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## This free e-Book will teach you Excel 365 in five hours or less.

We've helped over 2 million students to learn Excel. If you carefully work through this free book there is absolutely no doubt that you **will** master Excel 365 fundamentals.

## Make sure you are using the correct and latest version of this free e-book. A free e-book is available for all commonly used Excel versions.

This book supports *Excel 365 semi-annual version 2112, released on Jan 4, 2022*. A new edition of this book is published when significant new features are added. You can download the most recent version of this free e-book from: <https://thesmartmethod.com>.

This book is only for *Excel 365 for Windows* users. If you are using a different version: (2016, 2019, 2021 or an Apple Mac version) download the correct free e-book for your version from: <https://thesmartmethod.com>.

## Why you should use this free e-book

- **It is free (and you can print it).** Because this book is provided **free of charge**, schools, colleges, universities, and businesses are able to teach their students best-practice Excel skills without the substantial cost of designing lesson plans or purchasing books. You can print copies of this book but only if you print the content exactly as it is published, do not add or remove any book content or copyright notices, and make no charge of any sort for the books that you print.
- **Smart Method books are #1 best sellers.** While this e-book is **entirely free of charge**, every paper printed Smart Method® Excel book (and there have been thirty-four of them starting with Excel 2007) has been an Amazon #1 best seller in its category. This provides you with the confidence that you are using a best-of-breed resource to learn Excel.
- **Learning success is guaranteed.** For over fifteen years, Smart Method courses have been used by large corporations, government departments and the armed forces to train their employees. The book is ideal for teaching or self-learning because it has been constantly refined (during hundreds of classroom courses) by observing which skills students find difficult to understand and then developing simpler and better ways of explaining them. This has made the book effective for students of all ages and abilities.
- **It is the book of choice for teachers.** As well as catering for those wishing to learn Excel by self-study, Smart Method® books have long been the preferred choice for Excel teachers as they are designed to *teach* Excel and not as reference books. Books follow best-practice adult teaching methodology with clearly defined objectives for each learning session and an exercise to confirm skills transfer. With single, self-contained lessons the books cater for any teaching period (from minutes to hours).
- **No previous exposure to Excel is assumed.** You will repeatedly hear the same criticism of most Excel books: "you have to already know Excel to understand the book". This book is different. If you've never seen Excel before, and your only computer skill is using a web browser, you'll have absolutely no problems working through the lessons.
- **It focuses upon the everyday Excel skills used in the workplace.** This free *Basic Skills* book will teach you the basics without confusing you with more advanced, less used, Excel features. If you decide to expand your Excel education, you'll be able to move on to other Smart Method® books (or e-books) in this series to master even the most advanced Excel features.
- **It provides a clearly defined route to become a true Excel guru.** If you later decide that you'd like to become a true Excel guru, we also have *Essential Skills* and *Expert Skills* books in this series that will teach you very advanced features such as *Power Pivot*, *Power Query* (Get & Transform), *Power Maps* (3-D Maps), *Dynamic Arrays* and *OLAP multi-dimensional modeling* that very few Excel users understand.

## Learn Excel in just a few minutes each day (or in one five-hour sitting)

Excel is a huge and daunting application, and you'll need to invest some time in learning the skills presented in this book. This will be time well spent as you'll have a hugely marketable skill for life. With 1.2 billion users worldwide, it is hard to imagine any non-manual occupation today that doesn't require Excel skills.

This book makes it easy to learn at your own pace because of its unique presentational style. The book contains 49 simple, self-contained lessons and each lesson only takes a few minutes to complete.

You can complete as many, or as few, lessons as you have the time and energy for each day. Many learners have developed Excel skills by setting aside just a few minutes each day to complete a single lesson. Others have worked through the entire book in less than five hours.

## This book is a structured tutorial that will teach you Excel

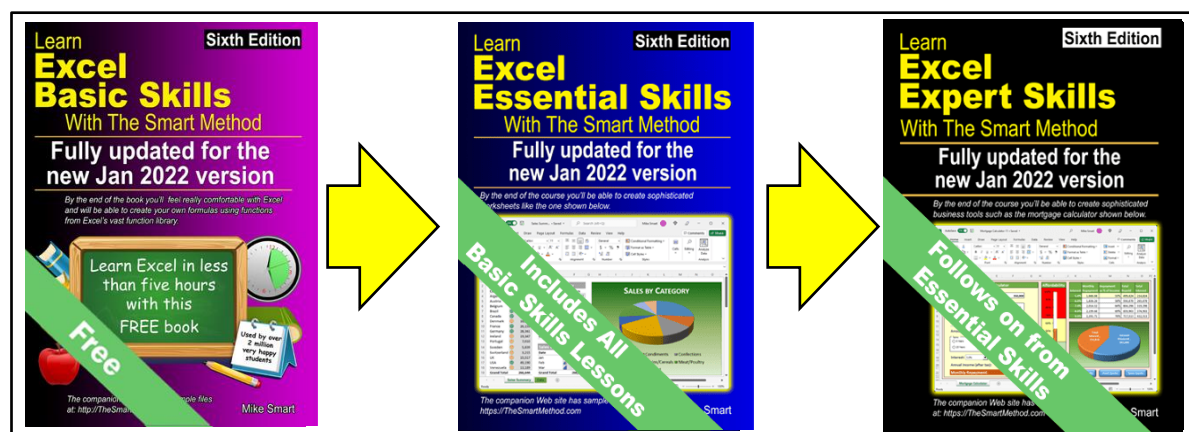
This free *Basic Skills* book is a structured tutorial that will teach you basic Excel skills with simple, easy hands-on lessons. You will learn basic Excel skills that are commonly used every day, in offices all over the world.

Many learners make the fundamental error of trying to learn from an Excel *reference* book that attempts to document (though not teach) Excel features. It is impossible to learn Excel using a reference book.

## Hardly anybody understands how to use every Excel feature

It is important to realize that Excel is probably the largest and most complex software application ever created. Hardly anybody understands how to use *every* Excel feature and for almost all business users, large parts of Excel's functionality wouldn't even be useful.

By the end of this free **Basic Skills** book, you'll be completely comfortable creating your own formulas and will be able to make use of the functions available in Excel's vast function library. You'll also have mastered many other fundamental Excel skills such as *AutoSum*, *AutoFill* and *Formula Autocomplete*. You'll be confident in the knowledge that you are using Excel's features in the correct, best-practice, professional way and you'll feel really at home with Excel.



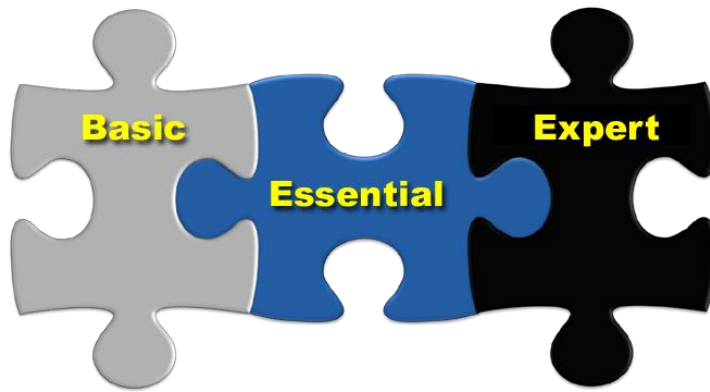
If you decide to further expand your Excel education, you'll be able to use the other books in this series to master advanced Excel features (such as *Power Pivot*, *Power Query/Get & Transform*, *Dynamic Arrays* and *DAX*) that are not even mentioned by many Excel text books as they are often ruled to be "out of scope".

If you'd like to review the precise skills taught in each book, you can view the full course outlines for *Essential Skills* and *Expert Skills* at: <https://thesmartmethod.com>.

# Excel competence levels

Office workers who use Excel every day for a living generally only use (and only need) a tiny fraction of Excel's enormous feature set.

Excel is a huge application with thousands of features. For most users it is a mistake to attempt to learn every Excel feature but, instead, to learn Excel to a competence level that is appropriate for your needs.



## Basic Skills

This is where you will be at the end of this book. You'll feel really comfortable with Excel. Even at **Basic Skills** level you'll have mastered many skills that most untrained Excel users are unable to use correctly. You'll also be using the correct professional techniques rather than "muddling through" in the way that most self-taught Excel users do. You'll be able to create your own formulas using functions from Excel's vast function library and have a complete mastery of fundamental Excel features such as *AutoFill*, *Flash Fill* and *Formula Autocomplete*.

## Essential Skills

At this level you will have excellent Excel skills, good enough to impress any employer, and your Excel skills will be better than most office workers (even those with many years of experience). You'll be able to create beautifully laid-out worksheets that will really impress. You'll also have mastered many advanced features that few Excel users understand such as *absolute and relative cell references*, *visualizations*, *advanced charts*, *conditional formatting*, *date serial numbers*, *themes* and *cloud computing*. You can see a full list of the lessons in the *Essential Skills* book at: <https://thesmartmethod.com>.

## Expert Skills

At *Essential Skills* level you'll be really, really good with Excel. If you want to join the tiny elite of power-users who can do absolutely everything with Excel you can use this follow-on book to move to expert level and become a true Excel guru.

This is a extremely high level of Excel competence that is very rarely found in the workplace (even amongst top professionals). Your Excel skills will be greater and broader than almost all other Excel users and you will understand (and be able to use) absolutely every Excel feature. You'll have a complete mastery of skills that are often even a mystery to Excel power users such as *OLAP*, *Power Pivot*, *Power Query (Get & Transform)*, *Power Maps (3-D Maps)*, *Data Modeling*, *DAX*, *Linked Data Types* and *Dynamic Arrays*. You can see a full list of the lessons in the *Expert Skills* course at: <https://thesmartmethod.com>.

## Every lesson is presented on two facing pages

Pray this day, on one side of one sheet of paper, explain how the Royal Navy is prepared to meet the coming conflict.

*Winston Churchill, Letter to the Admiralty, Sep 1, 1939*

Winston Churchill was aware of the power of brevity. The discipline of condensing thoughts into one side of a single sheet of A4 paper resulted in the efficient transfer of information.

A tenet of our teaching system is that every lesson is presented on *two* facing sheets of A4. We've had to double Churchill's rule as they didn't have to contend with screen grabs in 1939! If we can't teach an essential concept in two pages of A4 we know that the subject matter needs to be broken into two smaller lessons.

## How this book avoids wasting your time.

Over the years I have read many hundreds of computer text books and most of my time was wasted. The big problem with most books is that I must wade through thousands of words just to learn one important technique. If I don't read everything, I might miss that one essential insight.

Many presentational methods have been used in this book to help you to avoid reading about things you already know how to do, or things that are of little interest to you.

Lessons are logically grouped into *Lessons* and *Sessions* that are numbered for easy reference. This example shows *Lesson 28* in *Session 3*.

Screen grabs are provided in-line with the text when they can explain what you need to do more clearly than words alone.

If you want to progress through the course as quickly as possible you don't have to read notes.

Notes usually expand a little on the information given in the lesson text.

If you already know how to do something, simply read the bold text for each step and do it. Step notes sometimes provide precise instructions about how to progress if the one-line description is inadequate. Notes also often include interesting information about the current task.

When there is a sample file (or files) to accompany a lesson, the file name will be shown in a folder icon. You can download the sample file set from: <https://TheSmartMethod.com>

Learn Excel 365 Expert Skills with The Smart Method

**note**

**VLOOKUP is still (usually) a better solution than IFS**

In: Lesson 3-5: Use the IF logic function (sidebar) I advised: "Excel allows you to nest IF functions up to 64 levels deep (which is 63 too many)".

The new IFS and SWITCH functions (introduced in Feb 2016) are mainly intended to offer a simpler alternative to nested IF functions.

This doesn't mean using the IFS and SWITCH functions provides a better solution than VLOOKUP.

It is easy to introduce errors using IFS and SWITCH, as the order in which the logic pairs are listed is vital to the correct operation of the function.

In almost all business situations a VLOOKUP will provide a better and more elegant solution than the use of the IFS or SWITCH function.

**Lesson 3-28: Use the IFS function**

In: Lesson 3-25: Use a VLOOKUP function for an inexact lookup, you used a VLOOKUP function to return a grade from different pass mark percentages.

In this lesson you will solve exactly the same problem posed in: Lesson 3-25: Use a VLOOKUP function for an inexact lookup, with a logic based (rather than lookup based) solution.

1 Open *IFS Grades-1* from your sample files folder.

	A	B	C	D	E	F
1	Exam Results					
2						
3	Name	Percentage	Grade	Percentage	Grade	
4	Johnny Caine	70%		0% Fail		
5	George Marley	68%		60% C		
6	Betty Anan	86%		70% B		
7	Paris Winfrey	80%		80% A		
8	Ozzy Dickens	95%		90% A*		
9	Johnny Roberts	84%				

This is an exact duplicate of the *Grades-1* sample file that you used at the beginning of: Lesson 3-25: Use a VLOOKUP function for an inexact lookup.

2 Use the IFS function to calculate the grade for each student by defining grade data within the function.

Sometimes it may be better to "hard code" data (such as the percentage grade thresholds) within the function itself. This prevents users from accidentally deleting or changing the grade percentage thresholds within the worksheet.

The argument against this approach is that the worksheet is more difficult to maintain if grade thresholds change in the future.

- Click in cell C4.
- Click: Formulas→Function Library→Logical→IFS.

The *Function Arguments* dialog for the IFS function appears.

The IFS function accepts up to 127 *Logical Test/Value* pairs.

3. Enter the following pair of arguments:

Logical_test1	B4 < 60%
Value_if_true1	"Fail"

The *Logical Test* is an expression that returns TRUE or FALSE. In this case the test asks if Johnny Caine's percentage is less than 60%.

As Johnny scored 70%, the result is FALSE (as 70% is not less than 60%). If Johnny had a percentage score of less than 60%, the function would have returned the text "Fail".

IFS Grades-1

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<https://thesmartmethod.com>

# Learning by participation

Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand.

*Confucius, Chinese teacher, editor, politician and philosopher (551-479 BC)*

Confucius would probably have agreed that the best way to teach IT skills is hands-on (actively) and not hands-off (passively). This is another of the principal tenets of The Smart Method® teaching method.

Research has backed up the assertion that you will learn more material, learn more quickly, and understand more of what you learn if you learn using active, rather than passive methods.

For this reason, pure theory pages are kept to an absolute minimum with most theory woven into the hands-on lessons, either within the text or in sidebars.

This echoes the teaching method used in Smart Method classroom courses where snippets of pertinent theory are woven into the lessons themselves so that interest and attention is maintained by hands-on involvement, but all necessary theory is still covered.

Logical\_test1

B4<60%

Value\_if\_true1

"Fail"

Logical\_test2

B4<70%

Value\_if\_true2

"C"

Logical\_test3

B4<80%

Value\_if\_true3

"B"

Logical\_test4

B4<90%

Value\_if\_true4

"A"

Logical\_test5

B4>=90%

Value\_if\_true5

"A"

important

Excel recognizes text as having a value in logical expressions

If you try entering text into the Percentage column you might be surprised to find this result:

A	B	C
3 Name	Percentage	Grade
4 Johnny Caine	teacup	"A"
5 George Marley	68%	C

Excel has evaluated this logic expression:

"teacup">90%

... and has surprisingly returned TRUE.

This seems puzzling at first until you realize that (behind the scenes) Excel assigns numeric values to text in order to implement alphabetical sorting.

These numeric values are always higher than any number so that (in an A-Z sort) numbers will always come before text.

To work around this peculiarity, you could add a new first Logical Test/Value pair to ensure that the value in column B was numeric like this:

Logical_test1	ISNUMBER(B4)=FALSE
Value_if_true1	"Error"

Session Three: Advanced Functions

Note that textual values must be placed in double quotation marks. If you omit to do this Excel will add them for you.

4. Add Logical Test/Value pairs for the other grades (see sidebar).

5. Click the OK button.

Johnny Caine's B grade is shown in cell C4.

6. AutoFill cell C4 to the end of the range.

All grades are now correctly shown.

A	B	C	D	E	F
3 Name	Percentage	Grade		Percentage	Grade
4 Johnny Caine	70%	B		0%	Fail
5 George Marley	68%	C		60%	C
6 Betty Anan	86%	A		70%	B
7 Paris Winfrey	80%	A		80%	A
8 Ozzy Dickens	95%	A*		90%	A*

3 Use the IFS function to calculate the grade for each student using the grade data defined in cells E3:F8.

1. Delete the functions in column C.

2. Add a new IFS function to cell C4.

3. Enter the following pair of Logical Test/Value arguments:

Logical_test1	B4<=E5	= FALSE
Value_if_true1	"Fail"	= "Fail"

Notice the use of an absolute reference for cell E5. This is needed to make sure that the formula AutoFills correctly.

If you do not understand absolute references see: Lesson 1-10: Add percentage and running totals using Quick Analysis (sidebar).

You could also have used \$F\$4 to reference the text: "Fail" in cell F4 like this:

Logical_test1	B4<=E5	= FALSE
Value_if_true1	\$F\$4	= "Fail"

Personally I prefer the literal text approach in this case as it makes the formula easier to read and thus less prone to error.

4. Add appropriate Logical Test/Value pairs for the other grades.

5. Click the OK button.

6. AutoFill cell C4 down to the end of the range.

Exactly the same grade values are now shown. The difference from the first approach is that the grades will change if the Percentage thresholds shown in cells E4:E8 change in the future.

4 Save your work as IFS Grades-2.

Whenever something can easily go wrong, or when the subject text is particularly important, you will see the *important* sidebar. You should always read important sidebars.

Each lesson models a real-world business problem. You'll immediately appreciate the value and relevance of each skill you learn.

A goal of this book is not to waste your time by explaining any skill twice. Sometimes you may forget something that has already been covered earlier in the course.

Cross-references are extensively used, pointing you back to the lesson in which the relevant skills were learned. The cross-references also help when you use this course as a reference book but have forgotten the more basic skills needed to complete each step.

# **Learn Excel 365 Basic Skills with The Smart Method**

**Sixth Edition: Fully updated for the new Jan 2022 version 2201**

**Mike Smart**



**Learn Excel 365 Basic Skills with The Smart Method®**  
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How SaaS software is developed

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Potential problems when downloading untrusted sample files

Our sample files are available via a certified self-extracting .EXE file.

Our sample files are also available as a .ZIP file.



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## **Appendix A: Skills Covered in the Essential Skills Course**

Essential skills course outline

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Session 2: Doing Useful Work with Excel

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Session 4: Making Your Worksheets Look Professional

Session 5: Charts and Graphics

Session 6: Working with Multiple Worksheets and Workbooks

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## **Index**

# Introduction

Welcome to *Learn Excel 365 Basic Skills with The Smart Method®*. This book has been designed to enable students to master Excel 365 by self-study. The book is equally useful as courseware in order to deliver courses using The Smart Method® teaching system.

Smart Method publications are continually evolving as we discover better ways of explaining or teaching the concepts presented.

## Feedback

At The Smart Method® we love feedback – both positive and negative. If you have any suggestions for improvements to future versions of this book, or if you find content or typographical errors, the author would always love to hear from you. You can make suggestions for improvements to this book using the online form at:

<https://thesmartmethod.com/contact>

Future editions of this book will always incorporate your feedback so that there are never any known errors at time of publication.

If you have any difficulty understanding or completing a lesson, or if you feel that anything could have been more clearly explained, we'd also love to hear from you. We've made hundreds of detail improvements to our books based upon reader's feedback and continue to chase the impossible goal of 100% perfection.

## Downloading the sample files

In order to use this book, it is sometimes necessary to download free sample files from the Internet.

The process of downloading the free sample files will be explained later, in: *Lesson 1-9: Download the sample files*.

## Problem resolution

If you encounter any problem using any aspect of the course, you can contact us using the online form at:

<https://thesmartmethod.com/contact>

We'll do everything possible to quickly resolve the problem.


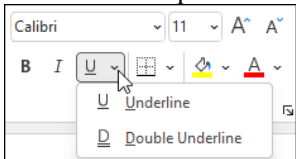
## Excel version and Region format settings used to write this book

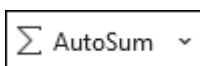
This edition was written using *Excel 365 version 2112*, released on Jan 4, 2022 running under the *Windows 11 operating system version 21H2*. You'll discover which version your computer is running later, in: *Lesson 1-3: Understand Update Channels* and *Lesson 1-4: Check that your Excel version is up to date*.

This book was written using English (United States) *Region format* settings. The English - US Region format uses the decimal separator for a period and a comma for the thousand's separator, producing formatted numbers such as 12,345.67. Dates are formatted as Month/Day/Year. If you are situated in a different region, it is possible to change your region format (in Windows settings) but there is no need to do so. Just be aware that some of the screen grabs in this book may be formatted differently to what you see on your screen.

# Typographical Conventions Used in This Book

This guide consistently uses typographical conventions to differentiate parts of the text.

When you see this	Here's what it means
Click <i>Line Color</i> on the left-hand bar and then click <i>No line</i> .	Italics are used to refer to text that appears in a worksheet cell, an Excel dialog, on the Ribbon, or elsewhere within the Excel application. Italics may sometimes also be used for emphasis or distinction.
Click: Home→Font→Underline. 	Click on the Ribbon's <i>Home</i> tab and then look for the <i>Font</i> group. Click the <i>Underline</i> button within this group (that's the left-hand side of the button, not the drop-down arrow next to it).  Don't worry if this doesn't make sense yet. You will cover the Ribbon in depth in session one.
Click: Home→Font→ Underline Drop Down→Double Underline. 	Click on the Ribbon's <i>Home</i> tab and then look for the <i>Font</i> group. Click the drop-down arrow next to the Underline button (that's the right-hand side of the button) within this group and then choose <i>Double Underline</i> from the drop-down list.
Click: File→Options→ Advanced→General→ Edit Custom Lists→Import	This is a more involved example.  1. Click the <i>File</i> tab on the Ribbon, and then click the <i>Options</i> button towards the bottom of the left-hand pane.  The <i>Excel Options</i> dialog appears.  2. Choose the <i>Advanced</i> list item in the left-hand pane and scroll down to the <i>General</i> group in the right-hand pane.  3. Click the <i>Edit Custom Lists...</i> button.  Yet another dialog pops up.  4. Click the <i>Import</i> button.
Type: <b>European Sales</b> into the cell.	Whenever you are supposed to actually type something on the keyboard it is shown in bold faced text.
Press <Ctrl> + <Z>.	You should hold down the <b>Ctrl</b> key and then press the <b>Z</b> key.



When a lesson tells you to click a button, an image of the relevant button will often be shown either in the page margin or within the text itself.

## note

An Excel worksheet can contain up to 16,585 columns and 1,048,476 rows.

If you want to read through the book as quickly as possible, you don't have to read notes.

Notes usually expand a little on the information given in the lesson text.

## important

Do not click the *Delete* button at this point as to do so would erase the entire table.

Whenever something can easily go wrong, or when the subject text is particularly important, you will see the *important* sidebar.

You should always read important sidebars.

## tip

### Moving between tabs using the keyboard

You can also use the <Ctrl>+<PgUp> and <Ctrl>+<PgDn> keyboard shortcuts to cycle through all of the tabs in your workbook.

Tips add to the lesson text by showing you shortcuts or time-saving techniques relevant to the lesson.

The bold text at the top of the tip box enables you to establish whether the tip is appropriate to your needs without reading all of the text.

In this example if you are not interested in keyboard shortcuts you do not need to read any further.

## anecdote

I ran an Excel course for a small company in London a couple of years ago...

Sometimes I add an anecdote gathered over the years from my Excel classes or from other areas of life.

If you simply want to learn Excel as quickly as possible you can ignore my anecdotes.

## trivia

The feature that Excel uses to help you out with function calls first made an appearance in Visual Basic 5 back in 1996 ...

Sometimes I indulge myself by adding a little piece of trivia in the context of the skill being taught.

Just like my anecdotes you can ignore these if you want to. They won't help you to learn Excel any better!

## The World's Fastest Cars

When there is a sample file (or files) to accompany a lesson, the file name will be shown in a folder icon. You can download the sample file from: <https://thesmartmethod.com>. Detailed instructions are given in: *Lesson 1-9: Download the sample files.*

# How to use this course

This course utilizes some of the tried and tested techniques developed after teaching vast numbers of people to learn Excel during many years teaching Smart Method classroom courses.

In order to master Excel as quickly and efficiently as possible you should use the recommended learning method described below. If you do this there is absolutely no doubt that you will master the Excel skills taught in this book.

## Three important rules

### #1 - Complete the course from beginning to end

It is always tempting to jump around the course completing lessons in a haphazard way.

We strongly suggest that you start at the beginning and complete lessons sequentially.

That's because each lesson builds upon skills learned in the previous lessons and one of our goals is not to waste your time by teaching the same skill twice. If you miss a skill by skipping a lesson, you'll find the later lessons more difficult, or even impossible to follow. This, in turn, may demoralize you and make you abandon the course.

### #2 If possible, complete a session in one sitting

The book is arranged into *sessions* and *lessons*.

You can complete as many, or as few, lessons as you have the time and energy for each day. Many learners have developed Excel skills by setting aside just a few minutes each day to complete a single lesson.

If it is possible, the most effective way to learn is to lock yourself away, switch off your telephone, and complete a full session, without interruption, except for a 15-minute break each hour. The memory process is associative, and we've ensured that the lessons in each session are very closely coupled (contextually) with the others. By learning the whole session in one sitting, you'll store all that information in the same part of your memory and will find it easier to recall later.

The experience of being able to remember all of the words of a song as soon as somebody has got you "started" with the first line is an example of the memory's associative system of data storage.

### #3 Rest at least every hour

In our classroom courses we have often observed a phenomenon that we call "running into a wall". This happens when a student becomes overloaded with new information to the point that they can no longer follow the simplest instruction. If you find this happening to you, you've studied for too long without a rest.

You should take a 15-minute break every hour (or more often if you begin to feel overwhelmed) and spend it relaxing rather than catching up with your e-mails. Ideally you should relax by lying down and closing your eyes. This allows your brain to use all its processing power to efficiently store and index the skills you've learned. We've found that this hugely improves retention of skills learned.

## How to work through the lessons

### At the end of each session, complete the session exercise

Keep attempting the exercise at the end of each session until you can complete it without having to refer to lessons in the session. Don't start the next session until you can complete the exercise from memory.

### At the end of each session, review the objectives

The session objectives are stated at the beginning of each session.

Read each objective and ask yourself if you have truly mastered each skill. If you are not sure about any of the skills listed, review the relevant lesson(s) before moving on to the next session.

You will find it very frustrating if you move to a new session before you have truly mastered the skills covered in the previous session. This may demoralize you and make you abandon the course.

## How to best use the incremental sample files

Many lessons in this course use a sample file that is incrementally improved during each lesson. At the end of each lesson an interim version is always saved. For example, a sample file called Sales-1 may provide the starting point to a sequence of three lessons. After each lesson, interim versions called Sales-2, Sales-3 and Sales-4 are saved by the student.

A complete set of sample files (including all incremental versions) are provided in the sample file set. This provides three important benefits:

- If you have difficulty with a lesson, it is useful to be able to study the completed workbook (at the end of the lesson) by opening the finished version of the lesson's workbook.
- When you have completed the book, you will want to use it as a reference. The sample files allow you to work through any single lesson in isolation, as the workbook's state at the beginning of each lesson is always available.
- When teaching a class one student may corrupt their workbook by a series of errors (or by their computer crashing). It is possible to quickly and easily move the class on to the next lesson by instructing the student to open the next sample file in the set (instead of progressing with their own corrupted file or copying a file from another student).

## The time you spend learning Excel is hugely worthwhile

If you persevere with this course, there is no doubt that you will master Excel. A little time and effort are needed but the skills you'll acquire will be hugely valuable for the rest of your life. With 1.2 billion users worldwide, it is hard to imagine any organization of any size that does not value Excel skills.

Enjoy the course.



# 1

## Session One: Setup and Basic Skills

A bad beginning makes a bad ending.

*Euripides, Aegeus (484 BC - 406 BC).*

Excel has hundreds of setup options. Before you can begin learning Excel it is important that your copy is properly configured. This session will show you how to correctly setup the user interface. You'll also ensure that you are updated to the latest Excel version.

You'll also learn the absolute basics you need before you can start to do useful work with Excel 365.

In my classes I often teach professionals who have used Excel for over ten years, and they *always* get some nugget of fantastically useful information from this session.

### Session Objectives

By the end of this session, you will be able to:

- Start Excel and open a new blank workbook
- Understand update channels
- Check that your Excel version is up to date
- Change between the Simplified and Classic Ribbon
- Change between Touch Mode and Mouse Mode
- Change the Office Theme
- Maximize, minimize, re-size, move and close the Excel window
- Download the sample files and open/navigate a workbook
- Save a workbook to a local file
- Understand common file formats
- Pin a workbook and understand file organization
- View, move, add, rename, delete and navigate worksheet tabs
- Use the Versions feature to recover an unsaved Draft file
- Use the Versions feature to recover an earlier version of a workbook
- Use the Ribbon
- Understand Ribbon components
- Customize the Quick Access Toolbar and preview the printout
- Use the Mini Toolbar, Key Tips and keyboard shortcuts
- Understand views
- Use the Tell Me help system
- Use other help features

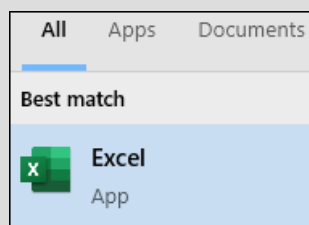
## note

### If you can't find the Excel tile in Windows 10

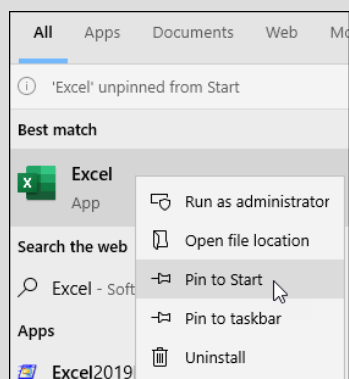
When you install Excel 365 on a Windows 10 computer a tile is automatically added to the Start Menu. If you can't find the tile proceed as follows:

1. Type: **Excel** into the Windows 10 search box at the bottom left of your screen.

You should then see the *Excel Desktop app* returned by the Windows 10 search. If you don't, Excel is not installed on this computer.




2. Right-click the Excel app icon and click: *Pin to Start* from the shortcut menu:

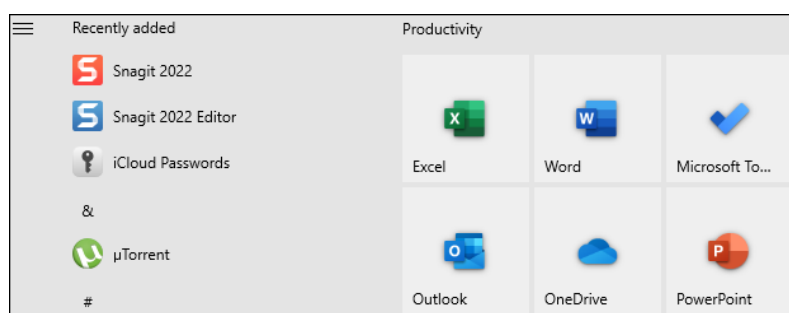


You will now be able to locate the Excel tile on the start menu (though you may have to scroll down to the bottom of the tile list to find it).

## Lesson 1-1: Start Excel and open a new blank workbook (Windows 10)

Excel 365 will only run on the Windows 10 and Windows 11 operating systems. If you are using Windows 11 skip this lesson and move to: *Lesson 1-2: Start Excel and open a new blank workbook (Windows 11)*.

- 1 Click the Start Button  in the bottom left corner of the Windows 10 screen.
- 2 Drag the *Excel* tile to the top of the start menu (the start menu is on the right-hand side of the pop-up window).



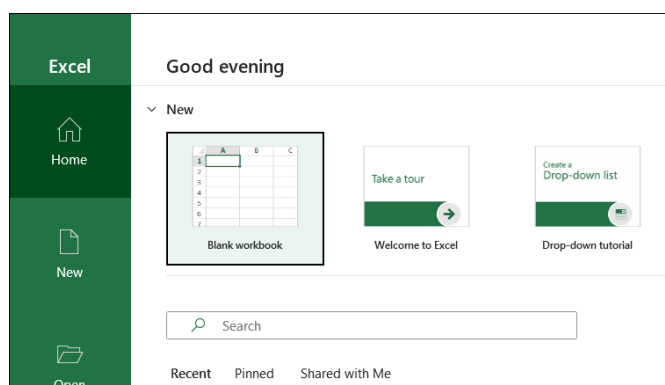
If you can't find the Excel tile, see sidebar for instructions on how to locate it.

You'll be using Excel a lot, so it makes sense to move the tile to the top of the Windows 10 start menu. You'll then be able to start Excel without having to search for the tile.

1. Point to the Excel tile.
2. Click and hold down the left mouse button.
3. With the left button held down, move your mouse towards the top of the start menu. The tile will move with the mouse cursor.
4. When you reach the top of the start menu, release the left mouse button.

The Excel tile is now permanently positioned at the top of the Windows 10 start menu.

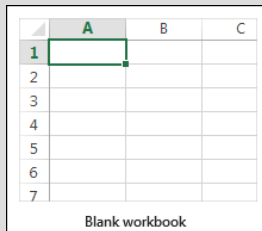
- 3 Left click on the Excel tile to start Excel.



## note

### Templates

When you clicked on the *Blank Workbook* icon:



... you instructed Excel to create a new workbook using the *Blank Workbook* template.

If you had clicked the *New* icon on the left-hand menu bar or clicked the *More Templates* link you would have seen a gallery containing many more templates.

Templates are sample workbooks that you can adapt and modify for your own needs. They are designed to give you a “flying start” when creating your own workbooks.

### Potential problems when using templates

Templates are not usually a good choice as it can take longer to adapt them to your true needs than to design from scratch

Many of Microsoft’s templates have been created using some very advanced Excel skills and techniques. If you make use of them there’s a danger that you may depend upon a workbook you don’t understand and are unable to maintain.

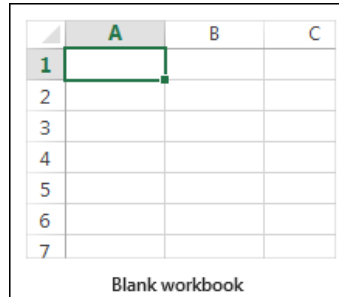
If you later progress to the *Essential Skills* book in this series, you’ll learn how to create your own custom templates (in *Lesson 3-16: Create a template*)

Templates you create yourself are far more useful. Because you understand how they are built, you will be able to maintain them, and any workbook created from them.

Now that Excel has started, Excel needs to know whether you want to create a new workbook, or whether you want to open a workbook that was created earlier.

## 4 Create a new blank workbook.

Left click on the *Blank workbook* icon.



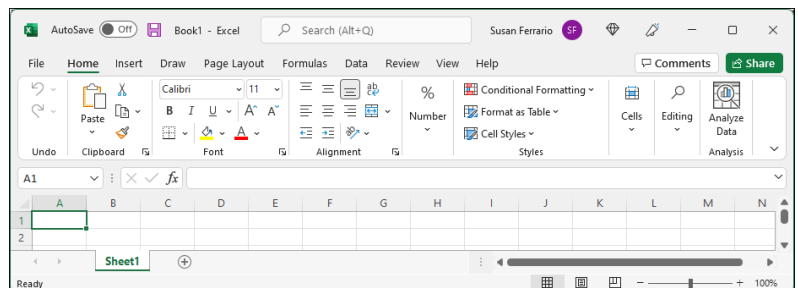
This icon represents a *template*.

When you click on the *Blank Workbook* icon you are telling Excel: “Create a new workbook using the *Blank workbook* template”.

Excel provides many more templates (see sidebar) but the *Blank Workbook* template is the one you will use most of the time.

Note that, from now onwards, I will simply use the term “click” when I mean left-click (the mouse button you will use most of the time) and “right-click” only when you need to click the (less-used) right mouse button.

The Excel 365 screen is displayed showing a blank workbook:



## 5 Leave the workbook open for the next lesson.

# Lesson 1-2: Start Excel and open a new blank workbook (Windows 11)

Excel 365 only runs on the Windows 10 and Windows 11 operating systems. If you are using Windows 10 skip this lesson, the lesson content has already been covered in: *Lesson 1-1: Start Excel and open a new blank workbook (Windows 10)*.

## 1 Add Excel to the taskbar.

The Windows 11 taskbar (the bar at the bottom of the screen) makes it easy to open applications you use regularly with a single mouse click.

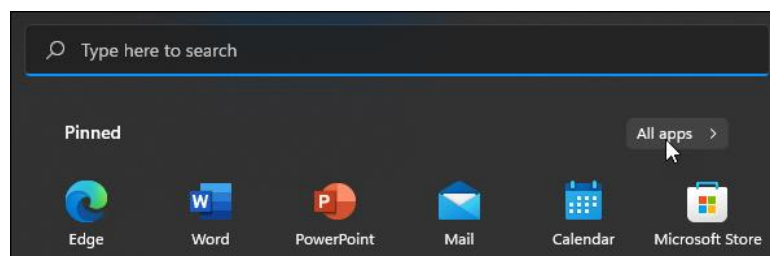
Here's the taskbar on my own computer.



You can see that I use Google Chrome, Outlook, Word and Excel regularly so I have added them to the taskbar.

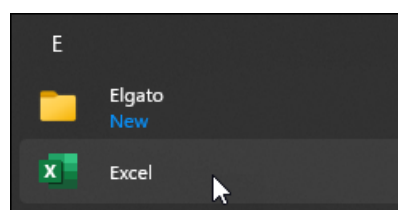
1. Click the Start button  in the bottom center section of the Windows 11 screen.

You may already see the Excel icon in the *Pinned* pane.



2. If you don't see it there click the *All Apps* button.

You'll then see the Excel icon in the alphabetical listing (under E). If you don't see the Excel icon then Excel is not installed on your computer.



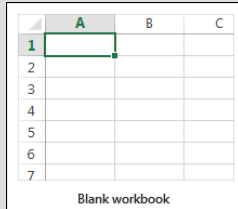
3. Right-click on the Excel icon.

A pop-up menu appears.

## note

### Templates

When you clicked on the *Blank Workbook* icon:



... you instructed Excel to create a new workbook using the *Blank Workbook* template.

If you had clicked the *New* icon on the left-hand menu bar or clicked the *More Templates* link you would have seen a gallery containing many more templates.

Templates are sample workbooks that you can adapt and modify for your own needs. They are designed to give you a “flying start” when creating your own workbooks.

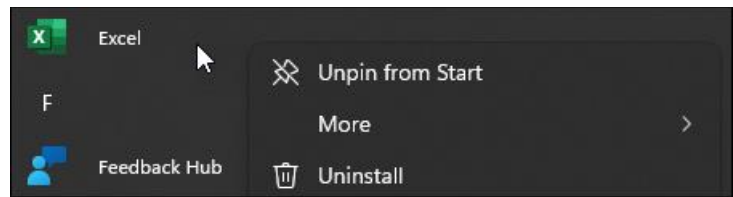
### Potential problems when using templates

Templates are not usually a good choice as it can take longer to adapt them to your true needs than to design from scratch

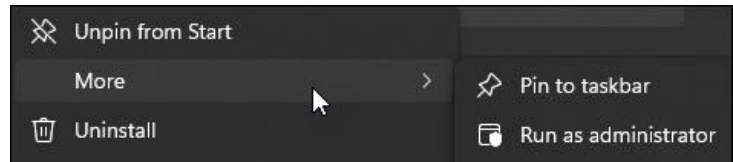
Many of Microsoft’s templates have been created using some very advanced Excel skills and techniques. If you make use of them there’s a danger that you may depend upon a workbook you don’t understand and are unable to maintain.

If you later progress to the *Essential Skills* book in this series, you’ll learn how to create your own custom templates (in *Lesson 3-16: Create a template*)

Templates you create yourself are far more useful. Because you understand how they are built, you will be able to maintain them, and any workbook created from them.



4. Hover the mouse cursor over the *More* option.
5. A pop-out menu appears.



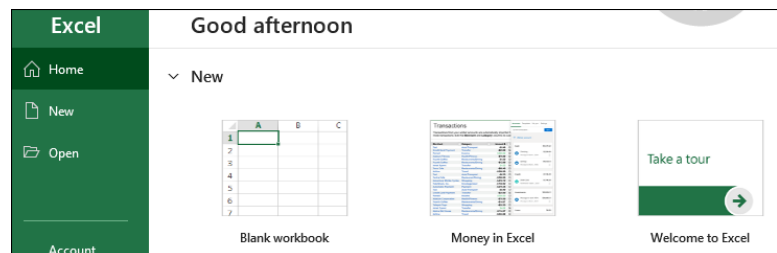
6. Left-click on the *Pin to taskbar* option.

The Excel icon appears on the bottom taskbar.

- 2 Left-click on the Excel icon to start Excel.



Now that Excel has started, Excel needs to know whether you want to create a new workbook, or whether you want to open a workbook that was created earlier.



- 3 Create a new blank workbook.

Left click on the *Blank workbook* icon.

This icon represents a *template*.

When you click on the *Blank Workbook* icon you are telling Excel: “Create a new workbook using the *Blank workbook* template”.

Excel provides many more templates (see sidebar) but the *Blank Workbook* template is the one you will use most of the time.

Note that, from now onwards, I will simply use the term “click” when I mean left-click (the mouse button you will use most of the time) and “right-click” only when you need to click the (less-used) right mouse button.

The Excel 365 screen is displayed showing a blank workbook:

- 4 Leave the workbook open for the next lesson.

## note

### Perpetual license versions have different features

Perpetual license holders still receive monthly updates, but these only include security updates and bug fixes (not new features).

An Excel 2021 user running version 2112 will thus see fewer features than an Excel 365 user running version 2112.

## note

### Windows 11 features are only updated once every year

Windows 11 features will only be updated once every year and the annual update will be released in the second half of the calendar year. This differs from Windows 10 that used to have features updated twice every year.

Starting with version 20H2 windows versions are named as the year of release along with the half of the year they were released in.

The two Windows 10 releases in 2021 were called Version 21H1 and 21H2 (the year, along with a half-year indicator).

For most users, new Windows versions are supported for 24 months. Some Enterprise and Educational users may have this extended to 36 months.

Microsoft does not force users to accept new Windows versions immediately. Users must initiate updates manually.

If your Windows operating system is approaching the end of its supported life, it is possible that Microsoft will automatically update your computer to keep your computer safe from potential security issues.

# Lesson 1-3: Understand Update Channels

In recent years most software vendors have transitioned from the concept of perpetual licenses to Software as a Service (SaaS).

## Perpetual license software

There are two current versions of Excel: Excel 2021 and Excel 365. Excel 2021 is a perpetual license product. This means that purchasers “pay once and use forever”. Excel 2021 never has new or updated features added during its lifetime. Mainstream support for Excel 2021 ends in October 2026.

There are many disadvantages to the perpetual license model, including:

- Users with different Excel versions can have problems when sharing files with each other. For example, an Excel 365 workbook may not open correctly in Excel 2021.
- Support and training are difficult as different versions often work in different ways.

## Excel 365 is a SaaS product

The modern method of creating and supporting software is called: *Software as a Service* or *SaaS*. In the SaaS model users pay a low-cost subscription to the software developer (in this case Microsoft) to use the software, receive support and have regular feature updates.

There are many advantages to the SaaS model, including:

- Every user has the latest version. You will see later in this lesson, however, that Excel 365 users that have different update channels may still have different versions.
- The software changes gradually so that users often need no training to adapt to new versions.

The SaaS model does, however, create several development challenges.

## How Perpetual Licensed software is developed

The traditional software development cycle involves three stages:

- **Alpha test version:** This is a pre-release version that isn't expected to work very well. Alpha versions are expected to have many bugs and issues and are only used for testing, usually by professional testers working for the development team.
- **Beta test version:** The beta version is feature-complete but many of the features are not thoroughly tested. Beta versions are sometimes given to real-world users who then report bugs to the developer for attention.

## note

### Microsoft changed the name of update channels on 9<sup>th</sup> June 2020

This lesson uses the new update channel names that came into effect on 9th June 2020. You may still see the older names referred to in older documentation.

Here are the new (after June 2020) names:

- **Beta Channel** (old name: Insider Fast Channel).
- **Current Channel Preview** (old name: Insider Slow).
- **Current Channel** (old name: Monthly Channel).
- **Monthly Enterprise Channel** (no previous equivalent).
- **Semi-Annual Enterprise Channel** (old name Semi-Annual Channel).

## note

### Home and small business users of Office are not allowed to use the Enterprise Channels

Unless you work for a larger business (with an Enterprise plan), the only update channel available to you will be the Current Channel.

It is also possible for home users to use the two channels available through the Office Insider Program: The *Beta Channel* and *Current Channel (Preview)*.

Because Excel 365 is a continually evolving product, you may notice some small differences between the version that you are using, and the version used to write this book.

- **Release version 1.0:** This version is expected to be solid and reliable and suitable for real-world use.
- **Updated versions 1.01, 1.02 etc:** Updates do not add new features but fix bugs and security problems that are found after release.

## How SaaS software is developed

SaaS software is constantly updated. To ensure that software is thoroughly tested Microsoft have created update channels. It is possible for users to decide which channel is most suitable for their needs. You'll discover the update channel that your copy of Excel is using later, in: *Lesson 1-4: Check that your Excel version is up to date.*

- **Beta Channel - sometimes called: Insider Fast:** This channel has no support. Features are still in development and may be risky to use. This channel is not suitable for real-world business use.
- **Current Channel (Preview) – sometimes called Insider Slow:** When new features have been tested in the *Insider Fast Channel*, they are released to the *Insider Slow Channel*. This channel is more stable and has less risk than the *Insider Fast Channel*. This channel is not suitable for real-world business use.
- **Current Channel:** On June 9, 2020, this became the default channel for all new Excel installations. Current Channel users have an Excel version that can change at any time. Different groups of Current Channel users may be using different versions at any one time as features are not released to all Current Channel users at the same time. Current Channel features can be expected to have more bugs than the *Enterprise* channels.
- **Monthly Enterprise Channel (only available with Enterprise plans)** This channel is aimed at bigger businesses rather than home users. Monthly Enterprise Channel users only have access to features that have been thoroughly tested by Current Channel users. Features can appear in the Current Channel months before they are considered ready for the Monthly Enterprise Channel. The Monthly Enterprise Channel is only updated with new features once each month.
- **Semi-Annual Enterprise Channel (only available with Enterprise plans):** This was the default channel for bigger business users before June 9, 2020 (when Microsoft changed the default to the Current Channel for all users). Semi-Annual Enterprise Channel users will receive a new, and thoroughly tested, version of Excel in January and July of each year. I would recommend this as the most appropriate channel for serious business use in large companies.

Most Excel users will use the Current Channel but, in larger companies, your administrator may have decided to use one of the other channels. This book was written using the *Excel 365 Version 2112* that was released to the *Current* update channel on *Jan 4, 2022*.

Because Excel 365 is a continually improving product, you may notice some small differences between the version that you are using, and the version used to write this book.



## important

### Can I use this Excel 365 book to learn Excel 2021?

Microsoft release a new, updated version of Excel 365 every month. The new monthly version often includes new or improved features.

Microsoft can do this because Excel 365 is a subscription product, providing Microsoft with a constant income stream to finance constant improvements.

Excel 2021 is a “pay once” (also called “perpetual license”) product that never has feature updates during its 5-year product life.

When Excel 2021 was first released (in October 2021) it was almost identical to the October 2021 version of Excel 365. At that time, you’d have had no difficulty learning Excel 2021 using this book.

As the years and months roll by, the differences between Excel 365 and Excel 2021 will become more significant. For this reason, Excel 2021 users may see screen grabs in this book that differ from what they see on screen and may see features described that do not exist in Excel 2021.

New editions of our Excel 365 books are published when significant new features are added. This book is the sixth edition (updated for the January 2022 release).

# Lesson 1-4: Check that your Excel version is up to date


## Automatic Updates

Normally Excel will look after updates without you having to do anything. By default, automatic updates are enabled. This means that updates are downloaded from the Internet and installed automatically.

It is possible that automatic updates have been switched off on your computer. In this case there is a danger that you may have an old, buggy, unsupported and out of date version of Excel 365 installed.

This lesson will show you how to make sure that you are using the latest (most complete, and most reliable) version of Excel.

- 1 Start Excel and open a new blank workbook (if you have not already done this).
- 2 Make sure that automatic updates are enabled.

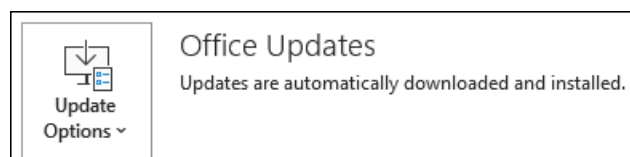
1. Click the *File* button  at the top-left of the screen.

This takes you to *Backstage View*. Backstage View allows you to complete an enormous range of common tasks from a single window.

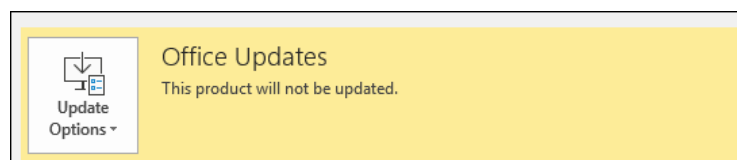
2. Click: *Account*  in the left-hand list.

Your account details are displayed on screen. Notice the *Update Options* button displayed in the right-hand pane.

If all is well, and automatic updates are switched on, you will see a button similar to this:



If automatic updates have been switched off, you will see a similar button to this.



In this case you will need to switch automatic updates on (see next step).

- 3 Switch on *automatic updates* if necessary.

Click: Update Options → Enable Updates.

## note

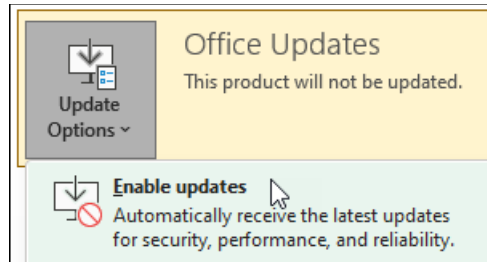
### Version number and Build

A new Excel version is usually released every month.

Each new version may add new features to Excel 365 (but these are not available to Excel 2021 users).

If bugs or security issues are found in a new version, Microsoft will fix them and publish a new *build* of the same version.

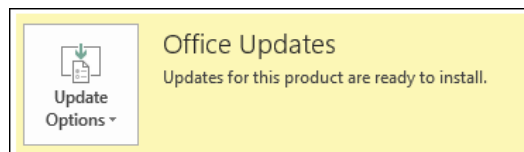
It is quite normal for there to be several new builds of each new version during the month that the new version is released.



You may also see a second dialog asking if you want the application to make changes to your device. If you see this click the *Yes* button.

#### 4 If there are updates waiting to install, apply them.

Sometimes Excel will download updates but will not install them automatically. In this case you will see an update button similar to the following:









If you see this type of button, you should apply the update.

Click: Update Options → Apply Updates.



You may be asked to confirm that you want to apply the update, and to close any open programs before applying the update.

#### 5 Make sure that you are using Excel 365.

Product A	Product B	Product C
<b>Product Information</b>  Microsoft Office Home and Business 2021	<b>Product Information</b>  <b>Microsoft</b> Subscription Product Microsoft 365 Apps for enterprise	<b>Product Information</b>  <b>Microsoft</b> Subscription Product Microsoft 365
 <b>About Excel</b> Learn more about Excel, Support, Product ID, and Copyright information. Version 2112 (Build 14729.20248 Click-to-Run)	 <b>About Excel</b> Learn more about Excel, Support, Product ID, and Copyright information. Version 2112 (Build 14729.20248 Click-to-Run) Current Channel	 <b>About Excel</b> Learn more about Excel, Support, Product ID, and Copyright information. Version 2112 (Build 14729.20248 Click-to-Run) Current Channel

You will see product information section displayed. If you see the number 365 or the words *Subscription Product*, you will know that you are using the subscription version (Excel 365) that this book teaches. This is the case for products B and C above.

Notice also the *Version and Build* (see sidebar for an explanation).

- Click the *Back* button  to leave *Backstage View* and return to the worksheet.
- Click the *Close* button  in the top-right corner of the Excel screen to close Excel.

## note

### Simplified/Classic Ribbon are Office-wide settings

When you set Excel to work with the Simplified or Classic Ribbon, you'll find that all of your other Office applications (such as Word and PowerPoint) have inherited the same setting.

It isn't possible to set the Ribbon preference individually for each application.

## Lesson 1-5: Change between the Simplified and Classic Ribbon

Excel was originally designed to be used on home computers. Today Excel is sometimes used on mobile devices (such as an iPad or Smartphone).

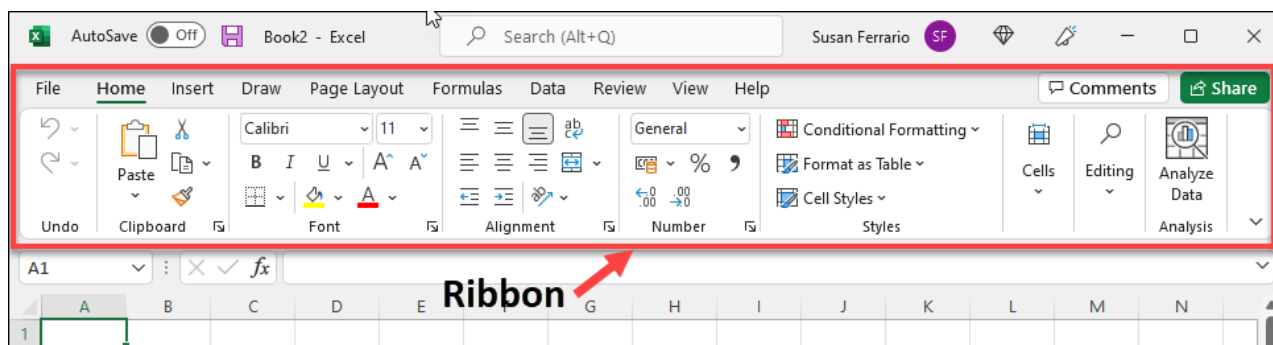
Mobile devices have smaller screens than desktop computers.

For these reasons, Excel 365 enables users to customize the user interface to make it more usable on mobile devices.

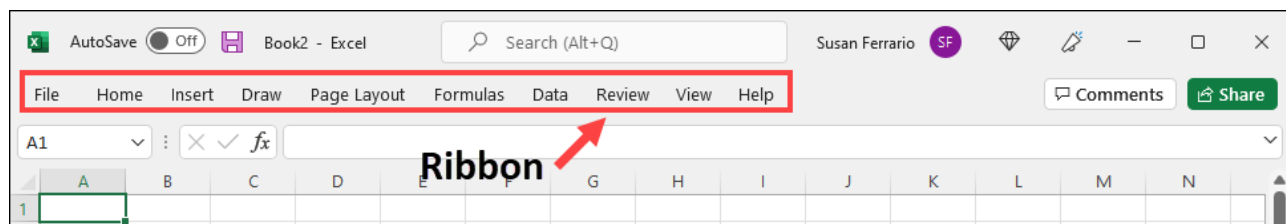
Most Excel commands are executed using a user interface component called the Ribbon. You'll learn how to use the Ribbon later in: *Lesson 1-17: Use the Ribbon*.

Depending upon the device you are using, you may see the *Simplified* or *Classic* Ribbon on your screen.

### The Classic Ribbon



### The Simplified Ribbon



You can see that the *Simplified Ribbon* takes up far less space but doesn't include all of the commands and icons for each menu option.

1 Open Excel and open a new blank Excel workbook.

Excel attempts to automatically detect the type of device you are using. For this reason, you may see either the Simplified Ribbon or the Classic Ribbon on your screen.

2 Switch from the Classic Ribbon to the Simplified Ribbon.



## note

### Excel had a visual makeover in December 2021

In *Lesson 1-3: Understand Update Channels*, you learned that some users are updated later than others.

The current Excel version (at January 2022) is *Version 2112* but If you are using one of the *Enterprise* channels your updates may have been delayed.

If this is the case, you can try one of two things:

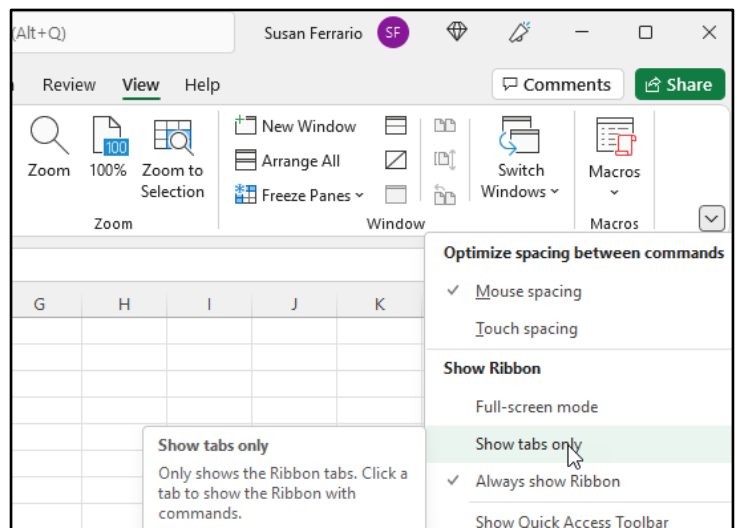
1. Click on the *Upcoming Features* icon  at the top-right of your screen. You may be able to update the visual appearance there.
2. Work around the limitation by using the older *Ribbon Display Options* button at the top-right of the Excel window. 

1. When the Classic Ribbon is displayed you will see a small downward facing chevron on the bottom-right corner of the classic Ribbon.



If you do not see this chevron, you may be using an older Excel version than *Excel 365 version 2112*. (See sidebar for potential workarounds for this problem).

Click on the chevron to display the *Ribbon Display Options*.



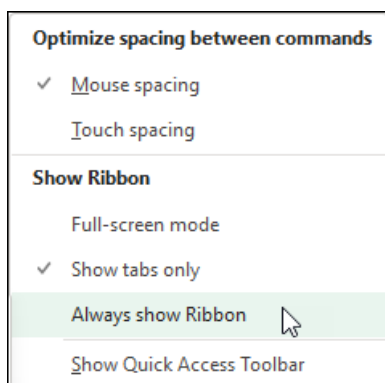
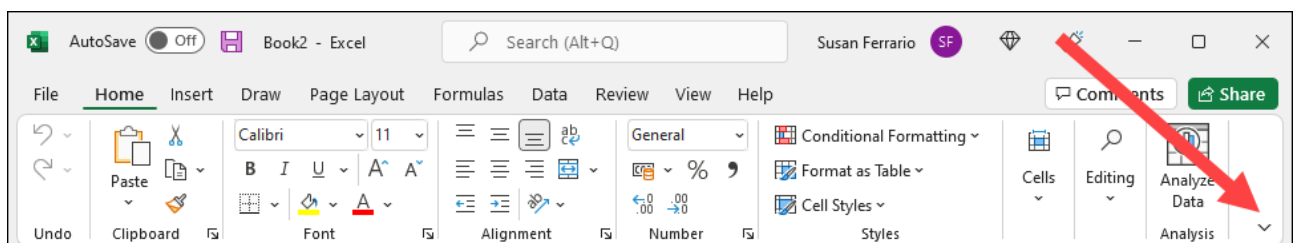
2. Click: *Show tabs only*.

The Simplified Ribbon is displayed.

### 3 Switch from the Simplified Ribbon to the Classic Ribbon.

1. Click on any of the menu options shown on the Simplified Ribbon except the *File* option.

The relevant Ribbon commands appear.



Notice that you can now see the Ribbon Display Options chevron at the bottom right of the Ribbon.

2. Click on the chevron to display the Ribbon Display Options.
3. Click: *Always show Ribbon*.

The Classic Ribbon is restored.

All of the screen grabs in this book assume that you are working with the Classic Ribbon.

Most Excel desktop users prefer to work with the Classic Ribbon as you can execute a command with one mouse click rather than two.

## note

### Touch mode and mouse mode are Office-wide settings

When you set Excel to work in touch mode or mouse mode, you'll find that all of your other Office applications (such as Word and PowerPoint) have inherited the same setting.

It isn't possible to set touch mode/mouse mode individually for each application.

# Lesson 1-6: Change between Touch Mode and Mouse Mode

Both Excel and Windows allow you to operate in one of two modes: Touch Mode and Mouse Mode. Excel tries to figure out which mode you want to use and then sets it for you automatically. This lesson will enable you to set the mode you prefer manually.

**Touch Mode:** In Touch Mode the icons are spaced further apart so that they are easier to tap with your finger.

**Mouse Mode:** This is the mode preferred by most Excel desktop users. In Mouse Mode the icons are displayed closer together. Unless you have a very large screen you will usually also see more icons on your screen when in Mouse Mode. This means that you can often execute a command with one click rather than two.

For this reason, it is usually more efficient to work with Excel in Mouse Mode (using a mouse to select commands) than to use Touch Mode (using your finger to select commands).

- 1 Open Excel and open a new blank Excel workbook.
- 2 Set Excel to use *Touch Mode*.

If you are using a computer that has a touch screen, you may find that Excel is already using touch mode.

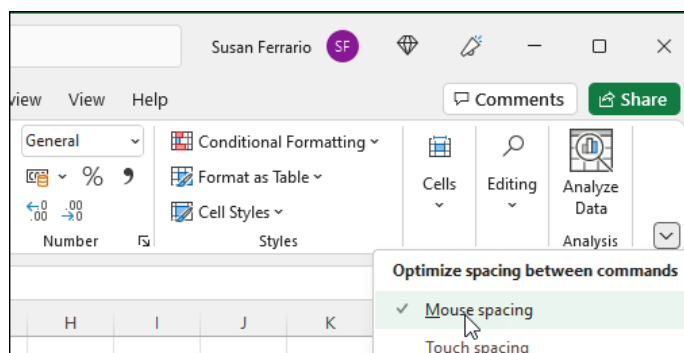
Make sure that the Classic Ribbon is displayed. You learned how to do this in: *Lesson 1-5: Change between the Simplified and Classic Ribbon*.

When the Classic Ribbon is displayed you will see a small downward facing chevron on the bottom-right corner of the classic Ribbon.

Click on the chevron to display the *Ribbon Display Options*.

Notice that there are two options: *Touch Spacing* and *Mouse Spacing*.

Click on the *Mouse Spacing* option.



Notice that fewer icons are now displayed. You are now using Excel in Touch Mode.

## anecdote

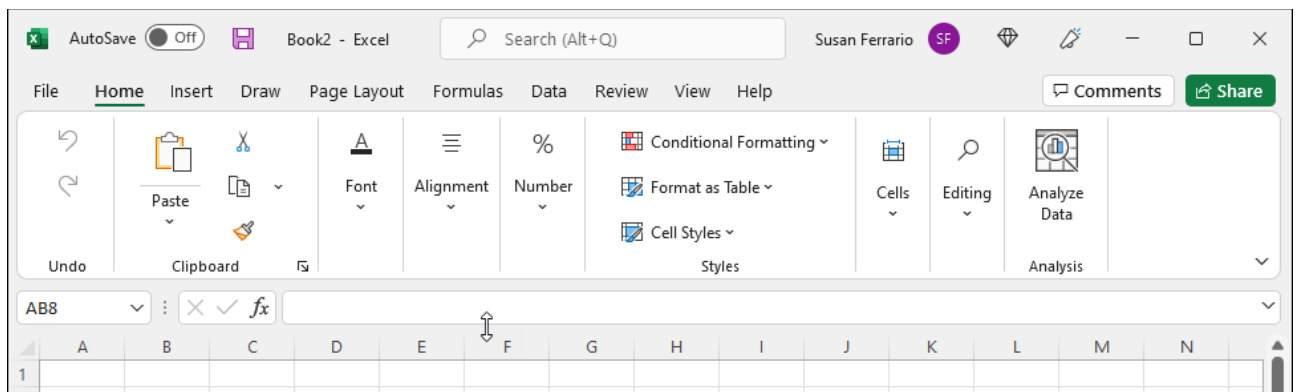
### How touch mode baffled a Microsoft Surface user

One of my users had a Microsoft Surface tablet computer connected to a 32-inch monitor via a docking station.

He couldn't understand why his Ribbon was so difficult to work with when compared to the other users in the office.

Office had auto-detected his device and classed it as a mobile device with a touch screen. Office had then set itself to use Touch mode.

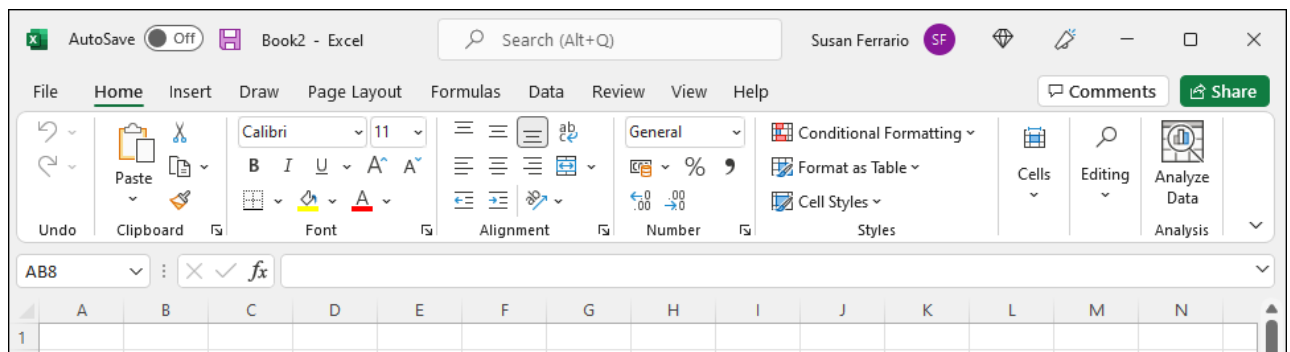
Without an understanding of Touch Mode and Mouse Mode he had found it impossible to correctly configure his computer for desktop use.



### 3 Set Excel to use *Mouse Mode*.

Now do the same thing but this time select *Mouse Mode*. Notice that the icons are now closer together.

There's also far more that you can do with a single click. For this reason, you'll probably be far more productive using *Mouse Mode* providing that you are using a conventional mouse with a reasonably large screen.



Most of the screen grabs in this book were taken using Mouse Mode.

If you decide that you prefer Touch Mode, you'll still have no difficulty working through all of the lessons in this book.



## note

### You can also personalize Excel by changing the background

Background customization can only be done if you are connected to the Internet and logged into a Microsoft Account. If you progress to the *Essential Skills* book in this series, you'll learn more about Microsoft Accounts in: *Session Eight: Cloud Computing*.

If you are logged into your Microsoft Account, you will see an *Office Background* drop-down list (above the *Office Theme* setting) that enables backgrounds to be set:

When you choose a background a "tattoo" is added to the opening screen (when you first start Excel).



## note

### The Office Visual Refresh

In early December 2021 Microsoft updated the appearance of Office 365 and Office 2021 for all Windows 11 users. Microsoft called this upgrade the "Office Visual Refresh".

While the update was designed mainly for Windows 11 users, Windows 10 users should also have been updated by the time you read this book.

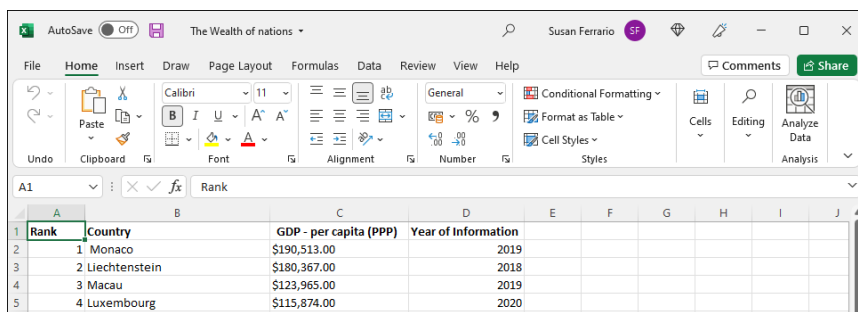
The visual refresh uses a color palette with soft neutral tones with rounded corners on dialogs.

This book was written using Windows 11 and Excel's new modern look.

# Lesson 1-7: Change the Office Theme

Excel allows you to change the colors of screen elements (such as the title bar and ribbon) by selecting a *theme*. There are four themes available: *Colorful*, *White*, *Dark Gray* and *Black*.

## White

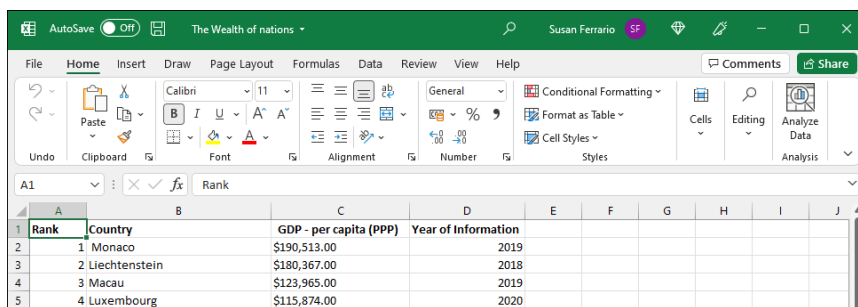


Since the Jan 4, 2022 version 2112 update, Excel 365 uses the theme that best complements the current Windows theme (see sidebar). This will be the *White* theme (assuming that the Windows theme has not been changed from the default *Light* theme).

You may see a different theme if:

- You have changed the default Windows theme.
- You have upgraded from an earlier version of Office in which a different theme was selected.
- You have changed the theme on another computer that uses the same Windows account as this one.
- You are a Windows 10 user who has not yet been updated.

## Colorful



The *Colorful* theme was the default in Excel 2016 and Excel 2019.

This theme makes it clear which of the Office applications you are using as Word, Excel, PowerPoint, Outlook and other Office applications each have their own unique color for the Title Bar (the bar shown at the very top of the Excel window).



## note

### Themes and Backgrounds affect every Office application on all your devices

When you set a theme or background in Excel you are changing the theme and background for the entire Office suite.

This means that you will have a consistent experience when using other Office applications such as *Word* and *PowerPoint*.

If you progress to the Essential Skills book in this series, you'll discover (in: Session Eight: Cloud Computing) that Excel includes features that are useful to users with multiple devices (such as a work computer, home computer, laptop, tablet and smartphone).

If you are logged into a *Microsoft Account*, the theme you select will also magically change on all your devices.

## note

### Audio cues

If you enable *Audio Cues* a different sound will be played whenever you complete common Excel actions (such as cut and paste).

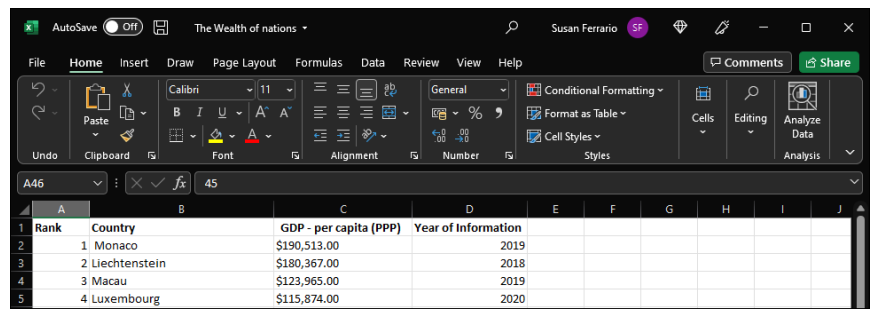
The idea is that you will subconsciously link sounds with actions so that when you make a mistake it will "sound wrong".

To enable Audio cues click:

File→Options→  
Accessibility→  
Feedback options→  
Provide feedback with sound.



You are also able to choose between two different *Sound Schemes*.

## Dark Gray and Black



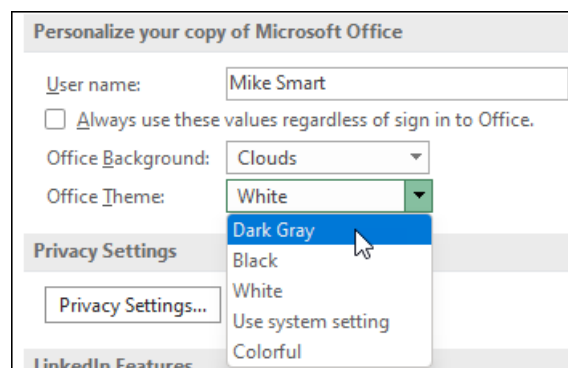
The *Dark Gray* and *Black* themes provide high contrast between different screen elements. It has been suggested that these themes would be particularly useful for users with impaired vision.

- 1 Open Excel and open a new blank Excel workbook.
- 2 Change the *Office Theme*.

1. Click the *File* button  at the top-left of the screen.
2. Click the *Options* button  near the bottom of the left-hand menu bar.

The *Excel Options* dialog box appears.

In the *Personalize your copy of Microsoft Office* section, you'll see an *Office Theme* drop-down list. Click the drop-down arrow to see the different themes available.



3. Click the *Dark Gray* theme.
4. Click *OK* to return to the Excel screen.

Experiment with each theme until you discover the one you prefer.

All of the screen grabs in this book were made using the *White* theme. If you choose a different theme the screen grabs in the book may look slightly different to what you see on your computer screen.

- 3 Close Excel.

# Lesson 1-8: Maximize, minimize, re-size, move and close the Excel window

The main Excel window has a dazzling array of buttons, switches and other artifacts. By the end of this book, they will all make sense to you, and you'll feel really comfortable with Excel.

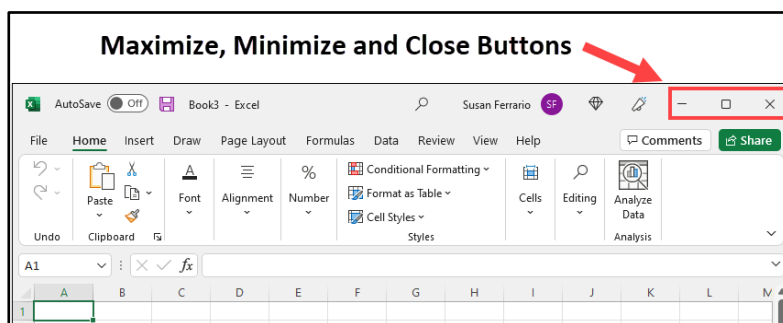
For now, you'll explore the big picture by looking at how the Excel window can be sized and moved. The details will come later.

- 1 Open Excel.
- 2 Use the *Blank workbook* template to open a new blank workbook.

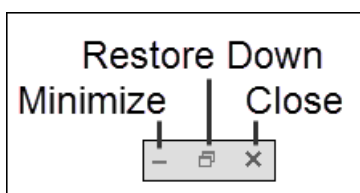
You learned how to do this in: *Lesson 1-1: Start Excel and open a new blank workbook.*

- 3 Understand the *Maximize, Minimize, Close* and *Restore Down* buttons

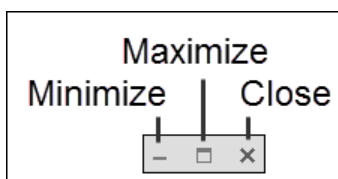
At the top right corner of the Excel window, you'll see three buttons.



The buttons that you see will depend upon how the Excel window was left last time the application closed down. Normally the Excel screen is maximized to fill the screen and you'll see:



But if you had reduced the size of the Excel window so that it didn't fill the screen, you'd see this instead:



Try clicking the *Maximize, Minimize* and *Restore Down* buttons.

- *Maximize* makes the Excel window completely fill the screen.

- *Minimize* reduces Excel to a button on the bottom task bar.

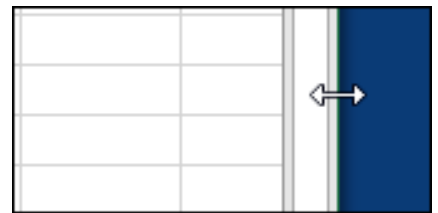
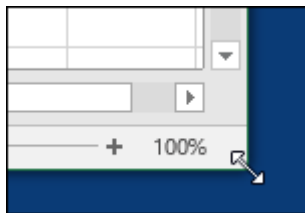


Click this button again to restore the window to its previous size.

- *Restore Down* makes the Excel window smaller, allowing you to re-size the window.

#### 4 Re-size the Excel window.

After clicking the *Restore Down* button you are able to re-size the Excel window. Hover over either the side of the window, or a corner of the window, with your mouse cursor. The cursor shape will change to a double-headed arrow.



When you see either cursor shape, hold down the left mouse button and move the mouse (this is called *click and drag*) to re-size the window.


- Clicking and dragging a corner allows you to change both the height and width of the window.
- Clicking an edge allows you to change only one dimension.

#### 5 Move the Excel window.

Click and drag the *Title Bar* (the bar at the very top of the window) to move the Excel window around the screen.



#### 6 Close Excel.

Click on the *Close* button  at the top right of the Excel window.

This is the most common way to close Excel

It is also possible to close Excel by pressing the <Alt>+<F4> keys on your keyboard.

Excel often provides many ways to do exactly the same thing.

# Lesson 1-9: Download the sample files

Many of the lessons in this book require the use of a sample file. The sample files for the book can be downloaded free from our web site.

You normally only have to download once but if you lose or otherwise corrupt the sample files you can download them again (as many times as you want) to start again with a fresh set of sample files.

## Potential problems when downloading untrusted sample files

*Protected View* is a security feature that was first introduced in Excel 2010. It is designed to protect you from potential viruses by treating all files downloaded from the Internet as being suspicious.

Any workbooks that are downloaded from the Internet, or are sent by e-mail attachment, will open in *Protected View* by default.

	A	B	C	D	E	F	G	H	I
1	Rank	Country	GDP - per capita (PPP)	Date of information					
2	1	Qatar	\$ 124,927.00	2017					

### note

#### Windows S Mode

The Windows 10 S operating system was discontinued in mid-2017 and replaced with “S Mode” (also available for Windows 2011).

Some new computers are sold with S mode enabled.

S mode locks Windows into a cut-down environment that only allows executable files to be purchased from the Windows store. That means that you cannot download the executable sample files when in S mode (you’ll have to use the alternative zip file set instead).

Tech website Thurrott reported that 40% of users that had purchased a Windows 10 S computer have switched to Windows 10/11 Pro (this is a free upgrade).

The user then has to click an *Enable Editing* button to use the file as normal.

## Our sample files are available via a certified self-extracting .EXE file.

While some users may find it useful to be reminded about the origin of their files, others may find this feature annoying.

In order for Excel to trust the sample files they must be installed from an executable file (.exe file) that has a valid security certificate.

We provide the sample files as a digitally signed self-extracting download and that is the easiest only way to install them onto your computer.

A single file is downloaded and run on your computer. All of the sample files are then installed into a folder on your computer called C:/Practice.

## Our sample files are also available as a .ZIP file.

We also offer an alternative zip file download method (the link to this page is in the FAQ section at the bottom of the download web page).

## important

### Organizing your sample files folder

When you complete a lesson that involves a sample file that is changed, you will be instructed to save the file with a suffix.

By the time you've completed the course you'll have sample files such as:

Sales-1  
Sales-2  
Sales-3  
Sales-4 ... etc

The first file is the sample file that you downloaded, and the others (with the number suffix) are interim versions as you complete each lesson.

The sample file set includes the starting sample file and all interim versions.

The interim versions are provided for three reasons:

1. If your work-in-progress becomes unusable (for example after a system crash) you can continue without starting at the beginning again.
2. If a lesson doesn't seem to give the results described, you can view the example to get some clues about what has gone wrong.
3. When you have completed the course you will use this book as a reference. The interim versions allow you to work through any of the lessons in isolation if you need to remind yourself how to use a specific Excel feature.

It is a good idea to place the sample files in a different folder to your saved work. If you don't do this, you'll be over-writing the sample interim files (such as Sales-1, Sales-2 etc) with your own finished work.

The alternative zip file has been provided because some companies (or anti-virus products) block the download of executable files. You may also have to use the zip file option if you are using a (now discontinued) operating system called *Windows 10 S* that only allows executable files to be downloaded from the Windows store (see sidebar).

If you download using the zip file option, you'll have to click the *Enable Editing* button every time you open a sample file for the first time.

#### 1 Download the sample files.

1. Open your web browser and type in the URL:

<https://thesmartmethod.com>

2. Click the *Sample Files* link on the top right of the home page.

Download the sample file set for *Excel 365 Essential Skills Sixth Edition*.

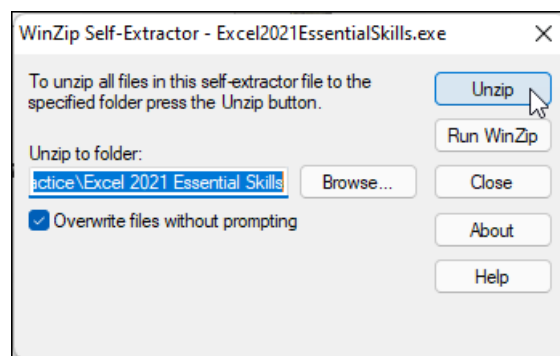
If you have any difficulty downloading the sample files there is a FAQ section at the bottom of the page detailing the solutions to common problems.

The file you have downloaded is named:

Excel365EssentialSkillsSixthEdition.exe

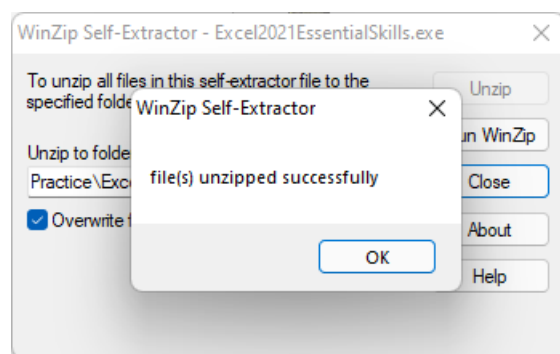
3. Run the file (some browsers may call this *Open* the file or *Execute* the file).

An unzip dialog will appear:



4. Click the *Unzip* button.

The files will be unzipped, and you'll see a success message.



The files are (by default) installed into the directory:

C:/Practice/Excel 365 Essential Skills-6<sup>th</sup> Edition.

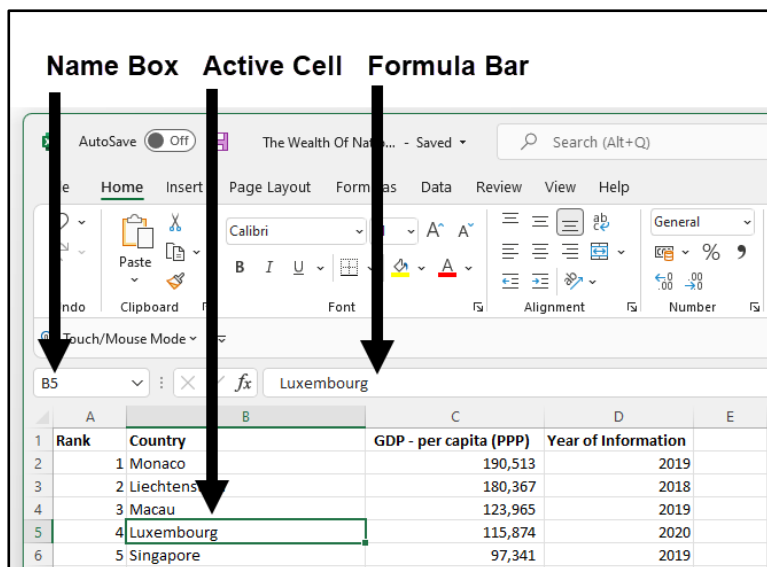
# Lesson 1-10: Open and navigate a workbook

Excel uses the analogy of a book that has many pages. In Excel terminology, the term: *Workbook* is used for the entire book and *Worksheet* for each of the pages. You'll learn about worksheets later in this session in: *Lesson 1-14: View, move, add, rename, delete and navigate worksheet tabs*.

## 1 Open the sample workbook: *The Wealth of Nations*.

1. Open Excel.
2. Click *Open* from the left-hand menu bar.
3. Click: *Browse* in the right-hand window.
4. Navigate to your sample files. If you downloaded using the recommended option and didn't change the normal file location, you will find these in the *C:/Practice* folder.
5. Open the *Excel 365 Essential Skills 6th Edition* folder.
6. Open the *Session 1* folder.
7. Double click *The Wealth of Nations* to open the sample workbook.

## 2 Go to Cell ZZ3 using the Name Box.



Excel uses the letter of the column and the number of the row to identify cells. This is called the *cell address*. In the above example, the cell address of the active cell is B5.

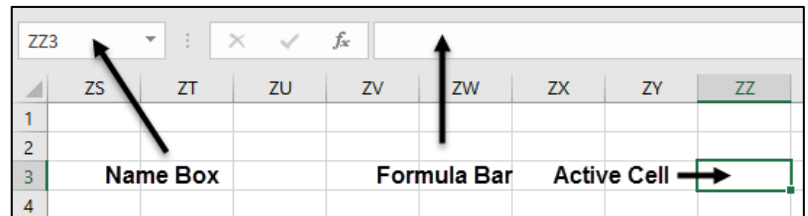
In Excel 365 there are a little over a million rows and a little over sixteen thousand columns. You may wonder how it is possible to name these columns with only 26 letters in the alphabet.

When Excel runs out of letters it starts using two: X, Y, Z and then AA, AB, AC etc. But even two letters are not enough. When Excel reaches column ZZ it starts using three letters: ZX, ZY, ZZ and then AAA, AAB, AAC etc.

The currently selected cell is called the *Active Cell* and has a green line around it. The Active Cell's address is always displayed in the *Name Box* and its contents are displayed in the *Formula Bar*.

You can also use the *Name Box* to move to a specific cell.

To see this in action, type **ZZ3** into the *Name Box* and then press the **<Enter>** key. You are teleported to cell ZZ3:

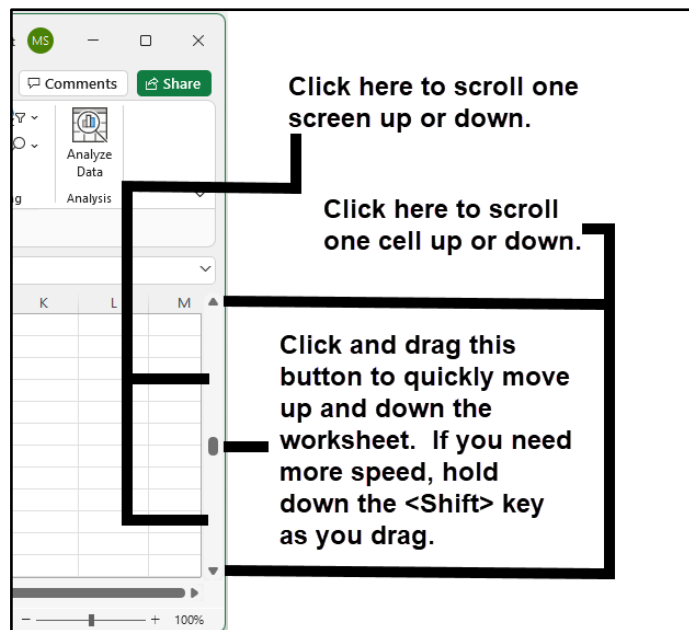


- 3 Return to cell A1 by pressing **<Ctrl>+<Home>**.
- 4 Go to the end of the worksheet by pressing **<Ctrl>+<End>**.
- 5 Use the scroll bars.

There are two scroll bars for the Excel window.

The vertical scroll bar runs from top to bottom of the window and allows you to quickly move up and down the worksheet.

The horizontal scroll bar is at the bottom right-hand side of the window and allows you to move to the left and right in wide worksheets. Here's how the scroll bars work:



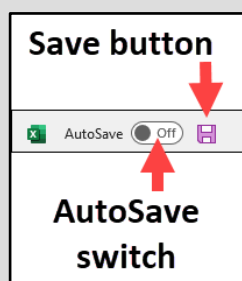


## important

**You may not be able to complete this lesson if the sample file is accessed from a OneDrive**

A *OneDrive* is a virtual disk drive that is usually accessed via the Internet (see facing page sidebar).

When you save a file to a OneDrive it is automatically saved as you work. Notice the control to the left of the save button (on the Quick Access Toolbar).



In the screen grab above the AutoSave switch is Off because the workbook I am using was not opened from a OneDrive.

When you open a workbook from a OneDrive you are able to control the AutoSave behaviour of the drive.

## tip

You can also use the <F12> key to instantly display the *Save As* dialog.

## tip

You can also use the <Ctrl>+<S> keyboard shortcut to save your work.

# Lesson 1-11: Save a workbook to a local file

- 1 Open *The Wealth of Nations* from your sample files folder (if it isn't already open).
- 2 Save the workbook.


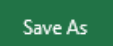
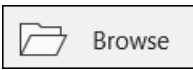
When you are editing a workbook that is saved on your local computer's hard drive, the changes that you make are only held in the computer's memory. If there is a power cut or your computer crashes, you may lose any work that has been done since the last save.

For this reason, you should get into the habit of regularly saving your work.

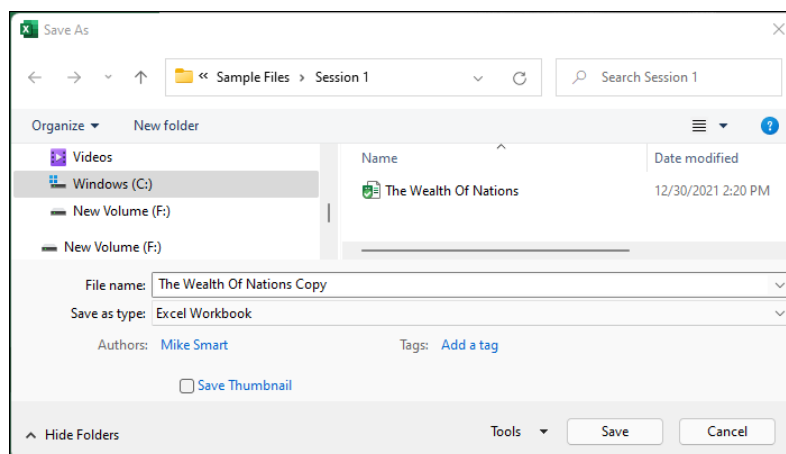
Even though you haven't changed this workbook, save it by clicking the *Save* button at the top left of the screen.



- 3 Save the workbook with a different name.

1. Click the *File* button.  at the top-left of the screen.
2. Click: *Save As*  in the left-hand list.
3. Click *Browse*  in the *Save As* menu.

The following dialog appears:



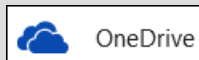
1. Click the drop-down arrow to the right of the *Save as type* drop-down list.

**The Wealth of Nations**

## note

### OneDrive and Cloud Computing

You may have noticed that the *Save As* dialog also has an option to save your workbook to a OneDrive:



A OneDrive can be thought of as a “disk drive in the sky”.

It is just like the C:\ drive on your computer but exists on a Microsoft server many miles away, accessed via the Internet.

The OneDrive can be very useful when you need to access your files from several different computers.

A OneDrive also provides an easier way to share files with others.

The OneDrive is part of a completely new way of working called *Cloud Computing*.

If you progress to the *Essential Skills* book in this series, you’ll find an entire session to it in: *Session Eight: Cloud Computing*.

File name:	The Wealth Of Nations
Save as type:	Excel Workbook

- A list appears showing a large number of different file types:

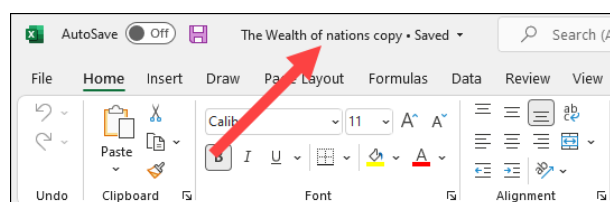
The Wealth Of Nations
Excel Workbook
Excel Workbook
Excel Macro-Enabled Workbook
Excel Binary Workbook
Excel 97-2003 Workbook
CSV UTF-8 (Comma delimited)
XML Data
Single File Web Page
Web Page
Excel Template
Excel Macro-Enabled Template
Excel 97-2003 Template
Text (Tab delimited)
Unicode Text
XML Spreadsheet 2003
Microsoft Excel 5.0/95 Workbook
CSV (Comma delimited)
Formatted Text (Space delimited)
Text (Macintosh)
Text (MS-DOS)
CSV (Macintosh)
CSV (MS-DOS)
DIF (Data Interchange Format)
SYLK (Symbolic Link)
Excel Add-in
Excel 97-2003 Add-in
PDF
XPS Document
Strict Open XML Spreadsheet
OpenDocument Spreadsheet

Most of the time you’ll want to use the default format: *Excel Workbook* but there may be times when you’ll need to save in one of the other formats. You’ll learn about the most important formats (and when you should use them) in: *Lesson 1-12: Understand common file formats*. For now, you’ll stay with the default: *Excel Workbook* format.

- Click inside the *File name* box.
- Type: **The Wealth of Nations Copy**
- Click the *Save* button.

Notice that the name of the workbook in the title bar (at the top of the window) has now changed indicating that you are now viewing the new workbook that you have just saved.

File name:	The Wealth of nations Copy
Save as type:	Excel Workbook



# Lesson 1-12: Understand common file formats

## 1 Open a new blank workbook.

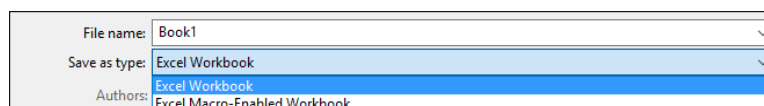
You learned how to do this in: *Lesson 1-1: Start Excel and open a new blank workbook.*

## 2 View the file formats supported by Excel.

1. Click the *File* button at the top-left of the screen.
2. Click: *Save As* in the left-hand list.
3. Click *Browse* in the *Save As* menu.

The *Save As* dialog appears.

4. Click the drop-down arrow to the right of the *Save as type* list.



A list appears showing all of the different file formats supported by Excel (see sidebar).

## 3 Understand the most important file formats.

The Wealth Of Nations
Excel Workbook
Excel Workbook
Excel Macro-Enabled Workbook
Excel Binary Workbook
Excel 97-2003 Workbook
CSV UTF-8 (Comma delimited)
XML Data
Single File Web Page
Web Page
Excel Template
Excel Macro-Enabled Template
Excel 97-2003 Template
Text (Tab delimited)
Unicode Text
XML Spreadsheet 2003
Microsoft Excel 5.0/95 Workbook
CSV (Comma delimited)
Formatted Text (Space delimited)
Text (Macintosh)
Text (MS-DOS)
CSV (Macintosh)
CSV (MS-DOS)
DIF (Data Interchange Format)
SYLK (Symbolic Link)
Excel Add-in
Excel 97-2003 Add-in
PDF
XPS Document
Strict Open XML Spreadsheet
OpenDocument Spreadsheet

## Excel Workbook (the Open XML format)

Before Office 2007 was released, every program stored its information on the hard disk in a completely different way. These incompatible formats are called *binary formats*. This made it very difficult to write applications that could be used together.

All of this changed with a new format that was first introduced in Office 2007: *Office Open XML*.

In 2008 Office Open XML was ratified by the International Standards Organization as ISO/IEC 29500.

This published specification enables programmers to make other programs easily work with Excel workbook files.

Many Excel users will only use this format and it is the most usual way to save an Excel workbook.

## Excel Binary Workbook

This is a binary alternative to Open XML.

Binary files generally result in smaller file sizes and open and save more quickly than Open XML.

You will only notice a speed (and file size) difference when working with very large worksheets. When working with small files you may even find that binary files take up more space than the Open XML format.

The *Excel Binary Workbook* format may also present a security threat as (just like the *Excel Macro-Enabled Workbook* format) it can contain macros that could infect your machine with a macro virus.

## Excel Macro-Enabled Workbook

An Excel Macro-Enabled Workbook is a workbook that has program code (called VBA code) embedded within it. Macros (also called VBA program Code) are beyond the scope of this book but are covered in the *Learn Excel 365 Expert Skills* book in this series.

While macro code is very powerful it can also be destructive as it is extremely simple to write damaging viruses within Excel macro code.

Versions of Excel before Excel 2007 could potentially allow a workbook to infect your machine with a macro virus because all Excel files could carry macros. Because the formats are now separate, it is easier to avoid opening potentially infected files.

## Excel 97-2003 Workbook

This is the old binary format that allows users with very early versions of Excel to open your workbooks. Many features won't work in such old versions and if you've used those in your workbook, Excel will display a warning when you save telling you which features will be lost.

As Excel 2003 officially reached the end of its life in April 2014 it is unlikely that any business users will still use these obsolete versions.

You may have to work with archive files that were originally saved in this format. If you do, it is a good idea to save the file in the modern Open XML (Excel Workbook) format before you work with it.

### note

#### Sharing files using Cloud Computing features

Excel 365 provides another way to share files with users that do not have any version of Excel installed upon their computer. This is done using Excel 365's built in *Cloud Computing* features.

Cloud Computing also allows users to open (and even edit) Excel workbooks using devices such as iPads, Android pads, Apple Macs, and Smartphones.

If you progress to the *Essential Skills* book in this series, you'll find an entire session to this subject in: *Session Eight: Cloud Computing*.

## PDF

If you need to send a worksheet to a user who does not own a copy of Excel, you can save it in PDF (Portable Document Format). This format was invented by Adobe and is also sometimes called *Adobe Acrobat* or simply *Acrobat*.

All major web browsers can open and display PDF files. In Windows 10 and 11, PDF files will, by default, open using the Edge browser. If you send a user a PDF file you can be confident that they will be able to read and print (but not change) the worksheet.

## Other formats

As you can see, there are several other less commonly used formats supported by Excel 365, but the above formats are the only ones you'll normally encounter. The most important thing to remember is that, unless there's a good reason to use a different format, you should always save documents in the default *Excel Workbook* format.

## tip

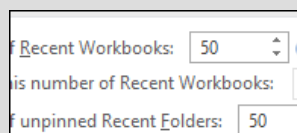
### Reducing the number of items, or hiding items, in the recent workbooks or recent folders lists

Excel remembers the fifty most recently opened workbooks and folders.

As you open more documents the fiftieth oldest is removed from the *Recent* list unless you pin it.

If you'd like to reduce the number of workbooks or folders that Excel keeps track of, here's how it's done:

1. Click the *File* button at the top left of the screen.
2. Click the *Options* button at the bottom of the left-hand menu bar.
3. Choose *Advanced* from the left-hand menu bar.
4. Scroll down the right-hand list until you find the *Display* category. You'll see *Show this number of Recent Workbooks: 50* and *Show this number of unpinned Recent Folders: 50*.



5. Change the number to the number of recently opened workbooks/folders you'd prefer Excel to remember.

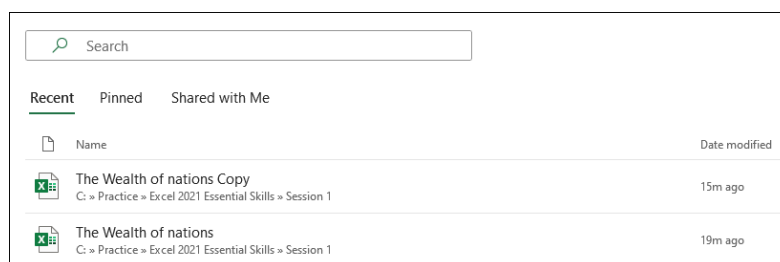
If you set the value to zero, Excel will not show any entries in the list.

## Lesson 1-13: Pin a workbook and understand file organization

1. Close down and restart Excel.
2. Pin a workbook to the *Recent Workbooks* list.

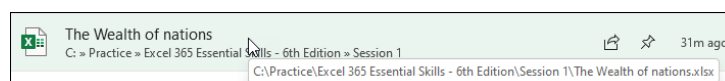
Notice that there is a list of recently opened documents at the bottom of the main window.


You'll probably see the *Wealth of Nations* and *The Wealth of Nations Copy* workbooks that you opened earlier in this session in the list.



Notice that there is also a *Search* box that will enable you to quickly find a file that you've recently worked on.

1. Hover the mouse cursor over *The Wealth of nations*.

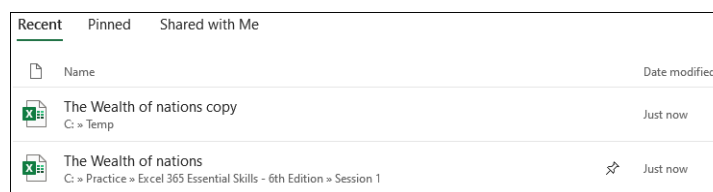


Notice that a pin icon  has appeared next to the workbook name.

When you hover the mouse cursor over the pin a tooltip is displayed saying: *Pin this item to the list*.

This can be a great time saver as it enables any workbook that you use a lot to always be at the top of the *Recent* list. You won't have to waste time looking for it on the hard drive.

2. Click the pin icon. The pin icon now appears next to the pinned item:

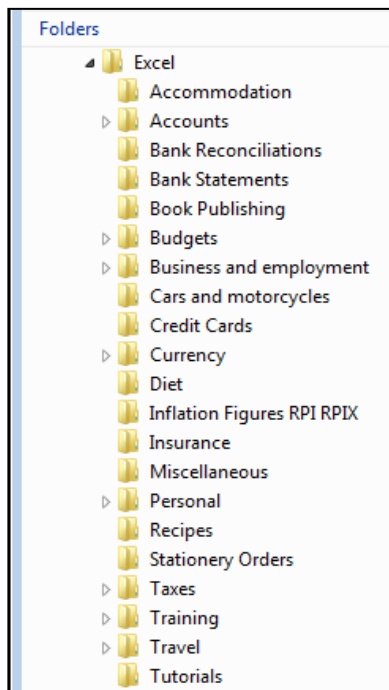


3. Click on *The Wealth of Nations* to open the workbook.

## 3 Understand file organization.

By default, Excel saves all workbooks into your *Documents* folder along with other Office documents (such as Word and PowerPoint files). This is clearly going to cause problems when you have a few hundred files.

**The Wealth of Nations**



## note

### How do I create a subfolder?

The concept of folders, subfolders and files is a very fundamental Windows skill rather than an Excel skill.

If you do not have basic Windows skills (an understanding of how Windows organizes files) you would get good value from a Windows book.

Here's how you create a new subfolder:

1. Open the *Documents* folder.
2. Right-click in a blank area of the folder.
2. Click: **New**→**Folder**, from the shortcut menu.

A new folder will appear called *New Folder*.

3. You will now be able to type: **Excel** in order to name the folder.

If this doesn't work for you, right-click the new folder and select *Rename* from the shortcut menu. In Windows 11 you may have to click *Show more options* to select *Rename*.

It is better to organize yourself from the start by setting up an orderly filing system.

#### 4 Create an *Excel* subfolder beneath your *Documents* folder.

I create a folder called *Excel* beneath the *Documents* folder. In this folder, I create subfolders to organize my work into categories. You can see a screen grab of my Excel folder structure in the sidebar (of course, your needs will be different to mine).

See sidebar if you don't know how to create a subfolder.

#### 5 Set the default file location to point to the new *Excel* folder.

If you take my advice and create an Excel folder, you will waste a mouse click every time you open a file because Excel will take you to the *Documents* folder by default.

Here's how to reset the default file location to your new Excel folder:

1. Open Excel and click the *Blank workbook* template to open a new blank workbook.
2. Click the *File* button at the top left of the screen.
3. Click the *Options* button towards the bottom of the left-hand list.

The *Excel Options* dialog appears.

4. Choose the *Save* category from the left-hand side of the dialog.
5. During the remainder of the book, I'll explain the above three steps like this:

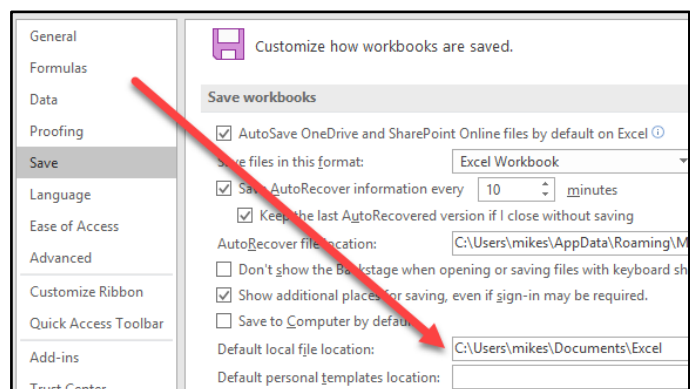
Click: **File**→**Options**→**Save**.

6. Change the *Default local file location*.

Type: **\Excel** after the end of the current *Default local file location*.

You have to actually type this manually. Microsoft seem to have forgotten to add a browse button.

Click the OK button.



When you click **File**→**Open**→**Browse** in future you'll automatically be taken to your Excel folder ready to choose one of the subfolder categories you have created.



## important

### If your sample files are stored on a OneDrive, switch AutoSave off

Most learners will have the sample files installed onto their local hard drive (sample files are installed to C:\Practice by default).

Some users may have copied the sample files to their OneDrive. A OneDrive is a "cloud" drive meaning that it is located on a Microsoft server many miles away and accessed via the Internet.

When you purchased Excel 365 you were automatically allocated a 1Tb free OneDrive.

When files are located on your OneDrive the AutoSave feature is switched on by default. The AutoSave button (at the top left of the screen) then becomes enabled.

AutoSave **On**

When AutoSave is On, every change you make is instantly updated to the OneDrive.

If you see this button at the top left of your screen, click the *On* button to switch AutoSave off before beginning this lesson.

AutoSave **Off**

If you progress to the *Essential Skills* book in this series, you'll find an entire session that will teach you everything there is to know about Excel's powerful Cloud Computing features.

The Autosave feature is covered in depth within the dedicated Cloud Computing session

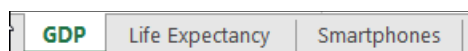
# Lesson 1-14: View, move, add, rename, delete and navigate worksheet tabs

When you save an Excel file onto your hard disk, you save a single workbook containing one or more worksheets. You can add as many worksheets as you need to a workbook.


There are two types of worksheets. *Regular* worksheets contain cells. *Chart* sheets, as you would expect, each contain a single chart. If you progress to the *Essential Skills* book in this series, you'll find an entire session that will teach you everything there is to know about Excel's powerful charting features.

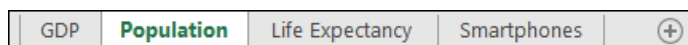
- 1 Open *The Wealth of Nations* from your sample files folder (if it isn't already open).
- 2 Move between worksheets.

Look at the tabs in the bottom left corner of your screen. Notice that this sample workbook contains three worksheets. Click on each tab in turn to view each worksheet.



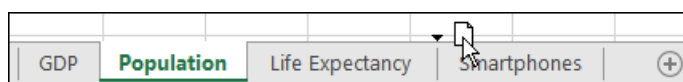
- 3 Add a new worksheet and name it: **Population**

1. Click the *New Sheet* button (the circle with a plus sign inside it next to *Smartphones*).  A new tab appears named *Sheet1*.
2. Double-click the *Sheet1* tab.
3. Type the word **Population** followed by the <Enter> key.

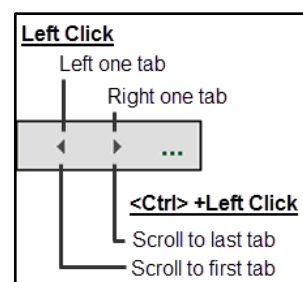


- 4 Move a worksheet's tab.

1. Click on the *Population* tab (you may have to do this twice).
2. Hold the mouse button down and drag to the left or right. As you drag, you'll notice an icon of a page and a black arrow showing you where the tab will be placed.
3. Release the mouse button to move the tab to the location of your choice.



- 5 Understand the tab scroll buttons.



The Wealth of Nations

Because this workbook only has four tabs, there's no need to use the tab scroll buttons (in fact, they don't do anything and are grayed out when all tabs are visible).

When there are more tabs than will fit on the screen the *tab scroll buttons* are used to move between tabs.

## 6 Move between worksheets using the keyboard.

You can also move between worksheets using only the keyboard by pressing the <Ctrl>+<PgUp> and <Ctrl>+<PgDn> keyboard shortcuts to cycle through all the tabs in your workbook.

## 7 Change tab colors.

1. Right-click on any of the tabs and choose *Tab Color* from the shortcut menu.
2. Choose any color.

It is best practice to choose a color from the top block of *Theme Colors* rather than one of the *Standard Colors*.

If you progress to the *Essential Skills* book in this series, you'll discover the reasons for avoiding standard colors when you learn about themes and custom cell styles in: *Session Four: Making Your Worksheets Look Professional*. Excel themes make it really easy to create beautifully styled worksheets.

3. Repeat for the other tabs on the worksheet.

## 8 Delete a worksheet.

Right click on the *Population* tab and click *Delete* from the shortcut menu.

## 9 Delete several worksheets at the same time.

1. Hold down the <Ctrl> key.
2. Click each tab that you want to delete in turn. Don't select them all as it isn't possible to delete every worksheet in a workbook.
3. Right click any of the selected tabs and select *Delete* from the shortcut menu.
4. If prompted, click the *Delete* button to confirm that you want to delete the selected worksheets.

Don't worry about the missing tabs. You're going to close the workbook without saving, so you won't overwrite the original workbook.

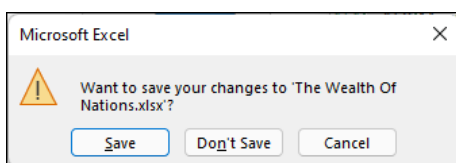
## 10 Close the workbook without saving.

1. Click: File→Close.

A dialog is displayed:

2. Click *Don't Save* so that you don't over-write the workbook.

Because you haven't saved the workbook it will remain in its original state when you next open it.





## note

### The versions feature will not protect you from a hard drive failure

Carnegie Melon University conducted a study of 100,000 mechanical hard drives in 2007. They found that there's a probability of between 1 in 50 and 1 in 25 of a mechanical hard drive failing each year.

In an office of 100 workers (using mechanical hard drives) that means that between two and four unlucky workers will suffer a hard drive failure every year.

Solid state hard drives (SSD) tend to be more reliable than mechanical hard drives but will still eventually fail. For example, one very popular 250Gb SSD is only warrantied to remain reliable for the first 150 Terabytes written to it.

To insure against drive failure, you need to back up your data to a different hard drive (or other media).

If your computer is part of an office network, the normal solution is to save your files to a shared network drive. The IT department are then responsible for backing this up every night.

For home users (or small companies that only have one computer) you should back up all of your data to an external hard drive (or a memory stick if your files are not very large).

Cloud computing enables you to store or backup your files to a OneDrive (a virtual disk drive accessed via the Internet).

OneDrive has its own (better and more powerful) versions feature

If you progress to the *Essential Skills* book in this series, you'll learn about the OneDrive versions feature in: *Session Eight - Cloud Computing*.

## Lesson 1-15: Use the Versions feature to recover an unsaved Draft file

This lesson refers to workbooks that are saved to a local hard drive (and not a OneDrive – see sidebar). The OneDrive is one of Excel's cloud computing features. If you later progress to the *Essential Skills* book in this series, there is a whole session dedicated to *Cloud Computing* that thoroughly covers this new way of working.

The Versions feature is fantastically useful as it solves two common problems that are as old as computing itself:

1. Your computer crashes, there's a power cut, or you close your work without saving, and then discover that you've lost all of your work since the last save.
2. You delete parts of your workbook and then save, only to realize that you deleted something important before saving. Because saving over-writes the old version of the file, you find that you've lost the deleted work forever.

Microsoft has a solution to both problems. The Versions feature works like this:

1. Every so often Excel saves a backup of your workbook (called a *Version*) for you. The default time interval for these automatic backups is every 10 minutes (but you can change this to any interval). You'll see the Versions feature at work in the next lesson: *Lesson 1-16: Use the Versions feature to recover an earlier version of a workbook*.
2. If you create a new workbook and then close it without saving, Excel will still keep the last automatic backup it made. Excel calls this a *Draft* version. Draft versions are automatically deleted after four days. The Draft feature is the subject of this lesson.

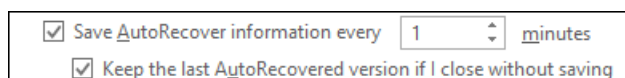
You'll need a watch or clock with a second hand for this lesson.

### 1 Open a new blank workbook.

You learned how to do this in: *Lesson 1-1: Start Excel and open a new blank workbook*.

### 2 Set the AutoSave interval to one minute and check that AutoSave features are enabled.

1. Click: File→Options→Save.
2. Change the *Save AutoRecover information every* box to 1 minute.
3. Make sure that the other options are set in the same way as in this screen grab (the two check boxes will already be checked unless another user has changed them):



☒ Save AutoRecover information every 1 minutes  
☒ Keep the last AutoRecovered version if I close without saving

4. Click: OK and check the time on your clock or watch. The first AutoSave will happen one minute from now.

## anecdote

### RAID arrays protect against hard drive failure

Loss of data has always been a concern for large organizations. It has been estimated that two to four percent of hard drives fail every year.

Many years ago, I implemented an EDMS (electronic document management system) for the world's largest car manufacturer. It would have been a disaster for them to lose even one hour's work, so I specified a special drive called a RAID Array (Redundant Array of Independent Disks) to store the documents.

The simplest RAID array consists of two hard drives and automatically writes all data to both drives (this is called mirroring). If one drive fails, the other will still have the data, meaning that any data loss is very unlikely.

RAID arrays don't stop workflow for even a moment. If a disk fails, the users don't even notice as data continues to be available from the other disk (or disks).

When the faulty disk drive is replaced, the files automatically restore themselves from the good disk (or disks) restoring the reliability of the array.

## note

### If you do not see the draft saved file

If your computer has many background processes running it is possible that the draft automatic save may take a lot longer than the one minute it should.

We've even had a report of ten minutes from one user).

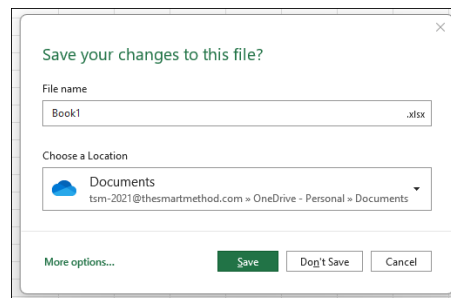
## 3 Type some text into cells A1 and A2.

1. Type the following into cells A1 and A2, pressing the <Enter> key after each line:

	A	B	C
1	Mary had a little lamb		
2	Its fleece was white as snow		

2. Wait for at least one minute. (After one-minute Excel will automatically save your workbook).

After a little over a minute try to close the workbook. The following dialog should appear:



3. Click the *Don't Save* button.

Even though you told Excel not to save, a draft copy has been secretly saved, just in case you made a mistake and may need the file later.

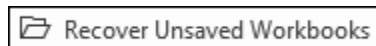
## 4 Recover the draft document.

1. Open Excel.
2. Click: *More Workbooks* at the bottom of the recent files list.



3. Click the *Recover Unsaved Workbooks* button.

You'll find this at the bottom center of the screen (you may need to scroll down).



4. A dialog should appear showing the unsaved document that you were working on:

Name	Date modified
Book1((Unsaved-309319800475079274))	12/28/2021 4:58 PM

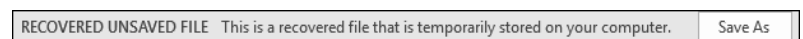
If you don't see this dialog, see sidebar for more information.

5. Double-click the document to open it.

The document is now shown on screen (even though you have never saved it).

6. Recover the unsaved file.

Click the *Save As* button in the top information bar.



## 5 Save the file in your sample files folder with the name: *Mary*

## important

**This lesson does not apply to files saved to a OneDrive**

This lesson refers to workbooks that are saved to a local hard drive and not a OneDrive.

OneDrive is a cloud computing feature. In the Essential Skills book in this series there is an entire session dedicated to cloud computing.

## important

**Version files don't stay around forever**

As discussed in: *Lesson 1-15: Use the Versions feature to recover an unsaved Draft file*, draft versions of unsaved files are kept for four days.

But what about the regular *Version* backups that Excel makes? Obviously, Excel would fill up your hard drive with version files if it didn't have a mechanism for automatically deleting them.

Excel uses two rules when deciding whether version files are still useful.

1. While you are in the current editing session, version files are **never** deleted (even if you save the current version).
2. When you close the workbook **all version files are deleted** unless you close without saving. If you close without saving only the last version is retained (as a draft version).

Mary

# Lesson 1-16: Use the Versions feature to recover an earlier version of a workbook

Excel's ability to automatically backup your document at a chosen time interval was explored in the previous lesson: *Lesson 1-15: Use the Versions feature to recover an unsaved Draft file*. This lesson will show you how to view the automatic backups and to revert to an earlier version if you've messed up the current version. You can even cut sections from older versions of a workbook and paste them into the current version.

You'll need a watch or clock with a second hand for this lesson.

- 1 Open *Mary* from your sample files folder (if it isn't already open).

This is the file that you saved in the last lesson.

- 2 Cause Excel to automatically save a different version of the workbook.

In the last lesson: *Lesson 1-15: Use the Versions feature to recover an unsaved Draft file*, you set the time interval for automatic backups to 1 minute. If you are not completing this course sequentially, you will need to go back to that lesson and make sure that this setting is set to 1 minute.


Add the following text to cells A4 and A5, pressing the <Enter> key after each line:

	A	B	C	D
1	Mary had a little lamb			
2	Its fleece was white as snow			
3				
4	and everywhere that Mary went			
5	The lamb was sure to go			
6				

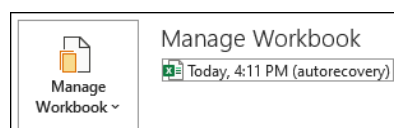
Look at your watch or clock and wait for a little over one minute. Excel should have automatically saved a new version of the workbook.

- 3 Make sure that Excel has automatically saved the new version.

Some users have reported that Excel sometimes takes as long as ten minutes to automatically save a file (even when the AutoRecover interval is set to one minute). Here's how to check that AutoRecover has performed as it should:

1. Click the *File* button  at the top-left of the screen.
2. Click *Info* on the left-hand menu bar.

You should see an AutoRecover file version alongside the *Manage Workbook* button.




If you don't see the AutoRecover version, click the *Back* button



, wait another minute and then click File→Info again. Don't move on to the next step until it has appeared.

#### 4 Further modify the file and then save it.

	A	B	C
1	Mary had a little lamb		
2	Its fleece was white as snow		
3			
4	and everywhere that Mary went		
5	The lamb was sure to go		
6			
7	It followed her to school one day		
8	It was against the rules		

1. Click the Back button to return to the workbook. 
2. Add the following text to cells A7 and A8, pressing the <Enter> key after each line:

	A	B	C
7	It followed her to school one day		
8	It was against the rules		

3. Save the workbook.

You learned how to do this in: *Lesson 1-11: Save a workbook to a local file.*

#### 5 View the earlier version that Excel automatically saved.

1. Click the *File* button  at the top left of the screen.
2. Click *Info* on the left-hand menu bar.
3. Click the earlier AutoSaved version.

The earlier version opens in a new Excel window.

AUTORECOVERED VERSION A newer version is available. <span>Restore</span>						
A6						
	A	B	C	D	E	F
1	Mary had a little lamb					
2	Its fleece was white as snow					
3						
4	and everywhere that Mary went					
5	The lamb was sure to go					
6						
7						

Notice that Excel advises that there is a later version of your workbook available should you need to go back to the version that you have just replaced.

AUTORECOVERED VERSION A newer version is available. <span>Restore</span>	
--	--

Notice also that it would be possible to copy and paste sections from the older version into the newer version if you needed to do that.

#### 6 Replace the current version of the workbook with the earlier AutoSaved version.

1. Click the *Restore* button on the top information bar.
2. Click the OK button to confirm.

#### 7 Reset the AutoSave interval to 10 minutes.

You learned how to do this in: *Lesson 1-15: Use the Versions feature to recover an unsaved Draft file.*

## note

### The Versions feature isn't just for Excel

Microsoft has also included the Versions feature in Word and PowerPoint.

Now that you've learned how to use it in Excel, you should be able to figure out the small differences in the way it is implemented in the other Office applications.

## important

### The Ribbon shows more if you have a wider screen

When I work with Excel, I use a 32-inch monitor running at 2,560X1,440 pixels.

Excel uses all of the available screen space to display extended descriptions of each feature on the Ribbon.

For example, the *Styles* pane on the *Home* Ribbon shows ten buttons for common cell styles allowing them to be applied with a single click rather than two clicks.

# Lesson 1-17: Use the Ribbon

The Ribbon provides fast access to hundreds of Excel features.

The sheer breadth of Excel features can seem overwhelming. This book will gently introduce all of the most important features, one at a time.

By the end of the book, you'll be really comfortable and productive with the Ribbon.

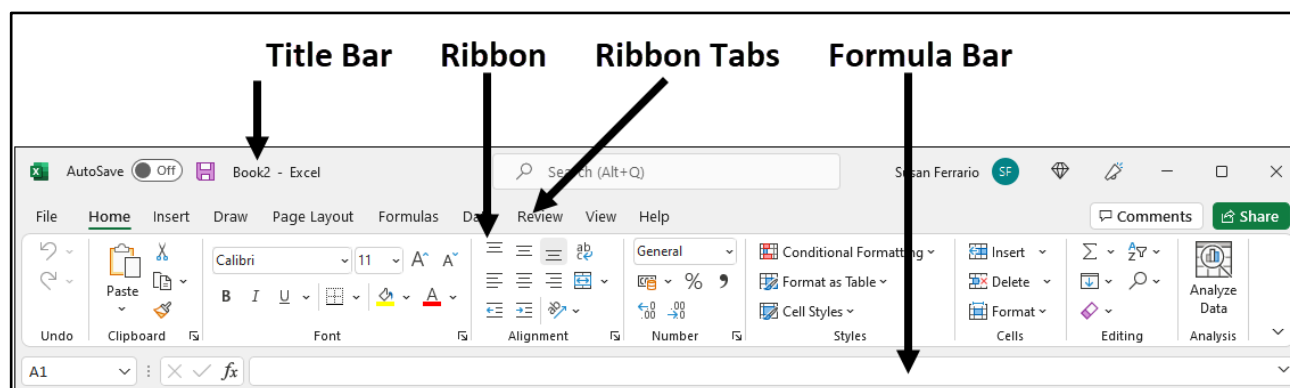
## 1 Start Excel and open a new blank workbook.

You learned how to do this in: *Lesson 1-1: Start Excel and open a new blank workbook.*

## 2 Use Ribbon tabs.

Each Ribbon tab has its own toolkit available to you. By far the most important tab is the *Home* tab which has buttons for all of the most common and useful features.

Click each tab in turn and view the buttons. The screen grab below has the *Home* tab selected. Don't worry if the buttons seem cryptic at the moment. Most of them will make complete sense by the end of this book. (And if you later go on to complete the *Expert Skills* course, Excel will have no mysteries left at all).



## note

### Contextual tabs

Sometimes Excel will show you even more tabs.

If you progress to the *Essential Skills* book in this series, you'll learn everything there is to know about charts in: *Session Five: Chars and Graphics.*

When you click on a chart two new tabs called *Chart Design* and *Format* appear. The new tabs provide access to a range of features relating to Charts.

Chart Design    Format

## 3 Type the word **Test** into any blank cell and then press the <Enter> key on the keyboard once.

Notice how the active cell moves to the cell beneath.

	A	B
1		
2		Test
3		

## 4 Make the cell with the word *Test* into the active cell.

Click once on the word *Test* or use the arrow keys on the keyboard to navigate back to the cell. Be very careful not to double-click, otherwise Excel will think that you want to edit the cell.

	A	B
1		
2		Test

## important

### If your Ribbon doesn't look like the illustrations in this book

The Ribbon will look different depending upon the size of your screen (see important sidebar on previous page).

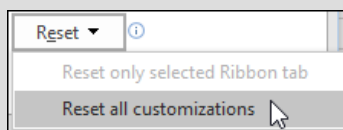
Excel 365 also allows you to customize the Ribbon.

Customizing the Ribbon is an expert-level skill covered in the *Expert Skills* book in this series.

If another user has customized the Ribbon using this feature, they may have rendered Excel unusable.

If you suspect this to be the case, you can put things back to normal like this:

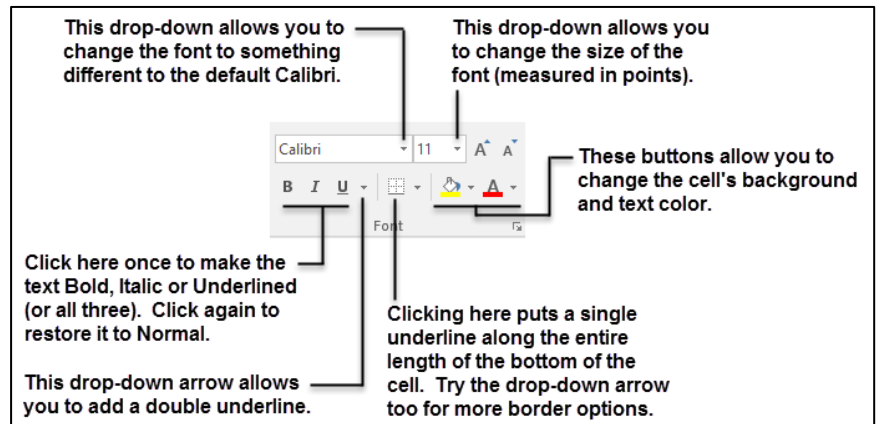
1. Right-click in a blank area of the Ribbon.
2. Click: *Customize the Ribbon...* from the shortcut menu.
3. Click: Customizations → Reset → Reset all customizations.



4. Click: Yes.

- 5 Click the *Home* tab on the Ribbon and focus upon the *Font* command group (it's the third panel from the left).

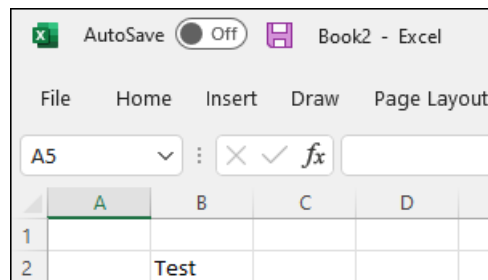
Try clicking each of the buttons and you will see the word *Test* change to reflect your choices.



- 6 Minimize the Ribbon.

1. Double-click any of the Ribbon tabs except the *File* tab (for example the *Home* tab or the *Insert* tab).

Notice how the Ribbon is now minimized in order to save screen space (though the *Formula Bar* is still visible).




2. Click once on any tab, except the *File* tab, to temporarily bring the Ribbon back to full size.

Notice that as soon as you click back onto the worksheet the Ribbon is minimized again.

- 7 Bring back the Ribbon.

Double-click on any tab except the *File* tab to permanently bring back the Ribbon.

- 8 Close Excel without saving changes.

1. Click: File → Close or click the cross  in the top right corner.
2. When asked if you want to save your changes, click the *Don't Save* button.

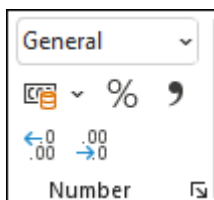


# Lesson 1-18: Understand Ribbon components

The whole is more than the sum of its parts.

*Aristotle, Greek critic, philosopher, physicist & zoologist  
(384 BC – 322 BC)*

The Ribbon is made up of several different controls.



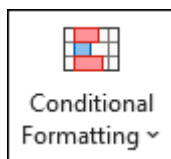
## Command group

Similar actions are grouped into a cluster. For example, every control relating to numbers is clustered into the *Number* group.



## Normal button

Simply executes a command when clicked. The *Bold* button on the *Home* tab is a good example.



## Menu button

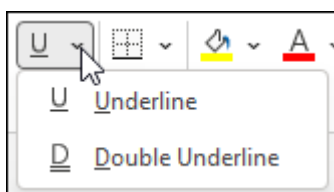
This type of button has a little down-arrow underneath or next to it. Menu buttons display a *list*, *menu* or *rich menu* drop-down when clicked.



## Split button

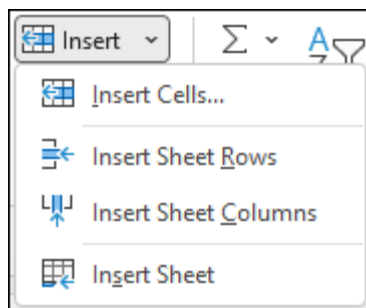


This button can be difficult to understand because *Split* buttons look almost the same as *Menu* buttons. When you hover the mouse cursor over a split button, the icon and drop-down arrow highlight separately as different “buttons within a button”.



A good example is the *underline* button on the *Home* toolbar.

Clicking the icon part of a split button (the U) will perform the default action of the button (in this case a single underline). Clicking the arrow part of the button will display a drop-down list of further choices (in this case the choice between a single and double underline).



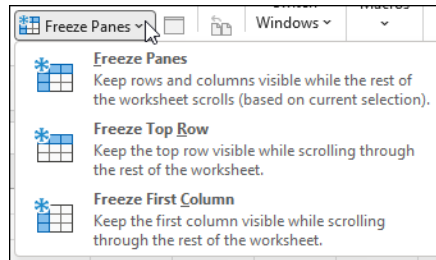
## Drop-down list

I often shorten this to simply “Drop-Down” in this book. A drop-down is a simple menu listing several choices.

If you see an ellipsis (...) after a drop-down list item, this means that a dialog will be displayed after you click, offering further choices.

## Rich menu

The rich menu is a drop-down list with added help text explaining what each item will do.



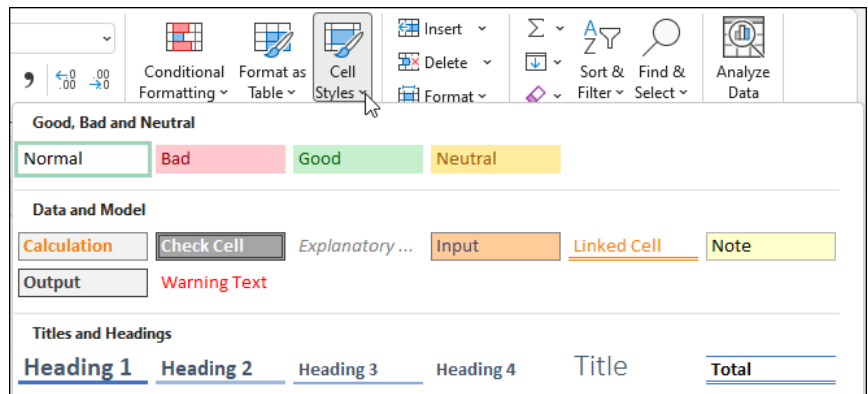
This rich menu can be found at:

View→Window→Freeze Panes

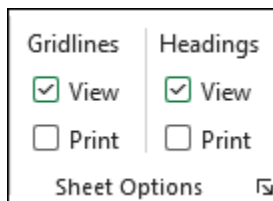
If you progress to the *Essential Skills* book in this series, you'll learn how to use the freeze panes feature in: *Session Three: Taking Your Skills to the Next Level*.

## Drop-down gallery

This is a little like a drop-down list but has graphics to visually demonstrate the effect of each choice.



## Check box

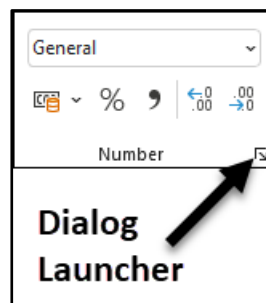


A little square box that you can click to switch an option on or off.

In this example (from the *Page Layout* Ribbon tab) you are able to switch the gridlines on and off for the screen display and/or the printout.

## Dialog launcher

Dialog launchers appear on the bottom right-hand corner of some command groups. Dialogs offer more choices than it is possible for the Ribbon to express graphically.





# Lesson 1-19: Customize the Quick Access Toolbar and preview the printout

The *Quick Access Toolbar* is one of the keys to being really productive with Excel. This lesson will introduce you to the main features.

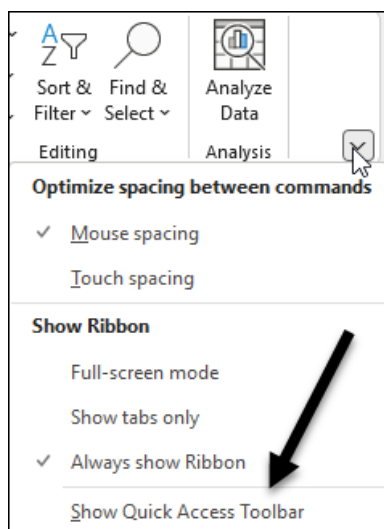
- 1 Open *The Wealth of Nations* from your sample files folder.
- 2 Enable the Quick Access Toolbar.

In previous versions of Excel 365 the Quick Access Toolbar was enabled by default. In the *Jan 2022 version 2112* it is hidden by default.

Click: Ribbon Display Options→Show Quick Access Toolbar.

The Ribbon Display Options button is the downward facing chevron on the right-hand side of the Ribbon (see sidebar).

The Quick Access Toolbar doesn't look very impressive, but that's because you haven't added any controls to it yet.



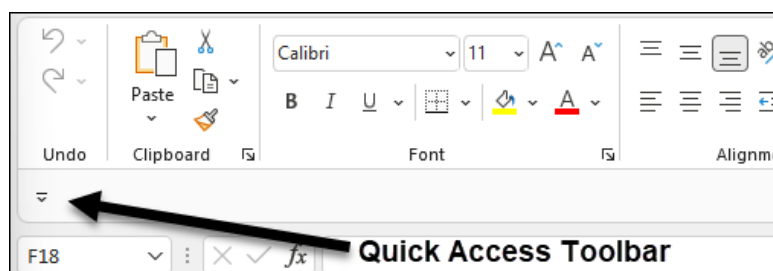
## tip

The Quick Access Toolbar is one of the keys to being really productive with Excel.

Always try to minimize the number of mouse clicks needed to do common tasks.

If you find yourself forever changing tabs to use a button, change two clicks into one by adding the button to the Quick Access Toolbar.

All of those extra clicks add up to a lot of time over the weeks and years.



- 3 Preview how the *Life Expectancy* worksheet will look when printed.

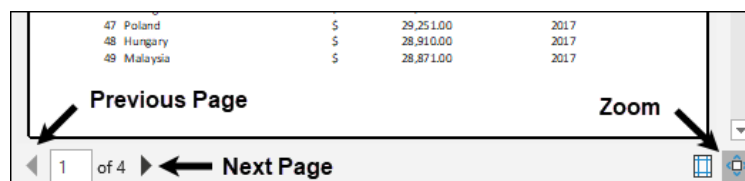
1. Click the *Life Expectancy* tab at the bottom of the worksheet.
2. Click: File→Print.

*Backstage View* is displayed.

Backstage view displays a large number of print-related features. A preview of how the page will look when it is printed is displayed on the right-hand side of the screen.

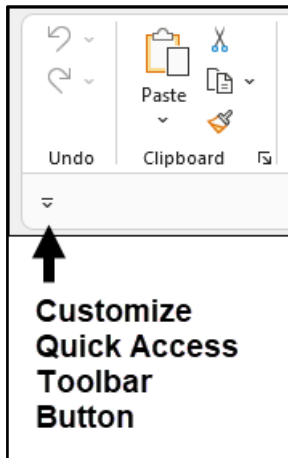
3. Click the *Next Page* and *Previous Page* buttons to move through the print preview.

Notice there's a button to the bottom-left of the preview pane that allows you to cycle through each page:



4. Use the *Zoom* button to magnify the page for a clearer view. (You may not notice much of a zoom if you have a large screen).

**The Wealth of Nations**



## note


**Some amazing “hidden” Excel features cannot be used at all without customizing the Quick Access Toolbar or the Ribbon**

One of my favourite “hidden” features in Excel is its ability to read the workbook to me via its *Text to Voice* facility.

When I need to input lots of numbers from a sheet of paper and want to check them, I get Excel to read them to me as I tick each off my list. This is much faster and nicer than continuously looking first at the screen, then at the paper, for each entry.

This feature is covered in depth in the *Expert Skills* book in this series.

You can't use this feature at all unless you either add some custom buttons to the Quick Access Toolbar or customize the Ribbon.

- Click the *Back* button  at the top left of *Backstage View* to return to the workbook.

## 4 Add a *Print Preview* button to the Quick Access Toolbar.

The quick *Print Preview* offered by the *Backstage View* is a very useful feature and you'll probably use it a lot. Every time you use it, however, it is going to take two clicks of the mouse. Wouldn't it be better if you could show a print preview with just one click?


- Click the *Customize Quick Access Toolbar* button (see sidebar).
- Click the *Print Preview and Print* item in the drop-down list.

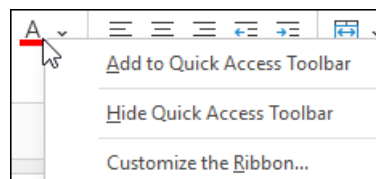
A new button now appears on the Quick Access Toolbar. You are now able to *Print Preview* your work with a single click of the mouse.



## 5 Add a *Font Color* button to the Quick Access Toolbar.

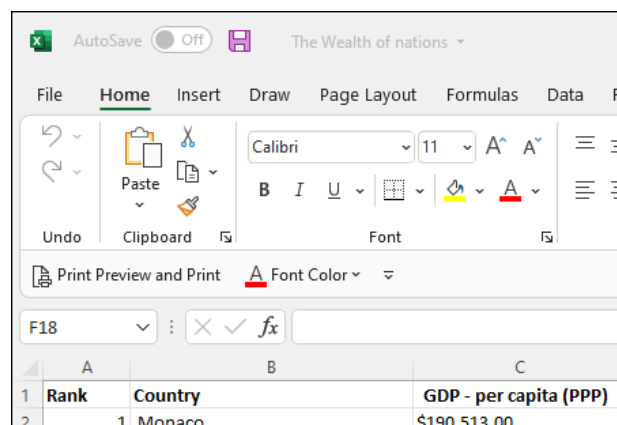
A *More Commands...* option is available when you click the *Customize Quick Access Toolbar* button. This enables you to add any of Excel's commands to the toolbar. But there's an easier way.

- Click the *Home* tab on the Ribbon (if it isn't already selected).
- Right-click on the *Font Color* button  in the *Font* group.




- Click *Add to Quick Access Toolbar* from the shortcut menu.

A *Font Color* button is added to the Quick Access Toolbar.



## 6 Remove a button from the Quick Access Toolbar.

- Right-click on the *Font Color* button that you've just added to the Quick Access Toolbar. 
- Click *Remove from Quick Access Toolbar* from the shortcut menu.

# Lesson 1-20: Use the Mini Toolbar, Key Tips and keyboard shortcuts

- 1 Open *The Wealth of Nations* sample worksheet (if it isn't already open).
- 2 Select cell B2 (Monaco) on the GDP worksheet.
  1. Click on the *GDP* tab.
  2. Click on cell B2 (Monaco).

Make sure that you only click once, otherwise Excel will think that you are trying to edit the cell.

	A	B	C
1	Rank	Country	GDP - per capita (PPP)
2		1 Monaco	\$190,513.00

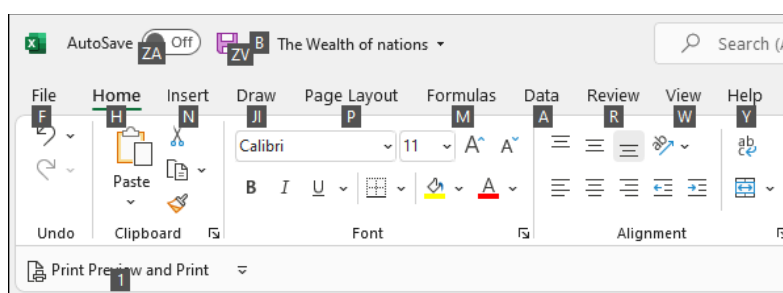
- 3 Make cell B2 (Monaco) bold, italicized and underlined.
  1. Click: Home→Font→Bold.
  2. Click: Home→Font→Italic.
  3. Click: Home→Font→Underline.

	A	B	C
1	Rank	Country	GDP - per capita (PPP)
2		1 <u><i>Monaco</i></u>	\$190,513.00

- 4 Display *Key Tips*.

Hold down the <Alt> key on the keyboard.

Notice how *Key Tips* are now displayed on the Ribbon and the Quick Access Toolbar:



- 5 Use the *Key Tips* to show a print preview using only the keyboard.

The key tips reveal the key you need to press to simulate clicking any of the Ribbon and Quick Access Toolbar icons.

The print preview button will not be on the Quick Access Toolbar unless you added it during: *Lesson 1-19: Customize the Quick Access Toolbar and preview the printout.*

## tip

**Keyboard shortcuts are one of the secrets of maximizing productivity with Excel**

Many years ago, I took my mouse and stuck it to the back of my monitor with sticky tape.

For a whole day, I struggled to work without it.

The first few hours weren't much fun, but after that my work became faster and faster. It became a challenge to figure out how to do things without the mouse.

You will be far more productive if you can get into the same habit.

These days, there are some things that you simply need the mouse for, and some things that are genuinely faster (or easier) with the mouse.

For many common tasks, however, you'll find it faster and more efficient to work with the keyboard.

**The Wealth of Nations**

## note

### If you don't like the Mini Toolbar, you can switch it off

Personally, I really like the mini toolbar and wouldn't dream of switching it off but if you are used to an early version of Excel and find that it annoys you, here is how it's done:

1. Click:  
File→Options→General
2. In the *User Interface options* section, uncheck the *Show Mini Toolbar on selection* item.
3. Click the OK button.

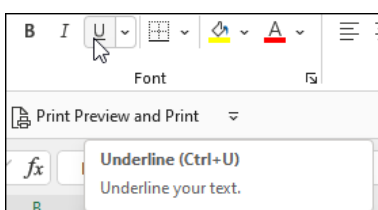
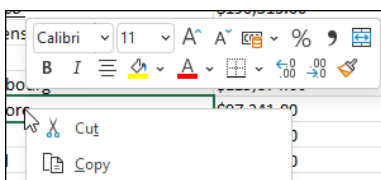
## note

### The shortcut menu


If you right-click on a cell, a shortcut menu is displayed.

The shortcut menu doesn't display *everything* that you can do to a cell but Excel's best guesses at the *most likely* things you might want to do.

Because Excel is guessing at the actions you might want to take in the context of what you are doing, the *shortcut menu* is also sometimes referred to as the *contextual menu*.



Hold down the <Alt> key and press the relevant number to show a print preview (in the above example this is 1 but it may be different on your computer).

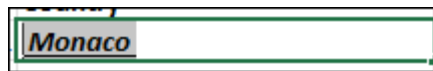
- 6 Click the *Back* button  to leave *Backstage View* and return to the worksheet.

- 7 Use the mouse to select the text *Monaco* in cell B2.

1. Double-click the cell containing the text.

You can see the cursor flashing in the cell. This means that you have entered *Edit Mode*, enabling you to change the contents of the cell

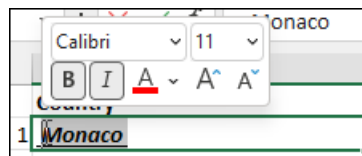
2. Position the cursor just after the word *Monaco* and hold down the left mouse button.
3. Drag the mouse across the complete word until it is highlighted like this:





4. Release the mouse button but do not move it away from the text.

- 8 Observe the *Mini Toolbar*.

Provided you didn't move the mouse cursor away from cell B2 you will now see the mini toolbar above the cell:



- 9 Use the *Mini Toolbar* to restore the text to non-bold and non-italic.

Click on the Bold  and Italic  buttons to remove the bold and italic attributes from the text.




- 10 Show a bigger Mini Toolbar with a right-click.

Right-click on the text *Singapore* in cell B6. Notice that, as well as the shortcut menu (see sidebar), you now get an even better Mini Toolbar with a few extra buttons.

- 11 Remove the underline from Monaco using a shortcut key.




1. Click once on the text *Monaco* in cell B2.
2. Press the <Ctrl>+<U> keys on the keyboard to remove the underline.

But how can you remember cryptic keyboard shortcuts like <Ctrl>+<U>? Fortunately, you don't have to. Hover the mouse over the underline button  (on the Home tab of the Ribbon) and you'll see the keyboard shortcut listed in the tooltip.

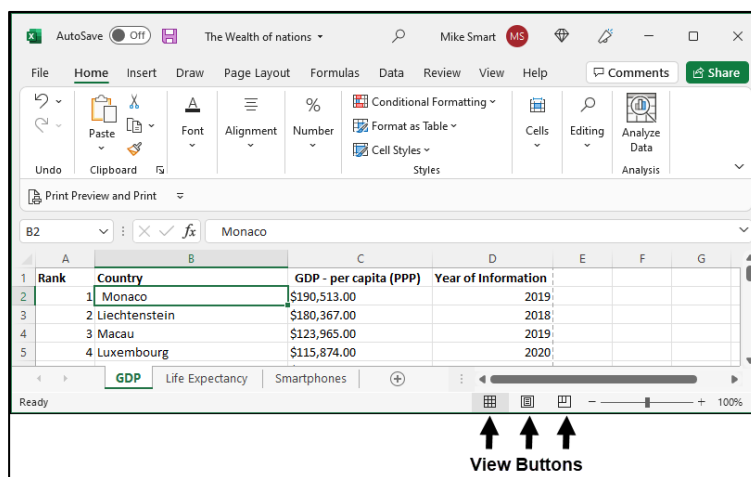
# Lesson 1-21: Understand views

Views provide different ways to look at your worksheet.

Excel 365 has three main views. They are:

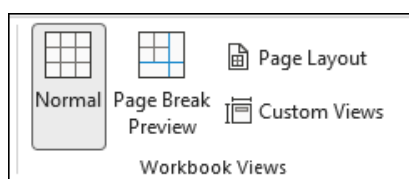
View	Icon	What it is used for
Normal		This is the view you've been using until now. It's the view most users use all of the time when they are working with Excel.
Page Layout		This view allows you to see (almost) exactly what the printout will look like.  Unlike running a <i>Print Preview</i> , you are able to edit cells just as you can in <i>Normal</i> view.
Page Break Preview		A page break indicates when the printer should advance onto a new sheet of paper.  If you progress to the <i>Essential Skills</i> book in this series, you'll learn how to use this view to make sure that the pages break in the right place.

- 1 Open the *The Wealth of Nations* sample workbook (if it isn't already open).



You can change views in two ways:

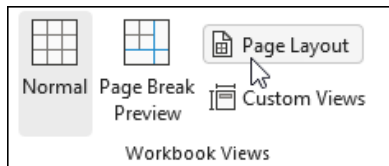
1. By clicking one of the View buttons at the bottom of the window (see above).
2. By clicking one of the buttons in the *Workbook Views* group on the Ribbon's *View* tab:



The Wealth of Nations

## 2 View the GDP worksheet in *Page Layout* view.

1. Click on the *GDP* tab to select it.
2. Click: View→Workbook Views→Page Layout.



	A	B	C
1			
2			
3			

	Rank	Country	GDP - per capita (PPP)
1	1	Monaco	\$190,513.00
2	2	Liechtenstein	\$180,367.00

The worksheet is displayed in *Page Layout* view. You are able to see (almost) exactly what will be printed. Headers, footers and margins are all shown.

You are also able to edit the worksheet.

You may wonder why Excel users don't use *Page Layout* view all of the time when editing worksheets. While some users may prefer to do this, most will want to see the maximum amount of data possible on screen and so will prefer the *Normal* view.

## 3 Select Page Break Preview view.

Click: View→Workbook Views→Page Break Preview.

The worksheet is displayed in *Page Break Preview* view (you may also see a help dialog first).

This view shows each page with a watermark to indicate which sheet of paper it will be printed on:

	A	B	C	D
23	22	Jersey	\$56,600.00	2016
24	23	Austria	\$56,188.00	2019
25	24	Iceland	\$55,874.00	2019
26	25	Germany	\$53,919.00	2019
27	26	Sweden	\$53,240.00	2019
28	27	Guernsey	\$52,500.00	2014

This view also shows the break between each page as a dotted line:

	A	B	C	D	E
48	47	Spain	\$40,903.00	2019	
49	48	Czech Republic	\$40,862.00	2019	
50	49	Israel	\$40,145.00	2019	
51	50	Faroe Islands	\$40,000.00	2014	
52	51	Cyprus	\$39,545.00	2019	
53	52	Slovenia	\$39,088.00	2019	
54	53	Aruba	\$37,500.00	2017	

It is possible to click and drag the dotted line to change the place where the page breaks.

If you progress to the *Essential Skills* book in this series, you'll learn how to use *Page Break Preview* to adjust page breaks.

## 4 Select *Normal* view.

Click: View→Workbook Views→Normal.

## note

### You need an Internet connection to use Excel 365's help features

In previous versions of Excel, it was possible to access offline help when no Internet connection was available.

Support for offline help was dropped in 2016. If you have no Internet connection, you will not be able to access Excel's help features.

## note

You can also use the <Alt>+<Q> shortcut keys to instantly move the cursor into the *Tell Me* help box.

## note

### The screen grabs shown in this lesson may differ from those you see on your screen

The Excel 365 help system is delivered online. This means that Microsoft are able to constantly correct and update help topics.

For this reason, the information you see on your screen may differ from the screen grabs shown in this lesson.

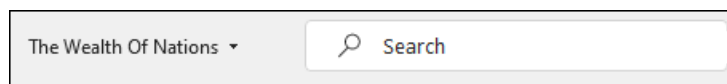
# Lesson 1-22: Use the Tell Me help system

The built-in Excel 365 help feature is called: *Tell Me* help.


*Tell Me* help is novel because it not only provides information about Excel features but also enables you to execute Ribbon commands directly from inside the help system. This can be a huge time saver.

- 1 Open *The Wealth of Nations* from your sample files folder (if it isn't already open).
- 2 Click inside the *Search* box located on the title bar at the very top of the screen.

When you click inside the *Search* box, a flashing cursor appears, and you can type a question.



- 3 Ask Excel how you can save a file.

You learned how to save a file in: *Lesson 1-11: Save a workbook to a local file*. In that lesson, you clicked the *Save* button  at the top-left of the screen.

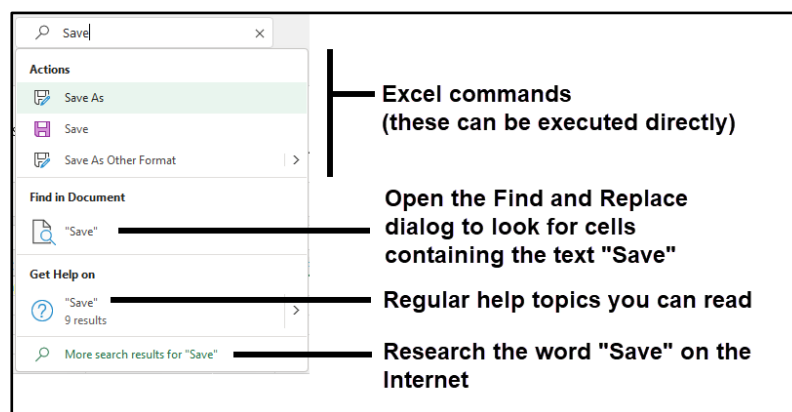
Imagine that you have forgotten how to save a file.

Type your question into the box.

You could ask Excel the question in several ways. You could use a plain English sentence, or you could just ask using a single word:



Excel displays a menu of choices.



Notice that the list is delineated into three sections.

The first section provides a different way to execute commands.

The second section offers a different way to open the *Find and Replace* dialog.

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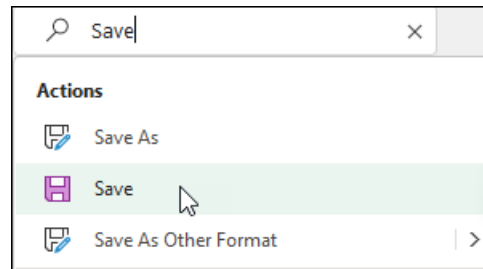


The last section gives access to the type of regular help topic that you are used to reading in traditional help systems, and also allows you to research the topic using a wider Internet search.

Note that the help features will only work if you are connected to the Internet (see sidebar).

#### 4 Execute the *Save* command directly from *Tell Me* help.

Click the *Save* command at the top of the menu:



*Tell Me* help executes the command. The workbook is saved in the same way it would have been if you had clicked the *Save* button on the *Quick Access Toolbar*.

You can see how useful *Tell Me* help is when you can't remember where a command is situated on the Ribbon and want to execute the command as quickly as possible.

You can also see that it could be dangerous to execute commands that you don't understand.

#### 5 Understand the other *Tell Me* help options.

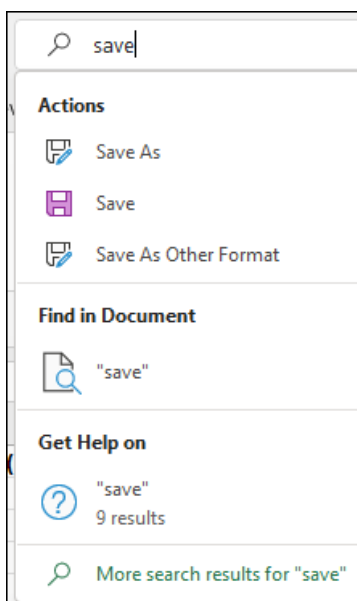
*Tell Me* help also allows you to execute several other commands and to access regular help that you can read as a reference:

- *Save As*. You learned how to use the *Save As* command in: *Lesson 1-11: Save a workbook to a local file*.
- *Save As Other Format*. You learned about different file formats in: *Lesson 1-12: Understand common file formats*.

#### 6 Read the Excel help topic relating to the *Save* command.

Click: *Get Help on "Save"*.

Links to several topics from the Excel 365 reference manual are shown. You can click on any of these links to read any of Microsoft's help topics about *Save* related features.



##### What is AutoSave?

AutoSave saves your file every few seconds. It's enabled by default when a file is stored in OneDrive, OneDrive for Business, or SharePoint Online.

##### Turn AutoSave on or off

1. Toggle the AutoSave switch



2. If the document isn't currently saved to OneDrive or a SharePoint library, you'll be prompted to choose a location.



## note

The screen grabs shown in this lesson may differ from those you see on your screen

The Excel 365 help system is delivered online. This means that Microsoft can constantly correct and update help topics.

For this reason, the information you see on your screen may differ from the screen grabs shown in this lesson.

## note

You can also open the Help task pane by pressing the <F1> key.

# Lesson 1-23: Use other help features

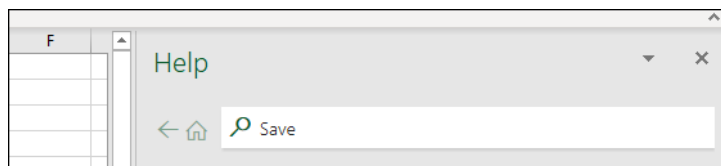
You'll probably use *Tell Me* help (discussed in: *Lesson 1-22: Use the Tell Me help system*) most of the time as your help system of first choice.

You can also access the same help topics that are available in *Tell Me Help* directly from their associated Ribbon commands. This can be useful when exploring new and unfamiliar features you may discover on Excel's many Ribbon tabs.

Later, in: *Lesson 2-13: Create functions using Formula AutoComplete*, you'll learn how to access and use Excel's vast function library (that contains over 300 functions such as SUM and AVERAGE). You'll also learn how to access a special Excel help feature that documents the use of each function.


## 1 Access help using the *Help* task pane.

1. Click: Help→Help.
2. A *Help* task pane appears at the right of the screen. If you progress to the *Essential Skills* book in this series, you'll learn a lot more about task panes and how they differ from regular Excel dialogs.
3. Type: **Save** into the text box at the top of the *Help* task pane:

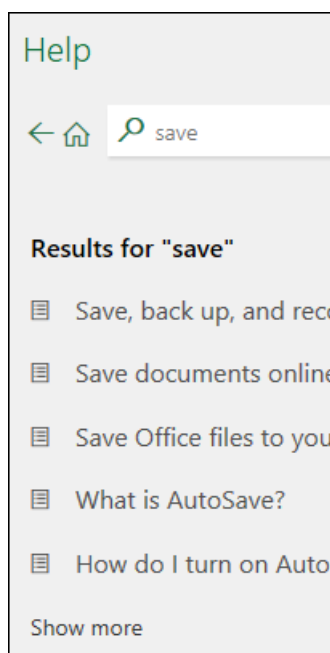


4. Click the magnifying glass icon or press the <Enter> key.  
A list of help topics relating to *Save* appears (see sidebar). Note that this list is served from the Internet and is constantly updated so may appear differently on your computer.
5. Click on any of the help topics displayed to read a detailed description.

## 2 Get help directly from the Ribbon.

1. Close the *Help* task pane by clicking the close button  in the top right corner of the *Help* pane.
2. Click the *Home* tab on the Ribbon and hover the mouse cursor over the drop-down arrow to the right of the word *General* in the *Number* group.

If you keep the mouse still, after a short delay a screen tip pops up providing a short description of what the drop-down list is for:



## note

### Why can't you learn Excel using the Help system?

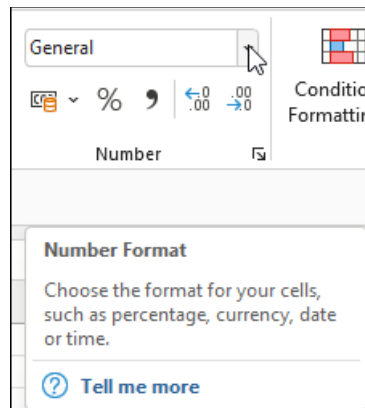
Excel's Help system is designed as a reference work and not as a structured tutorial.

Try reading the detailed help about any of the topics. You'll usually find that to make sense of the help topic you will already need to have learned to use Excel. This is because the writer assumes that you already know how to use Excel.

Many Excel books are also written in this way (as reference books).

This book is a structured *tutorial*. The book is carefully designed to teach Excel by building new skills upon existing skills so that each lesson is easy to understand.

Once you have learned Excel (using Smart Method tutorials) you will find Excel's reference topics easy to understand.

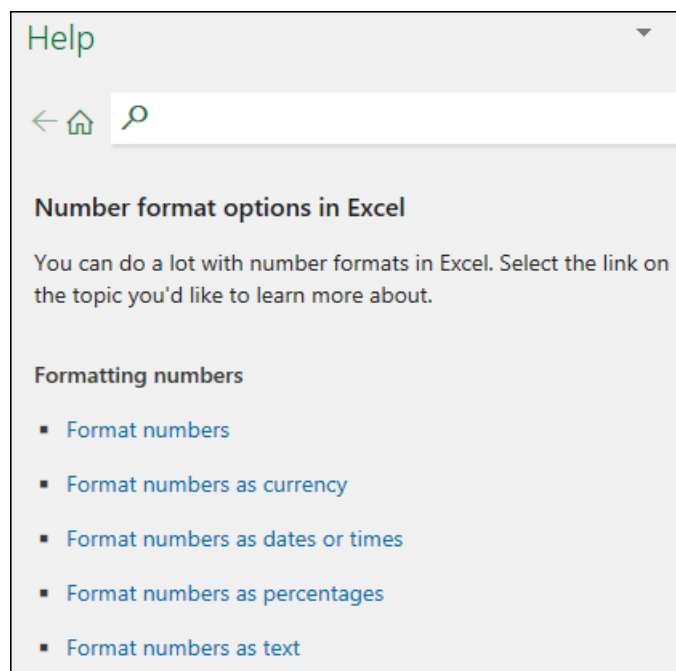


A *Tell me more* hyperlink is also provided offering more detailed help. This will only work if you are connected to the Internet.

3. Click the *Tell me more* hyperlink.



The *Help* task pane re-appears displaying a list of help topics relating to *Number Format* topics.

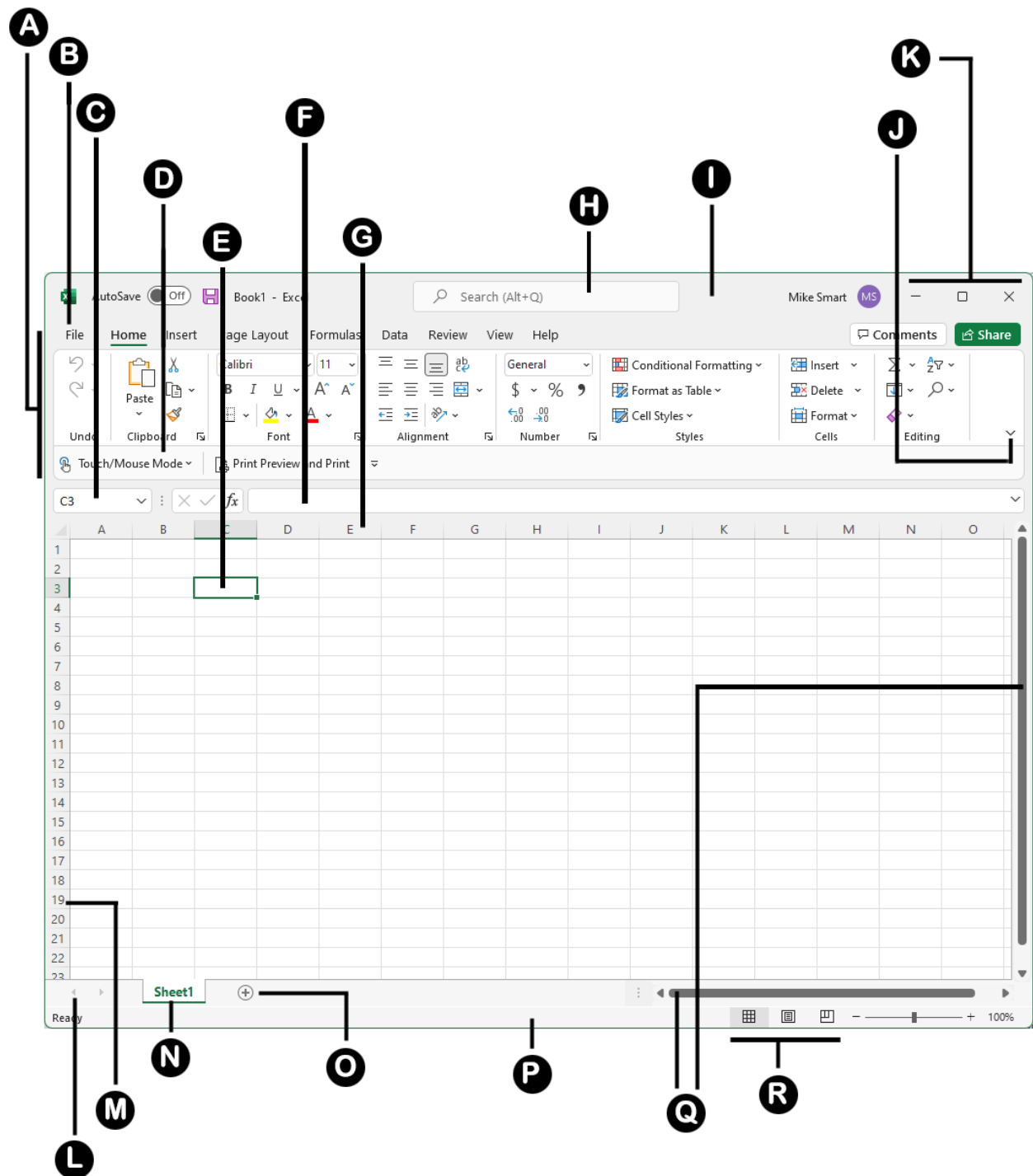


4. Click on any of the help topics displayed to read a detailed description.

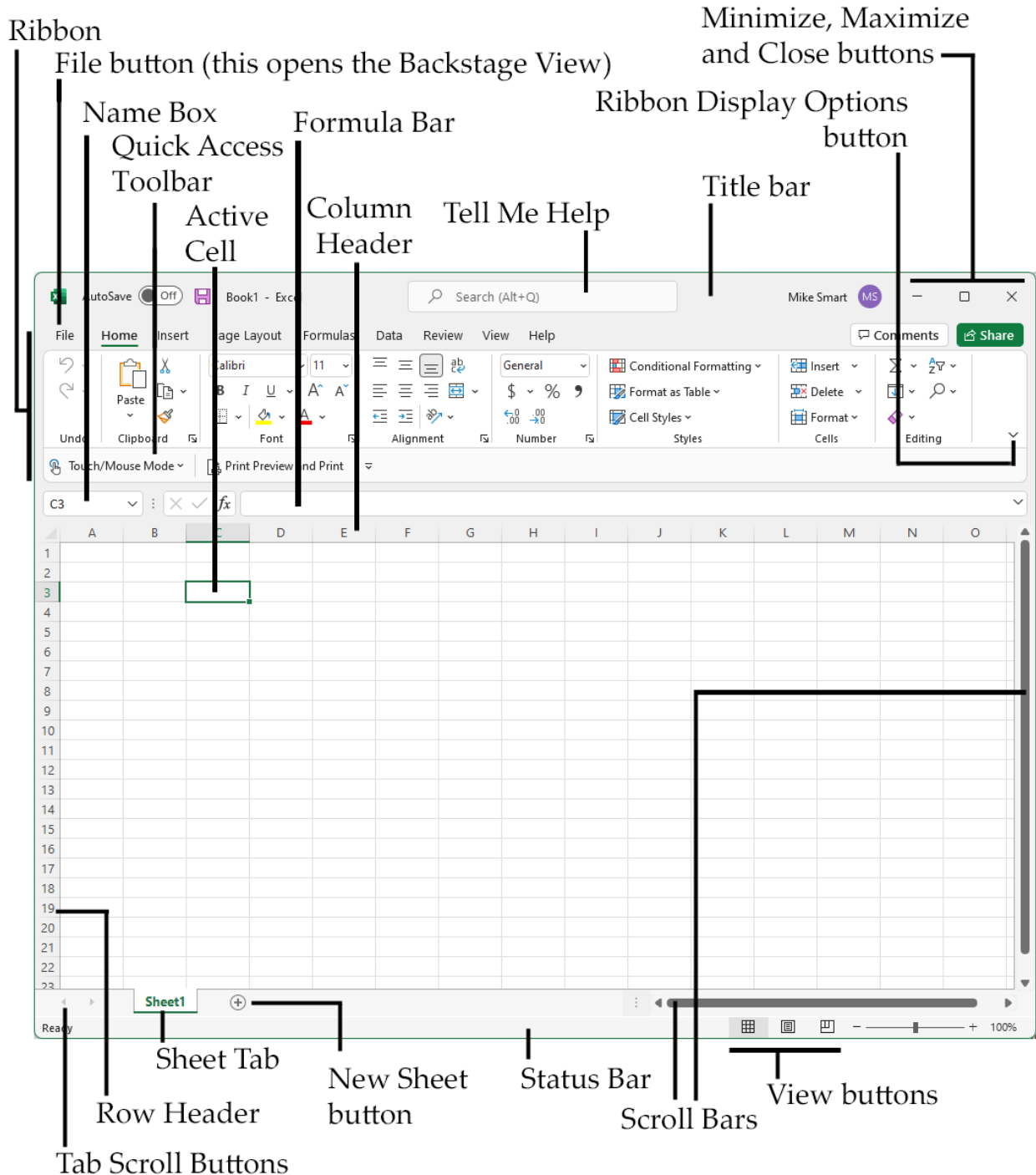
## Session 1: Exercise

In this exercise you'll try to remember the name of each of the Excel screen elements. The answers are on the next page, so you might want to recap by turning the page for a little revision before you start.

Keep trying until you are able to name each of the screen elements from memory. You'll be seeing this terminology used during the remainder of the book, so it's important that you can correctly identify each element.



## Session 1: Exercise answers



# 2

## Session Two: Doing Useful Work with Excel

Only those who have the patience to do simple things perfectly ever acquire the skill to do difficult things easily.

*Unknown author*

Now that you've mastered the basics, you are ready to do really useful work with this amazing tool. In this session, you will learn to use all of Excel's basic features properly. This will put you far ahead of anybody that hasn't been formally trained in Excel best practice.

Even after years of daily use, many users are unable to properly use Excel's fundamental features. They often reach their goal, but get there in a very inefficient way, simply because they were never taught how to do things correctly.

### Session Objectives

By the end of this session, you will be able to:

- Enter text and numbers into a worksheet
- Create a new workbook and view two workbooks at the same time
- Use AutoSum to quickly calculate totals
- Select a range of cells and understand Smart Tags
- Enter data into a range and copy data across a range
- Select adjacent and non-adjacent rows and columns
- Select non-contiguous cell ranges and view summary information
- AutoSelect a range of cells and re-size rows and columns
- Use AutoSum to sum a non-contiguous range
- Use AutoSum to calculate average and maximum values
- Create your own formulas
- Create functions using Formula AutoComplete
- Use AutoFill for text and numeric series
- Use AutoFill to adjust formulas and use AutoFill options
- Speed up your AutoFills and create a custom fill series
- Understand linear and exponential series
- Use Flash Fill to split and concatenate text
- Use Analyze Data to create Data Insights
- Use Natural Language Queries
- Use the zoom control
- Print out a worksheet

## Lesson 2-1: Enter text and numbers into a worksheet

Excel beginners tend to reach for the mouse far too often. One of the keys to productivity with Excel is to avoid using the mouse when entering data. In this lesson, you'll quickly populate a worksheet without using the mouse at all.

- 1 Open *First Quarter Sales and Profit* from your sample files folder.

	A	B	C	D
1	Sales and Profit Report - First Quarter			
2				
3		Jan	Feb	Mar
4	New York	22,000	29,000	19,000
5	Los Angeles			
6	London			
7	Paris			
8	Munich			

- 2 Notice the difference between values and text.

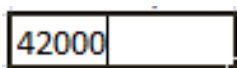
Cells can contain values or text. Values can be numbers, dates or formulas (more on formulas later).

Excel usually does a great job of recognizing when there are values in a cell and when there is text. The giveaway is that text is always (by default) left aligned in the cell and values are right aligned.


Look at the numbers on this worksheet. Notice how they are all right aligned. This lets you know that Excel has correctly recognized them as values and will happily perform mathematical operations using them.


- 3 Save a value into a cell.

1. Type the value 42000 into cell B5. Notice that the mouse cursor is still flashing in the cell.



At this stage, the value has not been saved into the cell.

If you change your mind, you can still undo the value by pressing the <ESC> key at the top left of your keyboard or by clicking the *Cancel* button  on the left-hand side of the Formula Bar.

2. Decide that you want to keep this value in the cell by either pressing the <Enter>, <Tab> or an <Arrow> key on the keyboard, or by clicking the *Enter* button  on the left-hand side of the Formula Bar.

- 4 Enter a column of data without using the mouse.

When you enter data into a column, there's no need to use the mouse. Press the <Enter> key after each entry and the active cell

### tip

#### Entering numbers as text

Sometimes you need Excel to recognize a number as text.

If you type an apostrophe (') before the number, Excel won't display the apostrophe but will format the cell as text. You'll notice that the number is then left justified to reflect this.

When a number is formatted as text you cannot perform any mathematical calculation with it.

**First Quarter Sales and Profit**

## important

### The many ways of entering numbers

#### Negative numbers

-123.56  
(123.56)

#### Currency prefixes

Excel is quite happy for you to prefix a number with a currency symbol. The currency symbol it will accept depends upon how you defined the regional options in your operating system.

\$123.56 (works in USA)  
£123.56 (works in UK)

If you progress to the *Essential Skills* book in this series, you'll learn an easy method of setting \$, £ and € currency prefixes (whatever your regional options are) in: *Session Four: Making Your Worksheets Look Professional*.

#### Commas

12,234,567.78

#### Fractions

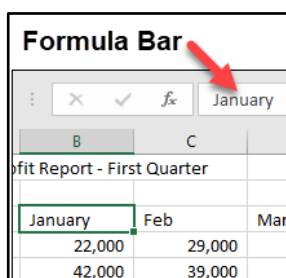
You must leave a space between a number and a fraction for this to work.

6 1/4  
(six, space, one, /, four)

The above will appear on the worksheet as 6.25 after you enter it in this way.

0 1/4  
(zero, space, one, /, four)

The above will appear on the worksheet as 0.25. The leading zero is needed to prevent Excel from assuming that you are entering a date.



Formula Bar			
January			
	B	C	
Profit Report - First Quarter			
	January	Feb	Mar
	22,000	29,000	
	42,000	39,000	

moves to the cell beneath. Try this now with the following January sales data:

1. Type **18,000** into cell B6.
2. Press the <Enter> key to move to cell B7.
3. Do the same to enter the following values into the next two cells.

	A	B	C	D
3		Jan	Feb	Mar
4	New York	22,000	29,000	19,000
5	Los Angeles	42,000		
6	London	18,000		
7	Paris	35,000		
8	Munich	12,000		

### 5 Enter a row of data without using the mouse.

You can also enter a row of data without using the mouse.

1. Click in cell C5.
2. Type **39,000** and then press the <Tab> key on your keyboard.

The <Tab> key is on the left-hand side of the keyboard above the <Caps Lock> key. Notice how pressing the <Tab> key saves the value into the cell and then moves one cell to the right.

3. Type **43,000** into cell D5 and press the <Enter> key.

You magically move to cell C6, as Excel guesses that you probably want to begin entering data into the next row.

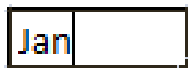
### 6 Complete the table without using the mouse.

By using the <Tab> or <Enter> key in the right places you should be able to complete the table now without using the mouse:

	A	B	C	D
3		Jan	Feb	Mar
4	New York	22,000	29,000	19,000
5	Los Angeles	42,000	39,000	43,000
6	London	18,000	20,000	22,000
7	Paris	35,000	26,000	31,000
8	Munich	12,000	15,000	13,000

### 7 Change the text in cell B3 to January.

1. Double-click cell B3. Notice that there is now a flashing cursor in the cell.



2. Type: **uary** on the keyboard to change Jan to January.
3. Press the <Enter> key.

### 8 Change the text in cell B3 back to Jan using the formula bar.

Click once in cell B3 and then change the text in the formula bar back to **Jan** (see sidebar).

### 9 Save your work as *First Quarter Sales and Profit-2*.



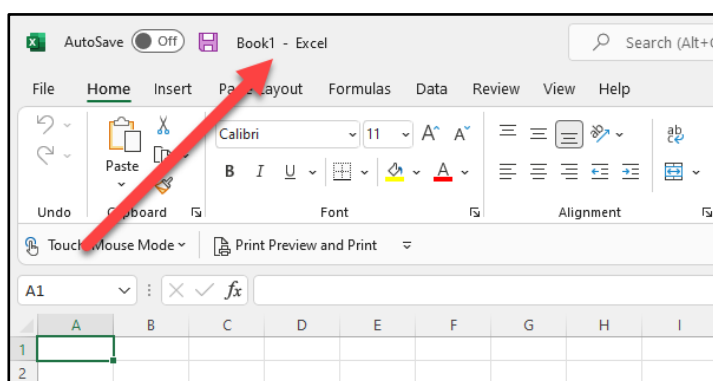
## Lesson 2-2: Create a new workbook and view two workbooks at the same time

### 1 Create a new workbook by opening Excel.

1. Open Excel.
2. Click the *Blank workbook* template to create a new workbook.

Excel helpfully creates a workbook, unimaginatively named *Book1*. If you already have a workbook open called *Book1*, the new workbook will be called *Book2*... and so on.

Notice that *Book1 – Excel* is displayed on the *Title Bar*.




### tip

#### Other ways of creating a new workbook

- Use the keyboard shortcut <Ctrl>+<N>.
- Add a button to the Quick Access Toolbar.

You learned how to add a button to the Quick Access Toolbar in: *Lesson 1-19: Customize the Quick Access Toolbar and preview the printout*

### 2 Create another new workbook.

1. Click the *File* button  at the top left of the screen and click the *New* button in the left-hand menu.

You are presented with a similar dialog to the one you saw when you started up Excel.

2. Click the *Blank workbook* template. A new blank workbook called *Book2* is displayed in the workbook window.

You could be forgiven for thinking that nothing has happened but you can see that the *Title Bar* now says: *Book2 – Excel*, showing that you are looking at a different workbook.



### 3 Use the taskbar to move between workbooks.

You can see an Excel icon at the bottom of the screen (this area is called the Windows taskbar). Hover over this icon with your mouse. A gallery pops up showing two workbooks: *Book1* and *Book2*.

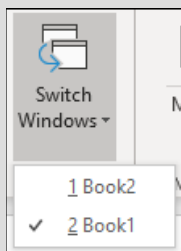
## note

### Finding a workbook when many are open

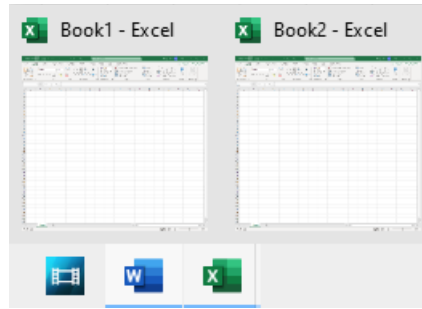
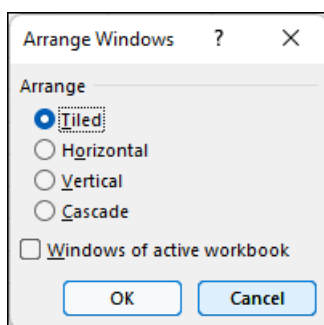
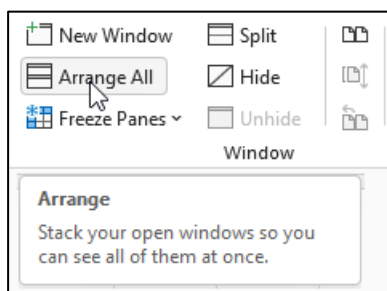
An alternative way to quickly find a workbook when many are open is to click:

View→Window→  
Switch Windows

This presents you with a list of all open workbooks.



You can also use the <Ctrl>+<Tab> keyboard shortcut to cycle through all open workbooks.



Hover the mouse cursor over each item in the pop-up gallery to display each workbook. The only difference you will see is the *Title Bar* changing from *Book1* to *Book2* because both workbooks are empty.

See sidebar for other methods of switching windows.

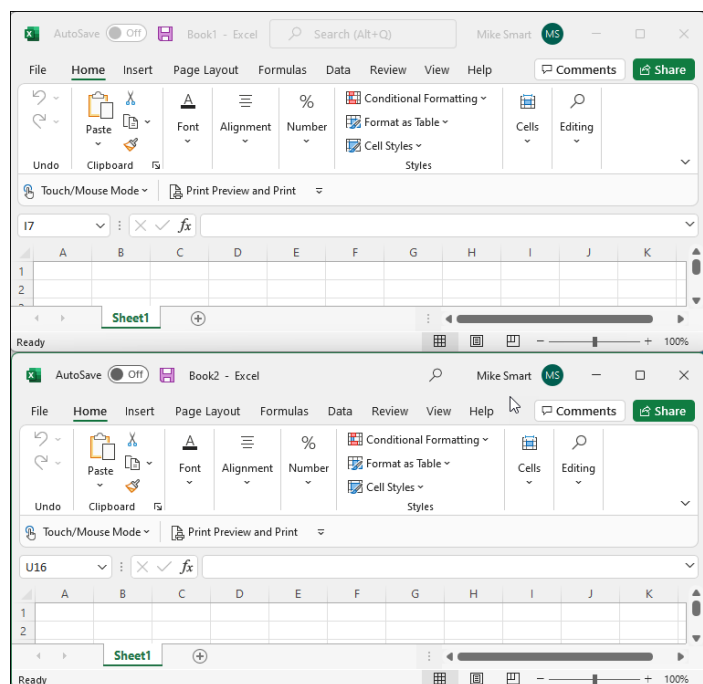
#### 4 Display both *Book1* and *Book2* at the same time.

1. Make sure that the *Book1* and *Book2* workbooks are both visible on the screen (meaning that neither are minimized).
2. Click: View→Window→Arrange All.

The *Arrange Windows* dialog is displayed.

3. Choose the *Horizontal* arrangement and click the OK button.

Both workbooks are now shown, one above the other. Each window occupies exactly half of your screen:



Notice that as you click each workbook window the *Title Bar* and the *Close/Minimize/Restore Down* buttons light up, to show that this is the active window.

#### 5 Close *Book2* and maximize *Book1* to restore the display to a single workbook.

If you've forgotten how to do this, refer back to: *Lesson 1-8: Maximize, minimize, re-size, move and close the Excel window.*

## anecdote

I ran an Excel course for a small company in London a few years ago.

The boss had sent his two office staff to learn a little more about Excel.

Before the course began, I asked the delegates how long they had been using Excel. They told me that they'd been using it for two years to do all of their office reports.

When I showed them AutoSum they gasped in delight. "This will save us hours" they told me.

I was curious how they had been doing their reports before.

Believe it or not, they had added up all of the figures in each column with a calculator and then manually typed the totals at the bottom of each column.

In this case the boss had given them Excel as he had heard it was a very good tool. Unfortunately, he had not initially seen the need to train the staff in its use.

With no training, it seemed quite logical to them to use it like a word processor and the boss had still been delighted that his staff were using such impressive technology.

## Lesson 2-3: Use AutoSum to quickly calculate totals

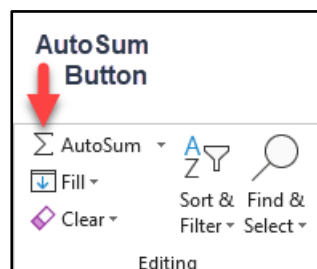
Excel's *AutoSum* feature is a really useful and fast way to add the values in a range of cells together.

- 1 Open *First Quarter Sales and Profit-2* from your sample files folder.
- 2 In cell A9 type the word **Total** followed by the <Tab> key.

The active cell moves to the right and is now in cell B9:

	A	B	C	D
7	Paris	35,000	26,000	31,000
8	Munich	12,000	15,000	13,000
9	Total			

- 3 Click: Home→Editing→ (this is the AutoSum button).




Something interesting has happened to the worksheet:

	A	B	C	D
3		Jan	Feb	Mar
4	New York	22,000	29,000	19,000
5	Los Angeles	42,000	39,000	43,000
6	London	18,000	20,000	22,000
7	Paris	35,000	26,000	31,000
8	Munich	12,000	15,000	13,000
9	Total	=SUM(B4:B8)		
10		SUM(number1, [number2], ...)		

Excel has placed a *marquee* around the number range that AutoSum has guessed you want to work with. The dots that mark the boundary of the marquee are called the *marching ants*.

The marching ants surround all the numbers in the column above, up to the first blank cell or text cell (in this case, up to the word: Jan).

=SUM(B4:B8) is your first glimpse of an Excel *Formula*. Formulas always begin with an equal sign (=). This formula is using the SUM *function* to compute the Sum (or total) of the values in cells B4 to B8. You'll learn more about functions later, in: *Lesson 2-13: Create functions using Formula AutoComplete*.

- 4 Press the <Enter> key or click the AutoSum button  once more to display the total January sales:

**First Quarter Sales and Profit-2**

## tip

### Entering an AutoSum using only the keyboard

You can also execute an AutoSum using the keyboard shortcut:

<Alt>+=

## note

### You can also add an AutoSum formula using the Quick Analysis button

Later, in: *Lesson 2-4: Select a range of cells and understand Smart Tags*, you'll learn how to select a range of cells.

Whenever you select a range of cells, a *Quick Analysis* button appears just outside the bottom-right corner of the selected range.

Jan	Feb
22,000	
42,000	
18,000	
35,000	
12,000	

When you click the *Quick Analysis* button, the *Quick Analysis* dialog appears.

One of the menu options on this dialog is *Totals*.

The *Totals* dialog allows you to add an AutoSum beneath a selected range (in a similar way to the AutoSum button method described in this lesson).



	A	B	C	D
3		Jan	Feb	Mar
4	New York	22,000	29,000	19,000
5	Los Angeles	42,000	39,000	43,000
6	London	18,000	20,000	22,000
7	Paris	35,000	26,000	31,000
8	Munich	12,000	15,000	13,000
9	Total	129,000		

- 5 Type the word **Total** into cell E3 and press the <Enter> key once.

The active cell moves down one row and is now in cell E4.

	A	B	C	D	E
3		Jan	Feb	Mar	Total
4	New York	22,000	29,000	19,000	
5	Los Angeles	42,000	39,000	43,000	

- 6 Use AutoSum to calculate the total sales for New York.

1. Click: Home→Editing→AutoSum.

This time AutoSum correctly guesses that you want to sum the values to the left of cell E4:

	B	C	D	E	F
3	Jan	Feb	Mar	Total	
4	22,000	29,000	19,000	=SUM(B4:D4)	
5	42,000	39,000	43,000	SUM(number1, [number2], ...)	

2. Press the <Enter> key or click the *AutoSum* button once more.

	A	B	C	D	E
1	Sales and Profit Report - First Quarter				
2					
3		Jan	Feb	Mar	Total
4	New York	22,000	29,000	19,000	70,000
5	Los Angeles	42,000	39,000	43,000	
6	London	18,000	20,000	22,000	
7	Paris	35,000	26,000	31,000	
8	Munich	12,000	15,000	13,000	
9	Total	129,000			

- 7 Save your work as *First Quarter Sales and Profit-3*.

## Lesson 2-4: Select a range of cells and understand Smart Tags

- 1 Open *First Quarter Sales and Profit-3* from your sample files folder (if it isn't already open).
- 2 Observe the formula behind the value in cell B9.

Click once on cell B9 or move to it with the arrow keys on your keyboard.

Look at the *formula bar* at the top of the screen. Notice that the cell displays the *value* of a calculation, and the formula bar shows the *formula* used to calculate the value:

B9		X ✓ fx		=SUM(B4:B8)	
	A	B	C	D	
8	Munich	12,000	15,000	13,000	
9	Total	129,000			
10					
11		Value		Formula	

### note

#### You can also delete cell contents using the mouse

Pressing the <Delete> key is the fastest way to delete cell contents.

You can also delete the contents of a cell using the mouse. To do this:

1. Right-click the cell.
2. Click *Clear Contents* from the shortcut menu.

- 3 Delete the contents of cell B9.

Press the <Delete> key on your keyboard.


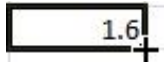

- 4 Change the word *Total* in cell A9 to: **USA Sales** and press the <Tab> key once.

The cursor moves to cell B9.

8	Munich	12,000
9	USA Sales	

- 5 Select cells B4:B5 with your mouse.

When the mouse cursor is hovered over a selected cell there are three possible cursor shapes:

Cursor	What it does
	The white cross (Select) cursor appears when you hover over the center of the active cell. You can then click and drag to select a range of cells.
	The black cross (AutoFill) cursor appears when you hover over the bottom right-hand corner of the active cell. You'll be covering AutoFill later in this session.
	The four-headed arrow (Move) cursor appears when you hover over one of the edges of the active cell (but not the bottom right corner).

Beginners often have difficulty selecting cells and move or AutoFill them by mistake.

### note

#### Selecting cells with the keyboard

To select cells with the keyboard, hold down the <Shift> key and then use the <Arrow> keys to select the range needed.

**First Quarter Sales and Profit-3**

## note

### Selecting a large range of cells with the <Shift>-click technique

If you need to select a very large range of cells it is sometimes useful to use this technique:

1. Click the cell in the top left corner of the required range.
2. If necessary, use the scroll bars to make the bottom right corner of the required range visible.
3. Hold down the <Shift> key.
4. Click in the bottom right corner of the required range.


1. Click on cell B4 to make it the active cell.
2. Carefully position the mouse at the center of cell B4 so that you see the white cross (Select) cursor. When you see the white cross, hold down the left mouse button and drag down to cell B5.
3. Release the mouse button.

You have now selected cells B4 and B5 (in Excel terminology you'd say that you have selected the *range* B4:B5).

	A	B
3		Jan
4	New York	22,000
5	Los Angeles	42,000

## 6 Display total USA sales in cell B9.

Because you have selected only the cells containing USA sales, (cells B4:B5), AutoSum can now be used to show the total value of the selected cells.

Click: Home→Editing→AutoSum.  to display the total value of the selected cells.


USA sales are now shown in cell B9.

9	USA Sales	64,000
---	-----------	--------

Notice the small green triangle at the top left of cell B9. This is Excel's way of saying: "I think you may have made a mistake".


## 7 Inspect a potential error using a Smart Tag.

1. Click once on cell B9 to make it the active cell.

An exclamation mark icon appears . This is called a *Smart Tag*.


2. Hover the mouse cursor over the Smart Tag.

A tip box pops up telling you what Excel thinks you may have done wrong (see below). Of course, in this case, everything is fine.

USA Sales		64,000
The formula in this cell refers to a range that has additional numbers adjacent to it.		

The Smart Tag thinks that perhaps you didn't want to total just the USA sales but, in this case, the Smart Tag is wrong.

## 8 Examine the remedial actions suggested by the Smart Tag.

1. Hover the mouse cursor over the Smart Tag icon .
2. Click the drop-down arrow that appears next to it.

A list of possible remedial actions is displayed. In this case you can choose *Ignore Error* to remove the green triangle from the corner of the cell.

## 9 Save your work as *First Quarter Sales and Profit-4*.

## note

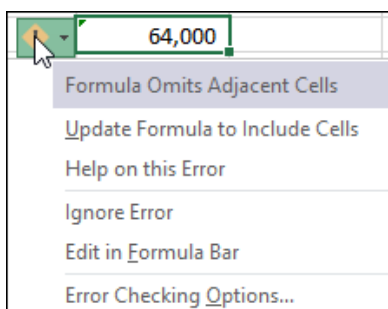
### If you don't see a Smart Tag somebody may have switched this feature off

Smart Tags are enabled by default. It is possible that a user might have switched this useful feature off on your machine. Here's how to switch the Smart Tag feature back on:

1. Click:

File→Options→General→Formulas→Error Checking

2. Make sure that the *Enable background error checking* checkbox is checked.



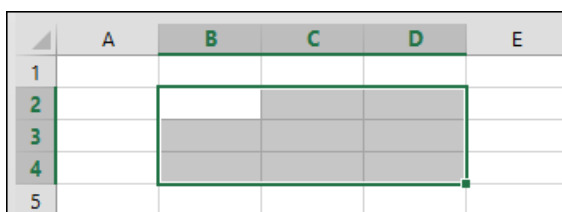
## Lesson 2-5: Enter data into a range and copy data across a range

Now that you have mastered the technique of selecting cells, you can use it to speed up data entry.

When you select a range of cells prior to entering data, Excel knows that all data entered belongs in that range. Several key combinations are then available to greatly speed up data entry.

- 1 Open a new workbook and save it as *Data Range Test*.
- 2 Select cells B2:D4.

You learned how to do this in: *Lesson 2-4: Select a range of cells and understand Smart Tags*.



- 3 Type: **London**

The text appears in cell B2 (the top left cell in the range selected).

- 4 Press the **<Enter>** Key.

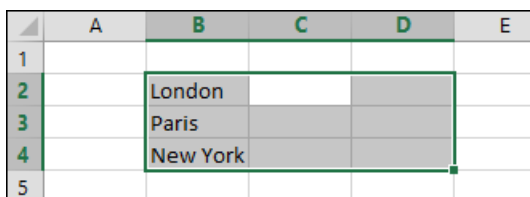
The cursor moves to cell B3 as it normally would.

- 5 Type: **Paris** followed by the **<Enter>** key.

The cursor moves to cell B4 as it normally would.

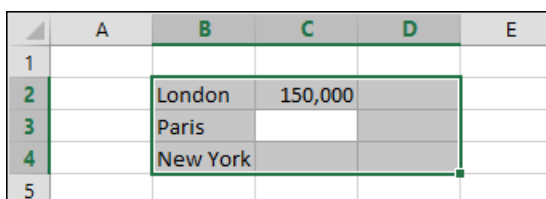
- 6 Type: **New York** followed by the **<Enter>** key.

This time something new happens. The cursor doesn't move to cell B5 as you might expect but jumps to cell C2 instead.



- 7 Type: **150,000** followed by the **<Enter>** key.

The value appears in cell C2 and Excel moves down the column again to cell C3.





- 8 Press the **<Enter>** key without entering a value to leave cell C3 blank.

Excel moves down the column to cell C4.

- 9 Type **225,000** followed by the **<Enter>** key.

The cursor jumps to cell D2.

- 10 Press **<Shift>+<Enter>** twice to change your mind about leaving the value for Paris blank.
1. Press **<Shift>+<Enter>** to move backwards to the value for New York.
  2. Press **<Shift>+<Enter>** a second time and you are back to the Paris cell.

	A	B	C	D	E
1					
2		London	150,000		
3		Paris			
4		New York	225,000		
5					

- 11 Type **180,000** followed by the **<Tab>** key.

**<Tab>** moves you across the range, to cell D3.

	A	B	C	D	E
1					
2		London	150,000		
3		Paris	180,000		
4		New York	225,000		
5					

You can now appreciate how to use the technique of **<Enter>**, **<Tab>**, **<Shift>+<Tab>** and **<Shift>+<Enter>** to save a lot of time when entering a whole table of data.

- 12 Select cells D2:D4.
- 13 Type **50%** but don't press the **<Enter>** or **<Tab>** keys.

The challenge this time is to place the same value into cells D3 and D4 without having to type the value two more times.

- 14 Press **<Ctrl>+<Enter>**.

The value is replicated into the other cells in the selected range.

	A	B	C	D	E
1					
2		London	150,000	50%	
3		Paris	180,000	50%	
4		New York	225,000	50%	
5					

- 15 Click the **Save** button to save the *Data Range Test* workbook.

The *Save* button is at the top-left of your screen.



## Lesson 2-6: Select adjacent and non-adjacent rows and columns

- 1 Open *First Quarter Sales and Profit-4* from your sample files folder (if it isn't already open).
- 2 Select all of column A.


1. Hover the mouse cursor over the letter **A** at the top of the column. The column header lights up and the mouse cursor changes to a black down arrow:

	A ↓	B	C
1	Sales and Profit Report - First Quarter		

2. Click to select the entire column. The column becomes slightly shaded and a green line surrounds all of the cells.


	A	B	C	D
1	Sales and Profit Report - First Quarter			
2				
3		Jan	Feb	Mar
4	New York	22,000	29,000	19,000

- 3 Bold face the contents of column A.

Click: Home→Font→Bold. 

Because the whole of column A was selected, all of the cells in column A become bold faced.

	A	B	C	D
1	<b>Sales and Profit Report - First Quarter</b>			
2				
3		Jan	Feb	Mar
4	<b>New York</b>	22,000	29,000	19,000
5	<b>Los Angeles</b>	42,000	39,000	43,000
6	<b>London</b>	18,000	20,000	22,000

- 4 Click: Home→Font→Bold  once more to change the cells in column A back to normal.
- 5 Select all of row 4.

1. Hover the mouse cursor over the number on the left-hand side of row 4. The number button lights up and the mouse cursor changes to a black arrow pointing across the row:

3		Jan
4	New York	22,000
5	Los Angeles	42,000

2. Click to select the row.

- 6 Select columns B and C.

**First Quarter Sales and Profit-4**

Hover the mouse cursor over the letter at the top of column B until you see the black down arrow. When you see the arrow, click and drag to the right to select columns B and C.

	A	B	C	D
1	Sales and Profit Report - First Quarter			
2				
3		Jan	Feb	Mar
4	New York	22,000	29,000	19,000

## 7 Select rows 6 and 7.

1. Hover over the number at the left of row 6 until you see the black arrow pointing across the row.
2. When you see the arrow, click and drag down to row 7 to select both rows.

5	Los Angeles	42,000	39,000
6	London	18,000	20,000
7	Paris	35,000	26,000

## 8 Select columns A, B, C, D and E without dragging the mouse.

Sometimes you will need to select a large number of adjacent columns or rows. You could drag across them, but it is often easier to use the following technique:

1. Select column A.
2. Hold down the <Shift> key.
3. Select column E.

Columns A to E are selected.

	A	B	C	D	E
1	Sales and Profit Report - First Quarter				
2					
3		Jan	Feb	Mar	Total
4	New York	22,000	29,000	19,000	70,000

## 9 Select rows 4 and 6.

Perhaps you need to perform an operation on two non-adjacent rows. To select rows 4 and 6 you need to:

1. Select row 4.
2. Hold down the <Ctrl> key on the keyboard.
3. Select row 6.

3		Jan	Feb	Mar	
4	New York	22,000	29,000	19,000	
5	Los Angeles	42,000	39,000	43,000	
6	London	18,000	20,000	22,000	
7	Paris	35,000	26,000	31,000	

## important

### You can also Deselect cells using Ctrl-Click

Excel 2019 added the ability to remove cells from a selection using **<Ctrl>+<Click>**.

Here's an example of how you can use this (fantastically useful) feature:

1. Use the mouse to select cells B4:B5.

	A	B
3		Jan
4	New York	22,000
5	Los Angeles	42,000
6	London	18,000

2. Hold down the **<Ctrl>** key and then use the mouse to select cells B6:B7.

The selected cells are added to the selection:

	A	B
3		Jan
4	New York	22,000
5	Los Angeles	42,000
6	London	18,000
7	Paris	35,000
8	Munich	12,000

3. Hold down the **<Ctrl>** key and then click on cell B4.

Cell B4 is removed from the selection:

	A	B
3		Jan
4	New York	22,000
5	Los Angeles	42,000
6	London	18,000
7	Paris	35,000
8	Munich	12,000

**First Quarter Sales and Profit-4**

## Lesson 2-7: Select non-contiguous cell ranges and view summary information

Non-contiguous is a very impressive word. It simply means a range of cells that is split across two or more blocks of cells in different parts of the worksheet.

Non-contiguous ranges can be selected using both the mouse and keyboard. The keyboard method may seem a little involved at first, but some users prefer it.

- 1 Open *First Quarter Sales and Profit-4* from your sample files folder (if it isn't already open).
- 2 Select the contiguous range B4:D8 with the keyboard.

When you need to select a contiguous range with the keyboard here's how it's done:

1. Use the arrow keys on the keyboard to navigate to cell B4.
2. Hold down the **<Shift>** key on the keyboard.
3. Still holding the **<Shift>** key down, use the arrow keys on the keyboard to navigate to cell D8.

The contiguous range B4:D8 is selected.

	A	B	C	D	E
1	Sales and Profit Report - First Quarter				
2					
3		Jan	Feb	Mar	Total
4	New York	22,000	29,000	19,000	70,000
5	Los Angeles	42,000	39,000	43,000	
6	London	18,000	20,000	22,000	
7	Paris	35,000	26,000	31,000	
8	Munich	12,000	15,000	13,000	
9	USA Sales	64,000			

- 3 Select the non-contiguous range B4:B8,D4:D8 using the mouse.

1. Select the range B4:B8 using the mouse.
2. Hold down the **<Ctrl>** key and select the range D4:D8 using the mouse.

The non-contiguous range B4:B8,D4:D8 is selected:

	A	B	C	D	E
3		Jan	Feb	Mar	Total
4	New York	22,000	29,000	19,000	70,000
5	Los Angeles	42,000	39,000	43,000	
6	London	18,000	20,000	22,000	
7	Paris	35,000	26,000	31,000	
8	Munich	12,000	15,000	13,000	
9	USA Sales	64,000			

#### 4 Select the same non-contiguous range with the keyboard.

This is a little more involved than using the simple **<Shift>+<Arrow keys>** method used earlier.

Here's how it's done:

1. Use the arrow keys on the keyboard to navigate to cell B4.
2. Hold down the **<Shift>** key and then use the **<Down Arrow>** key to move down the column to cell B8.
3. Press: **<Shift>+<F8>** to enter *Add or Remove Selection* mode (see sidebar).
4. Use the arrow keys to navigate to cell D4.
5. Hold down the **<Shift>** key and then use the **<Down Arrow>** key to move down the column to cell D8.

The non-contiguous range B4:B8,D4:D8 is selected:

	A	B	C	D	E
3		Jan	Feb	Mar	Total
4	New York	22,000	29,000	19,000	70,000
5	Los Angeles	42,000	39,000	43,000	
6	London	18,000	20,000	22,000	
7	Paris	35,000	26,000	31,000	
8	Munich	12,000	15,000	13,000	
9	USA Sales	64,000			

#### 5 Obtain a total sales figure for January and March using the status bar.

The status bar contains summary information for the currently selected range.

Look at the bottom right of your screen. You can see the average sales and total sales (sum of sales) for January and March:

Average: 25,700    Count: 10    Sum: 257,000

#### 6 View the maximum and minimum sales for January and March using the status bar.

Right-click the status bar and click *Maximum* and *Minimum* on the shortcut menu.

✓	Average	25,700
✓	Count	10
	Numerical Count	
✓	Minimum	12,000
✓	Maximum	43,000
✓	Sum	257,000

The status bar now also displays maximum and minimum values.

Average: 25,700    Count: 10    Min: 12,000    Max: 43,000    Sum: 257,000

#### 7 Close the workbook without saving.

## note

### Why your dates may look different to those in the screen grabs

This book was written using the *English (United States)* Region format settings.

The *Region format* for *English (United States)* dates are:

#### Short Date

3/10/2021

#### Long Date

Thursday, March 10, 2021

If you are situated in a different country, your *Short Date* and *Long Date* Region formats may be in a different format that is more appropriate to your location.

While it is possible to change your *Region format* (in Windows settings) there is no need to do so to work through this book.

Just be aware that some of the screen grabs in this book will be formatted differently to what you see on your screen.

If you progress to the *Essential Skills* book in this series, you'll learn more about data formats in: *Lesson 4-1: Format Dates*.

## Lesson 2-8: AutoSelect a range of cells

### 1 Open *Sales Report* from your sample files folder.

	A	B	C	D	E
1	Weekly Sales Report				
2					
3	Invoice No	Date	Customer	Country	Total
4	10918	Saturday, January 29, 2022	Bottom-Dollar Markets	Canada	1,700.81
5	10917	Saturday, January 29, 2022	Romero y tomillo	Spain	429.92
6	10926	Saturday, January 29, 2022	Ana Trujillo Emparedados y helados	Mexico	604.42
7	10929	Sunday, January 30, 2022	Frankenversand	Germany	1,380.33
8	10934	Sunday, January 30, 2022	Lehmans Marktstand	Germany	587.50
9	10939	Sunday, January 30, 2022	Magazzini Alimentari Riuniti	Italy	749.05
10	10939	Sunday, January 30, 2022	Magazzini Alimentari Riuniti	Italy	- 749.05
11	10925	Monday, January 31, 2022	Hanari Carnes	Brazil	558.29
12	10944	Monday, January 31, 2022	Bottom-Dollar Markets	Canada	1,204.75
13	10923	Monday, January 31, 2022	La maison d'Asie	France	879.83
14	10937	Tuesday, February 1, 2022	Cactus Comidas para llevar	Argentina	757.64
15	10947	Tuesday, February 1, 2022	B's Beverages	UK	258.50
16	10933	Tuesday, February 1, 2022	Island Trading	UK	1,081.71
17	10938	Wednesday, February 2, 2022	QUICK-Stop	Germany	3,209.95
18	10949	Wednesday, February 2, 2022	Bottom-Dollar Markets	Canada	5,195.85
19	10945	Wednesday, February 2, 2022	Morgenstern Gesundkost	Germany	287.88
20					
21	This report excludes sales to Asia and South Africa.				

This report contains a single block of cells in the range A3 to E19.

When data is arranged in this way it is referred to as a *Range*.

You will often want to select a row or column of cells within a range, or even the entire range.

You can select ranges by using any of the techniques covered so far but this could be very time consuming if the range encompassed hundreds, or even thousands, of rows and columns.

In this lesson, you'll learn how to select range rows, range columns and entire ranges with a few clicks of the mouse.

### 2 Select all cells within the range to the right of cell A7.

1. Click in cell A7 to make it the active cell.
2. Hover over the right-hand border of cell A7 until you see the four-headed arrow cursor shape.

6	10926	Saturday, January 29, 2022
7	10929	Sunday, January 30, 2022
8	10934	Sunday, January 30, 2022

3. When you see this cursor shape, hold down the <Shift> key and double-click.

All cells to the right of A7, that are within the range, are selected.

6	10926	Saturday, January 29, 2022	Ana Trujillo Emparedados y helados	Mexico	604.42
7	10929	Sunday, January 30, 2022	Frankenversand	Germany	1,380.33
8	10934	Sunday, January 30, 2022	Lehmans Marktstand	Germany	587.50

### 3 Select all cells within the range except the header row.

1. Click in cell A4 to make it the active cell.
2. Hover over the right-hand border of cell A4 until you see the four-headed arrow cursor shape.

**Sales Report**

## note

### Other ways to AutoSelect a range

#### Using the keyboard

Here's how you would select the entire range in the *Weekly Sales Report* (excluding the header row) using the keyboard method.

Make cell A4 the active cell by navigating to it with the <Arrow> keys.

1. Press: <Ctrl>+<Shift>+<DownArrow>

Cells A4:A19 are selected.

2. Press: <Ctrl>+<Shift>+<RightArrow>

The entire range (excluding the header row) is selected.

#### Using shortcut keys

The shortcut keys method is the fastest way to select the entire range *including* the header row.

1. Click anywhere inside the range.

2. Press: <Ctrl>+<A>

The entire range (including the header row) is selected.

#### From the Ribbon

You can select the entire range including the header row (described as the *Current Region* in the dialog) using the Ribbon. This method is the least efficient way to select an entire range.

1. Make sure that the active cell is within the range.
2. Click:

**Home**→**Editing**→  
**Find & Select**→  
**Go To Special...**

The *Go To Special* dialog is displayed.

3. Click the *Current region* option button and then click the OK button.

The entire range (including the header row) is selected.

3	Invoice No	Date
4	10918	Saturday, January 29, 2022
5	10917	Saturday, January 29, 2022

3. When you see this cursor shape, hold down the <Shift> key and double-click.

All cells to the right of cell A4, but within the range, are selected.

4. Hover over the bottom border of any selected cell until you see the four-headed arrow cursor shape.

Customer	Country
Bottom-Dollar Markets	Canada
Romero y tomillo	Spain

5. When you see this cursor shape, hold down the <Shift> key and double-click.

The entire range (except the header row) is selected.

	A	B	C	D	E
1	Weekly Sales Report				
2					
3	Invoice No	Date	Customer	Country	Total
4	10918	Saturday, January 29, 2022	Bottom-Dollar Markets	Canada	1,700.81
5	10917	Saturday, January 29, 2022	Romero y tomillo	Spain	429.92
6	10926	Saturday, January 29, 2022	Ana Trujillo Emparedados y helados	Mexico	604.42
7	10929	Sunday, January 30, 2022	Frankenversand	Germany	1,380.33
8	10934	Sunday, January 30, 2022	Lehmans Marktstand	Germany	587.50
9	10939	Sunday, January 30, 2022	Magazzini Alimentari Riuniti	Italy	749.05
10	10939	Sunday, January 30, 2022	Magazzini Alimentari Riuniti	Italy	749.05
11	10925	Monday, January 31, 2022	Hanari Carnes	Brazil	558.29
12	10944	Monday, January 31, 2022	Bottom-Dollar Markets	Canada	1,204.75
13	10923	Monday, January 31, 2022	La maison d'Asie	France	879.83
14	10937	Tuesday, February 1, 2022	Cactus Comidas para llevar	Argentina	757.64
15	10947	Tuesday, February 1, 2022	B's Beverages	UK	258.50
16	10933	Tuesday, February 1, 2022	Island Trading	UK	1,081.71
17	10938	Wednesday, February 2, 2022	QUICK-Stop	Germany	3,209.95
18	10949	Wednesday, February 2, 2022	Bottom-Dollar Markets	Canada	5,195.85
19	10945	Wednesday, February 2, 2022	Morgenstern Gesundkost	Germany	287.88

You can also use this technique to select cells (that are within the range) to the left of the active cell or above the active cell.

4. Close the workbook without saving.



## note

### Why are you calling the pound sign a hash?

In the USA and Canada, the hash symbol is called the **pound sign** or the **number sign**.

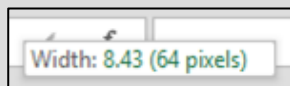
In different USA/Canada regions the single symbol has different names because it can be used to denote a number (as in contestant #5) or as a weight (as in 3# of butter).

Throughout this book I will refer to the # as a *hash* because that is the term used in most other English-speaking countries.

## note

### Excel column widths are expressed in characters and pixels

In this lesson Excel displays the default column width as:



8.43 *characters* is Excel's default column size (meaning that 8.43 characters can be displayed in each cell using the default *Calibri* font and font size).

Pixels are the tiny dots that make up a computer display.

With 64 pixels to each column, a computer screen with a resolution of 1680X1050 (the normal resolution for a 22 inch display) should display about  $1680/64=26.25$  Excel columns.

Row heights are displayed in points (a point is approximately  $1/72$  inch or 0.035cm).

### First Quarter Sales and Profit-4

## Lesson 2-9: Re-size rows and columns

- 1 Open *First Quarter Sales and Profit-4* from your sample files folder.

Notice that columns B, C, D and E are far too wide for their contents. It would be useful to make them narrower to keep the worksheet compact.

- 2 Re-size column B so that it is just wide enough to contain the January sales figures.

1. Hover the mouse cursor over the line separating the letters B and C until you see the *re-size* cursor shape:



2. When you see the *re-size* cursor shape, keep the mouse still and then click and drag to the left. Column B will re-size as you drag. Make it narrower so that the values just fit in the column. Notice that the column width is displayed in characters and pixels (see sidebar) as you drag.

	A	B	C	D
1	Sales and Profit Report - First Quarter			
2				
3		Jan	Feb	Mar
4	New York	22,000	29,000	19,000

- 3 Re-size column B so that it is too narrow to contain the January sales figures.

Notice that when the column isn't wide enough to contain the contents, hash signs are shown instead of values (if you're used to hashes being called **pound signs** or **number signs** see the sidebar).

	A	B	C	D	E
1	Sales and Profit Report - First Quarter				
2					
3		Jan	Feb	Mar	Total
4	New York	###	29,000	19,000	70,000

- 4 Automatically re-size column B so that it is a perfect fit for the widest cell in the column.

1. Hover over the line separating the letters B and C until you see the *re-size* cursor shape:



2. When you see this shape, double-click to automatically re-size column B.

- 5 Automatically re-size every column in the worksheet in one operation.

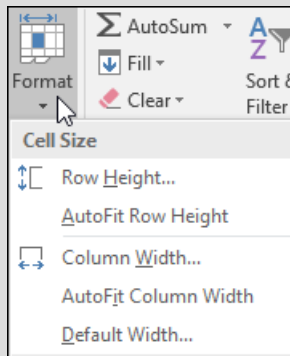
## note

### Other ways to re-size rows and columns

You can also re-size rows and columns using the Ribbon.

Click: Home→Cells→Format.

A drop-down menu appears.



You can use the *Row Height* and *Column Width* options to set the selected row(s) or column(s) to a specific number of characters (for column widths) or points (for row height).

You can also use the *AutoFit Row Height* and *AutoFit Column Width* options to automatically re-size the selected cells in a row or column (you did this during the lesson).

*Default Width...* allows you to set a new width for all empty columns but will not affect columns that have already been manually resized.

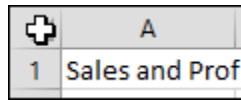
## note


### Making several columns or rows the same size

Select the rows or columns that you want to resize and then click and drag the intersection of any of the selected rows or columns.

When the mouse button is released, this will make each of the selected rows or columns exactly the same height or width.

1. Select every cell in the worksheet by clicking the *Select All* button in the top left corner of the worksheet (you can also do this by clicking in any blank cell and then pressing <Ctrl>+<A>).



2. Hover over the intersection of any two columns until you see the re-size cursor shape  and then double-click.

Every column is now perfectly sized.

Notice that AutoFit has done its job rather too well. Column A is now wide enough to accommodate all of the text in cell A1.

	A	B
1	Sales and Profit Report - First Quarter	

- 6 Automatically re-size column A so that it is only wide enough to contain the longest city name (Los Angeles).

1. Select cells A4:A9.
2. Click: Home→Cells→Format→AutoFit Column Width.

This time the column is automatically sized so that it is just wide enough to contain all of the text in the selected cells.

	A	B	C	D	E
1	Sales and Profit Report - First Quarter				
2					
3		Jan	Feb	Mar	Total
4	New York	22,000	29,000	19,000	70,000
5	Los Angeles	42,000	39,000	43,000	


Notice that the text in cell A1 has spilled over into the adjoining columns B, C, D and E. This always happens when a cell contains text, and the adjacent cells are empty.

- 7 Manually re-size row 3 so that it is about twice as tall as the other rows.

Do this in the same way you re-sized the column but, this time, hover between the intersection of rows 3 and 4 until you see the re-size cursor shape, and then click and drag downwards.

1	Sales and Profit Report - First Quarter			
2	Height: 24.00 (32 pixels)			
3		Jan	Feb	Mar
4	New York	22,000	29,000	19,000
5	Los Angeles	42,000	39,000	43,000

- 8 Auto-resize row 3 so that it is the same size as the other rows again.

1. Hover over the line separating the numbers 3 and 4 until you see the re-size cursor shape. 
2. When you see this shape, double-click to automatically re-size row 3.

- 9 Close Excel without saving.

## Lesson 2-10: Use AutoSum to sum a non-contiguous range

In: *Lesson 2-7: Select non-contiguous cell ranges and view summary information*, you learned how to view the sum of January and March sales using the status bar. But how can you put that value onto the worksheet?

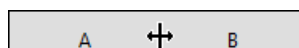
Now that you have the hang of selecting non-contiguous ranges, you can use this skill in conjunction with your AutoSum skills to create a formula that will calculate the total of a non-contiguous range.

- 1 Open *First Quarter Sales and Profit-4* from your sample files folder.
- 2 Enter the text: **Jan/Mar Sales** in cell A10 and press the <Tab> key.

The active cell moves to cell B10.

- 3 Re-size column A so that it is wide enough to contain the text.


1. Hover over the line separating the letters A and B until you see the re-size cursor shape:



2. When you see this shape, keep the mouse still and then click and drag to the right. Column A will re-size as you drag. Make it wider so that the words *Jan/Mar Sales* comfortably fit in the column:

	A	B	C	D
1	Sales and Profit Report - First Quarter			
2				
3		Jan	Feb	Mar
4	New York	22,000	29,000	19,000
5	Los Angeles	42,000	39,000	43,000
6	London	18,000	20,000	22,000
7	Paris	35,000	26,000	31,000
8	Munich	12,000	15,000	13,000
9	USA Sales	64,000		
10	Jan/Mar Sales			

- 4 Use AutoSum to calculate the total sales for January and March in cell B10.

1. Click in cell B10 to make it the active cell.
2. Click Home→Editing→ (the AutoSum button).

An AutoSum appears in cell B10, but it isn't the formula you need. AutoSum guesses that you simply want to repeat the value in the USA Sales cell.


8	Munich	12,000	15,000	13,000
9	USA Sales	64,000		
10	Jan/Mar Sales	=SUM(B9)		
11		SUM(number1, [number2], ...)		

**First Quarter Sales and Profit-4**

3. Select the range B4:B8 with the mouse and release the mouse button.
4. Hold down the <Ctrl> key and select the range D4:D8 with the mouse.

Notice that the non-contiguous range *B4:B8,D4:D8* is shown in the AutoSum's formula:

	A	B	C	D	E
1	Sales and Profit Report - First Quarter				
2					
3		Jan	Feb	Mar	Total
4	New York	22,000	29,000	19,000	70,000
5	Los Angeles	42,000	39,000	43,000	
6	London	18,000	20,000	22,000	
7	Paris	35,000	26,000	31,000	
8	Munich	12,000	15,000	13,000	
9	USA Sales	64,000			
10	Jan/Mar Sales	=SUM(B4:B8,D4:D8)			
11		SUM(number1, [number2], [number3], ...)			

5. Press the <Enter> key or click the AutoSum button  again to show the sales for January and March in cell B10.

	A	B	C	D	E
1	Sales and Profit Report - First Quarter				
2					
3		Jan	Feb	Mar	Total
4	New York	22,000	29,000	19,000	70,000
5	Los Angeles	42,000	39,000	43,000	
6	London	18,000	20,000	22,000	
7	Paris	35,000	26,000	31,000	
8	Munich	12,000	15,000	13,000	
9	USA Sales	64,000			
10	Jan/Mar Sales	257,000			

- 5 Save your work as *First Quarter Sales and Profit-5*.

## Lesson 2-11: Use AutoSum to calculate average and maximum values

- 1 Open *First Quarter Sales and Profit-5* from your sample files folder (if it isn't already open).

- 2 Delete cells E3:E4.

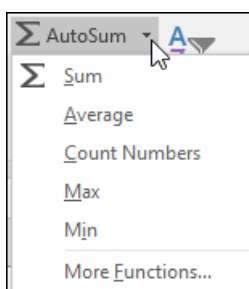
Select cells E3 and E4 and press the <Delete> key on your keyboard.

- 3 Type the word: **Average** in cell E3 and press the <Enter> key.

The cursor moves to cell E4:

	A	B	C	D	E
3		Jan	Feb	Mar	Average
4	New York	22,000	29,000	19,000	

- 4 Use AutoSum to create a formula that will show the average New York sales in cell E4.




1. Click: Home→Editing→AutoSum→Drop-down arrow (see sidebar).

A drop-down menu is displayed showing different ways in which AutoSum can operate upon a range of cells:

2. Click *Average*.

Excel generates an AVERAGE function and inserts the cell range B4:D4. This is exactly what you want:

E	F	G
Average		
=AVERAGE(B4:D4)		
AVERAGE(number1, [number2], ...)		

3. Press the <Enter> key or click the AutoSum button  again to see the average sales for New York:

3		Jan	Feb	Mar	Average
4	New York	22,000	29,000	19,000	23,333

- 5 Type the word: **Maximum** into cell F3 and then press the <Enter> key.

- 6 Use AutoSum to create a formula in cell F4 that will show the Maximum New York Sales for this period.

1. Place an AutoSum in cell F4 but this time, choose *Max* from the drop-down menu.


This time you have a small problem. AutoSum is including the average value (23,333) in the calculation.

**First Quarter Sales and Profit-5**

	B	C	D	E	F
	Jan	Feb	Mar	Average	Maximum
	22,000	29,000	19,000	23,333	=MAX(B4:E4)

2. Select cells B4:D4 with the mouse
3. Notice that the MAX function is now working with the (correct) range B4:D4.

	A	B	C	D	E	F
4	New York	22,000	29,000	19,000	23,333	=MAX(B4:D4)

4. Press the <Enter> key or click the AutoSum button  once more to see the maximum sales the New York office managed during the first quarter of the year:

3		Jan	Feb	Mar	Average	Maximum
4	New York	22,000	29,000	19,000	23,333	29,000

## tip


Another way to bring back the blue box showing a range is to click the range in the *Formula Bar*.

- 7 Change the words *USA Sales* in cell A9 back to: **Sales** and press the <Tab> key.
- 8 Press the <F2> key on the keyboard (or double-click cell B9) to bring back the marquee (shown as a blue box).
- 9 Adjust the marquee using click and drag so that all offices are included in the Sales total.

Notice that there is a small blue spot on each corner of the range. These are called *sizing handles*.

1. Hover the mouse cursor over the bottom right (or bottom left) sizing handle until the cursor shape changes to a double-headed arrow. It is really important that you see the double-headed arrow and not the four-headed arrow or white cross.

4	New York	22,000
5	Los Angeles	42,000

2. When you see the double headed arrow click and drag with the mouse down to cell B8.
3. Release the mouse button.
4. Press the <Enter> key or click the AutoSum button  again.

	A	B
3		Jan
4	New York	22,000
5	Los Angeles	42,000
6	London	18,000
7	Paris	35,000
8	Munich	12,000
9	Sales	129,000
10	Jan/Mar Sales	257,000

- 10 Save your work as *First Quarter Sales and Profit-6*.

## Lesson 2-12: Create your own formulas

The AutoSum tool is very useful for quickly inserting SUM, AVERAGE, COUNT, MAX and MIN formulas into cells. Many Excel users never get any further with their formulas than this.

In this session, you'll create your own formulas without the use of AutoSum.

- 1 Open *First Quarter Sales and Profit-6* from your sample files folder (if it isn't already open).
- 2 Select cells A10:B10 and press the **<Delete>** key once.  
The previous contents of cells A10:B10 are removed.
- 3 Type the word **Costs** into cell A11 and **Profit** into cell A12.
- 4 Type the value **83,000** into cell B11 and press the **<Enter>** key to move down to cell B12.

11	Costs	83,000
12	Profit	

- 5 Enter a formula into cell B12 to compute the profit made in January.
  1. Type: **=B9-B11** into cell B12.
  2. Press the **<Enter>** key.

The profit for January is displayed:

9	Sales	129,000
10		
11	Costs	83,000
12	Profit	46,000

- 6 Enter the formula again using the mouse to select cell references.

The method that you have just used to enter the formula works just fine, but it isn't best practice. Eventually you will make a mistake. For example, you could easily type **=B8-B11** resulting in an incorrect result.

To eliminate such errors, you should always select cell references visually rather than simply typing them in. You can visually select cells using either the mouse or the keyboard. First, you'll use the mouse method.

1. Click in cell B12 and press the **<Delete>** key on the keyboard to clear the old formula.
2. Press the equals **<=>** key on the keyboard.
3. Click once on the value 129,000 in cell B9.
4. Press the minus **<->** key on the keyboard.
5. Click once on the value 83,000 in cell B11.

### Important

**Formulas automatically recalculate whenever any of the cells in the formula change.**

For example, if you were to change the *Paris Jan* sales value in cell B7 to 45,000 (and then press the **<Enter>** key) this would cause the (total Jan) *Sales* value in cell B9 to re-calculate to 139,000.

Because the value in cell B9 has changed this would, in turn, cause the *Profit* value in cell B12 to recalculate to 56,000.

And because the value in cell B12 has changed this will cause the *10% Bonus* value to recalculate to 5,600.

**First Quarter Sales and Profit-6**



6. Press the <Enter> key on the keyboard.

If you followed the above steps carefully you will see that you have created the same formula but with a much lower possibility of making a mistake.

## 7 Enter the formula again using the visual keyboard technique.

The very best Excel experts hardly use the mouse. You waste valuable seconds every time you reach for the mouse.

Here's the expert technique of visual selection via keyboard:

1. Use the arrow keys to navigate to cell B12 and then press the <Delete> key on the keyboard to clear the old formula.
2. Press the <=> key on the keyboard.
3. Press the <Up Arrow> key three times to move to cell B9.
4. Press the <=> key on the keyboard.
5. Press the <Up Arrow> key once to move to cell B11.
6. Press the <Enter> key on the keyboard.

## 8 Enter a formula that uses the multiplication operator to calculate a 10% bonus paid upon profits.

This employer is very generous and pays the staff ten percent of all profits as an incentive bonus.

1. In cell A13 type the words: **10% Bonus** and then press the <Tab> key on the keyboard to move to cell B13.

The multiplication operator is not an X as you might expect but an asterisk (\*). The other Excel operators are shown in the sidebar.

You need to press <Shift>+<8> to enter an asterisk. If you are using a full size keyboard with a numeric keypad at the right-hand side you can also use the numeric keypad's <\*> key.

Whichever key you use you'll still see an asterisk in the formula.

2. Use either the *mouse selection* technique or the *visual keyboard* technique to enter the formula shown below into cell B13 and then press the <Enter> key to see how much bonus was earned:

	A	B
11	Costs	83,000
12	Profit	46,000
13	10% Bonus	=B12*0.1

Note that multiplying a value by 0.1 calculates ten percent of the value. If you progress to the *Essential Skills* book in this series, you'll learn a lot more about calculating and formatting percentages in: *Session Four: Making Your Worksheets Look Professional*.

11	Costs	83,000
12	Profit	46,000
13	10% Bonus	4,600

## 9 Save your work as *First Quarter Sales and Profit-7*.

### important

#### The Excel Operators

	Name	Example
+	Addition	1+2
-	Subtraction	7-5
*	Multiplication	6*3
/	Division	15/5
%	Percent	25%
^	Exponentiation	4^2

## trivia

The feature that Excel uses to help you out with function calls first made an appearance in Visual Basic 5 back in 1996 and had the wonderful name:

*IntelliSense*. The Excel implementation is called *Formula AutoComplete*.

In 1996 I was working in Switzerland (as a programmer and analyst) developing a ski-school management application. I was extremely impressed by how easy *IntelliSense* made my job. I didn't have to remember hundreds of function names anymore.

I was even slightly worried that just about anybody could now program (but, of course, I was wrong).

Recently I was in London being driven by a Hackney cab driver (Hackney cab drivers know every shortcut and back street in London). He was worried that satellite navigation devices would now enable anybody to become a London cabbie.

Of course, he really had nothing to worry about either.

## note

### Excel automatically adds closing brackets to functions

If you type:

**=SUM(B4:B5**

... and then press the **<Enter>** or **<Tab>** key, Excel will automatically add the closing bracket for you resulting in:

**=SUM(B4:B5)**

**First Quarter Sales and Profit-7**

# Lesson 2-13: Create functions using Formula AutoComplete

- 1 Open *First Quarter Sales and Profit-7* from your sample files folder (if it isn't already open).
- 2 Type the words **USA Sales** into cell A15 and **European Sales** into cell A16.
- 3 If necessary, re-size column A so that it is wide enough for the words *European Sales* to fit within the column.

You learned how to do this in: *Lesson 2-9: Re-size rows and columns*.

	A
15	USA Sales
16	European Sales

- 4 Click into cell B15 and type **=S** into the cell.

Something interesting happens:

15	USA Sales	=S
16	European Sales	
17		
18		
19		

A list appears showing every function in the Excel function library beginning with S. This feature is called *Formula AutoComplete* (if AutoComplete didn't display as expected see the facing-page sidebar).

You've already encountered the SUM, AVERAGE and MAX functions provided by AutoSum.

You may be pleased (or dismayed) to know that there are over 500 functions in the current Excel 365 function library. The good news is that most untrained Excel users only understand how to use the SUM and AVERAGE functions.

When you typed **=S** Excel listed all functions beginning with S.

- 5 Continue typing: **=SU**

Notice that the list now only shows functions beginning with SU and you can see the *SUM* function that you need three down in the list.

You could simply click on the SUM function with the mouse but let's work like an Excel pro and use the keyboard.

- 6 Press the **<Down Arrow>** key twice to move the cursor over the SUM function.

The SUM function now has a tip telling you what the function does:

15	USA Sales	=SU
16	European Sales	
17		
18		
19		

## note

### Enabling and disabling AutoComplete

As with so many other features, Microsoft allows you to turn this very useful feature off.

You'd never want to do this, but you may work on a machine that has had Formula AutoComplete switched off and you need to turn it on again.

Click:

File→Options→Formulas→Working with formulas

...and make sure that the *Formula AutoComplete* box is checked.

## note

### The Syntax box

The Syntax box tells you which arguments (sometimes called parameters) the function needs.

`SUM(number1, [number2], ...)`

The first argument has no square brackets meaning that you can't leave it out.

The second argument (shown in square brackets) is optional.

The third argument is an ellipsis (a row of three dots). This means that you could continue with more arguments such as [number3], [number4] etc.

For such a simple function as SUM the syntax box is hardly needed, but later in this course you'll encounter complex functions that require several arguments and then the syntax box will be invaluable.

## 7 Display Excel's help topic for the SUM function.

The tip tells you a little about the SUM function but to get the full story press the <F1> key while SUM is still highlighted in the dropdown list.

The Excel help system opens showing detailed help for the SUM function.

Read the help text if you are interested and then close the help window.

Notice that Excel has now left you with only =SU in the cell.

## 8 Complete the function by typing: M(

15	USA Sales	=SUM(	
16	European Sales	SUM(number1, [number2], ...)	

Notice that a little box has appeared beneath the function. This box displays the *Syntax* of the SUM function (see sidebar for more information about the Syntax box).

## 9 Select the cells that you need to sum (cells B4:B5) with the mouse or keyboard.

If you want to be a real pro, you should select them with the keyboard. To do this:

1. Press the <Up Arrow> key repeatedly until you reach cell B4.
2. Hold down the <Shift> key and press the <Down Arrow> key once to select cells B4:B5.

## 10 Type a closing bracket to complete the formula and then press the <Enter> key.

The total USA sales are displayed in cell B15.

## 11 Use the same technique to create a SUM function in cell B16 to show the total European sales (cells B6:B8).

1. Click in cell B16.
2. Type =SU
3. Press the <Down Arrow> key twice to move the cursor over the SUM function.
4. Press the <Tab> key to automatically enter the SUM function into cell B16.
5. Select the range B6:B8.
6. Type the closing bracket (this isn't really necessary – see sidebar facing page).

The formula should now be: =SUM(B6:B8)

7. Press the <Enter> key.

	A	B
15	USA Sales	64,000
16	European Sales	65,000

## 12 Save your work as *First Quarter Sales and Profit-8*.

## Lesson 2-14: Use AutoFill for text and numeric series

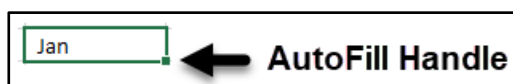
- 1 Open *First Quarter Sales and Profit-8* from your sample files folder (if it isn't already open).

- 2 Delete the text **Feb** and **Mar** from cells C3:D3.

Select cells C3:D3 and then press the <Delete> key on your keyboard.




- 3 Make B3 the active cell.

Click once inside cell B3. Notice that there is a green border around the cell and a spot on the bottom right-hand corner. This is the AutoFill handle. If you don't see it, refer to the sidebar.



- 4 Hover over the AutoFill handle with your mouse until the cursor shape changes to a black cross.

Many of my students have great difficulty with this when they try it for the first time.

- You don't want the four-headed arrow:  – that would move the cell.
- You don't want the white cross:  – that would select the cell.
- You want the black cross:  – the AutoFill cursor.



- 5 When the black cross cursor is visible, hold down the mouse button and drag your mouse to the right to AutoFill the other months: **Feb** and **Mar**.

Jan			
22,000	29,000	Mar	19,000
13,000	20,000		13,000

Notice the tip that appears as you drag, previewing the month that will appear in each cell.

When you release the mouse button, the name of each month appears in cells C3 and D3.

	B	C	D
3	Jan	Feb	Mar

- 6 Type: **Monday** into cell A18 and AutoFill down to cell A24 to show the days of the week.

(If you are not using an English language version of Excel you will need to type **Monday** in your own language).

### note

#### If you don't see the AutoFill handle somebody has disabled AutoFill

It's almost certain that AutoFill will be enabled on any computer that you work on. It is such a useful feature that you wouldn't want to disable it.

If you don't see the AutoFill handle (the black spot on the bottom right-hand corner of the active cell) it's because somebody has switched AutoFill off.

To bring it back click:

File→Options→Advanced

In the first section (*Editing Options*) check the box next to *Enable fill handle and cell drag-and-drop*.

**First Quarter Sales and Profit-8**

**tip**

You don't have to enter two numbers if you want to create a sequential numeric range.

If you simply type a number into a cell and then AutoFill while holding down the <Ctrl> key, you will automatically generate sequential numbers.

**note**

### Why your numbers may display differently to those in the screen grabs

This book was written using the *English (United States) Region format* settings.

The *Region format* for *English (United States)* numbers uses the decimal separator for a period and a comma for the thousand's separator.

This displays formatted numbers such as 12,345.67.

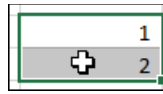
If you are situated in a different country, your numbers may be formatted in a way that is more appropriate to your location. For example, the decimal separator in France, Germany and many other countries is a comma.

While it is possible to change your locale (in Windows settings) there is no need to do so to work through this book.

Just be aware that some of the screen grabs in this book will be formatted differently to what you see on your screen.

- 7 In cell B18 type the number **1** and in cell B19 type the number **2**.

- 8 Select cells B18 and B19.



- 9 AutoFill down to cell B24 to create sequential numbers:

	A	B
18	Monday	1
19	Tuesday	2
20	Wednesday	3

- 10 In cell C18 type **9** and in cell C19 type **18**.

- 11 Select cells C18 and C19.



- 12 AutoFill down to cell C24 to create the nine times table.

	A	B	C
18	Monday	1	9
19	Tuesday	2	18
20	Wednesday	3	27

These are both examples of linear series. You'll learn more about linear series later, in: *Lesson 2-18: Understand linear and exponential series*

- 13 Use AutoFill to create sequential dates.

1. Type: **01-Jan-22** into cell D18.
2. Type: **02-Jan-22** into cell D19.
3. Select cells D18:D19.
4. AutoFill down to D24 to create sequential dates.

- 14 Use AutoFill to quickly copy text.

Sometimes you will want to duplicate the value from one cell into many others to the right of, left of, beneath, or above the active cell.

When a cell containing text is the active cell and it isn't defined as a *fill series* (the built-in fill series are days of the week and months of the year), AutoFill will simply duplicate the contents of the cell.

Type the text **Adjusted** into cell E18 and then AutoFill it down as far as cell E24. The same text is now shown in each of the cells:

	A	B	C	D	E
18	Monday	1	9	1-Jan-22	Adjusted
19	Tuesday	2	18	2-Jan-22	Adjusted
20	Wednesday	3	27	3-Jan-22	Adjusted
21	Thursday	4	36	4-Jan-22	Adjusted
22	Friday	5	45	5-Jan-22	Adjusted
23	Saturday	6	54	6-Jan-22	Adjusted
24	Sunday	7	63	7-Jan-22	Adjusted

- 15 Save your work as *First Quarter Sales and Profit-9*.

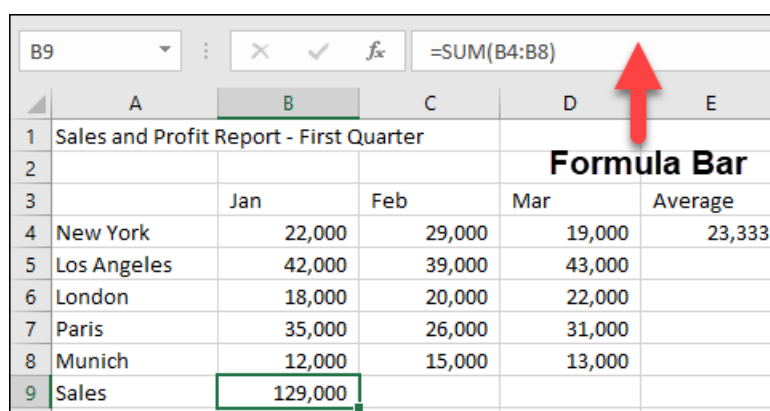
## Lesson 2-15: Use AutoFill to adjust formulas

AutoFill can save you a lot of time when extending or copying text, number and date sequences.

In this lesson you'll discover that AutoFill is also able to adjust cell references within formulas.

- 1 Open *First Quarter Sales and Profit-9* from your sample files folder (if it isn't already open).
- 2 Consider the formula in cell B9.

Click onto cell B9 and view the formula displayed in the formula bar (the formula bar is at the top right of the screen grab below).



	A	B	C	D	E
1	Sales and Profit Report - First Quarter				
2					
3		Jan	Feb	Mar	Average
4	New York	22,000	29,000	19,000	23,333
5	Los Angeles	42,000	39,000	43,000	
6	London	18,000	20,000	22,000	
7	Paris	35,000	26,000	31,000	
8	Munich	12,000	15,000	13,000	
9	Sales	129,000			

The formula is **=SUM(B4:B8)**. AutoSum created it for you in: *Lesson 2-3: Use AutoSum to quickly calculate totals*. The formula uses the SUM function to add together the values in the range B4:B8.

Think about the formula that would work in cell C9 (the total sales for February). It would be: **=SUM(C4:C8)**. Similarly the formula that would work in cell D9 (the total sales for March) would be **=SUM(D4:D8)**.

As you move to the right, all that is needed is to increment the letter for each cell reference in the formula and you'll get the right answer every time.

AutoFill understands this. When you AutoFill a cell containing a formula to the right, AutoFill automatically increments the letters in each cell reference.

Most of the time that is exactly what you want.

If you progress to the *Essential Skills* book in this series, you'll learn how to fine-tune the way in which AutoFill adjusts cell references in: *Session Three: Taking Your Skills to the Next Level*. This will enable you to implement some more advanced AutoFill techniques.

- 3 AutoFill cell B9 to the right as far as cell D9.

You learned how to do this in: *Lesson 2-14: Use AutoFill for text and numeric series*.

**First Quarter Sales and Profit-9**



You may see a row of hashes in cell C9 and/or D9. This is because the value may be too wide to fit in the cell. If this is the case, AutoFit the column using the skills learned in: *Lesson 2-9: Re-size rows and columns*.

The correct answers for *Feb* and *Mar* sales are shown on the worksheet. Click on the *Feb* total cell (C9) and look at the formula in the formula bar.

C9				=SUM(C4:C8)
	A	B	C	D
1	Sales and Profit Report - First Quarter			
2				
3		Jan	Feb	Mar
4	New York	22,000	29,000	19,000
5	Los Angeles	42,000	39,000	43,000
6	London	18,000	20,000	22,000
7	Paris	35,000	26,000	31,000
8	Munich	12,000	15,000	13,000
9	Sales	129,000	129,000	128,000

You can see that AutoFill has done its job perfectly, creating the sum of the values in cells C4:C8. Our five branches have sold exactly the same amount in both January and February, but a little less in March.

#### 4 Consider the formula in cell E4.

Click onto cell E4 and view the formula displayed in the formula bar.

E4					=AVERAGE(B4:D4)
	A	B	C	D	E
1	Sales and Profit Report - First Quarter				
2					
3		Jan	Feb	Mar	Average
4	New York	22,000	29,000	19,000	23,333
5	Los Angeles	42,000	39,000	43,000	
6	London	18,000	20,000	22,000	

The formula is **=AVERAGE(B4:D4)**. AutoSum created it for you in: *Lesson 2-11: Use AutoSum to calculate average and maximum values*.

Think about the formula that would work in cell E5 (the average sales for Los Angeles). It would be: **=AVERAGE(B5:D5)**. Similarly the formula that would work in cell E6 (the average sales for London) would be **=AVERAGE(B6:D6)**.

As you move downward, all that is needed is to increment the number for each cell reference in the formula. This is exactly what AutoFill will do.

E	F
Average	Maximum
23,333	29,000
41,333	43,000
20,000	22,000
30,667	35,000
13,333	15,000

#### 5 AutoFill cell E4 down to E8 to see the average sales for each branch.

#### 6 AutoFill cell F4 down to F8 to view the maximum sales for each branch.

#### 7 Save your work as *First Quarter Sales and Profit-10*.



## Lesson 2-16: Use AutoFill options

Sometimes AutoFill begins to misbehave and can even get in the way of efficient work by wrongly anticipating what you need.

- 1 Open *First Quarter Sales and Profit-10* from your sample files folder (If it isn't already open).
- 2 Populate cells F18 to F24 with sequential dates beginning with 1-Jan-22 using AutoFill.
  1. In cell F18 type the date: **1-Jan-22**
  2. AutoFill cell F18 down as far as cell F24.

The cells are populated with sequential dates:

	A	B	C	D	E	F
18	Monday	1	9	1-Jan-22	Adjusted	1-Jan-22
19	Tuesday	2	18	2-Jan-22	Adjusted	2-Jan-22
20	Wednesday	3	27	3-Jan-22	Adjusted	3-Jan-22
21	Thursday	4	36	4-Jan-22	Adjusted	4-Jan-22
22	Friday	5	45	5-Jan-22	Adjusted	5-Jan-22
23	Saturday	6	54	6-Jan-22	Adjusted	6-Jan-22
24	Sunday	7	63	7-Jan-22	Adjusted	7-Jan-22

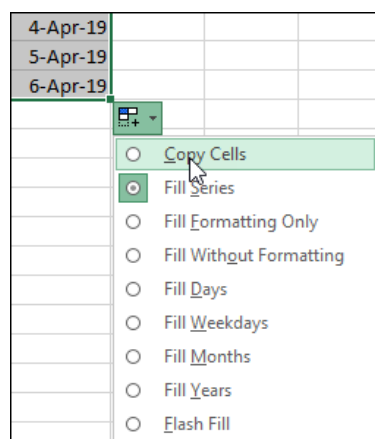
- 3 Populate cells G18 to G24 with the date *31-Mar-22* using the AutoFill Smart Tag.
  1. In cell G18 type the date: **31-Mar-22**
  2. AutoFill down as far as cell G24.

At some time, you'll need to add transaction dates to a worksheet and will have four or five entries with the same date.

AutoFill is perfect for eliminating the need to re-type the date for each transaction, but its insistence upon incrementing the date every time could be very frustrating.

Fortunately, you can change the default behavior.

3. Click the Auto Fill Options Smart Tag  at the bottom right corner of the filled cells.



**First Quarter Sales and Profit-10**

4. Click *Copy Cells* to tell AutoFill not to increment the date.

#### 4 Understand AutoFill options.

If you progress to the *Essential Skills* book in this series *The Fill Formatting* options will be covered in: *Session Four: Making Your Worksheets Look Professional*.

*Flash Fill* will be introduced later in: *Lesson 2-19: Use automatic Flash Fill to split delimited text*. Here's what the other options will do:

Copy Cells	Fill Series	Fill Days	Fill Weekdays	Fill Months	Fill Years
This is what you just did.  The first cell is copied to the other cells.	The default for dates that include the day.  The date increments by one day at a time.	The date increments by one day at a time.	Because 1st April 2022 is a Friday the weekend days are omitted, and the series jumps from 1st April to 4th April.	Normally this would show the same day number for each month. In this example, there are only 30 days in three of the months so 30 <sup>th</sup> is shown instead of 31 <sup>st</sup> .	The same calendar day is shown for each subsequent year.
31-Mar-22 31-Mar-22 31-Mar-22 31-Mar-22 31-Mar-22 31-Mar-22 31-Mar-22	31-Mar-22 1-Apr-22 2-Apr-22 3-Apr-22 4-Apr-22 5-Apr-22 6-Apr-22	31-Mar-22 1-Apr-22 2-Apr-22 3-Apr-22 4-Apr-22 5-Apr-22 6-Apr-22	31-Mar-22 1-Apr-22 4-Apr-22 5-Apr-22 6-Apr-22 7-Apr-22 8-Apr-22	31-Mar-22 30-Apr-22 31-May-22 30-Jun-22 31-Jul-22 31-Aug-22 30-Sep-22	31-Mar-22 31-Mar-23 31-Mar-24 31-Mar-25 31-Mar-26 31-Mar-27 31-Mar-28

#### 5 Populate cells G18 to G24 with sequential dates using a right-click AutoFill.

- Click on cell G18 to make it the active cell.
- AutoFill down to cell G24, but this time hold down the right mouse button (instead of the left).

When you release the mouse button you are instantly presented with the AutoFill options (see sidebar).

There are two new options here: *Linear Trend* and *Growth Trend*.

You'll learn how these can be used later, in: *Lesson 2-18: Understand linear and exponential series*.

This method is preferred to the Smart Tag method because it is faster (one click instead of two).

- Click: *Fill Series* or *Fill Days*.

In this example *Fill Series* and *Fill Days* produce exactly the same result.

#### 6 Save your work as *First Quarter Sales and Profit-11*.

Copy Cells
Fill Series
Fill Formatting Only
Fill Without Formatting
Fill Days
Fill Weekdays
Fill Months
Fill Years
Linear Trend
Growth Trend
Flash Fill
Series...

## Lesson 2-17: Speed up your AutoFills and create a custom fill series

In this lesson, you're going to learn some advanced AutoFill techniques that will massively speed up your efficient use of the AutoFill feature.

- 1 Open *First Quarter Sales and Profit-11* (if it isn't already open).
- 2 Delete the values in cells G18:G24.
- 3 Type the value: **31-Mar-22** into cell G18.

	A	B	C	D	E	F	G
18	Monday	1	9	1-Jan-22	Adjusted	1-Jan-22	31-Mar-22
19	Tuesday	2	18	2-Jan-22	Adjusted	2-Jan-22	
20	Wednesday	3	27	3-Jan-22	Adjusted	3-Jan-22	
21	Thursday	4	36	4-Jan-22	Adjusted	4-Jan-22	
22	Friday	5	45	5-Jan-22	Adjusted	5-Jan-22	
23	Saturday	6	54	6-Jan-22	Adjusted	6-Jan-22	
24	Sunday	7	63	7-Jan-22	Adjusted	7-Jan-22	

- 4 Use an AutoFill double-click to populate cells G19:G24 with sequential dates.

	F	G
17		
18	1-Jan-19	31-Mar-19
19	2-Jan-19	1-Apr-19
20	3-Jan-19	2-Apr-19
21	4-Jan-19	3-Apr-19
22	5-Jan-19	4-Apr-19
23	6-Jan-19	5-Apr-19
24	7-Jan-19	6-Apr-19

1. Click on cell G18 to select it.
2. Hover over the AutoFill handle (the black spot at the bottom right-hand corner of cell G18). When you are sure that you have the correct black cross cursor shape, double click to automatically fill down to the end of the range.

Cells G19 to G24 are filled with sequential dates (as this is the default behavior of AutoFill).

- 5 Use *AutoFill <Ctrl>-Drag* to copy the value in cell G18 to cells G19:G24.

1. Delete all of the dates from cells G19:G24, leaving only the date **31-Mar-22** in cell G18.
2. Click in cell G18 to make it the active cell.
3. Hold down the **<Ctrl>** key and AutoFill cell G18 down as far as cell G24 by dragging the AutoFill handle down with the mouse.
4. Release the mouse button.

Because you held the **<Ctrl>** key down, AutoFill copied the cell instead of creating a series of values.

	A	B	C	D	E	F	G
18	Monday	1	9	1-Jan-22	Adjusted	1-Jan-22	31-Mar-22
19	Tuesday	2	18	2-Jan-22	Adjusted	2-Jan-22	31-Mar-22
20	Wednesday	3	27	3-Jan-22	Adjusted	3-Jan-22	31-Mar-22
21	Thursday	4	36	4-Jan-22	Adjusted	4-Jan-22	31-Mar-22
22	Friday	5	45	5-Jan-22	Adjusted	5-Jan-22	31-Mar-22
23	Saturday	6	54	6-Jan-22	Adjusted	6-Jan-22	31-Mar-22
24	Sunday	7	63	7-Jan-22	Adjusted	7-Jan-22	31-Mar-22

**First Quarter Sales and Profit-11**

This is even faster than using the right-click method when you want to prevent the date (or a number) from incrementing.

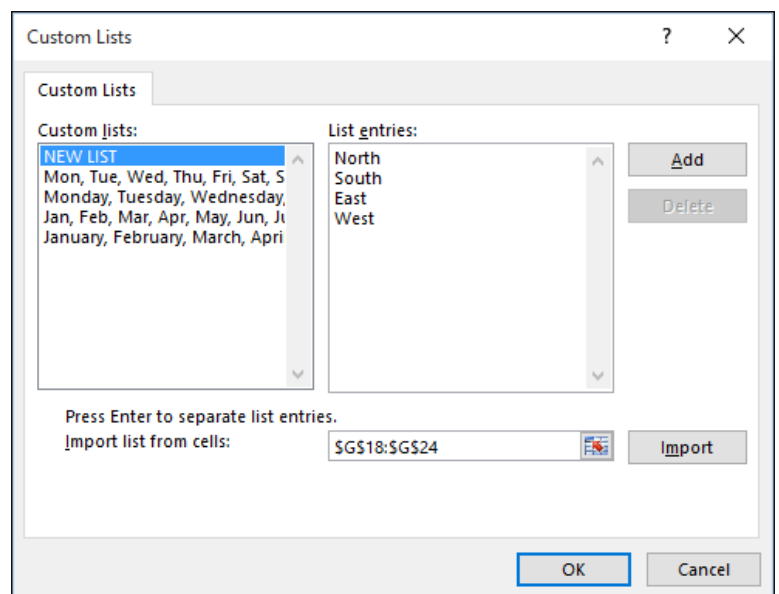
## 6 Create a custom list containing the values: *North*, *South*, *East* and *West*.

1. Click: File→Options→Advanced.
2. Scroll down to the *General* category and click the *Edit Custom Lists...* button.

Edit Custom Lists...

The *Custom Lists* dialog appears.

3. Click in the *List entries* window and add four custom list entries: **North**, **South**, **East** and **West** (pressing the <Enter> key after each entry).



4. Click the OK button and OK again to close the dialogs.

## 7 Use the newly created custom list.

Type **North** in any cell and AutoFill down.

As you AutoFill, the custom list entries appear in the worksheet (see sidebar).

North
South
East
West
North
South
East
West

- 8 Delete the *North*, *South*, *East*, *West* cells from the worksheet.
- 9 Save your work as *First Quarter Sales and Profit-12*.

## important

A synonym is a word you use when you can't spell the other one.

**Baltasar Gracián**  
(Philosopher 1601-1658)

Excel uses different terminology in various menus, dialog boxes and task panes that mean the same thing (in the context of this lesson):

*Series*, *Forecast* and *Trend* mean the same thing.

*Growth* and *Exponential* also mean the same thing.

In this lesson I'll consistently use the terminology *Series* and *Exponential*.

## note

### Excel can calculate a linear series when the step values of cells are not equal

Excel calculates a linear series (AutoFill also calls this a *fill series*) using this formula:

Start Value + Step Value

Sometimes you may need to produce linear series values from a series of numbers that have different step values. For example, consider this range:

	A	B
2	Value	Step Value
3	1	
4	2.1	1.1
5	2.9	0.8
6	4.1	1.2

In this case Excel will use a more complex mathematical operation (called the *least-squares algorithm*) to determine the correct step value to use. In the above example, Excel would calculate a step value of 1.01.

### Rabbit Population

# Lesson 2-18: Understand linear and exponential series

## Linear series

In: Lesson 2-14: Use AutoFill for text and numeric series, you used AutoFill's *Fill Series* method to automatically create these numeric series:

	A	B	C
18	Monday	1	9
19	Tuesday	2	18
20	Wednesday	3	27

These are both examples of *Linear* series.

To create the linear series in column C you selected cells C18:C19 before AutoFilling down the column:

	A	B	C
18	Monday	1	9
19	Tuesday	2	18
20	Wednesday	3	
21	Thursday	4	

To calculate a linear series Excel first identifies the *step value*. The linear series in column C has a *step value* of nine ( $18-9=9$ ).

When you use AutoFill's *Fill Series* method, Excel adds the *step value* to the *start value* (the number shown in the previous cell).

In the above example, if you AutoFill down to cell C20, the value shown in cell C20 will be 27. This is calculated by adding the *step value* of 9 to the *start value* of 18.

This is an example of a very simple linear series. Excel is also able to calculate a linear series even when the step values of the selected cells are not equal (see sidebar).

## Exponential (or Growth) series

An exponential series is calculated by *multiplying* (rather than adding) the *start value* by the *step value*. This type of series is usually referred to as an *exponential* (rather than linear) series. Excel also uses the term *growth series* as a synonym for *exponential series* (see sidebar).

Here's an example:

- A truly excellent restaurant opens in town. On the first day they only have one customer, but the customer is so delighted by the food, service and value that the customer tells two friends.
- The next day the two friends eat there, and the restaurant has two diners.
- The two friends are also so pleased with their experience that they each tell two friends. On the third day the restaurant has four diners.

You can see that the restaurant owner might expect that this trend will continue and that each day the number of diners will double (in Excel's

## note

Here's how you could have used the Ribbon to complete this lesson:

1. Enter the value **200** into cell B4.
2. Select cells B4:B51.
3. Click: Home→Editing→Fill→Series...

The *Series* dialog appears.

4. Enter the following values into the *Series* dialog:

Note that the value: **1.2** is used because an exponential (growth) series multiplies each *start value* by the *step value*.

## trivia

According to an old legend, the inventor of the game of chess presented his new game to a powerful king. The king was so pleased with the game that he offered the inventor any reasonable reward.

The inventor asked for one grain of rice for the first square on the chessboard, two for the second, four for the third... and so on for each of the 64 squares on the chessboard.

The king thought the inventor was foolish to ask for such a simple gift. Much later he found that there was not enough rice in the entire world to fulfil the inventor's request.

With the Excel skills you have learned in this lesson, you should easily be able to model the king's dilemma and discover exactly how many grains of rice would have been needed (about 18.5 quintillion).

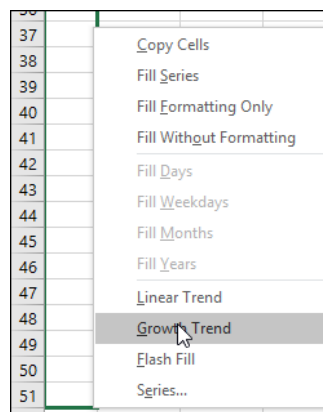
terminology, the *step value* is 2). Eventually, of course, the restaurant will become full, and the trend will have to end (in Excel's terminology the number of seats in the restaurant is the *stop value*).

In this lesson you will model this type of exponential series.

1. Open *Rabbit Population* from your sample files folder.
2. If the rabbit population of an island increases at the rate of 20% per month, use an exponential progression to calculate how a newly introduced community of 200 rabbits will grow in four years.
  1. Type the value: **200** into cell B4 to set the rabbit population at the beginning of the period.
  2. Type the value: **240** into cell B5 to set the rabbit population after one month.
  3. Select the range B4:B5.
  4. Hold down the right mouse button on the AutoFill handle at the bottom-right of the selected range and drag down to AutoFill to cell B51.

	A	B	C
1	Rabbit Population		
2			
3	Month	Population	
4	1	200	
5	2	240	
6	3		
7	4		

5. Click *Growth Trend* from the shortcut menu. Note that this is the shortcut menu's synonym for: *Exponential Series*.



After four years (48 months) the 200 rabbits will have grown to a population of a little over a million.

	A	B
49	46	731,452
50	47	877,743
51	48	1,053,291

3. Save your work as *Rabbit Population-1*.



## note

### If Flash Fill doesn't work for you, somebody has switched it off

It's almost certain that Flash Fill will be enabled on any computer that you work on. It is such a useful feature that you wouldn't want to disable it.

If Flash Fill doesn't work, there are two possible explanations:

1. You are using an earlier version of Excel. Flash Fill was only introduced in Excel 2013.
2. Somebody has switched Flash Fill off.

To switch it back on click:

File→Options→Advanced

In the first section (*Editing Options*) make sure that the *Automatically Flash Fill* check box is checked.

## note

### Help Flash Fill to work correctly by formatting header rows differently

You will notice that, in this lesson's sample file, I have bold-faced the header row:

	B	C
3	<b>First Name</b>	<b>Last Name</b>
4	Jessica	Sagan
5	Stephen	Bell
6	John	Jennings

When Flash Fill sees different formatting in the first row, it will treat this row (correctly) as a header row. Flash Fill then excludes the value in this row from its logic, providing more reliable results.

**Employee Names-1**

# Lesson 2-19: Use automatic Flash Fill to split delimited text

When you place data in cells it is useful to observe an important rule:

### "Keep data atomic"

If you strictly observe this rule, you'll avoid an enormous number of potential problems.

The rule means that, in the same way that the atom is the smallest basic unit you can divide matter into, each worksheet cell should contain the smallest possible amount of data.

Here's a simple example to illustrate the concept:

	A	B
3	<b>Name</b>	
4	Jessica Sagan	
5	Stephen Bell	
6	John Jennings	

Imagine that you want to use the worksheet above to create a mail merge using Word. In this case you'd need the first names in a cell of their own. This would enable you to personalize the mail merge with an introduction such as: *Dear Jessica*.

If you had observed the *keep data atomic* rule, you would have split your data into multiple columns like this:

	B	C
3	<b>First Name</b>	<b>Last Name</b>
4	Jessica	Sagan
5	Stephen	Bell
6	John	Jennings

Excel has a wonderful feature called *Flash Fill*. This feature enables you to quickly and simply split delimited text (such as the above) into separate cells. The term *delimited text* means text that is split using a separator. In this case the separator is a space (see facing page sidebar).

*Automatic Flash Fill* will only work for very simple text splitting tasks such as the one described above. In the lessons that follow you'll learn more complex manual Flash Fill techniques that will enable you to perform some very advanced text splitting tasks.

- 1 Open *Employee Names-1* from your sample files folder.
- 2 Add column headings for *First Name* and *Last Name* in cells B3 and C3.
  1. Click in cell B3.
  2. Type: **First Name**
  3. Press the <Tab> key to move to cell C3.
  4. Type: **Last Name**
  5. Press the <Tab> key to save the value into the cell and move to cell D3.



## note

### Limitations of automatic Flash Fill

Automatic Flash Fill always works perfectly when the source data column has the same type of *separators*.

In this lesson's example, space separators are used. The following example (using comma separators) would also work perfectly:

Sting, Musician
Kingdom Brunel, Engineer
Billie Jean King, Tennis Player

You can see that, without the commas, Flash Fill wouldn't know where the name ended, and the occupation began.

Sometimes you will need to extract data that does not have separators.

You'll discover how to solve this type of problem later, in: *Lesson 2-20: Use manual Flash Fill to split text.*

## note

### Use automatic Flash Fill to extract initials

You can often save a lot of space by showing initials instead of full names. Automatic Flash Fill is well suited to this task.

Try this (at the end of the lesson, after populating columns B and C with first and last names).

1. Type: **JS** (for Jessica Sagan) in cell D4.
2. Type **S** (Stephen Bell's first initial) into cell D5.
3. Press the <Enter> key to accept the Flash Fill.

	B	C	D
4	Jessica	Sagan	JS
5	Stephen	Bell	SB
6	John	Jennings	JJ

- 3 Bold face the text in cells B3 and C3 (if Excel has not done this for you automatically).

You learned how to do this in: *Lesson 1-20: Use the Mini Toolbar, Key Tips and keyboard shortcuts.*

	A	B	C
3	Name	First Name	Last Name

- 4 Use *Flash Fill* to extract the *First Name* values from column A into column B.

1. Type: **Jessica** into cell B4. Be careful to type it exactly as it is spelled in cell A4. Be careful not to leave any leading or trailing spaces.
2. Press the <Enter> key to move to cell B5.
3. Type: **S** (the first letter of *Stephen*) into cell B5.

Notice that something interesting has happened. *Flash Fill* has figured out that you possibly want to extract all the first names from column A and has displayed them all as grayed out names in the cells below:

	A	B	C
3	Name	First Name	Last Name
4	Jessica Sagan	Jessica	
5	Stephen Bell	Stephen	
6	John Jennings	John	
7	Meryl Simpson	Meryl	
8	Alfred Hawking	Alfred	

4. Press the <Enter> key to instruct Flash Fill to enter all the remaining *First Name* values.

All the first names appear in column B.

	A	B	C
3	Name	First Name	Last Name
4	Jessica Sagan	Jessica	
5	Stephen Bell	Stephen	
6	John Jennings	John	
7	Meryl Simpson	Meryl	
8	Alfred Hawking	Alfred	

The status bar (at the bottom left of the screen) also confirms how many cells were changed:

Ready Flash Fill Changed Cells: 23

- 5 Use *Flash Fill* to extract the *Last Name* values from column A into column C.

Follow the same procedure that you used to extract the first names:

	A	B	C
3	Name	First Name	Last Name
4	Jessica Sagan	Jessica	Sagan
5	Stephen Bell	Stephen	Bell
6	John Jennings	John	Jennings
7	Meryl Simpson	Meryl	Simpson

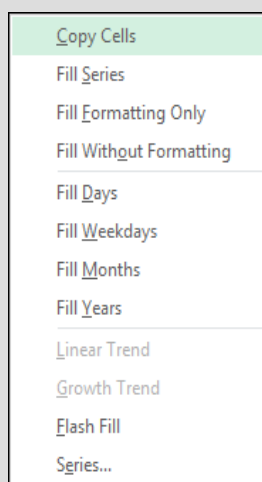
- 6 Save your work as *Employee Names-2*.

## note

### You can also Flash Fill more quickly by using the AutoFill handle

The *AutoFill handle* is the small black dot on the bottom-right corner of the active cell (or range of cells).

In: *Lesson 2-16: Use AutoFill options*, you learned that if you right-click and drag the AutoFill handle you are presented with *AutoFill options*:



You can then use the *Flash Fill* item on the *AutoFill options* list to request a Flash Fill.

You'll find that this method is faster than using the Ribbon.

This method is also the preferred way to provide Flash Fill with more than one example result for more complex problems (you'll do this in: *Lesson 2-21: Use multiple example Flash Fill to concatenate text*).

## Lesson 2-20: Use manual Flash Fill to split text

Here are two examples of international telephone numbers.

+44 (0)113-4960227 (a UK telephone number)

+356 (0)2138-3393 (a Maltese telephone number)

The *country code* (or international dialing code) is shown as a + symbol followed by one or more numbers. The *NDD* (National Direct Dialing prefix) is shown in brackets. This is the access code used to make a call within the relevant country but is omitted when calling from outside the country. The *Area Code* consists of the numbers after the closing bracket but before the hyphen.

In this lesson, you'll use *Manual Flash Fill* to split telephone numbers into the *Country Code*, *Area Code* and *Phone Number* like this:

	A	B	C	D	E
3	<b>Company</b>	<b>Telephone</b>	<b>Country Code</b>	<b>Area Code</b>	<b>Phone Number</b>
4	Books A Million	+44 (0)113-4960227	+44	113	4960227
5	Maltese Books	+356 (0)2138-3393	+356	2138	3393
6	Bargain Bookstore	+44 (0)115-4960498	+44	115	4960498

In early Excel versions you had to use some very complex formulas to split this type of text. With the *Flash Fill* feature, you can achieve the same result in seconds.

- 1 Open *Phone Book-1* from your sample files folder.
- 2 Extract the *Country Code* from the telephone number in column B and place it into column C.

If you were to type **+44** into cell C4, Excel would interpret it as a positive number and display the result as 44 (without the plus sign).

In order to signal to Excel that you want the plus sign to be displayed, you will need to indicate that +44 should be regarded as text rather than as a number.

You discovered the technique for doing this in: *Lesson 2-1: Enter text and numbers into a worksheet (sidebar)*. If an apostrophe is placed before a number, Excel will regard it as text.

1. Type: **'+44** into cell C4 (an apostrophe followed by **+44**).
2. Press the **<Enter>** key.
3. Make sure that the active cell is in a cell within the range that will be Flash Filled (ie anywhere in the range C3:C18),
4. Flash Fill cells C5:C18.

There are four different ways that you can invoke Flash Fill

- Click: Home→Editing→Fill→Flash Fill.
- Click: Data→Data Tools→Flash Fill.
- Use the AutoFill handle (see sidebar).

### Phone Book-1

## note

### The difference between Flash Fill and a formula-based solution

There are two ways to solve the problem posed in this lesson:

#### 1. Use Flash Fill

This is the method used in this lesson. Flash Fill provides a fast and simple solution.

#### 2. Use complex formulas

Only expert Excel users could construct the complex formulas required to split the telephone numbers contained in the sample file without the use of Flash Fill.

If you progress to the *Expert Skills* book in this series, you will complete a lesson that solves exactly the same problem presented in this lesson without Flash Fill.

Complex formulas are used instead, to provide a formula-based solution.

### Advantage of a formula-based solution

The results of a Flash Fill do not automatically update when the source data changes.

This means that if you changed a telephone number in column B you would then need to Flash Fill three times to update columns C, D and E.

Formula results automatically update whenever the source cells change.

This means that if you changed a telephone number in the formula-based solution, the *Country Code*, *Area Code* and *Phone Number* would automatically update.

- Use the shortcut key: <Ctrl>+<E>

Whichever method you use, the country code is extracted into the remaining cells in column C.

	A	B	C
3	Company	Telephone	Country Code
4	Books A Million	+44 (0)113-4960227	+44
5	Maltese Books	+356 (0)2138-3393	+356
6	Bargain Bookstore	+44 (0)115-4960498	+44

Notice that Excel has placed a green triangle in the top-left corner of each cell. Excel thinks you may have made an error but, of course, the value is fine. If you want to remove the green triangles, use the method you learned in: *Lesson 2-4: Select a range of cells and understand Smart Tags.*

#### 3 Extract the *Area Code* from the telephone number in column B and place it into column D.

Use the same method as you did for the country code. The first area code you need to type is: '113

Even though there is no plus sign, it is still useful to include the apostrophe as it will prevent Excel from re-formatting numbers (see next step for more on this).

#### 4 Extract the *Phone Number* from the telephone number in column B and place it into column E.

Use the same method as you did for the country code. The first telephone number is: '4960227

In this case you must use a leading apostrophe to prevent Excel from re-formatting large numbers. For example, the telephone number: 20180948 would be displayed as 2E+07 if you didn't include the apostrophe.

The *Country Code*, *Area Code* and *Phone Number* are now extracted for every international telephone number:

	A	B	C	D	E
3	Company	Telephone	Country Code	Area Code	Phone Number
4	Books A Million	+44 (0)113-4960227	+44	113	4960227
5	Maltese Books	+356 (0)2138-3393	+356	2138	3393
6	Bargain Bookstore	+44 (0)115-4960498	+44	115	4960498

#### 5 Save your work as *Phone Book-2*.

## note

### Flash Fill doesn't understand mathematics

Consider this problem:

	A	B
1	100	101
2	1120	1121
3	180	
4	149	

You could be forgiven for thinking that Flash Fill could populate cells B3 and B4 with the numbers 181 and 150. In order to produce this result Flash Fill would have to detect a mathematical relationship between the numbers in columns A and B.

Because Flash Fill doesn't understand mathematics, it will always see the problem as a textual one and will produce this result:

	A	B
1	100	101
2	1120	1121
3	180	181
4	149	141

Flash Fill has used the logic "replace the last character displayed in column A with 1" and not "Add one to the value displayed in column A".

# Lesson 2-21: Use multiple example Flash Fill to concatenate text

## Understand concatenation

In: *Lesson 2-19: Use automatic Flash Fill to split delimited text*, you learned how to split text with this example:

	A	B	C
3	<b>Name</b>	<b>First Name</b>	<b>Last Name</b>
4	Jessica Sagan	Jessica	Sagan
5	Stephen Bell	Stephen	Bell

In the above example, the text: *Jessica Sagan* was split into two separate words: *Jessica* and *Sagan*.

Concatenation is exactly the opposite of splitting. The two separate words *Jessica* and *Sagan* can be concatenated to produce the single word: *Jessica Sagan*. This is an example of very simple concatenation.

In this lesson, you'll perform some very advanced concatenation using *Flash Fill*.

### 1 Open *Client Names-1* from your sample files folder.

This workbook contains a list of very inconsistently formatted client names:

	A	B	C	D
3	<b>Last</b>	<b>Middle</b>	<b>First</b>	
4	Sagan	Elizabeth	Jessica	
5	Bell	p	Stephen	
6	Jennings		John	

You want to clean up this data so that client names are consistently formatted like this:

	A	B	C	D
3	<b>Last</b>	<b>Middle</b>	<b>First</b>	<b>Formatted Name</b>
4	Sagan	Elizabeth	Jessica	Sagan, Jessica E.
5	Bell	p	Stephen	Bell, Stephen P.
6	Jennings		John	Jennings, John
7	Simpson	Jane	Meryl	Simpson, Meryl J.
8	hawking		Alfred	Hawking, Alfred
9	Ashe	m	Lucille	Ashe, Lucille M.

For Flash Fill to automate this task you will need to tell Flash Fill what is needed by providing more than one example.

### 2 Type: **Formatted Name** into cell D3 and bold face the text.

(Excel will probably bold-face the text automatically).

It is important that the header text in row 3 is bold faced.

**Client Names-1**

When Flash Fill sees different formatting in the first row, the row is assumed to be a header row. Flash Fill then excludes the value in the header row from its logic, providing more reliable results.

### 3 Provide a single example result in cell D4.

Type: **Sagan, Jessica E.** into cell D4.

### 4 Flash Fill cells D5:D9 based upon the example result in cell D4.

	A	B	C	D
3	<b>Last</b>	<b>Middle</b>	<b>First</b>	<b>Formatted Name</b>
4	Sagan	Elizabeth	Jessica	Sagan, Jessica E.
5	Bell	p	Stephen	Bell, Stephen T.
6	jennings		John	jennings, John O.
7	Simpson	Jane	Meryl	Simpson, Meryl E.
8	hawking		Alfred	hawking, Alfred L.
9	Ashe	m	Lucille	Ashe, Lucille U.

You learned how to do this in: *Lesson 2-20: Use manual Flash Fill to split text.*

Excel completes the task, but the results are not what you wanted (see sidebar).

With only one example, Flash Fill has completely misunderstood the requirement.

### 5 Provide two example results in cells D4 and D5.

1. Delete the names in cells D5:D9.
2. Provide another example of the correct result (in cell D5).

	A	B	C	D
3	<b>Last</b>	<b>Middle</b>	<b>First</b>	<b>Formatted Name</b>
4	Sagan	Elizabeth	Jessica	Sagan, Jessica E.
5	Bell	p	Stephen	Bell, Stephen P.
6	Jennings		John	

### 6 Flash Fill cells D6:D9 based upon the example results in cells D4 and D5.

1. Select cells D4:D9.
2. Click: Home→Editing→Fill→Flash Fill.

	A	B	C	D
3	<b>Last</b>	<b>Middle</b>	<b>First</b>	<b>Formatted Name</b>
4	Sagan	Elizabeth	Jessica	Sagan, Jessica E.
5	Bell	p	Stephen	Bell, Stephen P.
6	jennings		John	
7	Simpson	Jane	Meryl	Simpson, Meryl J.
8	hawking		Alfred	
9	Ashe	m	Lucille	Ashe, Lucille M.

This time Flash Fill has done a better job (see sidebar).

Notice the two blank results (for *John Jennings* and *Alfred Hawking*).

Flash Fill doesn't yet understand how to treat clients without a middle name. The blank spaces are Flash Fill's way of asking you for yet another example.

### 7 Provide another example result in cell D6.

1. Type: **Jennings, John** into cell D6.
2. Press the <Enter> key.

Usually, Flash Fill will instantly replace the value in cell D8. If it doesn't, you'll have to manually Flash Fill the entire list based upon the three examples provided. Do this by completing the following steps:

3. Select cells D4:D9.
4. Click: Home→Editing→Fill→Flash Fill.

This time Flash Fill has completed the task successfully (see sidebar).

	A	B	C	D
3	<b>Last</b>	<b>Middle</b>	<b>First</b>	<b>Formatted Name</b>
4	Sagan	Elizabeth	Jessica	Sagan, Jessica E.
5	Bell	p	Stephen	Bell, Stephen P.
6	jennings		John	Jennings, John
7	Simpson	Jane	Meryl	Simpson, Meryl J.
8	hawking		Alfred	Hawking, Alfred
9	Ashe	m	Lucille	Ashe, Lucille M.

### 8 Save your work as *Client Names-2*.

## Lesson 2-22: Use Flash Fill to solve common problems

Flash Fill is one of Excel's most useful features. It isn't possible to overstate how useful this tool is. I find myself using Flash Fill almost every day to solve a huge number of different problems.

This lesson gives examples of many everyday tasks that I have found can be quickly and simply completed using Flash Fill. I've also included all of the examples in the sample file: *Flash Fill Examples*.

In the following examples, Flash Fill filled the shaded cells.

### Split text

Full Name	First Name	Last Name
Jessica Elizabeth Sagan	Jessica	Sagan
Stephen Bell	Stephen	Bell
John Paul Jennings	John	Jennings

### Extract initials from names

Name	Initials
Jessica Elizabeth Sagan	JES
Stephen Bell	SB
John Paul Jennings	JPJ

### Remove title from names

Full Name	Short Name
Miss Jessica Elizabeth Sagan	Jessica Sagan
Mr Stephen Bell	Stephen Bell
Mr John Paul Jennings	John Jennings

### Add commas (a useful name format for alphabetical sorting)

Name	Sort Name
Jessica Elizabeth Sagan	Sagan, Jessica
Stephen Bell	Bell, Stephen
John Paul Jennings	Jennings, John

### Concatenate text

First Name	Middle Name	Last Name	Full Name
Jessica	Elizabeth	Sagan	Jessica Elizabeth Sagan
Stephen		Bell	Stephen Bell
John	Paul	Jennings	John Paul Jennings

Flash Fill Examples



## Concatenate text and insert extra text

First Name	Middle Name	Last Name	Full Name
Jessica	Elizabeth	Sagan	First Name: Jessica, Last Name: Sagan
Stephen		Bell	First Name: Stephen, Last Name: Bell
John	Paul	Jennings	First Name: John, Last Name: Jennings

## Change capitalization

Mixed Case	Title Case
jessica elizabeth sagan	Jessica Elizabeth Sagan
stephen bell	Stephen Bell
john paul jennings	John Paul Jennings

## Extract the day, month or year from a date

In all the date-based examples note that the *Date* column is formatted as a date. If you progress to the *Essential Skills* book in this series, you will learn how to format cells as dates in: *Session Four: Making Your Worksheets Look Professional*.

Date	Day	Date	Month	Date	Year
19th January 2013	19	19th January 2013	January	19th January 2013	2013
5th August 1967	5	5th August 1967	August	5th August 1967	1967
20th February 2022	20	20th February 2022	February	20th February 2022	2022

## Extract the day/month from a date

Date	Day/Month
19th January 2013	19th January
5th August 1967	5th August
20th February 2022	20th February

## Extract domain names from e-mail addresses

E-mail address	Domain
Mary@QuiteContrary.com	QuiteContrary.com
Humpty@Dumpty.com	Dumpty.com
Jack@Nimble.com	Nimble.com

## Format telephone numbers

Name	Tel (unformatted)	Tel (formatted)
Books A Million	1134960227	(113) 496-0227
Bargain Bookstore	1154960498	(115) 496-0498
Books for Less	1164960593	(116) 496-0593



**note****Analyze Data is an “Excel 365 Only” feature**

*Analyze Data* is an Excel 365 only feature (it isn't included in Excel 2021).

For some users it may be the “must have” feature that will motivate them to move to Excel 365.

**note****Analyze Data will not work with older workbooks being used in compatibility mode**

In: *Lesson 1-12: Understand common file formats*, you learned that there is an older *Excel 97-2003 workbook* format used by earlier versions of Excel.

If you open this type of workbook you will need to save it in the more modern *Excel Workbook* format in order to use the *Analyze Data* feature.

**note****Analyze Data used to be called Ideas**

If you are using the *Enterprise Semi-Annual* update channel you may still see *Ideas* on the Ribbon until your copy of Excel has been updated.

## Lesson 2-23: Use Analyze Data to create Data Insights

### The Analyze Data feature solves a big problem

Pivot Charts and Pivot Tables are two of Excel's most powerful data analysis tools. For most Excel users the learning curve is too great to master these expert-level tools. In fact, an extensive survey of Excel users suggested that only 10% of Excel users understand how to use Pivot Tables.

But wouldn't it be wonderful to be able to create and use Pivot Tables and Pivot Charts without actually learning how to create them manually?

As you'll see in this lesson that's exactly what *Analyze Data* will do for you.

In: *Lesson 2-24: Use Natural Language Queries*, you'll even discover that you can just tell Excel what you need (in your own words) and Excel will create a Pivot Table, Pivot Chart or Regular Chart automatically using Artificial Intelligence.

### How Analyze Data creates insights

The *Analyze Data* feature begins by looking for repeating data. For example, in this lesson's sample data there are many rows of data for the USA and many rows for the UK. *Analyze Data* will begin by creating rolled up category totals for any repeating data that it finds.

The *Analyze Data* feature then automatically looks for insights (things that you might want to know about your data). At the moment the *Analyze Data* feature supports four different types of insight:

- **Rank:** Looks for and highlights any category that is significantly larger than other categories.
  - **Majority:** Looks for cases where the majority of a total comes from a single category.
  - **Outliers:** Looks for unusually high or low values when compared to other data.
  - **Trend:** Looks for a steady upward or downward trend with the passage of time. In order to establish a trend, it is important that dates are not formatted as text. If you progress to the *Essential Skills* book in this series, you'll learn more about date formatting in: *Session 4: Making Your Worksheets Look Professional*.
- 1 Open *Sales by Employee* from your sample files folder.

	A	B	C	D	E	F	G	H
1	Date	First Name	Last Name	Customer	City	Country	Product	Sale Value
2	1-Jan-22	Nancy	Davolio	B's Beverages	London	UK	Manjimup Dried Apples	\$ 127.20
3	3-Jan-22	Nancy	Davolio	Hungry Coyote Import Store	Elgin	USA	Geitost	\$ 40.00

This worksheet lists sales by employee for the first quarter of 2022.

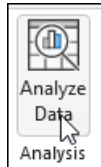
**Sales by Employee**

## note

### Analyze Data can only work with a limited data size

*Analyze Data* can only handle data sets with up to 1.5 million cells.

If you progress to the *Expert Skills* book in this series, you'll learn how to analyse much larger data sets that can contain billions of cells using Excel's advanced OLAP (Online Analytical Processing) tools.



## note

### Structure your data to work well with Analyze Data

In order for the *Analyze Data* feature to work at its best you should structure your data in a similar way to the sample data in this lesson.

Make sure that there is a single header row at the top of the data and avoid any blank cells within the header row or data.

Make sure you have well-named headers for the columns. Headers should be a single row of unique labels for each column.

If you progress to the *Essential Skills* book in this series you'll learn about merged cells.

You'll learn why you should avoid merged cells in your data.

You'll also learn a better alternative to merged cells.

You can see that on 1<sup>st</sup> January 2022, *Nancy Davolio* sold some *Manjimup Dried Apples* to *B's Beverages* – a company that is located in *London, UK*. The total sale value was \$127.20.

Even though there are only 45 rows of data in this worksheet it isn't easy to obtain any meaningful insights by glancing through it.

## 2 Use the *Analyze Data* feature to discover some useful insights.

In just two clicks, *Analyze Data* will look at all of the data in the range and guess the types of analysis you might find useful.

*Analyze Data* will then use advanced Excel features to calculate and present its findings (usually using a *Pivot Table* or *Pivot Chart* but sometimes using a regular chart).

1. Click on any cell that contains data.
2. Click: Home → Analysis → Analyze Data.

After a short delay an *Analyze Data* task pane appears on the right of the screen.

You can see that Excel's first guess is that you might be interested in ranking *Sales Value* by *City* (see sidebar if you see a different insight).

Row Labels	Sum of Sale Value
Albuquerque	\$8,303.50
Boise	\$7,889.10
London	\$7,069.00
Seattle	\$1,829.50
Anchorage	\$1,755.00
Lander	\$485.00
...	...

+ Insert PivotTable      Is this helpful?

The data is presented using a *Pivot Table*. You can insert the *Pivot Table* into your workbook using the + *Insert Pivot Table* button.

It is instantly clear that sales to *Albuquerque* provided the highest sale value. This is an example of a *Ranking* insight.

You may find it interesting to scroll down the *Analyze Data* pane. You will find that *Analyze Data* has identified over 30 insights.

## note

### Creating Pivot Tables and Pivot Charts manually

As mentioned in: *Lesson 2-23: Use Analyze Data to create Data Insights*, it has been estimated that only 10% of Excel users can create Pivot Tables and Pivot Charts manually.

If you progress to the *Expert Skills* book in this series, you will complete an entire 26-lesson session dedicated to Pivot Tables. This covers every aspect of this powerful analysis tool.

When you craft your own Pivot Tables by hand it is possible to add many other advanced features to them.

## Lesson 2-24: Use Natural Language Queries

In: *Lesson 2-23: Use Analyze Data to create Data Insights*, you discovered how Excel can provide *Data Insights* that help you to see interesting features of your data.

But *Analyze Data* can do so much more.

You have probably already used Amazon's Alexa, Apple's Siri or Microsoft's Cortana. These virtual assistants have an amazing understanding of the English language.

NLQ's adds this type of artificial intelligence to Excel. In the past data analysts would have to master complex query languages to extract summary data.

With NLQ's you can simply ask a question in plain English.

- 1 Open *Sales by Employee* from your sample files folder (if it isn't already open).
- 2 Use a Natural Language Query to find the three bestselling products.

1. Click on any cell containing data.
2. Click Home→Analysis→Analyze Data.

The *Analyze Data* task pane appears.

You are invited to ask a question about your data.

3. In the top text box type: **What are my top three products.**

**Analyze Data**

← What are my top three products

What are my top three products

Here's our answer  
Showing top 3 in 'Product' by total 'Sale Value'.

Row Labels	Sum of Sale Value
Thüringer Rostbratwurst	\$4,455.00
Gnocchi di nonna Alice	\$2,736.00
Raclette Courdavault	\$2,640.00
<b>Grand Total</b>	<b>\$9,831.00</b>

+ Insert PivotTable      Is this helpful?

Not what you meant? Try:

- 💡 Top 3 in 'Product' by average 'Sale Value'.
- 💡 Top 5 in 'Product' by total 'Sale Value'.

**Sales by Employee**

Excel has shown you how it has interpreted your natural language query. It has converted it into the more precise query:

Top 3 in 'Product' by total 'Sale Value'

Excel also guesses that you may have really wanted to use the average sale value, or even the top five products and provides useful links if this is the case.

Not what you meant? Try:

💡 Top 3 in 'Product' by average 'Sale Value'.

💡 Top 5 in 'Product' by total 'Sale Value'.

### 3 Experiment with a few more natural language queries.

Some that worked well for me were:

- **Nancy and Laura's sales in February.**
- **Sales for all customers.**
- **January sales for the UK and USA.**
- **Who is my best customer.**
- **Sales for each month.**
- **What were sales for Save-a-lot Markets each month.**
- **Sales by city.**

Click the + *Insert Pivot Chart*, +*Insert Chart* or + *Insert* buttons to see more detail.

## Lesson 2-25: Use the zoom control

Zooming is used to magnify or reduce the worksheet. If you have a lot of rows in a worksheet and have good eyes, you might want to zoom out sometimes to see more of the worksheet on one screen.

- 1 Open *First Quarter Sales and Profit-12* from your sample files folder.
- 2 Zoom in and out of the worksheet using the mouse wheel.

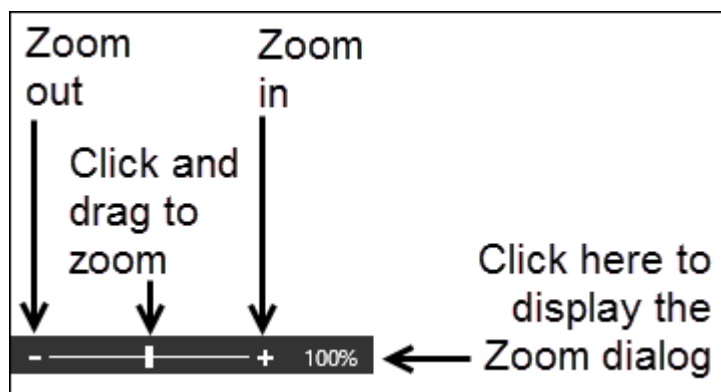
The fastest way to zoom a worksheet is by using the mouse.

Most mice these days have a wheel in the middle of the buttons. To zoom using this wheel hold down the <Ctrl> key on the keyboard and roll the wheel to zoom in and out.

- 3 Zoom in and out of a worksheet using the zoom control.

The zoom control is at the bottom right of your screen.

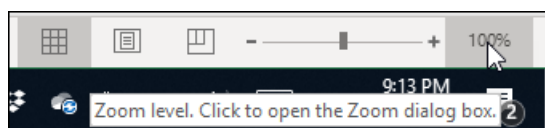
Click and drag on the zoom control slider to zoom in and out of your worksheet. You can also zoom by clicking the plus and minus buttons on either side of the Zoom control.



- 4 Use the Zoom dialog to make cells A3:D9 fill the screen.
  1. Select cells A3:D9.

	A	B	C	D	E
2					
3		Jan	Feb	Mar	Average
4	New York	22,000	29,000	19,000	23,333
5	Los Angeles	42,000	39,000	43,000	41,333
6	London	18,000	20,000	22,000	20,000
7	Paris	35,000	26,000	31,000	30,667
8	Munich	12,000	15,000	13,000	13,333
9	Sales	129,000	129,000	128,000	

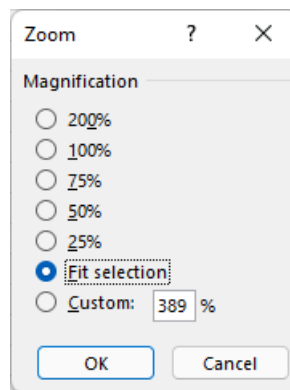
2. Click on the right-hand side of the zoom bar.



The *Zoom* dialog is displayed.

**First Quarter Sales and Profit-12**

3. Select the *Fit Selection* option button.



4. Click the OK button.

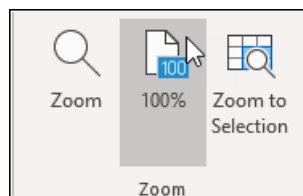
The worksheet is zoomed so that the selected cells completely fill the screen.

	A	B	C	D
1	Sales and Profit Report - First Quarter			
2				
3		Jan	Feb	Mar
4	New York	22,000	29,000	19,000
5	Los Angeles	42,000	39,000	43,000
6	London	18,000	20,000	22,000
7	Paris	35,000	26,000	31,000
8	Munich	12,000	15,000	13,000
9	Sales	129,000	129,000	128,000

5. Zoom back to 100% using the Ribbon.

You'll probably find the zoom bar to be the quickest and most convenient way to zoom, but you can also zoom using the Ribbon.

Click: View→Zoom→100%.



The screen is restored to normal size.

## Lesson 2-26: Print out a worksheet

You aren't going to explore every option for preparing and printing a worksheet in this lesson. If you progress to the *Essential Skills* book in this series, you'll find a whole session dedicated to more advanced printing techniques in: *Session Seven: Printing Your Work* This lesson only aims to teach you the bare minimum skills you need to put your work onto paper.

This lesson only aims to teach you the bare minimum skills you need to put your work onto paper.

- 1 Open *First Quarter Sales and Profit-12* from your sample files folder (if it isn't already open).

	A	B	C	D	E	F	G
1	Sales and Profit Report - First Quarter						
2							
3		Jan	Feb	Mar	Average	Maximum	
4	New York	22,000	29,000	19,000	23,333	29,000	
5	Los Angeles	42,000	39,000	43,000	41,333	43,000	
6	London	18,000	20,000	22,000	20,000	22,000	
7	Paris	35,000	26,000	31,000	30,667	35,000	
8	Munich	12,000	15,000	13,000	13,333	15,000	
9	Sales	129,000	129,000	128,000			
10							
11	Costs	83,000					
12	Profit	46,000					
13	10% Bonus	4,600					
14							
15	USA Sales	64,000					
16	European Sales	65,000					
17							
18	Monday	1	9	1-Jan-22	Adjusted	1-Jan-22	31-Mar-22
19	Tuesday	2	18	2-Jan-22	Adjusted	2-Jan-22	31-Mar-22
20	Wednesday	3	27	3-Jan-22	Adjusted	3-Jan-22	31-Mar-22
21	Thursday	4	36	4-Jan-22	Adjusted	4-Jan-22	31-Mar-22
22	Friday	5	45	5-Jan-22	Adjusted	5-Jan-22	31-Mar-22
23	Saturday	6	54	6-Jan-22	Adjusted	6-Jan-22	31-Mar-22
24	Sunday	7	63	7-Jan-22	Adjusted	7-Jan-22	31-Mar-22

- 2 Click File→Print.

*Backstage View* appears offering many preview and print options:



Send the worksheet to the printer      Select printer      Preview of how the page will look when printed

Print

Printer

NP1760566 (HP LaserJet M15...)  
Ready

Settings

Print Active Sheets  
Only print the active sheets

Pages: 1 to 1

Print One Sided  
Only print on one side of the sheet

Collated  
1,2,3 1,2,3 1,2,3

Portrait Orientation

A4  
8.27" x 11.69"

Normal Margins  
Top: 0.75" Bottom: 0.75" Left: 0.75" Right: 0.75"

No Scaling  
Print sheets at their actual size

Page Setup

Sales and Profit Report - First Quarter

	Jan	Feb	Mar	Average	Maximum
New York	22,000	29,000	19,000	23,333	29,000
Los Angeles	42,000	39,000	43,000	41,333	43,000
London	18,000	20,000	22,000	20,000	22,000
Paris	35,000	26,000	31,000	30,667	35,000
Munich	12,000	15,000	13,000	13,333	15,000
Sales	129,000	129,000	128,000		
Costs	83,000				
Profit	46,000				
10% Bonus	4,600				
USA Sales	64,000				
European Sales	65,000				

Monday 1 9 1-Jan-22 Adjusted 1-Jan-22 31-Mar-22  
Tuesday 2 18 2-Jan-22 Adjusted 2-Jan-22 31-Mar-22  
Wednesday 3 27 3-Jan-22 Adjusted 3-Jan-22 31-Mar-22  
Thursday 4 36 4-Jan-22 Adjusted 4-Jan-22 31-Mar-22  
Friday 5 45 5-Jan-22 Adjusted 5-Jan-22 31-Mar-22  
Saturday 6 54 6-Jan-22 Adjusted 6-Jan-22 31-Mar-22  
Sunday 7 63 7-Jan-22 Adjusted 7-Jan-22 31-Mar-22

1 of 1

Show margins

Zoom preview

Print options      Move to a different page      Zoom preview

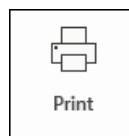
- 3 Click on the zoom button  to see the zoom feature working.

Each time you click on the button the page zooms in and out.

If you have a large screen, you may not see a lot of difference when you zoom.

- 4 Print the worksheet.

Click the *Print* button:



The page is printed on the selected printer.

---

## Session 2: Exercise

- 1 Open a new blank workbook.
- 2 Use AutoFill to put the text: Jan, Feb, and Mar into cells A4:A6.
- 3 Using only the keyboard, add the following data:

	A	B	C	D	E
1	Profit Analysis				
2					
3		London	Paris	New York	Average
4	Jan	2,500	3,100	2,300	
5	Feb	2,200	2,700	2,600	
6	Mar	2,100	2,600	2,800	
7	Total				

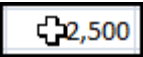
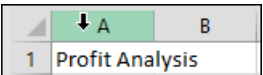
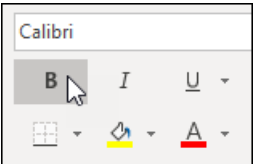
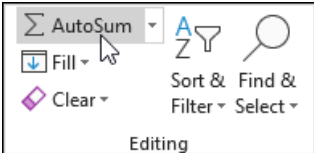
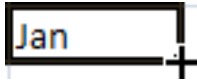
- 4 Use AutoSum to compute London's total profit for Jan/Feb/Mar in cell B7.
- 5 Use AutoSum to calculate the average January profit in cell E4.
- 6 Use AutoFill to extend the London total in cell B7 to the Paris and New York totals in cells C7 and D7.
- 7 Use AutoFill to extend the January average profit in cell E4 to the February and March average profits in cells E5 and E6.
- 8 Select all of column A and all of column E (at the same time) and bold face the values in them.
- 9 Select row 3 and row 7 (at the same time) and bold face the values in them.

	A	B	C	D	E
1	Profit Analysis				
2					
3		London	Paris	New York	Average
4	Jan	2,500	3,100	2,300	2,633
5	Feb	2,200	2,700	2,600	2,500
6	Mar	2,100	2,600	2,800	2,500
7	Total	6,800	8,400	7,700	

- 10 Select cells B4:B6 and cells D4:D6 at the same time and then read the total (Sum) of London and New York sales for Jan, Feb and March from the summary information displayed on the status bar.
- 11 Select cells B4:D6 and zoom the selection so that these cells fill the screen.
- 12 Save your work as *Exercise2-End*.

## Session 2: Exercise answers

These are the questions that students find the most difficult to answer:

Q 10	Q 8	Q 4	Q 2
<p>1. Hover over the center of cell B4 so that you see the white cross cursor shape.</p>  <p>2. Click and drag down to cell B6.</p> <p>3. Hold down the &lt;Ctrl&gt; key.</p> <p>4. Hover over cell D4 until you see the white cross cursor shape.</p> <p>5. Click and drag down to cell D6.</p> <p>6. Look at the status bar at the bottom right of the screen.</p> <p>This was covered in: Lesson 2-7: Select non-contiguous cell ranges and view summary information.</p>	<p>1. Click on the column A header.</p>  <p>2. Hold down the &lt;Ctrl&gt; key.</p> <p>3. Click on the column E header.</p> <p>4. Click:</p> <p>Home→Font→Bold</p>  <p>This was covered in: Lesson 2-6: Select adjacent and non-adjacent rows and columns.</p>	<p>1. Click in cell B7.</p> <p>2. Click:</p> <p>Home→Editing→AutoSum</p>  <p>3. Either press the &lt;Enter&gt; key or click the AutoSum button again.</p> <p>This was covered in: Lesson 2-3: Use AutoSum to quickly calculate totals.</p>	<p>1. Type <b>Jan</b> into cell A4 and press the &lt;Enter&gt; key.</p> <p>2. Click cell A4 once to make it the active cell.</p> <p>3. Hover the mouse cursor over the bottom right corner of the cell until you see the black cross cursor shape.</p>  <p>4. Click and drag down to cell A6.</p> <p>This was covered in: Lesson 2-14: Use AutoFill for text and numeric series.</p>

If you have difficulty with the other questions, here are the lessons that cover the relevant skills:

- 1** Refer to: Lesson 1-1: Start Excel and open a new blank workbook.
- 3** Refer to: Lesson 2-1: Enter text and numbers into a worksheet.
- 5** Refer to: Lesson 2-3: Use AutoSum to quickly calculate totals.
- 6** Refer to: Lesson 2-15: Use AutoFill to adjust formulas.
- 7** Refer to: Lesson 2-15: Use AutoFill to adjust formulas.
- 9** Refer to: Lesson 2-6: Select adjacent and non-adjacent rows and columns.
- 11** Refer to: Lesson 2-25: Use the zoom control.
- 12** Refer to: Lesson 1-11: Save a workbook to a local file.

# A

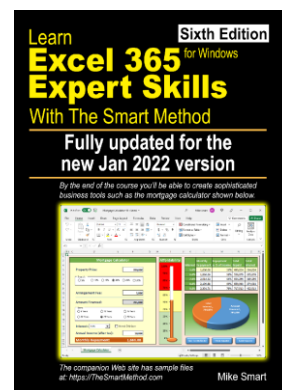
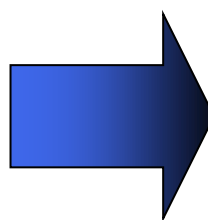
## Appendix A: Skills Covered in the Essential Skills Course

You have to learn to crawl before you can walk.  
You have to learn to walk before you can run.

*Proverbs, unknown authors*



978-1-909253-49-0  
382 pages



No ISBN (Free Book)  
(This book)

This appendix lists the objectives for each of the eight sessions in the *Essential Skills* book.

If you need Excel skills to get a job you should work through this book (it also includes all of the Basic Skills material you've already learned).

Even if you've never used Excel before you'll have no difficulty completing this book, most learners can complete it in two days or less.

The *Essential Skills* book will give you all the skills an employer would expect. By the end of the book your Excel skills will be better than most office workers.

- Available for every Excel version.
- Available as an instant-download e-book from <https://thesmartmethod.com>
- Available as a low-cost paper printed book. Always in stock for immediate dispatch at every Amazon warehouse worldwide.

# Essential skills course outline

## Session 1: Setup and Basic Skills

- Start Excel and open a new blank workbook
- Understand update channels
- Check that your Excel version is up to date
- Change between the Simplified and Classic Ribbon
- Change between Touch Mode and Mouse Mode
- Change the Office Theme
- Maximize, minimize, re-size, move and close the Excel window
- Download the sample files and open/navigate a workbook
- Save a workbook to a local file
- Understand common file formats
- Pin a workbook and understand file organization
- View, move, add, rename, delete and navigate worksheet tabs
- Use the Versions feature to recover an unsaved Draft file
- Use the Versions feature to recover an earlier version of a workbook
- Use the Ribbon
- Understand Ribbon components
- Customize the Quick Access Toolbar and preview the printout
- Use the Mini Toolbar, Key Tips and keyboard shortcuts
- Understand views
- Use the Tell Me help system
- Use other help features

## Session 2: Doing Useful Work with Excel

- Enter text and numbers into a worksheet
- Create a new workbook and view two workbooks at the same time
- Use AutoSum to quickly calculate totals
- Select a range of cells and understand Smart Tags
- Enter data into a range and copy data across a range
- Select adjacent and non-adjacent rows and columns
- Select non-contiguous cell ranges and view summary information
- AutoSelect a range of cells and re-size rows and columns
- Use AutoSum to sum a non-contiguous range
- Use AutoSum to calculate average and maximum values

- Create your own formulas
- Create functions using Formula AutoComplete
- Use AutoFill for text and numeric series
- Use AutoFill to adjust formulas and use AutoFill options
- Speed up your AutoFills and create a custom fill series
- Understand linear and exponential series
- Use Flash Fill to split and concatenate text
- Use Analyze Data to create Data Insights
- Use Natural Language Queries
- Use the zoom control
- Print out a worksheet

### **Session 3: Taking Your Skills to the Next Level**

- Insert and delete rows and columns
- Use AutoComplete and fill data from adjacent cells
- Cut, copy and paste
- Cut, copy and paste using drag and drop
- Use Paste Values
- Increase/decrease decimal places displayed
- Transpose a range
- Use the Multiple Item Clipboard
- Use Undo and Redo
- Insert, View and Print cell notes and cell comments
- Understand absolute, relative and mixed cell references
- Understand templates and set the default custom template folder
- Create a template
- Use a template
- Add an Office Add-In to a workbook
- Freeze columns and rows
- Split the window into multiple panes
- Check spelling

### **Session 4: Making Your Worksheets Look Professional**

- Format dates
- Understand date serial numbers
- Format numbers using built-in number formats

- Create custom number formats
- Horizontally and vertically align the contents of cells
- Merge cells, wrap text and expand/collapse the formula bar
- Unmerge cells and Center Across Selection
- Understand themes
- Use cell styles and change themes
- Add color and gradient effects to cells
- Add borders and lines
- Create your own custom theme
- Create your own custom cell styles
- Use a master style book to merge styles
- Use simple conditional formatting
- Manage multiple conditional formats using the Rules Manager
- Bring data alive with visualizations
- Create a formula driven conditional format
- Insert a Sparkline into a range of cells
- Apply a common vertical axis and formatting to a Sparkline group
- Apply a date axis to a Sparkline group and format a single Sparkline
- Use the Format Painter
- Rotate text



## Session 5: Charts and Graphics

- Understand chart types, layouts and styles
- Create a simple chart with two clicks
- Move, re-size, copy and delete a chart
- Create a chart using the Recommended Charts feature
- Add and remove chart elements using Quick Layout
- Apply a pre-defined chart style and color set
- Manually format a chart element
- Format 3-D elements and add drop shadows
- Move, re-size, add, position and delete chart elements
- Apply a chart filter
- Change a chart's source data
- Assign non-contiguous source data to a chart
- Understand data series and categories
- Add data series using the Select Data Source dialog tools
- Chart non-contiguous source data by hiding rows and columns
- Create a chart with numerical axes
- Deal with empty data points and add data labels to a chart
- Highlight specific data points with color and annotations
- Add gridlines and scale axes
- Emphasize data by manipulating pie charts
- Create a chart with two vertical axes
- Create a combination chart containing different chart types
- Work with trend lines and forecast sheets
- Add a gradient fill to a chart background
- Create your own chart templates
- Create a filled map chart

## Session 6: Working with Multiple Worksheets and Workbooks

- View the same workbook in different windows
- View two windows side by side and perform synchronous scrolling
- Duplicate worksheets within a workbook
- Move and copy worksheets from one workbook to another
- Hide and unhide a worksheet
- Create cross worksheet formulas
- Understand worksheet groups

- Use find and replace

## **Session 7: Printing Your Work**

- Print Preview and change paper orientation
- Use Page Layout view to adjust margins
- Use Page Setup to set margins more precisely and center the worksheet
- Set paper size and scale
- Insert, delete and preview page breaks
- Adjust page breaks using Page Break Preview
- Add auto-headers and auto-footers and set the starting page number
- Add custom headers and footers
- Specify different headers and footers for the first, odd and even pages
- Print only part of a worksheet
- Add row and column data labels and gridlines to printed output
- Print several selected worksheets and change the page order
- Suppress error messages in printouts

## **Session 8: Cloud Computing**

- Understand cloud computing
- Save a workbook to a OneDrive
- Open a workbook from a OneDrive
- Understand Office versions
- Understand Excel for the web
- Open a workbook using Excel for the web
- Share a link to a workbook
- Understand OneDrive AutoSave and Version History
- Edit a workbook simultaneously with other users using Excel for the web

# Moving to the next level

Learn  
**Excel 365  
Essential Skills**  
With The Smart Method  
Fully updated for the  
new Jan 2022 version



By the end of the course you'll be able to create sophisticated worksheets like the one shown below  
The companion Web site has sample files at  
<https://TheSmartMethod.com>  
Mike Smart

## THE SMART METHOD®

Mike Smart's unique teaching method provides a Fun, Fast and absorbing way to learn Excel skills

Here are just a few of the things you will learn with this book.

### USA Population by State



### MAP CHARTS

The Excel 365 Filled Map Chart shown above is very useful for showing geographical information by shading different areas based upon data.

This book will teach you to create filled map charts just like the one shown above in seconds.

#### Sales By Country

Country	Total Sales
Argentina	762
Austria	33,462
Belgium	6,109
Brazil	20,324
Grand Total	60,857

#### Unit Sales

Date	Total Sales
Jan	8,520
Feb	8,762
Mar	9,650
Grand Total	26,932

#### Sales by Category

Category	Total Sales
Beverages	70,168
Condiments	24,938
Confections	31,883
Dairy Products	49,902
Grand Total	176,891

#### Sales by Month

Date	Total Sales
Jan	83,325
Feb	88,261
Mar	95,058
Grand Total	266,644

### VISUALIZATIONS

The Excel designers knew that a picture paints a thousand words. This book will enable you to bring your data alive with a mastery of all of Excel's conditional formatting and sparkline features. Your data will never look the same again as you add data bars, color scales, icon sets and control when they appear with Excel's sophisticated Rules Manager.

	A	B	C	D	E
2		Currency	GBP	EUR	
3		Exchange Rate	0.74325	0.88435	
4	Make	Model	USA \$	UK £	Euros €
5	Ferrari	Roma	245,000.00	182,096	216,666
6	McLaren	765 LT	368,000.00	273,516	325,441
7	Porsche	911	203,500.00	151,251	179,965
8					
9	Ferrari	Roma	245,000.00	=C9*D\$3	=C\$5*E\$3
10	McLaren	765 LT	368,000.00	=C10*D\$3	=C\$6*E\$3
11	Porsche	911	203,500.00	=C11*D\$3	=C\$7*E\$3
12					

### FORMULAS

This book will teach you the correct, professional way to create formulas.

You'll learn both the mouse method and keyboard method. You'll master absolute, relative and mixed cell references (like the ones shown in the example above).

### SALES BY CATEGORY



### CHARTS

This book won't just teach you chart basics. It will teach you absolutely everything there is to know about charts. You'll create bar charts, pie charts, line charts and dual axis charts. You'll master chart elements, chart filters, callouts, styles, axis, titles, plot area, callouts... and absolutely every other Excel chart skill.



### CLOUD COMPUTING

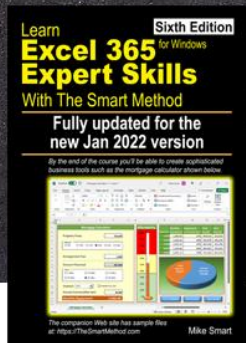
Excel now has extensive cloud computing features that you simply cannot ignore. You'll learn to e-mail tiny links to your workbooks rather than use huge e-mail attachments. Excel now allows multiple users to work together on the same workbook via the Internet – wherever they are. The book dedicates an entire session to mastering cloud computing skills.

The *Essential Skills* book in this series will continue your Excel learning. At this level you will have excellent Excel skills, good enough to impress any employer, and your Excel skills will be better than most office workers (even those with many years of experience).

You'll be able to create beautifully laid-out worksheets that will really impress.

You'll also have mastered many advanced features that few Excel users understand.

You can download this e-book today at <https://TheSmartMethod.com> or buy it as a low-cost paper printed book from Amazon.



# THE SMART METHOD<sup>®</sup>

Mike Smart's unique teaching method provides a Fun, Fast and absorbing way to learn Excel skills

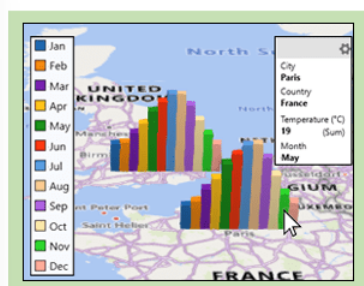
Here are just a few of the things you will learn with this book.

After the Essential Skills course you'll be really, really good with Excel.

If you have completed the Essential Skills course and want to join the tiny elite of power-users who can do absolutely everything with Excel you can take the follow-on Expert Skills course and become a true Excel guru.

By the end of this course your Excel skills will be greater and broader than almost all other Excel users in the workplace.

Available for every Excel version as an instant download e-book or paper printed book (from Amazon).



Power Maps  
and 3D Tours

FORM  
CONTROLS

Real Names	
Tom Cruise	
Johnny Depp	
To Match	Fuzzy Match
Tom cruise	Tom Cruise
Mr tom cruise	Tom Cruise
tom cruise jr	Tom Cruise
jonny deppp	Johnny Depp
johnny Depp jr	Johnny Depp
Depp	Johnny Depp

FUZZY  
LOGIC

Sales Summary	
Customer	Sales
AV Supplies	488.23
Classic Films	783.09
Creative Films	614.03
Grand Total	1,885.35
Genre	Sales
Action	1,049.75
Adventure	442.08
Comedy	393.52
Grand Total	1,885.35

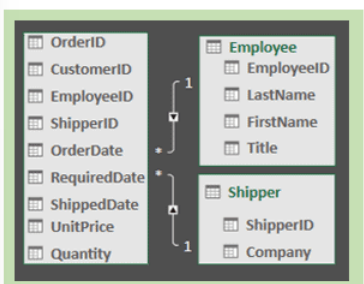
PIVOT TABLES  
AND SLICERS

Column:	Gross	Filter:	Walt Disney
Movie			United Artists
Released			Universal Pictures
Distributor			Walt Disney
Gross			Warner Bros.

DYNAMIC  
ARRAYS

	A	B	C	D
1	Month	Net	Tax	Total
2	Jan	15,249.00	2,287.35	17,536.35
3	Feb	18,320.00	2,748.00	21,068.00
4	Mar	21,260.00	3,189.00	24,449.00

STRUCTURED  
TABLE REFERENCES



POWER PIVOT  
DATA MODELING

Category	In Stock
Beverages	559
Condiments	507
Confections	386
Dairy Products	393
Grains/Cereals	308
Meat/Poultry	165
Produce	100
Seafood	701
Grand Total	3119

POWER PIVOT  
TABLE

fx Total:=SUM(Orders[Order Value])	
Unit Price	Order Value
Jan-20	\$77.00
Jan-20	\$1,088.00
Jan-20	\$160.00
Total: \$1,467,199.39	

DAX CALCULATED  
MEASURES



# Use your new Excel skills to teach your own classroom courses

There is a huge demand, everywhere in the world, for Excel training at all levels. If you progress to the Essential Skills book in this series you will be able to teach an introductory Excel course (providing all of the skills needed by most office workers).

Smart Method books are available for all Excel versions in common use (Excel 2013, 2016, 2019, 2021 and 365 for Windows along with Excel 2016 & 2019 for Apple Mac). You can use the books as courseware during your classes and then give each student a copy of the book to take home as reference material when the course is over.

Windows Perpetual Titles				Mac Titles	
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 <p>Learn <b>Excel 2016 Expert Skills</b> With The Smart Method</p> <p>978-1-909253-09-4</p>	 <p>Learn <b>Excel 2016 Essential Skills</b> With The Smart Method</p> <p>978-1-909253-08-7</p>	 <p>Learn <b>Excel 2013 Expert Skills</b> With The Smart Method</p> <p>978-1-909253-16-2</p>	 <p>Learn <b>Excel 2013 Essential Skills</b> With The Smart Method</p> <p>978-1-909253-15-5</p>	 <p>Learn <b>Excel 2016 Expert Skills</b> With The Smart Method</p> <p>978-1-909253-21-6</p>	 <p>Learn <b>Excel 2016 Essential Skills</b> With The Smart Method</p> <p>978-1-909253-22-3</p>
<b>Office 365 Titles</b>					
 <p>Learn <b>Excel 365 Essential Skills</b> With The Smart Method Fully updated for the new Jan 2022 version</p> <p>978-1-909253-49-0</p>	 <p>Learn <b>Excel 365 Expert Skills</b> With The Smart Method Fully updated for the new Jan 2022 version</p> <p>978-1-909253-50-6</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>A new edition of the Excel 365 book is published whenever there are significant Excel 365 feature updates.</p> </div>			

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