

Why you should use this book

- **It is written entirely for the Apple Mac version of Excel 2019.** While this book covers the same material as our acclaimed *Excel 2019 for Windows* course, the book has been completely re-written for the (very different) Apple Mac version.
- **It is up-to-date.** This book is fully updated for Excel 2019. This means that the screenshots printed in the book will match what you see on your screen. This makes the lessons easy to follow. It can be very frustrating to try to learn Excel 2019 using an out-of-date book.
- **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. This book has been constantly refined (during hundreds of classroom courses) by observing which skills students find difficult to understand and then developing simpler ways of explaining them. This has made the book effective for students of all ages and abilities. We have never had a student who has failed to learn Excel after taking one of our courses.
- **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 or self-learning period (from minutes to hours).
- **Smart Method® books are #1 best sellers.** Every paper printed Smart Method® Excel book (and there have been eight 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.
- **It won't waste your time by teaching basic Excel 2019 skills that you already know.** All of the basics are covered in our beginner's *Excel 2019 Essential Skills* book. By assuming that you are already able to use Excel's basic features, far more ground can be covered.
- **It is written in plain English.** Advanced concepts are explained without needless technical jargon. Everything is concisely described in a simple, no-nonsense way.
- **It teaches to true Expert level.** The Expert Skills book teaches Excel to an extremely high level of competence that is very rarely found in the workplace (even amongst top professionals). At Expert level your 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.

Learn Excel expert skills in just a few minutes each day

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 short 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 a single day.

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 screenshots 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.

Excel 2019 has many new features that won't be available to users of older Excel versions.
All of Excel 2019's new features are clearly documented.

Screenshots 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 just 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 2019 for Mac OS X Expert Skills with The Smart Method

Lesson 3-28: Use the IFS function

note
The IFS function is new in Excel 2019
IFS is a new function for Excel 2019, so it will not be available to users of earlier Excel versions.
You should avoid using IFS if your workbooks need to be accessible to users of earlier versions of Excel.

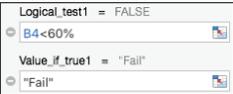
note
VLOOKUP is still (usually) a better solution than IFS
In: Lesson 3-5: Use the IF logic function (sidebar) I advised: "Excel 2019 allows you to nest IF functions up to 64 levels deep (which is 63 too many)".
The new IFS and SWITCH functions (introduced in Excel 2019) are mainly intended to offer 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.

In: Lesson 3-22: Use a VLOOKUP function for an exact lookup, you used a VLOOKUP function to return a grade from different pass mark percentages.
Microsoft have added a new IFS function to Excel 2019. In this lesson you will solve exactly the same problem posed in: Lesson 3-22: Use a VLOOKUP function for an exact 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 3-22: Use a VLOOKUP function for an exact 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.
 1. Click in cell C4.
 2. 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:


You will need to click the  button in the *Formula Builder* task pane to add the *Value_if_true1* argument.

IFS Grades-1

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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.

Session Three: Advanced Functions



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 it is realized that (behind the scenes) Excel does assign values to text in order to implement alphabetical sorting.

These nominal 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:



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".

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

- Add *Logical Test/Value* pairs for the other grades (see sidebar).
- Click the *Done* button.

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

- 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*

- Use the IFS function to calculate the grade for each student using the grade data defined in cells E3:F8.
 - Delete the functions in column C.
 - Add a new IFS function to cell C4.
 - Enter the following pair of *Logical Test/Value* arguments:

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 3-6: Use the SUMIF and COUNTIF functions to create conditional totals.*
- Add appropriate *Logical Test/Value* pairs for the other grades.
- Click the *Done* button.
- 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/Grade* thresholds shown in cells E3:F8 change in the future.
- 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.

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Who Is This Book For?

If you can already use all of Excel's essential features but want to raise your skills to true Expert level, you've found the right book.

This book isn't for absolute beginners. If you're just starting out with Excel, you should buy our *Essential Skills* book to learn all of Excel's most important features.

This book will give you advanced Excel skills that are rarely mastered by the average user. By the end of the book you'll be a true Excel expert, able to use all of the power available from the world's most powerful business tool. Your Excel skills will be greater and broader than almost all other Excel users in the workplace.

This book is for *Excel 2019 for Mac* users who:

- Are already comfortable with Excel 2019 for Mac's basic features (ideally by completing all of the lessons in our *Essential Skills* course).
- Want in-depth coverage of all of Excel 2019's more powerful and complex features rather than a simple overview.
- Teachers who wish to run advanced Excel 2019 training courses.

Use of this book as courseware

While this book is ideal for self-instruction, the book is also the official courseware for The Smart Method's *Excel 2019 for Mac Essential Skills* course.

Smart Method courses have been taken by a varied cross-section of the world's leading companies. We've had fantastic feedback from the vast number of professionals we've empowered with Excel skills.

This book is also suitable for use by other training organizations, teachers, schools, colleges and universities to provide structured, objective-led, and highly effective classroom courses.

This book is not suitable for learning Excel 2019 for Windows

You could be forgiven for thinking that *Excel 2019 for Windows* (suitable only for Windows desktop and laptop computers) was "just the same" as *Excel 2019 for Mac*. Unfortunately, this is not the case. The *Excel 2019 for Windows* version has a different feature set and a radically different user interface to the *Excel 2019 for Mac* version.

We've produced a different version of this book suitable for Windows users:

Learn Excel 2019 Expert Skills for Windows with The Smart Method
ISBN: 978-1-909253-35-3

You can find an appendix at the end of this book that lists the differences between the Mac and Windows versions that apply to this book.