



University Information  
Technology Services

Microsoft Office  
Excel 2016 for Windows  
Advanced Excel Tools

University Information Technology Services

Learning Technologies, Training & Audiovisual Outreach

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# University Information Technology Services

## Microsoft Office: Excel 2016 for Windows Advanced Excel Tools

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### Introduction

This booklet is the companion document to the *Excel 2016: Advanced Excel Tools* workshop. The booklet will explain how to create a simple macro, how to use nested formulas, how to create templates, hide/unhide rows and columns, and protect/unprotect your spreadsheets and workbook.

## **Learning Objectives**

After completing the instructions in this booklet, you will be able to:

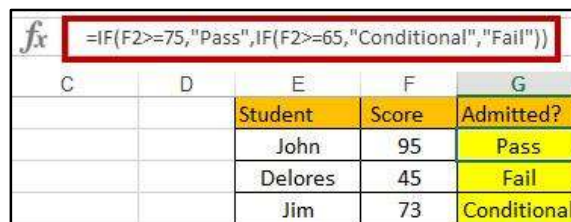
- Understand what Nested Functions are.
- Link data between sheets.
- Understand what Macros are.
- Create a simple Macro.
- Hide/unhide information in your spreadsheet.
- Protect your spreadsheet and workbook.
- Create templates out of workbooks.

## Creating Nested Functions

Nested functions are functions within a function. By nesting an IF function within an existing IF function, you can test more than one conditions (e.g. Pass, Conditional, Fail). This can be helpful if you want to assign scores or grades based on certain conditions.

For example: `=IF(F2>=75,"Pass",IF(F2>=65,"Conditional","Fail"))`

This formula checks the cell for a value, and if it is greater than or equal to ( $\geq$ ) a predetermined grade (e.g. 75), then the formula will return the phrase *Pass*. If the number in the cell is less than 75, *Excel* will move to the next part of the formula, and so on.



The screenshot shows an Excel spreadsheet with a formula bar at the top containing the nested IF formula: `=IF(F2>=75,"Pass",IF(F2>=65,"Conditional","Fail"))`. Below the formula bar is a table with columns labeled C, D, E, F, and G. The table data is as follows:

	C	D	E	F	G
			Student	Score	Admitted?
			John	95	Pass
			Delores	45	Fail
			Jim	73	Conditional

Figure 1 - Nestled IF Function

**Note:** Pass is in quotes to indicate to *Excel* that this is the value we want returned, and it is not another function.

## Linking Data

Linking data between spreadsheets allows you to reference data contained elsewhere in your workbook without having to copy all of the information. For example, you could have a workbook that has multiple spreadsheets tracking regional sales and a separate spreadsheet to tally the totals across all regions. By linking to the regional data from the totals, you will only have to update your information in one location. The following example explains how to link data between the Eastern Division spreadsheet, and the Year End Total spreadsheet:

1. Open the spreadsheet that contains the source data and the target location (e.g. Eastern Division, Western Division, Totals, etc)
2. Select the cell(s) in the source spreadsheet that contain the data that you want to link to the target location (e.g. Total sales for Eastern Division).



The screenshot shows an Excel spreadsheet titled "Eastern Division" with a table of sales data. The table has columns for Item, QTR 1, QTR 2, QTR 3, QTR 4, and Totals. The data is as follows:

Item	QTR 1	QTR 2	QTR 3	QTR 4	Totals
Hardware	\$ 300.00	\$ 800.00	\$ 900.00	\$ 500.00	\$ 2,500.00
Software	\$ 400.00	\$ 100.00	\$ 800.00	\$ 100.00	\$ 1,400.00
Furniture	\$ 200.00	\$ 500.00	\$ 500.00	\$ 200.00	\$ 1,400.00
Accessories	\$ 200.00	\$ 300.00	\$ 500.00	\$ 300.00	\$ 1,300.00

Figure 2 - Selected Cells

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