

Appendix B

Excel Errors

Under certain circumstances, even the best formulas can appear to have freaked out once you get them in your worksheet. You can tell right away that a formula's gone haywire because instead of the nice calculated value you expected to see in the cell, you get a strange, incomprehensible message in all uppercase letters beginning with the number sign (#) and ending with an exclamation point (!) or, in one case, a question mark (?). This weirdness is known, in the parlance of spreadsheets, as an error value. Its purpose is to let you know that some element - either in the formula itself or in a cell referred to by the formula - is preventing Excel from returning the anticipated calculated value.

Here is a list of some error values and their meanings:

#DIV/0! Appears when the formula calls for division by a cell that either contains the value 0 or, as is more often the case, is empty. Division by zero is a no-no according to our mathematical rules (you can divide a pizza into 2 slices, but you cannot divide a pizza into zero slices).

#NAME? Appears when the formula refers to a range name that doesn't exist in the worksheet. This error value appears when you type the wrong range name or fail to enclose in quotation marks some text used in the formula, causing Excel to think that the text refers to a range name.

#NULL! Appears most often when you insert a space (where you should have used a comma) to separate cell references used as arguments for functions.

#NUM! Appears when Excel encounters a problem with a number in the formula, such as the wrong type of argument in an Excel function or a calculation that produces a number too large or too small to be represented in the worksheet.

#REF! Appears when Excel encounters an invalid cell reference, such as when you delete a cell referred to in a formula or paste cells over the cells referred to in a formula.

#VALUE! Appears when you use the wrong type of argument or operator in a function, or when you call for a mathematical operation that refers to cells that contain text entries.

Appendix C

Other Features of Excel

Worksheet Tabs

Each workbook can contain multiple worksheets. For example, you may want a workbook containing data on your stock portfolio. The workbook could contain a separate sheet for each of the stocks in your portfolio showing past data and current information. One worksheet could contain a summary of all the current stock information, showing the current total value of your portfolio. To work with multiple sheets, use the worksheet tabs at the bottom of the data entry area. New workbooks contain three worksheets by default.

Simply click on the tab for the worksheet you wish to view. If there are too many worksheets to display all of them, use the arrow keys to move forward in the list (right arrows) or backward in the list (left arrows). The arrows with vertical bars take you to the first worksheet in the list (left arrow with bar) or the last worksheet in the list (right arrow with bar).

To add another worksheet either use the "Insert" menu, or right-click on the worksheet tabs and select "Add worksheet". You can also click on the worksheet tab to the right of the last worksheet in the workbook. To change the order of the worksheets, click and drag one of the tabs to a new place in the list; you will see a small sheet icon and a down arrow showing you where the sheet will be placed. It is also helpful to rename the worksheets with more meaningful names than "Sheet1" and "Sheet2". To do this, either

1. Right-click on the tab for the worksheet you want to rename. Select "Rename" from the pop-up menu, then type the new name over the highlighted text.
2. Double-click on the name of the sheet you wish to modify, then type the new name over the highlighted text.

Special Keys

There are several special key strokes that you will want to use on a regular basis. To display the actual formulas in each cell, rather than the results of the formulas, use CTRL + '. The ' (tilde) key is on the upper left of most keyboards. Hitting this key combination again will switch back to displaying the results of the formulas.

To use the keyboard to move around the worksheet:

- The arrow keys move the active cell in the obvious directions.
- Holding down SHIFT while navigating with an arrow key will both move the cursor and select (highlight) the cells as you move.
- Holding down CTRL while navigating with an arrow key will jump to the last cell containing data in that direction. If there is a blank cell in between blocks of data, CTRL + arrow will stop at the last cell before the blank cells begin.
- Holding down CTRL + SHIFT and using the arrow keys combines both of the last two features. This is especially useful for selecting a large block of data that scrolls on for many screens.

Appendix D

Sample Rubric for Evaluating Memo 7

The rubric below provides a sample of how instructors can easily use a checklist approach to grading the memo assignments in this text. Basically, each memo has three categories in which students should demonstrate excellence: Mechanics and Techniques, Application and Reasoning, and Communication and Professionalism. These are discussed in general terms in the preface. For each category, there are items listed in a checklist format at two levels of accomplishment: Expected and Impressive. To meet the minimum requirements for a memo, students should have the expected items checked off as being present in the memo in a clear and easily understandable way. Then, for each category in which the student's work is impressive, the grade is bumped up.

For example, one could define the following grade scale for memo problems, where the entries define the number of categories (out of 3) that must be at that level. Then, the intermediate and lower grades (D, C+, etc.) can be awarded for partial success in a category.

Grade	Expected	Impressive
C	3	0
B-	2	1
B+	1	2
A	0	3

	Expected Level	Impressive Level
M & T: 0 E-E E+ I-I	<ul style="list-style-type: none"> <input type="radio"/> File was correctly titled for Bb <input type="radio"/> File name correct <input type="radio"/> Contains a correlation matrix <input type="radio"/> Contains 4 scatterplots <p>A Table of Results contains</p> <ul style="list-style-type: none"> <input type="radio"/> 4 correct regression equations <input type="radio"/> A correct R^2 for each equation <input type="radio"/> A correct S_e for each equation <input type="radio"/> Correctly states which relationship has the strongest positive or negative correlation 	<ul style="list-style-type: none"> <input type="radio"/> The 4 regression equations are correctly ranked according to best-fit <input type="radio"/> Graphical analysis indicates how much confidence we have that we can model this relationship with a linear trendline <p>For Revision Only</p> <ul style="list-style-type: none"> <input type="radio"/> Errors made in original are adequately corrected
A & R: 0 E-E E+ I-I	<p>A reasonable preliminary prediction is made for the effect on Weekly Riders of</p> <ul style="list-style-type: none"> <input type="radio"/> Price per Ride <input type="radio"/> Population <input type="radio"/> Income <input type="radio"/> Parking Rate <p>Correctly compares preliminary predictions with correlation matrix results for effects on Weekly Riders of</p> <ul style="list-style-type: none"> <input type="radio"/> Price per Ride <input type="radio"/> Population <input type="radio"/> Income <input type="radio"/> Parking Rate <input type="radio"/> Slopes and y-intercepts are stated in terms of the problem context (not Xs or Ys) <input type="radio"/> Correct units are given for slopes <input type="radio"/> Correct units are given for Y-intercepts <input type="radio"/> Correct units are given for S_e 	<ul style="list-style-type: none"> <input type="radio"/> Provides an adequate and correct explanation of R^2 <input type="radio"/> Explains what R^2 tells us about the model <p>Correct R^2 analysis is used to rank Regression Model of Weekly Riders vs.</p> <ul style="list-style-type: none"> <input type="radio"/> Price per Ride <input type="radio"/> Population <input type="radio"/> Income <input type="radio"/> Parking Rate <input type="radio"/> Provides an adequate and correct explanation of S_e <input type="radio"/> Explains what S_e tells us about the model <p>Correct S_e analysis is used to rank Regression Model of Weekly Riders vs.</p> <ul style="list-style-type: none"> <input type="radio"/> Price per Ride <input type="radio"/> Population <input type="radio"/> Income <input type="radio"/> Parking Rate <p>Correctly interprets the slope of the model for</p> <ul style="list-style-type: none"> <input type="radio"/> Price per Ride <input type="radio"/> Population <input type="radio"/> Income <input type="radio"/> Parking Rate <p>Correctly interprets the y-intercept of the model for</p> <ul style="list-style-type: none"> <input type="radio"/> Price per Ride <input type="radio"/> Population <input type="radio"/> Income <input type="radio"/> Parking Rate
C & P: 0 E-E E+ I-I	<ul style="list-style-type: none"> <input type="radio"/> Assignment was submitted on time <input type="radio"/> Submitted in memo form <input type="radio"/> The writing is competent (grammar, spelling are basically correct) <input type="radio"/> There is an adequate introduction to the problem situation <input type="radio"/> The introduction clues the reader as to what to expect in the memo <input type="radio"/> The presentation of the proposal is adequate and complete (must include everything the memo requires) <input type="radio"/> Charts are not fragmented <input type="radio"/> All axes and text on graphs are readable. <input type="radio"/> All charts are legible <input type="radio"/> All parts of memo are adequately addressed <input type="radio"/> Supporting computer output is embedded in the memo 	<ul style="list-style-type: none"> <input type="radio"/> The writing adequately deals with the complexity and depth of the analysis <input type="radio"/> Text and graphics are well integrated in a way that facilitates the readers understanding <input type="radio"/> Memo includes a conclusion summarizing the results of the analysis (executive summary) <input type="radio"/> Conclusion states which model is the best-fit model <input type="radio"/> Conclusion states how accurate we can anticipate the predictions of the best-fit model will be. <input type="radio"/> Overall, the graphs, charts, and text have a professional appearance.

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