

## Spreadsheet Basics

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What is a spreadsheet? It is a group of values and other data organized into rows and columns much like the columnar pads or ledgers used manually by bookkeepers and accountants. Or perhaps similar to the checkbook register you use for your checking account.

It is a great flat file database useful for names and addresses and more. It is a super calculator. Keep track of expenses, project future expenses, calculate potential loan payments. take the burden out of budgeting, compare estimated costs to actual costs, and more.

Much like a word processor a spreadsheet allows you to digitize what was once manual. And you can not only enter the data, you can easily analyze it and use the features of the app to perform calculations automatically.

There are many variations of apps and the most popular is Microsoft Excel. Among a long list of others are apps like LibreOffice, OpenOffice. Windows Live, and Google Docs. These basics can apply to all of them. We are going to be looking at the Microsoft Excel application.



To open Excel, click the icon on the desktop, green with an X. Or click start and type the word excel--a list will appear above with the same icon. Click to open.



The bar across the top is called a ribbon. There are a number of different ribbons each having a tab to open them. This image is from Excel 2007. The round circle in the top left opens the File window where we open, save, print, and close the workbook among other things. In Excel 2010 and above this is shown as a File tab instead.

What opened is called a workbook and contains one or more worksheets. Notice the three tabs on the bottom. The empty workbook opens with three active worksheets. Other applications refer to these as spreadsheets.

	A	B	C
1			
2			
3			

A worksheet consists of cells organized in rows and columns. Rows are numbered and go from top to bottom. Columns are lettered and go from left to right. Each cell has an address called a cell reference consisting of the column letter followed by the row number. For example, the top left cell is A1, column A and row 1.

	A	B	C
1	Checkbook		
2			
3			

Clicking on a cell makes it active-the one you are working on. It has a box around it and whatever you type replaces what is currently in the cell. Pressing Esc reverts the content back to the original. Notice the content of whatever cell is active is displayed in the cell and in the formula bar above the grid. You may enter or make changes in either location.

	A	B
1	Checkbook	
2		

Range A1:B2 is selected

A group of contiguous cells can be referred to using a cell range consisting of the cell reference of the top left cell in the group followed by a colon and then the bottom right cell reference. For example, A1:B2 is a range referring to the top left four cells.



A workbook can contain more than one worksheet. There are tabs across the bottom of the worksheet indicating which sheet you are working on. Click the add button to add a new sheet.

	A	B	C
1	AAAAA	1111	
2	BBBBB	2222	
3	CCCCC	3333	
4		6666	
5			

There are three types of data that can be entered in a cell; text, values, and formulas. Text is anything that does not need to be used in calculation even if it might be numeric such as a zip code, a phone number, etc. Formulas are used to calculate answers of the other value cells.

- Text is automatically left aligned.
- Values are automatically right aligned
- Formulas appear as entered in the formula bar and the results show in the cell

	A
1	1/1/2012
2	3/15/2012
3	74

Dates are automatically converted to a numeric value when entered. The value is the number of days since 1-1-1900. This allows calculations to be performed on dates such as the number of days between two dates. They display in both the formula bar and the cell as a date.

	A
1	1
2	2
3	3
4	4
5	10

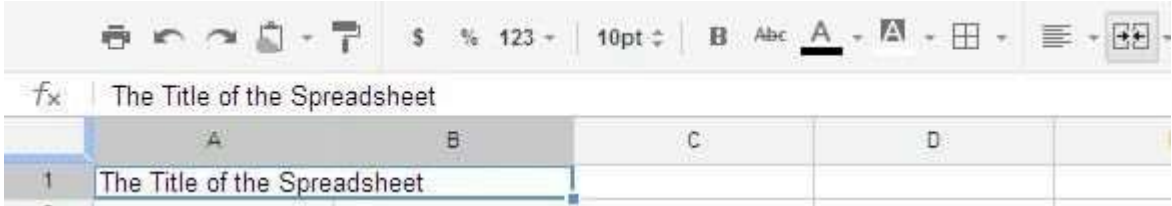
Instead of =A1+A2+A3+A4

Functions are special formulas. They call pre-made formulas built into the spreadsheet app. Parameters are entered and passed to the function and the results displayed in the cell. There are many complex functions such as PMT to calculate the monthly payment to pay back a loan.

	A
1	1

F2 was pressed so an insertion point shows in the cell

To modify the contents of a cell, click to select the cell (make it the active cell). Whatever you type will replace what is there. If you want to edit the content instead of replacing it, make the changes in the formula bar or press F2 to allow editing within the cell. Even though you have changed the cell, the change will not be processed unless you press Enter or click into another cell.



Use the merge cells tool to combine cells so you can fit more text than will fit in one.

To change the size of a column or row point the mouse to the line between the column letters or the row numbers. A double arrow will appear. Drag to resize the column or row, to select a cell simply click on it. Unlike other apps, you do not drag across the content to select it. To insert a row or column, right click and chose to insert left or right, above or below. To delete a row or column, right click the number or letter and choose Delete.

Formatting cells is much like any other app using the toolbar. Bold, italic, underline, left, center, right, font style, font size, font color, and more. Use the Format menu to choose various type of numeric formatting. Select an entire row or column by clicking the row number or column letter. Then use the format menu to format every cell selected.

When setting up a worksheet it is a good idea to format entire columns or rows before entering data. Then when data is entered later, you do not need to remember to format it.

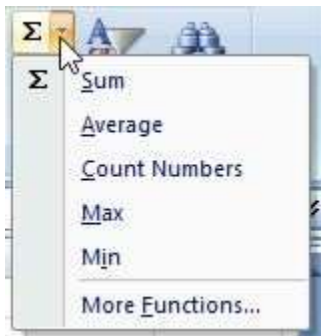
	A	B
1	1	
2	2	
3	3	
4	4	
5		
6	9	=A3+A4/A1+A2
7	2.3333333333333333	=(A3+A4)/(A1+A2)

When creating formulas remember the order of precedence you learned back in High School. Simply put, everything in parenthesis is done first. Multiplication and division happen before addition and subtraction. Note the example. Same cell, but two different answers.

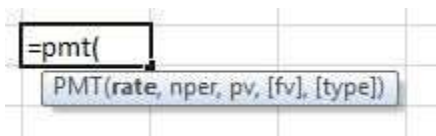
	A	B	C	D	E
1	Title of the worksheet goes here				
2					
3	Item	Quantity	Cost	Tax	Total Price
4	Ball	10	5.95	0.4165	63.665
5	Bat	5	9.45	0.35	49
6					
7					
8					
9					
10					
11					
12					
13	Assumptions				
14	Sales Tax Rate	7%			
15					

When setting up a spreadsheet consider following these “rules”.

- Title of the worksheet in A1
- Column headings in row 3
- Somewhere towards the bottom include an assumption area to hold values that might change



To insert a function, click the function tool and then click the function you need to use. For additional functions, click More functions. If you know the name of the function you can type = followed by the function name such as =SUM.



Each function name is followed by a set of parenthesis. In many cases, within are parameters separated with commas.

Here are some useful functions I use often:

- Sum - adds up a range of cells
- Average - computes the average of a range of cells
- Count - counts the number of non-blank numeric cells in a range
- Counta - counts the number of non-blank cells in a range
- Pmt - computes the monthly payment of a loan

Once you have created a formula, you can select the cell and copy the formula to the clipboard. Then you can paste into another cell. The cell references will be adjusted to fit the new location. To insure a cell reference is not adjusted, change it to an absolute cell reference by placing \$ in front of the row number and column letter:

Example: A1 is a relative cell reference. \$A\$1 is an absolute cell reference. Select the cell reference and press F4 to add the \$.

Most worksheets are best printed in landscape mode. I suggest a print preview before printing to be sure everything is lined up correctly.

As mentioned above, there are many uses for spreadsheets. Here are a few ways you might be able to use them:

Names and addresses  
Tracking expenses  
Keeping track of credit card charges  
Passwords  
Checkbook  
Calculate Loan Payment  
Calculate Investment Interest  
...

More white papers on my website at <http://RWEvans.com>