

# Excel Introduction

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## What is a Excel?

A spreadsheet is the computer equivalent of a paper ledger sheet. It consists of a grid made from columns and rows. It is an environment that can make number manipulation easy and somewhat painless.

<i>paper ledger</i>	
<i>car loan</i>	<i>\$12,000</i>
<i>interest</i>	<i>9.6%</i>
<i># of payments</i>	<i>60</i>
<i>monthly payment</i>	<i>\$252.61</i>

	A	B	C
1		<b>computer ledger</b>	
2			
3		car loan	\$12,000.00
4		interest	9.60%
5		# of payments	60
6			
7		Monthly Pmt.	\$252.61

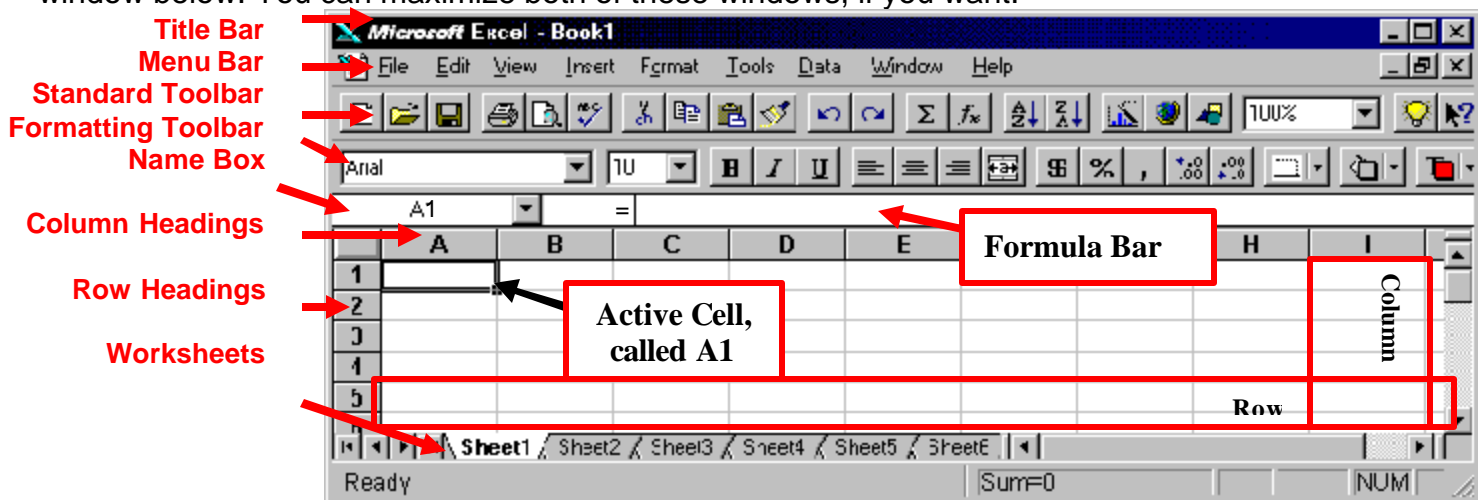
The math that goes on behind the scenes on the paper ledger can be overwhelming. If you change the loan amount, you will have to start the math all over again (from scratch). In addition it's easy to make a chart or graph from a spreadsheet.

For practical purposes, spreadsheets get used for planning and tracking budgets, tallying expenses, performing financial analysis.

Spreadsheet program are used to put non-numeric data lists into rows/columns, such as a membership or mailing list, because it's very easy to sort.

## Application Window

When you load Excel, you may see a "Tip of the Day" creen appear. (On new installations this will appear, but the display is often turned off.) Click on the "OK" button to close the tip screen and go on to the Excel screen. You should see the application window at the top of the screen and a document window below. You can maximize both of these windows, if you want.



The application window area contains five rows or lines of command menus which can be used to act upon the information found in the document window. These command menus display command

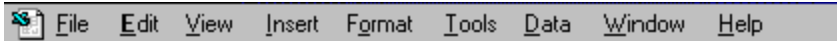
words and graphic icons. These menus include the *title bar* (at the very top) followed by the *menu bar*, the *Standard toolbar*, the *Formatting toolbar*, the *Formula bar*, and the *Status bar*. The function of each of these is as follows:

### Title Bar



Displays the name of the application "Microsoft Excel." The control menu box is on the far left and the minimize/maximize or restore buttons on the far right. These are standard Windows features, and you can consult the Windows manual for additional information.

### Menu Bar



Displays the main level commands. These commands can be executed with a click of the left mouse button; then additional command options are presented in pull-down menus. The commands **FILE**, **EDIT**, **VIEW**, **WINDOW** and **HELP** are common menu options found in other Windows applications.







### Toolbars



There are two toolbars which will normally display--the Standard toolbar and the Formatting toolbar. The toolbars have graphic buttons which can be click on with mouse to perform an action or bring up another set of menus. The actions performed by the toolbar buttons are also found in the menu bar/pull-down menus. Buttons are popular with Excel users because they give a quick way to perform an action but it is not NECESSARY to use them. Because the buttons duplicate menu items, there are often several ways to "perform an action." If you put your mouse pointer on top of a button, its *ToolTip* (name) will pop up.

If two toolbars are not displaying, click on **VIEW** on the menu bar, then Toolbars. A list of the toolbars appears. Click on the box in front of the toolbar name to display it.

A few of the toolbar buttons we will use in Lesson 1:

-  New Workbook (results in a blank document)
-  Open (workbook/file)
-  Save (workbook/file)
-  Print
-  AutoSum (to add up numbers in a row or column)
-  Undo (un-does the last editing action)

### Formula Bar



This is the last line before the document window. It displays information entered or about to be entered in a cell and gives the address location of that cell. Cell editing can also be done on this formula bar. The active cell position is indicated on the far left end of the Formula bar. more about this later.

### Worksheet Tabs and Scrolling Buttons

Tabs appear at the bottom of the document window with names of Sheet1, Sheet2, Sheet3, etc. (Refer to the diagram above.) You can go to another sheet by clicking on a different tab.

Also, the scrolling buttons appear to the left of the tabs; they allow you to scroll more quickly through the sheets.

## TRY IT!

1. Start Excel
2. Move the mouse pointer over the worksheet. The pointer displays as a white plus sign.
3. Click in cell **A1** and type number **38**
4. Press the **Tab** key.
  - *The number (value 38) appears in that cell and moves to B1. You can press **Tab** or **Enter** to enter the value and move to the next cell.*
5. Type the number **62** and press the **Enter** key
6. The value **62** appears in cell **B1** and cell **A2** becomes the *active cell*.

### Enter a Simple Addition Formula

1. Click in cell **B2**.
  - *Cell B2 is selected and is now the active cell. The entry in the Name box changes should change to B2*
2. Type the following formula **=a1+b1**
  - *a1 and b1 are **cell references**. The formula tells Excel to add the values in A1 and B1.*
3. Press the **Enter** key
  - *The result of the formula, 100, appears in the cell B2 and cell B3 is now selected.*

### Changing Data in a Cell

See what happens when you change the actual data in a referenced cell:

1. Click in cell **A1**
2. Type **138**, and press the **Enter** or **Tab** key
  - *If you select a cell that already has data, typing replaces existing data. The result in cell b2 changes to 200.*
3. Double-click cell **B1** or select cell **B1** and press the **F2** key.
  - *The insertion point appears in the cell so you can edit the data. You can position the insertion point using the cursor movement keys.*
4. Change the number to **162** and press **Enter**.
  - *The result of the formula, 300, appears in cell B2.*

**TIP:** You can also edit data by selecting the desired cell and then clicking in the Formula bar. Any data in the cell is then displayed in the Formula bar and you can edit the data in the Formula bar.

## Entering Values and Labels

Data Types	Examples	Descriptions
<b>LABEL</b>	Name or Wage or Days	Anything that is just text with no numerical value. Use to identify the contents of the values, a worksheet title or other identifying text. Labels are left-aligned within the cell by default.

<b>VALUE</b>	5 or 3.75 or -7.4	Anything that can be used in a formula: numbers, dates, and results of formulas. When you begin typing in a cell with a number, period or \$, Excel treats the entry as a value. Values are right-aligned within the cell by default. If they have decimals, they are aligned with the decimal.
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In this example the labels are:

- computer ledger
- car loan
- interest
- # of payments
- Monthly Pmt.

	A	B	C
1		<b>computer ledger</b>	
2			
3		car loan	\$12,000.00
4		interest	9.60%
5		# of payments	60
6			
7		Monthly Pmt.	\$252.61

In this example the values are:

- \$12,000
- 9.6%
- 60

## TRY IT!

1. Select cell **A4**, type **Cost**, and press **Enter**.
  - *The word is left-aligned, indicating that the cell contains a label.*
2. In cell **A5**, enter **3855**.
  - *The number is right aligned, indicating that the cell contains a value.*
3. Select cell **B4** and enter **Price**
4. Select cell **B5** and enter **2588**
5. Select cell **C4** and enter Profit
6. Your spreadsheet should look like this one:

	138	162
		300
Cost	Price	Profit
3855	2588	

## Copy a Formula

- It is easier to copy a formula rather than individually creating one.
  - When you copy a formula, Excel changes the cell references appropriately.
1. With cell **C5** selected, enter the following formula: **=a5-b5**.
    - *The result 1267 appears in cell C5*
  2. Select cell **A6** and enter **2979**
  3. Select cell **B6** and enter **1823**
  4. Select cell **C5**
  5. Click the **Copy** button or press **Ctrl+C**
    - *A blinking rectangle surrounds the copied cell.*
  6. Click cell **C6** to select it.
  7. Click the **Paste** button or press **Ctrl+V** and then press **Enter**.

- If you click the Paste button or press Ctrl+V, you can continue to paste the formula into additional cells. If you press the Enter key, the formula no longer is on the clipboard and cannot be pasted. If the blinking rectangle remains after pasting, press **Enter** or **Esc**.

## Select a Range of Cells

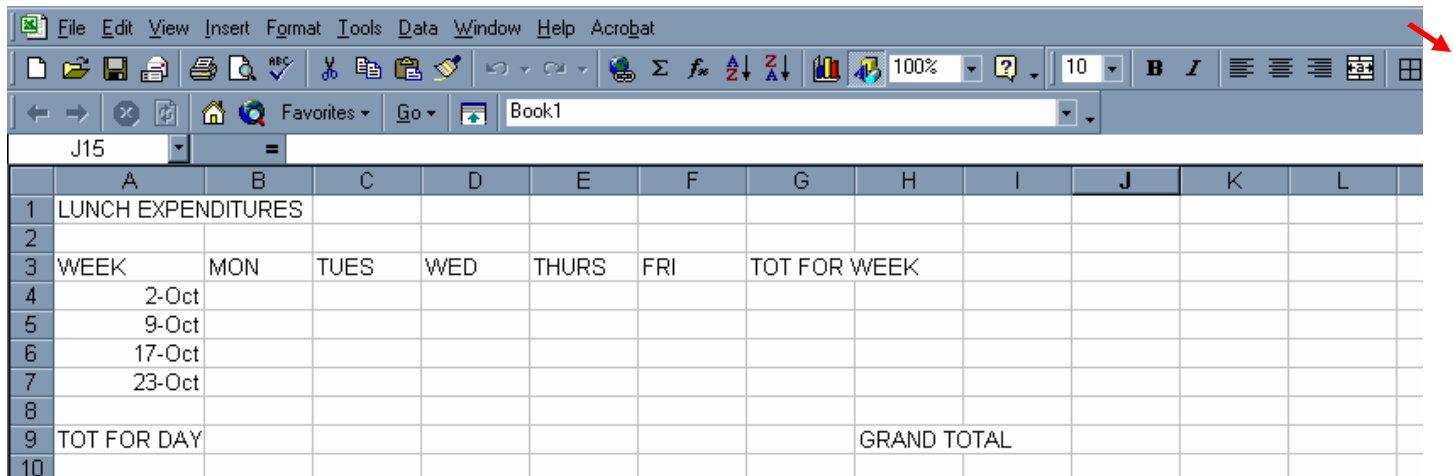
- When you want to work with more than one cell, you select a group of cells or a range. For many spreadsheet tasks, it will be easier to work with cells in a group. For example you may want to copy an entire row or format the total row or column in a budget worksheet.
- A range of cells is usually a rectangle identified by the cells in its upper-left corner and lower right corner, separated by a colon. The notation **B2:F5** means the rectangle of cells from column B, row 2 to column F, row 5 is selected. The selected cells will be grey.
- To select a range of adjacent cells:
  - With the mouse: click the first cell in the upper-left corner. Hold down the mouse button and drag to the lower-right corner. All cells in that range will be selected.
  - With the keyboard: click the first cell you want to select. Hold down the **Shift** key and use the **arrow** keys to select the range.
- To select a group of non-adjacent cells:
  - Hold down the **Ctrl** key and, using a mouse, select each range you want to include.
- To select an entire row or column click on the row number or the column letter
- To select the entire worksheet, click the grey cell above row 1, left of column A.
- To unselect just click on an empty cell

**Quick Fix:** If you accidentally make mistakes clicking and move things around, the **Undo** button will to move it back.

## TRY IT!

We're going to make a little more complicated spreadsheet to use for the rest of this lesson:

1. Create this spreadsheet:



Note: when putting in the dates, if you just type 10/2, 10/9, etc. Excel will automatically change the text to 2-Oct.

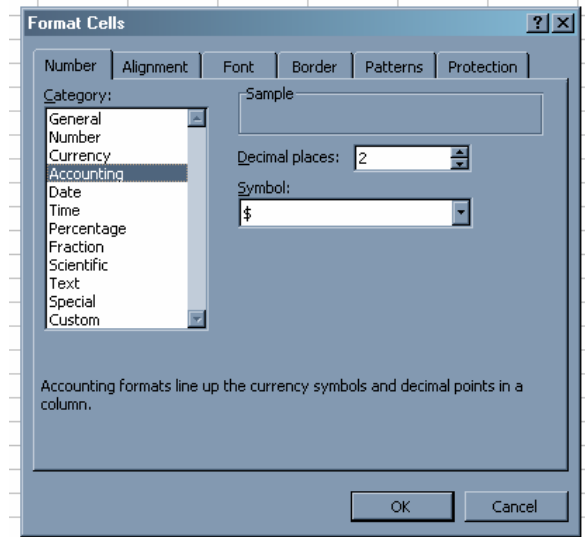
2. To center and merge text in a range of cells:
  - Select the range A1: I1.
  - Click on the “Center and Merge” button in the *The title will be centered on the spreadsheet.*
  - Click on the “B” in the Format Toolbar *The title text will be bold.*

3. Click on row 3 and bold the text
4. Click on column A and bold the text
5. Click on “Grand Total” and bold the text

Now let’s change the format of the numbers we’re going to enter:

6. Select range B4:G9
7. Choose Format>Cells. Click on the Number tab.
8. Explore the options for formatting numbers
  - Choose Accounting category, 2 decimal places, and \$ symbol.

*Every number you enter in these skills will be formatted with these characteristics.*



**Let’s put in the numbers we’re going to work with:**

	A	B	C	D	E	F	G	H
1	<b>LUNCH EXPENDITURES</b>							
2								
3	<b>WEEK</b>	<b>MON</b>	<b>TUES</b>	<b>WED</b>	<b>THURS</b>	<b>FRI</b>	<b>TOT FOR WEEK</b>	
4	2-Oct	\$ 6.48	\$ 5.22	\$ 6.48	\$ 7.59	\$ 3.60		
5	9-Oct	\$ 6.48	\$ 6.48	\$ 4.00	\$ 6.72	\$ 4.98		
6	17-Oct	\$ 6.48	\$ 10.69	\$ 3.75	\$ 6.48	\$ 2.34		
7	23-Oct	\$ 6.48	\$ 6.48	\$ 7.59	\$ 4.50	\$ 12.00		
8								
9	<b>TOT FOR DAY</b>							<b>GRAND TOTAL</b>
10								

9. Type in the numbers above.

**Question:** The numbers \$6.48 shows up very often in this spreadsheet. What would be the easiest way to put in that number?

10. Save the workbook to the desktop.

### Use the SUM Function

- You can create a formula for adding cells B2 through B5 by entering:

=B2+B3+B4+B5

- If a large number of cells are to be added, it is faster to use Excel's SUM function
- The SUM function lets you specify the cells to be added as shown below:

=SUM(B2:B5)

SUM is the most commonly used function.

- Excel has many functions. All functions must be typed in this format (also called syntax):
  - Begin with an equal sign.
  - Followed by the function name
  - The group of cells affected by the function



## TRY IT!

1. Select cell **B6**
2. Type in the following formula: **=SUM(B2:B5)**.
3. Press **Enter**.  
The results appear in cell B6
4. **Save** the workbook to the desktop.

## Use AutoSum

Rather than type in the SUM formula, you can use the AutoSum feature. This feature quickly creates a SUM function, estimating which range you want to sum.

## TRY IT!

1. Select cell **C9**.
2. Click the **AutoSum** button.   
*Because the selected text is at the bottom of a column, Excel assumes you want to total the column.*
3. Press **Enter** to accept the proposed formula.
4. Select cell **G4**.
5. Click the **AutoSum** button. 
6. Press **Enter** to accept the proposed formula again.

## Copying Formulas

While AutoSum and SUM are excellent tools, sometimes you have many columns or rows to put a formula in. To transfer the formula to many cells, try the two methods below.

## TRY IT!

1. **Copy** the formula in G5 to G6:G7 as outlined below:
  - a. Select cell **G4**
  - b. Click the **Copy** button
  - c. Select the range **G5:G7**
  - d. Press **Enter**
  - e. If the **clipboard** appears, click it **Close** button.

*NOTE: If you click the Paste button or press Ctrl+V, you can continue to paste the formula into additional cells. If you press the Enter key, the formula no longer is on the clipboard and cannot be pasted. If the blinking rectangle remains after pasting, press **Enter** or **Esc**.*

2. Use **Fill** to copy the formula from C9 to D9:G9.
  - a. Select cell **C9**.
  - b. Hold down your left mouse button and drag your mouse to add D9:G9 to your selection.
  - c. Click on Edit > Fill > Right (or enter Ctrl + R) . This makes the formula in C9 fill the cells from D9:G9

Question: How would you use Fill to add the formula to B9

You're spreadsheet should look like this:

	A	B	C	D	E	F	G	H
4	2-Oct	\$ 6.48	\$ 5.22	\$ 6.48	\$ 7.59	\$ 3.60	\$ 29.37	
5	9-Oct	\$ 6.48	\$ 6.48	\$ 4.00	\$ 6.72	\$ 4.98	\$ 28.66	
6	17-Oct	\$ 6.48	\$ 10.69	\$ 3.75	\$ 6.48	\$ 2.34	\$ 29.74	
7	23-Oct	\$ 6.48	\$ 6.48	\$ 7.59	\$ 4.50	\$ 12.00	\$ 37.05	
8								
9	TOT FOR DAY	\$ 25.92	\$ 28.87	\$ 21.82	\$ 25.29	\$ 22.92	\$ 124.82	GRAND TOTAL

## Print a Worksheet

There are many options to printing in Excel. You can print a worksheet with or without column and row numbers. You can also print with or without the lines that form the cells (called **gridlines**). Sometimes your worksheet will run into multiple pages and is not readable or prints cells that have no content. You can control many aspects of printing a worksheet. We'll practice a few.

## TRY IT!

1. Click on **View > Page Break View** to see how the printed pages would be divided. The dotted line is where new page would print. You can move the page breaks around by hovering your cursor above the solid blue lines and dragging them right or left, up or down.
2. Define the range of cells you want to print with **Set Print Area**
  - a. Click on **File > Print Area > Set Print Area**  
*This is the only part of this spreadsheet will print. So if you want to only print Monday's*

*expenses, you can select only that that for your Print Area.*

3. Click on **Page Setup**. This is where you control many aspects of the printed spreadsheet
  - a. Under the **Page tab** you can make these changes:
    - i. Portrait vs landscape layout
    - ii. Change how many pages the spreadsheet will use. This will enlarge or make smaller the text of the spreadsheet to take up the space you indicate.
    - iii. Change your paper size
  - b. Under the Margins tab you can make these changes:
    - i. The width of the margins
    - ii. Centering of the spreadsheet on the page
  - c. Head and Footer tab has some interesting options. We'll cover those next week.
  - d. Under the Sheet tab you can make these changes:
    - i. What part of the spreadsheet you print
    - ii. On a multiple page spreadsheet, you can have the title and column headers print on every page.
    - iii. Add **gridlines** between cells (makes it much easier to read).
    - iv. Add row and column headings to print the numbers and letters that identify the rows and columns.
4. After making your selections in Page Setup, click on **OK**.
5. Click on **File > Print Preview** or **the Print Preview button**. This will let you see what will actually be printed. If you don't like it you can go into Page Setup at the top of the page and change your settings.
6. Once you're satisfied, click the **Print** button.
7. Click **OK** to print the spreadsheet.
8. Close the workbook.