

Lesson 1:

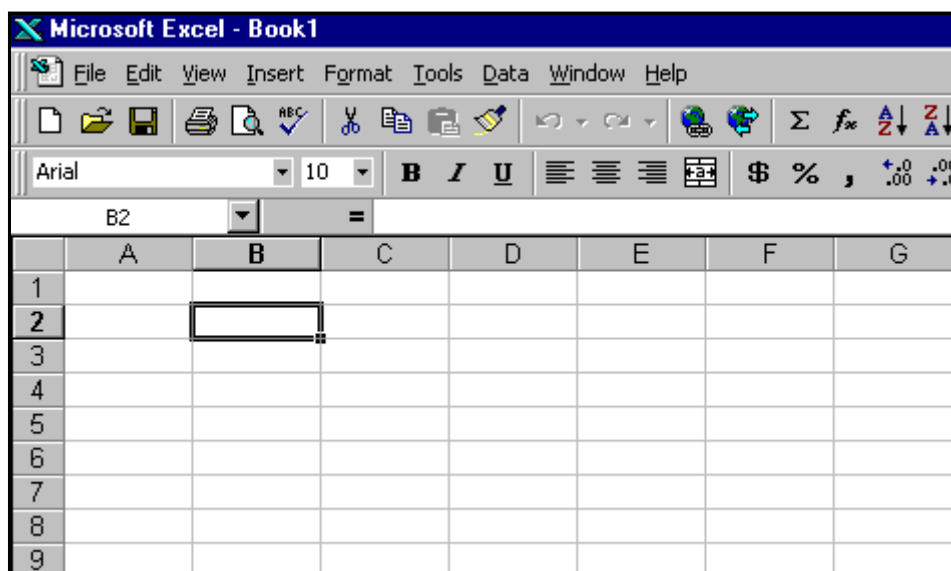
Overview of Excel Environment

Excel is organized to allow calculations laid out in tabular form -- much as we would lay out the same calculations if we were doing them with paper and pencil. The "paper" is called a **worksheet** in Excel, and it is divided into a rectangular grid by labeled **rows** and **columns**. The intersection of a row and column is referred to as a worksheet **cell**, and these cells contain all the data, text, and formulas that comprise a calculation and its associated documentation.

Rows are labeled by numbers (1, 2, 3, ...) and columns are labeled with letters (A, B, C, ..., AA, AB, AC, ...). Cells are then labeled with both the column letter(s) and row number in that order. For example, the highlighted cell in the figure below is cell B2. A cell is selected (highlighted) by clicking the cursor over it. Only one cell can be selected at a given time and this cell is referred to as **the active cell**.

Notice also in the figure below the tool bars at the top of the worksheet. Many of these will be familiar to you from your work with word processors, and they serve very similar functions within the spreadsheet. Any text (used for documenting our calculations) entered in a spreadsheet can be formatted in a number of ways, including changing its font style, font size, making it bold, italics, and so on. Numerical data can also be formatted in a variety of ways as can be gathered from the tools (\$, %, etc.) on the right side of the third tool bar.

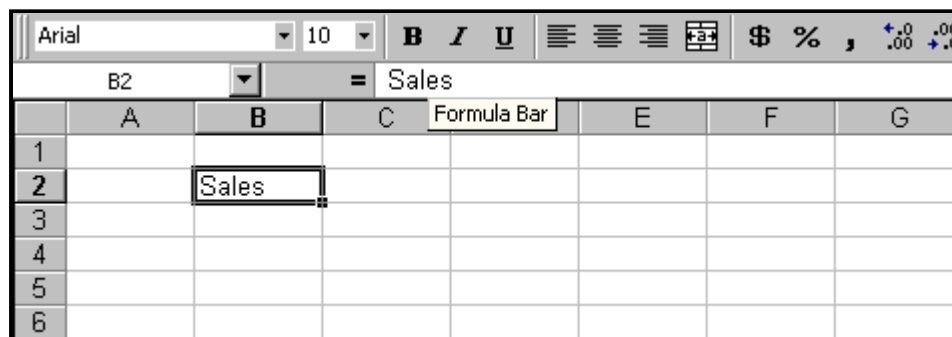
The area just above the row of column labels contains a field giving the currently active cell (B2 in the figure) and an area where text, data, and formulas are shown as they are typed in, and where they can be later edited. This area is referred to as the **formula bar**.



The following short activity will give you a quick introduction to some of the main features of the Excel spreadsheet package. If you have access to the program, you should do the activities as you read. This will enhance your understanding of each step.

1. Entering data in the active cell.

Recall that a worksheet cell is made the active cell by clicking over it. Once this is done the cell is ready to accept data. In the figure below, we have selected cell B2 as the active cell and then typed in the word "Sales." As you can see the word appears both in the cell itself *and* in the formula bar. If we want to edit (or erase and replace) this word later, we simply click over the cell, then move the cursor to the formula bar where it becomes the standard text editing I-beam pointer. Editing takes place in the formula bar and is reflected in the cell when we click the *Check* box to the left of the formula bar (this will appear once we click to activate the formula bar in edit mode) or press the *Enter* key.



2. Entering text and numerical data in the worksheet.

The following figure shows more text and numerical data entered into our example worksheet. Notice the new blue line between the column indicator row and the formula bar area. This appears once we save our document. It is the title bar for the document's own window. The document has been saved and named *Example1* in the figure.

When entering data in multiple cells, we usually employ a quicker method than selecting every new cell individually. The *Enter* key completes entry in a cell and moves the active cell to the cell immediately below the current cell. The *Tab* key has a similar effect but moves the new active cell to the cell to the immediate right.

Notice in the figure that we are about to format the numerical data that has been entered to of type *currency*. You'll see the effect of this in the next figure. The spreadsheet will automatically keep track of whether the data we have entered is textual or numerical (it will assume text except when the first character is a digit, a decimal point, or one of the algebraic signs + or -). Formulas are a third category and these always begin with an equals (=) sign. The formatting and other operations available will then be appropriate to the type of the data entered.

	A	B	C	D	E	F	G
1							
2	Month	Sales					
3	Jan	22876.00					
4	Feb	12222.00					
5	Mar	14321.00					
6	Apr	13423.00					
7	May	15532.00					
8	Jun	19087.00					
9							
10							

3. Entering a formula to calculate a result in the worksheet.

The following figure illustrates the process of entering a formula to compute the total sales for all six months shown. To enter a formula, we begin with the = symbol. Then we enter an algebraic formula, using the cell names (B3, B4, etc. in our example) instead of the actual data entered in those cells. The effect, of course, is the same. The worksheet will substitute the values entered in those cells when it does the arithmetic.

The advantage of this scheme is that whenever we change the numerical data in any of these cells, the formula is still valid. The worksheet will simply pick up the new values when it makes its substitutions for the cell names in the calculation. This simple scheme of **symbolically representing data** in our formulas rather than entering the actual data is a major benefit of using a spreadsheet. This is because we can repeat and/or correct calculations at will -- without retyping the formula that captures the basic computation.

	A	B	C	D	E	F	G
1							
2	Month	Sales					
3	Jan	\$ 22,876.00					
4	Feb	\$ 12,222.00					
5	Mar	\$ 14,321.00					
6	Apr	\$ 13,423.00					
7	May	\$ 15,532.00					
8	Jun	\$ 19,087.00					
9							
10	Total	=B3+B4+B5+B6+B7+B8					
11							
12							

4. Calculating with a formula.

The following figure illustrates the results of entering the above formula into cell B10. Notice that once we enter the formula, the result of the application of the formula appears *in the cell* and the formula itself appears *in the formula bar*. Once we check the results of the calculation in the cell itself, the formula can thus be easily edited in the formula bar if necessary.

	A	B	C	D	E	F	G
1							
2	Month	Sales					
3	Jan	\$ 22,876.00					
4	Feb	\$ 12,222.00					
5	Mar	\$ 14,321.00					
6	Apr	\$ 13,423.00					
7	May	\$ 15,532.00					
8	Jun	\$ 19,087.00					
9							
10	Total	\$ 97,461.00					
11							
12							

5. Altering the data used in a formula.

The following figure illustrates the results of entering new data into cell B4. Notice that the result of the application of the formula is automatically updated in cell B10 when this occurs. Alter some additional data and observe the results.

	A	B	C	D	E	F	G
1							
2	Month	Sales					
3	Jan	\$ 22,876.00					
4	Feb	\$ 32,222.00					
5	Mar	\$ 14,321.00					
6	Apr	\$ 13,423.00					
7	May	\$ 15,532.00					
8	Jun	\$ 19,087.00					
9							
10	Total	\$ 117,461.00					
11							
12							

Now that you've practiced with your first spreadsheet calculation, you're ready to move on to the next lesson, where we'll explore the use of worksheet formulas in greater detail.