

CS130/230 Lecture 1

Introduction to Excel

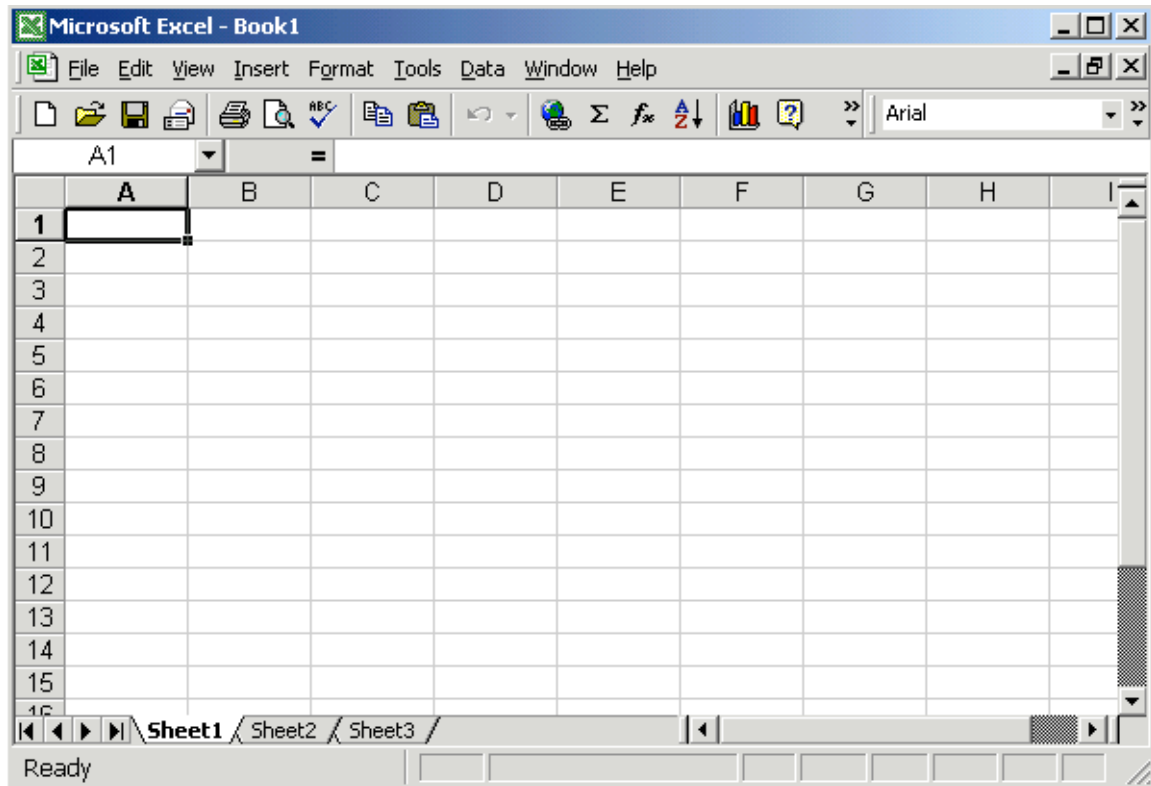
Tuesday, February 3, 2004

What is Microsoft Excel?

Basically, Excel is a spreadsheet (SS) program that allows the user the ability to organize data, do basic/advanced calculations, do what-if analysis, graph data, create professional reports, publish info to the Web, access real-time data from the Web. We will do all of these things through the four major parts of the Excel application:

- Worksheets: where we will enter, calculate, manipulate and analyze data.
- Charts: to represent our data pictorially.
- Databases: to manage the data. We can search, sort and select.
- Web Support: to save data in HTML format.

Let's begin by going to the Start menu and launching the Excel application. Your screen should look something like the following (only much larger):



As with most applications, Excel contains both a menu bar and a toolbar. Depending on the version of Excel that you are using, the menu bar and toolbar options might look a little different. Also, even though the Mac and Windows files are pretty much

compatible, there are differences between the UIs (User Interfaces) in the Mac and the Windows environments.

Workbook

When you first start Excel, it opens up with a new workbook called **Book1**. This workbook contains three worksheets by default but you can add many more. This is similar to having a notebook with many sheets of paper.

Worksheet

Worksheets consist of a grid of rows and columns. Each worksheet consists of cells, which are the basic building blocks of every worksheet.

A cell is referred to by its unique address or cell reference.

Question: What is an active cell and how do we know which cell is currently active?

Cells

You can enter various types of information into cells in various ways. The simplest type of information is text, which you just enter by selecting the cell and typing the text.

You can also enter numbers (or values) by typing in any of the number characters and acceptable symbols. Valid number symbols are = - () , / . \$ % E e. Do not put any spaces in a number or Excel will interpret it as text.

Formulas

Formulas are a different type of data that you can enter into the cell. A formula begins with an equal sign followed by a well-formed expression. If the equal sign is missing, chances are that the cell data will be interpreted as text unless a simple number is typed in.

Question: If we place the formula =3+9/3-1 into cell A1, what value gets displayed? Why?

Arithmetic Operators

Excel contains several binary arithmetic operators.

Question: What does binary mean?

Question: What do you think are the binary operators?

Question: What is the output of the following:

- 7/2
- 2/7
- 6/2

Operator Precedence

Question: What is operator precedence and how does it apply to the binary operators listed in the previous question?

Question: What is the value of each of the following formulas?

- $=2+4/2$
- $=4/0$
- $=0/4$
- $=2*3+5/2$
- $=2*/3$
- $=2*-1$

Operator Associativity

Question: Consider the formula $=2+3+6$. When we talk about the associativity operator, what do we mean and how does it apply to this formula?

Question: What is the value of each of the following formulas?

- $=2^3^2$
- $=2/3*4$

Cell References

Not only can numbers be placed in cell formulas, cell references can be used in cell formulas.

Question: What does the following formula mean? $=A1+2$

Problem

Place the values 10, -3 and 22 in the cells A1, A2, and A3 respectively. In cell, A4, write the formula to find the average of the values in cells A1 to A3. Then change the value in cell A2 and the value in cell A4 should be modified as soon as you hit return.