Introductory Excel

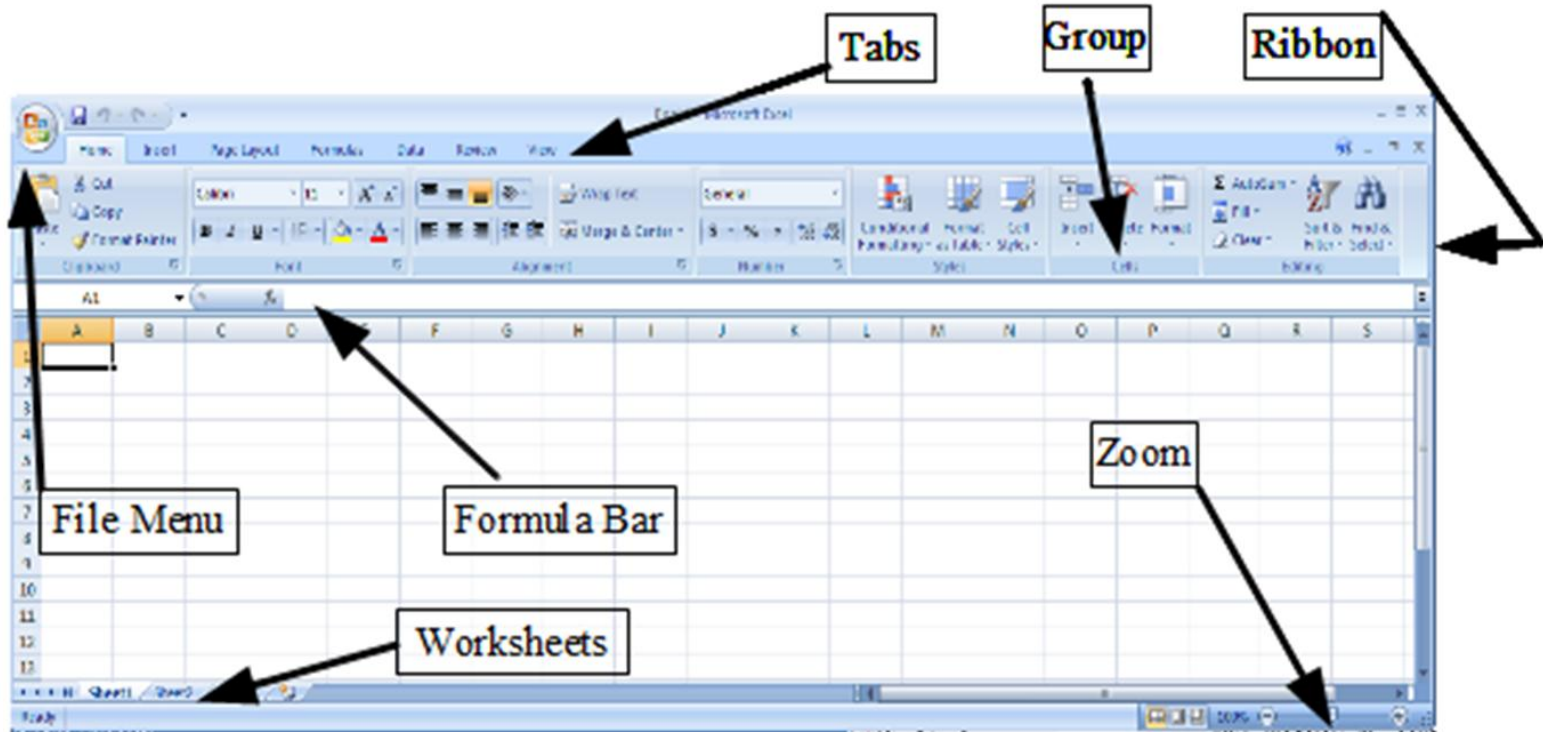## Spring 2012

Introduction to Excel

- What is Microsoft Excel?

- What can we do with Excel?

- We will do all of these things through the four major parts of the Excel application:

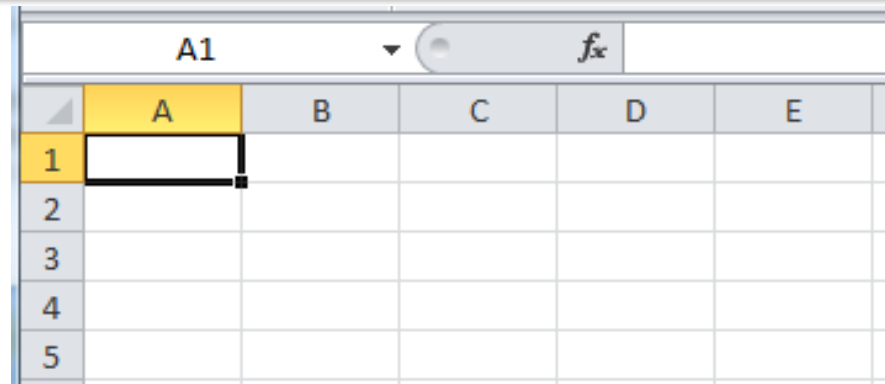# Launch Excel

Excel Functionality

- As with all Office 2007/2010 applications, Excel's functionality is divided into Ribbons or Tabs

- Select the appropriate Tab to use some Excel functionality

- The round **Office Icon** in the top left acts as the File Menu, allowing you to Open, Close, Save, and Print the Spreadsheet file.

Data Organization in Excel

- Workbook

- Worksheets

  - Worksheets can be renamed. How?

  - Worksheets can be added. How?

Excel Structures

- 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. The cell address is the Column letter and the Row number, for example D13.

- What is an active cell and how do we know which cell is active?

Excel Structure

- Cells
  - Text can be entered by selecting a cell and typing text
  - Numbers can be entered
    - Do not put any spaces in a number or Excel will interpret it as text.

- Formulas
  - The work horse of Excel
  - Formulas allow you to perform a calculation in a cell
  - Must begin with an equal sign

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

Binary Arithmetic Operators

- Excel contains several binary arithmetic operators.

What is a binary operator?

What are the five most common binary operators?

Operator Precedence

What is operator precedence?

What is the operator precedence for Excel's binary operators?

Evaluate

What is the value produced by evaluating each of the following Excel formulas:

▸ =2+4/2

▸ =4/0

▸ =0/4

▸ =2*3+5/2

▸ =2*/3

▸ =2*-1

Operator Precedence versus Associativity

- Does anyone know the difference between operator precedence and operator associativity?

- Operator Precedence

- Operator Associativity

Cell References

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

- What does the following formula mean? =A1+2

Problem 2.1

1. Place the values 10, -3 and 22 in the cells A1, A2, and A3 respectively.

2. In cell, A4, write the formula to find the average of the values in cells A1 to A3.

3. Change the value in cell A2 to 15, and the value in cell A4 will be modified as soon as you hit return.

Note: Excel always updates the entire worksheet any time a change is made to any worksheet cell.
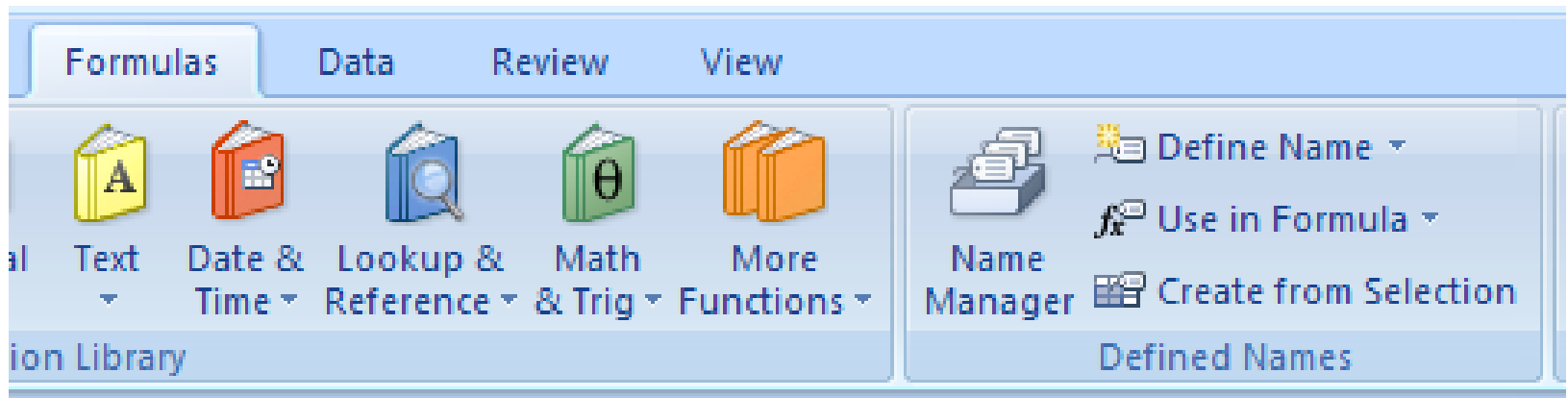
Saving Workbook & Worksheets

- For each Problem in this class, you are to create a new worksheet with the Problem name (e.g. Problem 2.1)
    - One file with all of your class work
- Save the Workbook as PUNetIDProblems
    - Backup on to Turing, Vault, or USB stick
    - https://vault.pacificu.edu
- Occasionally, I will have you drop your Workbook in the CS130 Drop folder on Turing

Named Cells

- You can name a cell rather than reference it through its address. This allows us to give meaningful names to values for use in formulas.

Problem 2.2

1. Place your age in cell A1. Using the **Formulas** Tab, **Define Name** of cell A1 to *MyAge*.

2. In cell A2, write the number of years left you have in college, name that cell *YearsLeft*.

3. In cell A3 write a formula to determine your age when you graduate college. Use the cell names in your formula.

Making the Data "Pretty" and Functional

- Formatting
  - Excel provides some advanced formatting capabilities to make your spreadsheet look more professional.

  - Cell formatting
    - Right-click on the cell, Format Cells, Number Tab
    - How many ways can we format numeric data?
    - There are also formatting buttons on the **Home tab**

- Any numbers that you have in your worksheet must be formatted appropriately.

Excel Error Message and Codes

Excel has several error messages that you should be aware of and the main ones are:

- # - A ##### error value occurs when the cell contains a number, date, or time that is wider than the cell or when the cell contains a date and/or time formula that produces a negative result.

- #DIV/0! - The #DIV/0! error value occurs when a formula divides by 0 (zero).

Excel Error Message and Codes

- #na - No information is available for the calculation you want to perform.

- #NAME? - The #NAME? error value occurs when Microsoft Excel doesn't recognize text in a formula.

- #NULL! - The #NULL! error value occurs when you specify an intersection of two areas that do not intersect.

- #REF! - The #REF! error value occurs when a cell reference is not valid.

- #VALUE! - The #VALUE! error value occurs when the wrong type of argument or operand is used, or if the Formula AutoCorrect feature cannot correct the formula.