Computer Science 1A
Introduction to Computer Science

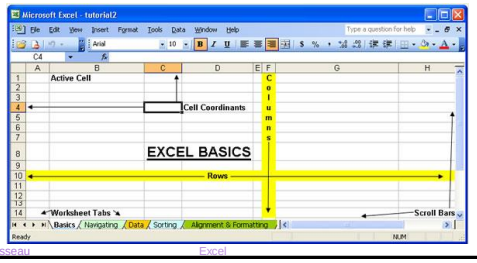
S1A

Topic 4 - Excel

- Assignment #2 – Spreadsheets in Excel
- Quiz next class on H/W & Excel

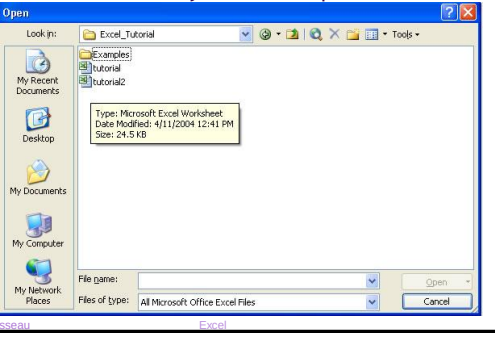
What is excel?

- Excel is a electronic spreadsheet
  - It is good for
    - Calculations
    - Organizing Data
      - Can use as a small database
    - Tables



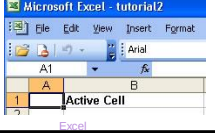
Opening a File

- Go to File → Open
  - Click on the file you want to open



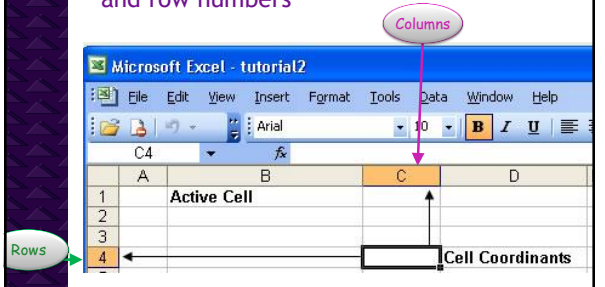
Activating a Cell

- Left clicking on a cell will activate a cell
- When a cell is active you can
  - Enter data
  - Enter a formula / function
  - Format the Cell
- NOTE: You must hit enter or activate another cell to deactivate your cell



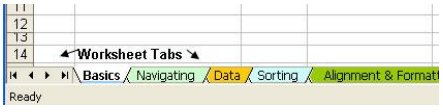
Columns and Rows

- Excel references cells by column letters and row numbers



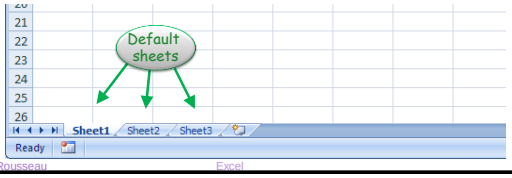
Worksheets / Workbooks

- A workbook is the entire file
  - The workbook is the name of the file
- A worksheet is one sheet in a file
  - Worksheets are named on tabs at the bottom of the workbook
- There can be many worksheets in one workbook
  - This allows us to organize our work, we can put related worksheets in one workbook
- To access a worksheet click on the tab



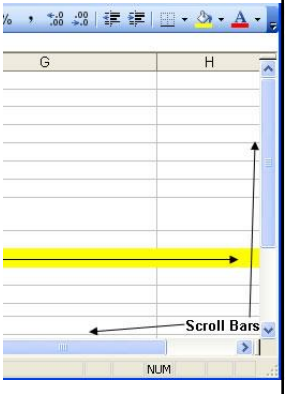
Worksheets

- To rename a worksheet
  - → right click the tab and click on rename or double left click the tab
- Worksheets allow us to organize our work
  - Related sheets can be places in 1 workbook
- To create a new worksheet
  - Right click a tab and click on insert → select worksheet
  - By default 3 worksheets are created with each new work book
- To delete a sheet
  - Right click the tab and click delete



Scroll Bars

- Scroll bars can be used to navigate around your spreadsheet



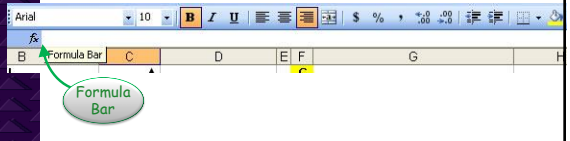
Navigating in Excel

- You can navigate by using the arrow keys
- Clicking on another cell
- Use scroll bars

- Or using some ctrl combinations
  - Home → Takes you to A1
  - End → Goes to last row, col, cell
  - Down → Last cell in col with data
  - Up → goes to first col with data
  - Right arrow → goes to last right hand cell with data
  - Left arrow → goes to last left hand cell with data

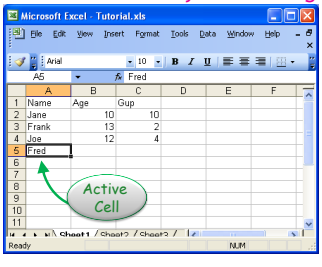
The Formula Bar

- The Formula bar (the line with the *fx*)
  - Where information for that cell will be entered.
  - Can be:
    - Data
    - Formulas
    - Functions



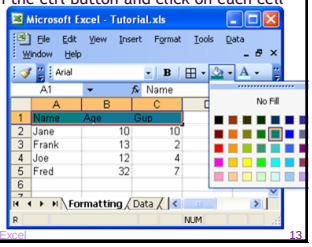
Entering Data

- Can type it in at the formula bar
- Can activate the cell and type
  - Activate a cell by left clicking it



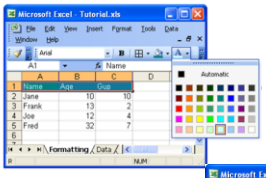
Formatting in Excel

- You can change fonts / alignments / colors
- Change Background color
  - Select one cell or a group of cells
    - To select a group click one cell - hold down the mouse button and drag across the ones you want to select.
    - Or you can hold down the ctrl button and click on each cell you want to select
  - Click on the Paint bucket
  - Select a fill color



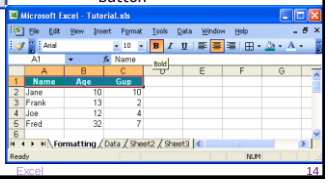
More Formatting

- Changing Cell colors
  - Select the A button and choose a color



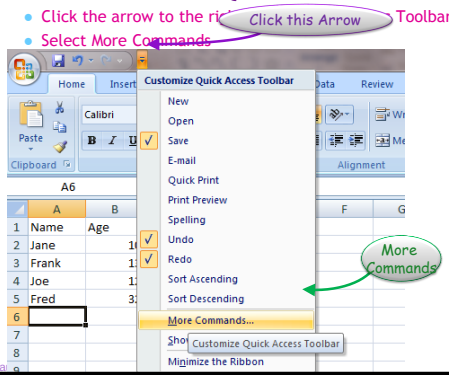
Bolding & Centering

- Select the "B" button
- Choose the center alignment button



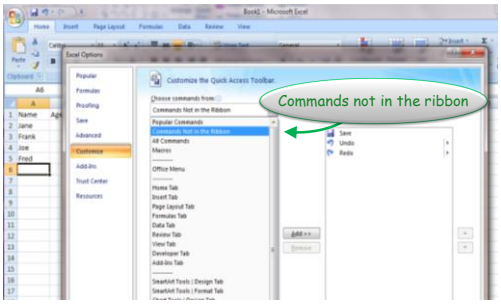
Auto Formatting

- Add Autoformat to the Quick Access Toolbar
  - Click the arrow to the ri… Toolbar
  - Select More Commands

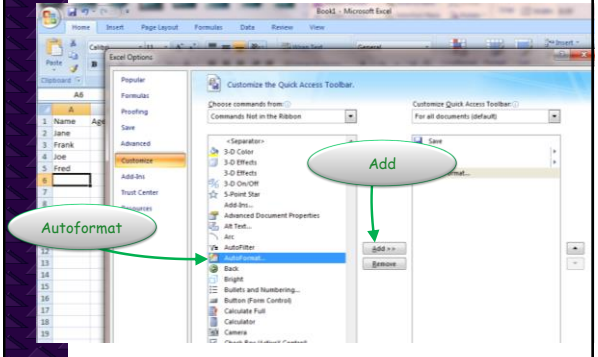


Auto formatting

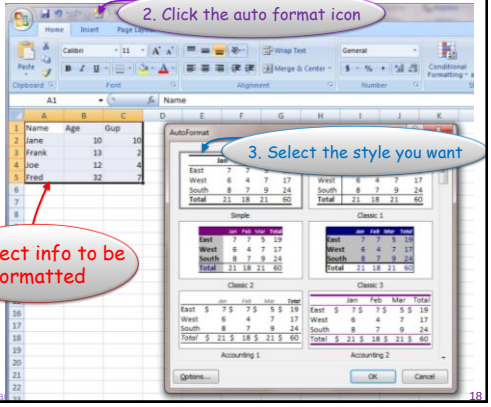
- Go to Commands not in the ribbon



- Select Autoformat
- Then Click the add Button

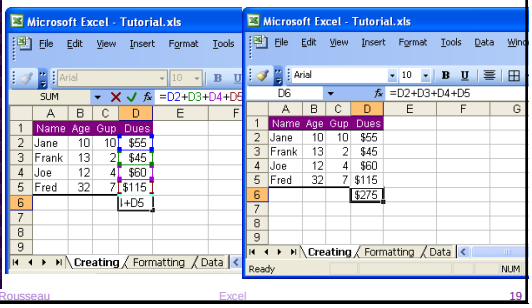


- Select the information to be formatted



Entering a Formula

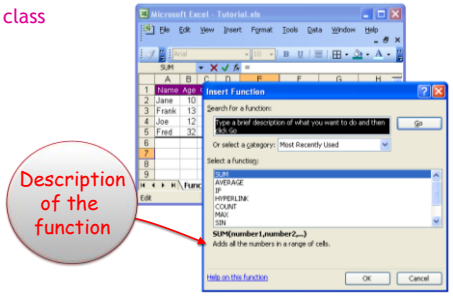
- Must start with an "="
- Refer to cells by Column Letter then Row #.



Predefined Functions

Click on *fx* for a list of predefined functions

- Can also define your own functions – that is for another class



Predefined Functions

Syntax ➔ how we write it so excel understands

=SUM(*number1, number2, number3*)

Semantics➔ how it works

SUM ADDS the value in the cells

=SUM(D1, D2, D3, D4)

Or we can select a group of cells

=SUM(D1:D4)

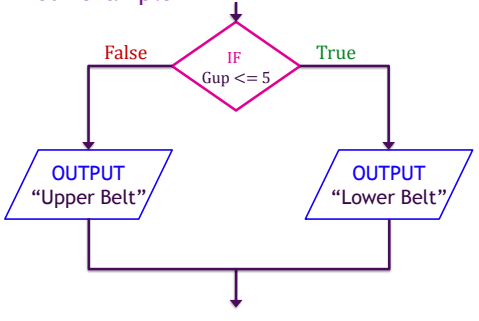
Selection Statements

- Sometime we want a cell to do one thing under one condition or another under another condition
- IF <some condition is true> THEN
  - Do something
- ELSE
  - Do something else

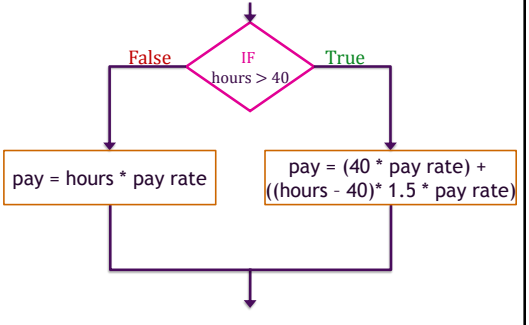
Relational Operators -ways to compare values	
=	Equal to
>	Greater than
<	Less than
>=	Greater than or equal to
<=	Less than or equal to
<>	Not equal to

Selection Flowchart

- In our example



Another Example



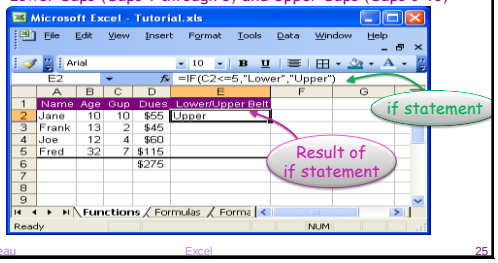
Using Selection in Excel

Syntax → format of our function

=IF(*condition*, *true_action*, *false_action*)

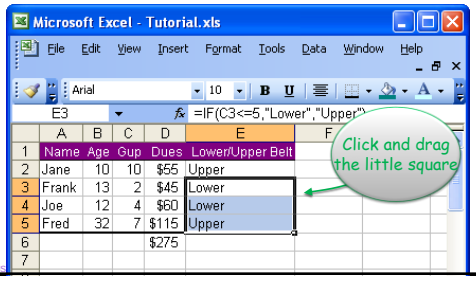
then else

In our example, let's say we want to differentiate between Lower Gups (Gups 1 through 5) and Upper Gups (Gups 6-10)



Applying Calculations to many cells

- Can drag down but clicking on the corner → wait until you have a + not a ✥
- Click on cell and copy – then select cells you want to copy to and click on paste



Nesting If Statements

- Nesting if statements is when we embed an if statement within an if statement
- Let's say we now want to differentiate between
  - Lower Gups (Gup 1-3), Middle Gups (Gup 4-7) & Upper Gups (Gup 8-10)
- We would say

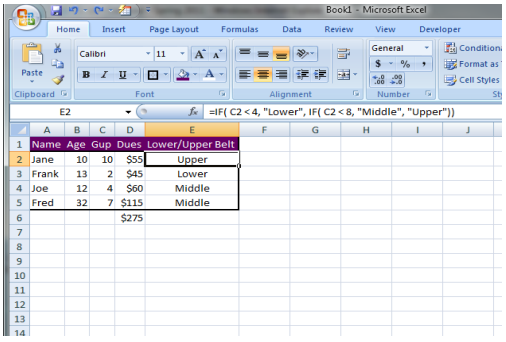
```
IF  Gup < 4  THEN
    OUTPUT "Lower"
ELSE
    IF Gup < 8 THEN
        OUTPUT "Middle"
    ELSE
        OUTPUT "Upper"
```

- In Excel using our worksheet

=IF(C2 < 4, "Lower", IF(C2 < 8, "Middle", "Upper"))

Note: it is good practice in excel to have an "**else**" condition for each **if**

Nested If Statement



	A	B	C	D	E
1	Name	Age	Gup	Dues	Lower/Upper Belt
2	Jane	10	10	$55	Upper
3	Frank	13	2	$45	Lower
4	Joe	12	4	$60	Middle
5	Fred	32	7	$115	Middle
6				$275	

Reminder

- Lab in Excel
- Assignment #2 : Spreadsheets in Excel