Week 1 - Lab 1: Introduction to Spreadsheets and Basic Calculations

Prepared by: Ealaf Selim

CPSC 203 - T16

Winter 2009

Welcome ☺

- This is your first tutorial in CPSC 203…
- Our goal is to have an enjoyable experience learning more about Computers and Software.

- Please try to log-in to the machine using your IT account…
- If you are having troubles, contact the IT in 7th floor of Math and Science Building ASAP.

Introductions

- Let's Introduce ourselves:
  - My name is: Ealaf Selim
  - Graduate Student in Computer Science Dept.
  - My email is: esselim@ucalgary.ca
  - My CT hours are:
    - Monday – 4 pm-5 – MS 237
    - Friday – 11 am-12 – MS 237
    - What are CT hours?!

- Now, it is your turn ☺

Expectations

- Prepare Yourself:
  - Check the wiki page of the Tutorial: http://wiki.ucalgary.ca/page/Courses/Computer_Science/CPSC_203/CPSC_203_Template/Winter_2010_Lab_Manual
  - Know the schedule of the lab
- In the lab Practice and be Interactive
- Use the extra examples: http://wiki.ucalgary.ca/page/Courses/Computer_Science/CPSC_203/CPSC_203_Template/Winter_2010_Lab_Manual#TA_Examples

Expectations

- Work early on Assignments. If you have questions, use my CT hours.
- Familiarize yourself with the CIB (Course Information Booklet).
- You are responsible for the correct submission of your quizzes and assignments. I grade what I receive.
- If you have questions about your grades or feedback, send me an email within a maximum of three weeks of receiving them.

Lab Norms

- Be punctual
- No Food or Drink in the lab
- Cell phones silent

- Log in only using your IT account
- Files saved on the machines are erased on log-off
- Do not move any machine

- You are encouraged to attend all tutorial sessions – Attendance in required for Quizzes

Tutorial Plan

- Part I: Spreadsheets
  - Microsoft Excel 2007
  - 6 Tutorial sessions + Quiz
- Part II: Databases
  - Microsoft Access 2007
  - 6 Tutorial sessions + Quiz
- Part III: Programming
  - Alice
  - Group Project

- More Details on page 8 in CIB.

Week 1 – Lab 1

- Overview of Microsoft Excel 2007
- We will learn to:
  - Type in data
  - Use AutoFill
  - Edit field formats, such as currency, numbers, text, etc.
  - Calculate basic statistics

What is a Spreadsheet?

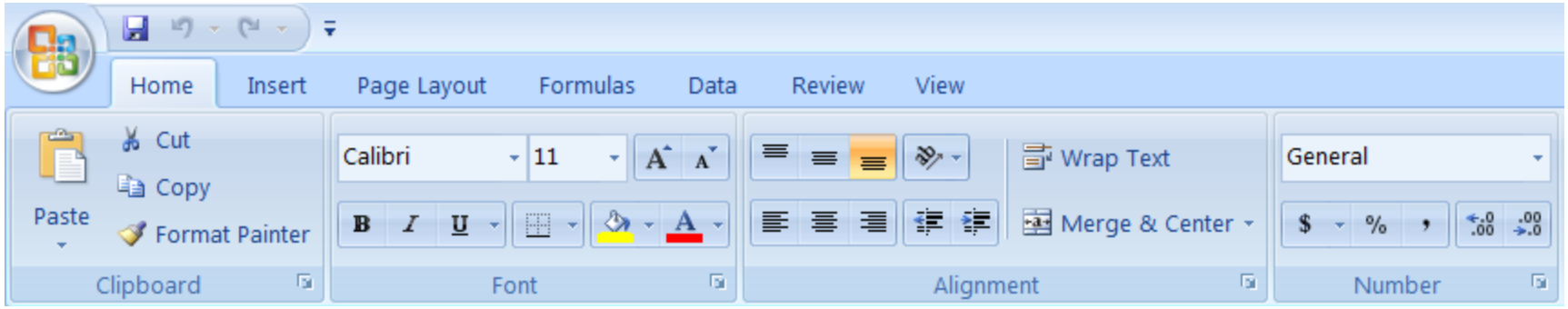
- A computer application that simulates a paper, accounting worksheet.
- Displays a grid consisting of rows and columns

- A cell contains either:
  - alphanumeric text, or
  - numeric values, or
  - a formula that defines how the contents of that cell is to be calculated from the contents of any other cells each time any cell is updated.

- Frequently used for financial information.
- Check http://en.wikipedia.org/wiki/Spreadsheet:

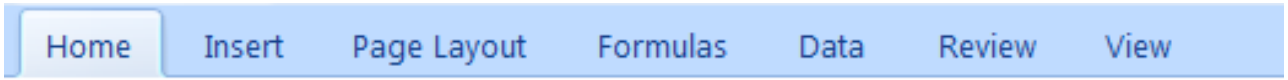
Overview of Excel 2007

- Ribbon:
  - Main toolbar + contextual menus
  - Above Work Area



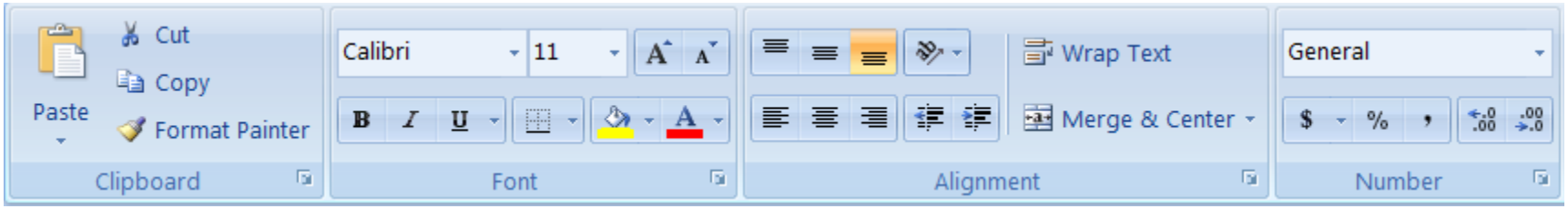
Overview of Excel 2007

- Main Toolbar:
  - Home, Insert, Page Layout, Formulas, Data, Review, and View
  - Different Contextual Menu for each of the main toolbar tabs



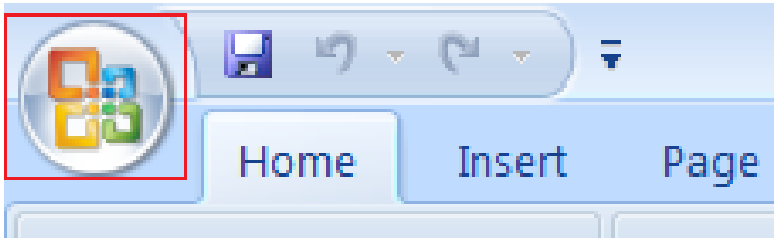
Overview of Excel 2007

- Contextual Menu:
  - Icons in Groups
  - Will introduce the contents gradually



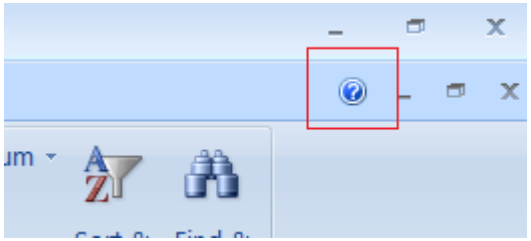
Overview of Excel 2007

- Office Button:
  - gives access to performing tasks such as opening a file, saving a file, and printing.

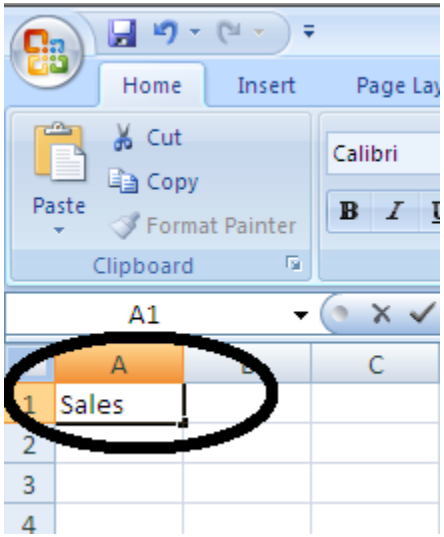


Overview of Excel 2007

- Help Icon:
  - Top Right corner .

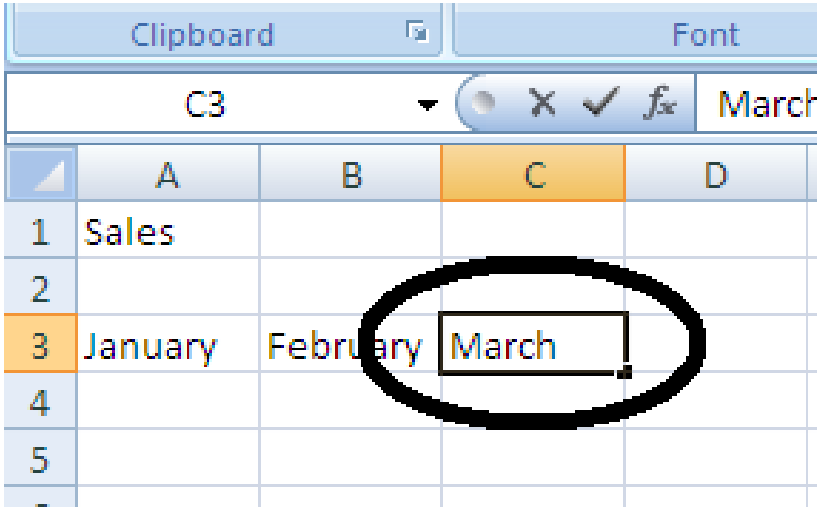


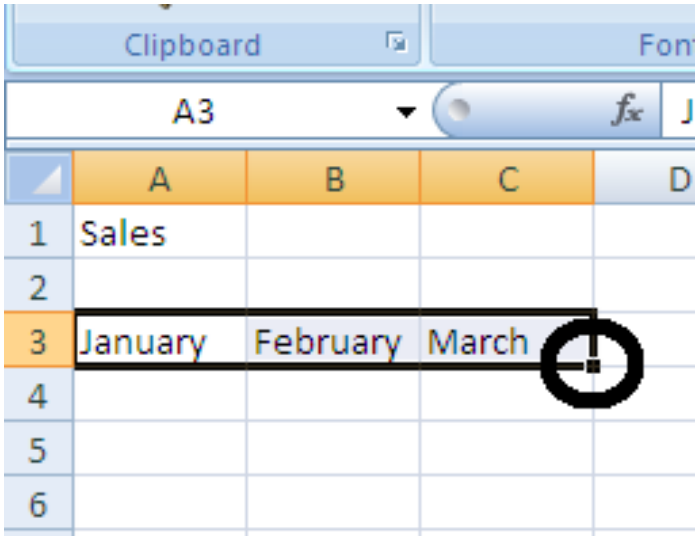
Entering Data



Using Autofill

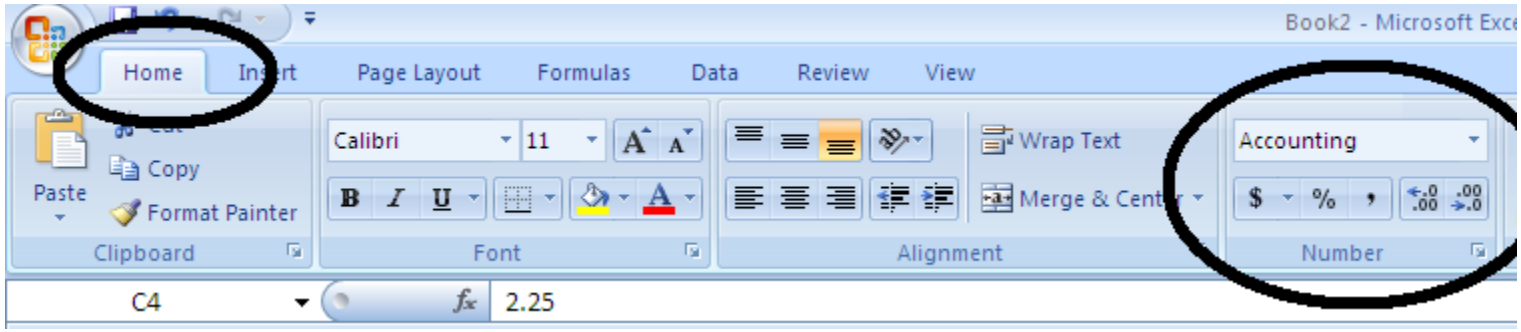
- Can be used with both numbers and text
- Can be applied to both rows and columns
- Enter the start of sequence + two or more cells





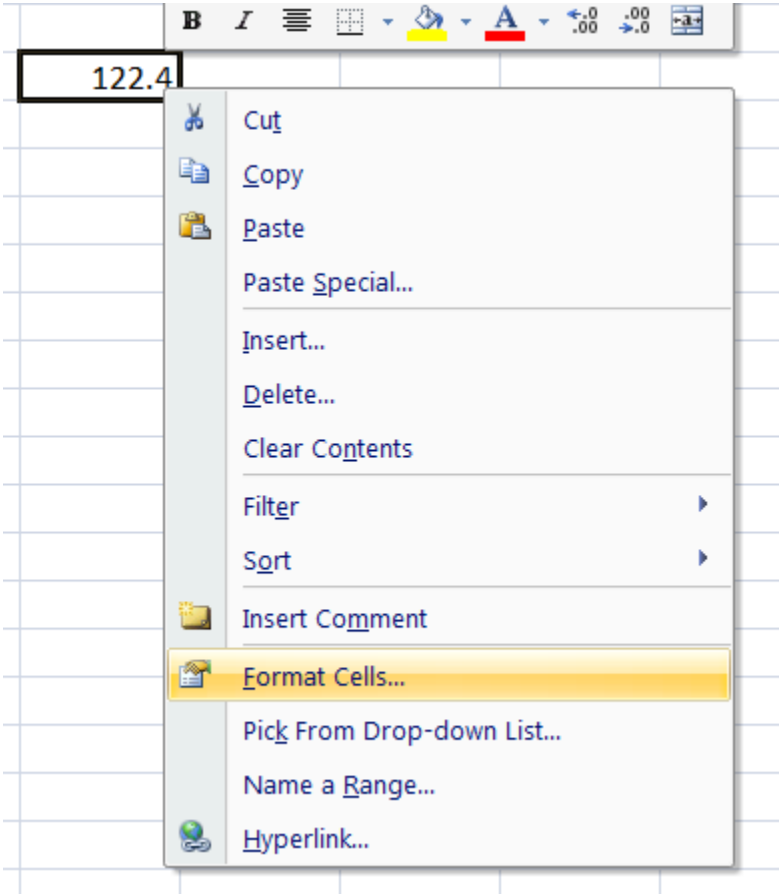
Editing Field Formats

- Makes data more readable
- Available from:
  - the ribbon (‘Number’ contextual menu as part of ‘Home’ in the main toolbar)

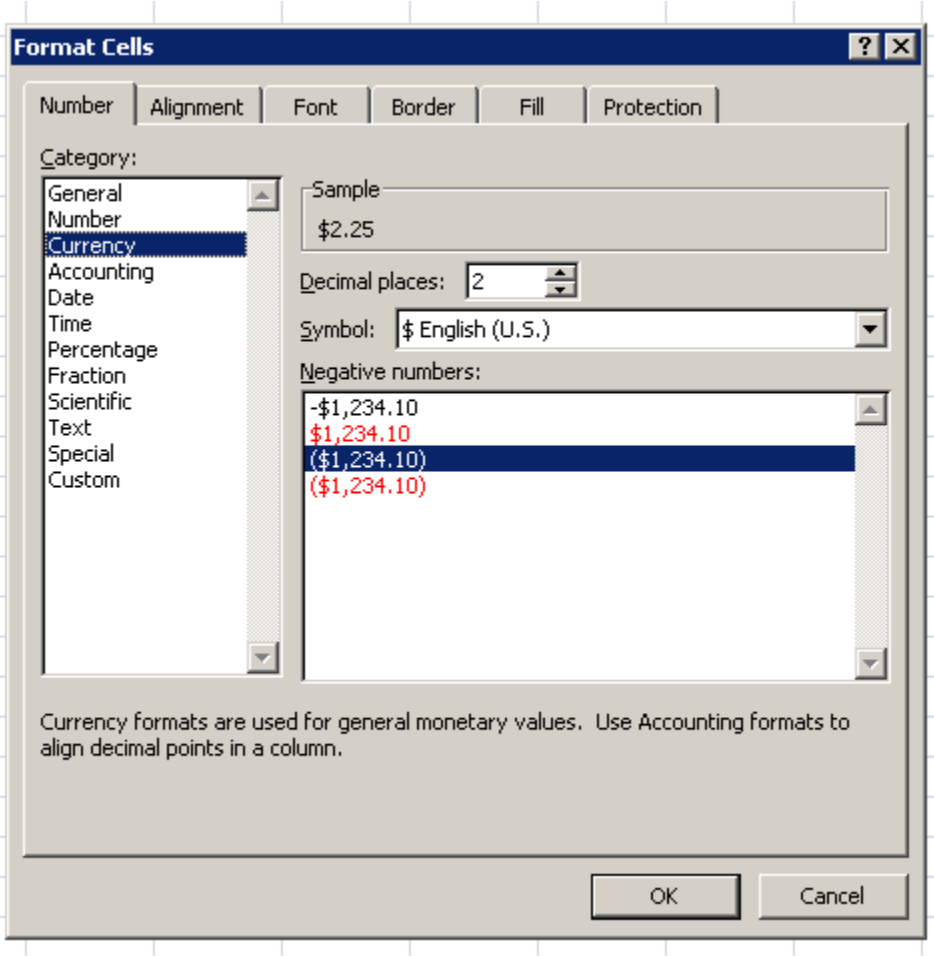


Editing Field Formats

- Or:
  - right-click using your mouse and select ‘Format Cells’ from the drop-down menu
  - In the new panel, select the ‘Number’ tab.



Editing Field Formats



Calculating Basic Statistics

- Excel Provides Built-in functions for basic statistics
- Functions can be specified directly in cells (including the range of cells to be included in the calculation), or in the Function Toolbar.
- Always use alternative calculations to check for errors when using functions.
- Some of the Built-in Functions available: Count, Min, Max, Average, Median, Mode, Standard Deviation

Calculating Basic Statistics

- COUNT( ):
  - gives the number of cells that contain numbers.
  - Its syntax is =COUNT(value1, value2, ...).
- MIN( ):
  - returns the smallest value in a set of numbers.
  - Its syntax is =MIN(number1, number2, ...).
- MAX( ):
  - returns the largest value in a set of numbers.
  - Its syntax is =MAX(number1, number2, ...).

Calculating Basic Statistics

- AVERAGE():
  - return the average, or arithmetic mean.
  - Its syntax is =AVERAGE(number1, number2, ...).
- MEDIAN():
  - returns the middle number in a set of numbers.
  - Its syntax is =MEDIAN(number1, number2, ...).
- MODE():
  - returns the most frequently occurring value of a set of numbers.
  - Its syntax is =MODE(number1, number2, ...).
- STDEV( ):
  - returns the standard deviation to measure of the dispersion of a set of values.
  - Its syntax is =STDEV(number1, number2, ...).

Calculating Basic Statistics

	A	B	C	D	E	F
1	Class Gardes					
2	3	Average	2.47		=AVERAGE(A2:A16)	
3	0	Median	3.0		=MEDIAN(A2:A16)	
4	4	Mode	4		=MODE(A2:A16)	
5	4					
6	4	Maximum Grade	4		=MAX(A2:A16)	
7	2	Minimum Grade	0		=MIN(A2:A16)	
8	4					
9	1	Number of Students	15		=COUNT(A2:A16)	
10	4					
11	0					
12	3					
13	3					

Calculating Basic Statistics

	A	B	C	D
1		Spped of Sound (m/s)		
2		347.8		
3		343.4		
4		339.4		
5		342.1		
6		342.7		
7		338.8		
8		344.7		
9		342.8		
10				
11	Average Velocity	342.7		=AVERAGE(B2:B9)
12	Standard Deviation	2.9		=STDEV(B2:B9)

More Examples

- http://wiki.ucalgary.ca/page/Courses/Computer_Science/CPSC_203/CPSC_203_Template/Labs_Template/TA_Examples_for_Spreadsheets#Navneet:_Week_1_-_Lab_1