CS 1L Spreadsheet / Microsoft Excel 1of 3

Microsoft online Tutorial S1: Create your first workbook/Meet workbook, Enter data/ Edit data & revise worksheets

Microsoft online Tutorial S2: Enter Formulas/Get Started/Use cell reference/Simplify formulas by using functions

Introduction

What is a spreadsheet? (electronic ledger pad, grid of cells)
Working with numbers (it's a number processor)

Rows (named by a number)
Columns (named by a letter)
Cells (named by a letter and a number)

Cells can hold things: words (text), numbers or a formula
Cells have actual contents and displayed contents (not always the same)
– What you see may not be what you entered.
Cells contain values and format information

Formula Bar (where you edit the contents of a cell)
(Excel specific: a workbook has multiple worksheets and each is a spreadsheet)

The Ribbon

Tabs: Home, Insert, Page Layout, Formulas, Data, Review, View

Moving/Editing

Use mouse - click to select cell, click and drag to select region
Arrow keys (thin plus sign with arrows up, down, left, right) to move,
Delete to delete a cell

Home/Editing/Clear (all, formats, values)
Type value in new value for cell (Enter to accept, ESC to cancel)
Click/drag column width insert/delete row/column

Clipboard Review

Cut, Copy, Paste (works on individual cells or ranges of cells)

Copying/Filling in data

Copy/Fill Handle (small box) Will copy values in a range (can fill with a series of values) when the thin plus sign is displayed.

Formatting is in Home

Formatting words and numbers, borders & shading (percentage, decimal, dollar)
Home (Number, Alignment, Font: border, color,
use arrow to access Format Cells (Fill tab allows you to select fill pattern)

AutoFormat

Automatically formatting cells with a pre-determined pattern
Format/cell… lots of choices

Data Alignment
Align numbers to the right; text to the left; column labels centered.
Formulas are Functions
Can be very simple or complex.
A formula (expression) calculates a value. Formulas always begin with =
Basic arithmetic +, -, *, /, ( ) parenthesis are used; operator precedence follows the rules of algebra.

A formula is the actual contents of a cell: Result is displayed
**In Excel, formulas start with** = (equal sign)
followed by an expression that evaluates to a value.
Example: in cell B5 try these four different formulas
  =B4+B3 or
  =B4+B3+A2+A7 (select cell and insert addition sign) or = **sum (C4:C9)**
  Σ (sum) - average, count, max, min – with these your select a range of values

A Function Returns a Value
- Webster's dictionary: A mathematical correspondence that assigns exactly one element of one set to each element of another set. (What the heck does that mean?)
- Function takes parameters (information) and evaluates to a value
- Every function has a name, parameters are enclosed in parenthesis after fn name
- In Excel, many useful functions are defined (if you want you can even add your own functions!)

**Some example functions:**
- sum()
- power(number, power)
- sqrt(number)
- count()
- pmt(rate, numpay, amount)
- average()
- min()
- max()

Cell Ranges
name of one cell: B3
range of cells: B3:B5 column
  A5:M5 row
  A3:B5 rectangular region

**Example:**
= **sum(c5:c11)**

**Cell References:** Relative and Absolute

Copy / Relative References – L3
Adjusts formulas for you automatically!
Copy/ paste example
Fill (handle – cross without arrows) and Move (handle – cross with arrows)
Copy / Absolute References – $L$3
$L$ holds the column location constant
$3$ holds the row location constant
$L$3 hold the value in L3 constant

Where does the $ come from? F4 key in MS Excel.

In class Exercise
To see the formulas on your spreadsheet, you use two keys, Ctrl and ~, together.
Please place the following in a footer found in Insert/Text/Header-Footer:
Name
Exercise SS1

1. Create a folder in your student folder called Spreadsheets. Use this folder to store all workbooks we create. Sometimes workbooks only hold one spreadsheet but often they hold several including charts created from the data in other spreadsheets.
2. Create a file within that folder called SS1Exercise.xls
3. Create a worksheet table with headings for item name and cost.
4. Include at least four items.
5. Center column titles, left-align items, right-align numbers.
6. Include a row at bottom Total Cost that totals cost of items by using a formula.
7. Format number cells as dollar values (currency) with two decimal places.
8. Make the table look great, formatting the numbers, using shading, borders.
9. Use Print/Print Preview to see what your document will look like when printed.
10. Use Page Layout/PageSetup/Sheet Options to include visible/printable gridlines.
11. Use Page Layout/PageSetup/Orientation to select landscape is you want to change page orientation.
12. Save the file to your student folder/Spreadsheets folder and to your portable storage device.
13. Use Page Layout/Page Setup/ Print Area to highlight what will be printed.

Here’s my example. Yours should not look just like mine!!

<table>
<thead>
<tr>
<th>Item Name</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking Shoes</td>
<td>$90.00</td>
</tr>
<tr>
<td>Sunscreen</td>
<td>$10.00</td>
</tr>
<tr>
<td>Big Hat</td>
<td>$20.00</td>
</tr>
<tr>
<td>Water Bottle</td>
<td>$2.00</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td><strong>$122.00</strong></td>
</tr>
</tbody>
</table>
This is what it looks like with the formula visible. Use Ctrl and ~
Notice that the columns gets a lot wider when you make formulas visible, and the number formatting is hidden. You may need to change the width of the columns before you print your document.

<table>
<thead>
<tr>
<th>Item Name</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking Shoes</td>
<td>90</td>
</tr>
<tr>
<td>Sunscreen</td>
<td>10</td>
</tr>
<tr>
<td>Big Hat</td>
<td>20</td>
</tr>
<tr>
<td>Water Bottle</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td>=SUM(B2:B5)</td>
</tr>
</tbody>
</table>

Here is the spreadsheet table with gridlines visible but with no additional shading or borders.

<table>
<thead>
<tr>
<th>Item Name</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking Shoes</td>
<td>$90.00</td>
</tr>
<tr>
<td>Sunscreen</td>
<td>$10.00</td>
</tr>
<tr>
<td>Big Hat</td>
<td>$20.00</td>
</tr>
<tr>
<td>Water Bottle</td>
<td>$2.00</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td>$122.00</td>
</tr>
</tbody>
</table>
**Homework Assignment SS1:**

Please include the following in the custom header (Insert/Text/Header-Footer)

Assignment Grades for CS 1L

Please include in the custom footer:
Left Section: Name, CS1L
Middle Section: Date
Right Section: Homework SS1

Create a grading worksheet following these specifications:

**Column Labels**

- **Name** – include 10 names
- **CS 1L assignments** (1 column for each assignment).
  - InfoSheet, Ages, WP1Exercise, WP2, SS1, SS2, SS3, HTML1, HTML2, HTML3, LIB1, GIMP1, PPT1
  - WP1LP, SpreadsheetLP, HTML FINAL Lab Practical (2 lab practicals and one final)
  - **Total points**
- **Make up** scores for your 10 names. All of the scores should not be the same!
- **Assignments Percentage** (create a formula to do this).
  
  If a student received 7.5/10 on SS1, add a column next to SS1 and call it SS1%. Then in SS1% for each student you would use the following formula:
  
  `=7.5/10`
  
  However, you would not retype the 7.5 or the 10; you would use the cell reference so it might look something like this
  
  `=C5/$C$2` You would use an absolute address for the denominator which is the total possible for that particular assignment.
- **Count, Max, Min, Average** (use a built-in formula for each one)
- **Total possible** for each assignment stored in the cell below the assignment label. Total possible for all assignments is 10 except WP1Exercise(5), WP2(20), SS3(20), HTML3(20). Lab practicals are WP1LP(40 + 36) points; the SpreadsheetLP(51) points; the HTML FINAL Lab Practical is 50 points.
- **Learn about and include** 4 additional formulas in this assignment workbook.
- I have provided a starter spreadsheet in Blackboard to get you going!
- **Formatting** your spreadsheet so it looks great and professional. This will help you gauge your grade for this course throughout the semester.
- Make **gridlines** visible – Page Layout/Page Setup/Sheet Options/Gridlines
- Change page orientation to **landscape** – Page Layout/Page Setup/Orientation
- **Always use print preview** to view your document BEFORE printing. We will NOT print our documents in this course.
- Upload **SS1** to Blackboard