

## An Introduction to Excel<sup>1</sup>

Excel is a spreadsheet. Another spreadsheet you may have heard of is Lotus 1-2-3. Spreadsheets share common features. Once you learn basics of Excel, you will be able to apply what you know to other spreadsheets. This class will only touch the surface of Excel's capabilities. After class, spend time looking at the menus, and playing with options. You will find that spreadsheets are very useful tools for a variety of purposes.

Get started by finding the Excel Icon and bringing up Excel.

### 1. Vocabulary

First we will cover the vocabulary of a spreadsheet.

**Menu Tool Bar:** At the very top you see words like File, Edit, View. In each of these words, one letter is underlined. Each of these word represents a menu. You can bring up the menu by using your mouse to left-click on one of these words, or holding down your Alt Key and pressing the underlined letter. (For example, Alt-F for File)

**Icon Tool Bar:** On the next line, you will see icons. If you hold your mouse over any of these icons, a short description of the function the icon will perform appears. These functions can also be performed through the menu bar – the icons provide shortcuts for frequently used commands.

**Format Bar:** The tool bar below the Icon bar contains shortcuts for formatting (font, bold, color).

**Columns, Rows, Cells:** Across the top you will see the letters of the alphabet. Each letter indicates a column. On the left side of the screen, you will see numbers. Each number indicates a row. Each square that you see is called a "cell".

**Name Box, Formula Bar:** Each cell has an address. Use your mouse and click on the cell in the top left of the spreadsheet. Look at the white square right above the "A". In this white box, which is called the name box, you will see "A1". This is the address of that cell – column A and row 1. Use your cursor key and move down one cell. You will see the address "A2". These cell addresses are very important. We will use them later to calculate grades. The white box to the right of the name box is the formula bar.

### 2. Navigation

There are several ways to get around in Excel. You can use the arrow keys, page up and page down, the scroll key on the right side to move up and down, or at the bottom to move left to right. You can left-click on the name box and specify the address of the cell you want to want to go to.

### 3. Entering Data

We will enter some data. Enter the following names in cells A1 through A6. Type the name, and then press the Enter key.

Anders, Louis  
Smith, Wally  
Franklin, Otto  
Sands, Maria  
Grant, Sarah  
Olsen, Hannah

Now, in cells B1 through B6, enter the following numbers.

34  
46  
45  
43  
50  
44

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<sup>1</sup>Prepared by Patty Glynn, Center for Social and Demographic Analysis (CSDA), University at Albany, April 21, 2000

#### 4. **Formatting a column – changing the width**

You will see that parts of the names do not show. We can change the width of the column to fix this. Use your mouse to move up to the “A”, and right-click on it. The entire column should be highlighted and a menu will appear. Go down to “column width”, and change the width to 15.

#### 5. **Saving your work – always a good idea to save often**

In the upper left, on the tool bar, you will see an icon that looks like a floppy disk. Click on it, and a box will appear. Put your floppy disk in drive a, and type a:csdaclass where it asks for filename.

#### 6. **Hiding a column and entering data a second time (to check accuracy)**

Click on B to highlight column B. Right click to bring up the menu, and then go down to “Hide” to hide the column. Now enter the same numbers that are in column B in cells C1 through C6.

#### 7. **Un-hiding the column**

Go to the name box, type B1, and hit return. This takes you to the hidden column. Now click on “Format” in the top menu, then click on Column, and then Unhide. You should now see three columns and 6 rows of data.

#### 8. **Entering a formula to check for errors**

When entering any kind of formula, the first character should be an equal sign (=). This tells Excel that it should expect a formula. Otherwise, it will think you are entering text. In cell D1, enter:

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=if(B1=C1,true,false)
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This means – if the value in cell B1 equals the value in C1, then write “true”. Otherwise, write “false”.

#### 9. **Copying the formula**

Use your mouse to move your cursor to cell D1. You want to put the contents of this cell into your Windows clipboard so that you can copy it. You can do this by using your mouse and clicking on the “copy” icon (it looks like duplicate sheets of paper), or you can hold your “Ctrl” key down and tap the C key (Ctrl-C). You should see some flashing lines. Now use your mouse to move your cursor to cell D2. Hold the left mouse button down and highlight cells D2 through D6. Then, to paste, either click on the Paste Icon (it looks like a clipboard), or hold your “Ctrl” key down and tap the V key (Ctrl-V). Tap the “esc” key to stop the flashing lines. Click on cell D2 to examine the contents of the cell – look at the formula bar at the box to the right of the name box. You will see that the formula automatically adjusted for you. D2 compares values in B2 and C2. D3 compares values in B3 and C3. If you made any mistakes, you will see the word “FALSE”. If you didn’t make any mistakes, go to a cell in column C and overwrite an entry with an incorrect value to test the formula. Correct any mistakes.

#### 10. **Deleting contents versus deleting a column**

Click on C to highlight column C. Touch your delete key. You will see the contents of the cells disappear. With the column still highlighted, right-click, and then click on delete. Column C will be deleted, and the contents formerly in Column D will be in Column C. (The formulas will no longer be valid, so you will no longer see “True”. Ignore this for now.)

#### 11. **Undoing and Redoing**

Now, UNDO the deletion. There are three ways to do this: 1) Ctrl-Z 2) click on Edit in the upper right, and then on Undo, or 3) left-click on the left-pointing curved arrow on the icon tool bar. You will see the column reappear. You can “redo” an “undo” 1) Ctrl-Y 2) click on Edit in the upper right, and then on Redo, or 3) left-click on the *right*-pointing curved arrow on the icon tool bar.

#### 12. **Delete values**

Now, erase the values in columns C and D by highlighting them using your mouse, and then tapping your delete key.

**13. Exit and save**

Bring up the File menu (Alt-F or, on the tool bar, use your mouse to left-click on File). Then click on exit, or hit the X key. If you have made changes to your spreadsheet since last saving it, a box will appear asking you if you want to save changes made to it. You will have the option of saving the changes and exiting, exiting without saving, or cancelling. Save the spreadsheet and exit.

**14. Get back into Excel, and bring up your spreadsheet again**

Find the icon for Excel and bring up the software. You want to retrieve the spreadsheet you have been working on. Bring up the File menu (left-click on File on the menu bar). At the bottom of the menu, you will see the last four spreadsheets that have been accessed. One way to bring up your spreadsheet is to click the spreadsheet you want. Another way is to click on the icon that looks like an open folder, and then navigate to the place where your file is stored. Bring up your spreadsheet.

**15. Inserting a row and column**

We want to insert a row above row 1. Click on 1 so that the entire row is highlighted. Right-click to bring up a menu, and then click on insert. Now we will use a different insert method to insert a column between A and B. Click on B, and see the whole column highlighted. Click on Insert on the Menu bar, and then click on Column.

**16. More data entry**

In Cell A1, enter Name. In cell B1, enter Exam 1. In Cell C1, enter Exam 2. In cells B2 through B7, enter the following numbers:

84  
96  
95  
83  
100  
85

**17. Using functions in formulas, using help, editing cells**

In Cell B9, enter:        =AVERAGE(B\$2:B\$7)

The “\$” before a row or a column tells Excel that you don’t want that value adjusted if it is copied. Use your copying skills to copy B9 into B10, B11, and B12.

Highlight B10 – we want to edit the cell. Move your cursor to the formula bar (the long box to the right of the name box), and click. Edit the formula so that it reads: =MAX(B\$2:B\$7) and then hit return. Edit B11 so that it reads =MIN(B\$2:B\$7).

In cell B12 we want to calculate the standard deviation of the six scores in column B, but we can’t remember what the function is for standard deviation. Click on Help on the top of the screen, and then on contents and index, and then the Index tab. Type Statistical functions, and then click on Display. You will see a list of statistical functions that are available. We see that the one we want is “stdev”. Edit B12 so that it reads =STDEV(B\$2:B\$7).

In cells A9 through A12, type: Average, Maximum, Minimum, Standard Deviation.

**18. More copying - copying multiple cells.**

We will now copy cells B9 to B12 to cells C9 to C12. Use your mouse to highlight cells B9 through B12, and put those cells into your windows clipboard (Ctrl-C /or/ click on the copy icon). Click on cell C9, and then paste (Ctrl-V /or/ click on the paste icon). (Tap your Esc key to stop flashing lines.)

**19. More data entry, formulas, copying.**

Go to D1 and type Total. Exam 1 had a possibility of up to 100 points. Exam 2 had up to 50 points, but we want each test to count equally. So, we will write a formula that will multiply exam 2 by 2. In D2, type:  
 $= (B2 + (2 * C2)) / 2$   
Copy D2 to cells D2 through D7.

**20. Sort**

Things can go wrong in sorting, so it is a good idea to always save just before you do it.

Use your mouse to highlight A2 through D7. Click on Data on the top menu, then click on Sort. A box will appear that allows you to spell out how you want the sort to be done. Specify that you want to sort by Total, ascending, and then click OK.

**21. Formatting numeric values.**

Click on the “B”, “C”, and “D” at the top of the spreadsheet so that the columns are highlighted. Right-click to bring up the menu, and then click on Format cells. Make sure the Number tab is highlighted. Under “Category”, click on “number”. On the lower right, you will be given format options to choose from, and in the upper right you will be given the opportunity to select the number of decimal places. Select one decimal point, click on “ok”.

**22. Final Grade, and a very quick graph.**

In cell E1 type Final Grade, and in E2 through E7, type: C B B A A A

You have given 3 “A”s, 2 “B”s, and 1 “C”. We will create a bar chart to summarize your grade distribution.

In F1 through H1 type: A B C, and in F2 through H2 type 3 2 1

Use your mouse to highlight cells F1 through H2. Click on the icon on the tool bar that looks like a blue, yellow and red bar chart. In that menu, click on the chart in the upper left, and then click Next. Then click Next, Next, and Finish. A bar chart should appear on your spreadsheet.

**23. Printing (Don't do this - but for your information)**

To print the entire spreadsheet, you can click on the printer icon on the Icon tool bar. To print just part of the spreadsheet, you would highlight the selection you wanted to print, then click on File, then Print, and then click on Selection in the lower left.