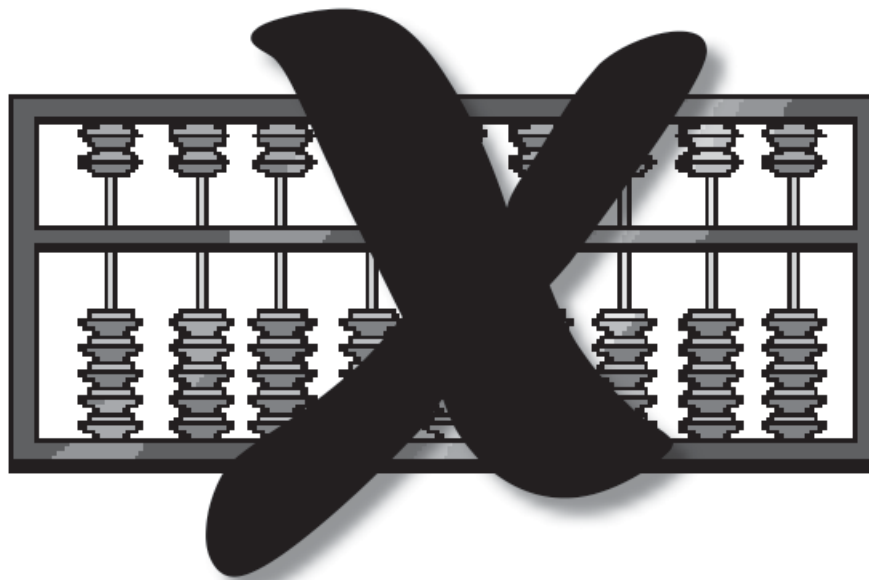


# **Microsoft EXCEL**

## **TEC 921**

### **Assignments**



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# TEC 921 - Excel Assignment Booklet

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## I. Introduction to the Class



### Assignment A - Page 2

Before we begin the coursework, I would like you to take a few moments and reflect on what you just read. One of the most critical elements of this class is understanding how technology such as Excel will change the way we and our students will function. Please send an email and introduce yourself. Tell a little about your current placement and what you see as your greatest challenges. Also, in one paragraph, react to the text you just finished reading. Remember, this is a graduate level course so your reflection should give indication that you have given the text some thought as it relates to your teaching situation.

Email this to [RFSwan@comcast.net](mailto:RFSwan@comcast.net)

## I. What is a Spreadsheet

No Assignments

## II. Getting Started



### Assignment 1.1 - Page 9

This assignment is in two parts. The first part is very important because it will set the foundation for file management for the entire course.

This works the same on both platforms so whether you are using a Mac or a Windows machine, it does not matter. The files are exactly the same in both folders. But, for the sake of everyone's sanity, I have created three FPUExcel folders, two in the Windows folder and one in the Macintosh folder. In the Windows folder there is one for older Excel versions and one for Excel 2007. Use the appropriate folder.

Open either the Windows or Macintosh folder, locate the FPUExcel folder. Drag this folder to your computer's **Desktop**. We want to keep it right out in front of us until we are finished with this course. All the files you need to complete this course will be found inside this folder. Make sure you use this folder, and this folder only, for all your assignments. Save all work in this folder and it will make it very simple when it is all over.

When we are finished with the course, we will identify which of the files in the FPUExcel folder you need to return for evaluation. Neat and efficient.

Now on to part two of this assignment.

Launch Excel and open a new blank spreadsheet file. Pull down **File** to **Save As...** and name the file PRACTICE.xls. (.xlsx if you are using Excel 2007) (You do not need to use caps but I am going to use them throughout this course to identify filenames. The same thing applies to the underlining.) Then select the correct folder FPUExcel on your Desktop and make sure the file is saved into that folder. If you have problems doing this, you need to seriously think about taking the Windows course (TEC 927XP) or the Introduction to Macintosh course (TEC 937).

Once you have named and saved the file in the correct folder, you should quit Excel and return to the **Desktop**.



## Assignment 1.2 - Page 9

We are now going to go back and open the PRACTICE.xls file you created in the previous assignment. We are going to open it twice so you will know that there are more than one way to accomplish this task and you may select either method as you work through the course. It is entirely a matter of preference.

Method 1: File Icon - Go to your hard drive and open the folder FPUExcel by double-clicking. Find the file PRACTICE.xls in the folder and double-click to open. Notice that Excel was launched as well. There is information behind each file icon as to the application that created it and the computer will automatically open the file in the correct program, as long as you have the program on your computer. Pull down **File** to **Close** to close out of this file. This action leaves Excel still running.

Method 2: Open Menu - With Excel still running, pull down **File** to **Open...** and move to the FPUExcel folder on your hard drive. With Excel 2007, you will need to click on the Office Button to

get to **Open**. Once you arrive there you should see the file PRACTICE.xls listed there. Double-click on this icon or name and the file will be opened.

There are several ways to quit Excel.

**Windows** - You can either click on the top **X** on the **Titlebar** at the top of the screen or you can pull down **File** to **Exit**. With Excel 2007, you can use the **X** or click on the Office Button and locate **Exit Excel** at the bottom. You also have a keyboard option - **Alt + F4**. Or, if you like doing things the hard way, you can press the **Alt** key to invoke the top menubar, press **F** for **File**, and then press **X** for **Exit**.

**Macintosh** - You can 1) pull down **File** to **Quit**, 2) you can use the **Cmd + Q** keyboard option, or 3) you can click on the red **Close** button.

There is no way for me to verify that you have completed this assignment. Just make real sure you understand what is going on because if you don't, I can guarantee it will come back to haunt you in the end.

*VERY IMPORTANT NOTE!!!! - Keep the PRACTICE.xls file open whenever you come across a **PRACTICE** icon in the manual.*



*Play around with and practice so you can make sure you understand the function being discussed before you move on. This is a very critical element of this course and you must be very careful not to fudge here. It will get you in the end.*



### Assignment 1.3 - Page 12

Open the PRACTICE.xls file found in the FPUExcel folder on your hard drive. Click in the very first cell, A1, and type in a few sentences about your knowledge regarding Excel. Are you a complete novice or do you have lots of experience and background? Do not worry about text wrap or any formatting.

Click in cell A2 and type in a few sentences explaining what you would like to get out of the class.

Pull down **File** to **Save As...** or the Office Button and change the filename to PRACTICE2.xls. Save it as an Excel Workbook in your FPUExcel folder.



### Assignment 2.1 - Page 14

We are going to do several things at this time. This will take a while and it is a little technical so early in the course but this is the best time to work with this.

First of all, we are going to open a simple set of data that is tab separated. This is the standard text format and there are very few programs that will not accept this type of data. I am going to assume that you have Microsoft Office installed since you are using Excel so we are going to use the Word program.

Launch Word, and pull down **File** to **Open**. Go to the FPUExcel folder on your **Desktop**. Inside you will find a file named SOLARSYS.txt. Open this file into Word. This might not go as smoothly as it sounds. You may not see the file if Word is looking for only .doc files. Set the **FileType** to **All files** or **Text files** to see those files that are not .doc files.

Take a good look at the information you see displayed. You will notice that it is tab separated. If you don't believe me, click on the **Paragraph**

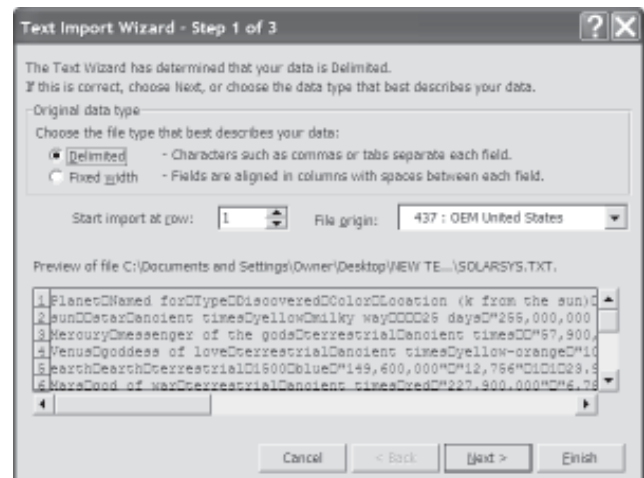
**Marker**  button to display the hidden characters. You will see **Tab Markers**

```
Planet → Named for → Type
      → Size (km diameter) →
      → Orbit → Speed → Temperature
sun → → star → ancient →
days → "255,000,000 years"
kps"¶
```

between each sets of data. All I wanted you to do here was to take a look of how it looks in word processing.

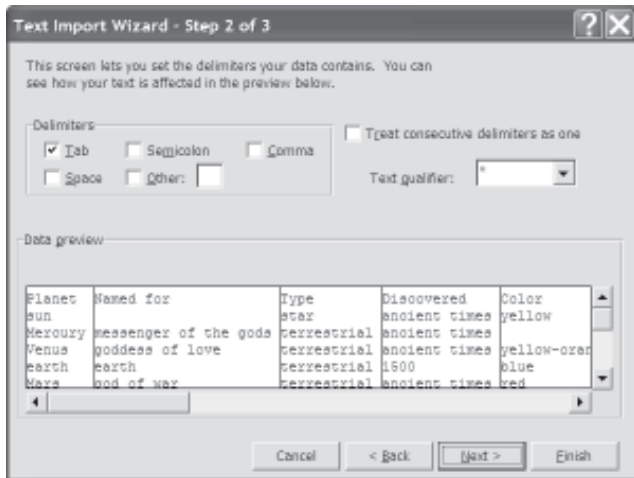
Close Word and launch Excel. Pull down **File** to **Open** and go to the FPUExcel folder and open the same SOLARSYS.txt file. We have the same problem here we had just a moment ago in Word. If Excel is looking only for .xls files, it is not going to see the text file we are trying to open. Set the **File Type** to **All files** or **Text files** and it will magically appear.

The following screen should appear:



Notice in the data types box the fact that the bullet is highlighted in front of **Delimited**. Truth is, in most cases you could simply click the **Finish** button on this screen since 90% of the time, you aren't going

to be making additional choices on the next few screens. But for the sake of overall knowledge, click on the **Next >** button and the following will appear:



Notice that the **Tab** option has a check in front of it which is the correct response since our data is a text file and is tab separated. The data should look quite normal in the **Data preview** area. Click **Next >** and the following will appear:



On this screen, you can click in any column and modify the data format for that column. Read the comments on the window and it should make sense. Click **Finish** and your data is displayed in an Excel **Worksheet**.

Save this file as an Excel Workbook file as SOLAR.xls in the FPUExcel folder on your hard drive.

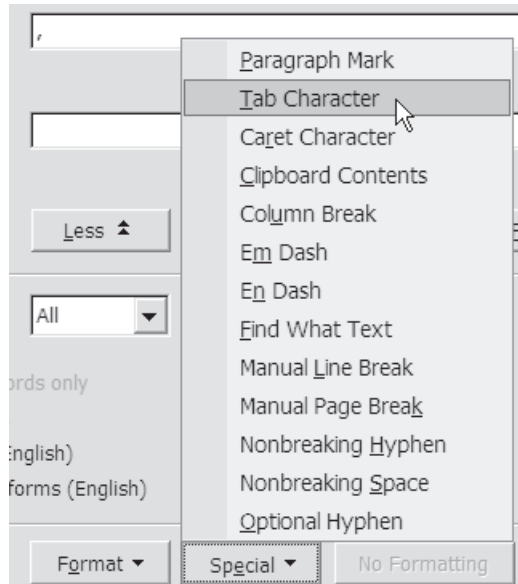
Now, on to the second portion of this assignment. I have also included a file that has the same data except that it is separated by commas. Excel will accept data that is comma separated, exactly like what you just experienced. On the second of the dialog box screens, you would check the **comma** option and the data would flow into the cells just like it did with tabs. But, I want you to be able to take the information to any spreadsheet so I want to run you through a simple exercise that should provide enough background to make it work the effort.

Launch Word (you may have to quit Excel if you don't have enough RAM to have both programs opened at the same time). Find the file SOLARCOMMA.txt Even though it is a text document, I purposefully put commas as delimiters instead of tabs. Once you have opened the file, you will see the commas that are separating the data elements.

```
"Planet,Named for,Type,Discovere
diameter),Mass (times
earth),Gravity,Rotation,Orbit,Sp
"sun,,star,ancient times,yellow,
C,, "Sunlight travels 299,000 k
"Mercury,messenger of the gods,t
times,, "57,900,000", "4,960",
degrees centigrade,almost none,"
```

Your job is to change all the commas to tabs. This will make it a true text file in every sense. Pull down **Edit** to **Replace...** The standard dialog box opens and you must click on the **More** button to get the feature we are looking for. We want to replace all commas with tabs so place a comma in the **Find what:** entry box. Now comes the tricky part. Make sure the **More** section is displayed and that your cursor is in the **Replace with:** entry box. Hold down your mouse button on **Special** and move up to **Tab Character**.

## III. The Excel Screen



The following will be placed in the entry box:

Find what:	,
Replace with:	^t

Click the **Replace All** button and all the commas will be replaced with tabs. You would now save as a standard text file and this data can be opened by any database or spreadsheet program known to mankind.

You do not need to save this file. This was an exercise to demonstrate how data can be moved between applications and doctored at either the Word or Excel end.



### Assignment 3.1 - Page 22

**Open** a new blank Excel file. You should have three Worksheets in this Workbook. You will find the Worksheet **Names** at the bottom of the screen. Change the **Names** to the following:

Text  
Values  
Formulas

**Save** this file as FILE1.xls in the FPUExcel folder on your hard drive. You should leave the file open since we are going to use it for the next few exercises.



### Assignment 3.2 - Page 22

Use the FILE1.xls you created in **Assignment 3.1** for this assignment. On the first Worksheet, Text, make the following changes:

change the width of column A to 10  
 change the width of column B to 12  
 change the width of column C to 15

**Save** the file. (Since you have already given the file a name and told it where to save it, you do not need to go to **Save As...** A simple **Save** will do it.)



### Assignment 3.3 - Page 23

Continue to use FILE1.xls for this assignment. Continue using the Text Worksheet as well. Make the following changes:

- change the height of Row 2 to 25
- change the height of Row 3 to 30
- change the height of Row 4 to 35

Save the file and close it.

## IV. Entering Data



### Assignment 4.1 - Page 28

Open the FILE1.xls file from the FPUEXcel folder on your hard drive. Move to the first Worksheet, Text, and enter the following information into the cells. Follow the instructions as you go step-by-step through this section.

- 1) Type “House Payment” into cell A4
- 2) Press the **return/enter** key (notice that the words were deposited in cell A4 and that highlight moved down one cell to A5)
- 3) Type “Car Payment” into cell A5 and press the **down arrow** on the keyboard. (notice that the words were deposited and the highlight moved down to cell A6)
4. Type “Food” and press the **tab** key. (Notice the word was deposited in A6 and the highlight moved to the right, to cell B6. If you are putting in a row of data, use the **tab** key - otherwise, use the **enter** or **downarrow**.

5. Move the highlight to cell A7 and type “Utilities”. Move over to the 10-key pad and find the enter key in the bottom right corner and press this key. (If you own a Mac, the word was deposited and the highlight stayed on A7, which is nice for doing what-if kinds of activities. If you own a Windows machine, well, your 10-key enter works just like the keyboard enter. It deposits the word and moves to the next cell.)

6. Move the highlight to cell B4 and enter the following amounts in cells B4 to B7:

	A	B
4	House Payment	100
5	Car Payment	200
6	Food	300
7	Utilities	400

Save the file as FILE1.xls and close the file.

## V. Working with Text



### Assignment 5.1 - Page 30

Open the FILE1.xls file and move to the first Worksheet, Text.

Highlight cells A4:A7 and change the font to Courier. If you do not have this font, select Helvetica or Times New Roman.

Save the file as FILE1.xls in the FPUEXcel folder on your hard drive and leave the file open for the next exercise.



### Assignment 5.2 - Page 31

Continue using the first Worksheet of the file FILE1.xls.

Change the font size of the cells A4:A7 to any size above 14 point.

**Save** the file and keep it open for the next assignment.



### Assignment 5.3 - Page 31

Continue to use the FILE1.xls file.

Change each of the four cells, A4:A7, to a different style. Make one bold, one underlined, etc.

**Save** the file and keep it open for the next assignment.



### Assignment 5.4 - Page 32

National Technology Standards: 1A, 5C

Continue to use the FILE1.xls file.

Change each of the four cells, A4:A7, to a different font color.

**Save** the file and close it for now. We will use it again later.



### Assignment 6.1 - Page 32

Open the file PRACTICE2.xls from the FPUExcel folder on your hard drive.

Earlier, you entered a few sentences into cells A1 and A2. As you can see, the text strings off into the other cells. We are going to change that. Highlight cell A1 and pull down **Format** to **Cells...** Click on the **Alignment** tab on the top of the dialog box, find the **Wrap text** option and click inside the box. Click **OK** and take a look at what this did to your text. With Excel 2007, this feature is located right on the **Home Ribbon**.

Do the same thing to cell A2.

Now, modify the width of column A, making it twice as wide as before. Modify the height of row 1 and notice the change in the text. Make the height of row 1 larger than the text and pull down **Format** to **Cell...** and change the **Vertical:** alignment to **Top**. Again, this is located on the **Home Ribbon** in Excel 2007.

You have lots of options here. Play around with this and when you are finished, make sure you save the file as PRACTICE2.xls on your hard drive. Leave the file open for the next assignment.



### Assignment 6.2 - Page 33

Continue with the PRACTICE2.xls file.

Change the height of row 2 so that it is larger than the available text in A2. Highlight A2 and pull down **Format** to **Cell...** and click on the **Alignment** tab. In the **Vertical:** alignment, change it to **Justify**. Click **OK**.

Notice that the contents were spread out to fill the cell. The taller you make the row, the more the text will be spread vertically to fill the cell.

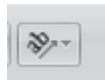
Save the file PRACTICE2.xls file on the hard drive and leave it open for the next exercise.



### Assignment 6.3 - Page 34

Continue with the PRACTICE2.xls file.

Highlight cell A1 and pull down **Format to Cell...** Click on the **Alignment** tab and change the **Orientation** to 90°. With Excel 2007, there is an **Orientation** button on the **Home Ribbon**.



Save the file PRACTICE2.xls and close it.

## VI. Working with Values



### Assignment 7.1 - Page 37

Open the file FILE1.xls from the FPUExcel folder on your hard drive.

We are going to do something tricky here but it is important that you know how to do this. Move to the first Worksheet of the file, Text. Highlight cells A4:B7. Place the pointer on A4 and drag right and down to B7. You will have highlighted a block of cells and remember, A4 will be white. Pull down **Edit to Copy**. With Excel 2007, the **Copy** button is right on the **Home Ribbon**.

Look down at the bottom of the Worksheet, find the Values tab and click once. Click on cell A4 to highlight. Pull down **File to Paste**. That is how you can copy items from one Worksheet to the next.

Now, making sure you are on the Values Worksheet, highlight the cells B4:B7, pull down **Format to Cells...** and click on the **Number** tab. We do not want dollar signs so set it for **Number**, set the **Decimal places** to 2, and go ahead and select the thousands separator. With Excel 2007, the **Number** option is right on the **Home Ribbon**.

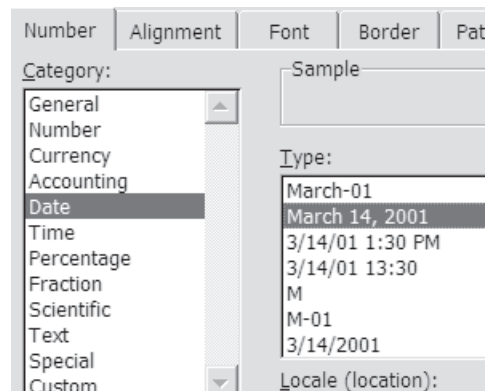
Save the file and leave it open for the next assignment.



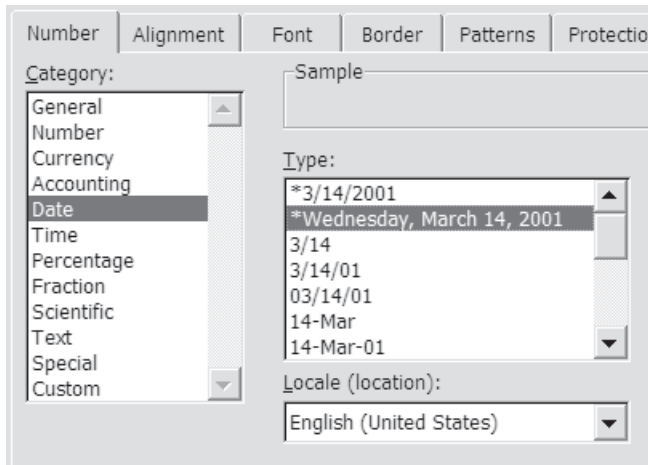
### Assignment 7.2 - Page 38

Continue with the FILE1.xls file.

Move back to the Text Worksheet. Click in cell A9 and enter today's date. Click in cell A10 and enter someone's birthdate. Click on A9 and pull down **Format to Cells...** and click on the **Number** tab. Click on the **Date** category (or the small arrow in the **Number** section on the **Home Ribbon**) and set it for the following:



Now click on cell A10 and pull down **Format to Cells...** and click on the **Number** tab. Click on **Date** and set it for the following:



Save the file and leave it open for the next exercise.



### Assignment 7.3 - Page 38

Continue using file [FILE1.xls](#).

Use the [Text Worksheet](#). Highlight cell A12 and enter "11:15". Move down to cell A13 and enter "1:36". Format the first time including seconds and change the AM to PM on the second time up in the text edit box. Your cells should look like this:

12	11:15:00 AM
13	1:36 PM
14	

Remember to widen your column if you find the pound signs (#).

Save the file and leave it open for the next assignment.



### Assignment 7.4 - Page 38

Continue using file [FILE1.xls](#).

Use the [Text Worksheet](#). Enter the following values in cells A15 through A17:

100  
.156  
.1739

Highlight all three cells and pull down **Format to Cells...** Click the **Number** tab and click on the **Percentage** option in the list. Set the decimal places to 2.

Now, click on cell A17 and click on the **Decrease Decimal** button on the **Toolbar** so there is only one decimal place.

Save the file [FILE1.xls](#) and close it.

## VII. Calculations



### Assignment 8.1 - Page 41

Open [FILE1.xls](#) and move to the second [Worksheet, Values](#).

Click on cell B9 to highlight it and enter the following:

=B4+B5+B6+B7

Press **Enter**.

This calculation adds the values of the four cells you have included above. Go back and change one of the values in any cell between B4 and B7. Don't forget to press **Enter** so that Excel knows you are ready to go.

This is a good time to utilize some of the other operands. Enter the value 2000 into cell B1. We are going to make believe that this is our take home pay. We are going to calculate how much money we have left each month after paying our bills. Click on cell B11 and enter the following:

=B1-B9

This subtracts the total of our bills (B9) from the amount of our take home pay (B1). Don't forget the **Enter** key.

Save FILE1.xls and leave it open for the next exercise.



## Assignment 8.2 - Page 41

Continue to use the Values Worksheet in FILE1.xls.

Let's do something out of the way for a moment. Click on cell B18 and enter the following:

=4+6\*3

Don't press **Enter** just yet. The question is, what is the correct answer? Is it 30 or 22? Press **Enter** to find the answer is 22.

Let's get a little more practical. I want to find out how much I pay for house and car payment every 6 months. My house payment is cell B4 and my car payment is cell B5. The formula should look like this:

=B4+B5\*6

Click on cell B14 and enter this formula. Go ahead and press **Enter**. Fact is, this figure is totally incorrect. The formula should read:

=(B4+B5)\*6

Enter this into B15 and look at the difference.

Don't be caught unaware. This situation can make you look bad in front of students, peers, and boards of education. Test your calculations by putting in some easy numbers and make sure the outcome is what it is supposed to be. In almost every case, it is user-error and not Excel.

Save the FILE1.xls and leave it open for the next assignment.



## Assignment 8.3 - Page 42

Continue to use the Values Worksheet in FILE1.

We are going to cover formulas in a big way in the next section but I want to contrast the use of formulas and calculations.

Cell B9 has the calculation that sums the four values. This works good if there are only four values but what if there are 100?

Click on cell B10 and enter the following:

=SUM(B4:B7)

Press **Enter** and you should see the same value in B10 as is in B9. That is because they are summing the same set of cells. Imagine how these two cells might differ if there were 25 cells to sum. I think you get the picture.

Save FILE1.xls and close it. We will use it in the next section but it is important to learn how to close and open files.

## VIII. Formulas



### Assignment 9.1 - Page 44

Open FILE1.xls from your hard drive and move to the last Worksheet, Formulas.

I want you to enter values into 10 cells starting with A1. Use 4 and 5 digit numbers (1000 - 99999) and do not use commas. Your entries should look something like this, even though your values will be different.

	A
1	1254
2	1245
3	6577
4	5426
5	4567
6	74658
7	5499
8	9745
9	97541
10	6879

I want you to experiment with entering formulas in cell A12. The formula will always be the same (=SUM(A1:A10)) but there are several ways to enter the same formula.

First of all, click on cell A12 to highlight the cell and enter the following:

=SUM(A1:A10)

Press **Enter** and the sum of the 10 values is instantly presented in cell A10. You can hardly get your **Enter** key down before the calculation is complete.

There is another way that I want you to know about. Walk through this with me. Click on cell A12 to

highlight the cell once again. We are going to replace the formula there with another. Begin by typing

=SUM(

Do not press **Enter** or add anything else at this time. Grab your mouse and place the pointer on cell A1. Hold down the mouse button and drag down to cell A10. Make sure those 10 cells are contained in the dotted selection box. Release the mouse button, close the parenthesis with **shift+0** and press **Enter**. You get the same result without having to type in the **Range**.

Save FILE1.xls and leave it open for the next exercise.



### Assignment 9.2 - Page 46

Continue to use the Formulas Worksheet of FILE1.xls.

Please enter the following information into cells C1 through C7.

	C	D
1	32.586	
2		
3	INT	
4	MOD	
5	PI	
6	RAND	
7	SQRT	
8		

Starting in cell D3, enter the following formulas into the cells down column D.

=INT(C1)  
 =MOD(D3,5)  
 =(PI()\*C1)^2 (pi \* radius squared)  
 =INT(RAND()\*D3)  
 =SQRT(C1)

Take some time to study the formulas you entered. They are very straightforward mathematical formulas. It helps to understand what they are doing.

Save FILE1.xls and leave it open.



### Assignment 9.3 - Page 47

Continue to use the Formulas Worksheet of FILE1.xls.

Let's move down a little and do a few calculations that involve statistics. Since we already have a set of numbers we can play with, we might as well use them.

Enter the following information into cells A14 through A18:

	A	B
14	Average	
15	Count	
16	Maximum	
17	Minimum	
18	Standard Deviation	
19		

We are going to put the formulas in column B but we will use the values in column A. Starting in cell B14, enter the following formulas as you go down column B:

- =AVERAGE(A1:A10)
- =COUNT(A1:A10)
- =MAX(A1:A10)
- =MIN(A1:A10)
- =STDEV(A1:A10)

If that doesn't impress you, you must be asleep. Go back and change any of the values in cells A1 through A10 and watch how fast the computer can recalculate all the values in A14 through A18. Who needs a calculator?

Save FILE1.xls and leave it open.



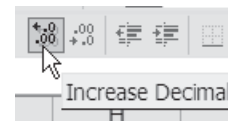
### Assignment 9.4 - Page 48

Continue to use the Formulas Worksheet of FILE1.xls.

Enter the following information into cells C11 through D13:

	C	D	E
11	Yearly Int	0.0875	
12	Months	36	
13	Loan Amt	24500	
14			
15	Payment		
16			

Point of order there. Please enter .0875 into cell D11. Percent is a decimal fraction so you cannot enter 8.75 because that is 875% and I don't think you afford that kind of a loan unless it is from Cousin Guido. Click on D11 and click the **Percent** button on the **Toolbar**. Then, add two decimal places by clicking on the **Increase Decimal** place button on the **Toolbar** and you are set.



Click on cell D15 and enter the following formula:  
=PMT(D11/12,D12,D13)

Now go to the three variables in D11 through D13 and make some changes. Change the interest rate to 9.12% and see what it does to the monthly payment. Change the number of months to 48. Change the amount of the loan to 26000. You can see how this is a great way to manage loan payments.

Save the file and leave it open.



## Assignment 9.5 - Page 49

Continue to use the Formulas Worksheet of FILE1.xls.

Enter the following into cells F1 through G1:

	F	G	H
1	Sales	15000	
2	Commission		
3			
4			

We are going to calculate the commission to be paid the salesperson. If they sell more than \$15,000, they get 12% commission. Anything less than that they get only 9.2%. So click in cell G2 and enter the following formula:

```
=IF(G1>15000,G1*.12,G1*.092)
```

Play around with the value in G1. Enter a number greater than 15000. Enter a number less than 15000. Get the picture?

There are lots of applications for this logical formula. Keep it in the back of your mind and one of these days, it will be ready to work for you.

**Save** the file and leave it open for one more assignment.



## Assignment 9.6 - Page 50

Continue to use the Formulas Worksheet of FILE1.xls.

We are going to do something simple here so you get the idea. Click in cell B19 and pull down **Insert** to **Function...** Click on **Math & Trig** from the list on the left and select **SUM** on the right. Click on the **OK** button and then either enter A1:A10 or click on the small colorful box to the left of the top entry area. Move the pointer to cell A1 and drag from there to A10. Click on the

colorful box again and another **OK** will complete the operation.

**Save** FILE1.xls onto the hard drive and close the file. We are finished with it for now.

## IX. Fill

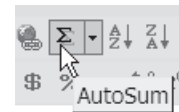


## Assignment 10.1 - Page 51

**Open** FILE2.xls found in the FPUExcel folder on your **Desktop**.

Move to the Fill Worksheet, the first one of the Workbook.

The first thing we are going to do here is to sum the first column of values. Click on the cell B15 and hit the **Autosum** button.



You will need to press the **Enter** key to finish the formula.

Drag from cell B5 to E5. Cell B5 will be white and the others will be highlighted. Pull down **Edit** to **Fill** and over to **Right**. Now drag from B6 to E6 and use **Command/Control+R**. With Excel 2007, the **Fill** option is at the right on the **Home Ribbon**.

Now drag from B7 to E13. Yes, this is a block of cells and B7 will be the only cell that is white while the others are all highlighted. Pull down **Edit** to **Fill** to **Right**. You will find that all the rows filled to the right.

**Save** the file as FILE2.xls in the FPUExcel folder on your hard drive. Leave it open for the next assignment.



## Assignment 10.2 - Page 52

Continue using the FILE2.xls Workbook.

Make sure you are still on the Fill Worksheet.

Highlight cells B15 to E15 and do a **Fill Right**. Click on cells C15, D15, and E15 to see that Excel has adjusted the formula to account for each column.

**Save** the file.

Highlight from cell C20 down to C28 and do a **Fill Down (Command/Control+D)**. We have a problem here. The problem, as we stated in our manual, is the fact that as we Fill a formula, the formula is adjusted for rows and columns. If you click on C21 and C22 and study the contents, you will see the problem. The total (C30) has changed to C31 and C32 and there are no numbers there. C30 is where the total resides and does not change based on a new row or column.

To fix the problem, we need to add dollar signs to the formula. Click on cell C20 and modify the formula so that it reads:

=B20/\$B\$30



## Assignment 10.3 - Page 53


Continue using the FILE2.xls Workbook.

We are going to do some major work here so that the whole idea of relative and absolute reference can fit in.

First of all, we are going to use the **Fill** Worksheet to get an idea of what we are talking about. Highlight cells A5 to B15. This will be a block of cells. Pull down **Edit to Copy**. Click on cell A20 and pull down **Edit to Paste**. We have made a duplicate of our January payments.

What we want to do here is to figure out what percent of our total budget goes for each category. Our total is in cell B30. To figure out the percentage of each category, we need to create a fraction with the monthly payment as the numerator and the total being the denominator. The house payment would look like this: 784.52/1730.59. If we substitute cells for values, the formula is B20/B30. So, click in cell C20 and enter the following:

=B20/B30

Now highlight the cells and do a Fill Down. Viola! It works like a champ. By the way, you need to highlight cells C20 to C28 and click on the **Percent** button  so that the decimals are expressed as percent.

**Save** the file and close it for now. We will use it in the next assignment but we have another project for now.

I want you to open a file titled PERSTEPS.xls. It would be wise to print this spreadsheet out in order accomplish this next section. You are to recreate a spreadsheet that calculates personnel costs for a group of four employees. The PERSTEPS.xls file lists all the steps in order to complete this spreadsheet and you will find a copy of the final product in APPENDIX B of the Assignment Manual. Use the combination of these two items to complete the assignment. By going through the steps of creating a rather sophisticated Workbook, you will become much more comfortable with the use of Excel.

**Save** the file as PERSONNEL.xls and make sure that it is in the FPUExcel folder on your hard drive.



### Assignment 10.4 - Page 54

Open FILE2.xls from the FPUExcel folder on your hard drive.

Move to the Fill Worksheet.

We are going to finish off this spreadsheet in a major fashion. The **Fill Handle** is simply awesome in its power. There are several steps we are going to take here.

- 1) Click on cell E5 and position the pointer so that it becomes the small black plus sign in the lower right corner of the cell. Grab it and drag it over to I5.
- 2) Highlight cells E6 to E13. Grab the small **Fill** box in the lower right corner of the block and drag over to I13.
- 3) Highlight E15 and drag the Fill Handle to I15. Notice that the formulas are all adjusted to the relative column.

**Save** the file and leave it open for the next exercise.



### Assignment 10.5 - Page 54

Continue to use the Fill Worksheet of FILE2.xls from the previous assignment.

Drag from A40 down to A50 and pull down **Edit to Fill** and over to **Series...** The series is in a column and set for **Linear** with a **Step value:** of 1. Click **OK**.

**Save** the file and leave it open.



### Assignment 10.6 - Page 55

Continue to use the Fill Worksheet of FILE2.xls from the previous assignment.

Drag from B40 down to B50 and set it for **Linear** but this time, set the **Step value:** to 5.

**Save** the file and leave it open.



### Assignment 10.7 - Page 55

Continue to use the Fill Worksheet of FILE2.xls from the previous assignment.

Drag from C40 to C50 and set the **Type** for **Date** and the **Date unit** to **Weekday**.

Drag from D40 to D50 and set the **Date unit** for **Month**.

**Save** the file and leave it open.



### Assignment 10.8 - Page 56

Continue to use the Fill Worksheet of FILE2.xls from the previous assignment.

First of all, move down and highlight cell E40. Grab the **Fill Handle** and drag down to E50. You should find that it filled it as a series in weekday order.

Move up to cell B3 and highlight that cell. Grab the **Fill Handle** and drag to the right all the way to M3, which should be December.

**Save** the file and leave it open.



## Assignment 10.9 - Page 56

Continue to use the Fill Worksheet of FILE2.xls from the previous assignment.

Move down and highlight F40. Grab the **Fill Handle** and drag down to F50. VIOLA in a big way.

Let's finish this spreadsheet while we are at it. Highlight I5 to I15, grab the **Fill Handle**, and drag over to M15.

Go back into the values and change some of the numbers. Your house payment will most likely stay the same but your food bill varies as to whether relatives are coming over. Your utilities change as well. Modify a half dozen or so. Pretend that lots of folks are coming to your house for Easter so you must allocate an additional \$150 for April's food bill.

Click on N5 and hit the **Autosum** button on the **Toolbar**. Don't forget to **Enter**. Highlight that cell and grab the **Fill Handle** and pull down to N13. If you make a mistake, highlight the entire column and pull down **Edit** to **Clear** and over to **All**. It will be erased.

Now for something tricky. Click on cell N13. We are going to drag a copy of this cell down to N15. To do this, you must place the pointer on the very edge of the cell so that it becomes an arrow. If you were to drag it at this point you would move it instead of copying. You must hold down an additional key while you drag in order for it to copy. Windows - hold down the **Control** key and Macintosh - hold down the **Option** key. You should see a little plus show up right next to the arrow. When you see the plus, you are copying and not moving. Now, holding down the additional key, drag the contents of N13 to N15. Neat and simple.

**Save** the file and **Close** it. We will come back to this file later.

# X. Working with Cells



## Assignment 11.1 - Page 59

**Open** FILE2.xls from your hard drive and move to the Fill Worksheet.

We are going to add another category to this budget. Move all the way to the left of the spreadsheet and click on the **Row Heading** 10. This is the little box all the way to the left with the number 10 inside. When you click on this box, the entire row 10 will be highlighted. Pull down **Insert** to **Rows** or click on the **Insert** button on the **Home Ribbon**.

The totals have been moved from row 15 to row 16. Click on any total at the bottom of the budget to see how it has been automatically adjusted.

Click on A10 and make up your own category.

**Save** the file and leave it open for now.



## Assignment 11.2 - Page 59

Continue using the Fill Worksheet on the FILE2.xls Workbook.

Add some values into row 10. Just make up some realistic values based on the category you chose.

Now, move to cell N10. There is no formula there. When you inserted a row, Excel did not automatically move the formula down. You need to add a formula into that spot. The easiest way is to click on cell N9, grab the **Fill Handle**, and drag down to cell N10.

There are other ways to do this. You could use the **Copy** and **Paste** feature under **Edit**, or you could have held down the optional key and used the arrow to **Copy** the contents to the next cell. Any of the ways will work just fine.

Finish out the values in row 10. You are welcome to use the **Fill Handle** if it will make it easier.

**Save** the file and leave it open for the next assignment.



### Assignment 11.3 - Page 62

Move to the Attributes Worksheet of FILE2.xls.

We are going to work on most of the alignment attributes in this assignment. Complete each of the following activities: (for Excel 2007 - all commands are on the **Home Ribbon**.)

- 1) Use the **Formatting Toolbar** to align cells A1 through A3 based on what is indicated in each cell. If it says **Right**, then **Right Justify**.
- 2) Use the **Format Cells** option to **Justify** cell A4.
- 3) Highlight A8 to H8. Use the **Format Cells** to **Center Across Selection**. This is found in the **Horizontal:** alignment.
- 4) Notice A12 and the sentence found there. The same sentence resides in A14 but you can't see it because there is a value in B14 that blocks the view. Click on A14 and use the **Format Cells** to **Wrap text**.
- 5) Modify the **Vertical:** alignment of cells A19 through A21, again based on the instructions in each cell.

**Save** the file and leave it open for the next assignment.



### Assignment 11.4 - Page 63

Continue to use the FILE2.xls Workbook from your hard drive.

Move to the Borders Worksheet. Highlight A6 through F6 and **Fill** this portion with a light gray color. Do the same thing for A9:F9 and A12:F12. Again, all commands in Excel 2007 are on the **Home Ribbon**.

Now move to the **Fill** Worksheet. Use the same gray fill to emphasize rows 7 and 11.


**Save** the file and leave it open.



### Assignment 12.1 - Page 64

Continue using FILE2 and move to the Borders Worksheet.

Starting with cell A20, set a border for each of the cells below based on the contents of that cell. You will need to go to the **Format Cells** window in order to get the top border.

Now, move to the Fill Worksheet and highlight cells B15 to N15. Place a heavy bottom border on these cells. This can be done using the **Borders** 

button on the **Toolbar**. With Excel 2007, these commands are all on the **Home Ribbon**. If you would like, you can begin clicking on the small arrowed button in the bottom right of the **Font** section and click on the **Border** and **Fill** tab.

**Save** the file and leave it open for the next assignment.



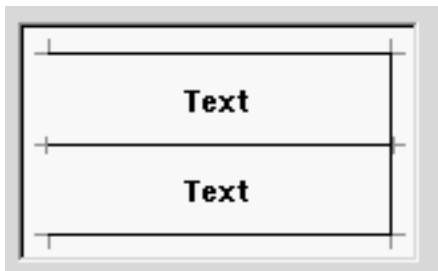
## Assignment 12.2 - Page 65

Continue to use FILE2.xls and move to the Borders Worksheet.

Highlight cells B4 to F13. Using the **Borders** button, set the **Border** for total borders on all cells.

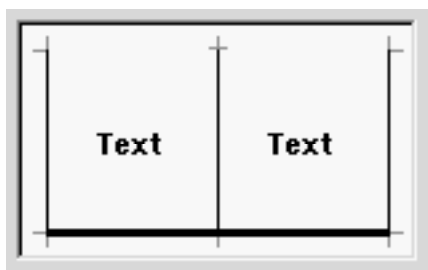


Now highlight cells A4 to A13 and pull down **Format to Cells...** and click on the **Border** tab. Set the borders as follows. Keep clicking until it is right.



No border on the far left.

Now highlight cells B3 to F3 and set the border to the following:



Make sure to have a heavy line across the bottom.

**Save** the file and leave it open for the next exercise.



## Assignment 12.3 - Page 65

Continue using the Borders Worksheet on FILE2.xls.

Highlight cells B3 to F3. Change the **Alignment Orientation** to 90°. While this section is highlighted, go ahead and modify the horizontal alignment to center.

**Save** the file and leave it open for the next assignment.



## Assignment 12.4 - Page 66

Continue using the Borders Worksheet on FILE2.xls.

Change the width of column A to 15. Highlight columns B through F using the **Column Heading** so the entire column is highlighted. Modify the width of these columns to 3.

**Save** the file and leave it open for the next assignment.



## Assignment 12.5 - Page 67

Continue using FILE2.xls and move to the **Fill** Worksheet.

Narrow column N so that some of the numbers are no longer displayed. Leave it this way for your save.

**Save** the file and leave it open for the next assignment.



### Assignment 12.6 - Page 67

Continue using the FILE2.xls Workbook and move to the Borders Worksheet.

Highlight rows 4 through 14 using the **Row Heading** and modify the **Row Height** to 20.

**Save** the file and leave it open for the next assignment.



### Assignment 12.7 - Page 69

Continue using the Borders Worksheet on FILE2.xls.

Remove the **Gridlines** from the Borders Worksheet.

**Save** the file and leave it open.



### Assignment 12.8 - Page 71

Continue using the FILE2.xls Workbook and move to the Fill Worksheet.

Move the horizontal **Scroll Bar** all the way to the left so that column A is displayed. Split the screen between column A and column B.

**Save** the file and make sure it is in the FPUExcel folder on your hard drive. We are finished with this file now so you can **Close** it.



### Email Assignment

I would like you to once more send an email to Dr. Swan. Provide responses to each item below in your email. You may attach a document to an email if you prefer.

1. How is the course going so far? Do you have any issues you cannot resolve?
2. How do you foresee using Excel in your classroom and in your daily life?
3. Do you sense a feeling of information overload both for you and for your students?
4. What do you see as the number one issue in education today? What do you feel is standing in the way of exceptional student learning?
5. Describe the type of student information system available at your school and what information do you find the most valuable?

Send this email to [rfswan@comcast.net](mailto:rfswan@comcast.net)

## XI. Working with Worksheets



### Assignment 13.1 - Page 73

**Open** a file named WORKSHEET from the FPUExcel folder on your hard drive.

Click on the February Worksheet tab at the bottom of the work area and pull down **Insert** to **Worksheet** to add another for January. With Excel 2007, you can either click on the **Insert Worksheet** button next to the names of the Worksheets at the bottom or you can click on the **Insert** button and select **Sheet** on the **Home Ribbon**.

Remove the **Extra** Worksheet.

**Save** the file as WORKSHEET.xls in the FPUExcel folder. Make certain that is where it winds up.



### Assignment 13.2 - Page 73

Continue using the WORKSHEET.xls file.

Change the name of the Worksheet you added in the previous exercise to January.

**Save** the file and leave it open.



### Assignment 13.3 - Page 73

Continue using the WORKSHEET.xls file.

Rearrange May and June so that they are in order and add additional Worksheets and name them so there is a sheet for each month of the year.

**Save** the file and leave it open for one more assignment.



### Assignment 13.4 - Page 75

Continue using the WORKSHEET.xls file.

Modify the **Header** so that it says the following, centered across the top of the page:

*Learning Excel Worksheets*

and the date is posted in the upper right corner. You will need to use the **Custom Header** option to accomplish this. With Excel 2007, move to the

**Page Layout Ribbon** and click on the arrowed button in the **Page Setup** section. There you will see the **Header** and **Footer** tab.

Modify the **Footer** so that the page number appears at the bottom of the page. Your call as to how and where it is displayed.

Click on the **Print Preview** button to make sure it works. **Print Preview** is located in the Print section under the **Office Button**

**Save** the file and **Close** it.

## XII. Working with Toolbars



### Assignment 14.1 - Page 78

There is no way for me to assess this activity but I think you will appreciate the power if you will complete the exercise.

Open a new spreadsheet file and add the **Increase** and **Decrease Font Size** buttons to your **Formatting Toolbar**. This works really great. Well, you Excel 2007 folks can take a break. It is already there.

If you do not have the alignment buttons, you should consider adding those as well.

Now, doesn't that feel better?

## XIII. Printing Spreadsheets



### Assignment 15.1 - Page 83

Open FILE2.xls from the FPUExcel folder on your hard drive.

Change the **Orientation** of this document to **Landscape**.

**Save** the file and leave it open for the next exercise.



### Assignment 15.2 - Page 85

Continue to use FILE2.xls.

This assignment is in several parts.

- 1) Change all the margins in this file to .5".
- 2) On the **Page** tab, set it to **Fit to**: one page wide by one page tall.
- 3) On the **Sheet** tab, set the **Rows to repeat at top**: for the first three rows of the spreadsheet, which would include the column headings in the third row. (\$1:\$3)

**Save** the file and leave it open for the next exercise.



### Assignment 15.3 - Page 85

Continue to use FILE2.xls.

Turn on the **Gridlines** in the **Page Setup**. **Save** the file and close it.

## XIV. Working with Names



### Assignment 16.1 - Page 88

Open FILE2.xls from the FPUExcel folder on your hard drive.

Create a **Name** for the area of the entire budget area that contains values on the Fill Worksheet. This would include all cells from B5 to M14. You can either type it in the name box or use the colorful little box. The **Refers to**: entry area should have the following:

=Fill!\$B\$5:\$M\$14

Name the area **BUDGET**.

**Save** the file and leave it open for the next assignment.



## Assignment 16.2 - Page 88

Continue to use FILE2.xls.

Click on cell A35 and enter the following formula:  
=SUM(BUDGET)

**Save** the file and close it.

# XV. Managing Data



## Assignment 17.1 - Page 90

**Open** FILE2.xls from the FPUExcel folder on your hard drive and move to the Fill Worksheet.

We have moved our account from Sears to Penneys and need to change the name where it appears in our spreadsheet. Use the **Replace** feature to change the name.

**Save** the file and close it.



## Assignment 17.2 - Page 91

Open TEXT.xls from the FPUExcel folder.

Move to the first Worksheet, **Word List**, and use the spell check to correct the spelling errors found on that sheet.

Take a moment to consider how spell check might be able to help your students meet some of the academic standards.

**Save** the file as TEXT.xls into the FPUExcel folder on your hard drive. Leave it open for the next exercise.



## Assignment 17.3 - Page 91

Continue using the TEXT.xls file from the FPUExcel folder on your hard drive.

Using the **Copy** and **Paste** feature, **Copy** cell D10 and **Paste** it into cell E10.

**Save** the file and leave it open.



## Assignment 17.4 - Page 91

Continue using the TEXT.xls file.

Using the **Cut** and **Paste** feature, **Cut** the contents of D11 and **Paste** it into cell E11.

**Save** the file and leave it open.



## Assignment 17.5 - Page 92

Continue using the TEXT.xls file.

We are going to copy the names in column D to the gender lists in columns E and F. You will need to use the **Option/Control** key to accomplish this so that you copy and not move the data.

Drag each name from column D to the proper column depending upon the gender of their name. Don't worry about alphabetical unless you feel so inclined. This sure makes moving data around a breeze.

**Save** the file and close it.

# XVI. Linking



## Assignment 18.3 - Page 94

Continue using the LINKING.xls file.

Move to the Summary Worksheet and click on cell C4. We want the remaining balance for Sub Salaries in this cell which would be found in cell D4 over on the second Worksheet, Bud 4196. Rather than using the method we used above, we are going to type in the link. Enter the following formula into cell D5:

= 'Bud 4196' !D4

Press **Enter** to complete the action.

I want you to finish this spreadsheet by finishing the remaining links. Start with column B first and link cells B5 and B6 to the corresponding cells on the first Worksheet. Add a sum at the bottom of that column in cell B7.

Now for some additional magic. Since the cells are in order by column, we can use the **Fill Handle** to do the same thing. Click on cell C4, on the Summary Worksheet, and drag the **Fill Handle** down to C6. Works like a champ.

Now, add a sum in C7 and also add sums to the right of each row of data.

**Save** the file and close it.



## Assignment 18.1 - Page 93

**Open** the file LINKING.xls found in the FPUExcel folder.

Move to the first Worksheet, Bud 4175. Click in cell D10 and link it so that the current balance D7, appears in this cell. (=D7)

**Save** the file and leave it open for the next assignment.



## Assignment 18.2 - Page 93

Continue using the LINKING.xls file.

We are going to create a summary of the two budgets we are managing. I have already created a Summary Worksheet so move to that one at this time.

We want to be able to check on the remaining balances in the categories listed in each of the two budgets. Click on cell B4 and hit the equal sign key (=). Move to the first Worksheet, **Bud 4175**, find cell D4 which contains the remaining balance for sub salaries for that budget. Click once in D4 and hit the **Enter** key.

**Save** the file and leave it open.

## XVII. Options/ Preferences



### Assignment 19.1 - Page 96

**Open** the file named WORKSHEET.xls in the FPUExcel folder on your hard drive.

Move to the first Worksheet of the file and open the **Options/Preferences**. Change the **Show** so that the **Formula bar** and the **Status bar** are not showing.

**Save** the file and leave it open.



### Assignment 19.2 - Page 97

Continue to use the WORKSHEET.xls file.

Remove the **Row & column headers** as well as both **scroll bars**.

**Save** the file and leave it open for the next assignment.



### Assignment 19.3 - Page 98

Continue using the WORKSHEET.xls file.

Make sure the **User name:** is your name, that is, if you are using your own computer at this time.

**Save** the file and be done with it.

## XVIII. Draw Tools



### Assignment 20.1 - Page 104

While you are working through this section, you might decide to hide the **Gridlines**. This is done on the **Options/Preferences View** dialog box. You do not need to remove them to complete the assignments, it simply is your choice.

**Open** the file GRAPHICS.xls from FPUExcel folder on your hard drive.

Make sure the **Drawing Toolbar** is displayed. If it is not, pull down **View** to **Toolbars** and over the **Drawing**. Make it a **Tool Palette** instead of a **Toolbar**. For Excel 2007 users, make sure the **Insert Ribbon** is displayed. Once you have an **Object** drawn, you will see the Draw tools.

**Save** the file and leave it open for now.



### Assignment 20.2 - Page 105

Continue using the GRAPHICS.xls file. Move to the first Worksheet, Basic Shapes.

Click on the **Line Tool** and draw a simple line somewhere on the Worksheet.

**Save** the file and leave it open.



### Assignment 20.3 - Page 105

Continue using the GRAPHICS.xls file. Move to the first Worksheet, Basic Shapes.

Click on the line you drew in assignment 20.2 so that it is selected (**Handlers**). Change the line color to a color of your choice.

**Save** the file and leave it open.

Change the line thickness of each of the three lines to a different thickness.

**Save** the file and leave it open.



### Assignment 20.7 - Page 107

Continue using the Basic Shapes Worksheet on the GRAPHICS.xls file.

Change the color of one of the lines using the **More Lines...** option.

**Save** the file and leave it open.



### Assignment 20.4 - Page 106

Continue using the GRAPHICS.xls file. Move to the first Worksheet, Basic Shapes.

Draw a second line on the Worksheet and change the color to a new color found on the **More Line Colors...** dialog box.

**Save** the file and leave it open.



### Assignment 20.8 - Page 107

Continue using the Basic Shapes Worksheet on the GRAPHICS.xls file.

Change one of the lines to a **Long Dash**.

**Save** the file and leave it open.



### Assignment 20.5 - Page 106

Continue using the Basic Shapes Worksheet on the GRAPHICS.xls file.

Draw a third line on the Worksheet and select a **Pattern**.

**Save** the file and leave it open.



### Assignment 20.9 - Page 108

Continue using the Basic Shapes Worksheet on the GRAPHICS.xls file.

Change one of the lines so that it has an arrow at one end only.

**Save** the file and leave it open.



### Assignment 20.6 - Page 107

Continue using the Basic Shapes Worksheet on the GRAPHICS.xls file.



### Assignment 20.10 - Page 108

Continue using the Basic Shapes Worksheet on the GRAPHICS.xls file.

Change one of the lines so that it has an arrow at each end using the **More Arrows...** option.

Move the lines so that they are in the upper left corner of the Worksheet. If they are too large, make them a little shorter.

**Save** the file and leave it open. If at any time you need to quit, make sure to save the file as **GRAPHICS** in the FPUExcel folder on your hard drive. This is where it should be going anyway.



### Assignment 20.11 - Page 109

Continue using the Basic Shapes Worksheet on the GRAPHICS.xls file.

Use the **Rectangle Tool** to draw a rectangle on the Worksheet. Once you have drawn the rectangle, use the **Handlers** to modify the size and shape of the rectangle.

**Save** the file and leave it open.



### Assignment 20.12 - Page 109

Continue using the Basic Shapes Worksheet on the GRAPHICS.xls file.

Draw two more rectangles. On one of them, let's do something different. Hold down the **Shift** key while you draw the rectangle. This will force it to be a square. Neat, eh?

Practice moving the rectangles around on the screen but make sure to grab the line and not a **Handler** unless your intent is to resize it.

**Save** the file and leave it open.



### Assignment 20.13 - Page 110

Continue using the Basic Shapes Worksheet on the GRAPHICS.xls file.

Select one of the rectangles you drew and change the **Fill** to a color.

**Save** the file and leave it open.



### Assignment 20.14 - Page 110

Continue using the Basic Shapes Worksheet on the GRAPHICS.xls file.

Select one of the remaining rectangles and change the **Fill** to **No Fill**. Notice the fact that you can now see the **Gridlines** on the Worksheet. The rectangle is transparent.

**Save** the file and leave it open.



### Assignment 20.15 - Page 110

Continue using the Basic Shapes Worksheet on the GRAPHICS.xls file.

Select the final rectangle and fill it with a **Gradient** that uses two colors. Your choice here. Make it look wild!

**Save** the file and leave it open.



### Assignment 20.16 - Page 110

Continue using the Basic Shapes Worksheet on the GRAPHICS.xls file.

Draw another rectangle and **Fill** it with a **Texture**.

**Save** the file and leave it open.



### Assignment 20.17 - Page 112

Continue using the Basic Shapes Worksheet on the GRAPHICS.xls file.

Draw a fifth rectangle and **Fill** it with a picture. Click on the **Select Picture...** button and go to the **Picture** folder found on the CD that accompanied this coursework. Select any picture in that folder.

Before we finish here, change the line size and line color of each of the rectangles.

**Save** the file and leave it open for the next exercise.



### Assignment 20.18 - Page 112

Continue using the Basic Shapes Worksheet on the GRAPHICS.xls file.

Draw two ellipses on the Worksheet, one using the **Shift** key to get a circle. Fill each with a color, pattern, texture, picture of your choice. Change the line size and line color of at least one of the ellipses.

**Save** the file and close it for now. We will open it right back up but it is a good idea to make sure it is fully saved for now.



### Assignment 21.1 - Page 113

**Open** the file GRAPHICS.xls from the FPUExcel folder on the hard drive and move to the AutoShapes Worksheet.

This will be a little tricky at first but with practice you should be able to select an **AutoShape** with ease. Select any of the **Basic Shapes**, one that you find interesting, and draw a shape in the upper left corner of the Worksheet. Play around with resizing the shape and moving it around the Worksheet. When you are finished, put it back in the upper left corner in the cell labeled **Basic Shapes**.

**Save** the file and leave it open.



### Assignment 21.2 - Page 113

Continue on the AutoShapes Worksheet of the GRAPHICS.xls file.

Select a **Block Arrow** and draw a shape in the upper right cell labeled **Block Arrows**. Resize it and move it around for practice but make sure it resides in the cell when you are finished.

**Save** the file and leave it open.



### Assignment 21.3 - Page 113

Continue on the AutoShapes Worksheet of the GRAPHICS.xls file.

Select a **Flowchart** graphic in draw it in the lower left cell and select a **Stars and Banners** object and draw it in the lower right cell.

Now, go back and work with each of the four **AutoShapes** you have just drawn. Change the line thickness, the line color, and change the **Fill** on each as well. Try using a picture from the CD or select one of your own. Make each one different.

**Save** the file and leave it open.



### **Assignment 21.4 - Page 114**

Continue on the AutoShapes Worksheet of the GRAPHICS.xls file.

Select any two objects on this Worksheet and add a **Shadow** to those graphics. Move back to the **Basic Shapes** Worksheet and add a **Shadow** to one of the graphics on that page.

**Save** the file and leave it open.



### **Assignment 22.1 - Page 115**

Continue using the GRAPHICS.xls file and move to the Shadow Worksheet.

Use the **Shadow Settings** to modify the shadow on all three of the objects on that Worksheet. You can modify the **Fill** if you like but make sure to change the **Shadow** color as well as the horizontal and vertical length of the shadow.

**Save** the file and close it to make sure that everything is saved correctly.



### **Assignment 22.2 - Page 115**

Open the GRAPHICS.xls file found in the FPUExcel folder on your hard drive. Move to the 3-D Worksheet.

Add a **3-D** option to the graphic in the left cell. Draw a few more smaller objects under this one and add the **3-D** option to each of them.

**Save** the file and leave it open.



### **Assignment 22.3 - Page 116**

Continue using the 3-D Worksheet of the GRAPHICS.xls file.

Select the object in the right cell and move to **3-D Settings** to modify this object. Draw several additional objects in this box and play around with some of the **3-D Settings**. Some really wild stuff here.

**Save** the file and leave it open.



### **Assignment 22.4 - Page 117**

Continue to use the GRAPHICS.xls file and move to the Text Box Worksheet.

Add two **Text Boxes** on this sheet and type in a paragraph in each box. Type anything that comes to your mind. You can even copy and paste from something you have typed in another program. Change the shape and location of each **Text Box**. Notice how the words wrap within the confines of the box.

**Save** the file and close it.



### Assignment 23.1 - Page 118

Open the file GRAPHICS.xls from the FPUExcel folder on your hard drive and move to the Word Art Worksheet.

Open a new **Word Art** object and enter your first and last name.

**Save** the file and leave it open.



### Assignment 23.2 - Page 118

Continue using the Word Art Worksheet.

Resize the **Word Art** from Assignment 23.1 so that it fills about 1/4 of the Worksheet. If you have a little yellow diamond, reshape the curve.

**Save** the file and leave it open.



### Assignment 23.3 - Page 118

Continue using the Word Art Worksheet.

Rotate your **Word Art** using the rotation tool on the **Word Art Tool Palette**.


**Save** the file and leave it open.



### Assignment 23.4 - Page 119

Continue using the Word Art Worksheet.

Click on the **Work Art** you created earlier and pull down **Edit to Copy** and then **Edit to Paste**.

This will give you a second copy of your object. Use the **Word Art Shape Tool**  to change the shape of the second copy.

Now, add your own **Word Art**. Play around with this until you feel comfortable.

**Save** the file and close it.



### Assignment 24.1 - Page 121

Open the GRAPHICS.xls file and move to the Grouping Worksheet.

Select the three objects you find there and group them so they act as one.

Create three additional graphic objects in the remaining space and group them as well.

**Save** the file and leave it open.



### Assignment 24.2 - Page 121

Continue using the GRAPHICS.xls file but move to the Layering Worksheet.

You will find three objects on this Worksheet. You need to do a little work before you can use them to create the drawing below. You must first turn off the **Fill** and change the line to **No Line**. You can select all three and do them all at once by holding down the shift key to select.

Once you have made the modifications, you are now ready to layer the images so you can create the image below. Change the layers and position the images so that they appear as shown below. Once you have them in position, add some people from the **Clip Art**, or any other source, and place them behind the car in front of the church.



**Save** the file and leave it open.



### Assignment 24.3 - Page 122

Continue to use the GRAPHICS.xls file and move to the Nudging Worksheet.

Select the graphic on the right and use the left **Arrow** key to nudge it toward the image to the left so that the line that separates them become one.

**Save** the file and leave it open.



### Assignment 24.4 - Page 123

Continue using the GRAPHICS.xls file but move to the Aligning Worksheet.

Select the five graphics to the left of the cell and **Align** them to the **Left**. Select the five objects in the center and **Align** them to **Center**. Select the final five objects on the right side of the cell and **Align** them to **Top** and **Distribute Horizontally**.

**Save** the file and leave it open.



### Assignment 24.5 - Page 123

Continue to use the GRAPHICS.xls file and move to the Rotating Worksheet.

Select the arrow in the upper left and rotate so that it points in a different direction. Make sure it does not point at any of the 90° angles.

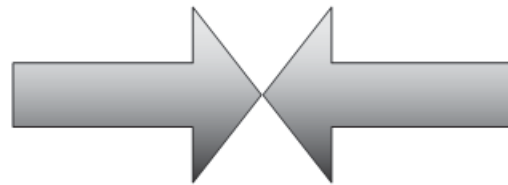
**Save** the file and leave it open.



### Assignment 24.6 - Page 124

Continue to use the Rotating Worksheet.

Select one of the arrows and flip it horizontally. Relocate the arrows and using the Nudge feature, move them so their tips touch. Tender, isn't it?



**Save** the file and leave it open.



### Assignment 24.7 - Page 124

Continue using the GRAPHICS.xls file and move to the Resizing Worksheet.

Resize the car you see here into three different shapes. Make one low and sleek, turn another into a Volkswagen by making it short, and resize the third so that it is a smaller version of itself.

**Save** the file and leave it open.

**Assignment 24.8 - Page 125**

Continue to use the GRAPHICS.xls file and move to the Image Control Worksheet.

You will find a beautiful picture of the Golden Gate Bridge. If you have never been to San Francisco, this is a sight to behold.

First, change the image to **Grayscale**. Take a good look at the image. If you were going to print this image on a regular laser printer, this is how you would want to do it.

Now, change the image to **Watermark**. You can change either color or grayscale to **Watermark** but I happen to prefer grayscale.

**Save** the file and leave it open.

**Assignment 24.9 - Page 129**

Continue using the GRAPHICS.xls file and move to the Clip Art Worksheet.

Create a single picture here by adding at least three **Clip Art** images to the Worksheet.

**Save** the file and leave it open.

**Assignment 24.10 - Page 130**

Continue using the GRAPHICS.xls file and move to the Cropping Worksheet.

**Crop** this image so the only portion remaining is the man sitting at the desk. Remember, **Cropping** does not change the size of the graphic and that is what I am going to be looking at.

Save the file and close it. We are finished with the GRAPHICS file.

# XIX. Sort

**Assignment 25.1 - Page 132**

**Open** the SORT.xls file from the FPUExcel folder on your hard drive.

On this Worksheet you will find two identical lists of students with lots of information on each. We are going to **Sort** the first group correctly and then see how it works if we do not.

Highlight rows 1 through 21 and pull down **Data to Sort...** In the **Sort by:** entry area, select **Date of Birth**. Click **OK** and you now have a list of students by age.

We are not going to leave it like that. I want you to alphabetize the students in the top list so highlight rows 1 through 21 again and this time we need to do a two level **Sort**. **Sort** first by **Last Name** and then by **First Name**.

The screenshot shows the 'Sort by' dialog box in Excel. It has two sections: 'Sort by' and 'Then by'. In the 'Sort by' section, the dropdown menu is set to 'Last Name' and the 'Ascending' radio button is selected. In the 'Then by' section, the dropdown menu is set to 'First Name' and the 'Ascending' radio button is selected.

We do it this way in case two students share the same last name.

Now we move to the bottom list. First of all, click on cell B27. Pull down **Data to Sort...** and you will see that Excel has done the selection for you. Pretty smart, eh? Cancel out of that and highlight cells A26 through A32. Pull down

**Data to Sort...**, sort in reverse alpha, and examine the warning message very carefully. Click on the **Continue with the current selection** and click **OK**. Notice how you messed up your data big time. Be careful.

Save the file and close it.

## XX. Advanced Formulas



### Assignment 26.1 - Page 133

Open the file ADVANCED.xls from the FPUExcel folder on your hard drive.

Now, move to the first Worksheet, If. We are going to complete three examples of the **IF** function.

In the first, click on cell B3 and enter the following formula:

```
=IF(B2>9000,B2*.10,B2*.5)
```

Play around with the value in B2. If the number entered is greater than 9,000, then the amount in B3 will be 10% of B2. If it is less than 9,000, then the amount in B3 will be 5% of B2.

Let's move to the next example. Click on cell B8 and enter the following formula:

```
=IF(B7>3.99,B6,0)
```

Now, play around with the number of hours in B7. In our district, if anyone works four hours or more, they are entitled to medical benefits. Try 2 hours and 6 hours.

Now for the last example, which is a little more tricky in that it involves text. Click on cell B12 and enter the following formula:

```
=IF(B11="m","male","female")
```

Now change cell B11 to "f" and then back to "m". Notice the changes in cell B12.

Think through the logic here. It will come to you.

Save the file and leave it open for the next exercise.



### Assignment 26.2 - Page 134

Continue using the file ADVANCED.xls and move to the Lookup Worksheet.

We are going to begin the makings of a gradebook program. Move down to A20 where you find the words Grading Scale and enter the following information:

	A	B	C
19			
20	Grading Scale		
21	50	0	
22	60	1	
23	70	2	
24	80	3	
25	90	4	
26			

We are now going to enter the formula for calculating a numeric grade in column C. The numeric grade is based on the 4=A, 3=B, 2=C, etc. Move to cell C3 and enter the following formula:

```
=VLOOKUP(B3,A21:B25,2)
```

Test this formula by entering several values into B3. Try 81, 80, and 79 to see if it changes to 2 when you hit 79. If it does, you know the formula is working correctly.

We now need to copy this formula down to the nine cells below, but we have a problem. We need to anchor the lookup range so that it is an absolute reference while we leave column B as relative to the row. So, modify the formula in cell C3 to the following:

```
=VLOOKUP(B3,$A$21:$B$25,2)
```

Notice that we did not anchor B3. Now, using the **Fill Handle**, copy C3 down to C12. Enter some values into column B to see if it works correctly.

**Save** the file and leave it open.



### Assignment 26.3 - Page 135

Continue using the Lookup Worksheet.

We are going to move over to column E and calculate the ranking of the scores. Start by highlighting cell E3. Enter the following formula:

```
=RANK(B3,$B$3:$B$12,0)
```

Notice we have added the dollar signs to anchor the reference to the range (B3:B12) which contains the scores. Also notice we put a 0 at the end so the ranking would be descending - highest score to lowest score. Copy cell E3 down to E12 and VIOLA!

Let's finish off a few more ideas on this sheet before we move on. We want Excel to tell us the letter grade of the students, not just a numeric grade. We are going to problem solve as we move through this concept.

We are going to do it a more difficult way first so we can learn how formulas can work together. It is possible to use the CHOOSE function to establish letter grades, but there is a problem which will surface in a moment. Move to cell D3 and enter the following formula:

```
=CHOOSE(C3,"F","D","C","B","A")
```

The idea here is to select the value from the list based on the value in C3. The problem is, CHOOSE does not recognize a 0. It starts with the number 1. So modify the formula to the following by simply removing the "F" from the list:

```
=CHOOSE(C3,"D","C","B","A")
```

Try changing the grade in cell B3. This will work just fine as long as the grade is greater than 59, which is the break point between a D and an F. Since it cannot recognize an F, there is no way to get an F into that cell using the formula in this way. We need a way to take into consideration the 0 numeric grade.

We are going to use a combination of functions to accomplish our goal. In the previous section we worked with the IF function and we are going to resurrect it to solve our problem. The situation is the following: if the grade is a 0 then we want it to put an F in the letter grade spot, if not, we want it to use the CHOOSE formula to figure out the correct grade. Modify cell E3 to the following:

```
=IF(C3=0,"F",CHOOSE(C3,"D","C","B","A"))
```

You only need add the boldface items in the editing window at the top of the Worksheet. This formula now says IF C3 equals 0, then put an F in the cell. If not, then use the CHOOSE formula to select D, C, B, or A from the list. You don't need any dollar signs on this formula since we are not referring to any other fixed range so cells. Copy from E3 to E12 and play around with the scores in column B. It would be much easier to read if you centered the letters in column E.

Now for the easy way. Move down the cell D20 and enter the following information:

	D	E	F
20	Grading Scale		
21	50	F	
22	60	D	
23	70	C	
24	80	B	
25	90	A	
26			

Now, move up to cell F3 and enter the following formula:

=VLOOKUP(B3,\$D\$21:\$E\$25,2)

Notice we refer over to B3 which contains the percentage score, not the numeric grade. Copy the formula from F3 to F12. VIOLA!

Save the file and leave it open.



## Assignment 26.4 - Page 136

Continue using the ADVANCED.xls file and move to the PMT Worksheet.

We are going to calculate the payment of a loan and then lay out the payment schedule for the first year.

To begin with, enter the following information into the cells starting with B3:

	A	B	C
1			
2			
3	Loan Amount	19500	
4	Interest Charged	8.15%	
5	Number of monthly payments	48	
6			

In cell B4, enter .0815 and click on the **Percent** button on the **Toolbar**. You will also have to increase the decimals to two.

Now we move to cell B7 for the formula. Enter the following:

=PMT(B4/12,B5,B3)

You can now play around with the numbers in B3 to B5 and see what would happen to your loan payment.

Highlight from A11 to A22 and pull down **Edit** to **Fill** and over to **Series...** We want to increment the **Fill** by month. Now move over to cell D10 and enter 18000. Let's say we make a payment of 500 per month. Enter 500 in cell B11.

Our interest rate is 7% per year which would be 7/12 to calculate the per month interest. We pay this amount on the previous month's unpaid balance, which at this point resides in cell D10. Move to cell C11 and enter the following:

=D10\*(.07/12)

We put the parenthesis to force Excel to calculate the monthly interest rate prior to calculating the interest due. So, we are going to pay \$105 in interest for the first month.

We now need to calculate our balance after making our January payment. We must subtract the interest from the payment and subtract the remaining amount from the unpaid balance. Move to cell D11 and enter the following:

=D10-(B11-C11)

Now, drag from B11 to D22 and use the **Fill Down** command. WOW. Well there you go. Works like a champ.

Save the file and close it. I think your brain needs a little breather after this last section.



## Assignment 26.5 - Page 137

Open the ADVANCED.xls file from the FPUExcel file on your hard drive and move to the Text Worksheet.

We are going to play around with a few text functions found in Excel. To begin with, type your last name into G1 and your first name into H1.

Let's begin by calculating the length of each cell with text. Move to cell B3 and enter the following formula:

```
=LEN(B1)
```

The number is 16 because the space is a character and is counted along with all the other letters. Hold down the **Option/Control** key and drag cell B3 to D3. Continue to hold down the **Option/Control** key and drag D3 to E3 and E3 to G3 and G3 to H3. Neat!

Move to cell B5 and using the LEFT function, have Excel display the word Fern in that cell. The formula would look like this:

```
=LEFT(B1,4)
```

In cell D5 have Excel display Mic using the LEFT function. Try one with your name in either cell G3 or H3

Now use the RIGHT function to have Excel display "key" in cell D7. Try one with your name in G7 or H7.

Using the MID function, have Excel display the word "and" in cell B9. The formula would look like this:

```
=MID(B1,5,3)
```

Play with your name and see if you can't find a word using the MID function.

Now onto the big word. We will use this with your first and last name just for practice. Move to cell G11 and enter the following:

```
=H1&" "&G1
```

In cell G12, enter the following:

```
=G1&" "&H1
```

**Save** the file and close it.

I want you to take a look at another potential use for Excel. I have included a file named SPELLINGpractice.xls. Take a good look at the formulas found in column C. Think about this for having students practicing their spelling words. This works. No assignment. just want you to consider and learn.

## XXI. Charting

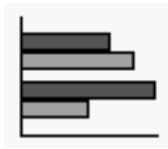


## Assignment 27.1 - Page 139

It should become quite obvious as you work through this next section on charting that this feature has some powerful application in helping students achieve academic standards in so many subject areas. While math is identified specifically, it should be quite clear how it can be used in science and social studies to analyze data. As you work, keep in the back of your mind how this can impact your classroom, not only in achievement of the part of your students, but on how you might use this to track and report student growth toward standards.

**Open** the file CHARTING.xls. Make sure you are on the Chart 1 Worksheet.

Highlight cells A1 to E5 and pull down **Insert to Chart...** Select a horizontal **Bar** chart and select the first sub-type on the top row. The other options would not make sense.



To demonstrate what I mean by not making sense, you might click on several of the sub-types shown there and hold down the mouse button on the **Press and Hold to View Sample** button. Some of them simply do not make sense.

Let's not go any farther with this. Click on the **Finish** button without going to any of the additional options at this time.

**Save** the file and leave it open.



## Assignment 27.2 - Page 142

Continue using the CHARTING.xls file from the FPUExcel folder on your hard drive.

Stay on Worksheet Chart 1 for a moment. You already have one chart on this page. Make sure it is small enough for one more chart to fit on the Worksheet.

Make a **Line Chart** out of the same information. Go through the steps of the **Chart Wizard** to accomplish this. You may embellish it in any way you wish. Excel 2007 folks, you will find the Change Chart Type option on the **Chart Design Ribbon**.

**Save** the file and move to the Pie Chart Worksheet.

Make a **Pie Chart** out of the information found on this screen. Again, you can add any embellishments you wish

**Save** the file and leave it open for the next exercise.



## Assignment 27.3 - Page 143

Continue using the CHARTING.xls file and move to the Chart 2 Worksheet.

Notice that the series of data on this Worksheet is in columns instead of rows. Highlight cells A1 through E5 and click on the **Chart Wizard** button on the **Toolbar**.

Go ahead and select a **Line Chart** at this time and click on the **Next** button. On the **Data Range** window, notice that the **Data range:** is identified as =Chart 2!\$A\$1:\$E\$5 and that the **Rows** series button is highlighted. Change it to **Columns** and watch what happens to the display window. With Excel 2007, there is a switch **Row/Column** in the **Data** section.

Now click on the **Series** tab at the top of the dialog box because we want to remove two of the companies from the chart. We are only interested in what happens to American Airlines and Shell. So remove the other two.

Click **Finish** and **Save** the file but leave it open.

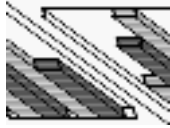


## Assignment 27.4 - Page 144

Continue using the CHARTING.xls file and move to the Worksheet Chart 3.

For Excel 2007 users, you will find all the buttons you need to accomplish the rest of this chapter on the **Chart Tool Ribbons**. Look and you will find them.

We are going to go back and chart the stock prices again but this time, we are going to add some enhancements. Highlight A1 to E5 and click on the **Chart Wizard** button. Select a **Column Chart** and choose the first sub-type in the second row:



Click on the **Next** button twice to move to **Step 3 of 4**.

In the **Title** area, title the chart “Stock Market Trends” and label the X-axis (Vertical) as “Months” and the Y-axis (Horizontal) as “Share Prices”.

Do not save or exit the file at this time. Do not close the **Chart Wizard** window. Simply move on to the next assignment.



### Assignment 27.5 - Page 144

Click on the **Axes** tab and take off the Y axis (Horizontal) labels.

Do not close this window. Move onto the next assignment.



### Assignment 27.6 - Page 145

Move to the **Gridlines** tab and add the Major gridlines to the Y axis (Horizontal) only.

Do not close this window. Move onto the next assignment.



### Assignment 27.7 - Page 145

Click on the **Legend** tab and move the **Legend** to the top of the chart.

Continue without saving or closing.



### Assignment 27.8 - Page 145

Click on the **Data Labels** tab and have it show the values only.

Continue without saving or closing.



### Assignment 27.9 - Page 146

Move to the **Data Table** tab and show the data table along with the legend keys.

Do not close the window or quit the application. Move onto the next assignment.



### Assignment 27.10 - Page 146

Click on the **Next** button to move you to Step 4 of 4. Please locate this chart as a new sheet with the name “Stocks”.

You may now click on the **Finish** button and position the chart to your liking.

**Save** the file and leave it open. If you decide to take a breather, you may close it as long as you have saved it to the FPUExcel folder on your hard drive.



### Assignment 28.1 - Page 147

Continue to use the CHARTING.xls file located in the FPUExcel folder on your hard drive. Move to the Chart 1 Worksheet.

Select the chart and using the **Chart Tool Palette**, change the chart type to an **Area Chart**. Select one of the 3-D options.

**Save** the file and leave it open.



### Assignment 28.2 - Page 148

Move to Chart 2 of the CHARTING.xls file.

Select the outside perimeter to highlight the **Chart Area** of this chart. Pull down **Format** to **Selected Chart Area...** and change the background to either a color or a **Fill Effect** of your choice. Choose something that is not too dark.

**Save** the file and leave it open.



### Assignment 28.3 - Page 148

Continue with the chart on the Chart 2 Worksheet.

Resize the chart so that it is larger .

**Save** the file and leave it open



### Assignment 28.4 - Page 149

Continue with the chart on the Chart 2 Worksheet.

Using the **Draw Tools**, place some arrows and circles to emphasize points of interest. If you are really brave, try adding a small **Text Box** to add commentary to your chart.

**Save** the file and leave it open.



### Assignment 28.5 - Page 150

Continue to use the Chart 2 Worksheet.

Click on cell F1 and add an additional stock. Choose something like IBM or Nike to keep it simple. Put some figures in the four months identified and add this data to your chart. Click on the chart and use the small blue box at the bottom right corner of the data box and drag it one column to the right.

**Save** the file and leave it open.



### Assignment 28.6 - Page 150

Continue to use the Chart 2 Worksheet.

Select each data series and put a different fill on each one. Have fun with this.

**Save** the file and leave it open.



### Assignment 28.7 - Page 150

Continue to use the Chart 2 Worksheet.

Modify the **Series Order** so that the chart makes more sense from a visual standpoint.

**Save** the file and leave it open. If you want to take a break, make sure you have saved it.

**Assignment 28.8 - Page 151**

Move to the chart found on the Pie Chart Worksheet.

Add a picture to the **Chart Area**.

**Save** the file and leave it open.

**Assignment 28.9 - Page 152**

Move to the Chart 2 Worksheet.

Change the 3-D Line view of the chart so that it is more visually pleasing.

**Save** the file and leave it open.

**Assignment 28.10 - Page 152**

There are two final assignments for this section and both are to be completed using the CHARTING.xls file located in the FPUExcel folder.

First of all, I would like you to chart the testing scores for the students on the Student Worksheet. I will give you a lot of latitude here to make your own decisions. Understand that we are charting achievement test scores of students over a five year period so make the chart reflect that information.

**Save** the CHARTING.xls file.

Lastly, move to the Your Chart Worksheet and I would like you to create a chart of your own making. Decide on the type of data and the type of chart. Show off your skills here in terms of colors, fills, values, labels, legends, etc.

**Save** the file and you may close it. We are finished with the CHARTING.xls file.

## XXII. Excel as a Database

A note before we begin this next section. There are some assignments in this section that I will not be able to verify your activity. While skipping over any of these sections would save you time in this course, it will result in missing pieces. Excel can be very powerful in the use of **Lists** as a database so be very careful to do the assignment as stated. In the long run, you will benefit.

**Assignment 29.1 - Page 154**

**Open** the DATABASE.xls file from the FPUExcel folder on your hard drive.

The first Worksheet of this file is titled Your Own List. I would like you to begin a database using this Worksheet. Decide for now the type of database you want to create. Do you want to keep track of cassette tapes or CDs? Home inventory? School inventory? Books? A list of students? The type of database is important because you must decide what fields you want to create. On the first row, create three field names. Then add at least four records for each of the three fields. You are welcome to make something up if you like. I just want you to have the experience.

Once you have entered the data, pull down **Data to Form...** and you will see what you have created. With Excel 2007, you will need to add the **Form** button to your **Quick Access Toolbar**.

**Save** the file making sure it is saved in the FPUExcel folder on your hard drive. Leave it open for the next assignment.



## Assignment 29.2 - Page 155

Continue using the DATABASE.xls file. Move to the Students 1 Worksheet.

Pull down **Data** to **Form...** and move through the records you find there.

Close the window when you are finished and move to the next assignment.



## Assignment 29.3 - Page 156

Using the Students 1 Worksheet, open the **Data Form** and add at least three additional records. Just make up some names and addresses. Then, remove two that were there before. You should wind up with a total of 21 records. This is what I will be looking for.

**Save** the file and leave it open for the next assignment.



## Assignment 29.4 - Page 157

Continue using the DATABASE.xls file and stay on the Students 1 Worksheet.

**Sort** the list by Last Name only.

**Save** the file and leave it open.



## Assignment 29.5 - Page 158

Continue using the DATABASE.xls file and move to the Students 2 Worksheet.

First of all, convert this data to a **Table** or **List**.

**Sort** this file alphabetically by City. Make sure that City is your first sort.

**Save** the file and leave it open for the next assignment.



## Assignment 29.6 - Page 159

Move to the Filter 1 Worksheet.

Using the **AutoFilter**, select all those records that live in Sanger.

**Save** the file and leave it open.



## Assignment 29.7 - Page 159

Move to the Filter 2 Worksheet.

Select all those students that have allergies. You will be looking for all the non-blank cells.

**Save** the file and leave it open.



## Assignment 29.8 - Page 160

I want you to complete **Your Own List**. Add additional fields so there are a total of 6 fields. Add records so they total 10. You are welcome to make up information. **Filter** the information on one of the fields and **Sort** the remaining data by a field of your choice.

**Save** the file and close it. We are finished with it.

## XXIII. Annotating Cells



### Assignment 30.1 - Page 161

**Open** the file FILE2.xls from the FPUExcel folder on your hard drive. Move to the Fill Worksheet.

Select any three cells and add a **Comment** to those cells. A good example might be food costs in April if you have your family coming over for Easter. Make up some comments for any three cells.

**Save** the file and leave it open.



### Assignment 30.2 - Page 162

Continue using the FILE2.xls file.

Pull down **View** to **Comments** and make sure all three **Comments** are displayed.

**Save** the file and close it.

## XXIV. Using Templates



### Assignment 31.1 - Page 163

Open a brand new Excel file.

Create some form of template that you might need to use in the future. It might be a book checkout form, a candy sale sheet, a student checklist, a permission slip, whatever...

**Save** this as a **Template** document in the FPUExcel folder. Name the file TEMPLATE.xlt. **Close** the file because we are going to use it in the next assignment.



### Assignment 31.2 - Page 164

While in Excel, pull down **File** to **Open...** and change the **List Files of Type:** to **Templates**. Make sure you are in the FPUExcel folder and your TEMPLATE.xlt file should be displayed. **Open** it.

Notice that the filename has been changed to **Template1**. Add some information to this file.

**Save** it now as a standard Excel Workbook file to the FPUExcel folder. Use the name TEMPLATE1.xls. **Close** the file.

## XXV. Protecting Your Spreadsheet



### Assignment 32.1 - Page 166

**Open** the file PROTECT.xls from the FPUExcel folder on your hard drive.

We are going to protect the formulas on the Formula Worksheet. Since the default is locked, we need to highlight cells B4 to F11 and pull down **Format to Cells...** and click on the **Protection** tab. Notice the check in front of **Locked**. Click once to remove this check and click **OK**.

**Save** the file and leave it open since we must finish the process with the next assignment.



### Assignment 32.2 - Page 166

Continue using the PROTECT.xls file.

On the Formula Worksheet, pull down **Tools** to **Protection** and over to **Protect Sheet...** Leave all the checkmarks as they are but add your own **Password**. I should not be able to get into this file.

Once you have closed the dialog window, change some of the values in the cells B4 to F11. Now try and add a value into a cell that contains a formula, such as G9.

**Save** the file and **Close** it.

## XXVI. Working Collaboratively



### Assignment 33.1 - Page 168

Open FILE1.xls from the FPUExcel folder on your hard drive.

Pull down **Tools** to **Track Changes** and click on the top box to **Track changes while editing**.

**Save** the file and **Close** it. When I open it, it will track any modifications I make to it.



### Assignment 33.2 - Page 169

**Open** the file DATABASE.xls from the FPUExcel file which contains students' names and addresses.

Pull down **File** to **Save As...** and set the **File Type** to **Text (Tab Delimited)**. **Save** this file as TEXTFILE.txt in the FPUExcel folder.

Now, use any word processing program you have, the most likely candidate would be Word, and pull down **File** to **Open** and open the TEXTFILE.txt from the FPUExcel folder on your hard drive. Change the font to very small and notice how the data is laid out.

**Save** this word processing file as WORDDATA.doc in the FPUExcel folder on your hard drive.

**Assignment 33.3 - Page 169**

There are two files that came with this course, that contain student information. One file contains the students in grades 6 and 7 and is titled GRADES67.xls. The other file contains the students from grades 8 and 9, titled GRADES89.txt. The GRADES89.txt file is a text file while the GRADES67.xls is an Excel file.

**Open** the Excel file titled GRADES67.xls. Now, pull down **File** to **Open...** and open the GRADES89.txt file. Highlight all the rows that contain data in the GRADES89.txt file and pull down **Edit** to **Copy**. Now pull down **Window** and move over to the GRADES67.xls file. Click in the first cell in column A under the last line of data. Pull **Edit** to **Paste** and you have combined the two sets of data.

**Save** this new GRADES67.xls file as GRADES.xls in the FPUExcel folder on your hard drive. You may **Close** this file.

**Assignment 33.4 - Page 170**

**Open** the file HYPER.xls.

Move to the Hyper Worksheet and click on the cell that contains NASA. Pull down **Insert** to **Hyperlink...** and enter the following URL in the top window:

<http://www.nasa.gov>

Now, click on the White House and enter the following **Hyperlink**:

<http://www.whitehouse.gov>

And finally, click on the Fresno Pacific Web Page cell and enter the following URL **Hyperlink**:

<http://www.fresno.edu>

We are going to link to one **Named** range. I have already prepared a **Name** on the second Worksheet titled FPU. Click on the cell which contains Go to Fresno Pacific and pull down **Insert** to **Hyperlink...** Move to the bottom window and click on the **Select...** button. You will find FPU listed. Select it and you are done.

If you have a browser set up, you will be able to test these links. Otherwise, the last one is the only one you will be able to play with.

**Save** the file and **Close** it.

## XXVII. Using Macros

**Email Assignment**

Before you complete the final activities of this course, I would like you to send one final email to Dr. Swan. First of all to let him know you are nearing the end of your coursework and to provide some feedback regarding the course. What did you find the most valuable? What did you find the least beneficial? And finally, in one sentence, describe how this course will impact your classroom management, your communication, your teaching.

Send this email to **rfswan@comcast.net**

# XXVIII. Excel in Education



## Assignment 34.1 - Page 175

Your final assignment will be four project files that you need to complete from scratch. In addition, I am going to ask you to select one colleague and demonstrate or teach one skill you have learned that you think they might benefit from.

This course has covered a lot of territory and taken a significant amount of time and effort so I feel somewhat restrained in the amount of work I want to assign as your projects. This isn't a six-unit course and I am aware of that. I still want you to be able to use Excel as a tool in your classroom so please complete the following four projects.

### 1) School Budget

National Technology Standards: 1A, 2B, 2D, 2E, 3D, 4B, 5B, 5C, 5D, 6B, 6C, 6D, 6E, Mathematics, Social Studies, Science, Language Arts

I want you to create a sample school budget. We will limit ourselves to only four categories but you should get the idea. **Open** the file SCHSTEPS.xls. Open a new empty file right over the top of this one. Resize them and position the two windows so that you can see both on the screen. Complete the steps you find to complete the SCHOOL.xls file that will be saved on your hard drive. Enter the data that you find in **APPENDIX A** found at the end of this Assignments booklet.

\*Be on your toes! Office Supplies has a \$300 balance!

**Save** this file as SCHOOL.xls in the FPUExcel folder on your hard drive.

### 2) Candy Sale

Create a spreadsheet that will keep track of a 5-day candy sale. To make it easy, say each candy bar costs \$1.00. Be sure to include the following:

- 10 students
- First day distribution per student
- 5 days of collection
- Calculated total sold
- Calculated balance due
- Enter data

**Save** this file as PROJECT2.xls in the FPUExcel folder on your hard drive.

### 3) Gradebook

Create a gradebook that calculates the following information:

- 10 student names
- 5 scores
- Average per each score
- Average per each student
- Highest grade per score
- Lowest grade per score
- Enter data

**Save** this file as PROJECT3.xls in the FPUExcel folder on your hard drive.

### 4) Project of your choice

Please create a spreadsheet of your choice. I will give you a lot of latitude here but I want you to make sure it is something you will be able to use in your classroom. Use this project to show off your expertise. If you have already created a spreadsheet that you are using, you are welcome to submit that as your project of choice. Your call. Just remember, on Page 4 of the Course Manual, we set out the following minimum requirements for your project.

2 Worksheets  
10 Cells with formulas  
5 Cells with Fill Color  
1 Chart  
3 Linked cells  
2 Graphics from Clip Art  
Wrapped Text in a Cell  
1 Hyperlink  
1 WordArt

**Save** this file as PROJECT4.xls in the FPUExcel folder on your hard drive.

### **5) Peer Coaching**

Select a colleague and teach them one skill or concept that you feel they could benefit from. You might want to really score some points and pick an administrator that must keep track of budgets.

You are to provide a paragraph or two which identifies your selected peer, what concept you decided to demonstrate, and a comment as to how it went. You may do this in a word processing file or as text in a cell. Title the file PEER.xls and make sure it is in the FPUExcel folder on your hard drive.

# National Technology Standards

The assignments contained in this course are closely aligned to the ISTE National Content Standards established for technology known as the National Educational Technology Standards (NETS) and Performance Indicators.

The following technology standards are addressed throughout this course.

## **1. Facilitate and Inspire Student Learning and Creativity**

Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments.

Teachers:

- A. promote, support, and model creative and innovative thinking and inventiveness.
- B. engage students in exploring real-world issues and solving authentic problems using digital tools and resources.
- C. promote student reflection using collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning, and creative processes.
- D. model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments.

## **2. Design and Develop Digital-Age Learning Experiences and Assessments**

Teachers design, develop, and evaluate authentic learning experiences and assessments incorporating cotemporary tools and resources to maximize content learning in context and to develop the knowledge, skills, and attitudes identified in NETS-S.

Teachers:

- A. design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity.
- B. develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress.
- C. customize and personalize learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources.
- D. provide students with multiple and varied formative and summative assessments aligned with content and technology standards and use resulting data to inform learning and teaching.

## **3. Model Digital-Age Work and Learning**

Teachers exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society.

Teachers:

- A. demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations.
- B. collaborate with students, peers, parents, and community members using digital tools and resources to support student access and innovation.
- C. communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital-age media and formats.
- D. model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning.

**4. Promote and Model Digital Citizenship and Responsibility**

Teachers understand local and global society issues and responsibilities in an evolving digital culture and exhibit legal and ethical behavior in their professional practices.

Teachers:

- A. advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources.
- B. address the diverse needs of all learners by using learner-centered strategies and providing equitable access to appropriate digital tools and resources.
- C. promote and model digital etiquette and responsible social interactions related to the use of technology and information.
- D. develop and model cultural understandings and global awareness by engaging with colleagues and students of other cultures using digital-age communication and collaboration tools.

**5. Engage in Professional Growth and Leadership**

Teachers continuously improve their professional practice, model lifelong learning, and exhibit leadership in their school and professional community by promoting and demonstrating the effective use of digital tools and resources.

Teachers:

- A. participate in local and global learning communities to explore creative applications of technology to improve student learning.
- B. exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others.
- C. evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning.
- D. contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community.

Chapter	Topic	Technology Standards Addressed
1	What is a Spreadsheet	3a, 5b
2	Getting Started	1c, 3a, 5b
3	The Excel Screen	3a, 3d
4	Entering Data	3a, 3d
5	Working with Text	2c, 3a, 3d, 5b, Language Arts
6	Working with Values	3a, 3d, 5b, Mathematics
7	Calculations	1a, 3a, 3d, 5b, Mathematics
8	Formulas	1a, 3a, 3d, 5b, Mathematics
9	Fill	3a, 3d
10	Working with Cells	3a, 3d
11	Working with Worksheets	3a, 3d
12	Toolbars and Ribbons	3a, 3d, 5b
13	Printing Spreadsheets	3a, 3d, 5b
14	Working with Names	3a, 3d
15	Managing Data	3a, 3c, 3d, Language Arts
16	Creating Links	1a, 3a, 3d
17	Options/Preferences	3a, 3d, 4c
18	Draw Tools	1a, 1b, 2a, 3a, 3d
19	Sorting	3a, 3d
20	Advanced Formulas	1b, 3a, 3d, Mathematics
21	Charting	1b, 3a, 3c, 3d, 5a, Mathematics, Science, Social Studies
22	Excel as a Database	1a, 2a, 2d, 3a, 3c, 3d, 5a, Mathematics, Science
23	Annotating Cells	2c, 3a, 3c, 3d, 5a, Language Arts, Science
24	Using Templates	3a, 3d
25	Protecting Your Spreadsheet	3a, 3d, 4a
26	Working Collaboratively	1a, 1b, 1c, 1d, 2b, 2c, 3a, 3b, 3c, 3d, 4a, 4c, 4d, 5a, 5b, 5c, 5d, Language Arts, Mathematics, Science, Social Studies
27	Using Macros	3a, 3d
28	Excel in Education	1a, 1b, 1c, 1d, 2a, 2b, 2c, 3b, 3c, 3d, 4a, 4b, 4c, 4d, 5a, 5b, 5c, 5d, Language Arts, Mathematics, Science, Social Studies

# APPENDIX A

	A	B	C	D	E	F	G
1							
2	<b>School Budget</b>						
3							
4			<b>Budgeted</b>	<b>Spent</b>	<b>Remaining</b>	<b>Percent</b>	
5	1120	Sub Salaries	2000.00	255.00	1745.00	87.3%	
6	4310	Instr. Supplies	2950.00	745.35	2204.65	74.7%	
7	4510	Office Supplies	500.00	0.00	500.00	100.0%	
8	6490	New Equipment	3000.00	0.00	3000.00	100.0%	
9		<b>TOTALS</b>	8450.00	1000.35	7449.65	88.2%	
10							
11	1120	Sub Salaries					
12	<b>Date</b>	<b>Payee</b>	<b>Comment</b>	<b>P.O.</b>	<b>Amount</b>		
13	1/1/05	Sammy Sub	Bob		85.00		
14	1/5/05	Sarah Sub	2-day conf		170.00		
15							
16							
17							
18					255.00		
19	<b>4310</b>	<b>Instr. Supplies</b>					
20	<b>Date</b>	<b>Payee</b>	<b>Comment</b>	<b>P.O.</b>	<b>Amount</b>		
21	1/2/2005	GW School	Posters	2342	487.36		
22	2/1/2005	Barnes & Nobles	Books	65435	257.99		
23							
24							
25							
26					745.35		
27	<b>4510</b>	<b>Office Supplies</b>					
28	<b>Date</b>	<b>Payee</b>	<b>Comment</b>	<b>P.O.</b>	<b>Amount</b>		

# APPENDIX B

	A	B	C	D	E	F
1						
2	Personnel Costs			Health Benefits	6985	
3				PERS	7.20%	
4				OASDHI	1.30%	
5				Un. Ins.	1.10%	
6						
7	<b>EMPLOYEE</b>					
8	=====	=====	=====	=====	=====	
9	<b>Wages</b>					
10	Work Days	180	175	180		
11	Hours per Day	5	3	3.5		
12	Hourly Wage	8.75	9.21	8.75		
13					TOTAL	
14	<b>TOTAL</b>	7,875.00	4,835.25	5,512.50	18,222.75	
15	=====	=====	=====	=====	=====	
16	<b>BENEFITS</b>					
17						
18	Health Benefits	6,985.00	-	-	6,985.00	
19	PERS	567.00	348.14	396.90	1,312.04	
20	OASDHI	102.38	62.86	71.66	236.90	
21	Un. Ins.	86.63	53.19	60.64	200.45	
22						
23	<b>TOTAL</b>	15,616.00	5,299.43	6,041.70	26,957.13	
24						
25						
26						