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# Advanced Excel for Windows

Academic  
Computing  
Support



Information Technology Services  
Tennessee Technological University  
February 2000

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## 1. Opening Excel for Windows

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In the PC labs, from the **Start** menu: Select **Programs** → **MSOffice 97** → **Microsoft Excel**  
Otherwise, from the **Start** menu: Select **Programs** → **Microsoft Excel**

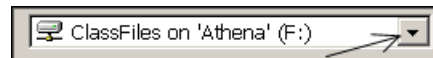
## 2. Creating a Document

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The Excel program opens with a blank spreadsheet. If necessary, click on the **x** to close the Excel Assistant (animated paper clip). You may need to drag it over to the left to do so.

**For this class, please open an existing file in the PC lab:**

- Select **File** → **Open**.
- Click on the down arrow.
- Select **ClassNotes on 'Athena' (F:)**.
- Double click to open: **Its** → **Excel Class** → **Expenses.xls**



You will see a spreadsheet that has been started. (See **Beginning and Intermediate Excel** for details on how a spreadsheet is created. Available on the web at [www2.tntech.edu/its/pubs/](http://www2.tntech.edu/its/pubs/)).

## 3. Adding Rows for a Title at the Top of the Document

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To insert three rows for a title at the top of this document:

	A	B
1	Date	No.
2	3/1/1999	
3	3/2/1999	1231
4	3/3/1999	1232
5	3/3/1999	

- Click on the row header **1** and drag down to row header **3** to highlight rows 1 through 3.
- From the menu, select **Insert** → **Rows**.

Note that the existing rows move down the page and three blank rows are inserted above row 1.

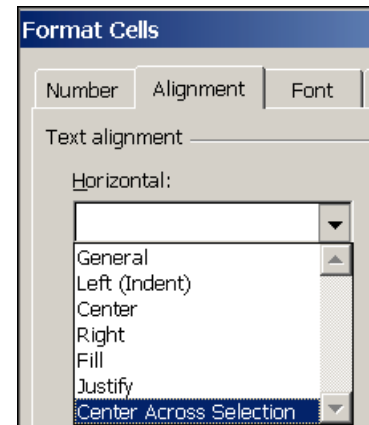
Type in the title:

- Use **Ctrl + Home** or your mouse to move to the first cell, **A1**.
- Type: **American Travel Expenses**
- Move to cell **A2** and type a **single quote mark** to indicate that the information you will be typing should be considered to be text and not as a date.
- Type: **'March 1999**

### 3. Adding Rows for a Title at the Top of the Document (cont.)

To format a group of cells in the same way:

- Click into cell **A1** and drag across to cell **H2** to select.  
**Or** click into cell **A1**, hold the shift key down, then click into cell **H2**.
- From the menu, **Format** → **Cells**
- Click on the **Alignment** Tab
- Under Horizontal: click on the down arrow to see the menu.
- Select **Center Across Selection**
- Click **OK**.



### 4. Creating a Formula to Compute a Running Balance

To create a running balance:

- Click into cell **H5**.
- Note that since this is the beginning balance it must equal the amount listed in cell **F5**.
- To begin the formula type: **=** (or a plus sign)
- Next, use your arrow keys or mouse to move into cell **F5**
- Note that this cell's reference now appears in your formula: **=F5**
- Press **Enter** to enter the formula and move to the cell below (**H6**).

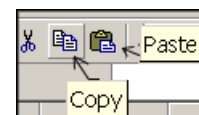
Consider what formula you will want in cell **H6** to get an accurate balance. You will want to add any credits from cell **F6** and subtract any debits in cell **G6** from your balance in cell **H5**. The final formula will be **=H5+F6-G6** To most easily type this in:

- Type: **=**
- Use your arrow keys to move to cell **H5**
- Type **+**
- Move to cell **F6**
- Type **-**
- Move to cell **G6**
- Press **Enter**

	F	G	H	I
4	<b>Credit</b>	<b>Debit</b>	<b>Balance</b>	
5	2,254.65		2,254.65	
6		17.35	=H5+F6-G6	
7		26.72		

Note that the same formula will apply down the column with the next row of cells as the references. Excel will automatically adjust your formulas to reflect the change in position as you copy down the column.

- Click on the cell **H6**
- Click on the **Copy** button or from the file menu select **Edit** → **Copy**
- Click on the cell **H7**
- Use the scroll bar to move down in the spreadsheet.
- Hold the **shift** key down and click in cell **H38** to select the cells from **H7** through **H38**
- Click on the **Paste** button or from the file menu, select **Edit** → **Paste**




Click into several cells from H7 to H38 to see how the formula has adjusted to each location.

## 5. Computing the Minimum and Maximum Balance

To create a formula for the minimum and maximum balances:

- Click into cell **H41** and type: **Min Balance:**
- Click into cell **H42** and type: **Max Balance:**

Expand the width of column H to accommodate this text.

- Move the mouse pointer to the right boundary of the column H header until it changes to a double headed arrow  and drag.
- Or select the column by clicking in the header and from the menu select **Format** → **Column** → **Width**. Then type a value, such as **12**.

The formula to compute the minimum value among the values listed will be: **=min(h5:h38)**

- Click into cell **I41** and type: **=min(**
- Click into cell **H5** and drag down through cell **H38**  
(or scroll down, hold the **shift** key and click into H38)
- Press **Enter** and note that the final parenthesis in the formula is completed for you.

Repeat these steps in cell **I42** for the maximum value formula which is: **=max(h5:h38)**

## 6. Using the If Function to Assign Expenses to Accounting Lines

To categorize your expenses, the **If** function can be helpful. This function allows you to set a condition for determining what the value of a cell should be. The general form of an **If** statement is: **=If(comparison statement, true action, false action)**

For example, if the category code in column E is **1**, then you would like that amount to be listed in column J under **Salary** expenses, but if it is not a 1, then you would like to show no expense in column E. Consider cell J5: If E5=1, then you would like the value of cell J5 to be equal to the amount in G5, but if the value of E5 is not 1 (Salary), you would want the value of cell J5 to be zero. This can be written as **=If(E5=1,G5,0)**

Likewise, if the category code in column E is **2**, you want the expense to be listed under **General** expenses in column K and if the category code in column E is **3**, then the expense belongs under **Supplies** in column L. If a deposit has been made, then that amount should be listed under column M (**Income**).

## 6. Using the If Function (cont.)

Enter the formula into cell J5:

- Click into cell **J5**
- Type: **=IF(E5=1,G5,0)**
- Press **Enter** and compare your formula with that shown above. Correct any typos.

	J
4	Salary (1)
5	=IF(E5=1,G5,0)

*Tip: You can also enter this formula by clicking in to cell **J5**, typing **=IF(** then clicking into cell **E5**, typing **=1** then clicking into **G5**, typing **,0** and pressing **enter**.*

Repeat the appropriate formula for cells K5 (General), L5 (Supplies), and M5 (Income):

- Click into cell **K5** and type: **=IF(E5=2,G5,0)**  
 Click into cell **L5** and type: **=IF(E5=3,G5,0)**

To type the comparison in M5, you will need to enclose the category in quotes, because it is text “In” and not a number as in the cases above. Also note that the value comes from cell **F5** in this case, not G5 as in the other cells above.

- Click into cell **M5** and type: **=IF(E5="In",F5,0)**

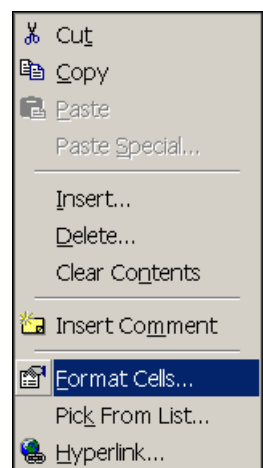
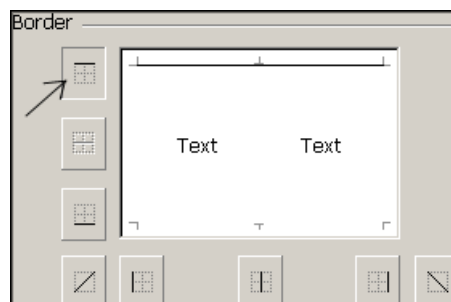
Use copy and paste to copy the formulas down each column:

- Select the cells **J5** through **M5**
  - Click on the **Copy** button or from the file menu select **Edit → Copy**
  - Click on the cell **J6**
  - Use the scroll bar to move down in the spreadsheet.
  - Hold the **shift** key down and click in cell **M38** to select the cells from J6 through M38
  - Click on the **Paste** button or from the file menu, select **Edit → Paste**
  - Press the Escape key to turn off the selection around the cell you copied from.
- Click into several cells and note how the formulas are copied and adjusted for each row.

## 7. Using the Sum Function to Total Expenses

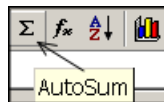
To compute the total expenses under each category:

- Click into cell **J39** and **drag across** to select cells K39 and M39.
- **Right-click** in the highlighted region and select **Format Cells** from the floating menu **or** from the menu, select **Format → Cells**
- Select the **Border** tab
- Click on the **Top** border button to place a plain line across the top of these cells.



## 7. Using the Sum Function (cont.)

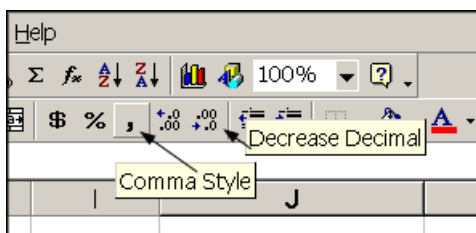
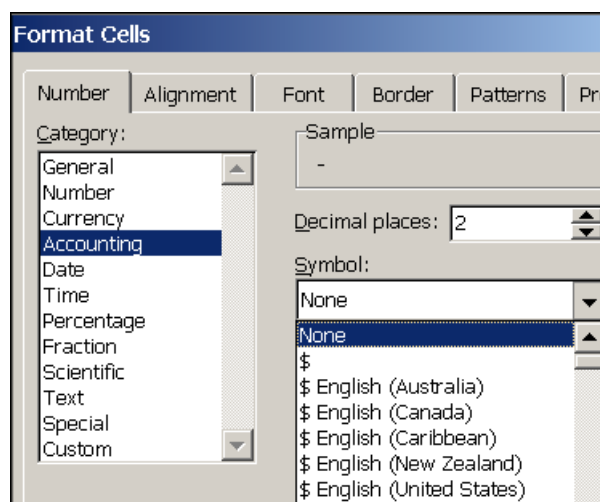
- Click in cell **J39**.
- Click on the **AutoSum** button.
- Note that the formula is correct.  
**=SUM(J5:J38)**
- Press **Enter**.
- Copy the formula from cell **J39** to cells **K39** through **M39** using the **Copy** and **Paste** buttons or **Copy** and **Paste** from the **Edit** menu.



## 8. Formatting Cells

To format the cells as in accounting:

- Click in cell **J5**
- Scroll down the page.
- Hold the **shift key** and click into cell **M39**
- Right-click and select **Format Cells** from the floating menu *or* from the menu, select **Format** → **Cells**
- Select the **Number** tab
- Under *Category*: select **Accounting**
- Under *Symbol*: select **None**.
- Click **OK**.



This same formatting is available as a button in the toolbar. Click on the **Comma Style** button to get the same effect. Try out the other button formatting shortcuts including **\$** (accounting currency style), and **%** (automatically converts decimal numbers to percentages). You may also quickly *increase or decrease* the number of decimal points displayed by using the **Increase Decimal** or **Decrease Decimal** buttons.

## 9. Plotting the Balances

The Chart Wizard allows you to produce a chart or plot very quickly. First you need to select the numbers to be used in the chart.

- Click in cell **H5**
- Scroll down the page.
- Hold the **shift key** and click into cell **H38** to select the numbers to chart.
- Click on the **Chart Wizard** button or from the menu **Insert** → **Chart**



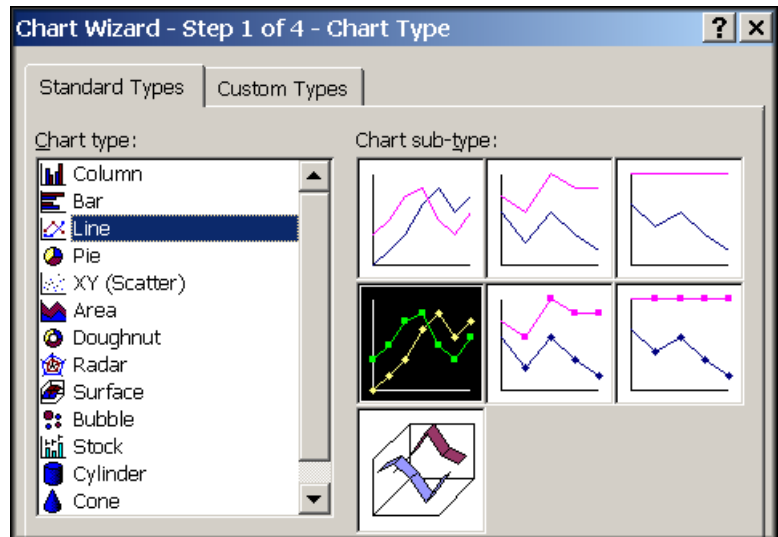
## 9. Plotting the Balances (cont.)

The Chart Wizard window opens with the first of four steps, selecting the **Chart Type**.

- Under Chart type: select **Line**
- Under Chart sub-type, select the **first style in the second row**.
- Click **Next**.

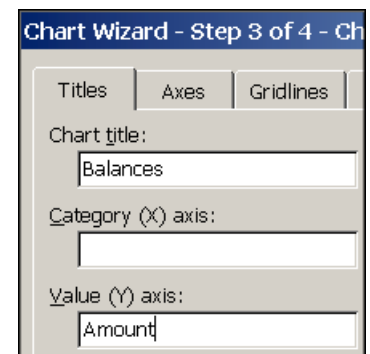
In Step 2:

- Look over the range of data to be graphed and click **Next**.



In Step 3:

- On the Titles tab, under Chart Title:, type **Balances**
- Tab twice or use your mouse to move to the Value (Y) axis: and type **Amount**
- Note how the changes show up on the chart preview.




- Click on the **Axes** tab.
- Click to remove the check mark beside **Category (X) axis**. Note in the Chart preview that the the x axis labels are removed.
- Click on the **Legend** tab.
- Click to remove the **check mark** beside **Show Legend**.
- Click **Next**

In Step 4:

- To have the graph saved on the same sheet as your data, select  **As object in: Sheet1**
- Click **Finish**

To change the position of the resulting graph:

To move the chart to a location under the transaction data.

- **Click** on the chart to select it and hold down as you drag it to a new location on the sheet. You should see a four directional arrow as you drag. 

## 9. Plotting the Balances (cont.)

To change the size of the resulting graph:

- **Click** on the chart to select it. You will see squares appear at each corner and in the center of each side when the chart is selected.
- Place your cursor over the bottom right corner of the chart until you see a double headed arrow. ↔
- Click and **drag** down to enlarge.
- Click off the chart to deselect it.

## 10. Creating a Summary Sheet

Each **Excel** file (workbook) allows you to create multiple sheets for your information. In this exercise, we will create a summary for the month of March on another sheet.

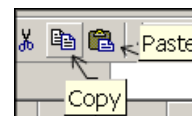
To rename the sheets:



- **Double-click** on the *Sheet1* tab at the bottom and type **Transactions**
- **Double-click** on the *Sheet2* tab at the bottom and type **Summary**

Copy from the Transactions Sheet to the Summary Sheet:

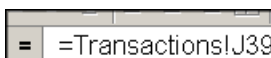
- Click on the **Transactions** sheet tab and move to the top (**Ctrl + Home** or scroll).
- Click in cell **A1** and click on the **Copy** button.
- Click on the **Summary** sheet tab
- Click in **A1** and click on the **Paste** button.
- Click on the **Left** alignment button to change the alignment.



- Type **Salary** in cell **C3**.
- Type **General** in cell **C4**.
- Type **Supplies** in cell **C5**.

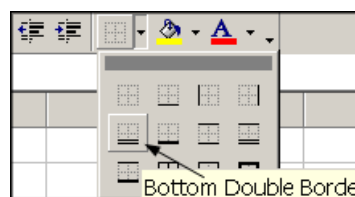
	C	D
3	Salary	9,808.44
4	General	2,236.42
5	Supplies	297.80
6		12,342.66

- Click in cell **D3** and type =
- Click on the **Transactions** sheet tab.
- Click on cell **J39** and note the formula shown. = =Transactions!J39
- Press **Enter** and note that you are returned to the **Summary** sheet in cell **D4**.



Repeat these steps so that the value of cell **D4** in the **Summary** sheet is from **K39** in the **Transactions** sheet and the value of **D5** in the **Summary** sheet is from **L39**. You should see the same values as shown above which are created from these formulas.

- Click in cell **D5**.
- Click on the **Borders** button.
- Click on the **Bottom Double Border** button. →

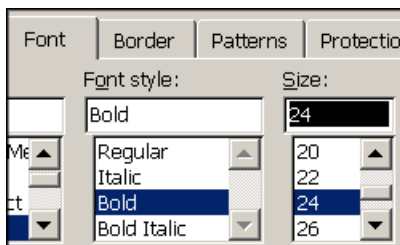
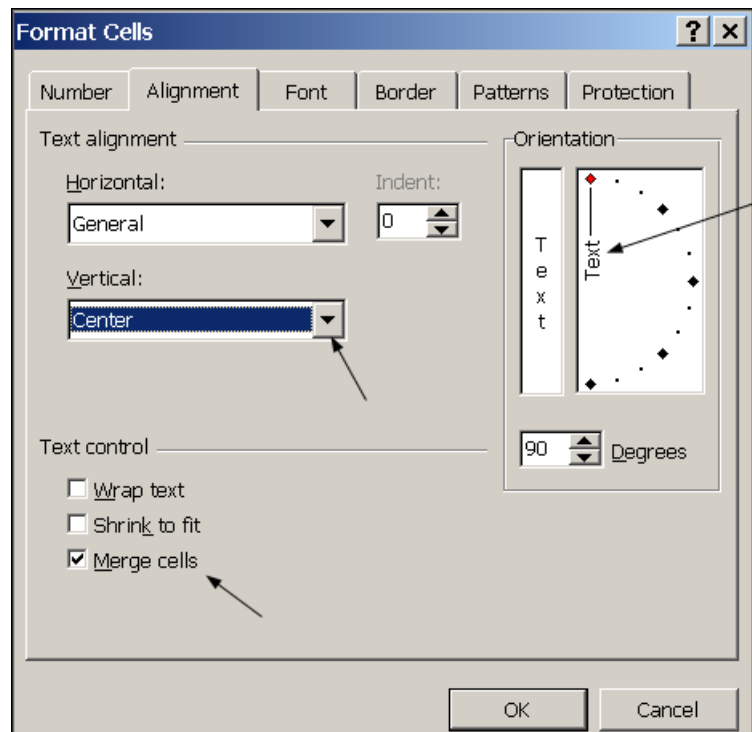


## 10. Creating a Summary Sheet (cont.)

- Click in **D6**.
- Click on the **Autosum** button
- Press **Enter** to create the sum of *Salary*, *General* and *Supply* expenses.

## 11. Creating a Heading across Cells and Rotated at 90 Degrees

- Click in cell **A20**.
- Type **'March 1999'** (Be sure to include the single quote mark to indicate text).
- Select cells **A3** through **A20**.
- **Right-click** and select **Format Cells** from the floating menu (or select **Format** → **Cells** from the menu).
- Click on the **Alignment** tab.
- In the **Orientation** box, **click** and drag the word **Text** until it is oriented at 90 degrees. Note that the value in the **Degrees** box changes as you move the *Text orientation pointer*.
- Under **Text control**, click to select **Merge cells**. This will cause the cells A3 through A20 to be merged into one cell and the text you entered in cell A20 will be displayed across these cells.
- Under **Text alignment**, click on the down arrow and select **Center** as the Vertical alignment under the pulldown menu.

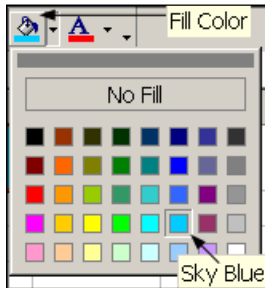


- Click on the **Font** tab.
- Select **Bold** as the Font style.
- Select **24** as the font Size.
- Click on the **Patterns** tab.
- Select a *medium yellow*.
- Click **OK**.

## 12. Formatting a Heading

To format the heading American Travel Expenses:

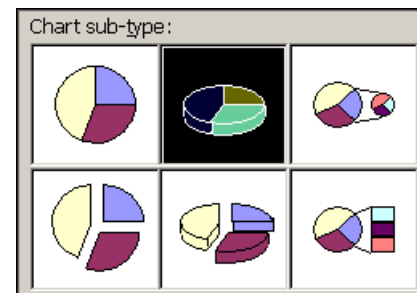
- Select cells **A1** through **F1**.
- Click on the **Merge and Center** button.
- Click on the **Bold** formatting button.
- Click on the **Font Size** down arrow and select **20** from the pulldown menu.
- Click on the **Fill Color** button to set a background color for the heading.
- Select **Sky Blue**.



	A	B	C	D	E	F
1	<b>American Travel Expenses</b>					
2						
3			Salary	9,808.44		
4			General	2,236.42		
5			Supplies	297.80		
6				12,342.66		

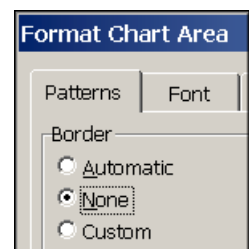
## 13. Creating a Pie Chart on the Summary Sheet

- Select the numbers to be used in the chart by highlighting **C3** to **D5**.
- Click on the **Chart Wizard** button.
- Under Chart type: select **Pie**.
- Under Chart sub-type, select the **second style**. →
- Click **Next**.
- Click **Next**.
- Select the **Legend** tab.
- Click to deselect **Show Legend**.
- Select the **Data Labels** tab.
- Select **Show label and percent**.
- Click **Finish** to complete the chart and skip step 4, accepting the default to place the chart on the same sheet as your data.

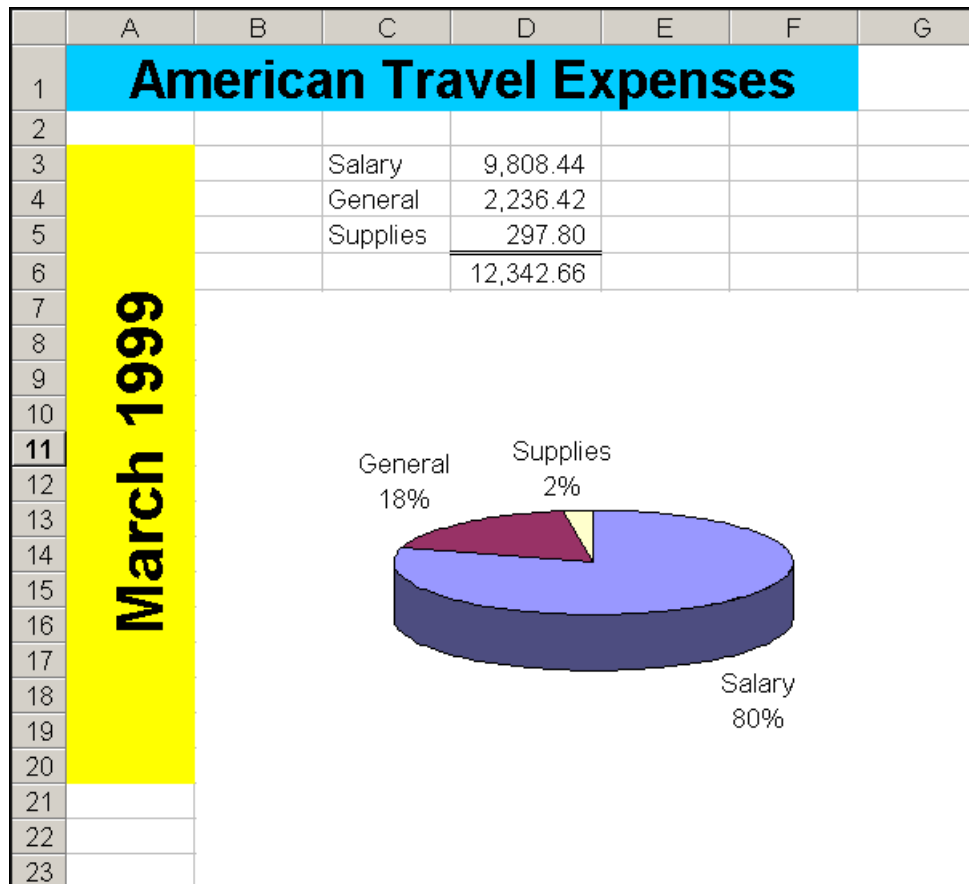


To move and resize the pie chart:

- **Click** on the pie chart to select it and hold down as you drag it to directly under **row 6**. You should see a four directional arrow as you drag. ↕
- With the pie chart still selected, place the cursor over the **bottom right corner** of the chart until a double headed arrow appears. ↗
- Click and **drag** down to cell **G23**.
- With the chart still selected, **right-click**.
- Select **Format Chart Area** from the floating menu.
- Under the **Patterns** tab, select  **None** for the Border.

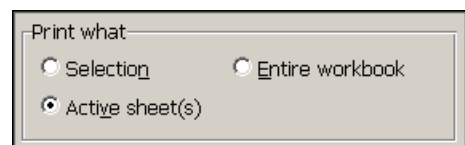


## 14. The Final Summary Sheet



## 15. Printing and Exiting

- Select **File** → **Print**.
- Note that you may print the **Entire workbook**, a **Selection**, or the **Active sheet**.



- To print just the chart, select the chart by clicking on it near the edge and then select **File** → **Print**. Note that **Selected Chart** is indicated under *Print what*.

To exit the program:

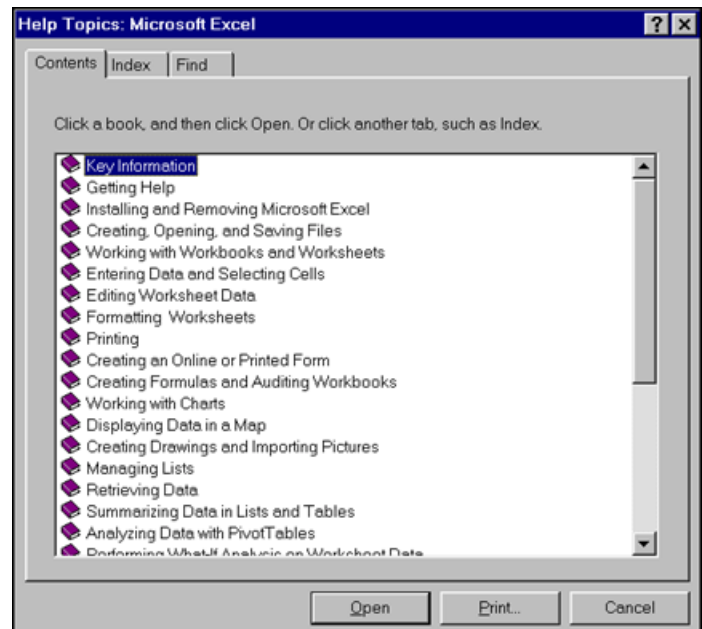
- Select **File** → **Exit** or use the close box **✕** in the upper right corner.

**Note:** If you have made a change and have not yet saved, at exit a prompt will ask you if you would like to save your changes.

## 16. Getting Help

One of the easiest ways to get help with Microsoft Excel is the comprehensive online help included with it, as shown below. Just click on **Help** → **Contents and Index**.

- 1) Should you have a question that the online help does not address, please contact the Microcomputer Support Office at 372-6315 (email: [MicroSupport@tntech.edu](mailto:MicroSupport@tntech.edu)) or your college contact.
- 2) Students may call the Helpdesk at 372-3975 or get assistance in the PC labs in person.
- 3) Handouts on using Excel and other programs are available on the web from the TTU home page under **Computing** → **Publications** (at [www2.tntech.edu/its/pubs/](http://www2.tntech.edu/its/pubs/)).



### 17. Part of the Original Spreadsheet

	A	B	C	D	E	F	G	H	I	J	K	L	M
	Date	No.	Name	Item	Category	Credit	Debit	Balance	Salary (1)	General (2)	Supplies (3)	Income (In)	
1	3/1/1999			Beginning Balance		2,254.65							
2	3/2/1999	1231	Office Max	Paper, pens, notebooks	3		17.35						
3	3/3/1999	1232	Walmart	Calculator, batteries	3		26.72						
4	3/3/1999			Deposit	In	1,275.00							
5	3/5/1999	1233	Suzanne Jones	weekly pay	1		546.15						
6	3/5/1999	1234	Jordan Grant	weekly pay	1		546.15						
7	3/5/1999	1235	Danny Dupree	weekly pay	1		937.50						
8	3/5/1999			weekly pay deduction	1		422.31						
9	3/8/1999			Deposit	In	300.00							
10	3/10/1999			Deposit	In	150.00							
11	3/11/1999			Deposit	In	2,500.00							
12	3/12/1999	1238	Herald Citizen	Sunday Ad	2		75.86						
13	3/12/1999	1239	Suzanne Jones	weekly pay	1		546.15						
14	3/12/1999	1240	Jordan Grant	weekly pay	1		546.15						
15	3/12/1999	1241	Danny Dupree	weekly pay	1		937.50						
16	3/12/1999			weekly pay deduction	1		422.31						
17	3/14/1999			Deposit	In	1,275.00							
18	3/15/1999	1237	Mr. Landford	rent	2		500.00						
19	3/16/1999			Deposit	In	1,050.00							
20	3/18/1999			Deposit	In	1,350.00							
21	3/19/1999	1243	Suzanne Jones	weekly pay	1		546.15						
22	3/19/1999	1244	Jordan Grant	weekly pay	1		546.15						
23	3/19/1999	1245	Danny Dupree	weekly pay	1		937.50						
24	3/19/1999			weekly pay deduction	1		422.31						
25	3/19/1999			Deposit	In	445.00							
26	3/20/1999	1247	Walmart	copy paper	3		28.73						
27													