Lab 11: Budgeting with Excel

This lab exercise will have you track credit card bills over a period of three months. You will determine those months in which a budget was met for various categories. You will graph expenses by category and over time.

Excel Skills Used

- Working with Multiple Sheet Workbooks
- Sorting Data
- Copying and Linking Cells Between Sheets
- Using Absolute and Relative Referencing
- Conditional Formatting Cells Based on Value
- Writing Formulas
- Formatting Cells with Colors, Fonts, and Borders
- Formatting Dates and Currency
- Working with Dates and Times
- Obtaining Data From Visible Cells Only
- Creating Pie, Line, and Bar Charts
- Writing formulas that calculate Sums and Averages
- Viewing Formulas
- Investigating Recalculations based on Data Changes
- Adding Subtotals

General Requirements

Format all dates and currency values appropriately. All charts and graphs should have titles, legends, and labeled axes.   Create a custom footer with your name in the left section, the name of the sheet in the center section, and the page number in the right section. Rename the tab of each worksheet with a meaningful name.

Getting Started

Open the workbook Lab11start.xls which has the starter data for this assignment. The file is linked on the course Calendar. To download the file, right click and save to your Desktop. Double click on the Desktop icon to open the spreadsheet in Excel.

The sheet named Data contains a table in chronological order of charges made to a credit card over a three month period. The columns specify the category of each purchase, the date, the purchase, and the amount.

Documentation Sheet

Add a documentation sheet in which you display a title for the project, the purpose of the workbook, the author (that's you), date created, source of data, and any revision history.

Budget Sheet

Create a budget sheet as shown below in which you enter the values for the monthly budget in each category. These cells are shown formatted with a yellow background. Merge-and-center the title "Monthly Budget" across cells A1 and B1, and format that in a larger font.

Add a formula for cell A7 to be the sum of the values above it.

Monthly Sheets

Create three sheets: one for July, one for August, and one for September. Place the name of the month in a cell that is merged and centered, spanning cells A1 through F1 of each sheet. Format it using a larger font size.

- Copy the Monthly Budget values from the Budget Sheet to each of the monthly sheets, being sure to link the cells back to the original budget sheet, so if you change the values there, they will be updated on the other sheets.
  In other words, the budget at the top of the sheets for July, August, and September will all be the same as the budget on the Budget Sheet, and you will accomplish that by linking the cells on the monthly pages to the Budget Sheet.

- Below the budget table, create column headings for Category, Date, Description, and Amount, in columns A through D.

- On the July sheet,

    o Copy the charges from July on the Data sheet

    o Sort them by category

    o Add subtotals for each category.

    o Add an IF formula and use conditional formatting in the column to the right of each subtotal that displays the amount by which the total is over budget in that category in red—only when the category is over budget. (Hint: Use "" in your formula to create a blank cell as a result if the category is under budget.) Add a heading in red to the top of the column: Over Budget.

- Repeat these steps for the August and September sheets. Notice, there are no restaurant expenses for September, so you should add a Restaurant entry with an expense of 0 so that you will have a subtotal for this category. This way, all of your pages will have the same categories to subtotal.

- Once you get the July sheet done, you should be able to copy the formulas directly to the other sheets. Since you only need to copy the formulas to the visible cells, you can collapse all of the individual entries and only show the subtotals by clicking on the plus signs in the area at the left of your worksheet.

Charts

Add the following charts to your monthly sheets. Rename Series 1 to "July Expenses":

July	Add a horizontal bar chart to show the expenses in each category.
August	Add a pie chart showing the expenses in each category.
September	Add a vertical bar, or column, chart showing the expenses in each category.

Experiment with the settings for each chart, including font size, text alignment of category names, position of the legend, colors, etc. so that the labels and values display correctly.

Summary Sheet

Create a summary sheet containing only the subtotals for each category. Cell A1 should contain the words "Worksheet prepared:" Cell A2 should contain a formula for today's date.

Column headings should be *Category, July, August, September, Total*, and *Average*. Row headings should be the names of each category. Display a page title that says *Summary* formatted in bold and in a color other than black, centered and spanning across all of the columns containing data.

To copy only the subtotal values from the earlier sheets, hide all of the data so that only the subtotals appear. Highlight the range of cells you want to copy. Then follow the directions below for your version of Excel.

Windows Vista	Earlier Versions of Excel
On the Home tab, in the Editing group, click Find & Select → Go To Special → Visible cells only, and only then click OK.	From menu bar, select Edit … → Go To … → Special … → Visible Cells, and only then click OK.

Now click Edit … Copy (or the Copy icon) and move to the Summary sheet, and click Paste (linking these values back to the original month's sheet from which they came.)
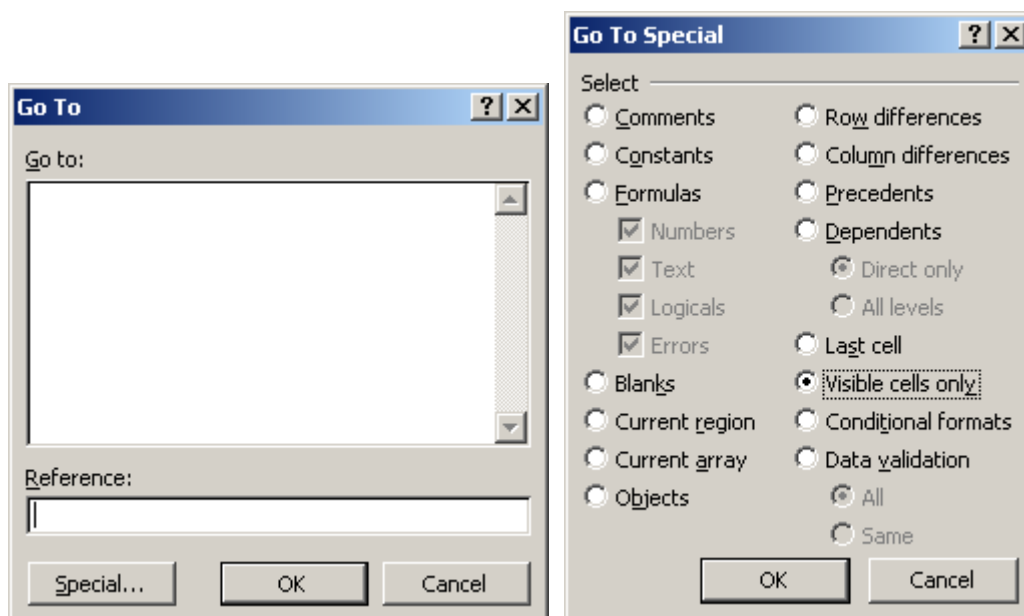
Repeat the process to Select Visible Cells only before each copy/paste operation. Be sure to Unhide all the rows so your charts are visible on the July, August, and September pages.

On the summary page, add formulas to display the totals and averages in each category. Format the table with the header row in a background color, and the summary row text in the same color.

Display a line chart showing the amount of money spent in each category in each month. The horizontal axis should have July, August, and September. The vertical axis should be appropriate dollar amounts. Each line should represent the expense amount in each category for that month. Display the legend above the graph. Give the chart an appropriate title.

Viewing Formulas

View the formulas for each of your pages by pressing Ctrl and ` at the same time on a given sheet. Verify that they are correct.

Changing Values

Change a value in the Budget sheet and then notice how that change effects the corresponding month and summary sheets For example, if you change the monthly budgeted amount for Gas to $75, what changes occur elsewhere in the workbook?

Rubric

Task	Points Possible
Tabs labeled with sheet name	5
Month sheets (July, August, September)	
Subtotals	10
Over budget IF formulas for each category	10
Summary sheet with totals and averages	10
Four charts with titles, legends, and labeled axes: line, bar, column, pie	15
Total possible extra credit	**50**

Turn In

Due Date: Monday, March 3, before 5:00 pm.

Instead of the usual Word Document, turn in the modified Excel spreadsheet. Because this file isn't a Web page, there's no need to link it. Just upload it to the Catalyst Collect-It Turn-in Area on the Course Calendar for your lab section and select this lab number.