

15. Save and close the workbook.

Case Problem 2

Data File needed for this Case Problem: Econ.xlsx

Introduction to Economics 102 Alice Keyes teaches Introduction to Economics 102 at Mountain View Business School in Huntington, West Virginia. She wants to use Excel to track the grades from her class. Alice has already entered the homework, quiz, and final exam scores for all of her students in a workbook, and she has asked you to set up the formulas and functions for her.

You will calculate each student's final average based on his or her homework score, quiz scores, and final exam. Homework counts for 20 percent of the student's final grade. The first two quizzes count for 10 percent each. The second two quizzes count for 15 percent each. The final exam counts for 30 percent of the final grade.

You will also calculate each student's rank in the class. The rank will display which student placed first in terms of his or her overall score, which student placed second, and so forth. Ranks are calculated using the function

`RANK(number, ref, [order=0])`

where *number* is the value to be ranked, *ref* is a reference to the cell range containing the values against which the ranking is done, and *order* is an optional argument that specifies whether to rank in descending order or ascending order. The default *order* value is 0 to rank the values in descending order.

Finally, you will create formulas that will look up information on a particular student based on that student's ID so Alice doesn't have to scroll through the complete class roster to find a particular student. Complete the following:

1. Open the **Econ** workbook located in the Excel3 ► Case2 folder included with your Data Files, and then save the workbook as **Econ Grades** in the location specified by your instructor.
2. In the Documentation sheet, enter your name and the date.
3. Go to the Grade Book worksheet. In cell B5, count the number of student IDs in the range A22:A57.
- **Explore** 4. Cells C15 through H15 contain the weights assigned to each assignment, quiz, or exam. In cell J22, calculate the weighted average of the first student's scores by entering a formula that multiplies each score by its corresponding weight and adds the resulting products.
5. Edit the formula in cell J22, changing the references to the weights in cells C15 through H15 from relative references to absolute references.
6. Use AutoFill to copy the formula from cell J22 into the range J23:J57.
- **Explore** 7. In cell K22, use the RANK function to calculate how the first student compares to the other students in the class. Use the weighted average from cell J22 for the *number* argument and the range of weighted averages in the cell range `$J$22:$J$57` for the *ref* argument. You do not need to specify a value for the *order* argument.
8. Use AutoFill to copy the formula you entered in cell K22 into the range K23:K57.
9. In the range C16:H18, calculate the class average, minimum, and maximum for each of the six grading components (homework, quizzes, and final exam).
10. In cell B8, enter the student ID **14858**.

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-  **Explore** 11. Using the VLOOKUP function with an exact match and the student data table in the range A22:K57, retrieve the first name, last name, weighted average, and class rank for student 14858 in the range B9:B12. Use an absolute reference to the lookup table. Note that the first name is found in the third column of the student data table, the last name is found in the second column, weighted average is found in the tenth column, and the class rank is found in the eleventh column.
12. Brenda Dunford missed the final exam and will be taking a make-up exam. She wants to know what score she would need on the final exam to achieve an overall weighted average of 90. Use Goal Seek to calculate what final exam score Brenda needs to result in a weighted average of 90.
13. Save and close the workbook.

Case Problem 3

15. Save the workbook as **Bertrand Budget 2**, and then close it.

Case Problem 2

Data File needed for this Case Problem: **PetroChart.xlsx**

PetroChart Reports William Rawlings runs a blog called *PetroChart Reports* that deals with the energy market with special emphasis on crude oil production and consumption. William likes to augment his writing with informative charts and graphics. He has an Excel workbook with some historic data on the crude oil market. He has asked you to create charts from that data that he can use in an article that reviews the history of oil production and consumption, and their impact on the size of the proven world oil reserves. Complete the following:

1. Open the **PetroChart** workbook located in the Excel4 ► Case2 folder included with your Data Files, and then save the workbook as **PetroChart Reports**.
2. In the Documentation sheet, enter your name in cell B3 and the date in cell B4.
3. In the World Oil Production worksheet, create a line chart of world oil production from 1980 to 2010 using the data from the range A6:G37. Move the chart to the Summary worksheet covering the range B4:H19.
4. Format the chart with the Style 9 chart style, and then change the chart title to **Oil Production Historic Trends**.
5. Change the line color for the North America data series to white, which is easier to read against the black backdrop.

- ✚ **Explore** 6. Revise the vertical axis scale so that the display unit is expressed in terms of thousands (most oil production reports are quoted in terms of thousands of barrels per day). Change the text of the display unit from Thousands to **Thousands of Barrels per Day**.
7. In the World Oil Production worksheet, create a pie chart that displays the relative size of the oil production values for different regions in 2010 based on the data in the nonadjacent range B6:G6;B37:G37. Move the pie chart to the Summary worksheet covering the range J4:P19.
8. Make the following changes to the pie chart:
- Format the chart with the Style 7 chart style.
 - Change the chart title to **2010 Oil Production** and reduce its font size to 14 points.
 - Move the chart legend to the left edge of the chart area.
 - Add data labels outside of the pie slices showing the percentage associated with each region.
 - Change the color of the pie slice for the North America region to white.
9. In the World Oil Consumption worksheet, create a line chart that shows how oil consumption changed from 1980 to 2010 based on the data in the range A6:G37. Move the chart to the Summary worksheet covering the range B21:H36.
10. Change the chart title to **Oil Consumption Historic Trends**.
- ✚ **Explore** 11. Copy the Oil Production Historic Trends line chart. Use Paste Special to paste the format of that chart into the Oil Consumption Historic Trends line chart.
12. In the World Oil Consumption worksheet, create a pie chart showing the 2010 regional breakdown of oil consumption based on the data in the range B6:G6;B37:G37. Move the chart to the Summary worksheet covering the range J21:P36.
- ✚ **Explore** 13. Change the chart title to **2010 Oil Consumption**. Use Paste Special to copy the 2010 Oil Production pie chart and paste its format into the 2010 Oil Consumption pie chart.
14. There was a fear that with increased oil production and consumption from 1980 to 2010, there would be decreasing amounts of proven reserves. Was this the case? In the Proven Reserves worksheet, create a combination chart based on the data in the range A5:D36. Display the Oil Production and Oil Consumption data series as line charts on the primary axis. Display the Proven Reserves data series as an area chart on the secondary axis. Move the chart to the Summary worksheet covering the range E38:M53.
15. Make the following changes to the combination chart:
- Format the chart with the Style 6 chart style.
 - Change the chart title to **Historic Trends in Proven Oil Reserves**; reduce the font size to 12 points.
 - Change the primary axis scale to range from **50,000** to **90,000** in steps of **5,000**.
 - Change the line color of the Oil Production data series to white.
16. Save the workbook, and then close it.