

MgtOp 470—Business Modeling with Spreadsheets
Washington State University
Spring 2020
Problem Set 2
Due: March 3, midnight

E-mail your completed files to gihan.mgtop470@gmail.com. This assignment may be completed in a group of up to four people. Please state in the email message the names of all persons turning in this assignment. Please put “MgtOp 470 Homework 2” followed by the name of the person who sent the email in the Subject of the email.

Note: The file related to this assignment is available on our course website.

1. (6 points)
Create a user-defined function called **Cube** that takes one argument called **edge** and returns the surface area of a cube for the given length of the edge. Show that the function works in a worksheet by inserting the formula somewhere.
2. (12 points)
Start with a clean version of the file **Training.xlsx**. Do the following with VBA. (Place the code for all of the parts in a single sub.)
 - (a) Boldface the font of the label in cell A1, change the cell color to yellow, and change its font size to 18.
 - (b) Boldface the headings in row 3, and change their horizontal alignment to the left.
 - (c) Boldface the font and change the color of the font for the employee ID numbers in column C to green.
 - (d) Change the background (the Interior property) of the range with employee names (A4:B23) to green and italicize the font in that range.
 - (e) Enter the label **Average** in cell C24 and boldface it (using VBA code).
 - (f) Enter a formula in cell D24 that averages the scores above it. Copy this formula to the range E24:H24 (using VBA code).
3. (7 points)
Start with a clean version of the file **Training.xlsx**. Begin by using VBA to name the following ranges with the range names specified: cell A1 as **Title**, the headings in row 3 as **Headings**, the employee numbers in column A as **EmpNumbers**, and the range of scores as **Scores**. Refer to these range names as you do the following:
 - (a) Fill the cells containing all of the scores red.
 - (b) Boldface the title of the spreadsheet in cell A1.
 - (c) Change the font of the column headings to 20 point.
 - (d) Change the formatting of the employee numbers to have a comma in front of the last three digits.
4. (5 points)
Start with a clean version of the file **Training.xlsx**. Write a VBA sub that sorts the scores in descending order on exam 4. Break ties by sorting in descending order on exam 2.

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5. (5 points) Insert numbers into the range A1:K15. The following code is used to format some data. This code works perfectly well, but it is quite repetitive. Rewrite it by using as many *With Constructions* as make sense. Using appropriate indentation and then run your modified code to make sure it still works.

```
Sub FormatARange()  
ActiveWorkbook.Worksheets("Sheet1").Range("C3:J15").Font.Bold = True  
ActiveWorkbook.Worksheets("Sheet1").Range("C3:J15").Font.Italic = True  
ActiveWorkbook.Worksheets("Sheet1").Range("C3:J15").Font.Color = vbYellow  
ActiveWorkbook.Worksheets("Sheet1").Range("C3:J15").Interior.Color = vbBlue  
ActiveWorkbook.Worksheets("Sheet1").Range("C3:J15").HorizontalAlignment = xlRight  
ActiveWorkbook.Worksheets("Sheet1").Range("C1:J2").Interior.Color = vbRed  
ActiveWorkbook.Worksheets("Sheet1").Range("C2:J2").NumberFormat = "$#,##0"  
ActiveWorkbook.Worksheets("Sheet1").Range("A1").Font.Bold = True  
ActiveWorkbook.Worksheets("Sheet1").Range("A1").Font.Size = 14  
ActiveWorkbook.Worksheets("Sheet1").Range("A1").Interior.Color = vbYellow  
ActiveWorkbook.Worksheets("Sheet1").Range("A1").HorizontalAlignment = xlLeft  
ActiveWorkbook.Worksheets("Sheet1").Range("K2:K15").Font.Bold = True  
ActiveWorkbook.Worksheets("Sheet1").Range("K2:K15").Font.Italic = True  
ActiveWorkbook.Worksheets("Sheet1").Range("K2:K15").Interior.Color = vbGreen  
ActiveWorkbook.Worksheets("Sheet1").Range("K2:K15").InsertIndent 1  
End Sub
```

6. (15 points)

Write a reference (in VBA code) to each of the following ranges. You can assume that each of these ranges is in the active worksheet of the active workbook so that you don't have to qualify the references by worksheet or workbook. (*Hint: You can "reference" the ranges by using the "Select" method e.g., **Range("A2:C4").Select.***) Before you begin, create a range name in Excel called **Best** that covers range A2:L34.

- (a) The fifth cell of the range C3:C18.
- (b) The cell at the intersection of the 16th row and 7th column of a range that has the range name **Best**.
- (c) The cell at the intersection of 13th row and 3rd column of a range that has been set to the Range object variable **Hello**. Have **Hello** cover B2:M50.
- (d) The cell at the intersection of the 19th row and 12th column of A1:Z900.
- (e) The entire row corresponding to cell A1.
- (f) The set of entire columns from column E through column G.
- (g) A range of city names, assuming the first is in Cell B2 and they extend to the right in row 2 (although you don't know how many there are).
- (h) A range of inventory figures in the rectangular block, assuming that location labels are above them in row 3 (starting in Cell F3) and week labels are to their left in column E (starting in Cell E4). You don't know how many locations or weeks there are and you want the range to include only the sales figures, not the labels.
- (i) The cell that is 3 rows up from and 4 column to the left of the active cell. (The active cell is the cell currently selected. If a rectangular range is selected, the active cell is the first cell that was selected when the range was selected. It can always be referred to in VBA as **ActiveCell**.)