

MgtOp 470—Business Modeling with Spreadsheets
Washington State University
Spring 2020
Problem Set 3
Due: March 10, 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 3” followed by the name of the person who sent the email in the Subject of the email.

Note: The files related to this assignment are available on our course website.

1. (6 points)
Write a sub for the Recreation Center at your college that does the following: (a) It displays a Yes-No box to ask whether the guest is registered as a member; (b) If the result of the Yes-No box in part (a) is **vbYes** (the built-in VBA constant that results from clicking the **Yes** button), display a message box stating that the guest is free to get into the center; otherwise, the message box should state that the guest needs to pay \$8.00 to get into the center.
2. (8 points)
Write a sub that does the following: 1) it asks the user to input a word; 2) it enters each character of the word in backwards order in consecutive cells in row 5, starting with cell B5.
Hint: Use a For Loop.
3. (7 points)
The file **Sales Data.xlsx** (Chapter 7) contains monthly sales amounts for 40 sales regions. Write a sub that uses a *For* loop to color the interior of every other row (Regions 2, 4, etc.) green. Color only the data area, columns B to M, starting with Row 3 (Region 2) in the spreadsheet.
4. (6 points)
Starting with the **Sales Data** file from the course website (Chapter 7), write a sub that uses a *For Each* loop to boldface and change the font color to yellow for each sales amount that is greater than \$10,500.
5. (8 points)
Create a new worksheet and named it as “Roster”. Assume that you are the TA for Mgtop 470. You have the class roster in the worksheet “Roster” and the full names of students are in column A, starting in Cell A3, with last name last and case insensitive (such as Ben ALT). Write a sub that counts the number of names in the list with last name ALT and then displays this count in an MsgBox that is titled “Number of ALTs” and has an Exclamation icon button. *Note that there might be last names, such as DALT, which should not be counted.*

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6. (8 points)

Write a VBA program for a website that uses an InputBox to ask the user for a promotion code. Embed this in a Do loop so that the user has to keep trying until the result is a valid promotion code that starts with "Spring" (case insensitive) and is followed by 4 digits. Then use a message box to display the input promotion code and inform the user that the code has been applied. *Hint: You can check if a character is a digit by seeing if it is $\geq$ "0" and if it is $\leq$ "9" (the quotation marks are needed).*

7. (7 points)

An *Armstrong number* (also known as a *narcissistic number*) is a number that is the sum of its own digits, each raised to the power of the number of digits. For example, 153 is considered an Armstrong number because $1^3 + 5^3 + 3^3 = 153$.

Write a VBA program that lists all 3-digit Armstrong numbers within a specified range of 3-digit positive integers. Your sub should do the following: 1) Using two input boxes, ask the user to input two 3-digit positive integers (a "lower bound" and an "upper bound" for the range); 2) Enter all Armstrong numbers between the specified numbers in column A, starting with cell A1. *Hints: Use a For Loop. Also, string functions can be used on LONG variables.*

8. Extra Credit—5 points

This is a real-world question from a WSU alumna who had previously taken this class. Download the file on the website called **Delete Old-Year Problem.xlsx**. That is the file that the student had sent to the instructor. His message is shown below. While his code worked, it ran way too slowly on large files. See if you can modify his code to identify the first year that is earlier than 2019 and then delete that row and the row containing the rest of the years below that all at one time.

Hope all is well. I'm having trouble with a piece of code that crashes my computer occasionally, and I am stuck working on a solution.

Problem: Trying to remove the entire row if the year is before 2019.

Current code:

```
Range("B2").Select
Do Until ActiveCell.Value = ""
    If ActiveCell.Value < 2019 Then
        ActiveCell.EntireRow.Delete
    Else
        ActiveCell.Offset(1, 0).Select
    End If
Loop
```

Code Problem: My data sets can be 1000's of rows so checking every cell is very slow.

Since the data is always in order, all I need to do is find the first entry <2019 and then select xlDown and delete everything, but I don't know how to find that cell and make it the active cell.