**Assignment Directions**

For all assignments, follow the guidelines in the PEP8 Standards for this Class document in the Student Docs section. Your programs and zip files must be named correctly, contain a docstring heading and include the other style requirements taught to this point. Be sure that your user prompts and print outputs are descriptive.

The specific instructions for these problems are adapted from problems shown in the textbook. Make sure to follow the specific instructions in THIS document.

**Chapter 2 Exercises**

1. Write a Python program that counts the number of odd numbers, even numbers, squares of an integer and cubes of an integer from 2 to 130 (inclusive). For example, 9 is both odd and a square, 8 is even and a cube.   
   Use constants to set the beginning and ending of the range.  
   For output, print a title with the total range.  
   For Odd and Even, print the totals and the range of the numbers in scope.  
   For Squares and Cubes, print the totals and a list of the numbers that meet the criteria  
   Nothing printed should be hard coded.

Example of Output:  
Checking numbers from 2 to 130  
Odd (64): 3...129  
Even (65): 2...130  
Square (10): [4, 9, 16, 25, 36, 49, 64, 81, 100, 121]  
Cube (4): [8, 27, 64, 125]

**Chapter 4 Exercises**

1. Set a constant with an odd length string.   
   Confirm in code that the string is of an odd length. Otherwise, print a relevant message for the user and end the program.  
   For a string of odd length, print each of the following in double quotes:
   * Print the entire string and its length.
   * Print the middle character.
   * Print the string up to but not including the middle character.
   * Print the string from immediately following the middle character to the end.

Example of Output:  
My 27 character string is: "A man a plan a canal Panama"  
The middle character is: "a"  
The 1st half of string is: "A man a plan "  
The 2nd half of string is: " canal Panama"

1. Write a program that prompts the user for a sentence and calculates the number of uppercase letters, lowercase letters, digits, and punctuation. Output the results neatly formatted and labeled in columns.

Example of Output:  
# Upper # Lower # Digits # Punct.

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2 36 4 5

1. Write a program that prompts the user to enter a three-digit whole number such that the digits are in ascending order and without duplicates.

Valid examples: 123 and 489   
Invalid examples: 133 and 174

The program loops and re-prompts the user until a correct value is entered. Make sure to check whether the user entered the correct data type.

Example Run:

Please enter a 3-digit integer: 122

Your number contains duplication.

Please enter a 3-digit integer: 1234

Error: You did not enter a 3-digit number.

Please enter a 3-digit integer: 1.23

Error: This is not an integer. Please re-enter.

Please enter a 3-digit integer: 376

Error: The digits are not in ascending order.

Please enter a 3-digit integer: 348

Number Accepted!

**Chapter 6 Exercise**

1. Create a test file with a single sentence of 20 words.   
     
   Read the file, insert appropriate new line characters (\n) and write the test to a new text file that contains four lines of five words.  
     
   Print an error message and stop if the sentence in the file has other than 20 words.  
     
   Test the input file for existence and not crash if the file does not exist.  
     
   Remember to properly close the files.

**Chapter 14 Exercise**

1. Create a text file containing student records by line and each record is of the format:
   * Name of Student
   * Student ID
   * GPA

For example (you can use your own examples):

Tyrion Lannister, 1, 3.7

Daenerys Targaryen, 52, 2.8

Jon Snow, 13, 3.9

Sansa Stark, 24, 3.4

Write a program to read the file line by line and store all the records in lists or tuples.

Hint: you need to create a list of lists or list of tuples.  
Afterwards, print the array that you created.

Include the file best practices described in exercise #5.

**Where to submit?**

Click Assignments in the Navigation Area and then click on the title of the assignment to enter the submission area and upload your response.