* Understand String Methods and Dictionaries
* Understand Control Statements and Functions

**Description:**You will become familiar with implementing functions and function calls using various conditional and looping structures.

* Please complete the following assignments and submit by Saturday July 11 by 11:59PM:

1. Translate the following for loops to equivalent while loops:

               a.   for count in range (100):

                                      print (count)

              b.     for count in range (1, 101):

                                     print (count)

              c.      for count in range (100, 0, –1):

                                     print (count)

1. The greatest common divisor of two positive integers, A and B, is the largest number that can be evenly divided into both of them. Euclid’s algorithm can be used to find the greatest common divisor (GCD) of two positive integers. You can use this algorithm in the following manner:

             a.     Compute the remainder of dividing the larger number by the smaller number.

             b.    Replace the larger number with the smaller number and the smaller number with the remainder.

             c.     Repeat this process until the smaller number is zero.

The larger number at this point is the GCD of A and B. Write a program that lets the user enter two integers and then prints each step in the process of using the Euclidean algorithm to find their GCD.

  3. Write a program that receives a series of numbers from the user and allows the user to press the enter key to indicate that he or she is finished providing inputs. After the user presses the enter key, the program should print the sum of the numbers and their average.

  4. A bit shift is a procedure whereby the bits in a bit string are moved to the left or to the right. For example, we can shift the bits in the string 1011 two places to the left to produce the string 1100 . Note that the leftmost two bits are wrapped around to the right side of the string in this operation. Define two scripts, shiftLeft.py and shiftRight.py , that expect a bit string as an input. The script shiftLeft shifts the bits in its input one place to the left, wrapping the leftmost bit to the rightmost position. The script shiftRight performs the inverse operation. Each script prints the resulting string.

  5. The Payroll Department keeps a list of employee information for each pay period in a text file. The format of each line of the file is the following:

**<last name> <hourly wage> <hours worked>**

 Write a program that inputs data from a list and prints to the terminal a report of the wages paid to the employees for the given period. The report should be in tabular format with the appropriate header. Each line should contain an employee’s name, the hours worked, and the wages paid for that period. Use the following list or tuples to extract the report information:

**[(“Lambert”, 34, 10.50), (“Osborne”, 22, 6.25), (“Giacometti”, 5, 100.70)]**

  6. A file concordance tracks the unique words in a paragraph and their frequencies. Write a program that displays a concordance for a paragraph. The program should output the unique words and their frequencies in alphabetical order. The program should be case insensitive (ignores whether capital or lowercase letters). Use the following paragraph:

*"Never give in — Never, never, never, never, in nothing great or small, large or petty, never give in except to convictions of honour and good sense. Never yield to force; never yield to the apparently overwhelming might of the enemy. O horror, horror, horror. Words, words, word. But you never know now do you now do you now do you."*