Problem Sheet – Strings in Python

Activities using Python Coding:

1. Program to print all characters in a given string in forward and reverse order.

2. Program to count the number of vowels in a given string.

3. Program to check whether the given string is palindrome or not.

4. Program to check whether a given string (say string1) is present or not in another string (say string 2).
   EG:
   string 1: India
   String 2: India is our country.
   Output: String 'India' is present in string 'India is our Country'.

5. Program to print the following patterns.
   a. A
      B B
      C C C
      D D D D
      …

   b. A
      A B
      A B C
      A B C D
      ….
   c. A
      2 2
      C C C
      4 4 4 4
      E E E E E
      ……

6. Program for simple encoding.
    a. Read a sentence (original data) from user.
    b. Encode the user input as follows.
        i. Replace ‘a’ by ‘5’
        ii. Replace ‘b’ by ‘+’
        iii. Replace ‘c’ by ‘$’
    c. Print both original data and encoded data in the screen.

    Examples:

    Input (Original data): India

    Output (Encoded data): Indi5

    Input (original data): Carbon

    Output (Encoded data): C5r+on

7. **Read input string from user and convert into title case.**
   Example:

   Input:
   Airplanes come in a variety of sizes, shapes, and wing configurations

   Output (Title case):

   Airplanes Come In A Variety Of Sizes, Shapes, And Wing Configurations

8. Write a program to count the number of upper case letters (A, B,…Z), lower case letters (a, b, ….z) and numeric digits (0,1…9) in a given input string. Exclude special characters including ‘white space’.

   Example:
   Input: Autopilot Version is 04

   Output:
   Number of upper case letters: 02
   Number of lower case letters: 16
   Number of numeric digits: 02

9. Write a program to count the number of occurrences of a given word (user input) in a given sentence (user input).

   Example-1:
   Input:
   Given sentence: I like apple very much.
   Given word to be searched: apple

   Output:
   The number of occurrences of apple is: 1

   Example-2:
   Input:
   Given sentence: I like self-driving car as it requires no human for driving.
   Given word to be searched: driving

   Output:
   The number of occurrences of the word driving: 2

10. Write a program to count all characters except numeric digits (0-9) and alphabets (both a-z and A-Z).

Example 1:

Input: The expression to be evaluated is c=a+(b*d)%(i-j).

Output: Total number of characters except numeric digits (0-9) and alphabets (both a-z and A-Z): 10