DATA STRUCTURES – ASSIGNMENT 2

1. Get a sentence from the user. Count the number of vowels and consonants in the sentence and store it in the form of dictionary.

   (Eg): If user enters a sentence "Python Scripting is so much efficient", the output should be "{'consonants': 22, 'vowels': 10}"

2. Get a sentence from the user. Extract only the unique words from the sentence in the form of list. Ignore the case while extracting the unique words.

   (Eg): If user enters a sentence "He is a boy and he is playing and dancing", the output should be "['He', 'is', 'a', 'boy', 'and', 'playing', 'dancing']"

3. Get a sentence from the user. Count the number of uppercase characters and lowercase characters in the sentence, in the form of dictionary.

   (Eg): If user enters a sentence "PYTHON Scripting is BEST Ever", the output should be "{'uc':12, 'lc':13}"

4. Get a sentence from the user. Extract only the uppercase characters from the sentence in the form of tuple.

   (Eg): If user enters a sentence "PYTHON Scripting", the output should be "('P', 'Y', 'T', 'H', 'O', 'N', 'S')"

5. Create a list that contains a collection of strings. Filter the list which contains only Palindrome.

   (Eg): If you are creating the list of strings as "['php', 'perl', 'mam', 'python', '121']" and the output list should be "['php', 'mam', '121']"

6. Create a Python Script to implement STACK. (Hint: LIFO – Last In First Out, i.e., The element which is inserted last have to be removed first)

7. Create a Python Script to implement QUEUE. (Hint: FIFO – First In First Out, i.e., The element which is inserted first have to be removed first)

8. Get a string from the user. Count the number of occurrences of each character in the string and store it in the form of dictionary.

   (Eg): If user enters a string "php", the output should be "{'p': 2, 'h': 1}"

9. Get a sentence from the user. Count the number of occurrences of each word in the sentence and store it in the form of dictionary. Don't ignore the case while counting.

   (Eg): If user enters a sentence "He is a boy and he is playing and dancing", the output should be "{'He': 1, 'is': 2, 'a': 1, 'boy': 1, 'and': 2, 'he': 1, 'playing': 1, 'dancing': 1}"

10. Get a string from the user. Extract the character which has most number of occurrences in the string.

    (Eg): If user enters a string "php", the output should be "character 'p' with '2' occurrences"