# Session2 Assignment:

1. Write a Python program which accepts a sequence of comma-separated numbers from user and generate a list and a tuple with those numbers.
Sample data : 3, 5, 7, 23
Output :
List : ['3', ' 5', ' 7', ' 23']
Tuple : ('3', ' 5', ' 7', ' 23')

2. Write a Python program to display the first and last colors from the following list.
color_list = ["Red", "Green", "White" , "Black"].

3. Write a Python program to check whether a specified value is contained in a group of values.
Test Data :
3 -> [1, 5, 8, 3] : True
-1 -> [1, 5, 8, 3] : False

4. Write a Python program to count the number of characters (character frequency) in a string.
Sample String : google.com'
Expected Result : {'o': 3, 'g': 2, '.': 1, 'e': 1, 'l': 1, 'm': 1, 'c': 1}

5. Write a Python program to find the first appearance of the substring 'not' and 'poor' from a given string, replace the whole 'not'...'poor' substring with 'good'. Return the resulting string.
Sample String : 'The lyrics is not that poor!'
Expected Result : 'The lyrics is good!'

6. Write a Python program to convert a string in a list.

7. Write a Python program to sum all the items in a list.

8. Write a Python program to get the largest and the smallest numbers from a list.

9. Write a Python program to get a list, sorted in increasing order by the last element in each tuple from a given list of non-empty tuples.
Sample List : [(2, 5), (1, 2), (4, 4), (2, 3), (2, 1)]
Expected Result : [(2, 1), (1, 2), (2, 3), (4, 4), (2, 5)]

10. Write a Python program to remove duplicates from a list.

11. Write a Python program to shuffle and print a specified list.

12. Write a Python program to convert a list of characters into a string.

13. Write a Python program to count the number of elements in a list within a specified range.

14. Write a Python program to check whether a list contains a sublist.

15. Write a Python script to sort (ascending and descending) a dictionary by value.

16. Write a Python script to add a key to a dictionary.
Sample Dictionary : {0: 10, 1: 20}
Expected Result : {0: 10, 1: 20, 2: 30}

17. Write a Python script to concatenate following dictionaries to create a new one.
Sample Dictionary:
dic1={1:10, 2:20}
dic2={3:30, 4:40}
dic3={5:50,6:60}
Expected Result : {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}

18. Write a Python script to check if a given key already exists in a dictionary.
Sample Dictionary:
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100, 11: 121, 12: 144, 13: 169, 14: 196, 15: 225}

19. Write a Python script to merge two Python dictionaries.

20. Write a Python program to iterate over dictionary and print each key-value pair, using for loops.

21. Write a Python program to sum all the values in a dictionary.

22. Write a Python program to multiply all the values in a dictionary.

23. Write a Python program to remove a key from a dictionary.

24. Write a Python program to sort a dictionary by key.

25. Write a Python program to remove duplicates from Dictionary.

26. Write a Python program to combine two dictionaries adding values for common keys.
d1 = {'a': 100, 'b': 200, 'c':300}
d2 = {'a': 300, 'b': 200, 'd':400}
Sample output: Counter({'a': 400, 'b': 400, 'd': 400, 'c': 300})

27. Write a Python program to sort a list alphabetically.

28. Write a Python program to remove spaces from dictionary keys.

29. Write a Python program to print a dictionary item by item.

30. Write a Python program to check if multiple items stored in a list are keys in a dictionary.

31. Write a Python program to count number of items in a dictionary value that is a list.

32. Write a Python program to sort items in a dictionary by values in a descending order.
Sample data : {'Math':81, 'Chemistry':87, 'Physics':83}
Expected data: [('Chemistry', 87), ('Physics', 83), ('Math', 81)]

33. Write a Python program to replace dictionary values with their sum.

34. Write a Python program to convert a list of tuples into a dictionary.

35. Write a Python program to count the elements in a list until an element is a tuple.

36. Write a Python function that accepts a string and calculate the number of upper case letters and lower case letters.
Sample String: 'The quick Brown Fox'
Expected Output:
No. of Upper case characters : 3
No. of Lower case Characters : 13

37. Write a Python program that takes a list and returns a new list with unique elements of the first list.
Sample List : [1,2,3,3,3,3,4,5]
Unique List : [1, 2, 3, 4, 5]