Data Types

1. 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}

2. Write a Python program to get a string made of the first 2 and the last 2 chars from a given a string. If the string length is less than 2, return instead of the empty string.

Sample String : 'Python'

Expected Result : 'Pyon'

Sample String : 'Py'

Expected Result : 'PyPy'

Sample String : ' w'

Expected Result : Empty String

3. Write a Python program to get a string from a given string where all occurrences of its first char have been changed to '$', except the first char itself.

Sample String : 'restart'

Expected Result : 'resta$t'

4. Write a Python program to get a single string from two given strings, separated by a space and swap the first two characters of each string.

Sample String : 'abc', 'xyz'

Expected Result : 'xyc abz'

5. Write a Python program to add 'ing' at the end of a given string (length should be at least 3). If the given string already ends with 'ing' then add 'ly' instead. If the string length of the given string is less than 3, leave it unchanged.

Sample String : 'abc'

Expected Result : 'abcing'

Sample String : 'string'

Expected Result : 'stringly'

6. Write a Python program to find the first appearance of the substring 'not' and 'poor' from a given string, if 'not' follows the 'poor', replace the whole 'not'...'poor' substring with 'good'. Return the resulting string.

Sample String : 'The lyrics is not that poor!'

'The lyrics is poor!'

Expected Result : 'The lyrics is good!'

'The lyrics is poor!'

7. Write a Python function that takes a list of words and returns the length of the longest one.

8. Write a Python program to remove the n^{th} index character from a nonempty string.

9. Write a Python program to change a given string to a new string where the first and last chars have been exchanged.

10. Write a Python program to remove the characters which have odd index values of a given string.

11. Write a Python program to count the occurrences of each word in a given sentence.

12. Write a Python script that takes input from the user and displays that input back in upper and lower cases.

13. Write a Python program that accepts a comma separated sequence of words as input and prints the unique words in sorted form (alphanumerically).

Sample Words : red, white, black, red, green, black

Expected Result : black, green, red, white,red

14. Write a Python function to create the HTML string with tags around the word(s).

Sample function and result :

add_tags('i', 'Python') -> 'Python'

add_tags('b', 'Python Tutorial') -> 'Python Tutorial '

15. Write a Python function to insert a string in the middle of a string.

Sample function and result :

insert_sting_middle('[[]]<<>>', 'Python') -> [[Python]]

insert_sting_middle('{{}}', 'PHP') -> {{PHP}}

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

17. Write a Python program to multiplies all the items in a list.

18. Write a Python program to get the largest number from a list.

19. Write a Python program to get the smallest number from a list.

20. Write a Python program to count the number of strings where the string length is 2 or more and the first and last character are same from a given list of strings.

Sample List : ['abc', 'xyz', 'aba', '1221']

Expected Result : 2

21. 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)]

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

23. Write a Python program to check a list is empty or not.

24. Write a Python program to clone or copy a list.

25. Write a Python program to check whether all dictionaries in a list are empty or not.

Sample list : [{},{},{}]

Return value : True

Sample list : [{1,2},{},{}]

Return value : False

26. Write a Python program to insert a given string at the beginning of all items in a list.

Sample list : [1,2,3,4], string : emp

Expected output : ['emp1', 'emp2', 'emp3', 'emp4']

27. Write a Python program to replace the last element in a list with another list.
Sample data : [1, 3, 5, 7, 9, 10], [2, 4, 6, 8]

Expected Output: [1, 3, 5, 7, 9, 2, 4, 6, 8]

28. 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}

29. 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}

30. Write a Python script to check whether a given key already exists in a dictionary.

31. Write a Python program to iterate over dictionaries using for loops.

32. Write a Python script to generate and print a dictionary that contains a number (between 1 and n) in the form (x, x*x).

Sample Dictionary (n = 5) :

Expected Output : {1: 1, 2: 4, 3: 9, 4: 16, 5: 25}

33. Write a Python script to print a dictionary where the keys are numbers between 1 and 15 (both included) and the values are square of keys

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}

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

35. Write a Python program to iterate over dictionaries using for loops.

36. Write a Python program to sum all the items in a dictionary.

37. Write a Python program to multiply all the items in a dictionary.

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

39. Write a Python program to unpack a tuple in several variables.

40. Write a Python program to add an item in a tuple.

41. Write a Python program to convert a tuple to a string.

42. Write a Python program to convert a list to a tuple.

43. Write a Python program to remove an item from a tuple.

44. Write a Python program to slice a tuple.

45. Write a Python program to find the index of an item of a tuple.

46. Write a Python program to find the length of a tuple

Functions

1. Write a Python function to find the Max of three numbers.

2. Write a Python function to sum all the numbers in a list.

Sample List : (8, 2, 3, 0, 7)

Expected Output : 20

3. Write a Python function to multiply all the numbers in a list.

Sample List : (8, 2, 3, -1, 7)

Expected Output : -336

4. Write a Python program to reverse a string.

Sample String : "1234abcd"

Expected Output : "dcba4321"

5. Write a Python function to calculate the factorial of a number (a non-negative integer). The function accepts the number as an argument.

6. Write a Python function to check whether a number is in a given range.

7. Write a Python function that accepts a string and calculate the number of upper case letters and lower case letters.

Sample String : 'The quick Brow Fox'

Expected Output :

No. of Upper case characters : 3

No. of Lower case Characters : 12

8. Write a Python function 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]

9. Write a Python function that takes a number as a parameter and check the number is prime or not.

Note : A prime number (or a prime) is a natural number greater than 1 and that has no positive divisors other than 1 and itself.

10. Write a Python program to print the even numbers from a given list.

Sample List : [1, 2, 3, 4, 5, 6, 7, 8, 9]

Expected Result : [2, 4, 6, 8]

11. Write a Python program to create a lambda function that adds 15 to a given number passed in as an argument, also create a lambda function that multiplies argument x with argument y and print the result.

12. Write a Python program to create a function that takes one argument, and that argument will be multiplied with an unknown given number.

13. Write a Python program to sort a list of tuples using Lambda.

14. Write a Python program to sort a list of dictionaries using Lambda.

15. Write a Python program to filter a list of integers using Lambda.

16. Write a Python program to square and cube every number in a given list of integers using Lambda.

17. Write a Python program to find if a given string starts with a given character using Lambda.

18. Write a Python program to check whether a given string is number or not using Lambda.

19. Write a Python program to create Fibonacci series upto n using Lambda.

20. Write a Python program to find intersection of two given arrays using Lambda.