

Python for ML|| Week-1 Practice Project

Topics: -

- i) Variable
- ii) Data Structures with loops
- iii) Functions

Variables

1. Write a program to swap the values of two variables without using any arithmetic operators.
 Given a=10, b=20
 Expected o/p:- a=20, b=10
2. Write a program to reverse a string without using any loop.
 Given string name = 'greatlearning'
 Expected o/p:- 'gninraelatarg'
3. Write a program to split a string into blank space without using loops.
 Hint: Use built-in functions of python.
 Given String: " Hello folks Welcome to greatlearning "

Data Structures (List)

4. Write a program to sum all the items of a list.
 Given list x=[5,3,8,9,14]
 Expected o/p: 39
5. Write a program to multiply all the items of a list.
 Given list y = [6,8,12,14,15]
6. Write a program to check if a list is empty or not.
7. Write a program to generate all the permutations of a list without using loops. Hint: Use itertools library.
 input: x=[2,5,8]
 output: [(2, 5, 8), (2, 8, 5), (5, 2, 8), (5, 8, 2), (8, 2, 5), (8, 5, 2)]
8. Let's say we have three lists.
 lst_1=[2,4,8]
 lst_2=[5,1,3]
 lst_3=[6,9,2]

- a. Write a program to make a list of lists to form a matrix.
- b. Add 5 to the diagonal element of the matrix.

Dictionary

9. Write a program to fetch 'loss' from the below dictionary.

```
d = {'fruits':{'apple':100,'orange':{'good':1,'bad':{'buy':['loss','profit']}}}}
```

10. Given a list of dictionary,

```
list_dict=[{'apple':1},{'orange':2},{'pineapple':1},{'guava':3},{'strawberry':5}]
```

- a. Write a program to print all the unique values in the dictionary.

Sets

11. Write a program to check if a given set is superset of itself or not.

```
S = {20,10,30,50}
```

12. Given two sets s1={20,10,30,50} and s2={10,30}. Write a program to check if s2 is a subset of s1 or not.

Tuple

13. Write a program to unzip a list of tuples into individual lists. Please refer to the below example.

```
a. new_list=[(56,43,21),(21,45,67),(89,16,78)]
```

```
b. output:[56, 43, 21, 21, 45, 67, 89, 16, 78]
```

Functions

14. Write a program to check whether a number is a perfect number. A perfect number is defined as the positive number in which the sum of all positive divisors excluding the number itself is equal to that number.

a. Ex: 6 the divisor of 6 is 1,2,3 and 1+2+3=6 28 the divisors of 28 is 1,2,4,7,14 and 1+2+4+7+14=28

15. Given a string x='Hello folks Welcome to greatlearning Greatlearning provides the best data science courses'.

a. Write a program to calculate the frequency of each word of the sentence

b. Output Ex: greatlearning 2 Hello 1 the 1

HAPPY LEARNING!!