

# SUMANTH S

## AF0363570

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### PYTHON LAB: 12 LIST

“A list is a data structure that is used to store a collection of items. Lists are mutable, meaning their elements can be changed after the list is created. Lists can contain elements of different data types. “

#### QUESTIONS

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

```
list = [1,2,3,4,5] # taking list items ---> 1,2,3,4,5
sum = 0 # initializing sum --> 0
for i in list: # using for loop to traverse the list items and add all the items
    sum = sum + i # adding the items ---> 1+2+3+4+5
print("The sum of all the items in the given list is: ", sum) # print the sum
```

Output:

The sum of all the items in the given list is: 15

##### 2. Write a Python program to get the largest and smallest number from a list without builtin functions.

```
list = [4,5,2,1,23,8,11] # taking list items --> 4,5,2,1,23,8,11
largest = list[0] # taking the 1st value from list and assigning that to largest variable
smallest = list[0] # taking the 1st value from list and assigning that to smallest variable
for i in list: # # using for loop to traverse the list items
    if i > largest: # comparing the list items with the 1st item --> 4 using > operator
        largest = i # returning the largest item
    elif i < smallest: # comparing the list items with the 1st item --> 4 using < operator
        smallest = i # returning the largest item
# displaying the largest and smallest number
print("The largest element in the list is :", largest)
print("The smallest element in the list is :", smallest)
```

Output:

The largest element in the list is : 23

The smallest element in the list is : 1

**3. Write a Python program to find duplicate values from a list and display those.**

```
list = [1,1,2,3,3,2,4,5,7,7] # list with duplicate values
print("The duplicate values from the given list are :")
for i in range (0,len(list)): # using for loop to traverse forward
    for j in range (i+1,len(list)): # using for loop to traverse backward
        if list[i] == list [j]: # comparing both the lists
            duplicate_values = list[j] # storing the duplicate values in duplicate_variable
            print(duplicate_values,end= " ") # print the duplicate values
```

Output:

The duplicate values from the given list are :

1 2 3 7

**4. Write a Python program to split a given list into two parts where the length of the first part of the list is given.**

**Original list:** [1, 1, 2, 3, 4, 4, 5, 1]

**Length of the first part of the list:** 3

**Splitted the said list into two parts:**

([1, 1, 2], [3, 4, 4, 5, 1])

```
original_list=[1, 1, 2, 3, 4, 4, 5, 1] # taken original list values --> 1,1,2,3,4,4,5,1
index =3 # taken index ---> 3
first_part = original_list[:index] # spilting the 1st part of the list--> from 0th index
--> index -1
second_part = original_list[index:] # spilting the 2nd part of the list --> from index
---> last index
print("The splitted list is:")
print((",",first_part,",",second_part,"")) # print both the lists
```

Output:

The splitted list is:

( [1, 1, 2] , [3, 4, 4, 5, 1] )

**5. Write a Python program to traverse a given list in reverse order, and print the elements with the original index.**

**Original list: ['red', 'green', 'white', 'black']**

**Traverse the said list in reverse order:**

**black**

**white**

**green**

**red**

```
original_list=['red', 'green', 'white', 'black'] # intializing a list with items
print("The original list is :",original_list) # print original list
print("Traversing the list in reverse order :")
for i in reversed(original_list): # traversing a list in reverse order
    print(i) # print reversed items
print("The original index of reverse order items are:")
# i is the original index, and item represents each element in reverse order.
# enum function is used to given an index.
for index, item in reversed(list(enumerate(original_list))):
    print(index," -->", item)# Print the original index and the corresponding element
```

Output:

The original list is : ['red', 'green', 'white', 'black']

Traversing the list in reverse order :

black

white

green

red

The original index of reverse order items are:

3 -->black

2 -->white

1--> green

0 -->red