

TASK # 4

10/10/25

USE VARIOUS DATA TYPES, LIST, TUPLES AND
DICTIONARY IN PYTHON PROGRAMMING

Aim :- TO use various data types: list, tuples
and dictionary in python programming.

a. You are working on a python project
that requires you to manage and manipulate
a list of numbers your task is to create a
python program that demonstrates the following
list operations.

1. Add Elements : Add elements to the list.
2. Remove Elements : Remove specific elements from
the list.
3. Sort Elements : Sort the list in ascending
order and descending order.
4. Find minimum and maximum : Find the minimum
and maximum elements in the list.
5. Calculate Sum and average : Calculate the
sum and average of the elements in a list.

ALGORITHM :

1. Start
2. For adding elements to a list first create
a list with name 'list' and assign the values
within [] brackets, inorder to add a new value
use the function append.
3. For removing a specific element use "pop(index
value)" or "remove (item name)"

4. For sorting the elements use "sorted (list)" function.
5. Finding minimum value use "min (list)" and for maximum use "max (list)".
6. For sum use function "sum (list)" and for average use the formula "sum (list) / len (list)".
7. Print the output.
8. End.

PROGRAM :

Add elements : Add elements to the list.

list = [10, 20]

a = 30

list.append(a)

print (list)

Remove elements : Remove specific elements from the list.

list.pop()

print (list)

list.remove (10) # by item name

print (list)

Sort elements : Sort the elements in ascending and descending order

l = [5, 8, 9, 15, 30, 89]

print (sorted (l))

Find minimum and maximum : Find the minimum and maximum elements in the list.

```
Print ("The minimum value is : "min(n))  
Print ("The maximum value is : "max(n))  
# calculate the sum and average  
Print ("The sum is "sum(n))  
Print ("The average is : "(sum(n)/len(n))
```

Output :

Restart : c : / users / student

[10, 20, 30]

[10, 30]

[30]

[5, 8, 9, 15, 30, 89]

The min value is : 5

The max value is : 89

The sum is : 156

The Avg is : 26

b. You are tasked - Creating a Python program that shows operations on tuples. Tuples are immutable sequences. Similar to list but with the key difference that they cannot be changed after creation your program illustrate the following tuple operations.

1. Creating a Tuple: Creating a tuple with elements of different datatypes (10, 'hello', 3.14, 'world')
2. Access elements: Access individual elements and slice of tuple.
3. Concatenate tuples: Combine two tuples to create a new tuple.
4. Immutable Nature: Attempt to modify elements of the tuple and handle the resulting error.

ALGORITHM:-

1. Start
2. To create a tuple use "tuple-name=(values)"
3. To access the elements of the tuple either use the index values (tuple-name[index-value])
4. To concatenate tuples use the operators '+' (tuple1 + tuple2).
5. Try to modify the tuple elements by assigning the values directly like; tuple (index, new-value, will result in an error as it is immutable.
6. Print the output
7. End.

Output: Restart: C:/Users/student-0

(10, 'hello', 3.14, 'world')

10

hello

3.14

world

('hello', 3.14)

(10, 'hello', 3.14)

PROGRAM:

```
# create a tuple : Define a tuple with elements of
different data types ('0', 'hello', 3.14, 'world').
tuple = ('0', 'hello', 3.14, 'world')

print (tuple)

# Access elements : Access individual elements and slices
of the tuple.
for i in tuple:
    print (i)

print (tuple[1:3])

print (tuple [1:3])

# concatenate Tuples : combine two tuples to create
new tuple.
t2 = (5,0.5)
t3 = tuple + t2

Print (t3)

# immutable Nature : Attempt to modify elements of
the tuple & handle the resulting error.
tuple[3] = 'P1' # ERROR
```

RESULT: Thus, various data types, List, Tuple & Dictionary in python programming was used & verified successfully.

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EX No.	
PERFORMANCE (5)	
RESULT AND ANALYSIS (5)	
VIVA VOCE (5)	
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