Task-4

use various data types, List, tuples and Dictionary in python programming

Aim:

To use various data types, List, tuples and Dictionary in python

a. You 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 demonstrate 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 asc and dsc order
4. Find min and max: so Find the minimum and max elements in list
5. calculate sum and avg: calculate the sum and avg of the element in list.

Algorithm

1. Start
2. For adding elements to a list first create a list with name list and assign the values within brackets, in order to add a new value use the func append.[]

output :-

[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 : 26.0

3. For removing a specific element use "pop" or "remove(item name)".
4. For sorting the use "sorted(list)"
5. For finding min value use "min(list)" and for max use "max(list)".
6. for sum use function "sum(list)' and for avg use "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
list pop(1) #
print(list)
list.remove(10)
I = [5,8,9,15,30,89]
Print(sorted(1))
The list
Print("The min value is:", min(1))
Print("The max value is:", max(1))
Print("The sum is:", sum(1))
Print("The avg is:", ((sum(1)/len(1))))
```

4b: You are tasked with creating Python program that showcases operations on tuples. Tuples are seq, similar to lists but with the key difference that they cannot be changed after creation.

1. create tuple: Define a tuple with different Data types (10, 'hello', 3.14)
2. Access Elements: Access individual elements
3. Immutable Element Nature: Attempt to modify elements of the tuple.

Algorithm

1. Start
2. To create a tuple use "tuple_name = (values)".
3. To access the elements of tuple use Index
4. To concatenate tuples use operator "+"
5. Try to modify the tuples elements by assign the values
6. Print the output
7. End.

Program

create a tuple: Define a tuple with elements like (10, 'hello', 3.14, 'world')

```
tuple = (10, 'hello', 3.14, 'world')
print (tuple)
for i in tuple:
    print (i)
print (tuple [1:3])
print (tuple [:-1])
t2 = (5, 0.5)
t3 = tuple + t2
print (t3)
tuple (3) = "P1" # Error
```

output :-

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

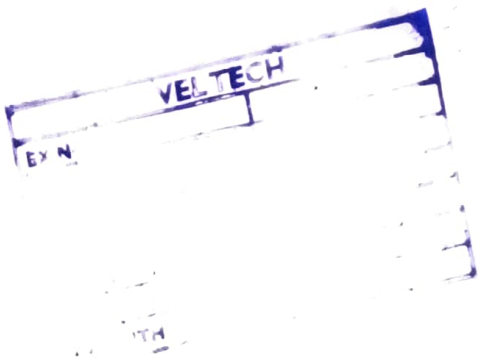
4.c You are tasked with creating a program that showcases operations on Dictionaries. They in Python are unordered collections of items.

Illustrate the following operations.

1. Create a Dictionary : Define a dictionary with key value pairs of different data types ({'name': 'Alice', 'age': 30, 'city': 'New York'}
2. Access values : using keys
3. Iterate over Dictionary : use loops to iterate over keys or values.

Algorithm :

1. Start
2. Define a dictionary with key value pairs
3. Retrieve values from the dictionary using their keys
5. Iterate over program
6. Stop



output

{'name': 'Alice', 'age': 30, 'city': 'New york'}

Alice

30

{'Name': 'James', 'age': 30, 'city': 'New york'}

{'Name': 'James', 'Age': 30}

Key : Name

Key : age

dict-items([('name', James'), ('age', 30)])

Program

```
# create a Dictionary : Define a Dictionary with
  key value
{'name': 'Alice', 'age': 30, 'city': 'New York'}
Dictionary = {'name': 'Alice', 'age': 30, 'city': 'New
                                            York'}
Print (Dictionary)
Print (Dictionary ['Name'])
Print (Dictionary ['age'])
# Modify Dictionary : Update values, add new key value
  pairs
Dictionary ['Name'] = "James"
print (Dictionary)
dictionary.pop ('city')
Print (dictionary)
print (" Key", K)
    Print ("Key:", K)
print (dictionary.items())
```

Result :-

Thus, various data types, List, tuples and Dictionary in python programming was used and verified successfully.

VEL TECH	
EX No	4
PERFORMANCE (5)	
RESULT AND ANALYSIS (5)	
VIVA VOCE (5)	
RECORD (5)	
TOTAL (20)	10
SIGN WITH DATE	

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