*Program:-

```
list = [10,20]
a = 30
list.append(a)
print(list)
list.pop(1)
print(list)
l = [5,8,9,15,30,89]
print(sorted(l))
print("The minimum value is:", min(l))
print("The maximum value is:", max(l))
print("The sum is:", sum(l))
print("The average is:", (sum(l)/len(l)))
```

Output:-

```
[10,20,30]
[10,30]
[30]
[5,8,9,15,30,89]
The minimum value is: 5
The maximum value is: 89
The sum is: 156
The average is: 26.0
```

Date: 18/8/25

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 programming.

1) 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 element to the list.
2) Remove elements:- Remove specific elements from the list.
3) Sort elements:- Sort the list in ascending and descending order.
4) Find Minimum and maximum:- Find the min and max elements in the list.
5) Calculate sum and average:- Calculate the sum and average of the elements in the list.

Algorithm:-

1. Start
2. For adding elements to a list first create a list with name "list" and assign the values.
3. For removing a specific element use "pop(index value)" (or) "remove(itemname)".
4. For Sorting the elements use "sorted(list)" function.
5. For 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. Output.

* Program:

```
tuple = (10, 'hello', 3.14, 'world')
print (tuple)
~~the 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) = "PI" #error.
```

Output:

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

(b) You are tasked with creating a python program that showcases operations on tuples. Tuples are immutable sequence, similar to lists but with the key difference that they cannot be changed after creation. your program should illustrate the following tuple operations.

1) Create a Tuple :- Define a tuple with elements of different data types (10, "hello", 3.14, 'world')
2) Access elements :- Access individual elements and slices of the 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 a tuple either use the index values.
   (tuple_name(index_value)) or the tuple slicing (tuple_name [start : end]).
4. To Concatenate tuples use the operator " + " (tuple1 + tuple2).
5. Try to modify the tuple elements by assigining the values error as it is immutable.
6. Print the output
7. End.

* Program:

```
dictionary = {'name': 'Alice', 'age': 30, 'city': 'NewYork'}
print(dictionary)
print (dictionary ['age'])
print (dictionary ['name'])
dictionary ['name'] = "James"
print (dictionary)
dictionary .pop ('city')
print(dictionary)
for k in dictionary:
    print ("key:", k)
print (dictionary: items())
```

Output:-

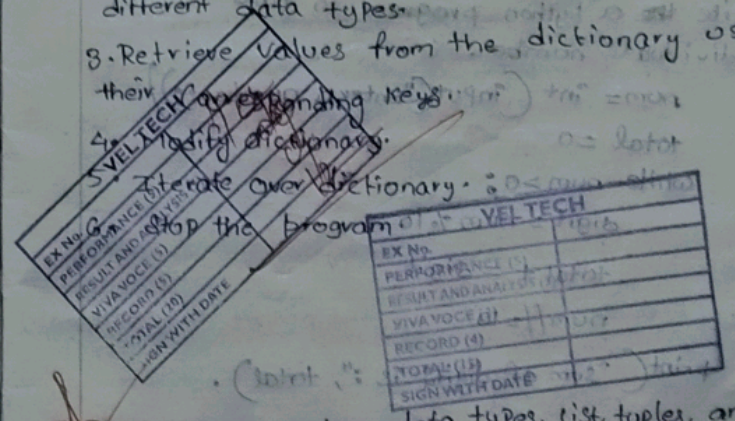
```
{'name': 'James', 'age': 30, 'city': 'Newyork'}
Alice
30
{'name': 'James', 'age': 30, 'city': 'Newyork'}
{'name': 'James', 'age': 30}
KEY: name
KEY: age
dict_items ([('name': 'James'), ('age', 30)])
```

C) You are tasked with Creating a python program that showo Cases operations on dictionaries. Dictionaries in python are unordered Collections of items. Each item is a pair Consisting of a key and a value Your program should illustrate the following dictionary operations.

1. Create a dictionary :- Define a dictinory with key value pairs of different data types. ({name: 'Alice', 'age:', 30, 'city:', 'NewYork'}).
2. Access values :- Access values using keys.
3. Modify dictionary :- update values, add new key-value pairs, and remove existing pairs.
4. Iteratiover Dictionary :- use loops to iterate over keys (or) values.

Algorithm:-

1. Start
2. Define a dictionary with key-value pairs of different data types.
3. Retrieve values from the dictionary using their corresponding keys.
4. Modify dictionary.
5. Iterate over dictionary.
6. Stop the program.



Result: Thus, various data types, list, tuples, and dictionary in python programming was used and verified Successfully.