Task-3:- Use various data types, List, Toples, and Dictionary in Python programming.

Aim: -

To use various data types, List, Toples, and Dictionary in python programming.

- a) You are working on a Python project the requires
  you to manage and manipulate a list of numbers
  your task is to create a python programme that
  demonstrates the following lis operations:
- 1. Add Elementes: Add elements to the list
- 2. Remove Elements: Remove specific elements from the
- 3. Sort Flement: Sort the list in ascending and descending order
- 4. Find the Minimum and Maximum: Find the list minimum and maximum elements in the list
- 5. Colculate Sum and Average: Calculate the sum and Average of the element in the list.

Algorithm: -

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

Output: and the finners in typical more [10,20,30] [10,30] saly it led warp stoo soored as [30] primary in Pathon programing [5,8,9,15,30,59] The minimum value is: 5 The maximum value is 89 The son is: 156 The average is: 26.0. I Ald Elementer ! Add elements to the channe Herrand: homane specific clarents from the s. Sof Florond S. of the list in occanoling o. it documbing order while the Minimum and Maximum Tind the til it i framme element in the list stablished from ond diversity alaste the sum and Lil dt ni towards alt to again . m. HinalA treated tole ! situs adding changes to a till third comple a list I'd winds render after regises have tell some the medies, investor to cold a ... Columnia is ite stailing a specifi aboverto in populario " (smarry of " remare ( internance)"

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. End. fragram'-#Add Element: Add elements to the list 1.st=[10,20] a: 30 list. append (a) print(list) # Remove Elements: Remove specific elements from the list. list.pop(1)#by index value priat (list) list remove (10) # by itemneme print (list) # sort Element: sort the list in ascending and descend ring order. 1=[5,8,9,15,30,89] print (sorted [1)) # Find Minimum and Maximum: Find the minimum and maximum elements in the list print ("The minimum value is: 11, min (1)) print ("The maximum value is:", max(1)) # colubete sum and Average print ( worke som is: 11, sum (1)) print ("The average is:", (fsum(1)/len(1)))

- b) You are tasked with creating a python program that showcases operations on tuples. Tuples are immutable sequences, similar to lists but with the liey difference that they cannot be changed after creation. Your program should illustrate the following toples operations:
- 1. Create a Toples: Define a tople with elements of the different data type (10, bello', 3.14, world')
- 2. Access Elements: Access individual elements and slices of the toples.
- 3. Concatenate tople: Combine two toples to create a new toples.
- af the tople and handle the resulting error.

## Algorithm:

- 1. Stort
- 2. To create a tuple use "taple-name=(values)".
- 5. To access the elements of the tuple either use the index value (typle\_name (index\_value)) or the tuple sliping (typle\_name[stort:end))
- "to concatenate tuples use the gerator." + " (toples "+" tuple 2).
- 5. Try to modify the tople elements by assinging the values diff directly like; tople (index) = new-value, will result in an error as it is immulatable.
- 6. Print the output.
- 7. End.

(10) hello', 3.14, 'world') ration is a correspond whatever in it towned by the tests warmented 0 charter the klassic margorety and with any hello 3.14 world (1holls); (314) this alph a milest realist a dome. (10, thella) 3.14) 1 20 I alled and ong onet which to mall to published contact tomail 2000%. ealer all to sools explorate typic combine and expert Etransla Hibari of tymeth sarchall addressed is of the tople and hundle the resulting error : mathing /4 "(2 else), amor shot' see short a step is it a corresp the elements of the tuple withou use the index volve (right verne linder value)) or the liple ( biothels proon april printe "Lagh" "4" where the consider "4" (Appl)" . Co doch afte prigning to stranged alget at fibers it git ? Mines dist directly like; tiple ( ndex) : new- vilue . addatalament i ti so vorio no ni tran lis topha alf thir's . but 1

Program: HE Create a Tople: Define a tople with demonts of different data types (10, helb) 3.14, world) typle = (10,1 hellow, 3.1 Ly world') print (typle) # Acress Element: A cross individual elements and sixes of the tople for in typle: print (i) Print (tople[1:3]) Print (-lyle[:-1]) It connadenate Toples: contine two toples to create a new turples t2=(5,0,5) t3 = toplo + 12 print (+3) # immutable Nature: Attempt to modify elements of the tople and handle the resulting error. tuple(3)= "PI" #ERROR.

- e. You are tasked with creating a python program that showards operations on dictionaries. Dictionaries in python are unordered collection of items. Each item in a pair consisting of a key and a value. Your program should illustrate the following dictionary operations:
- 1. Create a Dictionary: Define a dictionary with key-value pairs of different data type: (& hame!;
  'Alice', age; 30, 'city': Now York?
- 2. Access value: Access values using key.
- 3. Modify Dictionary: Update value, add now keyvalue pairs, and remove existing pairs.
- h. Herate Over Dictionary: Use loops to iterate over key or values.

## Algorithm:

- 1. Start the program.
- 2. Define a dietionary with key-value poirs of different data types.
- 3. Retrieve values from the dictionary using their corresponding key.
- 4. Modify Dictionary
- 5. Herate over Dictionary.
- 6. Stop the pragram.

Outut: { name ': 'Alice', lage': 30, 'city'! Now York 13 ('name': 'Jama', 'arge': 30, 'city': 'New York') 30 l'nome! James: lage! : 20) a practice o dans. MEY: name arch while the stable to string ander-loss KEY: age false work: ptis', or i apallasila" dict- item ([('name', 'James'), ('age', 30)]) god was the seles species granding grand , erica british browns print alor showed over Dictionary the last to iterate social solve-hay then theoret sip a significant a little velver them the dictionary weight ! Bay bright will sell c. Modify Dich way Herote own Bistimeny. married of the days

Arogram:

# create a Distinging: Define a dictionary with key-value pairs of different data.

type. (finame': Alice', lage! 30, lait! New York')

dictionary = { 'name': 'Alice', 'age = 30, city: 'NowYork' } print (dictionary)

#Access value: Access value using key.

print (dictionary [name]

print (dictionary ['age'])

# Modify Dictionary: Update value, add new-key-vole pairs, and remove existing pairs.

dictionary ['name ] = "James"

print (dictionary)

dictionary pop('city')

print (dichonary)

# Herate Over Dictionary: Use loops to iterate over keys or value.

for he in dictionary print "KEY: ", K) print (dichbrary . item ()).

Resolt: They, various data types, list, Toples and Dictionary in python programming was used and venified excessfully.