**7. Write a python program to demonstrate the working of tuple.**

**Aim:** To generate a python program to demonstrate the working of tuples.

Description: In python, a ‘tuple’ is an ordered immutable collection of elements unlike lists, which are mutable and use square brackets ‘[]’. Tuples use parentheses ‘()’. Tuples are practically useful that when we want to ensure that the data remains unchanged and is treated as a single unit.

For demonstrating the working tuples in python initially we determine the action user wants to perform that is: add element to the tuple, access element in the tuple, remove element from the tuple and display the tuple. Based on user choice, we create the tuple by tuple\_name = (). We add items to the tuple by tuple\_name= tuple\_name+(element to be added).And since tuples, are immutable we remove elements by converting the tuple to list by list(tuple\_name) and again convert the list back to tuple by tuple(list\_name).

**Code:**

def create\_tuple():

my\_tuple=()

print("Empty tuple created.")

return my\_tuple

def add\_to\_tuple(my\_tuple,element):

my\_tuple+=(element,)

print(f"Added '{element}' to the tuple.")

return my\_tuple

def access\_tuple(my\_tuple,index):

if 0<=index<len(my\_tuple):

element=my\_tuple[index]

print(f"Element at index {index}:{element}")

else:

print("Invalid index.")

def remove\_from\_tuple(my\_tuple,element):

if element in my\_tuple:

my\_list=list(my\_tuple)

my\_list.remove(element)

my\_tuple=tuple(my\_list)

print(f"Removed '{element}' from the tuple.")

return my\_tuple

else:

print(f"'{element}' not found in the tuple.")

def display\_tuple(my\_tuple):

print("Current Tuple:",my\_tuple)

my\_tuple=create\_tuple()

while True:

print("\n Choose an action:")

print("1.Add an element to the tuple")

print("2.Access an element in the tuple")

print("3.Remove an element from the tuple")

print("4.Display the current tuple")

print("5.Exit")

choice=input("enter your choice (1/2/3/4/5):")

if choice=='1':

element=input("Enter a element to add:")

my\_tuple=add\_to\_tuple(my\_tuple,element)

elif choice=='2':

index=int(input("Enter the index to access:"))

access\_tuple(my\_tuple,index)

elif choice=='3':

element=input("Enter the element to be remove:")

my\_tuple=remove\_from\_tuple(my\_tuple,element)

elif choice=='4':

display\_tuple(my\_tuple)

elif choice=='5':

break

else:

print("Invalid choice.Please try again:")

**Output:**

PS D:\23MCA36> python p7.py

Empty tuple is created

Choose an action :

1.Add an element to tuple :

2.Access an element in the tuple :

3.Remove an element from the tuple :

4.Display the current tuple

5.Exit

Enter you choice (1/2/3/4/5) : 4

Cuurent tuple : ()

Choose an action :

1.Add an element to tuple :

2.Access an element in the tuple :

3.Remove an element from the tuple :

4.Display the current tuple

5.Exit

Enter you choice (1/2/3/4/5) : 1

Enter an elements to add : 10

Added 10 to the tuple

Choose an action :

1.Add an element to tuple :

2.Access an element in the tuple :

3.Remove an element from the tuple :

4.Display the current tuple

5.Exit

Enter you choice (1/2/3/4/5) : 1

Enter an elements to add : 20

Added 20 to the tuple

Choose an action :

1.Add an element to tuple :

2.Access an element in the tuple :

3.Remove an element from the tuple :

4.Display the current tuple

5.Exit

Enter you choice (1/2/3/4/5) : 1

Enter an elements to add : 30

Added 30 to the tuple

Choose an action :

1.Add an element to tuple :

2.Access an element in the tuple :

3.Remove an element from the tuple :

4.Display the current tuple

5.Exit

Enter you choice (1/2/3/4/5) : 4

Cuurent tuple : ('10', '20', '30')

Choose an action :

1.Add an element to tuple :

2.Access an element in the tuple :

3.Remove an element from the tuple :

4.Display the current tuple

5.Exit

Enter you choice (1/2/3/4/5) : 2

Enter the index to access : 0

Element at index 0 : 10

Choose an action :

1.Add an element to tuple :

2.Access an element in the tuple :

3.Remove an element from the tuple :

4.Display the current tuple

5.Exit

Enter you choice (1/2/3/4/5) : 3

Enter an element to remove : 20

Removed 20 from tuple.

Choose an action :

1.Add an element to tuple :

2.Access an element in the tuple :

3.Remove an element from the tuple :

4.Display the current tuple

5.Exit

Enter you choice (1/2/3/4/5) : 4

Cuurent tuple : ('10', '30')

Choose an action :

1.Add an element to tuple :

2.Access an element in the tuple :

3.Remove an element from the tuple :

4.Display the current tuple

5.Exit

Enter you choice (1/2/3/4/5) : 5