PYTHON LAB

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1. Write a Python program to Create a tuple of your choice and perform all the possible operations, Functions and methods on it. Try to add data in to tuple by converting it into a list.

q1.py

```
print("Name : Vinayak Kumar Singh \nRegisteration Number:23MCA1030")
print("\nCreating Tuple and priniting it.")
Tuple1 = ('TupleData1', 'TupleData2')
print(Tuple1)

print("\nPerforming Tuple Operations")
print("\n1.Concatenation operator")
tuple1=(10,20,30)
tuple2=(40,70)
print(tuple1+tuple2)
print("\n2. Repetition operator")
tuple1=(10,20,30)
print(tuple1*3)
print("\n3.Comparison Operator")
tuple1=(10,20,30)
tuple2=(40,70)
print(tuple1>tuple2)

print("\nPerforming Tuple Functions")
print("\n1.Max Function")
tuple1 =( 10, 95, 50, 80 )
print( max(tuple1))
print("\n2.min() method")
tuple1=( 10, 95, 50, 80 )
print( min(tuple1))
print("\n3.Index() method")
tuple1 =( 10, 95, 50, 80 )
x=tuple1.index(50)
print(x)
print("\n4.count() method")
tuple1 =( 10, 95, 50, 80,10,20,30,10 )
x=tuple1.count(10)
print(x)
print("\n5.tuple() method")
list1=[10,30,50]
tuple1= tuple( list1)
print(tuple1)
print("\n6.len() method")
tuple1 = (10, 6, 13, 19, 25, 12)
result = len(tuple1)
print(result)

print("\nConverting the tuple into a list")
tuples3 = (10, 20, 40, 60, 80,100)
customlist = list(tuples3)
print(type(customlist))
print(customlist)
```

Output:-

```
[Running] python -u "/home/student/23MCA1030/q1.py"
Name : Vinayak Kumar Singh
Registeration Number:23MCA1030

Creating Tuple and priniting it.
('TupleData1', 'TupleData2')

Performing Tuple Operations

1.Concatenation operator
(10, 20, 30, 40, 70)

2. Repetition operator
(10, 20, 30, 10, 20, 30, 10, 20, 30)

3.Comparison Operator
False

Performing Tuple Functions

1.Max Function
95

2.min() method
10

3.Index() method
2

4.count() method
3

5.tuple() method
(10, 30, 50)

6.len() method
6

Converting the tuple into a list
<type 'list'>
[10, 20, 40, 60, 80, 100]

[Done] exited with code=0 in 0.02 seconds
```

2. Develop a program that tracks the progress of a race with multiple participants. Write a Python program that creates a tuple for each participant that contains their name, start time, and finish time. The program should then calculate and output the race time for each participant by subtracting their start time from their finish time.

Code:-

q2.py

```python
print("Name : Vinayak Kumar Singh \nRegisteration Number: 23MCA1030")

participants = [
        ("1. Vinayak Kumar Singh", 10.4, 18.2),
        ("2. Aman Nirmalkar", 12.0, 20.5),
        ("3. Aniket", 11.0, 19.5)
    ]
for participant in participants:
        name, start_time, finish_time = participant
        race_time = finish_time - start_time
        print(name+" race time is ","{:.2f}".format(race_time)," in seconds")
```

Output:-

```
[Running] python -u "/home/student/23MCA1030/q2.py"
Name : Vinayak Kumar Singh
Registeration Number: 23MCA1030
('1. Vinayak Kumar Singh race time is ', '7.80', ' in seconds')
('2. Aman Nirmalkar race time is ', '8.50', ' in seconds')
('3. Aniket race time is ', '8.50', ' in seconds')

[Done] exited with code=0 in 0.032 seconds
```