[LAB TASK NO-7]

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DATE

Program 1: Write a program to create an empty tuple**.**

INPUT:

```
#Create an empty tuple
x = ()
print(x)
#Create an empty tuple with tuple() function built-in Python
tuple1 = tuple()
print(tuple1)
```

OUTPUT:

()

()

Program 2: Write a Python program to create a tuple with different data types.

INPUT:

```
tuple2 = ("tuple", False, 3.2, 1)
print(tuple2)
```

OUTPUT:

('tuple', False, 3.2, 1)

Program 3: Write a Python program to get the 4th element and 4th element from last of a tuple.

INPUT:

```
tuplex = ("U", "I", "T", 2, 0, 1, 8, "b", "a", "t", "c"
, "h")
item = tuplex[3]
print(item)
item1 = tuplex[-4]
print(item1)
```

OUTPUT:

```
2

a
```

PROGRAMMING EXERCISE

1.Use inbuilt min and max functions to perform the task of getting the minimum and maximum value of in a list of tuples for a particular element position in a tuple.

Sample = [(2, 3), (4, 7), (8, 11), (3, 6)]

Input:

```
Sample  = [(2, 3), (4, 7), (8, 11), (3, 6)]
ind1=max(Sample)[0],min(Sample)[0]
ind2=max(Sample)[1],min(Sample)[1]
print("The Max and Min value in 1 index",ind1)
print("The Max and Min value in 2 index",ind2)
```

Output:

The Max and Min value in 1 index (8, 2)

The Max and Min value in 2 index (11, 3)

2.A dartboard of radius 10 and the wall it is hanging on are represented using the two dimensional coordinate system, with the board's center at coordinate (0; 0). Variables x and y store the x- and y-coordinate of a dart hit. Write an expression using variables x and y that evaluates to True if the dart hits (is within) the dartboard, and evaluate the expression for these dart coordinates:

(a) (0, 0)

Input:

```
from math import*
t1=(0,0)
t2=(0,0)
l1=(t2[0]-t1[0])**2
l2=(t2[1]-t1[1])**2
r=sqrt(l2+l1)
if r<10:
    print(True)
else:
    print(False)
```

Output:

True

(b) (10, 10)

Input:

```
from math import*
t1=(0,0)
t2=(10,10)
l1=(t2[0]-t1[0])**2
l2=(t2[1]-t1[1])**2
r=sqrt(l2+l1)
if r<10:
    print(True)
else:
    print(False)
```

Output:

False

(c) (6, 6)

Input:

```
from math import*
t1=(0,0)
t2=(6,6)
l1=(t2[0]-t1[0])**2
l2=(t2[1]-t1[1])**2
r=sqrt(l2+l1)
if r<10:
    print(True)
else:
    print(False)
```

Output:

True

(d) (7, 8)

Input:

```
from math import*
t1=(0,0)
t2=(7,8)
l1=(t2[0]-t1[0])**2
l2=(t2[1]-t1[1])**2
r=sqrt(l2+l1)
if r<10:
    print(True)
else:
    print(False)
```

Output:

False

3. Write Python expressions corresponding to these statements:

(a)The number of characters in the word "anachronistically" is 1 more than the number of characters in the word "counterintuitive."

Expression:

```
len("anachronistically")>len("counterintuitive")
```

(b)The word "misinterpretation" appears earlier in the dictionary than the word "misrepresentation".

Expression:

```
a="misinterpretation"
b="misrepresentation"
a<b
```

(c)The letter "e" does not appear in the word "floccinaucinihilipilification."

Expression:

```
for i in "floccinaucinihilipilification":
    i!="e"
```

(d)The number of characters in the word "counterrevolution" is equal to the sum of the number of characters in words "counter" and "resolution."

Expression:

```
a=len("counterrevolution")
b=len("counter")+len("resolution")
```

a==b

4.Write a program in Python that holds an empty tuple and fill that tuple after taking user input for names of provinces of Pakistan and fill an empty tuple and print.

INPUT:

```
t1=tuple()
l1=list(t1)
for i in range(1,5):
    pname=input("Enter the Name of Provience Of
Pakistan")
    l1.append(pname)
t2=tuple(l1)
print(t2)
```

OUTPUT:

Enter the Name of Province Of Pakistan **Punjab**

Enter the Name of Province Of Pakistan **Baluchistan**

Enter the Name of Province Of Pakistan **Sindh**

Enter the Name of Province Of Pakistan **KPK**

('Punjab', 'Baluchistan', 'Sindh', 'KPK')