Experiment No. 07

*Lab 07 –Python Tuples.*

**Lab Objectives:**

1. Introduction to Python Tuples and Sets

Tuple:

A tuple is container which holds a series of comma separated values (items or elements) between parentheses such as an (x, y) co-ordinate. Tuples are like lists, except they are immutable (i.e. you cannot change its content once created) and can hold mix data types.

**Sets in Python**

A set is an unordered collection of items. Every element is unique (no duplicates) and must be immutable (which cannot be changed).

However, the set itself is mutable. We can add or remove items from it.

Sets can be used to perform mathematical set operations like union, intersection, symmetric difference etc.

**Program 2:Write a program to create an empty tuple.**

**Code:**

#Create an empty tuple x = ()

print(x)

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

print(tuple1)

**Output:**

**Student Name:**

**Roll No:**

**Section:**

**Program 3:Write a Python program to create a tuple with different data types.**

**Code:**

#Create a tuple with different data types tuple2 = ("tuple", False, 3.2, 1) print(tuple2)

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

**Code:**

#Get an item of the tuple

tuplex = ("U", "I", "T", 2, 0, 1, 8, "b", "a", "t", "c" , "h")

print(tuplex)

#Get item (4th element)of the tuple by index item = tuplex[3]

print(item)

#Get item (4th element from last)by index negative item1 = tuplex[-4]

print(item1)

**Output:**

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)]

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)

(b) (10; 10) (c) (6; 6)

(d) (7; 8)

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."

(b)The word "misinterpretation" appears earlier in the dictionary than the word "misrep- resentation."

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

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

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 n fill an empty tuple and print.

5. Start by assigning to variables monthsL and monthsT a list and a tuple, respectively, both containing strings 'Jan', 'Feb', 'Mar', and 'May', in that order. Then attempt the following with both containers:

(a)Insert string 'Apr' between 'Mar' and 'May'. (b)Append string 'Jun'.

(c)Pop the container.

(d)Remove the second item in the container. (e)Reverse the order of items in the container.

**Note:** when attempting these on tuple monthsT you should expect errors.