**GUJARAT TECHNOLOGICAL UNIVERSITY**

**INFORMATION TECHNOLOGY**

**PYTHON PROGRAMMING**

**SUBJECT CODE: 2180711**

**B.E. 8th SEMESTER**

**PRACTICAL LIST**

**ACADEMIC YEAR: 2019-20 (EVEN)**

1. Develop Programs to understand the control structure of python

* Write steps to install python and pycharm IDE for Windows Python Programming.
* Write a program to implement all arithmetic operators.
* Write a program to find largest out of three numbers given by users
* Display all prime numbers within range given by users

1. Develop Programs to learn different type of structures(list, dictionary, tuples) in Python

* Create a list (list1) of ten elements. Separate the elements of list1 in to two list (say list2 and list3), one for storing even and other for odd from list1.
* Create list1 and list2. Copy the content in list3
* Create two 3X3 matrix using list and store addition in result matrix.
* W.A.P to demonstrate class concepts along with constructor and destructor.
* Demonstrate use of dictionary and all its functions which can be operated on dictionary.(i.e len(),items(),keys(),values() etc…..)

1. Develop Programs to learn concept of functions scoping, recursion and list mutability.

* Write a program to generate Fibonacci Series using recursion
* W.A.P to create a calculator(for each operator keep separate function)

1. Develop programs to understand working of exception handling

* W.a.p to handle file opening(file not found) and divide by zero exception
* W.A.P to handle exception generated due to immutability of tuple element

1. Develop programs for data structure algorithms using python –searching, sorting and has tables.

* W.A.P to perform selection sort
* W.A.P to merge sort.
* W.A.P to do binary search on sorted elements.

1. Develop programs to understand concepts of threading.

* Demonstrate the custom thread and use of join function.
* Demonstrate the use of lock for threading.

1. Develop program for socket programming in Python.

* Write a program to perform TCP server and client.
* Write a program to perform UDP server and client.

1. Demonstrate various functions of turtle.
2. Develop programs to demonstrate Tkinter for GUI

* Demonstrate the use of button using Tkinter.
* Demonstrate the use of radio button using Tkinter.

1. Learn to plot different types of graphs using PyPlot.
2. Implement classical ciphers using python.