Python Lab – List of Practical
(Accept inputs from user)

[1]. Basic Programming Elements (Operators, if-else, looping,...)
Write Python programs to

- Display odd and even numbers between a given range
- Print an n digit number in reverse order
- Print Fibonacci series up to n members
- Print all the numbers between 100 to 200 which are divisible by 4 and 7

[2] Python - LIST
Write Python program to....

- Find number of list elements of different data types
- Check the presence/absence of a given value in the list; then display total number of occurrences and index of the position of each occurrence.
- Sort list elements; press 1 for ascending order and, press 2 for descending order (choice based)

[3] Python – User Defined Methods (UDM)
Write Python program using UDM to....

- Find the factorial of a given number
- Calculate and return simple interest
- Calculate and display gross salary of two categories of employees, permanent and temporary.
  For permanent - gross salary = net salary + Bonus of 15% of net salary, no bonus for temporary employee

[4] Python – Exception Handling

- Write a program to demonstrate EH in python for handling two exceptions, namely, IndexError: list index out of range and ZeroDivisionError
- Write a program to RAISE and handle user defined exception.

[5] Python – OOPs

- Write an object oriented program to demonstrate use of default and parameterized constructor.
- Create two objects distance1 and distance2 for a class called DISTANCE, Accept values of distance1 and distance2 from the user in terms of feet and inches and finally calculate and display the sum of two distances in feet and inches.
- Write a program to implement multilevel inheritance (use of super keyword and method overriding is must)

[6] Python – GUI and Database Connection

- Design two interfaces, one for user registration and the other one for displaying all registered users from the database.

[7] Python – Exploratory Data Analysis

Select an appropriate dataset and perform EDA to answer following questions. Create a Jupyter Notebook and start with installing required python libraries and loading dataset into dataframe.

- Number of independent variables
- What is the dependent variable in the selected dataset
- Display top 5 rows from the selected dataset
- Name of the independent variable having minimum average value
- Name of the independent variable having high standard deviation
- Find the total count of missing values in each column(independent variables). Visualize all missing values, and identify the independent variable having maximum number of missing values?
- Choose one numeric independent variable having missing values and replace the missing values with the average value of the column.
- Choose one independent variable and show frequency distribution using histogram
- Name of the independent variable having outliers? Use Box-plot to visualize.
- Display Correlation Matrix and find two pairs of independent variables, one having strong positive correlation and the other pair having strong negative correlation.
- Use scatter plots to visualize the correlation between independent and dependent variables (use same two pairs identified in previous question).

Program Layout - Programs included in the python lab journal must have following structure and must have proper indentation, variable names, and comments.

.....

Title:

.....

.....

Source Code:

.....

.....

Sample Output:

.....