Data Structures Lab

Syllabus: Week wise :

1. C program to illustrate concepts of arrays, structures, unions and enumerated data types.
2. Program to convert infix to post fix notation
3. Program to evaluate postfix notations
4. Program to illustrate tree traversals   a)In order   b)Preorder   c)Post order
5. Program to illustrate insertion, deletion and searching in Binary Search Tree.
6. Program to illustrate Insertion, deletion and Rotation on AVL Trees.

7. Program to illustrate Graph traversals
      •Breadth First Search
      •   Depth First Search

8. Program to implement hash table using linear and quadratic probing

Python Programming Lab

Description:

Python Programming is a general-purpose interpreted, interactive, object-oriented, and high-level programming language. This Lab includes Basics of Python like variables, strings, operators, control statements, functions, data structures and file handling. This lab also includes concepts of objected oriented programming like classes, inheritance, exception handling.

Outcomes:

- To learn how to use lists, tuples, and dictionaries in Python programs.
- To learn how to design object-oriented programs with Python classes for inheritance.
- To learn how to use exception handling in Python applications for error handling.
- To learn how to read and write files in Python.

Syllabus

Exercise 1

a) Installation and Environment setup of python.

b) Write a program to demonstrate the use of basic Data Types

c) Write a program to demonstrate the Operators and Expressions

d) Write a program to demonstrate the Functions and parameter passing Techniques.

Exercise 2

a) Write a Program to implement

i. Packages   **ii**. Modules   **iii**. Built-in Functions

b) Write a Program to implement

i. List   **ii**. Tuple   **iii**. Dictionaries

c) Programs on Stings, String Operations and Regular Expressions

Exercise 3

a) Write a Program to implement Class and Object

b) Write a Program to implement Static and Instance methods, Abstract Classes and Interfaces.

Exercise 4

a) Write a program to compute distance between two points taking input from the user (Pythagorean Theorem)

b) Write a program to convert a given decimal number to other base systems

Exercise 5

a) Write a program to implement Inheritance

b) Write a program to implement Polymorphism

Exercise 6

a) Write a program to implement Files

b) Write a program to Exception Handling**.**