April 8, 2024

Assignment – 4

[100 Points]

CSC-413-02
Spring 2024

San Francisco State University
Computer Science Department

Assignment Goal:

Familiarization with the Binary Search Tree

Objective:

The objective of this assignment is to implement a binary search tree (BST) data structure and perform various traversal operations on it

Tasks:

1. Implement a binary search tree class with the following functionalities:

   (a) Insertion of elements into the tree [15 pts]

   (b) Deletion of elements from the tree [15 pts]

   (c) Search for an element in the tree [15 pts]

   (d) In-order traversal of the tree [15 pts]

   (e) Pre-order traversal of the tree[15 pts]

   (f) Post-order traversal of the tree [15 pts]

2. Create a driver program to test the implemented functionalities of the binary search tree. [10 pts]

Submission:

Submit the following for evaluation:

1. Source code files containing the implementation of the binary search tree class and the driver program
2. Any necessary instructions or documentation to compile and run the code.

Evaluation Criteria:

Your submission will be evaluated based on the following criteria:

1. Correctness and completeness of the implementation
2. Efficiency of the implemented algorithms
3. Clarity and organization of the code
4. Adherence to best coding practices and documentation standards as specified in the coding guidelines document
5. Accuracy of the test cases and demonstration of functionality