

List of Assignments for Data Structures (CS2233)

Assignment 1:

1. Using an integer array,
 - a. Insertion Sort
 - b. Selection Sort
 - c. Bubble Sort
2. Define a structure containing roll number(string), name(string), age(integer), and gender(string). Create an array of this structure. Take values from the user with duplicate validation for roll number and sort on the basis of roll number.
3. Implement queue using a circular array
4. Implement stack using arrays

Assignment 2:

1. Implement linked list insertion, search, and deletion on a structure containing roll number, name, age, and gender. Maintain uniqueness for roll number.
2. Implement queue using linked lists.

Assignment 3:

1. Implement binary search tree with insertion, deletion, and search.

Assignment 4:

1. Implement Kruskal's algorithm for minimum spanning tree.

Assignment 5:

1. Implement Priority Queue.
2. Implement Heap Sort

Assignment 6:

1. Implement Prim's algorithm for minimum spanning tree.

Assignment 7:

1. Implement Red-Black trees with insertion and deletion.

Assignment 8:

1. Implement hashing using a suitable function. To resolve collisions, implement the following methods:
 - a. Linked lists
 - b. Overflow area
 - c. Linear Probing
 - d. Quadratic Probing

Assignment 9:

1. Implement B tree with $n=5$ assuming that entries must be unique.

Assignment 10:

1. Implement insertion, search, and deletion for a Skip List.

Assignment 11:

1. Implement a binomial heap with the following functions:
 - a. Insertion
 - b. Find minimum
 - c. Union
 - d. Delete minimum