CSE 212
Data Structures Lab
Topics

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Topics

From Saida's notes.

1. Sorting
   (a) Bubble sort
   (b) Insertion sort
   (c) Merge sort
2. Linked list
   (a) Insertion
   (b) Deletion
   (c) Search
   (d) Insert after given node
3. Stack
4. Doubly linked list
5. Types of linked list
   (a) Header linked list
   (b) Circular linked list
   (c) Header-circular linked list
6. Queue
7. Some problems
   (a) Implementing stack with a queue

(b) Implementing two stacks with an array

(c) Implementing a stack with two queues

(d) Implementing a queue with two stacks

(e) Bracket balancing

(f) Parenthesis balancing

8. Types of algebraic notation considering order
   (Generate trees from these notations. Generate these notations from trees. Evaluate expressions given in these notations.)

   (a) Postfix

   (b) Infix

   (c) Prefix

9. Definition and classification of graph and tree.
   Although theory oriented, the terminology will probably be used in the question.

10. Find the diameter of a tree.

11. Binary search tree

    (a) Insertion

    (b) Deletion

    (c) Search

    (d) Maximum

    (e) Minimum

    (f) Successor

    (g) Predecessor

    (h) Traversal in pre-, in-, post-order.

    (i) Online judge problem 1136- Parliament

12. Heap

    (a) Heapify (min, max)

    (b) Insertion

(c) Deletion

13. Hashing
    (a) Hash function
    (b) Solutions to hash collision
        i. Open addressing
        ii. Chaining
        iii. Linear probing
14. Graph representation
    (a) Adjacency list
    (b) Adjacency matrix
15. Graph algorithms
    (a) BFS
    (b) DSU
    (c) DFS
    (d) Top-sort