

Stack and Queue Operations

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Stacks and Queues

Stack (LIFO - Last In First Out): A data structure where elements are added and removed from the same end (top).

Operations:

- **Push:** Insert an element at the top.
- **Pop:** Remove an element from the top.
- **Peek:** View the top element.

Applications:

- **Expression Conversion:** Convert infix to postfix or prefix.
- **Expression Evaluation:** Evaluate postfix expressions.

Queue (FIFO - First In First Out): Elements are added from the rear and removed from the front.

Operations:

- **Enqueue:** Insert an element at the rear.
- **Dequeue:** Remove an element from the front.

Types of Queues:

- **Simple Queue:** Standard FIFO queue.
- **Circular Queue:** Connects the end to the front.
- **Priority Queue:** Elements dequeued based on priority.
- **Deque (Double-ended Queue):** Insertion and deletion can occur at both ends.

