

EMERGENCY ROOM QUEUE MANAGEMENT

Using Doubly Linked List

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1. PROBLEM STATEMENT

A hospital ER needs a flexible queue for patients:

- Critical: Add to front
- Walk-in: Add to end
- Nurse priority: Insert at exact position k (1-based)
- Treat: Remove from front

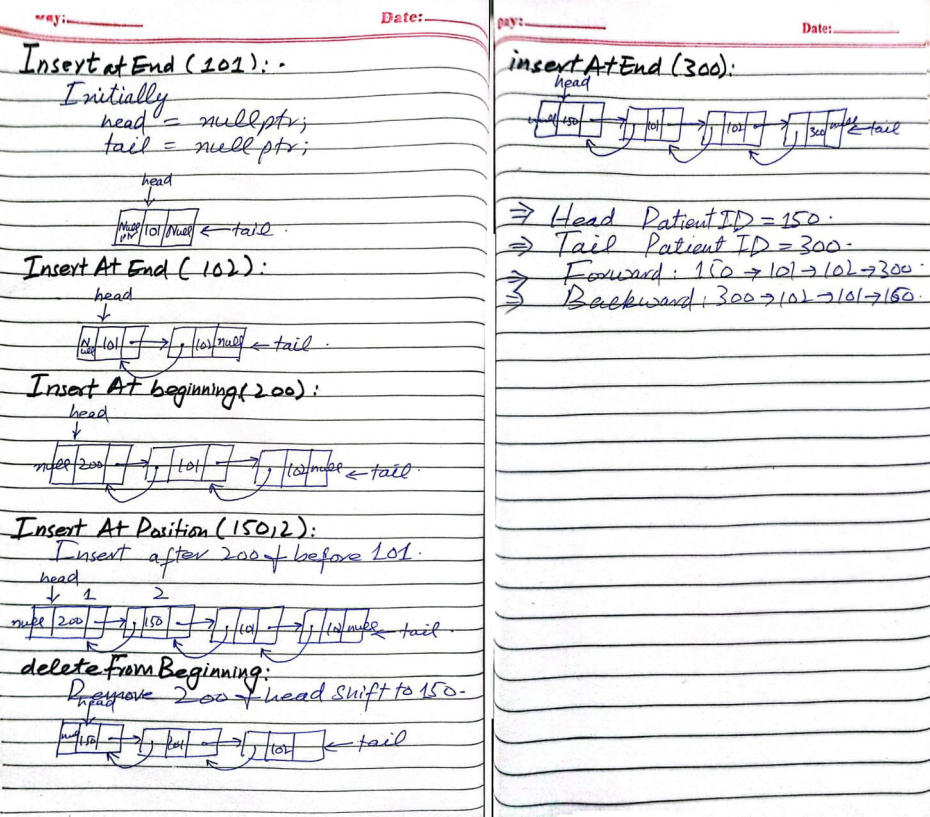
Handles dynamic changes with Doubly Linked List.

2. PROPOSED SOLUTION

- Node: patientID, prev\*, next\*
- Operations: insertAtBeginning(), insertAtEnd(), insertAtPosition(k), deleteFromBeginning()
- Edge Cases: Empty list, single node, pos=1, pos > length (→ end)

(See C++ Code on GitHub)

3. GRAPHICAL REPRESENTATION (Dry Run)



- GitHub Repo:
- Complete C++ Code
- Poster PNG
- Poster PDF

Thank You!