

Week 2 - Patient Management System for a Multi-Specialty Hospital using Doubly Linked List

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You are tasked with developing a Patient Management System for a multi-specialty hospital that handles outpatients in the following categories:

1. Emergency Patients – must be given top priority and inserted at the beginning of the queue.
2. Walk-in Patients – added at the end of the queue.
3. Appointment Patients – inserted at a specific position based on appointment time.

The hospital requires the following operations:

- Insert Patient:
 - At the beginning (for emergencies)
 - At the end (walk-ins)
 - At a specific position (scheduled appointments)
- Delete Patient:
 - From the beginning (after consultation)
 - From a specific position (if the patient leaves)
 - From the end (appointment cancelled)
- Display the current patient queue

Instructions:

1. Define a Patient node with the following attributes:
 - Patient ID
 - Name
 - Category (Emergency / Walk-in / Appointment)
 - Pointers to previous and next nodes
2. Implement the doubly linked list to manage the queue dynamically.
3. Write functions to perform:
 - Insertion at beginning, end, and specific position
 - Deletion from beginning, end, and specific position
 - Displaying the queue
4. Provide a menu-driven program for the user (hospital staff) to perform the above operations interactively.
