Hospital Emergency Room Queue Management System

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Problem Statement:

To simulate an Emergency Room Queue System using a Doubly Linked List, where:

- Critical patients are treated first (insert at beginning).
- Normal patients are added at the end.
- Special patients are admitted at a specific pusition.
- Treated patients are deleted from the beginning.

Proposed Solution

We use a Doubly Linked List (DLL) where each node represents a patient with:

- patient_id
- prev pointer (link to previous patient)
- next pointer (link to next patient)

Graphical Representation

insertAtEnd(101)

Null ← [101] → Null

insertAtEnd(102)

NULL← [200] ⇄ [101] ⇄ [102] →Null

insertAtBeginning(200)

NULL← [200] ⇄ [101] ⇄ [102] →Null

insertAtPotions(150_2)

NULL← [150] ⇄ [101] ⇄ [102] → Null

deleteFromBeginning()

NULL← [150] ⇄ [101] ⇄ [102] →Null

insertAtEnd(300)

NULL← [150] ⇄ [101] ⇄ [300] →Null