# Dry Run for the mid term paper task.

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## Initial State

head = nullptr  
tail = nullptr  
//list is empty

## Step 1 – insert\_at\_last(102)

A new node with patient ID 102 is added.  
Both head and tail point to this node.  
  
head → [102] ← tail

## Step 2 – insert\_in\_start(200)

A new node with ID 200 is added at the start.  
It becomes the new head.  
  
head → [200]<-> [102] ← tail

## Step 3 – insert\_at\_curr(150, 2)

Node 150 is inserted at position 2, between 200 and 102.  
  
head → [200] <-> [150] <-> [102] ← tail

## Step 4 – delete\_in\_start()

The first node (200) is deleted.  
Head now points to 150.  
  
head → [150] <-> [102] ← tail

## Step 5 – insert\_at\_last(300)

A new node (300) is added at the end.  
It becomes the new tail.  
  
head → [150] <-> [102] <-> [300] ← tail

## Final State

head → [150] <-> [102] <-> [300] ← tail  
  
Forward Traversal: 150 → 102 → 300  
Backward Traversal: 300 → 102 → 150  
Head ID: 150  
Tail ID: 300