❖ Queue:

- Explanation- This Java program implements a priority queue using a Min-Heap structure. It allows users to enqueue elements with associated priorities and dequeue the highest priority element efficiently. The main operations include inserting elements into the heap and extracting the minimum (highest priority) element while maintaining the heap properties.
- Time Complexity- Enqueue: O(logn)
  Dequeue: O(logn)
  Display: O(n)
- Space Complexity- O(m)
- Flowchart-

[Start]

|

v

[Input Capacity]

|

v

[Initialize Priority Queue]

|

v

[Choose Test Case]

|

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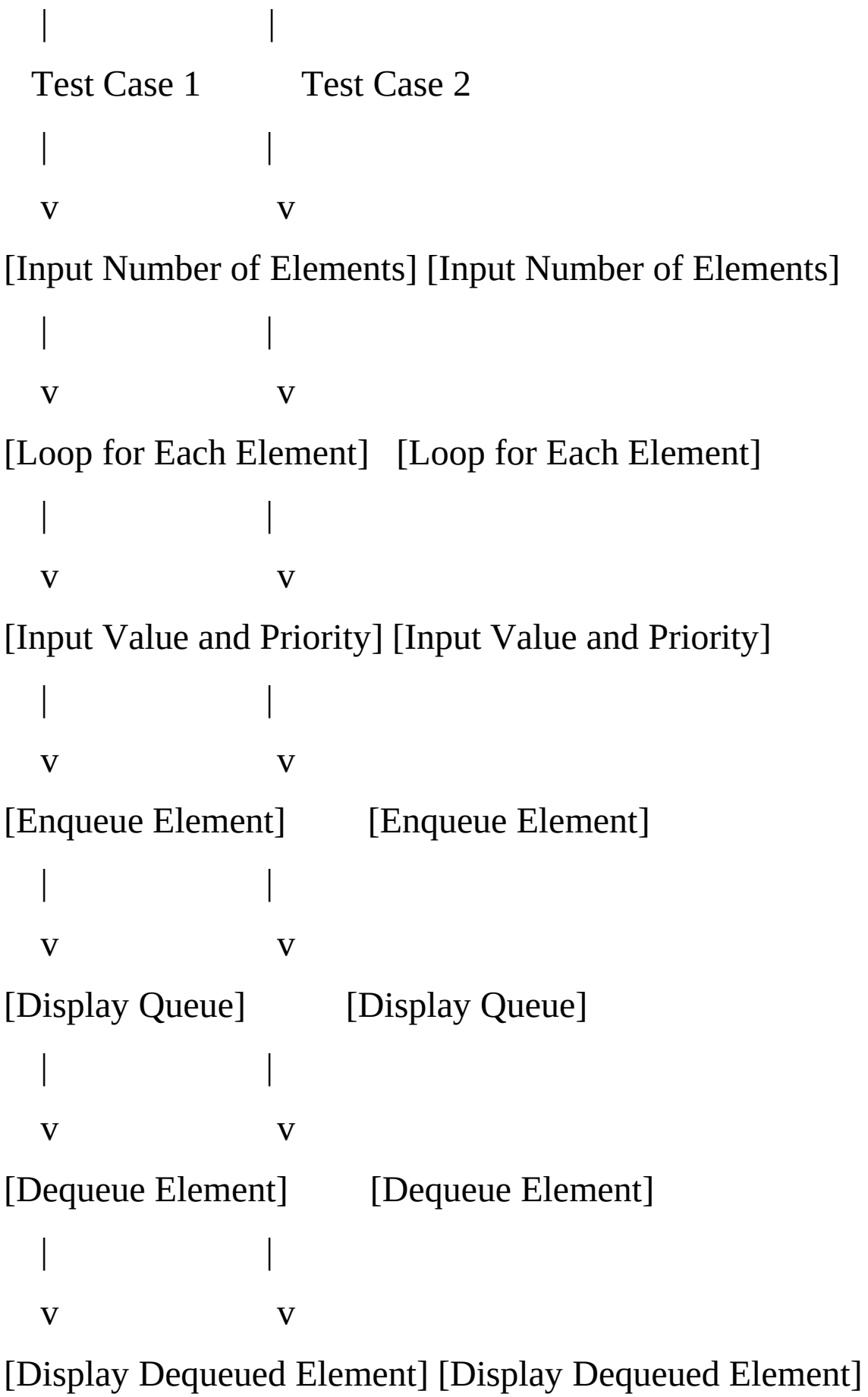
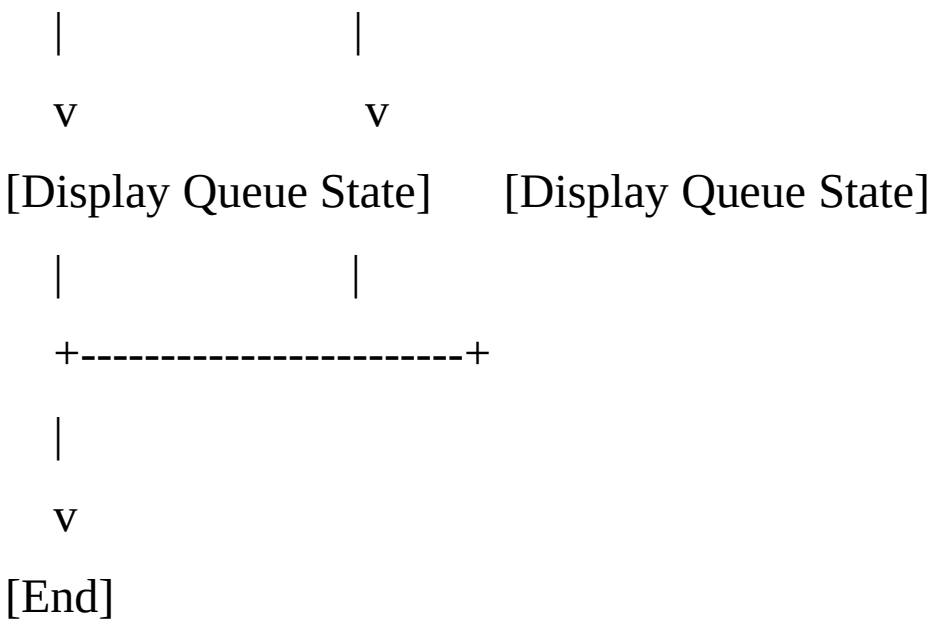

Test Case 1
Test Case 2
[Input Number of Elements]
[Input Number of Elements]
[Loop for Each Element]
[Loop for Each Element]
[Input Value and Priority]
[Input Value and Priority]
[Enqueue Element]
[Enqueue Element]
[Display Queue]
[Display Queue]
[Dequeue Element]
[Dequeue Element]
[Display Dequeued Element]
[Display Dequeued Element]


|
|
v
v
[Display Queue State]
[Display Queue State]
|
|
+----------+
|
v
[End]