
FACE
Prep

Priority Queue using DLL

Priority Queue using DLL

- Priority queue is abstract data type which behave similar to the linear queue except that each element has priority.

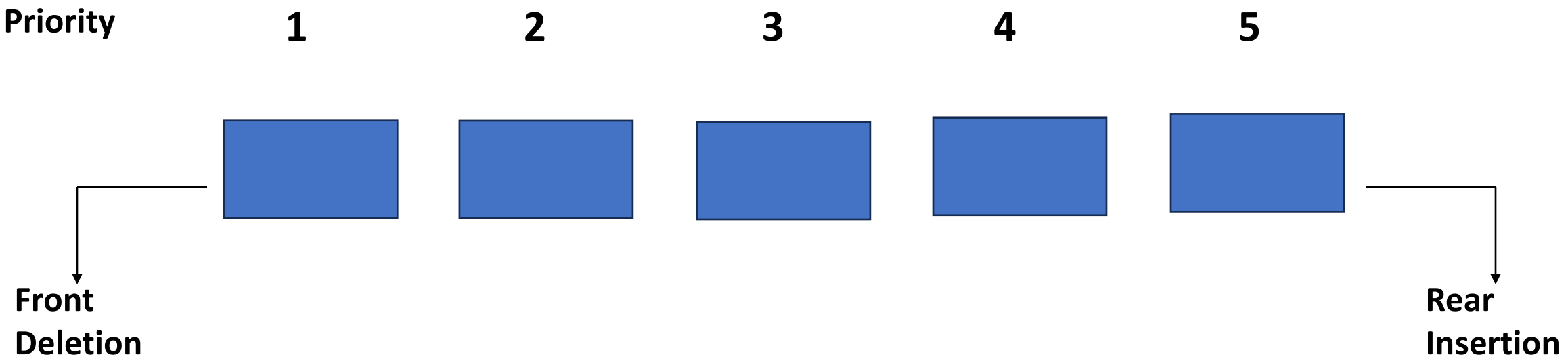
Example:

Hospital Emergency Queue

The patients will be treated according to their medical condition. (i.e: Person in pain – High priority).

Priority Queue using DLL

Example:



The priority of the elements in the priority queue will determine the order of removal of the data elements.

```
1  import java.util.*;
2
3  class Main {
4
5      static class Node {
6
7          int data;
8
9          int priority;
10
11         Node next, prev;
12
13         public Node(int data, int priority) {
14
15             this.data = data;
16
17             this.priority = priority;
18
19         }
20
21     }
22
23     private static Node head = null;
```

```
1       private static void push(int data, int priority) {
2
3           if (head == null) {
4
5                   Node newNode = new Node(data, priority);
6
7                       head = newNode;
8
9                       return;
10
11          }
12
13          Node node = new Node(data, priority);
14
15                  Node temp = head, parent = null;
16
17                  while (temp != null && temp.priority >= priority) {
18
19                                  parent = temp;
20
21                                  temp = temp.next;
22
                    }
                    if (parent == null) {
                                    node.next = head;
                                    head.prev = node;
                                    head = node; }
```

```
1        else if (temp == null) {
2
3                    parent.next = node;
4
5                    node.prev = parent;
6        }
7
8        else {
9
10                   parent.next = node;
11
12                   node.prev = parent;
13
14                   node.next = temp;
15
16                   temp.prev = node;
17
18        }
19   }
20
21   private static int peek() {
22
23           if (head != null) {
24
25                           return head.data;
26
27           }
28           return -1; }
```

```
1      private static int pop() {
2
3          if (head != null) {
4
5                  int curr = head.data;
6
7                  head = head.next;
8
9                  if (head != null)
10
11                         head.prev = null;
12
13                 return curr;
14
15         }
16         return -1;
17
18     }
19     public static void main(String[] args) {
20
21             Scanner sc=new Scanner(System.in);
22             int n=sc.nextInt();
23             for(int i=0;i<n;i++)
24
25             {
26                 int data=sc.nextInt();
```

```
1                       int pri=sc.nextInt();
2
3                       push(data, pri);
4                   }
5                   System.out.println(peek());
6
7                   System.out.println(pop());
8                   System.out.println(pop());
9                   System.out.println(peek());
10
11              }
12  }
13
14
15
16
17
18
19
20
21
22
```

THANK YOU

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