
FACE
Prep

# Sort Bitonic DLL

# Sort the bitonic doubly linked list

**Problem:** Sort the given biotonic doubly linked list

Below diagram shows a Biotonic double linked list.

```
1   import java.util.*;
2   Class Main {
3       static class Node {
4           int date;
5           Node next;
6           Node prev;
7       };
8       static Node sort(Node head) {
9           if(head==null || head.next==null)
10                  return head;
11          Node front = head;
12          Node last = head;
13          Node res = new Node();
14          Node resend = res;
15          Node next;
16          while(last.next ! = null)
17                  last = last.next;
18
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```

```
1       while(front ! = last) {
2             if(last.data <= front.data) {
3                   resend.next = last;
4                   next = last.prev;
5                   last.prev.next = null;
6                   last.prev = resEnd;
7                   last = next;
8                   resend  = resend.next;
9             }
10            else {
11                  resEnd.next = front;
12                  next = front.next;
13                  front.next = null;
14                  front.prev = resEnd;
15                  front = next;
16                  resend = resend.next;
17                  }
18            }
19
20
21
22
```

```
1        resEnd.next = front;
2        front.prev = resend;
3
4        return res.next;
5     }
6     static Node push(Node head_ref, int new_data) {
7
8        Node new_node = new Node();
9        new_node.data = new_data;
10       new_node.prev = null;
11
12       new_node.next = head_ref;
13       if( head_ref ! = null)
14             head_ref.prev = new_node;
15
16       head_ref = new_node;
17       return head_ref;
18       }
19
20
21
22
```

```
1       static void printlist(Node head) {
2
3           if(head == null)
4
5                   System.out.print("Doubly Linked list is empty");
6           while(head ! = null) {
7
8                   System.out.print(head.data + " ");
9                   head = head.next;
10          }
11      }
12      public static void main(String args[]) {
13          Scanner sc = new Scanner(System.in);
14          int n=sc.nextInt();
15
16          Node head = null;
17          int arr[] = new int[n];
18
19
20
21
22
```

```
        for(int i=0;i<n;i++) {
                int m=sc.nextInt();
                head = push(head,m);
        }
        head = sort(head);
        System.out.pritnln("After sorting:");
        printList(head);
    }
}
```

# THANK YOU

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