FACE
Prep

Sort without extra space

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Sort the queue

Problem:

Sort the given queue without using any extra space

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Queue

Queue follows FIFO i.e) First In First Out

Insertion is said to be enqueue, which can be done in rear end

Deletion is said to be dequeue, which can be done in front end

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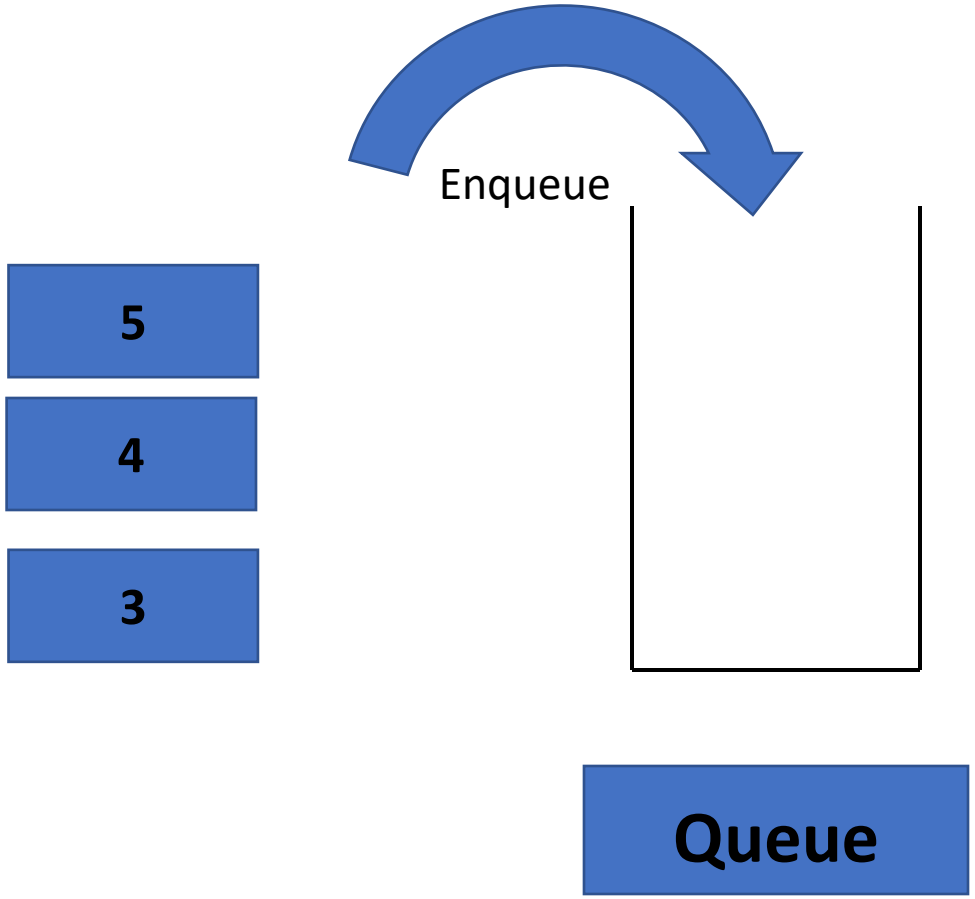
Queue

Enqueue – First In



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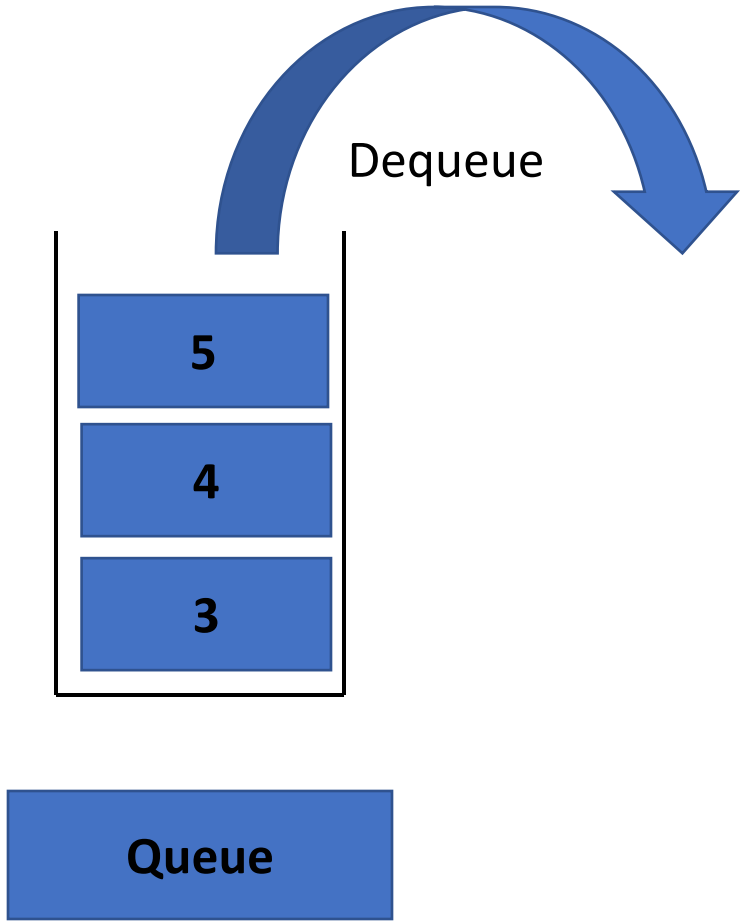
Queue

Dequeue – First Out



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```
1   import java.util.*;
2   class Main
3   {
4         public static int minIndex(Queue<Integer> list, int sortIndex)
5         {
6         int min_index = -1;
7         int min_value = Integer.MAX_VALUE;
8         int s = list.size();
9         for (int i = 0; i < s; i++)
10        {
11              int current = list.peek();
12              list.poll();
13              if (current <= min_value && i <= sortIndex)
14              {
15                    min_index = i;
16                    min_value = current;
17              }
18              list.add(current);
19        }
20        return min_index;
21  }
22
```

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```
23 public static void insertMinToRear(Queue<Integer> list, int min_index) {
24             int min_value = 0;
25             int s = list.size();
26             for (int i = 0; i < s; i++)
27             {
28             int current = list.peek();
29             list.poll();
30             if (i != min_index)
31                   list.add(current);
32             else
33                   min_value = current;
34             }
35             list.add(min_value);
36       }
37       public static void sortQueue(Queue<Integer> list) {
38             for(int i = 1; i <= list.size(); i++)
39             {
40                   int min_index = minIndex(list,list.size() - i);
41                   insertMinToRear(list, min_index);
42             }
43       }
44
```

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```
45 public static void main (String[] args)
46       {
47             Queue<Integer> list = new LinkedList<Integer>();
48             list.add(6);
49             list.add(11);
50             list.add(15);
51             list.add(4);
52             sortQueue(list);
53             while(list.isEmpty()== false)
54             {
55                   System.out.print(list.peek() + " ");
56                   list.poll();
57             }
58       }
59 }
60
61
62
63
64
65
66
```

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THANK YOU

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