

ArrayQueue.java

```
1/*
2 * Written by JJ Shepherd
3 */
4public class ArrayQueue <T> implements QueueI<T>
5{
6    private T[] queue;
7    private int headIndex;//First element
8    private int tailIndex;//First NULL element / 1 past the last element
9    public static final int DEF_SIZE = 100;
10   public ArrayQueue()
11   {
12       init(DEF_SIZE);
13   }
14   public ArrayQueue(int size)
15   {
16       init(size);
17   }
18   private void init(int size)
19   {
20       headIndex = tailIndex = 0;
21       if(size >= 1)
22           queue = (T[])(new Object[size]);
23       else
24           queue = (T[])(new Object[DEF_SIZE]);
25   }
26   public void enqueue(T aData)
27   {
28       if(queue[headIndex] != null && headIndex == tailIndex)
29           return;
30       queue[tailIndex] = aData;
31       tailIndex = (tailIndex+1)%queue.length;
32   }
33   public T dequeue()
34   {
35       T ret = queue[headIndex];
36       headIndex = (headIndex+1)%queue.length;
37       return ret;
38   }
39   public T peek()
40   {
41       return queue[headIndex];
42   }
43   public void print()
44   {
45       System.out.println(queue[headIndex]);
46       for(int i = (headIndex+1)%queue.length; i != tailIndex; i = (i+1)%queue.length)
47           System.out.println(queue[i]);
48   }
49 }
50
```