

Deque - ArrayDeck

ArrayDeque

- It is an implementation of the Java Deque interface

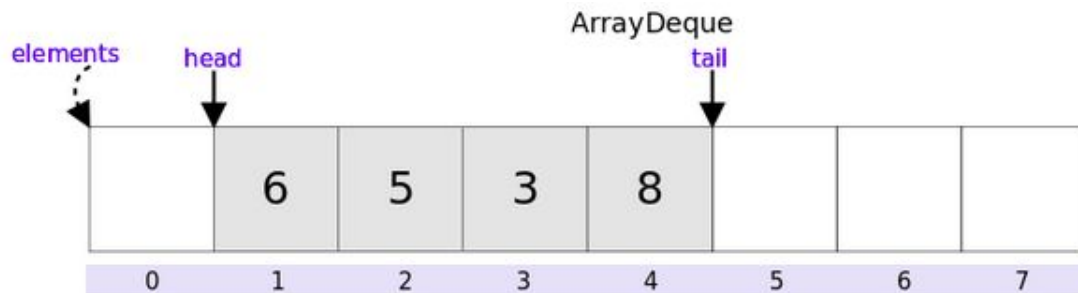
<https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html>

- It is also known as Array Double Ended Queue (pronounced ArrayDeck)
- It is an array that can add/remove from both sides and it can grow.

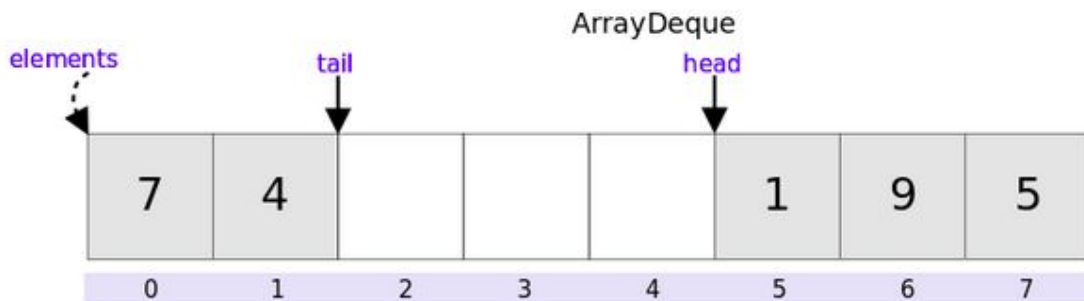


ArrayDeque Configurations

- Head and tail are in order



- Head and tail are out of order (data wraps around)

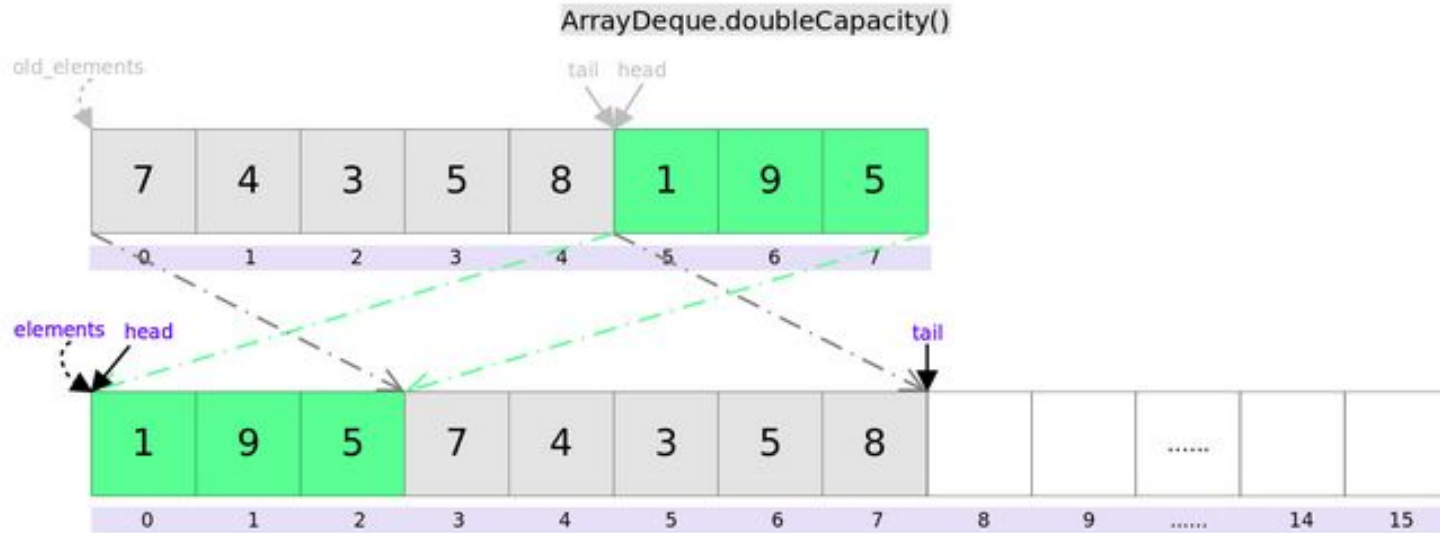


What does it happen when the ArrayDeck is completely full?



What does it happen when the ArrayDeque is completely full?

- Copy the values to a new array which doubles the deque size.
- Replace the old array with the new one



Let's implement a generic Deque

```
public class MyDeque<E>{
    private E[] data;
    private int size;
    private int start, end;

    public MyDeque(){ }
    public MyDeque(int initialCapacity){ }
    public int size(){ }
    public String toString(){ }
    public void addFirst(E element){ }
    public void addLast(E element){ }
    public E removeFirst(){ }
    public E removeLast(){ }
    public E getFirst(){ }
    public E getLast(){ }
}
```