

C:\Users\Rich\Documents\NetBeansProjects\Lab06\src\ArrayStack.java

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1 /**
2  * Implementation of the Stack as an array
3  * @author Richelin Metellus
4  * @version 02/24/2017
5  * @param <E> generic type for object
6  */
7 public class ArrayStack <E> implements Stack<E> {
8     public static final int CAPACITY = 1000;
9     private E[] data;
10    private int t = -1;           // index of the top element in stack
11
12    public ArrayStack(){ this(CAPACITY);}
13    public ArrayStack(int capacity)
14    {
15        data = (E[]) new Object[capacity];
16    }
17
18    @Override
19    public int size()
20    {
21        return t+1;
22    }
23
24    public boolean isEmpty()
25    {
26        return t == -1;
27    }
28    public void push(E e) throws IllegalStateException
29    {
30        if (size() == data.length) throw new IllegalStateException("Stack is full");
31        data[++t] = e;
32    }
33    public E top()
34    {
35        if (isEmpty()) return null;
36        return data[t];
37    }
38    public E pop()
39    {
40        if (isEmpty()) return null;
41        E answer = data[t];
42        data[t] = null;
43        t--;
44        return answer;
45    }
46
47 }
48

```

