CS 1324 Spring 2021 Homework 11 Perfect size and oversize arrays

Jordan McFadden

TOTAL POINTS

19 / 20

QUESTION 1

10 pts

1.1 Question 1a 2 / 2

✓ **- 0 pts Correct**

- 1 pts Incorrect or missing return type

- 1 pts incorrect parameters

- 2 pts Not attempted

- 1 pts Incorrect method signature format

- 1 pts incorrect datatype for return/parameter

1.2 Question 1b 2 / 2

✓ **- 0 pts Correct**

- 1 pts incorrect or missing return type

- 1 pts Incorrect or missing parameter

- 2 pts Not attempted

1.3 Question 1c 2 / 2

✓ **- 0 pts Correct**

- 1 pts Incorrect or missing return type

- 1 pts Incorrect or missing parameters

- 2 pts Not attempted

1.4 Question 1d 2 / 2

✓ **- 0 pts Correct**

- 1 pts Incorrect or missing return type

- 1 pts Incorrect or missing parameter

1.5 Question 1e 2 / 2

✓ **- 0 pts Correct**

- 1 pts Incorrect or missing return type

- 1 pts Incorrect or missing parameters

- 2 pts Not attempted

QUESTION 2

10 pts

2.1 Question 2a 2 / 2

✓ **- 0 pts Correct**

- 1 pts Incorrect return type

- 1 pts Incorrect parameters

- 2 pts not attempted

2.2 Question 2b 2 / 2

✓ **- 0 pts Correct**

- 1 pts Incorrect return type

- 1 pts Incorrect parameters

- 2 pts not attempted

2.3 Question 2c 1 / 2

- 0 pts Correct

- 1 pts incorrect return type

✓ **- 1 pts Incorrect parameters**

- 2 pts Not attempted

As it's an oversize array, you would need the size of the array as one of the parameters that represent the number of elements in the array

2.4 Question 2d 2 / 2

✓ **- 0 pts Correct**

- 1 pts Incorrect or missing return type

- 1 pts Incorrect or missing parameters

- 2 pts not attempted

2.5 Question 2e 2 / 2

✓ **- 0 pts Correct**

- 1 pts missing or incorrect return type

- 1 pts missing or incorrect parameter

- 2 pts Not Attempted

Homework 11: Perfect Size and Oversize Arrays

CS 1323/4 Spring 2021

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1. (10 points; 2 points for each part) A double ended queue is used to store data in an array when additions and deletions are usually made at the start and at the end of the data. Assume that the array contains Strings.

Find the signature for each method. Do not write the methods.

a) getFirst retrieves, but does not remove, the first element in the array.

Example: if the double ended queue contained {“A”, “B”, “C”}, “A” would be returned and the double ended queue would be unchanged.

```
public static String getFirst(String[] data);
```

b) addLast inserts a given element at the end of the double ended queue.

Example: if the double ended queue contained {“A”, “B”, “C”} and “D” was added, the resulting double ended queue would contain {“A”, “B”, “C”, “D”}.

```
public static String[] addLast(String[] data, String addMe)
```

c) contains returns true if this double ended queue contains a given element and false otherwise.

Example: if the double ended queue contains {“A”, “B”, “C”} and the given element was “B”, true would be returned. If the given element was “D”, false would be returned.

```
public static boolean contains(String[] data, String element)
```

d) RemoveLast removes the head of the double ended queue or does nothing if the double ended queue is empty.

Example: If the double ended queue contains {“A”, “B”, “C”}, after removeLast, the double ended queue would contain {“A”,”B”}

```
public static String[] removeLast(String[] array)
```

e) removeAll removes all of the elements that are also a given array from the double ended queue.

Example: if the double ended queue contains {“A”, “B”, “C”, “D”} and the given array contains {“A”, “C”, “E”}, the double ended queue would contain {“B”, “D”} after the method call. Assume that both the double ended queue and the other array are perfect size.

```
public static String[] removeAll(String[] testArray, String[] givenArray)
```

2. (10 points) It is also possible to store double ended queues in oversize arrays. Repeat problem 1 by creating signatures for the same methods, only using oversize arrays instead of perfect size arrays.

getFirst:

```
public static String getFirst(String[] array)
```

addLast:

```
public static int addLast(String[] array, int size, String addMe)
```

contains:

```
public static boolean contains(String[] array, String element)
```

removeLast:

```
public static int removeLast(String[] array, int size)
```

removeAll: Assume both the double ended queue and the other array are oversize.

```
public static int removeAll(String[] testArray, int testSize String[] givenArray, int givenSize)
```