

CS 1324 Spring 2021 Homework 9 Arrays

Jordan McFadden

TOTAL POINTS

18 / 20

QUESTION 1

1 Question 1 4.5 / 5

- 0 pts Correct
- ✓ - 0.5 pts minor mistake
- 1 pts partial
- 2 pts partial
- 3 pts partial
- 5 pts Incorrect

💬 Please see the solutions in Canvas

QUESTION 2

9 pts

2.1 Question 2a 3 / 3

- ✓ - 0 pts Correct
- 0.5 pts minor mistake
- 1 pts partial
- 2 pts partial
- 3 pts Incorrect

2.2 Question 2b 3 / 3

- ✓ - 0 pts Correct
- 0.5 pts minor mistake
- 1 pts partial
- 2 pts partial
- 3 pts Incorrect

2.3 Question 2c 2.5 / 3

- 0 pts Correct
- ✓ - 0.5 pts minor mistake
- 1 pts partial
- 2 pts partial
- 3 pts Incorrect/ No answer

💬 Please see the solutions in Canvas

QUESTION 3

6 pts

3.1 Question 3a 2 / 2

- ✓ - 0 pts Correct
- 0.5 pts partial
- 2 pts Incorrect/ No answer

3.2 Question 3b 2 / 2

- ✓ - 0 pts Correct
- 0.5 pts partial
- 1 pts partial
- 2 pts Incorrect/ No answer

3.3 Question 3c 1 / 2

- 0 pts Correct
- 0.5 pts partial
- ✓ - 1 pts partial
- 2 pts Incorrect/ No answer

💬 Should have used methods in Arrays class, as asked in the question. Please see the solutions in Canvas.

Homework 9: Arrays

CS 1323/4 Spring 2021

Name: Jordan McFadden

Student ID (usually 112-XXX-XXXX or 113-XXX-XXXX): 113502650

1. (5 points) Trace the code below using the memory diagram. Remember to trace index.

```
int[] data = new int[6];
int[] copy = {7, 2, 4, 3, 9};
for (int index = 1; index <= 5; ++ index) // read carefully
{
    data[index] = copy[index-1];
}
```

main stack frame		
Identifier	Address	Contents
data	100	1000
copy	101	1007
	102	
	103	
	104	

Heap		
Identifier	Address	Contents
0	1000	0
1	1001	7
2	1002	2
3	1003	4
4	1004	3
5	1005	9
data.length	1006	6
0	1007	7
1	1008	2
2	1009	4
3	1010	3
4	1011	9
copy.length	1012	5
	1013	
	1014	
	1015	
	1016	
	1017	
	1018	

[illegible]

c.

```
int[] data = {8, 6, 2, 4, 5, 1};  
int half = data.length/2;  
for (int index = 0; index < half; ++index)  
{  
    int temp = data[index];  
    data[index] = data[index + half];  
    data[index+half] = temp;  
}
```

half	temp	data[0]	data[1]	data[2]	data[3]	data[4]	data[5]	index
3	8	8	6	2	4	5	1	0
	6	4	5	1	8		2	1
	2							2

3. (6 points, 2 points each) Use **methods in Arrays class** to perform the operations below in a code fragment.

a. Print to the console the index where the first (leftmost, smallest index) element of arrays of int with references games, and plays that does not match occurred. For example, if games contains {1, 3, 5} and plays contains {1, 3, 7, 2, 6}, the index would be 2.

```
System.out.print(Arrays.mismatch(games, plays));
```

b. Copy the first ten elements of an array of Strings with reference names into an array with reference copy. The copy array should not be constructed before the method call. You may assume that the names array has at least ten elements.

```
String[] copy = Arrays.copyOf(names, 10);
```

c. Print out "Beautiful day" if any value in the 70s (i.e. 70, 71, 72, ... , 79) is in an array of int with reference temperatures, and "Too cold" otherwise. **Print out only one response.** You will need to use two methods in the Arrays class, one of them inside a loop. The order of elements in the original array will be changed. For example, if the temperature array contained {80, 75, 73, 71, 69, 85, 99}, "Beautiful day" would be printed out exactly once.

```
Public static int test(int[] a)
{
    int count = 0;
    for (int i = 0; i < a.length; ++i)
    {
        if (a[i] > 69)
        {
            count = count + 1;
        }
    }
    return count;
}
public static void answer(int[] a)
{
    if (test(int[] a) > 0)
        S.o.p ("Beautiful day");
    else
        S.o.p ("too cold");
}
```