

 README.md

Recitation 4

September 30, 2021

Topics to Recap

- Loops
 - For loop syntax
 - Control flow with `break` and `continue`
- Arrays
 - Accessing elements via an index
 - Regular arrays are fixed size!

Examples for Recap

1. Implement the function `computeArrayStats()` that takes an integer array `arr` as input and returns a double array that has two elements: the sum and the average of all elements in `arr`. Try solving this with both a `while` loop and a `for` loop if you have time! Below is a sample class to get started:

```
public class ArrayStuff {
    public double[] computeArrayStats(int[] arr) {
        // TODO: method stub
    }
}
```

2. Implement the function `echoChamber()` that takes user input from the console and simply prints (echoes) back each line that the user types, one-by-one, until the user types "quit".

```
import java.util.Scanner;

public class ConsoleEcho {
    public void echoChamber() {
        Scanner scnr = new Scanner(System.in);
        // TODO: method stub
    }

    public static void main(String[] args) {
        // For testing purposes only
        ConsoleEcho ce = new ConsoleEcho();
        ce.echoChamber();
    }
}
```

Recitation Problem Set

GROUPS (same as last recitation):

Group #	Member 1	Member 2	Member 3	Member 4
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Group #	Member 1	Member 2	Member 3	Member 4
Group 1	Zhang, Minzheng	Thenappan, Bala Sundar	Tims, George	Cruz, Marye I
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Group 3	Chou, Randy	Ye, Huifang	Carnation, Kayla Rae	Yu, Qingyu
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Group 5	Zhang, Yang	Gallagher, John Manus	Richmond, Christian	Bales, Elijah
Group 6	Kong, Rachel	Patel, Rishi	Ng, Wai Chung	Jiang, Yao
Group 7	Nojoomi, Radin	Biscaro, Denise	Wu, Jeng-Ru	Bernat, Kevin Bruno
Group 8	Arguello-Gonzalez, Marcos Abraham	Schnall, Aaron Hewitt	Wang, Kehan	Li, Yunhe
Group 9	Liu, Jiayun	Cho, Suebin Grace	Guo, Zhaosen	Liu, Shufan
Group 10	Chen, Xiyue	Lee, Jaeyoung	Liu, Xinyue	Cai, Jialin
Group 11	Hu, Lucy Qian	Wang, Yuanqi	Kallas Jatene, Rafael	Sheng, Xinyue
Group 12	Ren, Yue	Zhang, Yihong	Cheema, Sardar Asfandy	Chen, Zheyi
Group 13	Qiu, Xi	Shah, Rushabh	Choi, Jae Ho	Kim, Yunchae
Group 14	Graham, Alexander Richard	Nguyen, Tai D	Zhang, Zhihui	Wang, An-Jie
Group 15	Pizzico, Tyler R	Qiu, Chengzhuo	Rigas, Andrew	Hu, Yuxin
Group 16	Sabri, Rita	Pinheiro, Benjamin B	Williams, Levester Randall	Zhang, Han
Group 17	Pace, Benjamin Michael	He, Donglun	Lim, Xi Zhen	Patel, Siddharth Bhagwanji
Group 18	Sha, Yumeng	Kung, Ling-Hsin	Yiu, Hon-Cheung	Wang, Liujia

1. Implement the function `removeEvens()` below that takes as input an integer array `nums` and outputs an integer array which is, as the function name suggests, a copied version of `nums` without any even valued entries. For example, if we have the input `[1,2,3,4,5,6]`, the output would be `[1,3,5]`. Below is a class and function stub to get started. For Gradescope submission, please put this code (with your implementation of `removeEvens()`) into a file `Odd.java` and upload that file. Note that you should not be using any other external libraries or tools to do this - just your knowledge of arrays and loops!

Hint to get started: The output array and the input array might have different sizes! You'll need to loop through the input array twice: once to figure out how many elements of the input are even, and then another time to copy values from the input to the output.

```
import java.util.Arrays;
public class Odd {

    public int[] removeEvens(int [] nums) {
        /* Type your code here. */
    }
}
```

```
}

public static void main(String[] args) {
    Odd labObject = new Odd();
    int [] input = {1,2,3,4,5,6,7,8,9};
    int [] result = labObject.removeEvens(input);

    // Helper method Arrays.toString() converts int[] to a String
    System.out.print(Arrays.toString(input) + " without evens: "); // Should print original array
    System.out.println(Arrays.toString(result)); // Should print [1, 3, 5, 7, 9]
}
}
```

1. Complete lab problem 6.2.9 from the zybook. I've copied it below for reference:

What will the following code output? For an infinite loop, type "IL" (without the quotes).

- i.

```
x = 0;

while (x > 0) {
    System.out.print(x + " ");
    x = x - 1;
}
System.out.print("Bye");
```

- ii.

```
x = 5;
y = 18;

while (y >= x) {
    System.out.print(y + " ");
    y = y - x;
}
```

- iii.

```
x = 10;

while (x != 3) {
    System.out.print(x + " ");
    x = x / 2;
}
```

- iv.

```
x = 0;

while (x <= 5) {
    System.out.print(x + " ");
}
```

