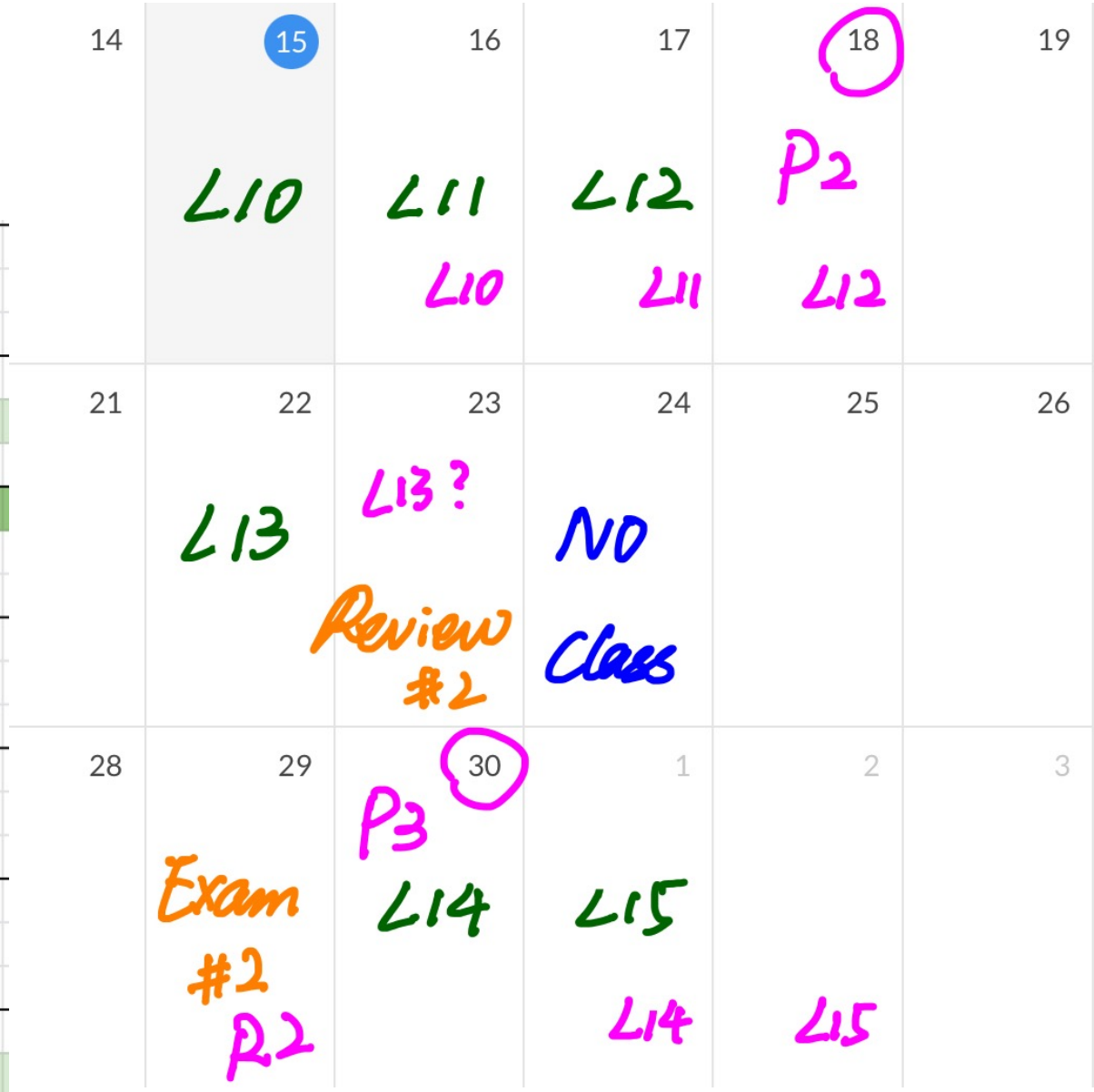
CSC116 DISCUSSION 10

GINA BAI

Logistics

	Tuesday, 06/15/2021	10	Array Basics
5	Wednesday, 06/16/2021	11	Modifying Arrays
	Thursday, 06/17/2021	12	Multi-dimensional Arrays & Array of Objects
	Tuesday, 06/22/2021	13	Testing Arrays
6	Wednesday, 06/23/2021		Midterm Exam 2 Review
	Thursday, 06/24/2021		NO CLASS
	Tuesday, 06/29/2021		Midterm Exam 2
7	Wednesday, 06/30/2021	14	Input Files
	Thursday, 07/01/2021	15	Input Files
	Tuesday, 07/06/2021	16	Output Files
8	Wednesday, 07/07/2021	17	Objects: Basics
	Thursday, 07/08/2021	18	Objects: Constructors and Other Methods
	Tuesday, 07/13/2021	19	Objects: Interacting Classes
9	Wednesday, 07/14/2021	20	GUI
	Thursday, 07/15/2021		Project Workday
	Tuesday, 07/20/2021	CE1	Comprehensive Exercise 1
10	Wednesday, 07/21/2021	CE2	Comprehensive Exercise 2
	Friday, 07/23/2021	CE3	Comprehensive Exercise 3
	Tuesday, 07/27/2021	CE4	Comprehensive Exercise 4
11	Wednesday, 07/28/2021		Final Exam Review
	Thursday, 07/29/2021		Q&A
12	Monday, 08/02/2021		FINAL EXAM, 3:30-6:00PM



Logistics – deadlines this week

- Growth Mindsets - Failure is Part of Success Reflection
  - Thursday, June 17th, 11:45pm

- Project 2
  - Friday, June 18th, 11:45pm

Pre- vs. Post- increment

```
int i = 1;
int j;
j = ++i;

// pre-
// i = 2; j = 2
```

```
int i = 1;
int j;
j = i++;

// post-
// i = 2; j = 1
```

Topics

- Arrays
  - **<type >[] <name > = new <type >[<size >];**
    - double[] grades = new double[10];
  - Index
    - starting a 0
  - Elements
    - variables stored in array
    - arrayName[i]
- Array as parameters
  - By reference
- Arrays Class
  - java.util
- Parallel arrays

Array Basics – Expressions

```
int[] numbers = new int[10];
```

Q: the first element?

```
numbers[0];
```

Q: the last element?

```
numbers[9];
```

Q: the last element regardless of its length?

```
numbers[numbers.length – 1];
```

Array Basics – True or False

1. In Java, you can use a variable as well as a constant to declare an array's size.

2. When you declare **int[] id = new int[20]** , each element of the array has a value of 0.

3. When you declare **int[] scores = {100, 90, 80}** , the first three elements of the array are assigned the values listed, but all the remaining elements are assigned 0.

Array Basics – Execution

```
int[] list = {1, 2, 3, 4, 5};
```

Q: What is the output?

```
System.out.println(list);                    // the reference, e.g., [I@6d06d69c
System.out.println(Arrays.toString(list));   // [1, 2, 3, 4, 5]
```

Array Basics – Execution

Q: Write a program that prints out an array in the format of {val1, val2, val3, …}.

For example, {1, 1, 6}.

```
public static String arrayAsString(int[] arr){
    String out = "{";
    for(int i = 0; i < arr.length; i++){
        out += arr[i];
        if (i < arr.length – 1){
            out += ", ";
        }
    }
    out += "}";
    return out;
}
```

Lab 10

Write a program called **IntArray** that

- Prompt the user for the **number of values**, n (n > = 1).
  - Output "You must enter an integer greater than 0" and reprompt the user if the number of values is not an integer value greater than 0.
- Prompt the user for **each value and store it in the array**.
  - Output "Invalid value" and reprompt if the user enters something other than an integer.
- Implement **three methods**
  - **getArrayMax** to find the maximum value in the array.
  - **getArrayMin** to find the minimum value in the array.
  - **getArrayMean** to find the mean of the array elements.
- Output the **maximum and minimum values as integers**, and output the **mean with 2 decimal places**.