CSE20 : Lab #13 - Review

Overview

This week we will review the more difficult materials from the course. This is meant to increase your comfort level with arrays and loops. Also, you should be able to find errors when presented with the sample code.

(Exercise) Fill-in FindDuplicate.java

Given the integer array (arr) declared in the program. Find all the numbers that are repeated in the array entries. Basic algorithm is you take one number, and then compare it against the rest of those numbers. You can see in expected output that for index 1 (after index 0 but it did not match with anything) it was compared against 3-11 and it just so happens to match with 2, 5 and 11 since they all have the same value 2. Now the one to repeat all the previous steps is index 2 and you now should compare it against indices 3-11. The pattern repeats so on until you reach index 10 where you will check against index 11 then it stops (why? Q1). Your solution should use loops (hint: double nested loops) and should work for any integer array.

Expected Output:

```
Index 1 same as Index 2 with value 2
Index 1 same as Index 5 with value 2
Index 1 same as Index 11 with value 2
Index 2 same as Index 5 with value 2
Index 2 same as Index 11 with value 2
Index 3 same as Index 7 with value 3
Index 3 same as Index 10 with value 3
Index 4 same as Index 6 with value 4
Index 5 same as Index 11 with value 2
Index 7 same as Index 10 with value 3
```

(Exercise) Fix Error9.java

Given the double array (inp) declared in the program. Take each entry and square it. The index of the number and squared value should be printed. Finally, the final value of sum is printed. Find all the errors (could be more than one in each line) and note the type of errors they are. There are 12 errors and all three types of errors in this code. You need to identify them all for full credit.

Expected Output:

```
Squared of index 1 is 4.0
Squared of index 2 is 9.0
Squared of index 3 is 16.0
Squared of index 4 is 25.0
Squared of index 5 is 36.0
Squared of index 6 is 49.0
Squared of index 7 is 64.0
Squared of index 8 is 81.0
Squared of index 9 is 100.0
Sum of Squares is 384.0
```

(Assessment) Level of Understanding

1) Why is for the particular array given in FindDuplicate.java that index 10 is the last check we need to make?
2) What are the three types of Errors?
3) What is a variable declaration?
4) What is a variable initialization? (When is it needed?)
5) What is an array?
6) What is the difference between the index of an array and the value of the array? (How can you tell by looking at the code?)

What to hand in

When you are done with this lab assignment, you are ready to submit your work. Make sure you have done the following ***before*** you press Submit:

- Answers to Level of Understanding Questions
- Attach your FindDuplicate.java
- Attach fixed Error9.java and the list of Errors
- List of Collaborators