CSE20 : Lab #7 - More Control Flow

Overview

We will continue to get more practice using control statements in this week along with the type of errors you have been encountering.

Run-Time Errors

Eclipse cannot catch these errors as they only appear when the programming is running. When we ask the user to input something, we have been assuming they will enter the correct data. However, it is not always the case and we can detect some of using control statements.

If-else Statement

A more complex control flow statement is a branching decision where it takes either one path or another. An example of that type of decision is done with *if* and *else* statement.

```
if (a < b)
      System.out.println(a + "is less than " + b);
else
      System.out.println(a + "is greater than or equal to " + b);
```

So for the *true* case where a is 4 and b is 10, the output will say “4 is less than 10”. For the *false* case where a is 10 and b is 4, the output will say “10 is greater than or else to 4”.

(Reading) Chapter 3.3 & 3.4

- Answer Participation Activity 3.3.2, 3.3.3, 3.3.4, 3.3.5 & 3.3.7
- Answer Participation Activity 3.4.1, 3.4.2, 3.4.3 & 3.4.5

Getting started

After starting Eclipse, create a new project called Lab 7. Import from the assignment page BooleanIf.java and Number.java into the project and load them.

(Exercise) Rearrange – BooleanIf.java

In Lab 6 we discovered that there will always be 3 if statements that will be true for any combination of two numbers (a and b). BooleanIf right now has 6 independent if statements to print out the true relations between the two numbers. It is actually redundant to have 6 checks as some expressions are related since if one is true then the other must be false and vice versa. We have 3 pairs of relations, which can be checked with 3 simple if-else. Modify BooleanIf.java to use 3 if-else statements only while preserving the same output.

(Exercise) Number.java

Program asks the user to input a number between 0-25.

- Put in code to check if the input number is within the valid range and print "* character of the alphabet is *"
- It will basically print alphabets from A to Z
- If the number is 0 then the output is "0 character of the alphabet is A"
- … so on …
- If the number is 25 then the output is "25 character of the alphabet is Z"
- If the number is invalid then it should say "Outside of acceptable range"

(Assessment) Logic Check

Enter the following values by running Number.java after your modification and explain the behavior.

- 1
- 20
- 1000
- 500000000000
- -500000000000
- 12,345
- 789.543
- -0

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:

- Include answers to Participation Activity 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.3.7, 3.4.1, 3.4.2, 3.4.3 & 3.4.5
- Include answers to Assessment questions
- Attach modified BooleanIf.java and Number.java
- List of Collaborators