Week2 Notes

HelloWorld:

- IDEs are not useful for getting familiar with syntax. Instead you can use text editor.
- For comments: // for single line, /* text… */ for multiple lines. It is super important for keeping track of what's going on and
- Java syntax:

```
class -classname- {
public static void main (String args []) {
    CODE
    }
}
```

- Class name and file name must be same and extension must be .java
- javac compiles the java file: "javac -classname-.java"
- javac produces executable "-classname-.class"

Numerical Operations:

- Defining variables in 2 ways:
    - Variabletype -variablename- ;
      -variablename- = somevalue;
    - Variabletype -variablename- = somevalue ;
- Concatenation
    - System.out.printlln("string" + variable) **output:** string + variable (
    - System.our.println("string" + variable1 + variable2) **output:** string + variable1variable2
    - System.out.println("String" + (variable1+variable2) **output:** string + (summation of variable1 and variable2)
- Primitive Data Types:

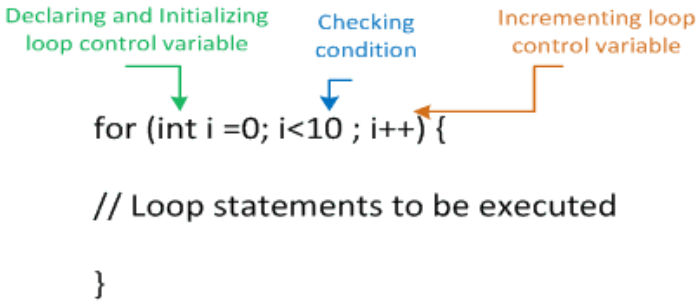
Type	Meaning
boolean	Represents true/false values
byte	8-bit integer
char	Character
double	Double-precision floating point
float	Single-precision floating point
int	Integer
long	Long integer
short	Short integer

Source: book, page 33

- integer / integer = integer. How to fix it?
    - Define integers as double.
    - Or convert to double: (double) var1/var2.
- Use doubles but don't check equality of doubles. When you manipulate doubles, although you do the same operations highly probably they are not the same because of precision of computer.

For Loops

- Syntax of for loop: for ("int -variablename- = -startingpoint-" ; "-variablename- -checkingcondition- -upperboundvalue-" ; " sepecify that how -variablename- will be updated") { }



Source: w3schools

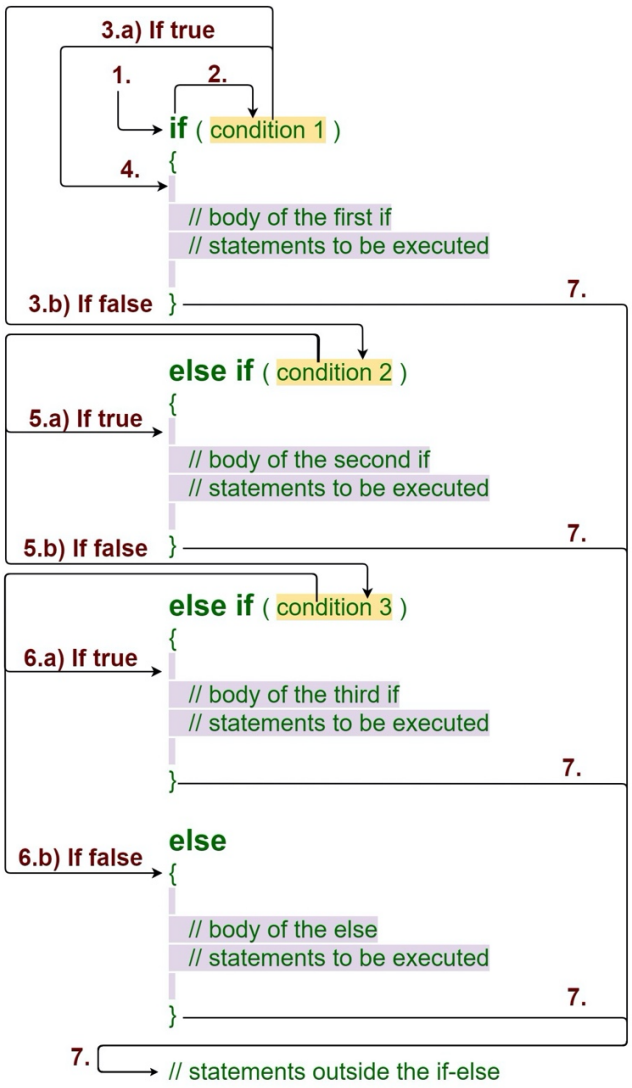
- Initialization must be done before the scope of for. Others can be manipulated in the scope of for.
- Arithmetic Operations:

Operator	Meaning
+	Addition (also unary plus)
–	Subtraction (also unary minus)
*	Multiplication
/	Division
%	Modulus
++	Increment
– –	Decrement

Source: textbook, page 46

- Break kicks you out of the inner-most for or while loop.

If Statements:



Source: geeksforgeeks

- If there are no curly braces, Java assumes it is single line.
- Give meaningful name to your variables. Technically, it doesn't matter.
- Relational operators (page49)
    - == : equal to
    - != : not equal to
    - < : Less than
    - <= : Less than or equal to
    - >: Greater than
    - >= : Greater than or equal to

- Logical operators (page49)
  - & : AND
  - | : OR
  - ^ : XOR (exclusive OR)
  - || : Short-circuit OR
  - && : Short-circuit AND
  - ! : NOT