The Second Program: Choice

Save and close your HelloWorld class (if it is still open) and start a new project called Choice.

/*
  Date    Name    Choice: make a simple decision.
*/

public class Choice{
    public static void main(String[] args){
        int a = Integer.parseInt(args[0]);
        int b = Integer.parseInt(args[1]);
        if (a < b){
            System.out.println("The first number is SMALLER.");
        } else if( b<a ) {
            System.out.println("The second number is SMALLER.");
        } else {
            System.out.println("The two numbers must be EQUAL!!");
        }
    }
}

Try executing the program. The system should report errors! You should see a complaint of the form

    Exception in thread "main" ...

If you look at this error carefully it will tell you at which line of the program the error occurred. If you think about it, you should realize the program does not know what numbers to compare.

Try executing the program again, after typing 34 35 in the box labelled CommandLine Arguments. These are the infamous input arguments, aka, args of the program.

In a more professional setup, you would type the entire command as input to the Java Console with the command:

    java Choice 34 55
The character strings “34” and “55” are the inputs to the program and are saved in the first two “slots” of a list named `args`. In order to treat them as integers, you must first convert them from strings of characters to integers, using the command `Integer.parseInt`. You will use this command often later in the class.

Try running `Choice` a few times, using different input arguments, to see that it works as expected. Then try the following experiments:

1. Try changing the symbols used to compare `a` and `b` to do different comparisons. What do you think you would use for the comparison “greater than”? How about “less than or equal to” or simply “equal to”?

2. Try running the program with input that does not look like an integer, for example, `java Choice Barak John`. What happens? Why?

3. Try running the program with input that looks like a rational number with written with a decimal. What happens?

4. You can get the program to handle approximations of real numbers written with a “floating point” decimal (like you see in hand calculators) by using the storage class “`double`”. Try changing every `int` to a `double` and see what happens. (You will have to think and guess a little to get this to work! Experiment first, before you ask for help!)