



Java Fundamentals

WorkSheet 1

1. In a few words, please explain how to compilation process works in Java?
(Pretend you are explaining this to a 6 year old or an elderly person).
2. What's a variable?
3. How are variables declared in Java? What's the syntax? Please give 2 examples.
(Hint: String name...)
4. What's the difference between a String and a Char (character) types? (Hint: think about how you declare each one of them)
5. A boolean value can have any value you like because any non-zero value is true.
True or False?

6. Where do Java programs begin execution?
7. What is bytecode and why is it important?
8. The moon's gravity is about 17% that of the earth's. Write a program that computes your weight on the moon.
9. How do you create a single-line comment? How do you create a multiline comment?
10. What happens when you miss a semicolon at the end of a statement?
11. What's the output of the following statement?

```
System.out.println("Hey\nPaulo\n!");
```

Answers to Questions

1. The key to answering this question is to think about what the compiler does to java source code, and what's the end result after the compilation process is completed (bytecode).
2. A variable is a special place in memory where we can store information. The contents of a variable can be changed during execution.
3. For example, to declare a string variable we would write as follows:
`String name = "name";`
`Int age = 21;`
4. Here's how we declare a string variable type: `String lastName = "Bond";` A char variable type is declared as follows: `char b = 'b';` The main distinction is the usage of `" "` (double quotes) for strings, and `' '` single quotes for chars.
5. False. Booleans must only be either true or false.
6. Java programs begin execution at `main()`.
7. Bytecode is the product of the compilation process which "converts" source code into specialized instructions to carry instructions. Bytecode is the file that's executed by the JVM (Java Virtual Machine). This is the only reason Java's programs are portable and secure.

8. *Class Moon{*

Public static void main(String args[]) {

double earthWeight;

double moonWeight;

earthWeight = 185;

*moonWeight = earthWeight * 0.17; // multiply earth weight by percentage*

System.out.println("Moon weight: " + moonWeight);

}

}

9. Single-line comment: *//single-line comment goes here*

Multiline comment:

*/**

You can write all you want

Here.... Even a novel.

**/*

10. You will get a syntax error. Your program won't compile until you add the semicolon.

11. The "\n" command tells the compiler to create a new line; so the output would be:

Hey

Paulo

!

