Java Errata

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# 1 Java.Introduction

## 1.1 Intro

**Quiz: What does JVM include?**

The theory section does not specifically mention what the JVM includes, and barely mentions what the terms in the answers available for this quiz are, let alone if they are in the JVM. 11% of people get this one right, by reading the comment with the correct answer.

**Quiz: What is a *HotSpot*?**

This one you can find by clicking on the link to more information in the theory, but HotSpot is introduced as “Some virtual machines, such as the Java SE HotSpot at a Glance,”

## 1.2 Comments

These seem fine.

## 1.3 Main method

**Quiz: What will be printed if compile and run the class below?**

**<Class with two main methods, neither correctly written goes here>**

This is a confusing one that is not mentioned specifically, the answer makes sense if you pay close attention, it can build but not run (technically, it prints nothing.)

**Quiz: Which declarations of the main method will cause the program to compile but not run?**

Another tricky quiz, the point is, just make sure main is correctly declared.

## 1.4 Variables and Types

**Quiz: What is the type of the variable var = '5';?**

Tricky, if coming from Python. In Java, single quotes appoint chars, but in Python it is a string.

## 1.5 Integer

Looks fine, just a bit of +-\*/% math to think about in some.

## 1.6 Boolean

These are a bit tough, but like earlier assignments in Python

## 1.7 Floating-point

Easy like Integer, the last one is easy to overthink. Do not.

## 1.8 Math

**Practice: You have been given the real numbers a, b, c, where a ≠ 0. Solve the quadratic equation *ax*2+*bx*+*c*=0 and output all of its roots.**

This is tough if you do not remember the equation, also tricky because you must output in a specific order.

**Practice: You have been given two 2D vectors. Find the angle (degrees) between them.**

I must have been sleeping through this math class because I do not remember learning vectors.

## 1.9 Character

Super easy

## 1.10 Type Casting

Also, Super easy

# Java.Statements and Arrays

## 2.1 Conditional statements

Straightforward, last one is annoying, but has an easy solution.

## Switch statements

**Practice: Write a program that reads the number of the direction (1 – up, 2 – down, 3 – left, 4 – right, 0 – stay) and outputs move up (or "move down", or "move left", or "move right", or "stay" depending on the entered number).**

THIS! This is the error that started this whole project, it is “do not move” not “stay.” The instructions are all wrong and the only sign is a comment on the Stepik website.

**Practice: Residents of Decorastan often experiment with the arrangement of their rooms, which can be triangular, rectangular, or round.**

Has some math formulas that can be googled.

## 2.3 While and do-while loops

These start to get difficult in logic and/or math. Fun exercise: do not use a do or while loop.

## 2.4 For loop

More math. Try not to use a for loop, one can be done without a loop at all.

## 2.5 Branching statement

Nothing special

## 2.6 Array

**Quiz: Select all ways to create an array which can be successfully compiled.**

char[] array = new char[-1]; is a correct answer but should not be.

## 2.7 String

String manipulation, nothing too hard, but not super easy.

## 2.8 Multi-dimensional array

Things get hard here. I did not finish this one myself, less than 10% of the 370+ people that tried this completed them all.

## 2.9 Boxing

This is easy, just try not to do things like Long long = new Long(4321L); It is unnecessary.

# 3 Java.Classes

## 3.1 Objects

Easy answers, but a hard concept to grasp at first…

## 3.2 Methods

**Quiz: Select all true statements about constructors in Java.**

**It's impossible to create an instance of a class that has no an explicit constructor.**

First grammatical typo I have seen. “has no an explicit” = “has no explicit”

**Quiz: The class SomeClass has four constructors:**

Please do not write code like this in real life.

## 3.3 Package

Pretty simple, read the theory.

## 3.4 Access modifiers

**Typo, Quiz: In Java, a common way (but not always) to get access to a class fields is**

Should be “get access to a class field.”

## 3.5 Enum

**Typo, Practice: You must include all of the above codes, others do not.**

None of us must include the codes, just you. You must include all the above codes, others do not.

## 3.6 Inheritance

Tricky concept with tricky questions in this chapter. Just read everything carefully to win.

## 3.7 Polymorphism

Same as with inheritance.

## 3.8 Abstract class

Nothing exciting, read carefully and work through it.

## 3.9 The Object class

**Practice: Given the classComplexNumber. Override its methods equals() and hashCode().**

This is a weirdly hard problem. The equals() part is easy, but how do you create your own hashCode?

## 3.10 Generics Basics

I personally did not finish the practices for this one, but if you got everything else you should get the quizzes and practices here, it is just a lot of generic coding.

# 4 Java.Collections

## 4.1 List

Easiest of the collections, should know a bit from Python.

## 4.2 Queue and Stack

Things start get a little harder here, and to be honest this is when I started my full-time job, so I just pretty much followed along in class from here on out… queues and stacks and dequeues are weird, make sure you push and pop and add the right things.

## 4.3 Set

Sets! Mostly easy problems.

## 4.4 Map

Maps! Or are they dictionaries? Nah.

## 4.5 Iterator

If you cannot get 100% on a 2-part chapter re-evaluate your life.

## 4.6 Collections utility class

For this one they do not really teach you anything in the Theory section, you must go dig into the Java documentation. (A promising idea, there are very clever things there with a lot of interesting stuff to learn.)

# Other Notes

There are a bunch of quizzes and tasks that show up inside IntelliJ IDE with raw html code. This code works on the Stepik website, but not inside the Task pane inside the IDE.

A lot of the time IntelliJ will bug out and give all kinds of errors like “Login to Stepik to check your answer.” Or “Your answer is out of date.” Good luck. Try fiddling with the EduTools plugin settings, resetting the question inside the task pane, or just trying to copy/paste your code or quiz answers to the website. I have not found an effortless way to fix these.