

Java Journal

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Abstract

With the Coursera - Princeton Algorithms Part 1 course, I had to start learning Java. I will collect here useful information.

18.05.2021 ~ Getting started

Following the advice in the HelloWorld tutorial:
<https://lift.cs.princeton.edu/java/linux/>
I downloaded IntelliJ.

Here are a couple of interesting things for Java, when coming from Python:

- There is one class per file and it should have the same name as the script.
- Imports are done automatically if we are importing something in the same folder.
- I have installed Java 11:

```
(base) aritz@aritz-ThinkPad-T460p:~$ javac -version
javac 11.0.11
(base) aritz@aritz-ThinkPad-T460p:~$ java -version
openjdk version "11.0.11" 2021-04-20
OpenJDK Runtime Environment (build 11.0.11+9-Ubuntu-0ubuntu2.20.04)
OpenJDK 64-Bit Server VM (build 11.0.11+9-Ubuntu-0ubuntu2.20.04, mixed mode, sharing)
```

I did this **beginner tutorial for IntelliJ**:
<https://www.jetbrains.com/help/idea/creating-and-running-your-first-java-application.html>

23.05.2021 ~ How Java works

I read this explanation of Georgi from the Coursera Algorithms Part 1 forum about **ClassPath** (how Java imports classes used inside a program):

<https://www.coursera.org/learn/algorithms-part1/discussions/forums/h8l7dMa0Eatkg4PhuP1Kthreads/LFNq5AtTSSaTauQLU5kmtQ>

There are also these two pages for more details:

<https://en.wikipedia.org/wiki/Classpath>

and

<https://docs.oracle.com/javase/8/docs/technotes/tools/windows/findingclasses.html#A1012444>

I also read this article presenting the **history of Java**:

<https://www.coursereport.com/blog/what-is-java-programming-used-for>

It is non-technical but it gives a good idea of what Java is. The article mentions this book as a good technical reference book, free to read online:

<http://math.hws.edu/javanotes/>

I watched this video which explains at a very high level **how Java works**:

<https://www.youtube.com/watch?v=fhfVkJwjk>

Here are things I found interesting:

1. **Java bytecode** isn't machine language. It's a transformed version of the code, created by the **Compiler** from the source code (blabla.java). This code is then run instruction by instruction by an interpreter. The Java bytecode format is blabla.class.
2. The **Java Virtual Machine (JVM)**, the part which runs the Java bytecode is machine specific but the Java bytecode is universal.

This tutorial gives another overview of Java with more focus on technical aspects:

<https://beginnersbook.com/2013/05/java-introduction/>

This page gives a nice picture of how **JVM**, **JRE**, and **JDK** are related:

<https://beginnersbook.com/2013/05/jvm/>

05.06.2021 ~ Difference between class and interface

This page explains well the difference between **class** and **interface**:

<https://www.geeksforgeeks.org/differences-between-interface-and-class-in-java/>

Interfaces appeared on slide 47 of the slides of Week 2 of Coursera Algorithms Part

1.