

SEW3

IT-Medientechnik

Softwareentwicklung

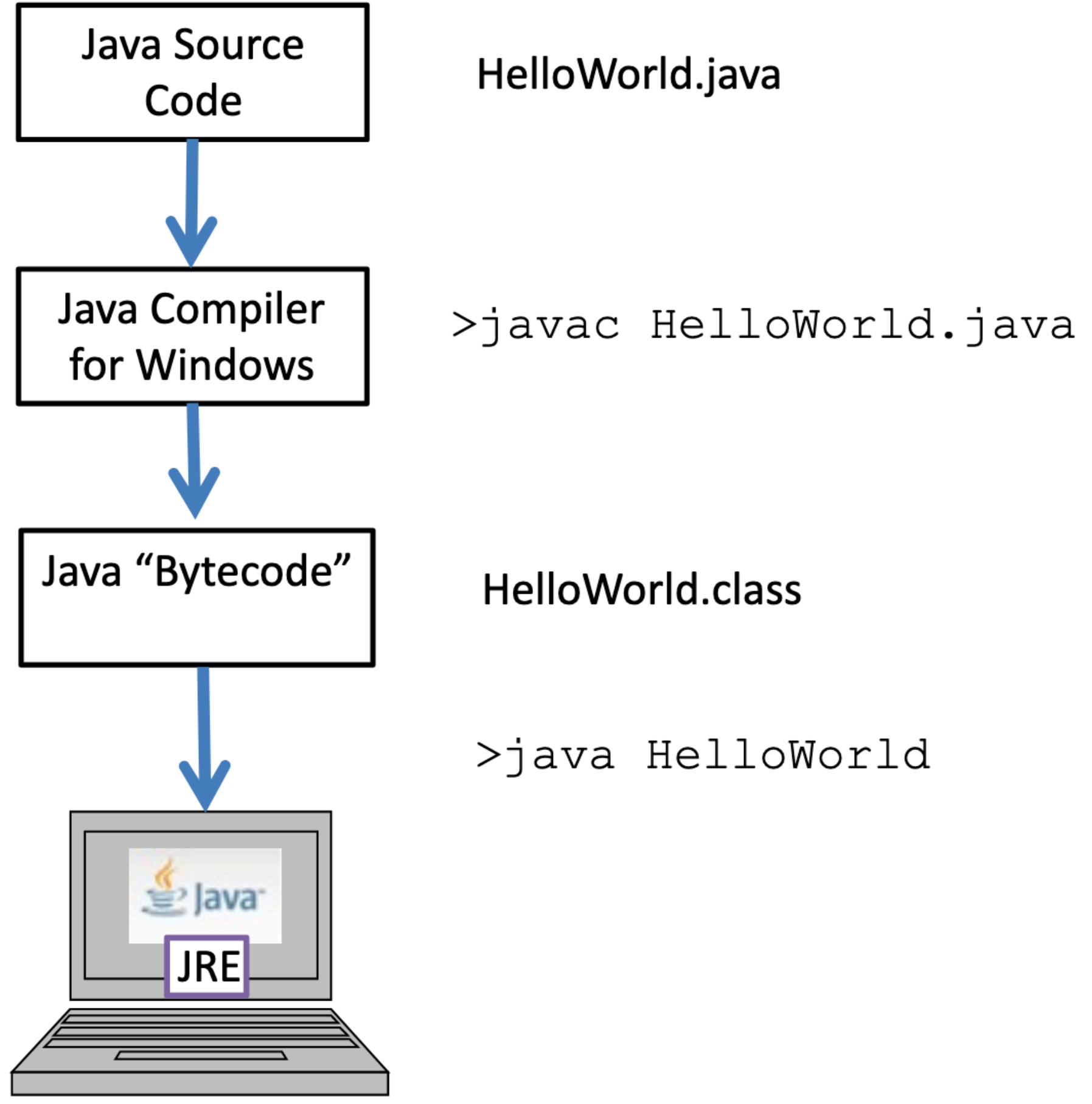
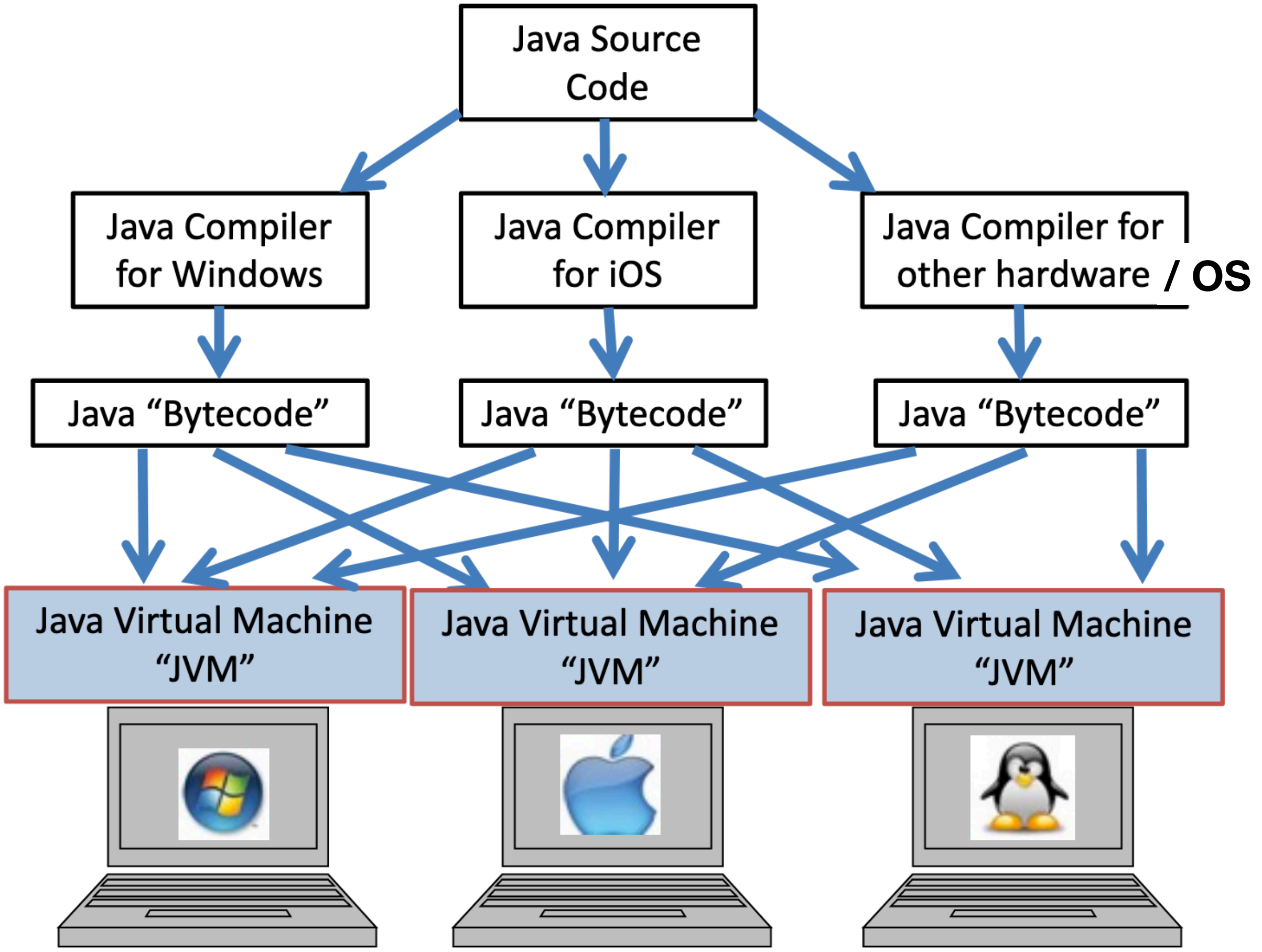
3. JG

IT-Medientechnik

TWS

Overview

Write Once; Run Anywhere!



Java-Versionen

Java SE
Standard Edition



- Java SE beinhaltet die Basistechnologien für Desktops

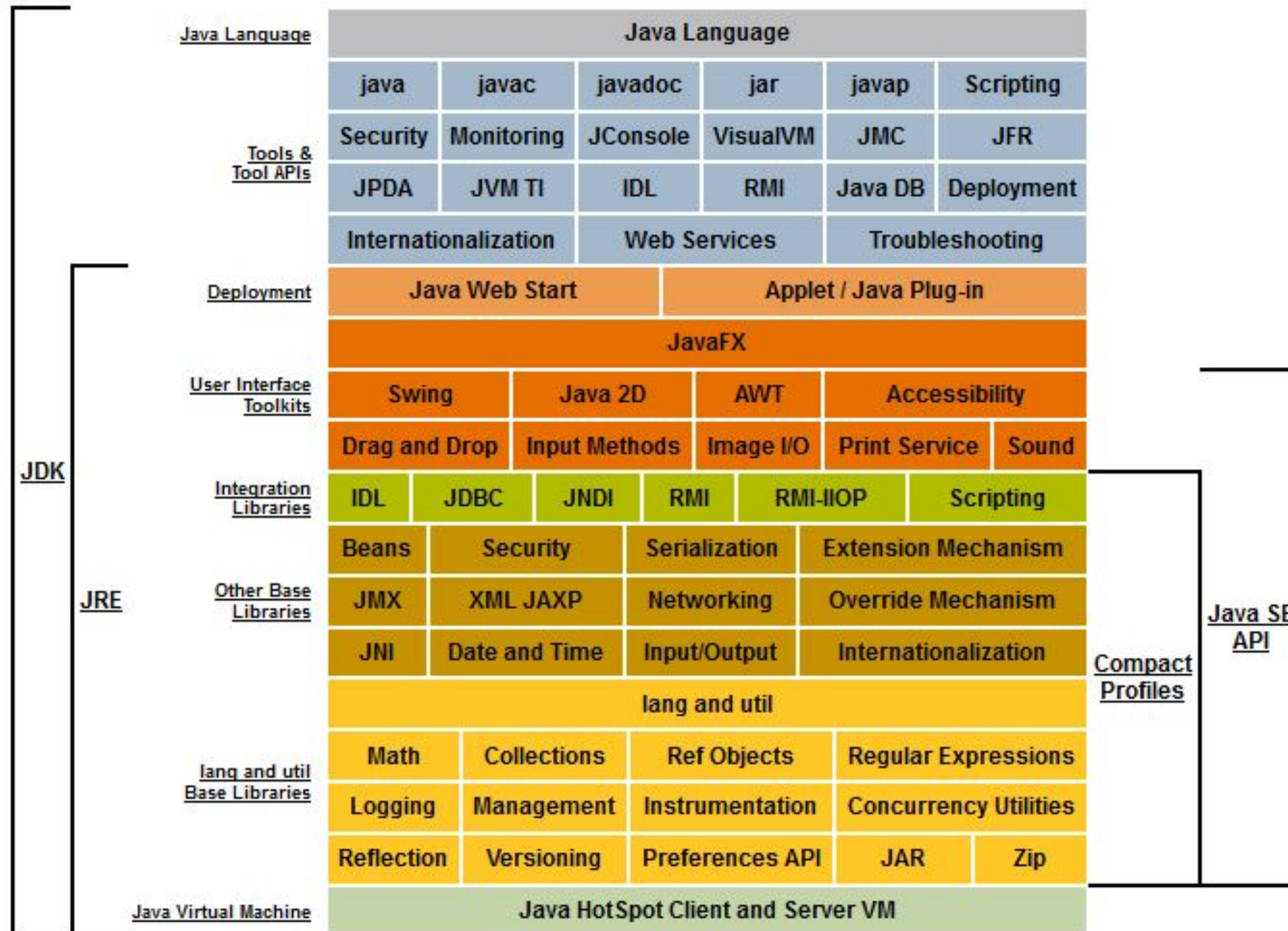
Jakarta EE
Enterprise Edition



JAKARTA EE

- früher Java EE
- Java EE wurde von der Eclipse Foundation übernommen und weiterentwickelt
- beinhaltet Technologien für verteilte Systeme
- wird immer mehr mit Microprofile kombiniert (Quarkus, Helidon, ...)

Java SE

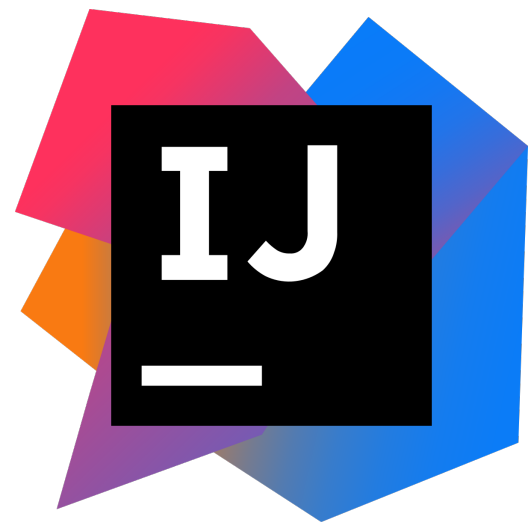


Welches Java JDK?

- Oracle JDK (lizenzenrechtlich eingeschränkt nutzbar)
<https://www.oracle.com/technetwork/java/javase/downloads/index.html>
- **Oracle openJDK** (kann als vollwertiger Ersatz verwendet werden)
<https://openjdk.java.net/> , <https://jdk.java.net/>
- **Adopt openJDK** (wird von IBM, Microsoft usw unterstützt, kann bedenkenlos verwendet werden)
<https://adoptopenjdk.net/>
- **Amazon Corretto** (wird in der AWS verwendet, ebenfalls zu empfehlen)
<https://aws.amazon.com/de/corretto/>
- **Zulu openJDK** (könnte auch verwendet werden)
<https://www.azul.com/downloads/zulu-community/>

In den meisten Linux Systemen wird über den Paketmanager Oracle openJDK installiert und ist daher am meisten verbreitet. Adopt openJDK Amazon Corretto JDK sind durch ihren Einsatz in der jeweiligen Cloud (azure bzw aws) sicherlich produktionsbereit

Tooling



IDE
IntelliJ IDEA Ultimate



Build Tool
Apache Maven



Test Framework
JUnit 5

<https://junit.org/junit5/docs/current/user-guide/>

<https://github.com/junit-team/junit5-samples/tree/r5.5.1/junit5-jupiter-starter-maven>



git on GitHub

<https://books.goalkicker.com/GitBook/>



GitHub Classroom

GitHub Classroom

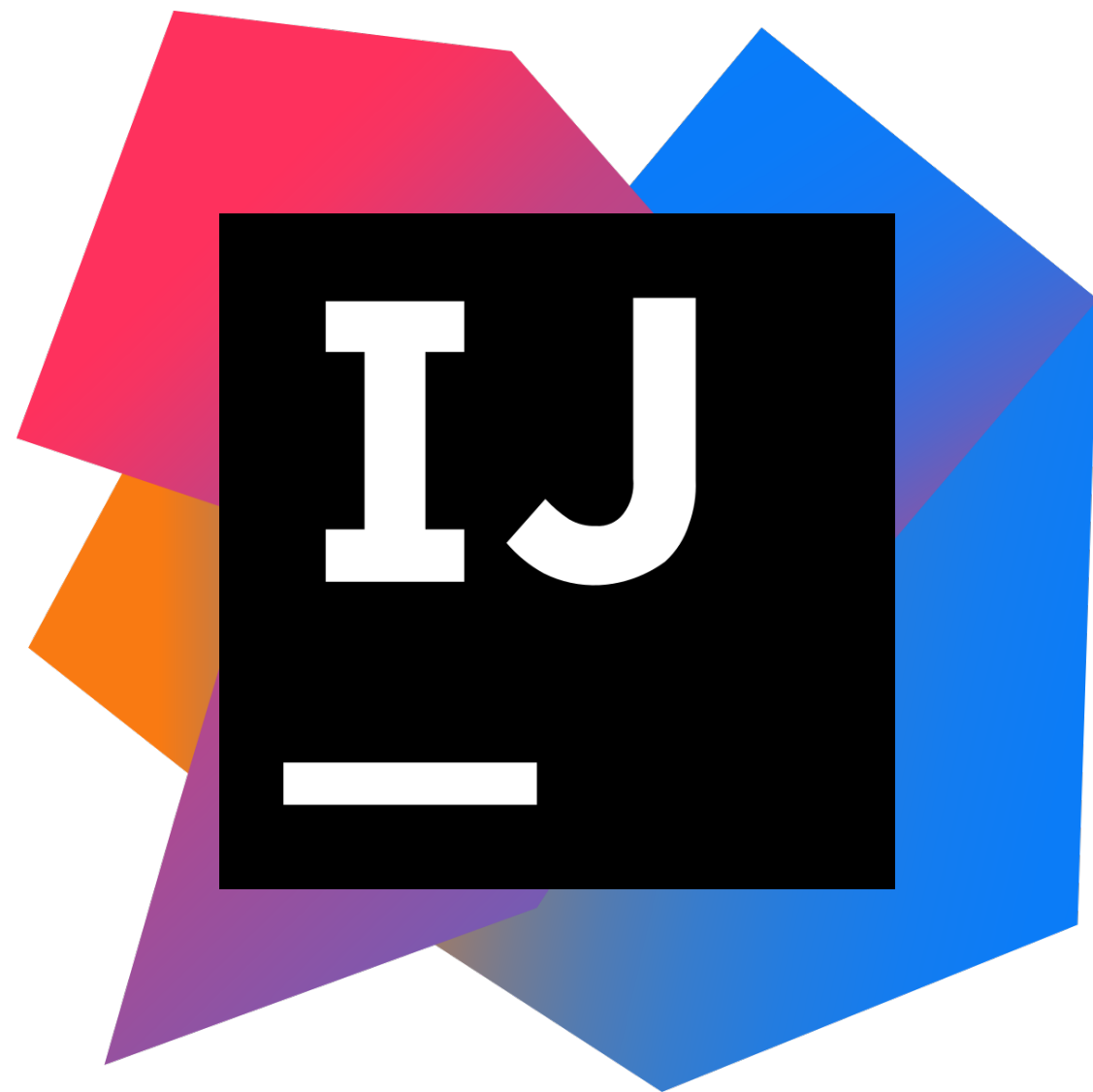


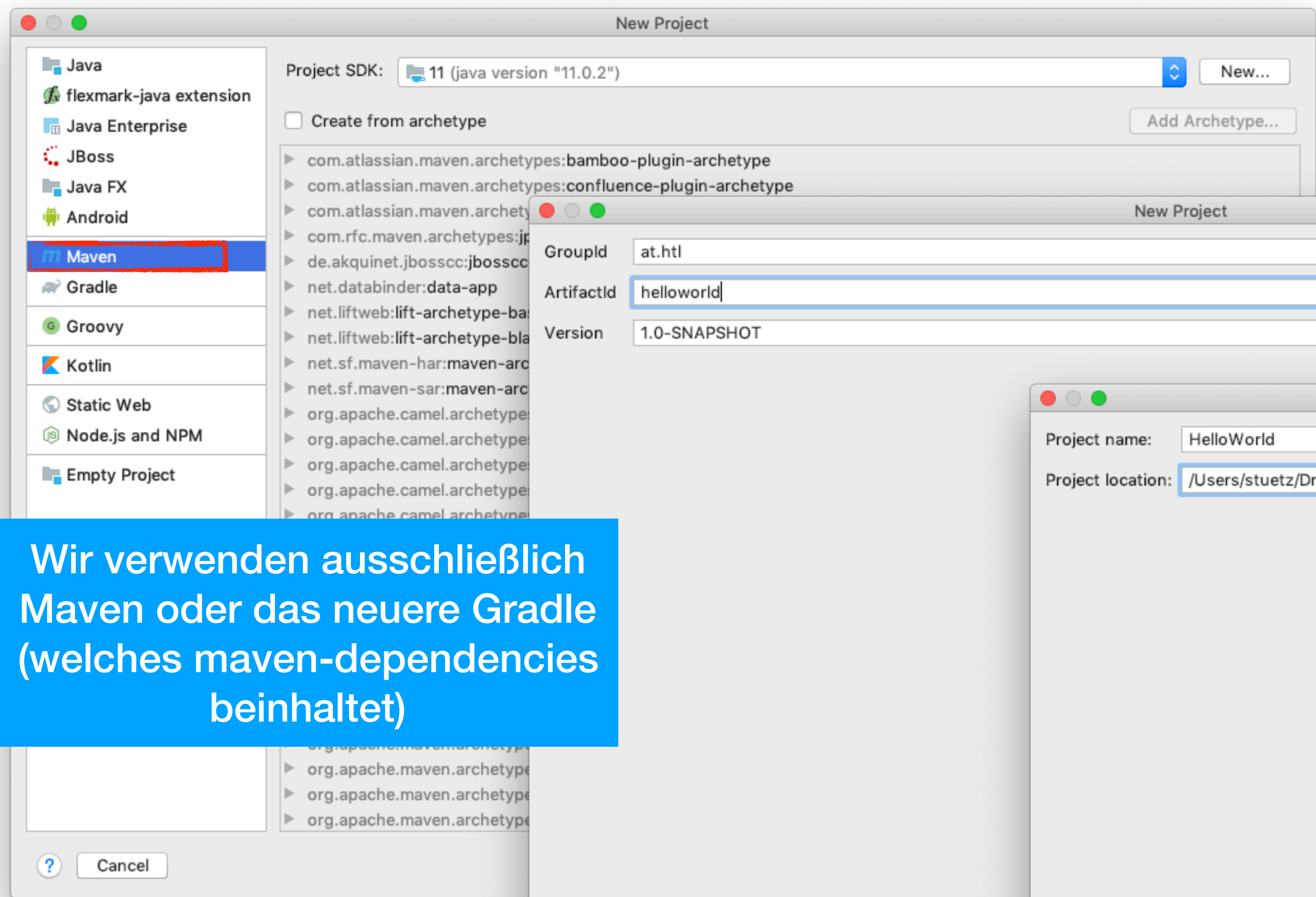
<https://edufs.edu.htl-leonding.ac.at/moodle/login/index.php>

Syllabus

- Java basics
- Unit testing
- Collections
- Exception Handling
- Java FX
- Lambda expressions
- Java Streaming API
- Java FX / MVC Pattern
- Threads
- Database access: JDBC
- Sockets / Serialization
- (Remote Method Invocation – RMI)

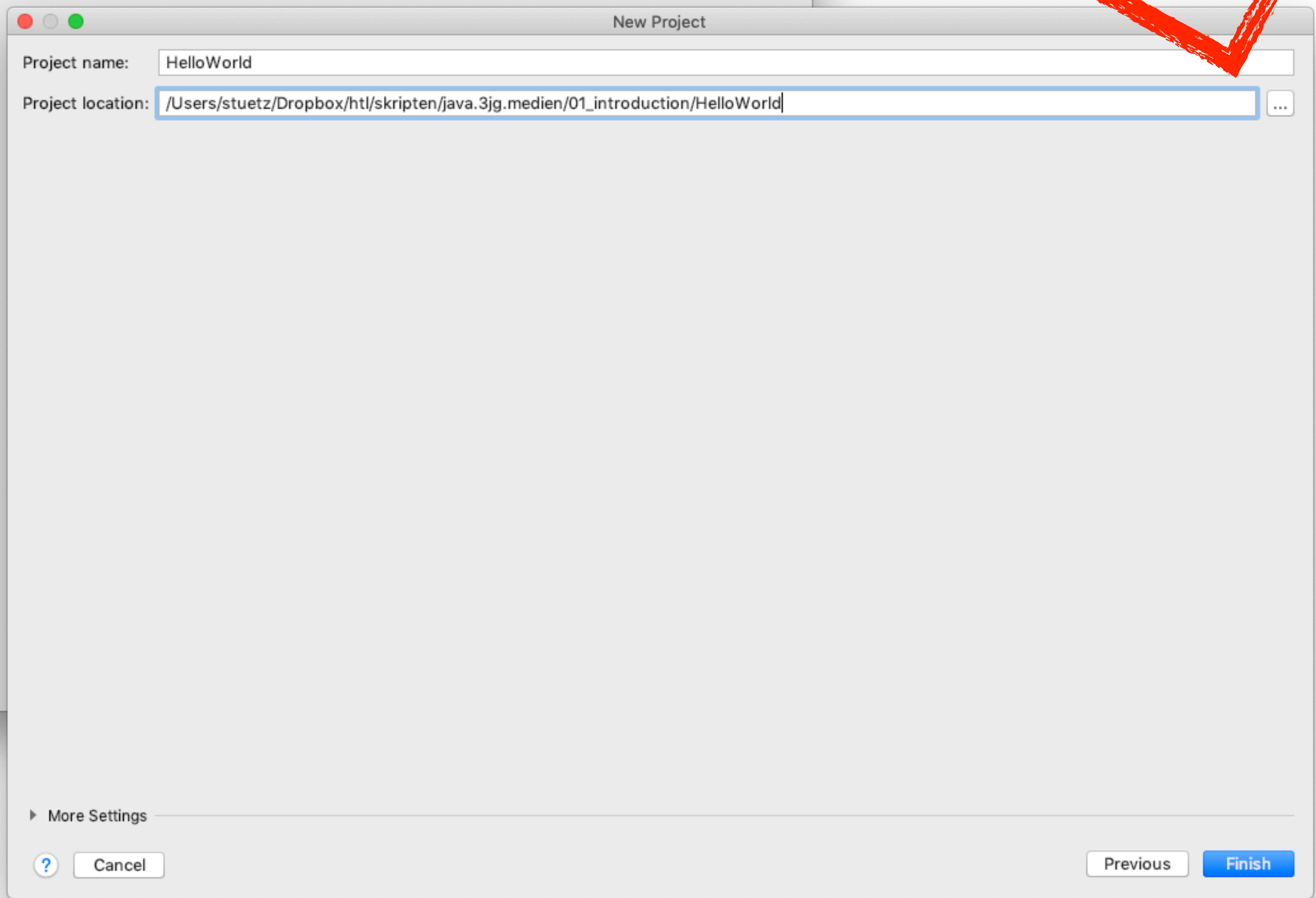
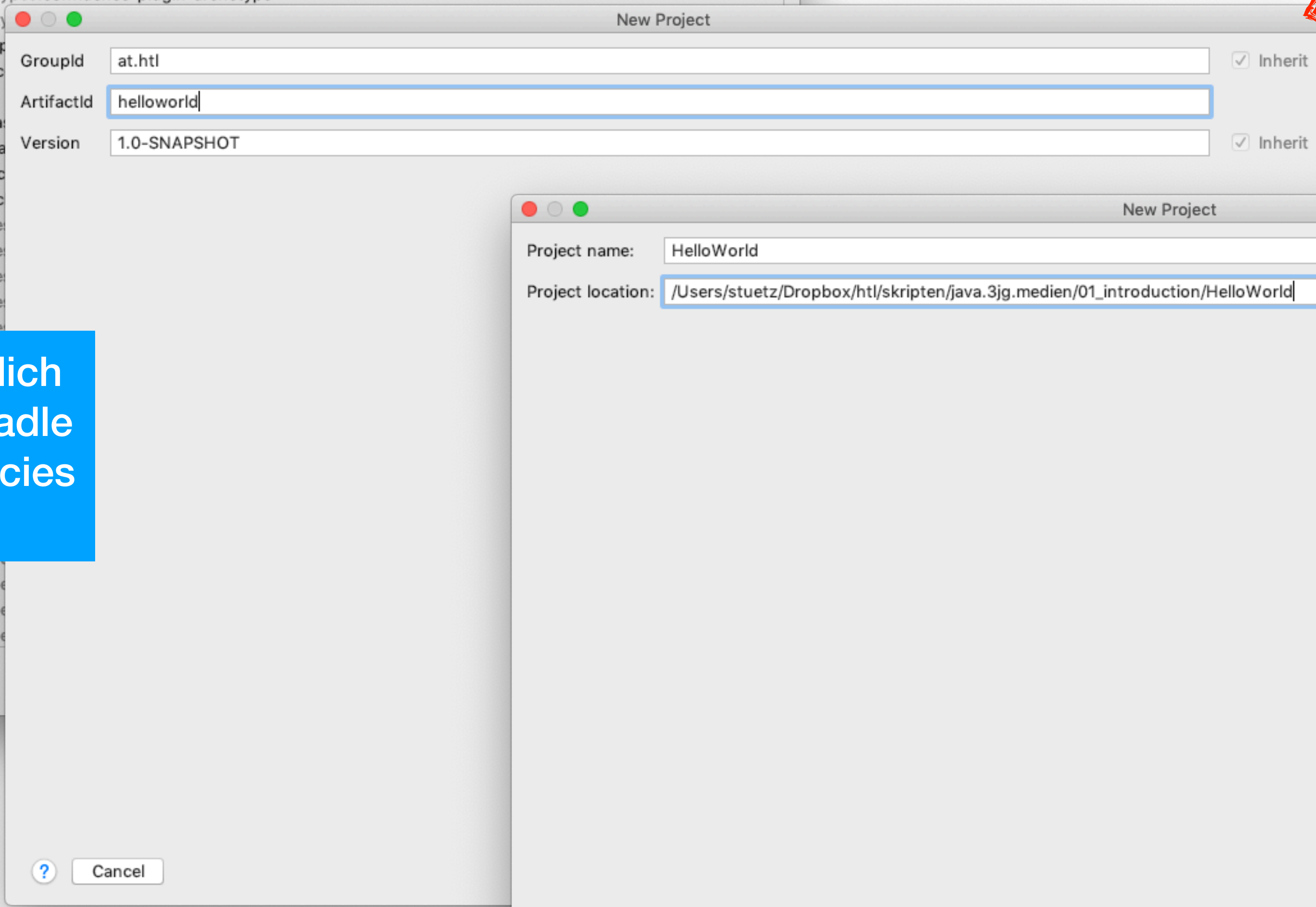
Create a project with IntelliJ IDEA Ultimate





wir verwenden
Maven

Wir verwenden ausschließlich
Maven oder das neuere Gradle
(welches maven-dependencies
beinhaltet)



Maven projects need to be imported
Import Changes **Enable Auto-Import**

pom.xml

Intellisense verwenden

<https://stuetzpunkt.wordpress.com/2019/07/16/pom-xml-for-junit5/>

```
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>

  <groupId>at.htl</groupId>
  <artifactId>helloworld</artifactId>
  <version>1.0-SNAPSHOT</version>
  <packaging>jar</packaging>

  <properties>
    <maven.compiler.source>11</maven.compiler.source>
    <maven.compiler.target>11</maven.compiler.target>
    <junit.jupiter.version>5.5.1</junit.jupiter.version>
  </properties>

  <dependencies>
    <dependency>
      <groupId>org.junit.jupiter</groupId>
      <artifactId>junit-jupiter</artifactId>
      <version>${junit.jupiter.version}</version>
      <scope>test</scope>
    </dependency>
    <dependency>
      <groupId>org.hamcrest</groupId>
      <artifactId>hamcrest-all</artifactId>
      <version>1.3</version>
      <scope>test</scope>
    </dependency>
  </dependencies>

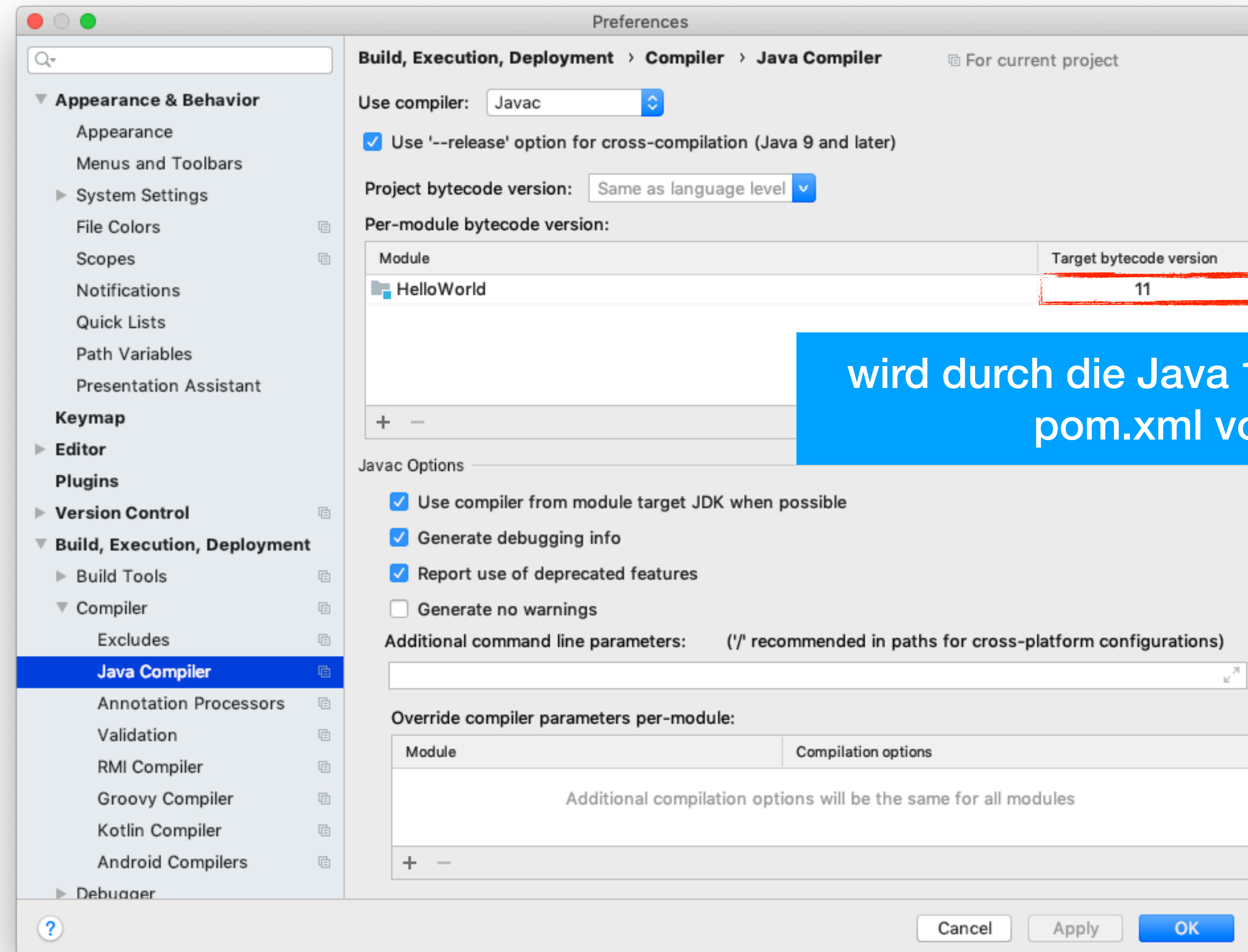
  <build>
    <finalName>helloworld</finalName>
  </build>
</project>
```

junit und hamcrest werden nur für das Testen benötigt und sind hier nur der Vollständigkeit halber eingetragen

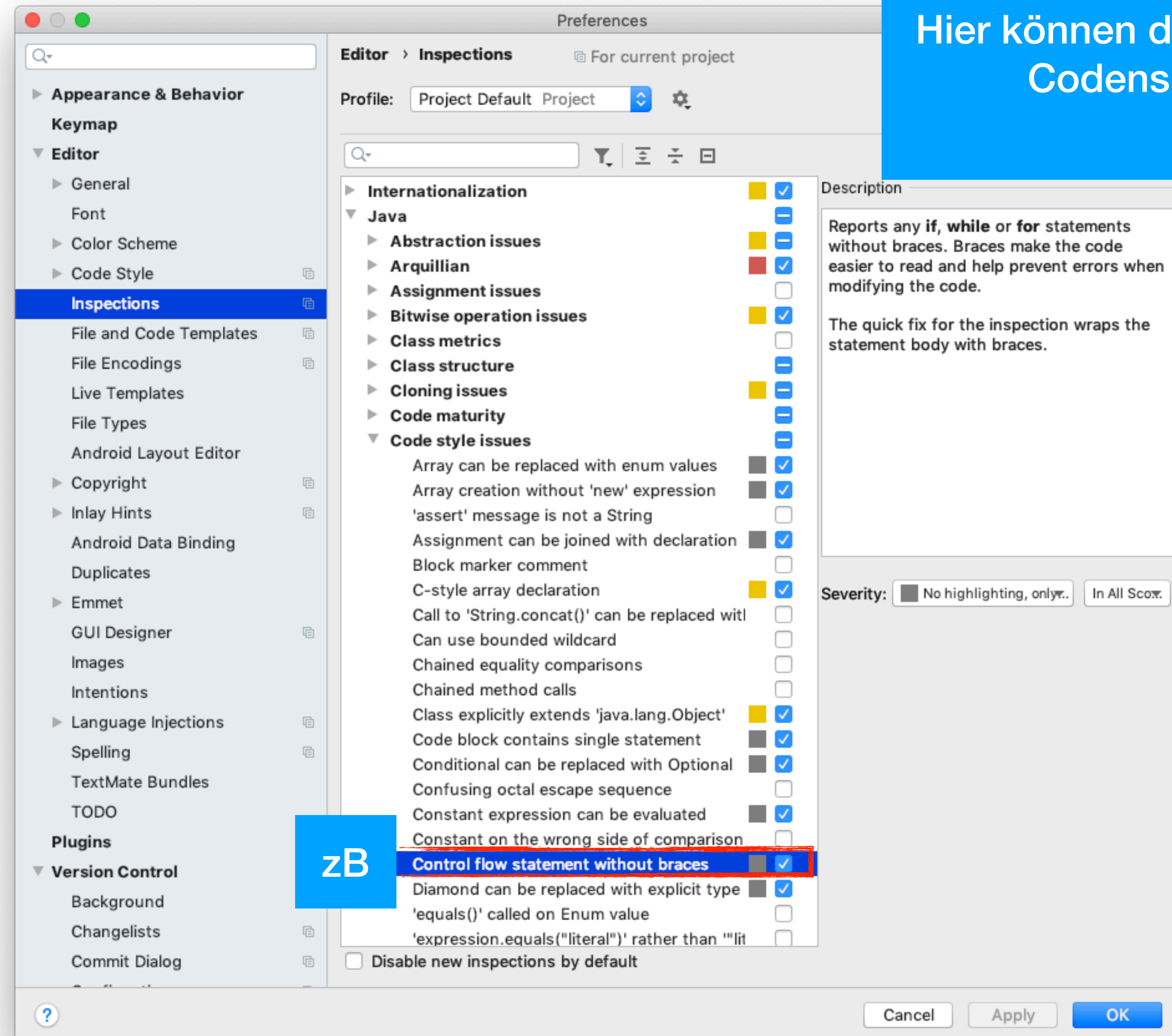
The screenshot shows the IntelliJ IDEA Project Structure dialog for a project named 'HelloWorld'. The 'Project SDK' is set to '11 (java version "11.0.2")'. The 'Project language level' is set to '11 - Local variable syntax for lambda parameters'. The 'Project compiler output' is also set to '11 - Local variable syntax for lambda parameters'. The 'Language level' dropdown is also set to '11 - Local variable syntax for lambda parameters'. The 'Project Settings' sidebar shows 'Project', 'Modules', 'Libraries', 'Facets', 'Artifacts', 'Platform Settings', 'SDKs', and 'Global Libraries'. The 'Platform Settings' section is expanded to show 'SDKs', with '11' selected. The 'JDK home path' is set to '/Library/Java/JavaVirtualMachines/jdk-11.0.2.jdk'. The 'Classpath' section shows the path to the JDK. The 'Project Structure' dialog is also visible in the background, showing the project name 'HelloWorld' and the 'Language level' dropdown.

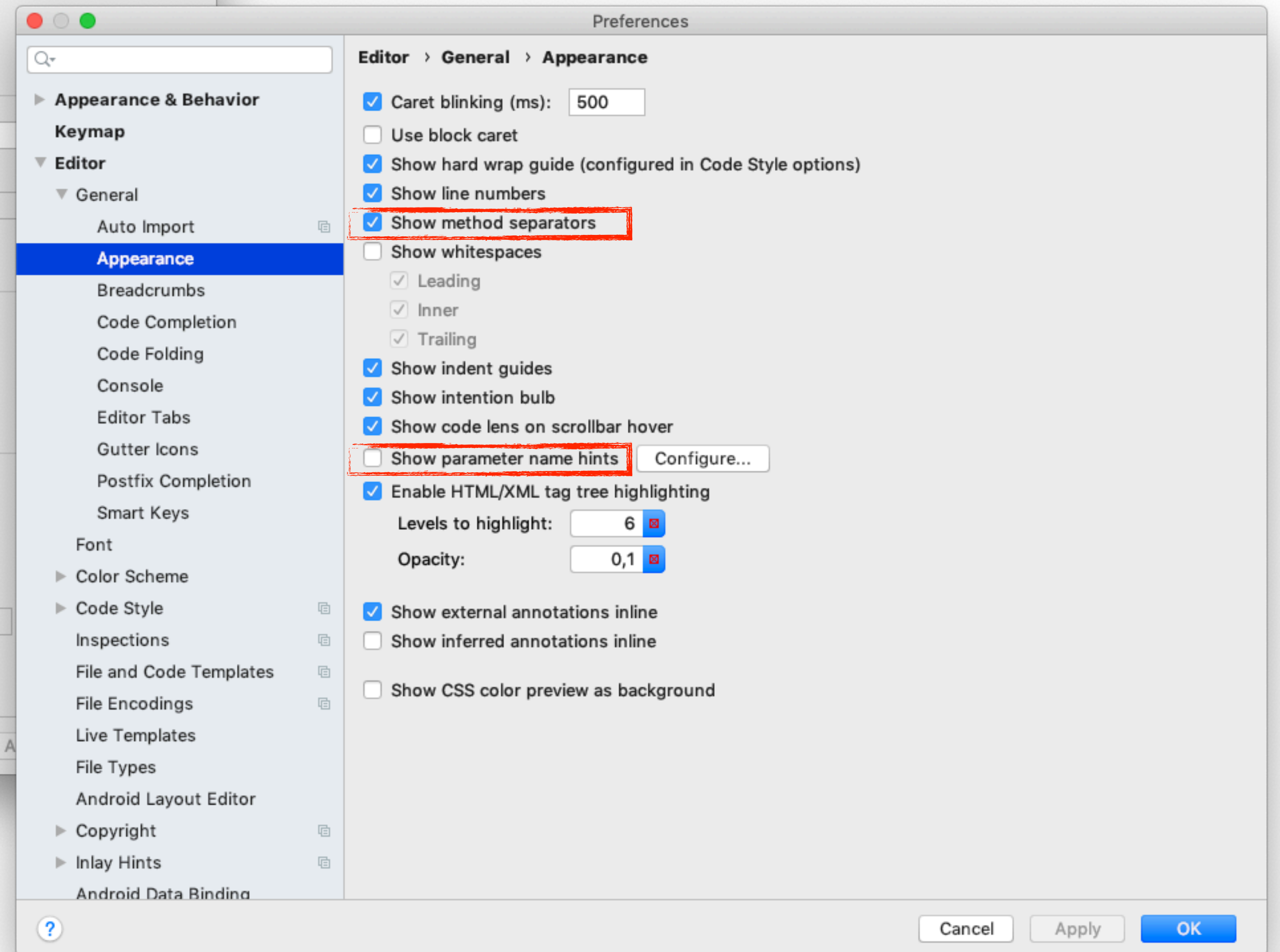
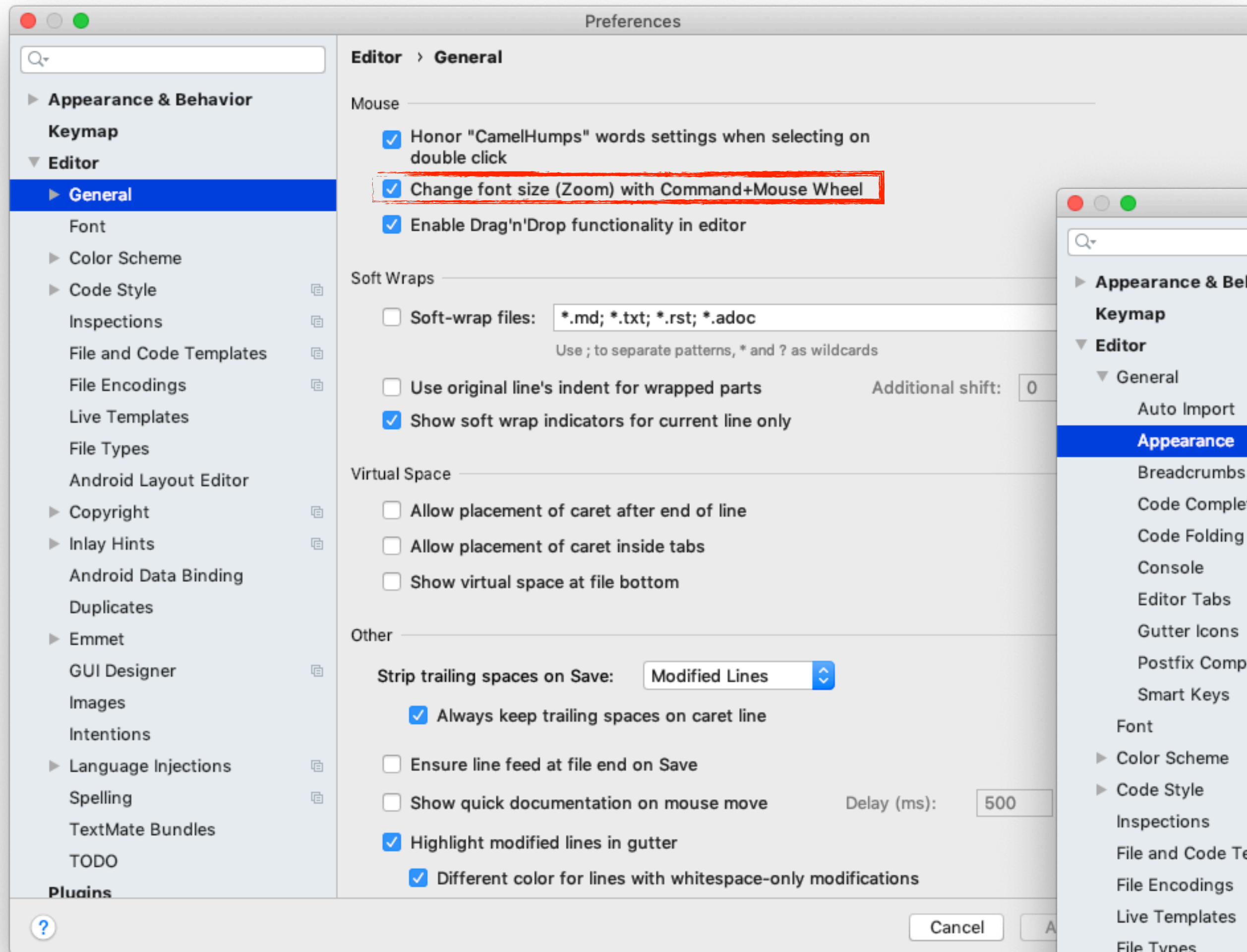
Durch die Java 11 - Properties in der pom.xml werden Einstellungen in der IDE für Java 11 durchgeführt (leider nicht durchgängig)

Kontrollieren in Preferences



Hier können die Hinweise während des Codens eingestellt werden





HelloWorld.java

```
package at.htl.helloworld;

import java.io.IOException;
import java.util.Scanner;

/**
 *
 * @author teacher
 */
public class HelloWorld {

    /**
     * @param args the command line arguments
     * @throws java.io.IOException
     */
    public static void main(String[] args) throws IOException {
        System.out.print("Please enter your name: ");

        Scanner s = new Scanner(System.in);
        String name = s.nextLine();

        boolean nameIsValid = name.length() > 0;

        if (nameIsValid)
            System.out.println("Hello " + name);
        else
            System.out.println("Hello World");
    }
}
```

Fakers

Ancient
Animal
Address
App
Artist
Avatar
Back To The Future
Aviation
Beer
Book
Bool
Business
ChuckNorris
Cat
Code
Color
Commerce
Company
Crypto
DateAndTime
Demographic
Dog
DragonBall
Dune
Educator
Esports
File
Finance
Food
Friends
FunnyName
GameOfThrones
Hacker
HarryPotter
Hipster
HitchhikersGuideToTheGalaxy
Hobbit
HowIMetYourMother
IdNumber
Internet
Job
LeagueOfLegends
Lebowski
LordOfTheRings
Lorem
Matz
Music
Name
Nation
Number
Options
Overwatch
PhoneNumber
Pokemon
PrincessBride
RelationshipTerms
RickAndMorty
Robin

Java-Faker

Tolle Library zum Erstellen
von Testdaten

@Test

```
void javaFaker() {  
    Faker faker = new Faker();  
  
    String name = faker.name().fullName(); // Miss Samanta Schmidt  
    String firstName = faker.name().firstName(); // Emory  
    String lastName = faker.name().lastName(); // Barton  
  
    String streetAddress = faker.address().streetAddress(); // 60018 Sawayn Brooks Suite 449  
  
    System.out.println(name);  
    System.out.println(firstName);  
    System.out.println(lastName);  
    System.out.println(streetAddress);  
}
```

<https://github.com/DiUS/java-faker>

```
Ed Gerlach  
Kyla  
Bartoletti  
52085 Christian Radial
```


Ressourcen

- Ullenboom, C.; Java ist auch eine Insel, 14. Auflage, Rheinwerk Verlag Bonn 2019
- Ullenboom, C.; Java ist auch eine Insel, 12. Auflage, <http://openbook.rheinwerk-verlag.de/javainsel/> (frei verfügbar)
- Java Notes for Professionals book, <https://goalkicker.com/JavaBook/>, download am 26. August 2019 (frei verfügbar)
- Präsentationen der Oracle Academy (Java, SQL, PL/SQL, ...) <https://en.ppt-online.org/search?text=oracle&cat=&lang=en>
- Oracle Java Tutorial, <https://docs.oracle.com/javase/tutorial/>



Noch
Fragen?

HTL LE  NDING

Schön, hier zu lernen