

Introduction

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Learn Programming with Java

Outline

Welcome

About Us

About the course

Socializing

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Setting up our tools

Welcome

Welcome to the course

Learn Programming with Java

Checkout <https://course.tobias-hanf.de/>

About Us

Who are we ?

Tobias Hanf

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Maik Göken

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<https://matrix.to/#/#java-course-ws2223:tu-dresden.de>

About the course



<https://pingo.coactum.de/602380>

What is this course about

- Learning to Programm
- Understand Object Oriented Programming (OOP)
- Write (small) Programms in Java
- Solve Problems on your own (with Partner)
- Learn to read Technical Documentation
- Create own Project

How is the course structured

- Course is divided into **Units**
- Each Unit deals with one or two concepts
- Starting with simple problems
- Working our way up to own projects
- At the end: you decide what to programm

How a unit is structured

- Starting with a revision of the last unit
- 20-30 min presentation: introduction to concepts
- -> you start working on problems/project (Pair Programming)
- Optional theory part
- End: review of the unit + feedback

Pair Programming

- Writing code together on one Computer
- Driver: writes the code
- Navigator: check the code and thinks about the problem
- Switching roles periodically

What we want from you

- ask questions
- Making mistakes is part of the job
- If we are too fast or you didn't understand a concept
 - -> tell us
 - someone may have the same problem
- If you have a project idea or want to know something about a topic
 - -> tell us, write an email, use Matrix
- Our job is to support you on your journey of becoming a programmer

Socializing

1. Group into pairs
2. Play Schnick Schnack Schnuck (Best of 5)
3. Loser has to follow the winner and cheer for him
4. If there is more then one winner left: goto step 1.
 - Else: we have a champion

sort by age (birthday)

Sort your selfs by age(birthday) **without** talking to each other

2 Gemeinsamkeit 1 Unterschied

Findet euch in Paaren zusammen und sucht zwei Gemeinsamkeiten und ein Unterschied. Dies können Hobbies, Lieblingspeisen, Musikgenres oder was auch immer sein. Ihr könnte auch kreativ werden ;)

About Programming and Java

What is Programming

Definition

Computer programming is the process of performing a particular computation (or more generally, accomplishing a specific computing result), usually by designing and building an executable computer program. Programming involves tasks such as analysis, ...

Source: https://en.wikipedia.org/wiki/Computer_programming

Simpler definition

Put simply, programming is giving a set of instructions to a computer to execute.

Source: <https://www.codecademy.com/article/what-is-programming>

What is Java

- High-level, object-oriented programming language
- Compiled to byte-code
- Byte-code runs in VM (virtual machine)
- Very portable
- Used heavily in enterprise software

Why do we use Java

- You need it for Software Technologie
- "Easy" to learn
- Teaches you OOP
- Used by alot of companies
- Alot of resources

Java compared to other Languages

- Cons:
 - Runs in VM -> overhead -> slow (compared to C)
 - Direct hardware access is impossible (very hard)
- Pros:
 - Memory save (garbage collector)
 - Strict typing
 - Runs almost everywhere (56 billion devices)

Java runs on 56 billion devices

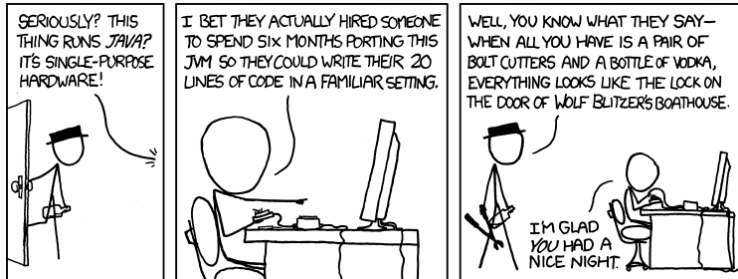


Figure 1: <https://xkcd.com/801/>

Setting up our tools

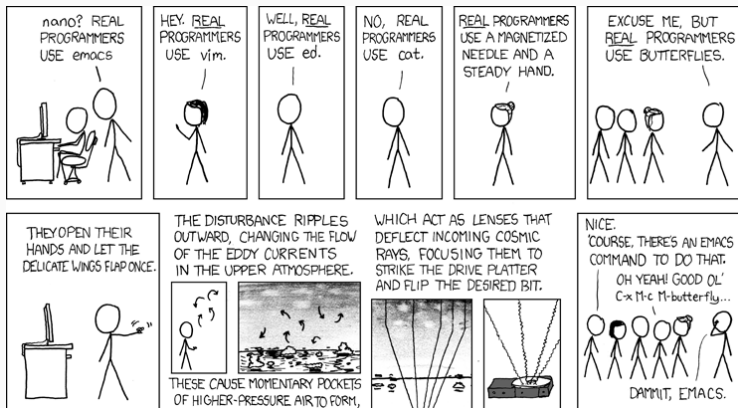


Figure 2: <https://xkcd.com/378/>

What tools do we use

- VS Code
- OpenJDK 11 (or higher)
- Java Plugins for VS Code

Installing

PCs in the PC-Pool should have VS Code and the JDK already installed. You only need to install the plugin.

1. Get VS Code
 - Or the Libre Version
2. Download JDK 18 and install it
 - Execute `java --version` in your terminal
 - If something with `JDK` gets printed you should be fine
3. Install the following plugin
 - <https://open-vsx.org/extension/vscjava/vscode-java-pack>

Hello World!

1. Download the **Hello World** file from the Course Page
2. Move/Copy it to a directory
3. Open the directory in VS Code
4. Find the Play-Button in the upper right corner and press it
5. Look at the result in the terminal

Feedback

Thank you
And have a nice day