

Einführung in die Informatik 2 für Ingenieure (MSE)

Übung I

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Agenda

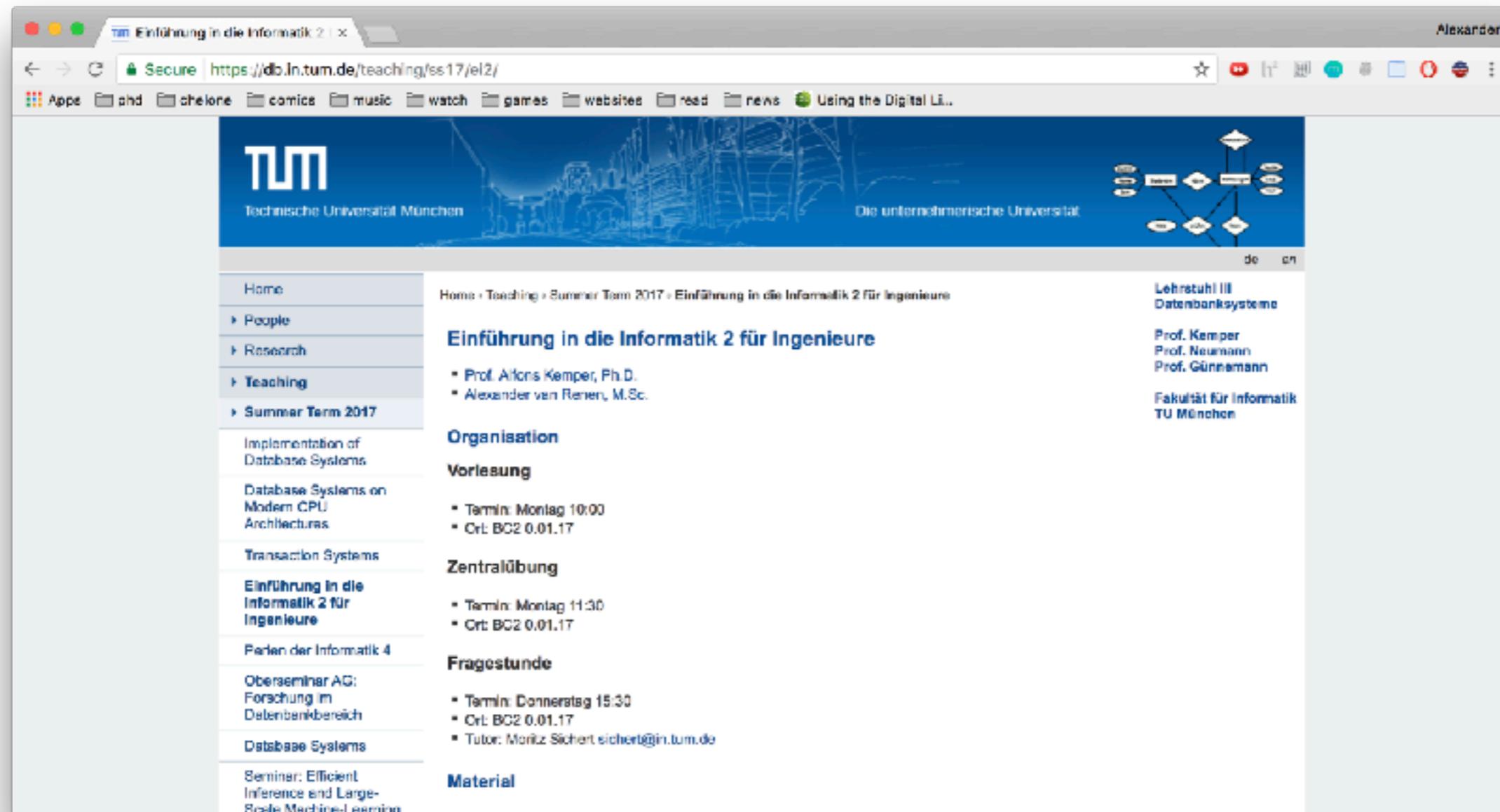
1. Organisation
2. Umfrage
3. Java
4. UML
5. Übungsblatt I

Organisation

Termine

- **Vorlesung** (Prof. Alfons Kemper)
 - Montag 10:00 - 11:30; BC2 0.01.17
- **Zentralübung** (Alexander van Renen)
 - Montag 11:30 - 12:30; BC2 0.01.17
- **Fragestunde** (Moritz Sichert)
 - Donnerstag 15:30 - 16:30; BC2 0.01.17

Website



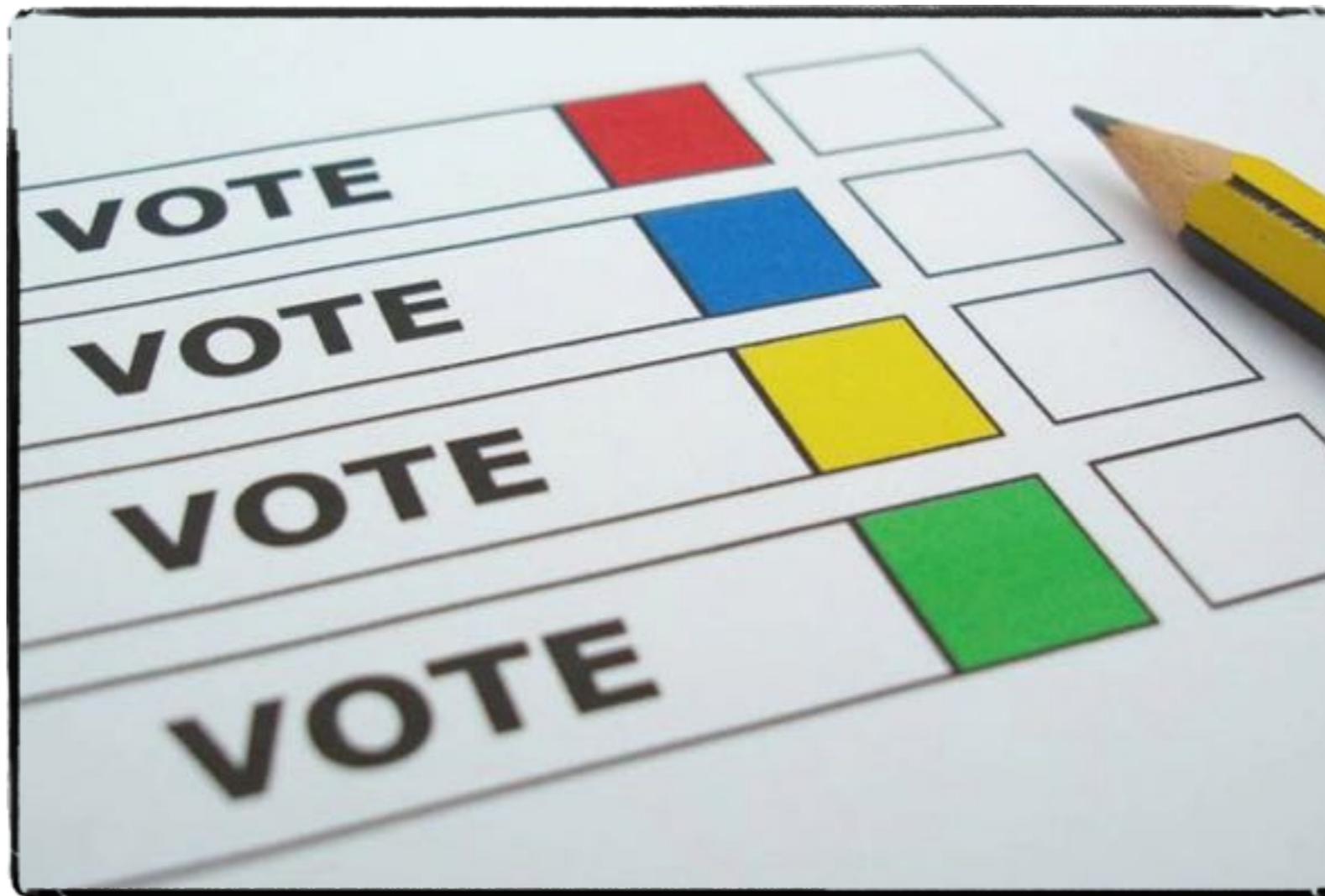
<http://db.in.tum.de/teaching/ss16/ei2/>

Übungsblätter

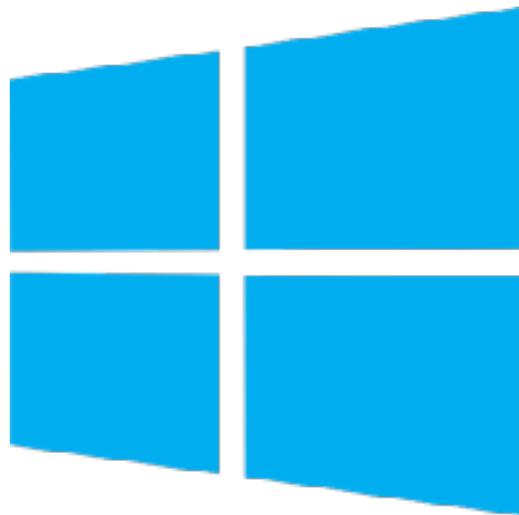
- Erscheinen immer zu Beginn der Woche (12x)
- Keine Hausaufgaben
- Stattdessen:
Ihr stellt eure Lösung vor
- Musterlösung danach auf der Webseite verfügbar



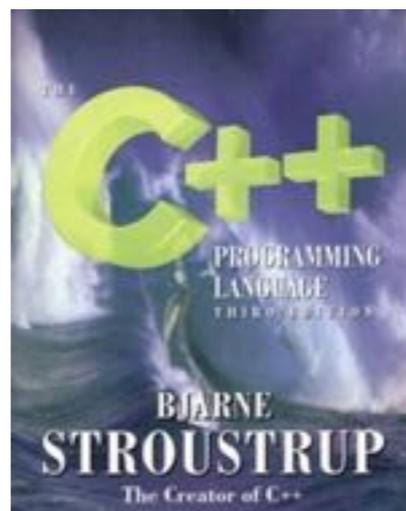
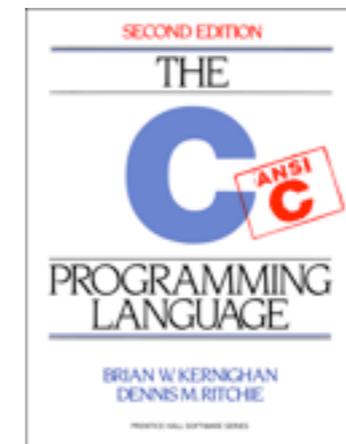
Umfrage



Betriebssysteme ?



Programmiersprachen ?



C#



Datenbanken ?

ORACLE®

IBM

Microsoft®
SQL Server®

SQLite

MySQL®



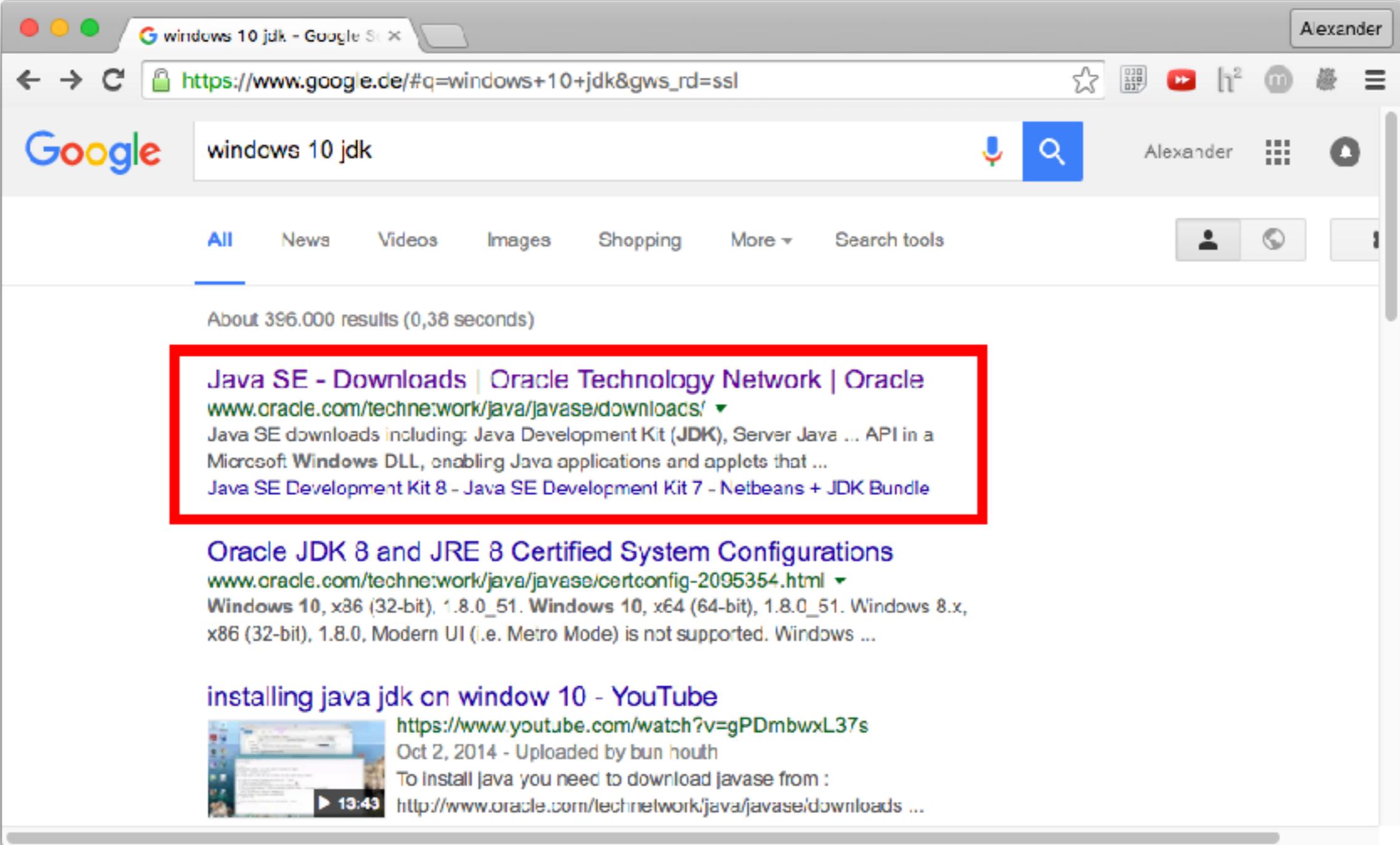
Einführung in



Getting Started (Windows)

I. Java Development Kit (JDK) installieren

Java Setup (Windows)



A screenshot of a Google search for "windows 10 jdk". The search results are displayed on a desktop browser window. The first result is highlighted with a red box and is titled "Java SE - Downloads | Oracle Technology Network | Oracle". The second result is titled "Oracle JDK 8 and JRE 8 Certified System Configurations". The third result is a YouTube video titled "installing java jdk on window 10".

Windows 10 jdk - Google Search

https://www.google.de/#q=windows+10+jdk&gws_rd=ssl

Google windows 10 jdk

All News Videos Images Shopping More Search tools

About 396.000 results (0,38 seconds)

Java SE - Downloads | Oracle Technology Network | Oracle
www.oracle.com/technetwork/java/javase/downloads/
Java SE downloads including: Java Development Kit (JDK), Server Java ... API in a Microsoft Windows DLL, enabling Java applications and applets that ...
Java SE Development Kit 8 - Java SE Development Kit 7 - Netbeans + JDK Bundle

Oracle JDK 8 and JRE 8 Certified System Configurations
www.oracle.com/technetwork/java/javase/certconfig-2095354.html
Windows 10, x86 (32-bit), 1.8.0_51. Windows 10, x64 (64-bit), 1.8.0_51. Windows 8.x, x86 (32-bit), 1.8.0, Modern UI (i.e. Metro Mode) is not supported. Windows ...

installing java jdk on window 10 - YouTube
<https://www.youtube.com/watch?v=gPDmbwxL37s>
Oct 2, 2014 - Uploaded by bun houth
To install java you need to download javase from :
<http://www.oracle.com/technetwork/java/javase/downloads> ...

Java Setup (Windows)

The screenshot shows a web browser window displaying the Oracle Java SE Downloads page. The browser's address bar shows the URL `www.oracle.com/technetwork/java/javase/downloads/index.html`. The page features the Oracle logo and a navigation menu with links for Products, Solutions, Downloads, Store, Support, Training, Partners, and About. A search bar is also present. The main content area is titled "Java SE Downloads" and includes a navigation bar with tabs for Overview, Downloads, Documentation, Community, Technologies, and Training. Two download options are highlighted with red boxes: "Java Platform (JDK) 8u77" and "NetBeans with JDK 8". Below the "Java Platform (JDK) 8u77" download button, there is a section for "Java Platform, Standard Edition" with a sub-section for "Java SE 8u77" and a note about security fixes. A sidebar on the left contains a list of links for various Java products and support resources. A sidebar on the right contains links for Java SDKs and Java Resources. The browser's status bar at the bottom indicates "Resolving host..."

Java SE - Downloads | Oracle

www.oracle.com/technetwork/java/javase/downloads/index.html

ORACLE

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Products Solutions Downloads Store Support Training Partners About

Oracle Technology Network > Java > Java SE > Downloads

Overview Downloads Documentation Community Technologies Training

Java SE Downloads

 **DOWNLOAD**

Java Platform (JDK) 8u77

 **DOWNLOAD**

NetBeans with JDK 8

Java Platform, Standard Edition

Java SE 8u77
Java SE 8u77 includes important security fixes. Oracle strongly recommends that all Java SE 8 users upgrade to this release.
[Learn more](#)

Java SE
Java EE
Java ME
Java SE Support
Java SE Advanced & Suite
Java Embedded
Java DB
Web Tier
Java Card
Java TV
New to Java
Community
Java Magazine

Java SDKs and Tools
Java SE
Java EE and GlassFish
Java ME
Java Card
NetBeans IDE
Java Mission Critical
Java Resources
Java APIs
Technical Articles
Demos and Videos
Forums
Java Magazine
Java.net

Resolving host...

Java Setup (Windows)

The screenshot shows the Oracle Java SE Development Kit 8u77 download page. The browser address bar shows the URL: www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html. The page title is "Java SE Development Kit 8u77".

Below the title, there is a license agreement section with two radio buttons: "Accept License Agreement" (selected) and "Decline License Agreement".

The main content is a table of download links for various operating systems and architectures. The "Windows x64" row is highlighted with a red box. The download link for Windows x64 is [jdk-8u77-windows-x64.exe](#).

Product / File Description	File Size	Download
Linux ARM 32 Soft Float ABI	77.7 MB	jdk-8u77-linux-arm32-vfp-hflt.tar.gz
Linux ARM 64 Soft Float ABI	74.68 MB	jdk-8u77-linux-arm64-vfp-hflt.tar.gz
Linux x86	154.74 MB	jdk-8u77-linux-i586.rpm
Linux x86	174.92 MB	jdk-8u77-linux-i586.tar.gz
Linux x64	152.76 MB	jdk-8u77-linux-x64.rpm
Linux x64	172.96 MB	jdk-8u77-linux-x64.tar.gz
Mac OS X	227.27 MB	jdk-8u77-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	139.77 MB	jdk-8u77-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	99.06 MB	jdk-8u77-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	140.01 MB	jdk-8u77-solaris-x64.tar.Z
Solaris x64	96.18 MB	jdk-8u77-solaris-x64.tar.gz
Windows x64	187.31 MB	jdk-8u77-windows-x64.exe

Below the table, there is a section titled "Java SE Development Kit 8u77 Demos and Samples Downloads".

Getting Started (Windows)

1. ~~Java Development Kit (JDK) installieren~~

2. Code schreiben

Hello World ...

```
public class Blub {  
    public static void main(String[] args) {  
        System.out.println("hello my world !");  
    }  
}
```

Files & Packages

- Eine Klasse pro File
- Packages entsprechen der Ordner Struktur

```
package source;  
  
public class Blub {  
    public static void main(String[] args) {  
        System.out.println("hello my world !");  
    }  
}
```

Getting Started (Windows)

1. ~~Java Development Kit (JDK) installieren~~
2. ~~Code schreiben~~
3. IntelliJ IDEA installieren

Intelij IDEA



<https://www.jetbrains.com/idea/>

Getting Started (Windows)

1. ~~Java Development Kit (JDK) installieren~~

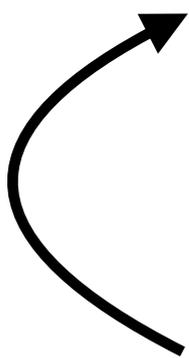
2. ~~Code schreiben~~

3. ~~IntelliJ IDEA installieren~~

4. Code schreiben

5. Debuggen

6. Goto 4



Klassen & Objekte

- Eine Klasse ... zB: Punkt
 - ... beschreibt einen Daten-Typen.
 - ... ist sowas wie ein 'struct' in C.
- Ein Objekt ... zB: (1;3)
 - ... ist eine Ausprägung eines Daten-Typen.
 - ... ist sowas wie eine Instanz von einer 'struct' C.

Klassen & Objekte

- Objekt Attribute/Methoden gehören zu einem Objekt.

```
public class Point {  
    float x; // Objekt Attribut  
    float y; // Objekt Attribut  
    float length() { /*...*/ } // Objekt Methode  
}
```

Objekt Methoden

- Nachgebaut in C

```
struct Point {  
    float x;  
    float y;  
};  
float pointGetLength(Point* this) { /* ... */ }
```

- Java

```
public class Point {  
    float x;  
    float y;  
    float length() { /* ... */ }  
}
```

Ein paar Links

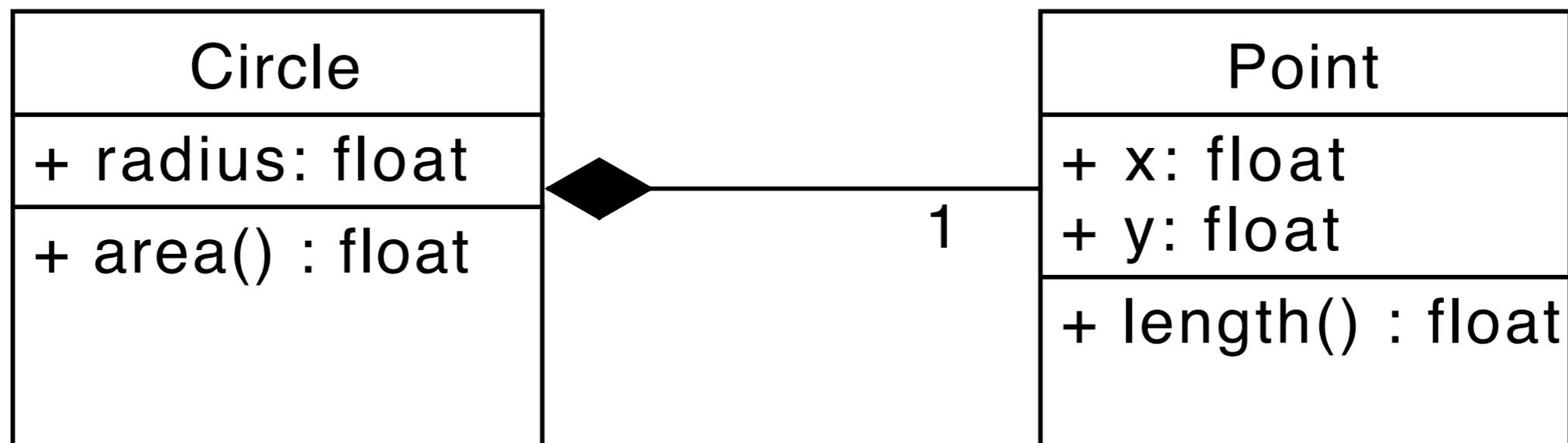
- Google !!!!!
- IDE: IntelliJ IDEA: <https://www.jetbrains.com/idea/>
- Online IDE: http://www.tutorialspoint.com/compile_java_online.php
- Zusätzliche Übungsaufgaben: <https://www.hackerrank.com/>

Modellierungsbeispiel



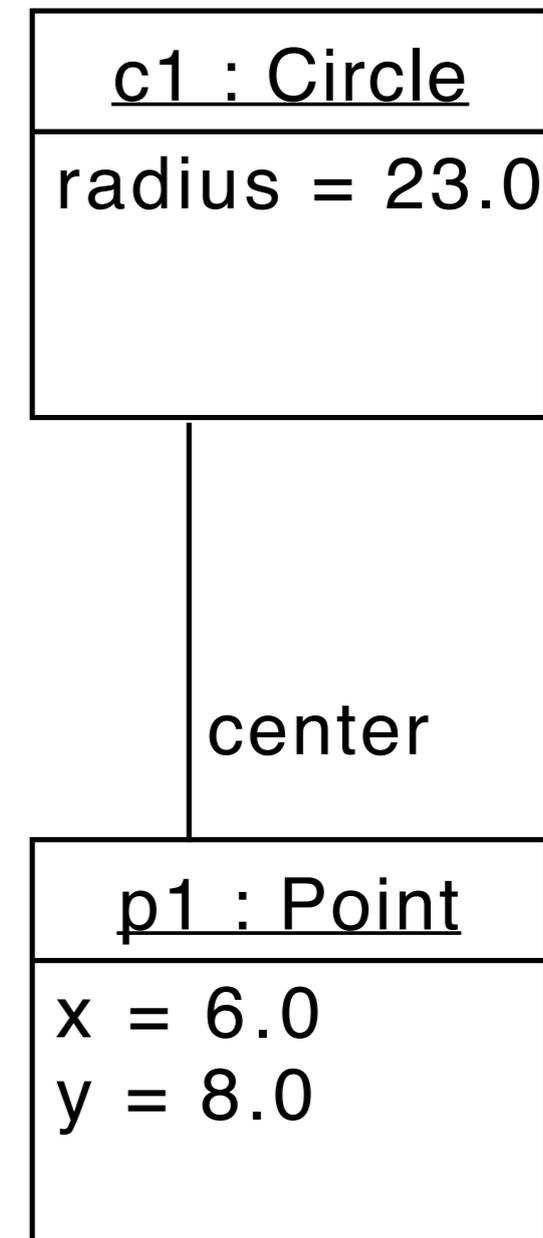
Klassendiagramm

- Zeigt die Struktur des modellierten Systems
- Beschreibt Klassen mit Attributen und Operationen
- Zeigt Beziehungen zwischen Klassen



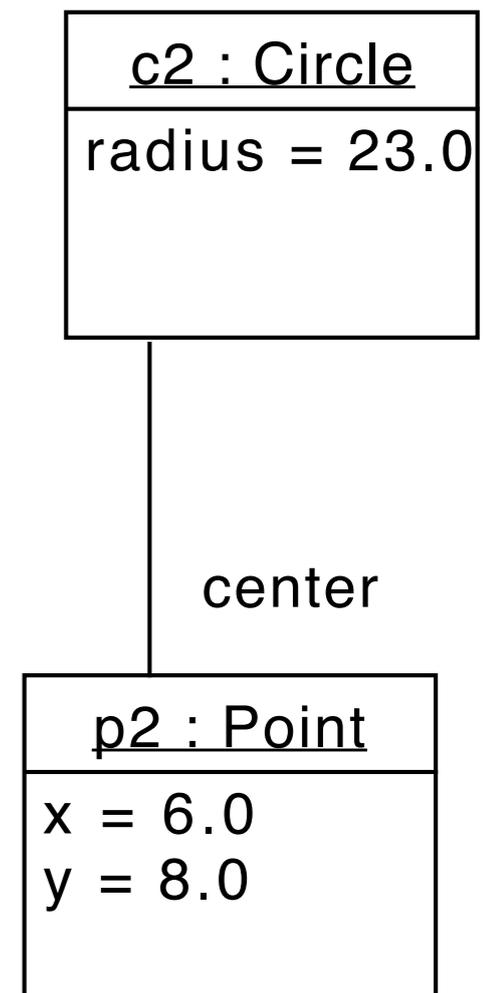
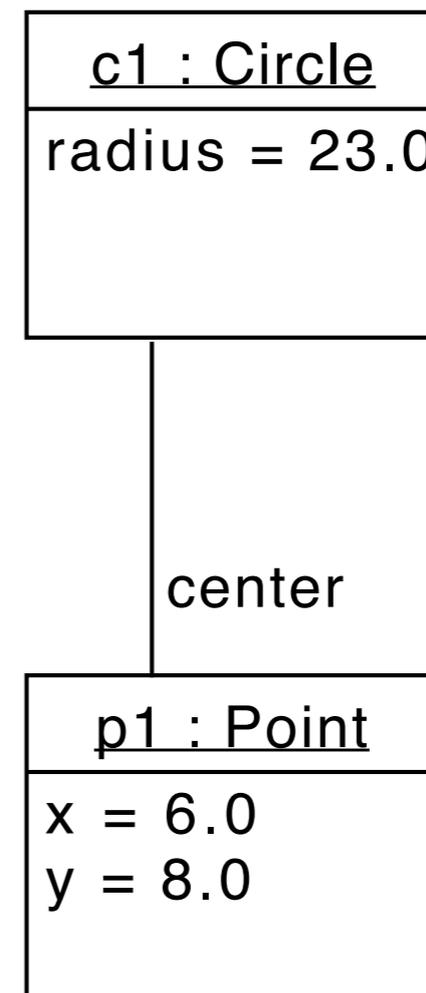
Objektdiagramm

- Zeigt das modellierte System zu einem Zeitpunkt
- Enthält Instanzen von Klassen und Assoziationen



Objektdiagramm

- Zeigt das modellierte System zu einem Zeitpunkt
- Enthält Instanzen von Klassen und Assoziationen

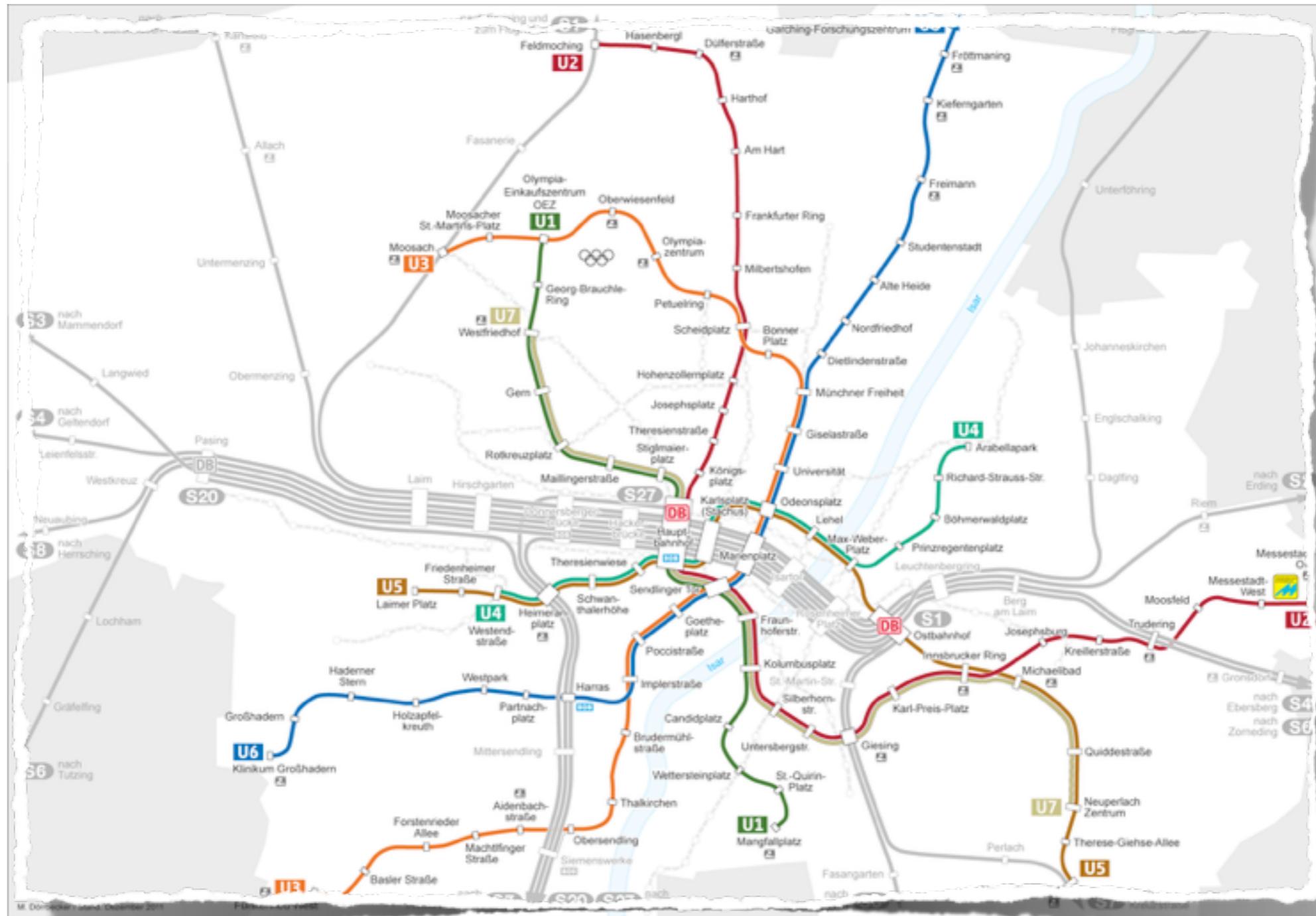


Übungsblatt I

- Verfügbar auf der Webseite
- Benötigt Java Compiler und Laufzeitumgebung



Aufgabe I



Aufgabe 2

