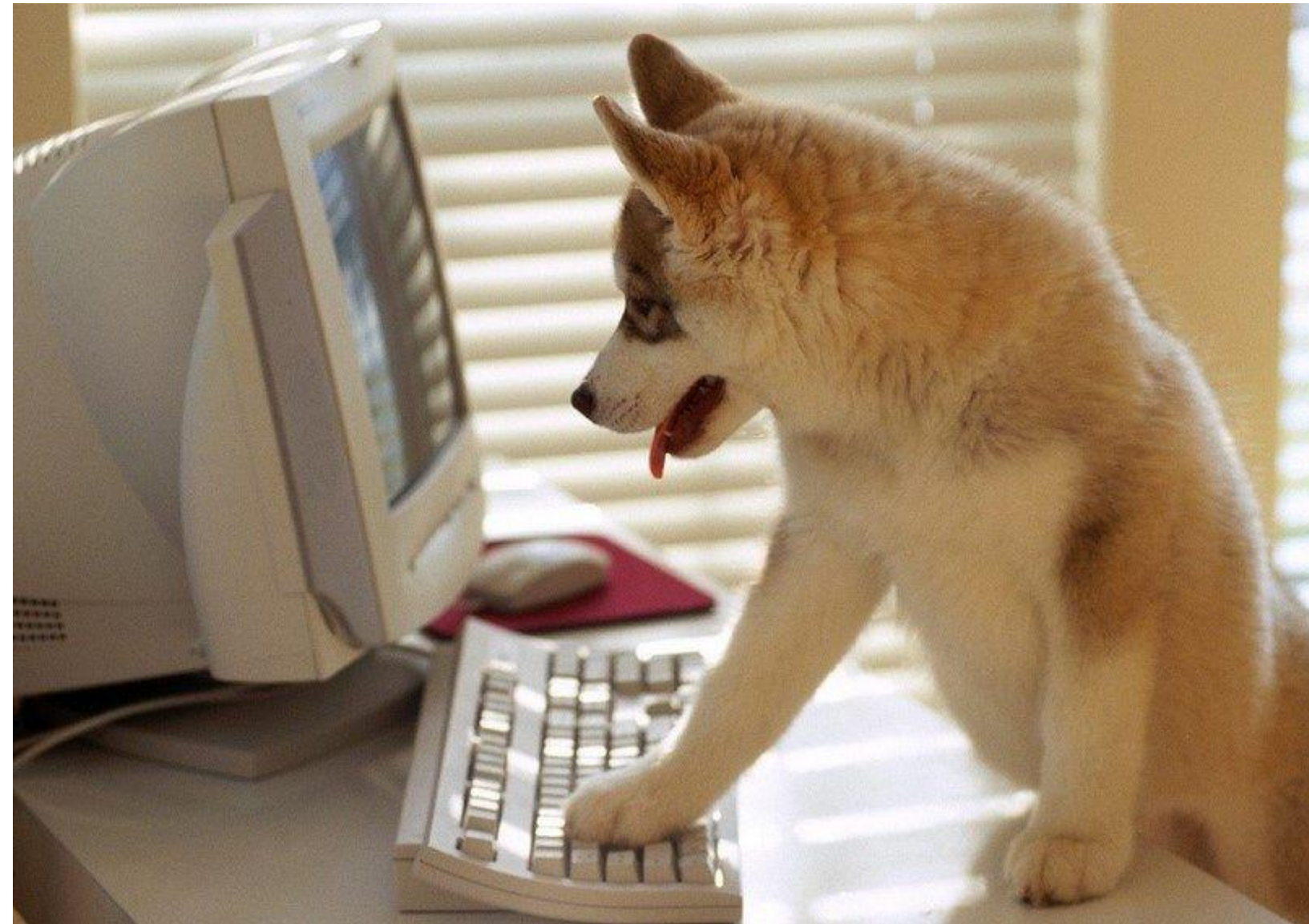


Programming Tutorial [Basics]



Organizational Stuff

- ECTS?
 - It depends...
 - More information after 24 April
- No ECTS for Computer Science Students (CS4DM, HCI, DE with Computer Science Bachelor)
- Students from other courses: Discuss this with your professor and tell me

Organizational Stuff

To get ECTS, you have to:

- Complete all assignments **in time**.
 - Individual assignments
 - Late submissions = No submissions
 - “I did it, but I did not push” = no submission
 - If you have problems with git, you have enough time to contact and to ask me
 - Only *.java files
 - Other file formats = no submission
- Complete a graded mini project in the end of the semester
 - Teams of 2 students
 - Submission = Code + Documentation (~3-10 pages) + Presentation
- **Never** plagiarise!

Note: We still do not know if you can get ECTS for this course!

Organizational Stuff

If you own a laptop, please bring it here and use it!

Otherwise, use the Lint-Pool computers with Linux, **not with Windows!**

Organizational Stuff

Current time slot: Every Friday 05:00 PM



Organizational Stuff

Topics?

Organizational Stuff

18.03.: Structures

19.03.: Methods

20.03.: Recursion

21.03.: Arrays

22.03.: Strings

25.03.: OOP1

26.03.: OOP2

27.03.: Generics

28.03.: Exceptions & Enums

29.03.: GUI

Organizational Stuff

Help needed?

- Java Dokumentation: <https://docs.oracle.com/en/java/javase/11/>
- A good Java Tutorial: <https://www.tutorialspoint.com/java/>
- Books:
 - B.Bates & K.Sierra: *Head first Java*
<https://www.oreilly.com/library/view/head-first-java/0596009208/>
 - OpenBook: *Java ist auch eine Insel* (German) <http://openbook.rheinwerk-verlag.de/javainsel/>
- Most important: **Google** and **Stackoverflow** ;)

Java Variables

- Different Datatypes:
 - int
 - float
 - double
 - boolean
 - String (this is a special one)
 - char
 - ...
- Structure:
 - `public static <DATATYPE> <NAME>;` (Declaration)
 - `public static <DATATYPE> <NAME> = <VALUE>;` (Declaration & Initialization)
 - Example:
 - `public static int x;`
 - `public static int x = 7;`

If-Else

```
if (<CONDITION>) {  
    <STATEMENT>;  
}  
else{  
    <STATEMENT>;  
}
```

```
if (1<7) {  
    System.out.println("Juuhuu");  
}  
else{  
    System.out.println("Buuuh");  
}
```

Switch Case

```
switch <VARIABLE>{  
    case <VALUE>:  
        <STATEMENT>;  
        break;  
    ...  
    default:  
        <STATEMENT>;  
}
```

```
switch x{  
    case 1:  
        System.out.println("1");  
        break;  
    ...  
    default:  
        System.out.println(":(")  
;  
}
```

Loops

```
int x = 0;
while(x<5) {
    System.out.println(x);
    x++;
}
```

```
int x = 0;
do{
    System.out.println(x);
    x++;
}while(x<5);
```

```
for(int x = 0; x<5; x++){
    System.out.println(x);
}
```

GIT Dictionary

- *Repository*: Contains not just the code, but also important metadata
- *Commit*: Updates code with your changes and important metadata
- *Push*: Adds your local commits to the repository
- *Pull*: Updates your local code with the current commits

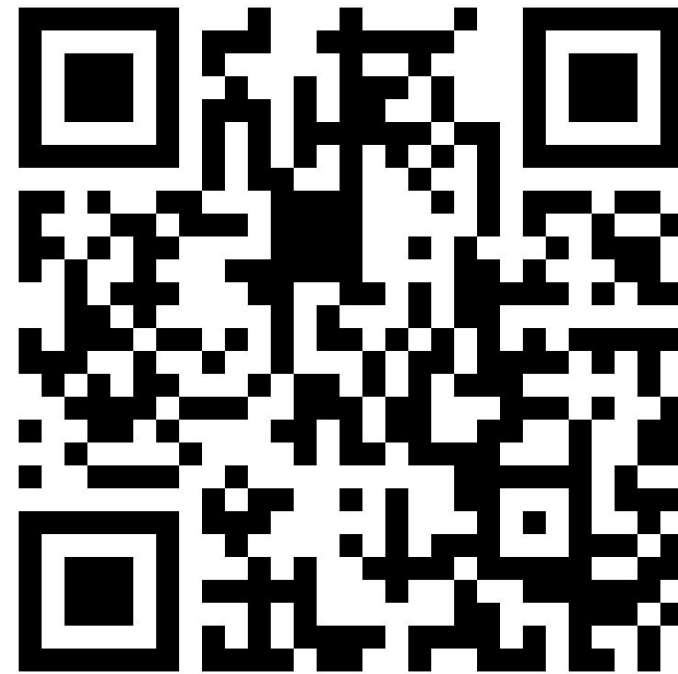
Different ways to use GIT

1. Through the console (recommended for better understanding):
<https://github.com/javaprogrammingbuw/structures/wiki/Git-commands>
(Windows users: Download git (<https://git-scm.com/downloads>) and use *git bash*)
2. Different GIT GUIs (you can use them, but you have to figure out by yourself how they work)

First Steps

In this course we will use Github Classroom

1. Get a Github Account if you don't have one
2. Go to: <https://classroom.github.com/a/thz74Gip> (or scan the QR Code with your phone)
3. Authorize Github and accept the assignment
4. Click on the repository



First Steps

How to clone the repository?

1. Click on *Clone or Download*
2. Copy the link
3. Create a new folder on your computer
4. Open the console and navigate into the newly created folder
5. Type into the folder: `git clone <INSERT LINK>`
6. Press Enter and see the magic happen

First Steps

How to compile?

```
javac YourJavaFile.java
```

How to run?

```
java YourJavaFile
```