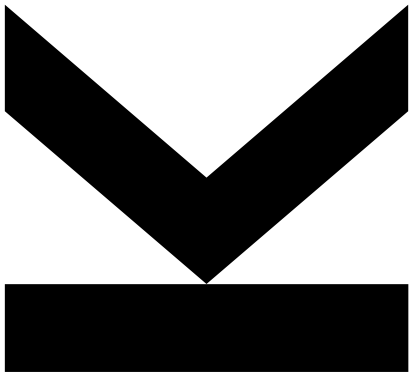
Institute of
Pervasive Computing

INTRODUCTION



Algorithms and Data Structures 1
Exercise - 2023S

Markus Jäger (Computer Science)
Florian Beck (Artificial Intelligence)
Raja Zafar (Artificial Intelligence)

Institute of Pervasive Computing
Johannes Kepler University Linz

markus.jaeger@jku.at
florian.beck@jku.at
raja.zafar@pervasive.jku.at

JOHANNES KEPLER UNIVERSITY LINZ
Altenberger Straße 69
4040 Linz, Austria
jku.at

Institute of
Pervasive Computing

GENERAL INFORMATION

Course type: Exercise - 45min (1.5 ECTS), weekly

Computer Science (CS) 5 groups:

- 340.110: Jäger
- 340.111: Jäger
- 340.112: Jäger
- 340.113: Jäger
- 340.114: Jäger

Artificial Intelligence (AI) 10 groups:

- 340.210, -.211, -.212, -.213, -.218, -.219: Beck
- 340.214, -.215, -.216, -.217: Zafar

One Group is recorded, and the video will be made available for all exercise participants

It does not matter if you take the AI or the CS course!

Contact for administrative issues (e.g., switch from this to that group, ...):

ALWAYS indicate your group number and student ID (Matr.-Nr.) when writing an e-mail

- E-mail: **teaching@pervasive.jku.at**
- Subject e.g.: "*AD1 exercise **CS**: …* " or "*AD1 exercise **AI**: …* "

GENERAL INFORMATION

The exercise in 2023S is held **on site @ JKU** (except the Zoom exercises)
If the situation requires a switch to online mode, you will be informed

Course administration is in the **Moodle course**.
There you will find:

- the **schedule** (and changes in rooms/cancellations, etc.)
- **exercise material** (slides, assignment sheets, code skeletons, video recordings, etc.),
- the place for assignment **submissions**,
- **forum** to exchange ideas and discuss assignment related questions

On any changes & updates, the information in Moodle is always the most accurate!

SCHEDULE

CS on Tuesdays:

- 07.03.2023 - Introduction
- 14.03.2023 - Unit testing / Debugging
- 21.03.2023 - Ex 1: Complexity
- 28.03.2023 - Ex 2: Lists, Stacks, Queues
- 18.04.2023 - Ex 3: Recursion
- 25.04.2023 - Ex 4: Trees
- 09.05.2023 - Ex 5: Heaps and PQ
- 23.05.2023 - Ex 6: Digital sorting
- 13.06.2023 - Ex 7: Strings & Patterns
- 20.06.2023 - Backup
- 28.06.2023 - LECTURE Exam

AI on Thursdays:

- 09.03.2023 - Introduction
- 16.03.2023 - Unit testing / Debugging
- 23.03.2023 - Ex 1: Complexity
- 30.03.2023 - Ex 2: Lists, Stacks, Queues
- 20.04.2023 - Ex 3: Recursion
- 27.04.2023 - Ex 4: Trees
- 11.05.2023 - Ex 5: Heaps and PQ
- 25.05.2023 - Ex 6: Digital sorting
- 15.06.2023 - Ex 7: Strings & Patterns
- 22.06.2023 - Backup
- 28.06.2023 - LECTURE Exam

Please check the Moodle course for any updates in the schedule!

GRADING

- There will be 7 assignments with 24 points each
- **At least 5 assignments** must be submitted successfully for a positive grade
  - An assignment with **at least 6 points** is considered as **submitted successfully**

- **Grading is based on all 7 assignments!**
  - All 7 assignments together make up for 100%
  - For grade 4 (*Genügend*) at least 50% of the total score (168/2 = 84pts) is required
  - e.g.: If you submit only 5 assignments, the best grade you can get is: 3 (*Befriedigend*)
- **No** exercise **exam**!
- **Attendance** in the exercise is **recommended!**

Grade	Percentages (%)	Points
1	87.50 – 100	147 – 168
2	75.00 – 87.49	126 – <147
3	62.50 – 74.49	105 – <126
4	50.00 – 62.49	84 – <105
5	< 50%	<84

Consider: You will get a grade **as soon as 2 assignments have been submitted** (regardless of the points)

SUBMISSION

Submission format

- Only Java sources (**.java**) for CS / Python sources (**.py**) for AI / **.pdf** files for pen & paper exercises – These files must be put in one single **ZIP archive** to be uploaded
  - **NO** project files, compiled files, office files, etc.
- **Filename convention**: [student ID]-[assignment number].zip
  e.g., *k0123456-assignment01.zip*

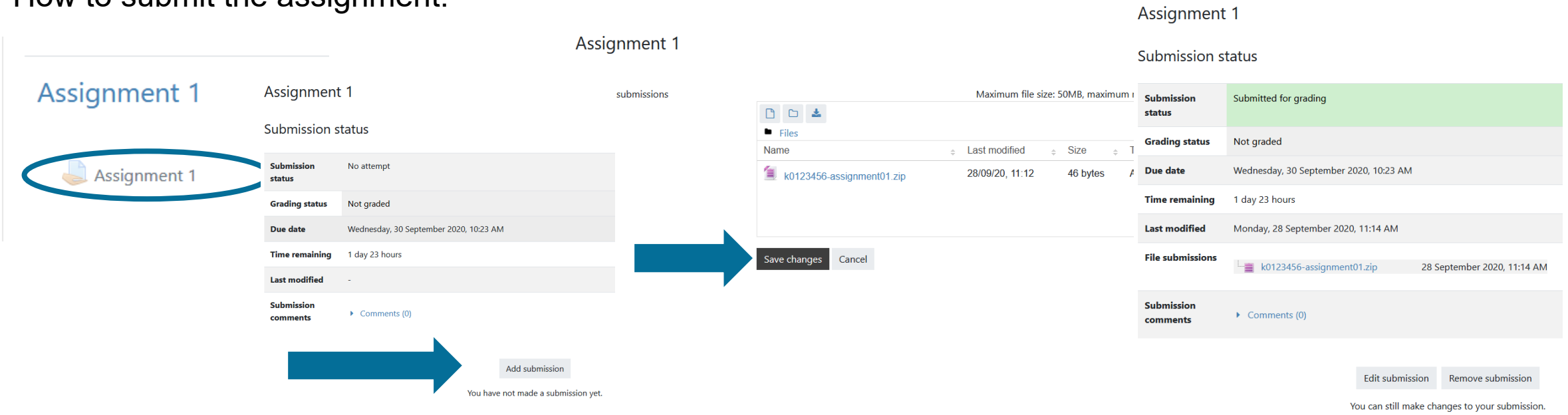
The submitted file can be overwritten until submission deadline

Exercise publication / submission deadline

- **14 days** from publication of each assignment (if not stated otherwise).
  - Exercise publication on: Tuesdays (CS), Thursdays (AI)
  - Submission deadline on: Tuesdays (CS), Thursdays (AI)

SUBMISSION

How to submit the assignment:



CAUTION: DOUBLE CHECK WHAT YOU HAVE UPLOADED

1. Content of your ZIP archive contains **correct assignment**
2. Check that uploaded files are **not corrupted**

LATE SUBMISSION

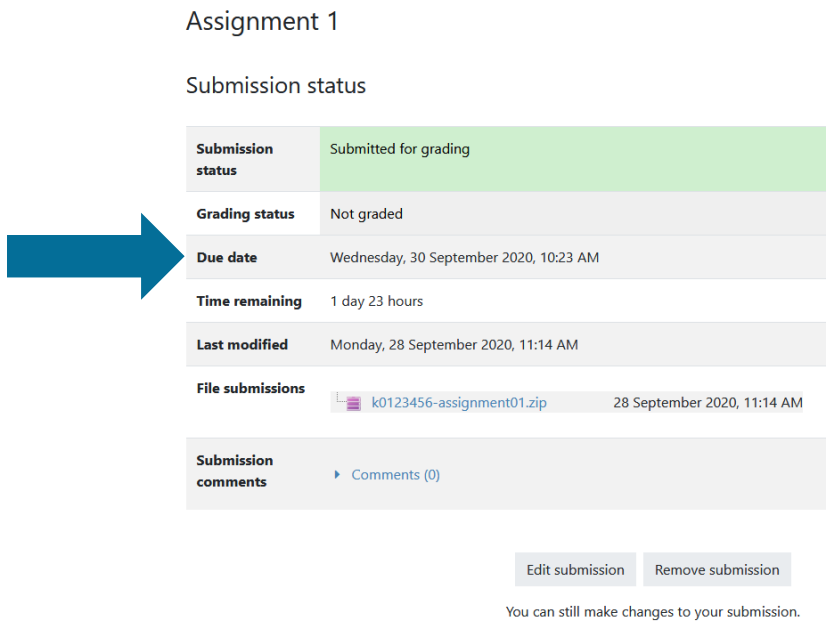
Stick to the deadline on the assignment sheet and in the submission form in Moodle!

If you miss the deadline, you have a **24h grace** period for submission, but

- for a late submission **only a maximum of 6 points** can be achieved.

Any later submissions are not accepted!

Only if you encounter **technical submission issues**, you can send your assignment via email **before the deadline**!



SUBMISSION & CORRECTION

Submission guidelines

- Make sure that your code is executable (0 points otherwise)
- Make sure that your ZIP files can be extracted (broken files will result in 0 points)
- Additionally, we will provide unit tests that should help you during development

Corrections

- Assignments are corrected by tutors (~2 weeks after submission deadline)
- For **questions** regarding **corrections** contact the tutors via mail:

tutor.algo1.**cs**@pervasive.jku.at
tutor.algo1.**ai**@pervasive.jku.at
} **with** your **student ID** + **tutor initials** in the subject
e.g.: *AD1 assignment 02 – k10293842 – tutor XY*

- Submissions are randomly assigned to tutors
- Some corrections may be available earlier than others
- Corrections are based on unit tests + pen & paper parts

CODING GUIDELINES

Interfaces MUST NOT be changed

- for the corrections it is essential that given **interfaces** are not changed

Usage of (other) libraries allowed?
This can change from assignment to assignment and will be announced. If not don't hesitate to ask.

Apart from that, you are free how to implement your solution,
e.g., creating your own classes, structures, methods, …

Comment your code!

CODING GUIDELINES

Avoid:

- non-descriptive variable and method names
- poor visual presentation (especially in Java)
- confusing or cryptic comments
- hard-coded values in the body instead of constant definitions
- unreadable expressions (e.g., due to missing parentheses)
- unclearly structured and/or complicated solutions
- wrongly chosen data types
- unnecessary import/declaration of classes/variables
- unused/dead code
- useless formulations

English language is **required** for both program code and inline comments.
Please comply with the PEP 8 Style Guide for Python Code
(e.g., snake_case for methods, CamelCase for classes)

AUTHORSHIP / PLAGIARISM

Assignments **MUST** always be **worked out independently**! (no groupwork, no code sharing)

- A plagiarism scanner is used to check authorship
- If there are doubts about the authorship,

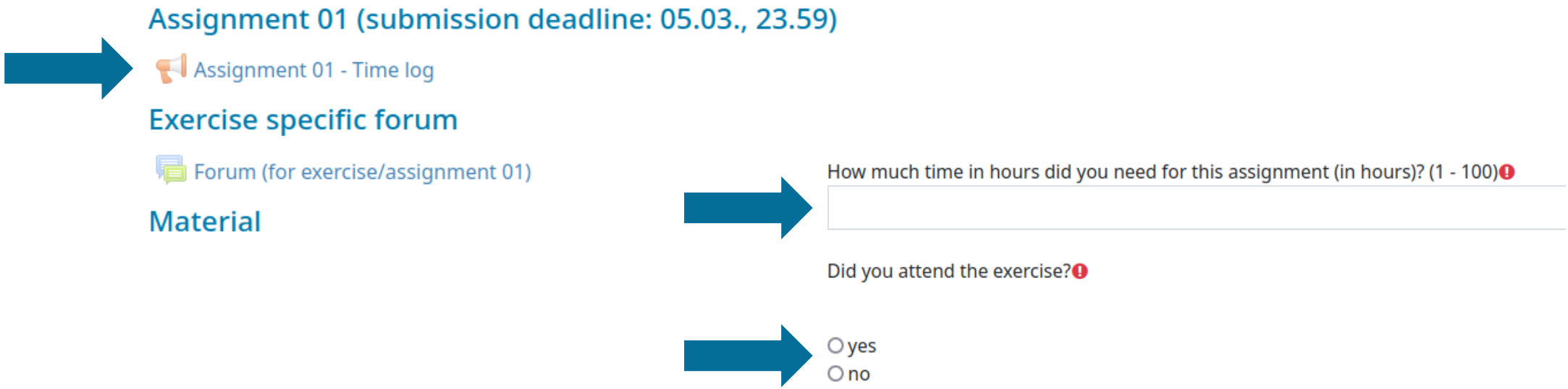
  the submission of **all involved participants** will be graded with **0 points**!

Please send questions or complaints in this regard to course supervisors.

TIME LOG

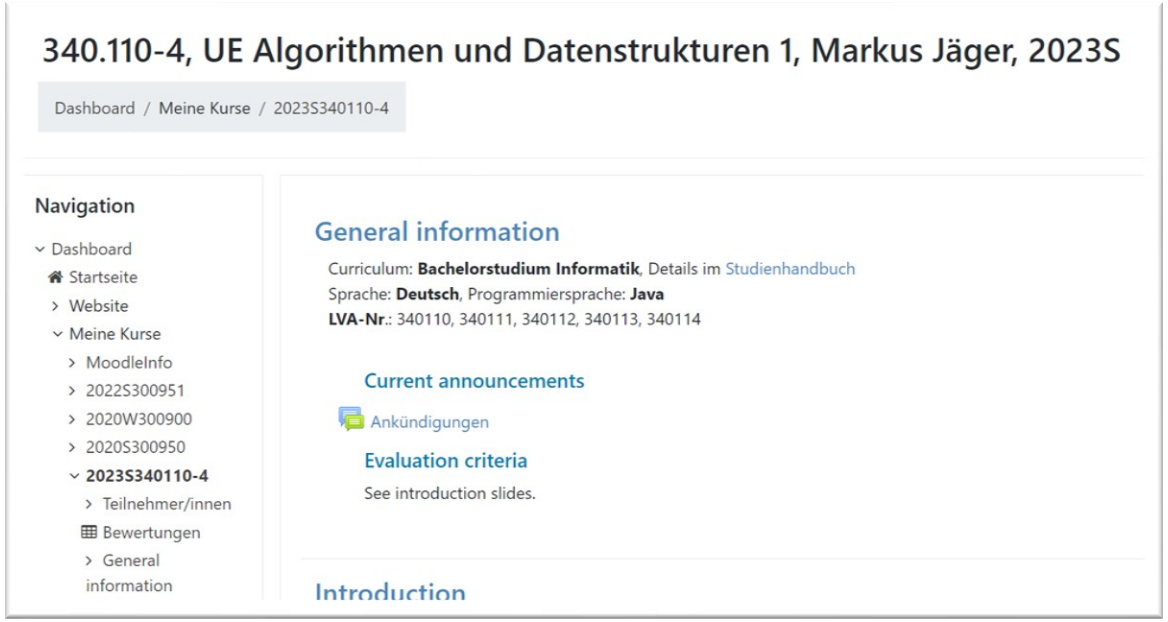
For each assignment there will be a Moodle survey asking for the time it took you to finish it:

- Answering is **mandatory!**
- Your answers are anonymous (we only see if you answered but not how)
- Please answer them honestly



LATEST INFORMATION

- Always on the Moodle Platform **https://moodle.jku.at**
- Post questions and discussions regarding the current assignment in the Moodle **forum**



PRELIMINARY EXERCISE 00

Next week's topics for the preliminary exercise:

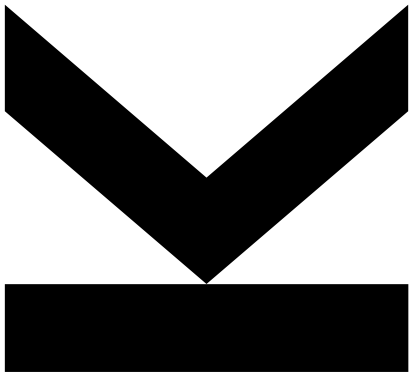
- development environment
- how to debug code and find bugs
- how to use and extend unit tests to verify code

There will be no assignment!

TIME FOR QUESTIONS...

Institute of
Pervasive Computing

INTRODUCTION



Algorithms and Data Structures 1
Exercise - 2023S

Markus Jäger (Computer Science)
Florian Beck (Artificial Intelligence)
Raja Zafar (Artificial Intelligence)

Institute of Pervasive Computing
Johannes Kepler University Linz

markus.jaeger@jku.at
florian.beck@jku.at
raja.zafar@pervasive.jku.at

JOHANNES KEPLER UNIVERSITY LINZ
Altenberger Straße 69
4040 Linz, Austria
jku.at

Institute of
Pervasive Computing