

Computer Science

Course for Computational Sciences and Engineering
at D-MATH of ETH Zurich

Felix Friedrich, Malte Schwerhoff

AS 2018

Welcome

to the Course Informatik

for CSE at the MAVT department of ETH Zürich.

Place and time:

Monday 08:15 - 10:00, CHN C 14.

Pause 9:00 - 9:15, slight shift possible.

Course web page

http://lec.inf.ethz.ch/math/informatik_cse

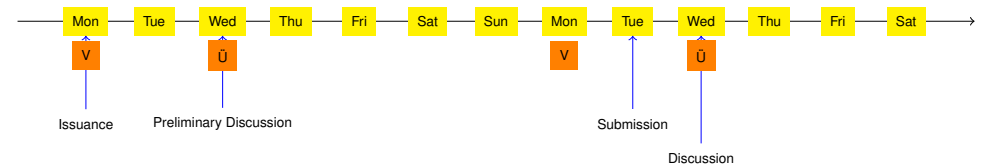
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Team

chef assistant	Francois Serre
back office	Lucca Hirschi
assistants	Manuel Kaufmann Robin Worreby Roger Barton Sebastian Balzer
lecturers	Dr. Felix Friedrich / Dr. Malte Schwerhoff

Procedure



- Exercises available at lectures.
- Preliminary discussion in the following recitation session
- Solution of the exercise until the day before the next recitation session.
- Discussion of the exercise in the next recitation session.

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Exercises

- The solution of the weekly exercises is thus voluntary but *strongly* recommended.

No lacking resources!

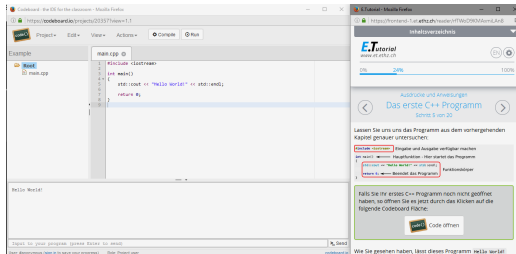
For the exercises we use an online development environment that requires only a browser, internet connection and your ETH login.

If you do not have access to a computer: there are a lot of computers publicly accessible at ETH.

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Online Tutorial



For a smooth course entry we provide an *online C++ tutorial*
Goal: leveling of the different programming skills.
Written mini test for your *self assessment* in the first recitation session.

Exams

The exam (in examination period 2019) will cover

- Lectures content (lectures, handouts)
- Exercise content (exercise sessions, exercises).

Written exam that most probably takes place at a computer (for the CSE students).
We will test your practical skills (programming skills) and theoretical knowledge (background knowledge, systematics).

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Offer

- During the semester we offer weekly programming exercises that are graded. Points achieved will be taken as a bonus to the exam.
- The bonus is proportional to the score achieved in specially marked bonus tasks, where a full score equals a bonus of 0.25. The admission to specially marked bonus depends on the successful completion of other exercises. The achieved mark bonus expires as soon as the lecture is given anew.

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Offer (Concretely)

- 3 bonus exercises in total; 2/3 of the points suffice for the exam bonus of 0.25 marks
- You can, e.g. fully solve 2 bonus exercises, or solve 3 bonus exercises to 66% each, or ...
- Bonus exercises must be unlocked (→ experience points) by successfully completing the weekly exercises
- It is again not necessary to solve all weekly exercises completely in order to unlock a bonus exercise
- Details: course website, exercise sessions, online exercise system (Code Expert)

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Academic integrity

Rule: You submit solutions that you have written yourself and that you have understood.

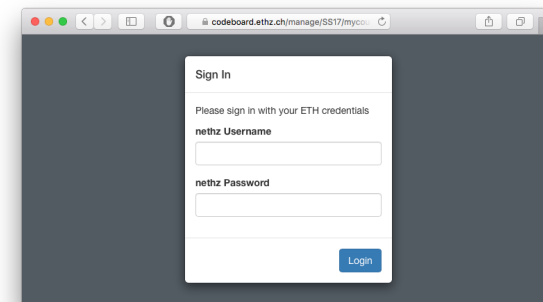
We check this (partially automatically) and reserve our rights to invite you to interviews.

Should you be invited to an interview: don't panic. Primary we presume your innocence and want to know if you understood what you have submitted.

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Exercise group registration I

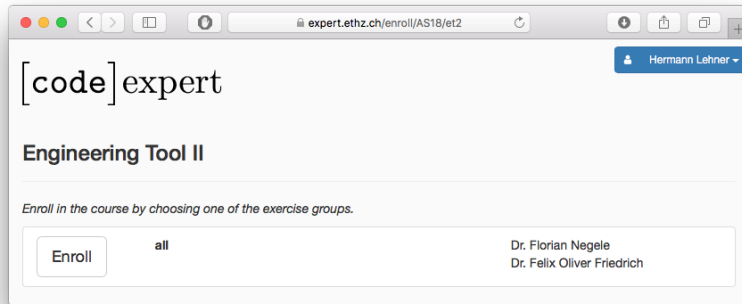
- Visit <http://expert.ethz.ch/enroll/AS18/infscse>
- Log in with your nethz account.



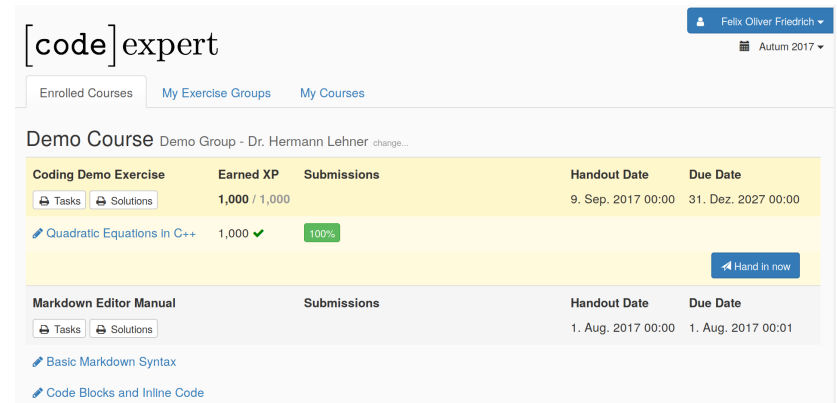
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Exercise group registration II

Register with the subsequent dialog for an exercise group.



Overview

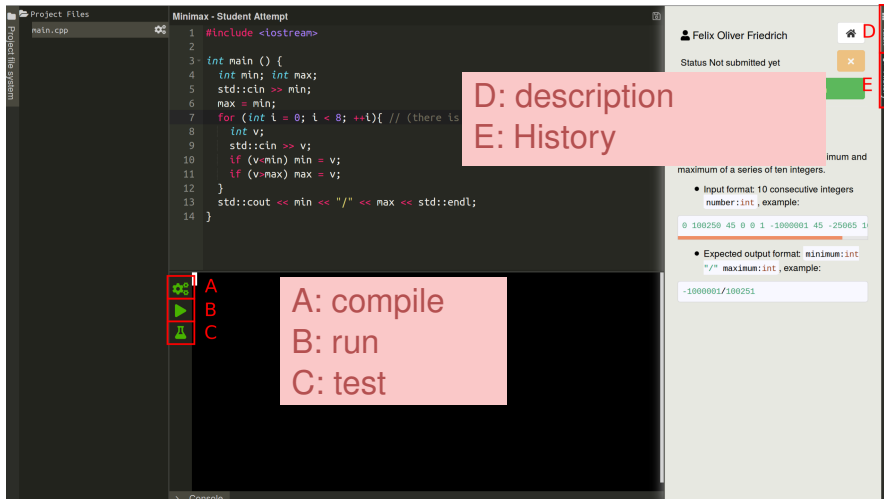


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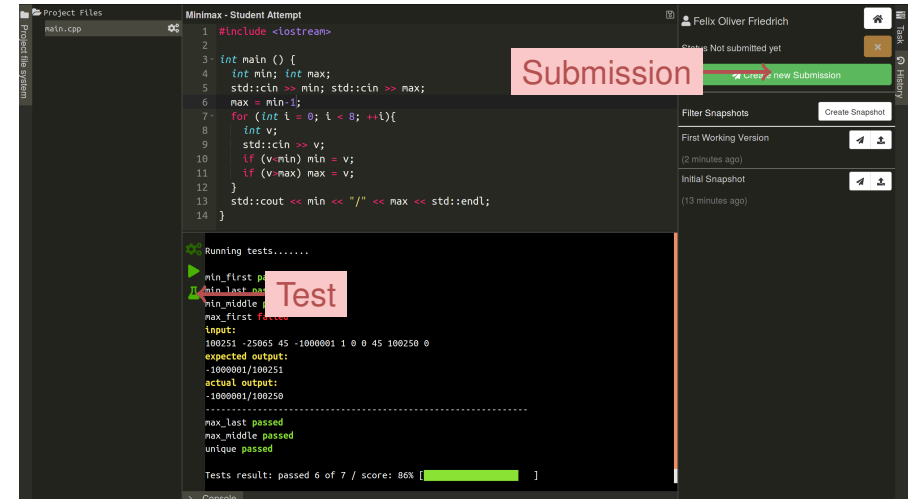
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Programming Exercise

Test and Submit



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Where is the Save Button?

- The file system is transaction based and is saved permanently ("autosave"). When opening a project it is found in the most recent observed state.
- The current state can be saved as (named) *snapshot*. It is always possible to return to saved snapshot.
- The current state can be submitted (as snapshot). Additionally, each saved named snapshot can be submitted.

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Snapshots

The screenshot shows a C++ IDE interface. The main window displays a C++ program with a comment: `// (there is a bug here)`. Below the code is a console window showing test results: `Running tests.....`, `m1n_first passed`, `m1n_last passed`, `m1n_middle passed`, `max_first passed`, `max_last passed`, `max_middle passed`, `unique passed`, and `Tests result: passed 7 of 7 / score: 100%`. On the right side, there is a sidebar with a 'History' panel. The panel shows a list of snapshots: 'Really Working Version' (2 minutes ago), 'First Working Version' (6 minutes ago), and 'Initial Snapshot' (16 minutes ago). Red arrows point to the 'Create Snapshot' button, the 'Submission' button, and the 'Go Back' button. A red box labeled 'Look at snapshot' points to the 'First Working Version' entry.

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Literature

- The course is designed to be self explanatory.
- Skript together with the course Informatik at the D-MATH/D-PHYS department.
- Recommended Literature
 - B. Stroustrup. *Einführung in die Programmierung mit C++*, Pearson Studium, 2010.
 - B. Stroustrup, *The C++ Programming Language* (4th Edition) Addison-Wesley, 2013.
 - A. Koenig, B.E. Moo, *Accelerated C++*, Addison Wesley, 2000.
 - B. Stroustrup, *The design and evolution of C++*, Addison-Wesley, 1994.

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Credits

- Lecture:
 - Original version by Prof. B. Gärtner and Dr. F. Friedrich
 - With changes from Dr. F. Friedrich, Dr. H. Lehner, Dr. M. Schwerhoff
- Script: Prof. B. Gärtner
- Code Expert: Dr. H. Lehner, David Avanthay and others

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