

Course assistants

- Course assistants
 - Hannu Kärnä – `first_name.last_name@helsinki.fi`
- Contact via e-mail or the course telegram channel
- Telegram channel <https://t.me/tktiralabra/> (will contain discourse in Finnish)
- Course page https://tiralabra.github.io/2021_alkukesa/en

What?

- On the course you will implement some program that utilizes "difficult" algorithm(s)/data structure(s) including all of the required data structures and algorithms. Everything included in the prerequisites is considered trivial. Eg. a purely brute force sudoku solver is not a suitable topic.

Prerequisite knowledge

- Prerequisite knowledge:
 - **Data Structures and Algorithms**
 - Mandatory
 - **Programming technique** (only in Finnish)
 - Very beneficial but the course materials cover the required knowledge in testing and project structures
- Ask if:
 - You have done Data Structure and Algorithms but do not have the credit (missing the exam for example)
 - You are unsure about the prerequisite knowledge requirements

Course content

- The programming language to be used has to be accepted by a course assistant. At least Java will be accepted
 - Ask a course assistant if you prefer some other languages
 - Note that testing and test coverage reporting is required no matter the language
- **Git** version control and **GitHub** is used
- The lab consists of **individual work**
- Generally the product will be some sort of **running program**
 - Not a library or a bunch of code that can not be executed
- Typically programs need to have some sort of **user interface**

Course content

- Project examples:
 - Comparison of path finding algorithms
 - Data compression algorithms
 - Cryptography
 - Computational creativity: music, text, pictures
 - Game solvers (minesweepers, nonograms, solitaire...)
 - There is a minesweeper template project on git!
 - AI (Chess, Go...)
 - There is a chess template project on git!
- **Try to chose a topic you are personally interested in!**

Coding style

- The code written for this course should be of high quality and easy to read. You should use some kind of style checkking (e.g. Java Checkstyle)
- The project name should be indicative of the contents. Course assistants will not appreciate it if all the project names are along the lines of "Lab-2020"
- Project structure along the lines of the programming techniques course
 - I.e. not all of the project code should be in the same file/folder
- Good coding conventions like DRY ja Single responsibility should be applied

Conduct of the course

- **Deadlines** according to the course material
 - Each deadline gives 0-2 points based on the deadline requirements
 - Submissions are done by *pushing* the project state to GitHub
 - No submissions by e-mail
 - A large part of the points – and the grade – are based on deadlines and code reviews
 - After each deadline, a course assistant will give some sort of feedback – more thorough feedback is available through paja, e-mail or Telegram
 - Extra time for deadlines may be available with **good reasons** if asked for **in advance**.

Conduct of the course

- If you need help, contact the instructor. Personal guidance available in Zoom.
- You may get advice in Telegram too

Conduct of the course

- A **code review** is done in conjunction with Deadlines 4 and 5
 - Every student will get another student project to review
 - Students write and receive feedback on each others' projects
 - The intention is to get familiar with reading code written by others
 - It is also important to get feedback
 - Maximum points for each review is 4

Conduct of the course

- At the end of the course there will be a mandatory **demo session**
 - Each student presents their project for about 5 minutes
 - Every student is present for the entire session
 - The project does not have to be completely done at the demo session
- There is **no course exam**

Motivation

- This can be one of the most fun courses during Bachelors' studies - you can implement whatever you want!
- If you get stuck, ask a course assistant for help
 - I'm here for you!
- Normally there are no real penalties for dropping courses – labs are an exception to this
 - It may be harder to enroll to the course after dropping the course

Ad break

- During fall of 2019 a group of students created 2 new project templates for the lab
 - Chess and
 - Minesweeper
- If either of these subjects are of interest, you may want to check them out. Links can be found on the course page

Thank you!

- **Welcome to the course!**
- Most information about the course can be found at: https://tiralabra.github.io/2021_alkukesa/en
 - It's a good idea to read through the entire site!