



Faculty of Science

# Final Group Project

Weight: 15% final grade

Groups of 3 to 4 students

Due date: **April 14th at 11:59pm**

## Overview

The goal of this assignment is to provide students with a chance to collaborate in a Java\*\* project while applying as many course concepts as possible.

*\*\*Java is preferable, but you are welcome to choose any other programming language, as long as you implement the equivalent concepts listed in this document, the group will be solely responsible for any extra research due to a different programming language.*

## Instructions

For this assignment you are expected to work in groups of 3 to 4 students. You will be using GitHub to collaborate and implement a Java application. Your Java application must:

- present a User Interface using JavaFX at least for the client-side application;
- have at least 2 scenes in at least one of the programs (either client or server);
- support multi-clients using multi-threading and sockets (client/server) architecture;
- use as many concepts learned in the course as possible including best coding practices;

The topic of the application can be defined by the group, if asked, the instructor will provide feedback on the group's ideas via Slack.

Some classic examples of multi-client socket programs are multiplayer games where 2 or more players connect to the same server and play each on their own client application, or a chat server.

You are welcome to innovate and pick an application that interests you the most.

Please be aware of the time constraints in the course, so you might want to focus on a small project scope. And iterate over it, as time allows while prioritizing the most important (required) features.

## Documentation

Make sure your project includes a readme.md file containing the following information:

1. Project information: short textual description of your project, and at least one screenshot of your application running.
2. How to run: step-by-step information on how one can successfully clone and run your application.
3. Other resources: any references to other materials/libraries that you might have used on your solution.
4. (Optional) URL to a video demo of your application

Readme examples: <https://github.com/matiassingers/awesome-readme>

## Deliverables

- You will provide the project's repository (see **How to submit** section) with the source code and documentation.
- (Optional) Include a short (around 60-180 secs) screen capture video demoing the application functionality including the server and multiple clients.
  - This does not need to include audio narration (you can), only the demonstration of the system running is required. For example, run the server, clients, show the basic functionality is being supported via the sockets communication.

**Note:** Even though the video is optional, it is recommended to have a demo video especially if the TA cannot build the project.

## Grading Guidelines

This is not a rubric, but general points to guide you. You will be graded considering:

1. The scope of the project
  - a. Did the team propose an achievable project?
  - b. Did they aim at realistic milestones?
2. The implementation accuracy
  - a. Does the project implement all the requirements outlined in the instructions?
  - b. Does the project compile/execute?
    - i. If not, did the team submit their comments on their analysis? what is missing, or possible fixes?
  - c. Does the project have the executable versions?
  - d. Does the code have proper documentation/best practices?
  - e. Does the repository history show collaboration between the team members?
3. README
  - a. Does the readme contain all the necessary project information?
4. Solution quality
  - a. Does the application look aesthetically pleasing?
  - b. Would users be able to use the application given the interface designed (intuitive use)?
  - c. Did it solve all the proposed scope? Is the solution representative of the project scope?

## How to Submit

You will maintain a **git repository** for this assignment, shared among all group members, and the TA will be added as an author to the repository.

To submit the assignment,

1. (Optional) Upload your screen capture video in .mp4 or .mkv format. (Or upload the video to YouTube and include the link in the submission and the README.md on github)
2. Upload your project's cloned .zip file.
3. In the submission comment include the URL of your repository on github (remember the TA will be previously added as a project member), and the name and SID of all student collaborators in this assignment.

**Note:** Comments are mandatory. Failure to properly document your program will result in a deduction on the marks you receive for this (and any other) assignment.