Semester project for " Programming advanced Java applications "

Rules and requirements

Timeline:

Topic submission deadline is **15.04.2021** (but the sooner the better). After my acceptance you can start work.

Project deadline is **25.05.2021**
Every day of delay decreases an evaluation by **5** points.

Requirements:

The project should be a network, window-based* Java application working in client - server model.
The project can be implemented in 2-person teams.
- server may be written without window, as console application, but client must work in window.

Project should consist of:

- short specification,
- implementation of selected topic as Java program (actually two programs: server and client),
- final defense

Specification (about one page of text) should include:

- Topic of project, author(s) name(s), student id(s) ;
- Description how program works (provided functionality)
- Resources and settings needed to run and work with application (e. g. login and password)
- Java elements and mechanisms, API elements or outer libraries used in a project,
- Moreover, you can write what were the most problems, what was a cause to be proud and so on

Obligatory technical elements of Java programming to use in the project:

- at least three, your own classes (with fields and methods)
- an inheritance
- **(20%) window-based GUI in Swing** (at least in client side, using various components and their layouts)
- exceptions handling,
- **(10%) events handling** (not only buttons, but also mouse or keyboard, or others)
- data containers (collections)
- **(15%) reading and writing from/to files**
- **(10%) threads**
- **(25%) client – server network communication (using sockets)**

Absence of one of them decreases the project value by 10 – 25% (values in brackets), but doesn't disqualifies the project from evaluation.

Besides of just occurrence of above technical elements, I pay attention to maturity, adequacy and diversity of using them. Elements beyond of above list (you should mention them in specification) are welcome.

Evaluation:

__Main condition is to make the project by yourself__. When not, they will be evaluate as zero points without possibility of a retake.

Evaluation criteria:

1. Proper usage of Java programming elements as technical requirements of the project.
2. GUI aesthetics: ease, attractivity and ergonomy of the program using.
3. Source code quality: aesthetics and clarity, keep of object programming principals, comments.
4. Functionality (does the program do what it should? does it do it well and complete?)
5. Specification & documentation (JavaDoc documentation will be welcome)

6. **Individual project defense (0 – 100%)** (final evaluation is product of project's points and a defense factor in percents)

Project defense: **During the defense you should prove a familiarity with your project (structure of code, language mechanisms). You should be able to explain any piece of source code (what is written and why it has been written in this way).**

Every project should be consulted with me before start of work, in other case I don't guarantee any points or even evaluation of such project at all.