

# Deliverable 1 - Project Proposal

SE2: Software Design and Architecture (CS446, ECE452, CS646)

## Description

The project forms an integral part of this course. Here are hard requirements of the project:

- The app should be implemented as a Native Android app (i.e., not built using an app builder or a framework like React/Node.js or HTML5).
- The app must be useful, it must take advantage of being on a mobile platform (e.g., utilize and integrate with several services offered by the device), and it must run on a mobile phone (tablet support is fine, but it must be demoed on a phone).
- The code should be hosted in GitHub (as a private repository).
- The app should use at least 2 architectural styles and 2 design patterns (other than singleton) that will be discussed in class.

The three goals of the project is to

- produce a significant mobile app that performs some *useful* function.
- does not cause harm to any population of users.
- have a defensible design and architecture that can be presented to us explicitly.

When coming up with your own app there are only two hard and soft restrictions on the app idea itself:

- Hard Restrictions
  - Simple CRUD apps that do not make sense in a mobile context are not allowed;
  - No games
- Soft Restrictions
  - apps that require crowd buy-in are not acceptable (e.g., apps that would require large numbers of people to contribute content to be viably useful);
  - apps that require a complex server infrastructure are also not acceptable.

If your app has any of these components specified in the soft restrictions, then you are responsible to have the DB or server infrastructure or crowd set up so that you can demo the app and we can test it too.

The project proposal is a description of what you intend to accomplish over the rest of the term for this project. It should describe your system and what you intend it to do. Emphasis on projects that are interesting / useful is preferred; use this project to build something that excites your team! A scaling factor will be applied to the final project grade to account for its difficulty and your individual effort as part of the team; we will provide feedback on this aspect of your proposal so you can have an approximate idea of what this factor will be if your team completes the proposed work in a completed app. If this is going to be below a certain threshold, then we will give out an idea for you to implement. The scope of the project should assume at least 6h / week development time (e.g., 6 team members \* 6h / week \* 12.5 weeks = approximately 450 hours in total). This should be enough time to complete an interesting project.

## GitHub Repository Requirements

Once your team has been formed, you should create a private GitHub repository for your project. Please ensure that the following are completed by the deliverable 1 deadline:

1. Add the following user as a collaborator with full privileges to your repository<sup>1</sup>: wat-cs446
2. Create a file called `readme.md` with the following information in the beginning of the file:
  - Your group number in Learn;
  - The group members: provide name, Quest ID, and GitHub username of each group member;
  - A descriptive title for your project.
3. Create a file called `timelog.md` with a markdown table that tracks the time spent by each group member on the project; see Figure 1 for an example.
  - The table should have  $X+2$  columns ( $X$  is the number of group members), where the first column is Date, the last column is Task, and the middle columns are the names of the group members;
  - Each role should record: on which day how much time (in number of hours) was spent on which task;
  - The record in this file will be used when computing the individual effort scaling factor.

You are allowed (and encouraged) to start working on your project and adding more files to the repository. Please make sure to **commit your code under your username**. Do NOT commit code for others. If you are doing pair programming, try to alternate the person who is committing the code. This is very important because the commit history will also be used when computing the individual effort scaling factor.

Date	Pengyu	Partha	Farshad	Task
2024/01/08	4			Teach class
2024/01/08		1		Create groups
2024/01/09			0.5	Create discussion groups

Figure 1: Example of `timelog.md`

## Proposal Document Requirements

The proposal document should be a PDF document in letter size. The page limit is **6 pages** (excluding acknowledgements and references). The font size of the main text should be 11pt.

The proposal document should be organized into the following parts:

1. **Metadata:** the project title, team member names and Quest IDs, and the GitHub repository link. These information must be placed at the top of the first page.
2. **Introduction:** introduce your project selection in 1–2 pages. Focus on the following information:
  - What is your project?
  - Why is it interesting?

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<sup>1</sup>If you have already added `pengyunie` as indicated in the first lecture, the instructor will add `wat-cs446` to your repository.

- Describe and justify your project selection.
  - Why does this project make sense in a mobile form factor?
3. **Proposal Details:** describe the functional/non-functional properties, user scenarios, stakeholders, architecture, etc of your project in more detail. NOTE: We will compare your architecture and final demo against the functional and non-functional properties in this proposal. Include the following information:
- What are the functional properties of your system? Numbered point form is recommended (e.g., 1, 1.1, 1.2).
  - Provide *at least two* user scenarios to describe how a user would interact with your system and what the benefit to them would be. These should each be 1-2 paragraphs and can refer back to your numbered functional requirements.
  - Choose an appropriate architectural view like sequence diagrams to represent your scenarios.
  - A description of *at least two* non-functional properties that your system needs to support. Justify why these properties are important for your system.
  - A description of *at least one* human value(s) addressed in your system.
  - Who are the stakeholders of the system? Include *at least two*.
  - Which population of users will use this system? Include *at least one*.
  - You can include figures (mockups / screenshots / hand drawings) to help describe your system.
4. **Acknowledgements and/or References:** acknowledge any help you received from others (including generative AI); cite any references you used. This part is not counted towards the page limit.

The proposal document should be uploaded to Learn; only one team member needs to upload this document. The file name should be `cs446-d1_<group-number>_<project-name>.pdf` (use - instead of space in name).

## Assessment

This deliverable accounts for 5% of your final grade.