Summary on Information about Software Architecture Project

Educational goal of the project: “Learn to design, evaluate, implement and test a software architecture through game development”.

Overview Project Requirements

- Develop a simple multiplayer smartphone game or fun application with an online component, focusing on specified quality attributes.
- The project must utilize architectural tactics, design patterns and architectural patterns in the game architecture.
- Development platform: Android
- Use external libraries and components: Can use any external libraries or components if it does not restrict the software architecture too much.

Project schedule

Project Phase	Start	Deadline	Weeks
Requirements and Architectural Design	Feb 14th	Feb 27th	2 weeks
Evaluation – Architecture Tradeoff Analysis Method (ATAM)	Feb 28th	March 6th	1 week
Project Presentation Video (YouTube)		**April 19th**	
Design, Implementation, and Testing	March 7th	April 21st	7 weeks

Requirement and Architecture Phase

- Create and document requirements and a software architecture for your game or fun application.
- You can choose any type of game or fun application, but the concept must have some complexity that will result in some complexity in the software architecture.
- All groups must focus on the quality attribute modifiability in their design and implementation.
- All groups must also choose at least one secondary quality attribute of the following: Availability, Deployability, Energy Efficiency, Performance, Testability or Usability.
- Note that the selection of quality attribute must be reflected in both quality requirements and the architectural design (choice and use of tactics, patterns etc.)
- You will find a template for the requirement and architectural design document in the assignment.
- You will also find examples of requirement and architectural design documents from previous years. Note that none of these documents are perfect, but they are good examples.

Evaluation Phase

- One group will evaluate another group's software architecture using Architectural Tradeoff Analysis Method (ATAM).
- You will evaluate the two highest prioritized quality attribute scenarios and investigate what design tactics and patters that were used to support the quality requirements.
- A lecture on ATAM will be given the same week the evaluation phase will begin.
- The course staff will publish an overview of which groups will evaluate each other's architecture.
- Note that your evaluation report will document the evaluation of the other groups architecture. E.g., if Group 1 and group 28 will evaluate each other's architecture, Group 1 will document the evaluation of group 28's architecture and vice versa.
- The template for the evaluation report is available as a part of the assignment.

Implementation Phase

- The focus of this phase is to carry out and document the remaining design, implement the game/app according to the requirements and architectural design, and test both functional and quality requirements.
- The submission of the implementation phase is the final delivery of the project and includes an implementation document, application source code and executable, updated requirement document and updated architectural document.
- The template for the Implementation document is available as a part of the assignment.

Project Presentation Video (YouTube)

- All groups must also produce a YouTube video presenting the project.
- The video can be maximum 2 minutes (but can be shorter).
- The video should present/pitch the game, the architecture, and experiences.
- All videos will be shown at the final project workshop, April 24th.
- You are encouraged to make the YouTube video fun and/or interesting.
- The YouTube video can be published as unlisted or public, and you must allow embedding of the video.

General about Evaluation of the Project

- Only the final submission of the project will be graded (April 21st), but there can be subtractions of insufficient deliveries in exercises or project phases (submissions clearly below expected level, or missing deliveries).
- Individuals not contributing to the group can result in individual grading.
- You will get feedback from course staff on initial submission of requirements and architectural design documents.
- You will get feedback from another group on your architectural design as a part of the Evaluation phase of the project.

Project grading criteria:

- Completeness of documents (documents according to provided template).
- Complexity/impressiveness of the software architecture and game/application. The most important here is that the software architecture must have some complexity.
- Suitable software architecture in regard to the given game, and the functional and quality requirements.
- Implementation according to the software architecture. Meaning that you have implemented you're the structures, tactics and patterns you have included in the architectural design.
- Provide a working implementation according to the requirements.
- Grading of the project will take place after the final project delivery.
- The project will be given a score between 0 and 60 points.
- The grade of the course is a combination of project and exam score, where the project counts 60% and exam counts 40%.