

# Software Engineering Course S24CS6.401

## Project 3 Proposal Submission Guidelines

### Call for Proposals

We are excited to announce the opportunity for students to propose their own projects for Project 3 in the Software Engineering course. This year, instead of assigning predefined projects, we are asking students to apply their creativity and technical knowledge to propose innovative software solutions.

### Proposal Submission Format

Your proposal **must not exceed 2 pages** and should clearly address the following points:

#### **1. Description of the Use Case**

In this section, you should provide a comprehensive overview of the scenario or problem your project aims to address. This involves identifying the target users or stakeholders and explaining how they encounter the issue your project will solve. Consider the following questions to guide your description:

- Who are the users or stakeholders affected by this problem?
- What is the problem or need? Be specific about the challenges or opportunities your project seeks to address.
- Why is this problem significant? Discuss the impact of solving this problem on the users or the domain.

**Example:** For a CineStream Platform-like project, the description might start with the current limitations in accessing a wide range of movies across different OTT platforms. The use case could detail how movie enthusiasts struggle to find and access content scattered across various services and how your platform will centralize access, offering a one-stop solution for renting or requesting movies.

#### **2. Key Functionalities**

This section should list the primary features and capabilities of your proposed system. These functionalities should directly address the problems or needs identified in the use case description. Focus on what users can do with your system and how these actions solve the problem. Consider addressing the following points:

- Core Features: What are the main actions or features available to the users? These should be the innovative aspects of your project that make it stand out.
- User Interaction: How will users interact with your system? Briefly describe the user interface or interaction modes (e.g., web interface, mobile app).
- Technical Highlights: Mention any technology or frameworks you plan to use.
- Architectural Tactics: List 4-5 architectural tactics you plan to employ (Optional).
- Design Patterns: Name the design patterns you'll use and their purpose in your project. List down design decisions that your system will have.
- Architecture Diagrams: Provide a simple diagram to illustrate your system's architecture.

**Example:** For the Smart City System, key functionalities might include real-time monitoring of various environmental parameters, smart alerts for citizens about quality issues, and integration with IoT devices for automated city management. You would detail the system's ability to gather data from different sensor types, process this information to derive actionable insights, and present it to both city administrators and residents in a user-friendly manner.

### 3. Expected Time to Build a Prototype

In this section, your proposal should provide a realistic timeline for developing a working prototype of your solution, considering that you have a team of 5 people. Break down the project into major phases or milestones and estimate the time needed for each phase. **Consider including the following aspects:**

- Research and Planning: Time allocated to understanding the problem domain, existing solutions, and planning the features of your prototype.
- Design: The period dedicated to designing the system architecture, user interfaces, and any necessary algorithms or database schemas.
- Development: The core coding phase where the team develops the features outlined in the proposal.
- Testing: Time set aside for testing the system, including unit testing, integration testing, and user acceptance testing.
- Refinement: The final phase for adjusting based on test results and feedback to ensure the prototype meets project goals.

Given the team size, factor in parallel workstreams if applicable, but also consider the need for coordination and integration of different components.

**Example:** For a project aiming to create a unified OTT platform like CineStream, the timeline might include initial days dedicated to market research and design, followed by a more extended development phase focusing on integrating APIs from various OTT services, and finally, a testing and refinement phase to ensure a seamless user experience.

### 4. Domain

The domain of your project defines the specific field or industry your solution is targeted towards. It helps to clarify the context and potential impact of your project. Below are several domain examples you can consider, inspired by the diverse applications seen in projects like last year's:

- Healthcare: Solutions that improve patient care, streamline medical processes, or enhance health monitoring and data analysis.
- Education: Systems aimed at enhancing learning experiences, teaching methods, or educational administration.
- E-Commerce: Platforms to simplify buying and selling processes, enhance customer experience, or innovate in retail logistics.
- Agriculture: Technologies that aid in crop monitoring, farm management, or sustainable farming practices.
- Finance: Solutions for banking, personal finance management, or financial data analysis.
- Entertainment: Projects like OTT platforms, gaming innovations, or virtual event technologies.
- Sustainability and Environment: Systems focusing on environmental monitoring, promoting sustainable practices, or energy management.

- Smart Cities: Like last year's project, focusing on urban development, IoT integrations for city management, or public safety solutions.

Choose a domain that not only interests your team but also where your project can make a significant impact. Reflect on how your proposed solution addresses a gap or opportunity within this domain and articulate the potential benefits or advancements your project could contribute.

## Submission Process

- a. Proposals should be submitted via Moodle in PDF format. File name should be Project3\_Proposals\_<TeamID>.pdf
- b. Ensure your proposal adheres to the specified format and content guidelines. They are guidelines, not necessarily to follow the exact flow, but your proposal should address all four things – Description of use case, Key functionalities, expected time and domain.
- c. Proposals more than 2 pages long won't be considered.

## Inspiration from Last Year's Projects

For inspiration and understanding of the project scope, refer to last year's projects: CineStream Platform and Smart City System.

They can be found here: [https://karthikv1392.github.io/cs6401\\_se\\_2023/projects/project-3/](https://karthikv1392.github.io/cs6401_se_2023/projects/project-3/)

These projects show the depth and breadth of software engineering applications. We encourage you to think along similar lines, with your learning from the course to propose ambitious yet achievable projects.

## Important Dates

**Proposal Submission Deadline: 19<sup>th</sup> March 2024**

**Announcement of Accepted Proposals: 22<sup>nd</sup> March 2024**

We look forward to your innovative proposals and the exciting possibilities they bring.

This is your chance to showcase your understanding of software architecture and contribute meaningful solutions to real-world problems.

Good luck!