Software Engineering Course S24CS6.401

Project 3 Deliverables Guidelines

Congratulations on getting project 3 proposal accepted!
Your project is an opportunity to apply the skills and knowledge you've acquired, addressing a real-world problem with a software solution. The deliverables below are designed to guide you through the development, documentation, and presentation of your system.

Deliverables

Task 1: Requirements and Subsystems

Functional and Non-functional Requirements: Document the specific functional and non-functional requirements of your system. Identify key requirements and explain why they are architecturally significant.

Subsystem Overview: List and describe the main subsystems of your project. Provide a brief description of each subsystem's role and functionality.

Task 2: Architecture Framework

Stakeholder Identification: Follow the IEEE 42010 standard to identify stakeholders, their concerns, and the viewpoints and views addressing these concerns.

Major Design Decisions: Document major design decisions using Architecture Decision Records (ADRs). Include at least 3-4 significant decisions and discuss the rationale behind them.

Task 3: Architectural Tactics and Patterns

Architectural Tactics: Outline 4-5 architectural tactics you plan to employ in your system. Provide a brief explanation of each tactic and how it addresses specific non-functional requirements.

Implementation Patterns: Describe the design patterns you will use and explain their roles within your architecture. Include diagrams where applicable (UML, C4Model, etc.).

Task 4: Prototype Implementation and Analysis

Prototype Development: Develop a working prototype of your system that demonstrates the core functionality and architectural design. This should be a significant focus, reflecting the practical application of your proposed solution.

Architecture Analysis: Compare your implemented architecture against another pattern of your choice. Provide quantification for at least 2 non-functional requirements (e.g., response time, throughput). Discuss the trade-offs involved.

Submission Guidelines:

Source Code and Repository: Share the complete source code of your project through a Git repository. Ensure the code is well-documented and includes README with setup instructions and an overview of the project.

Technical Report: Submit a comprehensive report detailing your design decisions, architecture, implementation, and analysis. Include reflections on the project process and any lessons learned.

Also submit your repository and report through Moodle as well. Submission Format: Project3_<team_number>.pdf/zip

Important Dates

Project Submission Soft Deadline: 20th April 2024

Project Submission Hard Deadline: 27th April 2024

We encourage you to approach this project with creativity and rigor, applying your best software engineering practices. Good luck, and we look forward to seeing your innovative solutions.