Design Patterns   Term Project

Project Description

In this assignment, you have the opportunity to propose and develop a software project of your own choosing, provided that it prominently features the application of design patterns. The goal of this assignment is to allow you to demonstrate your understanding of design patterns and their practical use in real-world software development scenarios.

Project Requirements

Design Patterns Integration: Your project must incorporate at least three different design patterns. These patterns can be selected from the creational, structural, or behavioral categories. Clearly identify and document the design patterns you choose and explain why they are suitable for your project.

Functional Requirements: Your project should serve a practical purpose or solve a real problem. Define clear functional requirements for your project, including any user interactions or system functionalities.

Documentation: Provide comprehensive documentation for your project, including:

- An overview of the project's purpose and scope.
- Detailed explanations of the chosen design patterns and their roles within your project.
- UML diagrams illustrating the project's class structure and the relationships between classes.
- Clear code documentation (comments) to explain complex or non-obvious sections of your code.

Implementation: Develop a working prototype or a fully functional application based on your project proposal. Your code should be well-structured, readable, and follow best practices. Use appropriate programming languages and tools for your project.

Milestones

Project Proposal (Due Date: Nov. 26, 2023): Submit a project proposal that includes a clear project title, a brief description of the problem or purpose your project will address, and a list of the design patterns you intend to use. Also, provide a rough timeline for completing the project.

Implementation (Due Date: Dec. 24, 2023): Submit the fully implemented project, along with any necessary code documentation. Ensure that the project meets the functional requirements.

Final Presentation and Demonstration (Due Date: Dec. 24, 2023): Submit your presentation documents. You will also present your project to the class, explaining the problem it solves, the design patterns used, and a live demonstration of the project's functionality.

Grading Criteria

Your project will be assessed based on the following criteria:

Design Pattern Integration (30%): Effectiveness and appropriateness of the chosen design patterns.

Functional Requirements (20%): The extent to which the project fulfills its intended purpose and meets specified requirements.

Documentation (10%): Quality and completeness of project documentation, including explanations of design choices and UML diagrams.

Code Quality (10%): Code structure, readability, adherence to best practices, and appropriate use of design patterns.

Presentation and Demonstration (30%): Clarity, organization, and effectiveness of your final presentation to the class.