Project Overview

Your company has secured a contract to develop and maintain an emergency management web application for a district government. This critical tool will serve various government officials and NGOs during emergency situations, requiring robust functionality and reliable performance.

Scenario

Heavy rainfall is forecasted for the upcoming week, and emergency coordinators require a comprehensive web-based flood risk assessment and response planning application. The system must support simultaneous use by multiple emergency responders across different levels of the organizational hierarchy - from field personnel to command center operations and senior government officials. The application must integrate Geographic Information System (GIS) capabilities for spatial analysis and visualization.

Pre-Development Requirements

Before implementation, students should understand

- Various GIS tools and technologies and spatial analysis

Development Constraints & Guidelines

Permitted Tools:

- AI-assisted development tools (GitHub Copilot, Cursor, etc.) are encouraged for problem analysis and solution design
- Any open-source technologies and frameworks
- Public APIs and libraries

Functional Requirements

Make use of the tools, your analytical skills, experience and imagination to come up with suitable functional requirements that solves the purpose

Technical Requirements:

- Modular Design: Code must be well-structured with clear separation of concerns
- Documentation: Students must be able to articulate and explain their code architecture
- Prompt Engineering: All AI prompts used during development must be documented and stored

- Shareability: Prompts should be organized and easily shareable for review

Evaluation Criteria:We prioritize the following over cutting-edge technology adoption:

1. Code Modularity: Clean, organized, and reusable code structure - **5 Marks**
2. Exception Handling: Robust error management and graceful failure handling - **5 marks**
3. Performance: Efficient algorithms and optimized resource usage - **5 marks**
4. Maintainability: Code that can be easily updated and extended - **5 marks**
5. Documentation - **30 marks**
6. Practical Utility: Real-world applicability and user value **50-Marks**
7. Analytical Thinking: Evidence of problem-solving approach visible in prompts

Individual Approach Expectation

While all candidates receive the same base problem statement, we recognize that each individual brings unique perspectives and problem-solving approaches. Your solution should reflect your analytical thinking and creative problem-solving abilities.Important Note: Although the core problem is shared among all candidates, your prompts, approach, and implementation should be original. Sharing prompts or solutions with other candidates may compromise the evaluation process and impact all participants' assessments.

Deliverables

A readme.md document, explaining the application and its use cases and how to run the application, an automation script that starts all the required software is preferable.

All the saved prompts

Entire code base

Each student should share this in a github in their private workspace, we will share the collaborators details later.

Note

Do not target for quantity, go for quality