

# PROJECT PLANNING PHASE DOCUMENTATION

## Civil Engineering Insight Studio

### 1. Introduction

The Project Planning Phase defines the roadmap for developing the Civil Engineering Insight Studio application. It includes planning of activities, resource allocation, scheduling, risk management, and milestones to ensure successful project completion within the specified timeframe.

### 2. Project Objectives

- Develop an AI-based system to analyze civil engineering structures from images
- Provide automated descriptive insights using multimodal AI
- Create a user-friendly web interface for interaction
- Deliver a functional prototype within the academic schedule

### 3. Scope of Planning

The planning covers all phases from requirement analysis to deployment and documentation. The system focuses on descriptive analysis of infrastructure images for educational purposes.

### 4. Work Breakdown Structure

- Requirement Analysis
- System Design
- Implementation
- Testing
- Deployment
- Documentation

### 5. Schedule and Timeline

The project is planned to be completed in sequential phases over the semester. Each phase has defined start and end points to ensure timely progress.

### 6. Resource Planning

Human Resources: Student developer and project guide

Hardware Resources: Computer or laptop with internet connectivity

Software Resources: Python, Streamlit, Google Gemini API, supporting libraries

### 7. Risk Management

Potential risks include API limitations, internet dependency, compatibility issues, and time constraints. Mitigation strategies involve early testing, backup plans, and adherence to schedule.

### 8. Quality Assurance Plan

Regular testing will be conducted during development to ensure accuracy, reliability, and usability of the system.

### 9. Deliverables

- Working application prototype
- Source code
- Project documentation
- Presentation materials

### 10. Conclusion

The Project Planning Phase establishes a clear strategy for executing the Civil Engineering Insight Studio project, ensuring efficient use of resources and successful achievement of project goals within the planned timeline.