

e-Class Learning Platform
Diploma in Software Engineering
Final Project Proposal
22.4F



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Project Proposal

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1. Introduction

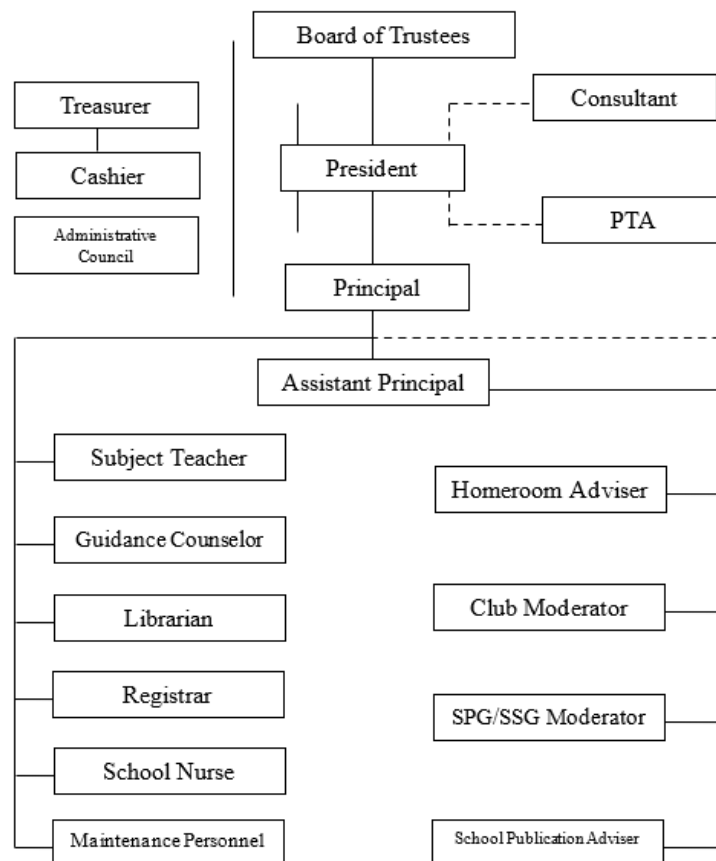
1.1 Introduction of the Organization

In the ever-evolving landscape of education, the need for innovative solutions is more pressing than ever. Recognizing this, our software engineering diploma final project aims to address the educational challenges faced by government schools. The focus of our initiative is to develop an e-Class Learning platform that not only enhances the learning experience but also contributes to the overall improvement of the educational ecosystem.

1.2 Organization Structure

The project will be conducted in collaboration with Susamayawardhana Vidyalaya - Colombo 08, with the guidance and support of the school administration and faculty. The organizational structure will involve key stakeholders, including project managers, developers, educators, and students. Effective communication channels and collaboration frameworks will be established to ensure the success of the project.

The Organizational Structure



1.3 Current Operations in Organization

A comprehensive analysis of the current educational practices, technological infrastructure, and teaching methodologies at Susamayawardhana Vidyalaya will be conducted. This examination will help us understand the existing challenges and areas that can be improved through the implementation of an e-Class Learning platform.

1.4 Users and Responsibilities in Organization

Identifying the primary users and defining their responsibilities is crucial for the success of the e-Class Learning platform. This section will outline the roles of teachers, students, administrators, and any other relevant stakeholders. Understanding the diverse needs and responsibilities of each user group is paramount to designing a platform that effectively addresses their requirements.

1. Teachers:

Responsibilities:

- Creating and uploading educational content to the platform.
- Monitoring student progress and performance.
- Engaging with students through interactive online sessions.
- Providing feedback and assessments.

2. Students:

Responsibilities:

- Accessing and engaging with learning materials on the platform.
- Participating in interactive online classes and discussions.
- Submitting assignments and assessments through the platform.
- Seeking assistance from teachers when needed.

3. Administrators:

Responsibilities:

- Managing user accounts and access permissions.
- Overseeing the overall functionality and performance (can use every function that teachers and students can use) of the e-Class Learning platform.
 - Can use the system for auditing purposes.

- Generating reports on student, teacher and system activities on daily, monthly and annual basis.
 - User Engagement Reports: Tracking user activity, such as login times, frequency of platform use, and engagement with different learning resources.
 - Performance Reports: Analyzing student performance data, including grades, assessments, and overall academic progress.
 - System Utilization Reports: Providing insights into how frequently different features of the e-Class Learning platform are utilized, helping administrators make informed decisions about resource allocation and platform improvements.
 - Content Popularity Reports: Identifying which learning materials are most accessed and utilized by students and teachers, aiding in the continuous improvement of educational content.
 - Monthly Attendance Reports: Monitoring and reporting on student attendance during virtual classes or other learning activities conducted through the platform.

- Ensuring the security and integrity of the platform.

1.5 Problem Definition

This section will articulate the educational challenges faced by Susamayawardhana Vidyalaya. It will delve into issues such as limited access to quality educational resources, the need for interactive learning tools, and the challenges of remote learning, providing a clear understanding of the problems the e-Class Learning platform aims to solve.

1.6 Project Objectives

Clearly defined objectives serve as the roadmap for project development. This section will outline the specific goals and targets of the e-Class Learning platform project. Objectives may include enhancing student engagement, improving learning outcomes, and providing teachers with effective tools for content delivery.

1.7 Proposed Solution

Our proposed solution involves the development and implementation of an e-Class Learning platform tailored to the unique needs of Susamayawardhana Vidyalaya. This section will provide an overview of the features and functionalities of the platform, highlighting how it addresses the identified challenges and contributes to a more effective and inclusive learning environment.

1.8 Chapter Summery

This introductory chapter sets the stage for the e-Class Learning platform project. It provides a comprehensive overview of the organization, its structure, current operations, users, and the challenges it faces. Additionally, the chapter outlines the specific objectives of the project and introduces our proposed solution. The subsequent chapters will delve deeper into the methodology, development process, and testing strategies employed in bringing this solution to fruition.

2. Methodology

2.1 Introduction

Methodology is the backbone of any successful software engineering project. In this chapter, we outline the approach and methods we will employ in the development of the e-Class Learning platform for Susamayawardhana Vidyalaya. This includes strategies for data collection, the software process model, tools for development, testing strategies, and an implementation plan.

2.2 Data Collection Methods

Understanding the specific needs and requirements of Susamayawardhana Vidyalaya is paramount for the success of the e-Class Learning platform. We will employ a combination of interviews, surveys, and direct observations to gather information from key stakeholders such as teachers, students, and administrators. This data will inform the design and functionality of the platform, ensuring it aligns with the unique characteristics of the school.

2.3 Software Process Model

For the development of the e-Class Learning platform, we will adopt an iterative and incremental software development approach. This model allows for continuous refinement based on feedback, ensuring that the final product meets the evolving needs of Susamayawardhana Vidyalaya. Regular meetings and feedback sessions will be scheduled with stakeholders to incorporate their insights throughout the development process.

2.4 Software Development Tools

To facilitate efficient project management, collaborative coding, and version control, we have carefully selected industry-standard tools that align with the specific requirements of Susamayawardhana Vidyalaya. The following tools will be utilized throughout the development process:

- We will utilize Draw.io and Figma as UML design tools and for prototyping, respectively. MySQL will be employed for database management. Communication will take place through a combination of physical and virtual meetings, utilizing online platforms like Google Meet.

- Project Management: Trello

Trello is an intuitive project management tool that will enable us to organize tasks, set milestones, and track progress in a visually accessible manner. It supports real-time collaboration, allowing team members to update and monitor project status seamlessly.

- Collaborative Coding: Visual Studio Code

Visual Studio Code (VS Code) is a lightweight and powerful source code editor that supports collaborative coding. With features like live sharing, it allows multiple developers to work on the codebase simultaneously, fostering efficient collaboration and reducing development time.

- Version Control: Git and GitHub

Git, a distributed version control system, will be employed for tracking changes in the source code. GitHub, a web-based platform, will serve as a repository for our Git-managed projects. This combination enables version control, collaborative development, and a centralized location for code storage.

By integrating these tools into our development process, we aim to streamline communication, enhance collaboration, and ensure the transparency of project activities. The selected tools are user-friendly, widely adopted in the industry, and align with the technical proficiency of the development team. Regular training sessions will be conducted to familiarize team members with these tools, ensuring their effective utilization throughout the project lifecycle.

2.5 Testing Strategies

Ensuring the reliability and functionality of the e-Class Learning platform is integral to its success. Our testing strategy will encompass unit testing, integration testing, and user acceptance testing. Regular testing cycles will be conducted to identify and rectify any issues promptly, guaranteeing a robust and user-friendly platform.

2.6 Implementation Plan

A well-defined implementation plan is essential to ensure a smooth rollout of the e-Class Learning platform at Susamayawardhana Vidyalaya. This plan will include a timeline for development milestones, user training sessions, and a phased deployment strategy. Regular communication with stakeholders will be maintained throughout the implementation process to address any concerns and provide necessary support.

Timeline:

- Phase 1: Gathering and Analyzing Requirements (3 weeks)
- Phase 2: Designing Software (3 weeks)
- Phase 3: Integrating and Migrating Data (1 week)
- Phase 4: Conducting Testing (1 week)
- Phase 5: Implementing (2 weeks)
- Phase 6: Monitoring and Continuously Improving (Ongoing)

Budget:

- Costs for installation and configuration: Rs. 10,000.00
- Monthly server costs: Rs 1000
- We plan to implement this system concurrently with the manual system for a duration of 2 weeks.

Success Criteria:

- Successful installation and configuration of the project cost and invoicing software solution.
- Efficient training of users and successful adoption of the new system.
- Enhancement in accuracy and efficiency in project costing and invoicing processes.

2.7 Chapter Summery

This chapter has outlined the methodology that will guide the development of the e-Class Learning platform for Susamayawardhana Vidyalaya. From data collection methods to the selection of software development tools and testing strategies, each aspect has been carefully considered to align with the unique context of the school. The subsequent chapters will delve deeper into the specific details of the development process, presenting a comprehensive roadmap for the successful execution of the project.