**Project Title**

Learning Management System

**Group Members**

Saman (23K-6078)



**Introduction**

**Background:**

In today’s digital age, education systems are evolving rapidly. E-learning platforms provide an alternative to traditional classroom learning by offering flexibility, accessibility, and enhanced student-teacher interaction. This project focuses on developing a simple Learning Management System (LMS) using C++, which applies Object-Oriented Programming (OOP) principles.

**Problem Statement:**

Traditional classroom systems struggle with limitations such as fixed schedules, limited access to educational content, and lack of interactivity. The challenge lies in designing an LMS that uses core OOP concepts—encapsulation, inheritance, and polymorphism—to create a scalable, maintainable platform.

**Objectives:**

* To design and build a C++ console-based application that simulates an LMS.
* To implement OOP concepts practically in the system's development.
* To demonstrate core functionalities like user registration, content upload, and quizzes.

**Scope of the Project**

**Inclusions:**

* Dual interface system for Students and Teachers.
* Registration and login functionality.
* Upload and view lecture content.
* Online quiz system with basic evaluation.

**Exclusions:**

* Real-time video/audio communication.
* Full graphical user interface (GUI).
* Integration with third-party systems or databases.

**Project Description**

**Overview:**

This project will develop a basic LMS in C++ that models a two-user system (students and educators) and supports basic learning functions. It will showcase how OOP concepts can be applied to solve real-world problems in education.

**Technical Requirements:**

* Programming Language: C++
* Tools: Embarcadero Dev C++, Microsoft Visual Studio
* Supporting Material: YouTube tutorials, online OOP documentation

**Project Phases:**

**Research:** Study LMS design patterns and features.

**Planning:** Draft application layout and identify modules.

**Design:** Use OOP to design classes and inheritance structures.

**Implementation:** Code each feature iteratively with testing.

**Methodology**

**Approach:**

The project will be executed in short weekly iterations. Each stage will be planned and reviewed, focusing on achieving small, testable goals. Agile-like principles will be used to adapt and improve as development progresses.

**Team Responsibilities:**

* **Saman (23K-6078):**
  + Research LMS structure and user needs
  + Develop registration/login and content management system
  + Implement quizzes and evaluations
  + Test the final application
  + Prepare documentation and presentation

**Expected Outcomes**

**Deliverables:**

* A working console-based LMS application in C++
* A final project report documenting all phases
* Simple user instructions for operating the LMS

**Relevance:**

The project emphasizes basic ICT concepts including digital content management, user access control, and simple programming logic. It supports educational goals by demonstrating how technology can enhance the learning process.

**Resources Needed**

**Software:**

* Embarcadero Dev C++
* Microsoft Visual Studio
* Microsoft Word (for documentation)

**Other Resources:**

* YouTube channels (MUMINJOON, Simplilearn) for coding guidance
* Instructor guidance for C++ implementation queries
* Online C++ reference material (e.g., cppreference.com)