E-Learning Platform

Submitted By

Student Name	Student ID
Abdullah Al Masud	0242220005101857
Junayed Bin Karim	024222000510185
Mohammad Shah Nur	0242220005101845

MINI LAB PROJECT REPORT

This Report Presented in Partial Fulfillment of the course **CSE222: Object Oriented Programming II Lab in the Computer Science and Engineering Department**

DAFFODIL INTERNATIONAL UNIVERSITY Dhaka, Bangladesh

December 11**, 2024**

DECLARATION

We hereby declare that this lab project has been done by us under the supervision of **Ms. Nasima Islam Bithi**, **Lecturer**, Department of Computer Science and Engineering, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere as lab projects.

Submitted To:

Ms. Nasima Islam Bithi
Lecturer
Department of Computer Science and Engineering Daffodil International University

Submitted by

Mohammad Shah Nur 0242220005101845 Dept. of CSE, DIU	
Junayed Bin Karim 0242220005101667 Dept. of CSE, DIU	Abdullah Al Masud 0242220005101857 Dept. of CSE, DIU

COURSE & PROGRAM OUTCOME

The following course have course outcomes as following:

Table 1: Course Outcome Statements

CO's	Statements
CO1	**Able to solve** computational problem using Python programming
CO2	**Able to develop** object oriented solution using Python
CO3	**Able to apply** OOP and Python knowledge in solving problem

Table of Contents

Chapter 1

Introduction

1.1 Introduction

The E-Learning Platform is a Python-based project designed to provide a simulated learning management system for students, instructors, and courses. It offers functionalities such as course registration, assignment submission, quiz participation, and interactive features for educational management.

1.2 Motivation

The E-Learning Platform is a Python-based project designed to provide a simulated learning management system for students, instructors, and courses. It offers functionalities such as course registration, assignment submission, quiz participation, and interactive features for educational management.

1.3 Objectives

The primary objectives of this project are:

- Provide an interactive and accessible learning management system.
- Implement features for student registration, instructor assignments, and quizzes.
- Ensure user-friendly design for enhanced learning experiences.

1.4 Feasibility Study

The project focuses on replicating core e-learning platform functionalities with command-line simplicity. Unlike existing platforms, it emphasizes Python-based object-oriented programming concepts.

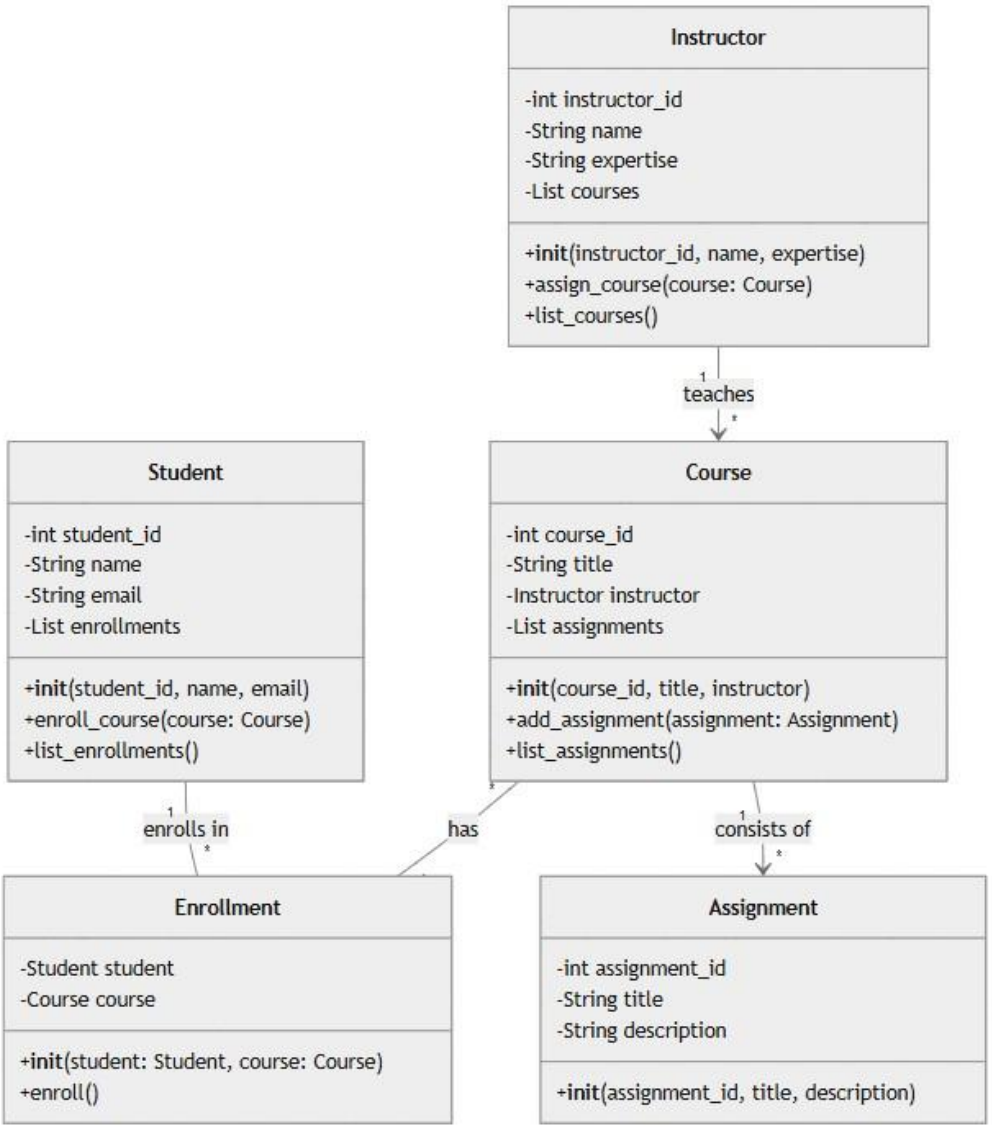
1.5 Gap Analysis

Existing educational platforms often rely on extensive resources and GUIs. This project addresses these gaps by simplifying the interface while focusing on the essential functionalities.

1.6 Project Outcome

- A functioning Python application simulating e-learning functionalities.
- Practical insights into OOP concepts like inheritance, encapsulation, and modularity.
- Enhanced understanding of software development for educational tools.

UML Diagram of E-Learning Platform



Chapter 2

Proposed Methodology

2.1 Requirement Analysis & Design Specification

2.1.1 Overview

The E-Learning Platform has two primary user categories:

- Students: Register, enroll in courses, submit assignments, and take quizzes.
- Instructors: Manage courses and assignments.

2.1.2 Proposed Methodology

The system uses Python OOP concepts to organize the functionality:

- Classes: Student, Instructor, Course, Assignment, and Enrollment.
- Interactive CLI: Handles user inputs for various operations.
- Login System: Restricts access to authorized users with ID and password.

2.1.3 UI Design

A command-line interface (CLI) with menu-driven options:

- Student actions (e.g., enroll in courses, submit assignments).
- Instructor controls (e.g., assign courses, add assignments)

2.2 Overall Project Plan

Task	Start Date	End Date	Status
Requirement Analysis	2024-11-03	2024-11-07	Completed
Development	2024-11-08	2024-11-30	Completed
Testing & Debugging	2024-12-01	2024-12-06	Completed
Final Deployment	2024-12-07	2024-12-10	Completed

Figure 2.2: Project Timeline Data

Here’s the UML Diagram of the project:

Chapter 3

Implementation and Results

3.1 Implementation

The project is implemented using Python with the following features:

- Login authentication for access control.
- Classes for managing students, instructors, courses, and assignments.
- Interactive quizzes with scoring.

3.2 Results and Discussion

The platform demonstrates:

- Secure login for authorized users.
- Seamless course management and assignment submissions.
- Interactive quizzes with real-time scoring.

Chapter 4

Engineering Standards and Mapping

4.1 Impact on Society, Environment and Sustainability

- Impact on Life: Promotes digital learning and education systems.
- Impact on Society: Encourages efficient learning management.
- Ethical Aspects: Ensures fairness and equal opportunities for all users.
- Sustainability: Designed for lightweight operations with minimal resource usage

4.2 Project Management and Team Work

- Cost Analysis: Built using open-source tools, requiring no additional costs.
- Collaboration: Managed through structured and modular development phases.

4.3 Complex Engineering Problem

4.3.1 Mapping of Program Outcome

Table 4.1: Justification of Program Outcomes

PO's	Justification
PO1	Applying software design principles to build an e-learning system.
PO2	Analyzed user needs for educational functionalities..
PO3	Developed an intuitive CLI for effective user interaction.

Chapter 5

Conclusion

5.1 Summary

The E-Learning Platform is a CLI-based project that replicates key functionalities of a learning management system, focusing on Python-based software development.

5.2 Limitation

- Limited to single-user CLI operations.
- No database integration for persistent storage.

5.3 Future Work

- Implementing a GUI for enhanced usability.
- Adding multi-user access with database integration.

References

[1] Python Software Foundation. (n.d.). Python documentation. Retrieved December 10, 2024, from https://docs.python.org/
[2] W3Schools. (n.d.). Python tutorial. Retrieved December 10, 2024, from https://www.w3schools.com/html/