Project Proposal:

Project Title

Student Management System with Course Credits and Exams

Team Member

1. Md Inzamamul Lohani (1639)
2. Akaeid Moonjin Dayeen (1649)

Objective

The objective of this project is to develop a comprehensive Student Management System using Object-Oriented Programming (OOP) principles in Java. The system will manage student and teacher accounts, handle course enrollments, track course credits, support multiple exams per course and store the results. This project aims to provide a practical demonstration of OOP concepts such as encapsulation, inheritance, and polymorphism.

Key Features

1. **User Management**
   - Student and Teacher account creation and authentication.
   - Separate panels for students and teachers.
2. **Course Management**
   - Add, edit, and remove courses.
   - Assign course credits to each course.
   - Enroll students in courses.
3. **Exam Management**
   - Support for multiple exams per course (e.g., midterm, final, quizzes).
   - Teachers can create and manage exams for their courses.
   - Students can attempt exams assigned to their enrolled courses.
4. **Result Management**
   - Automatic grading of exams (for MCQs).
   - Store and display results for each exam and course.
   - Calculate total credits earned by students based on passed courses.
5. **Reporting**
   - View student performance across multiple exams and courses.
   - Generate reports for teachers and students.

Student Management System

OOP Project Proposal
July 24, 2025

Submitted by

Md Inzamamul Lohani
Roll: 1639

Md Akaeid Moonjin Dayeen
Roll: 1640

Submitted to

Md Associate Prof.Shah Mostafa Khaled,
Institute of Information Technology
University of Dhaka

OOP Concepts Demonstrated

- **Encapsulation:** All data and methods related to students, teachers, courses, and exams are encapsulated in their respective classes.
- **Inheritance:** Common properties and methods are shared using base classes (e.g., `Account` as a base for `StudentAccount` and `TeacherAccount`).
- **Polymorphism:** Exam types and result calculations can be extended for different exam formats.
- **Abstraction:** The system hides complex operations (like grading and report generation) behind simple interfaces.

Technologies Used

- **Language:** Java
- **GUI:** Java Swing (for user interface)
- **Data Storage:** In-memory data structures (will be extended to file or database storage)

Planned Enhancements

- Add support for course credits and calculation of total credits per student.
- Implement multiple exams per course, with flexible exam creation and result tracking.

Conclusion

This project will provide a robust platform for managing students, teachers, courses, and exams, while demonstrating advanced OOP concepts. The planned features of course credits and multiple exams will make the system more realistic and useful for academic management.