

Project 2: Student Registration System with Fine Calculation

Title: Student Registration System with fine Calculation in C++

Objective: The objective of this semester project is to design and implement a comprehensive Student Registration System using C++. The system should include essential programming concepts such as if-else statements, loops, arrays, structures, and functions. The project aims to manage student registrations, course enrollments, and introduces fine calculations for late registrations. The system should provide a user-friendly interface to interact with student data and handle registration-related operations.

Key Features:

1. Student Registration:

- Implement functionality to add new students to the system, including details such as student ID, name, and contact information.
- Display the list of all registered students.

2. Course Enrollment:

- Students can enroll in courses, and the system should record the enrollment date.
- Display the list of courses each student is enrolled in.

3. Late Registration Fine:

- Implement a fine calculation mechanism for late student registrations based on a predefined fine rate per day.
- Display and update fines for each registered student with late registrations.

4. User Interface:

- Create an intuitive user interface with a menu system that allows users to perform various student registration and enrollment operations.
- Utilize if-else statements to handle different user choices and cases.

5. Data Persistence:

- Optionally, implement functionality to save and load student and enrollment data, as well as fine information, from a file for data persistence between program executions.

Guidelines:

- Utilize arrays to manage the collection of students and their course enrollments.
- Define a structure to represent the attributes of a student (e.g., student ID, name, contact information) and course enrollment (e.g., course ID, enrollment date).
- Use functions to modularize the code and perform specific tasks such as adding students, displaying student information, enrolling in courses, calculating fines, and displaying fines.
- Implement loops for repetitive tasks and to create a user-friendly experience.

Deliverables:

1. Source Code:

Well-commented C++ source code implementing the Student Registration System with fine calculations.

2. Documentation:

A brief document explaining the overall design, functionality, and usage of the system.

3. Presentation:

Prepare a short presentation to demonstrate the project, highlighting key features, including fine calculations, and design decisions.

Evaluation Criteria:

The project will be evaluated based on the following criteria:

- Correct implementation of basic operations (add, display, enroll).
- Effective use of if-else statements, loops, arrays, structures, and functions.
- Implementation and accuracy of fine calculations for late registrations.
- User interface design and overall program flow.
- Handling of edge cases and error scenarios.
- Optional features such as data persistence.