

# STUDENT PORTAL PROJECT

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**COURSE:** OBJECT ORIENTED PROGRAMMING

**COURSE CODE:** CSC-103

**SUBMITTED TO:** MISS AMNA UMER

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## ACKNOWLEDGMENT

We would like to begin by expressing our heartfelt gratitude to Allah for guiding us throughout the development of this student portal project. We also extend our appreciation to our teacher, Miss Amna Umer, and our peers for their invaluable support and insights. Special thanks to the UIT University for giving us this opportunity and various resources that helped shape our work.

## ABSTRACT

This presentation provides an overview of the project objectives, scope, and key functionalities of the student portal designed to enhance the academic experience. The system aims to simplify student information management through a modular, class-based framework that facilitates easy access to academic records, course details, and financial information. By structuring the portal to efficiently organize and retrieve essential data, we aim to improve both student engagement and overall academic workflow.

## INTRODUCTION

The purpose of the Student Portal is to provide a centralized platform for managing essential academic information, thereby enhancing the overall educational experience for students and faculty. Object-Oriented Programming (OOP) plays a crucial role in designing the system, as it allows for a modular approach that promotes code reusability, scalability, and ease of maintenance. The primary benefits of the system include streamlined access to academic records, improved communication between students and faculty, and effective management of course and financial information, ultimately fostering a more engaged and organized academic environment.

## WORKFLOW

#### 1 Student Registration and Login

#### The login process for new and existing students is designed to ensure secure access to the portal. New students must complete a registration form that collects essential information, including their name, student ID, email, and password. After submission, their credentials are verified and stored securely in the system. Existing students can log in using their registered email and password. The system incorporates security measures, such as password encryption and a CAPTCHA verification step, to protect user data and prevent unauthorized access.

#### 2 Academic Information Access

#### Once logged in, students can easily access their academic information. The portal provides a user-friendly interface where students can view their Grade Point Average (GPA), detailed marks for each course, and any outstanding fees. Additionally, students can review their registered courses and track attendance records through dedicated sections within the portal. This centralized access allows students to monitor their academic progress and manage their educational responsibilities efficiently.

#### 3 Faculty Information Access

#### Faculty members have a dedicated section within the portal that grants them access to relevant information about the subjects they teach. They can view their course outlines, schedules, and assigned roles within the university. Furthermore, the portal provides faculty with departmental information, allowing them to collaborate with colleagues and access resources pertinent to their teaching responsibilities. This functionality supports a cohesive academic environment and promotes effective communication among faculty members.

#### 4 Fee Tracking

#### The fee tracking feature of the portal allows students to manage their financial obligations easily. The system displays a clear overview of due fees, including tuition, registration, and other associated costs. Students receive notifications about upcoming payment deadlines and can track their payment history. The portal also offers options for online payment processing, ensuring that students can manage their fees conveniently and securely without the need for in-person transactions.

#### 5 Record Management

#### Student and faculty records are stored in a secure database within the portal. The system allows for the easy updating and management of these records, ensuring that all information is current and accurate. Students can edit their personal information as needed, while faculty can update their course details and departmental roles. Regular backups and data integrity checks are implemented to protect against data loss and ensure compliance with privacy regulations.

#### 6 Collaboration Tools for Students and Faculty

#### The portal includes various collaboration tools designed to facilitate communication and project management among students and faculty. Features such as discussion forums, messaging systems, and shared document storage enable effective collaboration on group projects and academic initiatives. These tools encourage interaction and teamwork, enhancing the learning experience and promoting a sense of community within the academic environment.

## CLASS STRUCTURE AND RELATIONSHIPS

Each of the following classes plays a distinct role in the Student Portal, interacting in specific ways to manage student activities, courses, and administrative functions.

1. **Person Class**

* **Purpose:** Represents general personal information applicable to both students and faculty.
* **Attributes:**

name

ID

* **Methods:**

get\_info(): Retrieves personal information.

update\_info(): Updates personal details.

* **Relationships:**

Acts as a superclass for both Student and Faculty classes.

1. **Student Class**

* **Purpose:** Represents a student enrolled in the institution.
* **Attributes:**
  + student\_id
  + name
  + email
  + password
* **Methods:**
  + enroll\_course(): Allows the student to enroll in a course.
  + submit\_assignment(): Submits assignments for courses.
* **Relationships:**
  + Interacts with the Course, Department, and Financials classes for enrollment and fee management.

1. **Faculty Class**

* **Purpose:** Represents faculty members and their roles in the institution.
* **Attributes:**
  + faculty\_id
  + name
  + email
  + department
* **Methods:**
  + assign\_grade(): Assigns grades to students.
  + manage\_courses(): Manages courses taught by the faculty.
* **Relationships:**
  + Interacts with the Course and Department classes.

1. **Department Class**

* **Purpose:** Manages information related to academic departments.
* **Attributes:**
  + department\_id
  + department\_name
  + list\_of\_courses
* **Methods:**
  + add\_course(): Adds a new course to the department.
  + remove\_course(): Removes a course from the department.
* **Relationships:**
  + Links to Faculty, Student, and Course classes.

1. **Course Class**

* **Purpose:** Represents a course offered by the institution.
* **Attributes:**
  + course\_id
  + title
  + description
  + schedule
* **Methods:**
  + add\_student(): Adds a student to the course roster.
  + remove\_student(): Removes a student from the course.
* **Relationships:**
  + Allows enrollment and management of students and faculty within each course, facilitating academic tracking.

1. **Financials Class**

* **Purpose:** Tracks student financial information, including tuition and fees.
* **Attributes:**
  + student\_id
  + tuition\_fee
  + due\_date
* **Methods:**
  + update\_fees(): Updates the fee records for a student.
  + check\_due\_fees(): Checks if fees are due for a student.
* **Relationships:**
  + Links to the Student class to manage individual payment records and provide access to financial summaries.

1. **Login Class**

* **Purpose:** Manages user authentication and secure access to the portal.
* **Attributes:**
  + username
  + password\_hash
* **Methods:**
  + authenticate(): Validates user credentials.
  + logout(): Logs the user out of the portal.
* **Relationships:**
  + Links to both Student and Faculty classes for validating login credentials and controlling access.

## PROJECT DIVISION AMONG TEAM MEMBERS

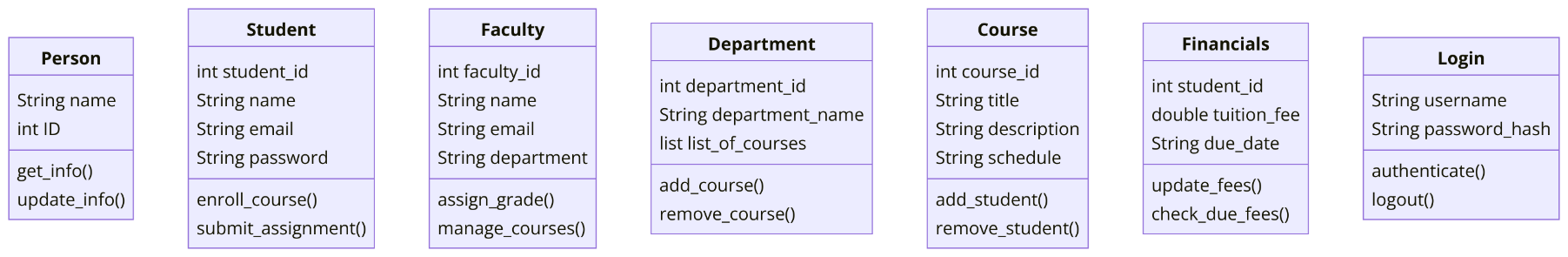
To ensure effective collaboration, we divided the project as follows:

* **Team Member 1 (Person Class):** Responsible for defining the Person class, which serves as a superclass for both Student and Faculty classes, encompassing shared attributes and methods.
* **Team Member 2 (Login Class):** Focused on developing the Login class to manage user authentication and secure access to the portal.
* **Team Member 3 (Student and Faculty Classes):** Handled the implementation of Student and Faculty classes, including attributes and methods specific to each role.
* **Team Member 4 (Financials Class):** Managed the Financials class, responsible for tracking student financial information, including tuition and fees.
* **Team Member 5 (Course and Department Classes):** Developed the Course and Department classes, overseeing course details and departmental information.
* **Collaboration Tools:** We utilised tools like GitHub for version control and Google Meets/WhatsApp for team communication throughout the project.

# CONCLUSION:

The student portal has effectively met the needs of both students and faculty by streamlining academic information management, from registration to fee tracking, while its modular, class-based framework allows for future enhancements. By improving accessibility to resources and fostering engagement through collaboration tools, the portal significantly enriches the academic experience. Moving forward, we recommend additional features such as enhanced data analytics and user interface updates to further refine usability, marking a substantial advancement in modernising academic management within our institution.

**Classes:**

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