A Midterm Progress Report

On

SCHOLARSHIP MANAGEMENT WEB PORTAL FOR GNDEC

Submitted in partial fulfillment of the requirements for the award

of the degree of

BACHELOR OF TECHNOLOGY

Computer Science and Engineering

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(JAN 2025 – JUNE 2025)

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LUDHIANA

INTRODUCTION

1. Overview

The Scholarship Management Web Portal for Guru Nanak Dev Engineering College (GNDEC) is an advanced, user-friendly platform designed to streamline and manage the entire scholarship process for students. This portal allows students to apply for various scholarships, track their application status, and submit necessary documents online. It also provides easy access to detailed information about available scholarships, including eligibility criteria, deadlines, and application procedures. By centralizing all scholarship-related activities, the portal ensures transparency, efficiency, and accessibility, making it easier for students to apply and stay updated on their applications.

2. Purpose

The primary objective of this system is to **automate and digitalize the scholarship process**, reducing paperwork, eliminating inefficiencies, and ensuring **fair and timely processing** of applications. The system serves as a **centralized platform** that facilitates students' access to scholarships, enables administrators to manage applications seamlessly, and provides clerks with tools for record-keeping and fund allocation. For the administrative staff at Guru Nanak Dev Engineering College, the Scholarship Management Web Portal significantly reduces the manual workload involved in reviewing and processing scholarship applications. The portal enables administrators to efficiently track applications, verify student eligibility, approve or reject applications, and manage the disbursement of funds. Additionally, the portal helps in maintaining organized records of all scholarship applications and approvals, which are crucial for future reference, audits, or reporting purposes.

3. Key Features

I.   **For Students:**

- Online scholarship application submission
- Application tracking and status updates
- Secure document upload for eligibility verification
- Notifications and alerts regarding deadlines and application status

II. **For Administrators (Admin Panel):**

- Scholarship creation and management
- Application review and approval/rejection workflows
- Reporting and analytics for scholarship distribution

III. **For Clerks:**

- Verification of submitted documents
- Disbursement and financial record-keeping
- Communication with students regarding missing or incorrect details

4. Benefits of the System

- **Efficiency:** Reduces manual work and processing time
- **Accessibility:** Available from any device with an internet connection
- **Transparency:** Ensures fair evaluation and real-time tracking of applications
- **Security:** Protects sensitive student and financial data

5. Conclusion

In conclusion, the Scholarship Management Web Portal for Guru Nanak Dev Engineering College plays a vital role in enhancing the accessibility, efficiency, and transparency of the scholarship application and management process. It is a modern solution that bridges the gap between students and financial aid, providing a streamlined, paperless, and efficient way to manage scholarships.

OBJECTIVES

The Objectives of the project:

1. To design a web portal to facilitate students to apply for available scholarships.
2. To facilitate college authorities to manage scholarship beneficiaries and required documentation.
3. To develop a user-friendly Interface for students and authorities to track status of scholarship applications and Report generation required for different purposes.

SYSTEM REQUIREMENTS

The Scholarship Management Web Portal for Guru Nanak Dev Engineering College (GNDEC) is designed to streamline the scholarship application process, track eligibility, and manage awards for students. The system will support students, administrators, and faculty in managing scholarships efficiently. Here are   some main SRS:

1) **HARDWARE REQUIREMENTS:** The system will require a combination of server-side and client-side hardware to ensure smooth performance, security, and accessibility. The hardware setup can be categorized into the following:

   ➢ **Server Requirements (For Hosting)**
      - Processor: Intel Xeon
      - RAM: Minimum 16GB (32GB recommended for high traffic)
      - Storage:1TB SSD
      - Operating System: Windows Server / Linux
      - Network: High-speed internet connection

   ➢ **Client-Side**
      - Desktop/Laptop: Minimum Intel i3
      - Browser Compatibility: Google Chrome, Mozilla Firefox, Edge
      - Internet Connection: Minimum 10 Mbps for smooth access
      - Mobile Devices: Android/iOS compatibility for student access

   ➢ **Networking & Security Infrastructure**
      - Firewall & Security Appliances: For data protection and prevention of cyber threats
      - Load Balancer: To manage high traffic and prevent downtime
      - Backup Server: To ensure data recovery and redundancy

2) **SOFTWARE REQUIREMENTS:** The system will provide a centralized platform for students, administrators, and faculty members to interact efficiently. To ensure the portal's functionality and performance, the system will require a set of hardware, software, and network resources.

- ➢ **Frontend Technologies (User Interface)**
  - ▪ Languages: HTML, CSS, JavaScript
- ➢ **Backend Technologies(Server-Side)**
  - ▪ Languages: PHP
  - ▪ Frameworks: Django for Python
- ➢ **Database Management System**
- ▪ Relational Database: MySQL (for structured data)

SOFTWARE REQUIREMENTS

Problem Definition for Scholarship Management System:

Many educational institutions and organizations struggle with efficiently managing scholarship applications, evaluations, and disbursements. The traditional paper-based or semi-digital methods often lead to delays, errors, and a lack of transparency. Additionally, students face difficulties in tracking their application status, and administrators find it challenging to process and verify applications promptly. A Scholarship Management System aims to address these issues by providing a web-based platform that allows students to apply for scholarships, clerks to verify documents, and administrators to review and approve applications. The system enhances efficiency, reduces paperwork, and ensures a fair and transparent scholarship allocation process.

Key Challenges Addressed:

1. **Manual Processes** – Paper-based or email-based applications are slow and error-prone.
2. **Lack of Transparency** – Applicants often struggle to track the status of their submissions.
3. **Inefficient Review Process** – Manual verification and approval take excessive time.
4. **Data Security Issues** – Sensitive applicant information needs secure handling.
5. **Scalability** – Institutions require a system that can handle a large volume of applications.

Modules for Scholarship Management System:

There are mainly three modules in Scholarship Management System.

These are followed:
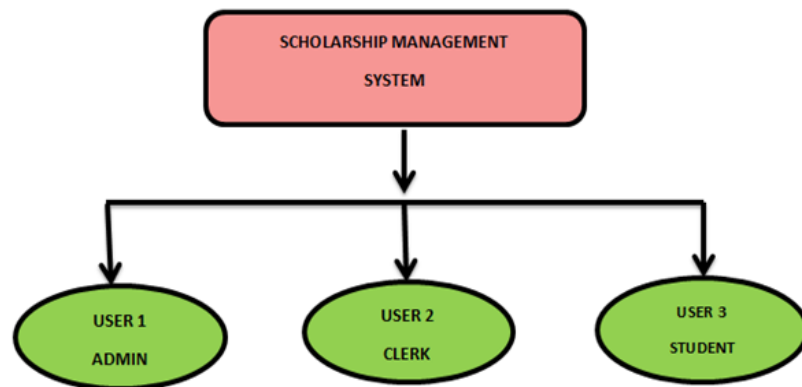
I. ADMIN:

The Admin plays a crucial role in managing the entire scholarship process, ensuring smooth operations, fairness, and efficiency. The Admin has the highest level of access and control over the system, overseeing students, clerks, and scholarship programs. They manage user accounts, including students and clerks, assigning roles and permissions as needed. Admins create and update scholarship programs, set eligibility criteria, and monitor deadlines. They oversee the verification and approval process, ensuring applications meet requirements before granting scholarships. Additionally, Admins handle communication by sending notifications, tracking application statuses, and generating reports for analysis.

II. CLERK:

The Clerk in a Scholarship Management System acts as a bridge between students and administrators, ensuring that applications are processed efficiently and accurately. Clerks are responsible for verifying student-submitted documents, such as academic records and financial statements, to ensure they meet eligibility criteria. They review applications for completeness, flag discrepancies, and communicate with students if additional information is required. Clerks also assist in updating application statuses and forwarding verified applications to the Admin for final approval. By maintaining accurate records and ensuring transparency, Clerks play a crucial role in streamlining the scholarship process and reducing errors or fraudulent claims.

III. STUDENTS:

The Student in a Scholarship Management System is the primary user, responsible for applying for available scholarships. Students create and manage their profiles, providing personal, academic, and financial details. They browse scholarships, check eligibility criteria, and submit applications with the required documents. Throughout the process, students can track their application status, receive notifications, and respond to any additional requests from clerks or administrators. If approved, they are informed about the scholarship disbursement details. By using the system, students experience a streamlined, transparent, and efficient scholarship application process, reducing paperwork and increasing their chances of securing financial aid.

FUNCTIONLITIES OF THE SYSTEM

ADMIN

I. **User Management**
   a. Add, edit, or remove students and clerks from the system.
   b. Assign roles and permissions to users.

II. **Scholarship Program Management**
   a. Create and update scholarship opportunities with eligibility criteria.
   b. Set application deadlines and required documents.
   c. Monitor the number of scholarships available.

III. **Application Processing & Approval**
   a. Oversee scholarship applications submitted by students.
   b. Assign clerks to verify applications and documents.
   c. Approve or reject applications based on verification reports.

IV. **Document & Data Verification**
   a. Ensure that students upload the required documents correctly.
   b. Cross-check financial and academic eligibility criteria.
   c. Prevent fraud and misuse of scholarships.

V. **Communication & Notifications**
   a. Notify students about application status updates.
   b. Send deadline reminders and other important announcements.
   c. Communicate with clerks regarding application processing.

VI. **Reporting & Analytics**
   a. Generate reports on scholarship distribution and application trends.
   b. Track approval rates, pending applications, and rejected cases.
   c. Use analytics to improve future scholarship policies.

VII. **Security & Compliance**
   a. Ensure data privacy and secure access to sensitive information.
   b. Maintain records for audit purposes and regulatory compliance.

CLERK

I. **Login and Validate:** Firstly Clerk login on this scholarship web portal.

II. **Clerk Home Page:** After successfully login on the portal then clerk can reach on Home page and check all needed details.

III. **Edit Students Details:** Clerk can edit all students details.

IV. **Send Notifications:** Clerk can send notifications to all students details.

V. **Verify Documents:** Clerk can verify students documents details.

VI. **Feedback:** Clerk can see feedback.

STUDENTS

I. **Login and Validate:** Firstly Student login on this scholarship web portal.

II. **Students Home page:** After successfully login on the portal then student can reach on Home page and check all needed details.

III. **View all Scholarships:** Students can view all scholarship details.

IV. **View Application Status:** Students can view all scholarship details.

V. **Apply Scholarship:** Students can apply different scholarships.

VI. **Send Feedback:** Students can send feeback.

SOFTWARE DESIGN

The system design follows a Modular Architecture that separates different functionalities into distinct modules, allowing for scalability, maintainability, and flexibility.

1) **SYSTEM FLOW CHART:** The System Flow Chart for the Scholarship Management Web Portal for Guru Nanak Dev Engineering College (GNDEC) illustrates the step-by-step flow of processes within the system. It provides a visual representation of how various components interact with one another and how data moves through the system. This chart is crucial for understanding the system architecture and the sequence of operations, ensuring clarity in both development and operation.
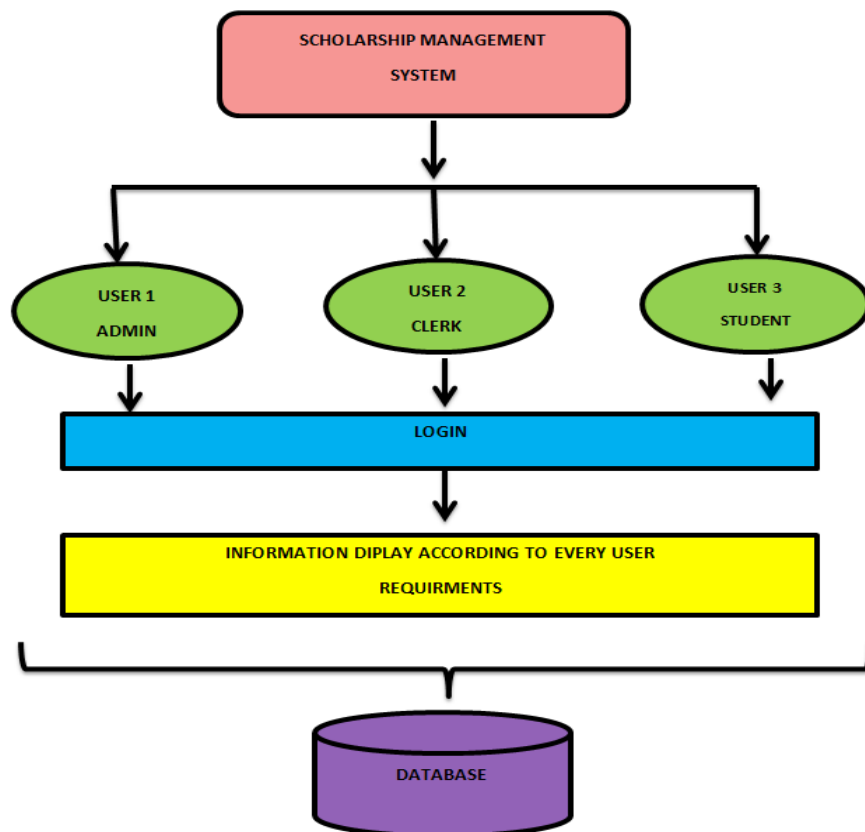
FIGURE 1: FLOW CHART OF SYSTEM

1) **ADMIN:**The Admin Flowchart is following:
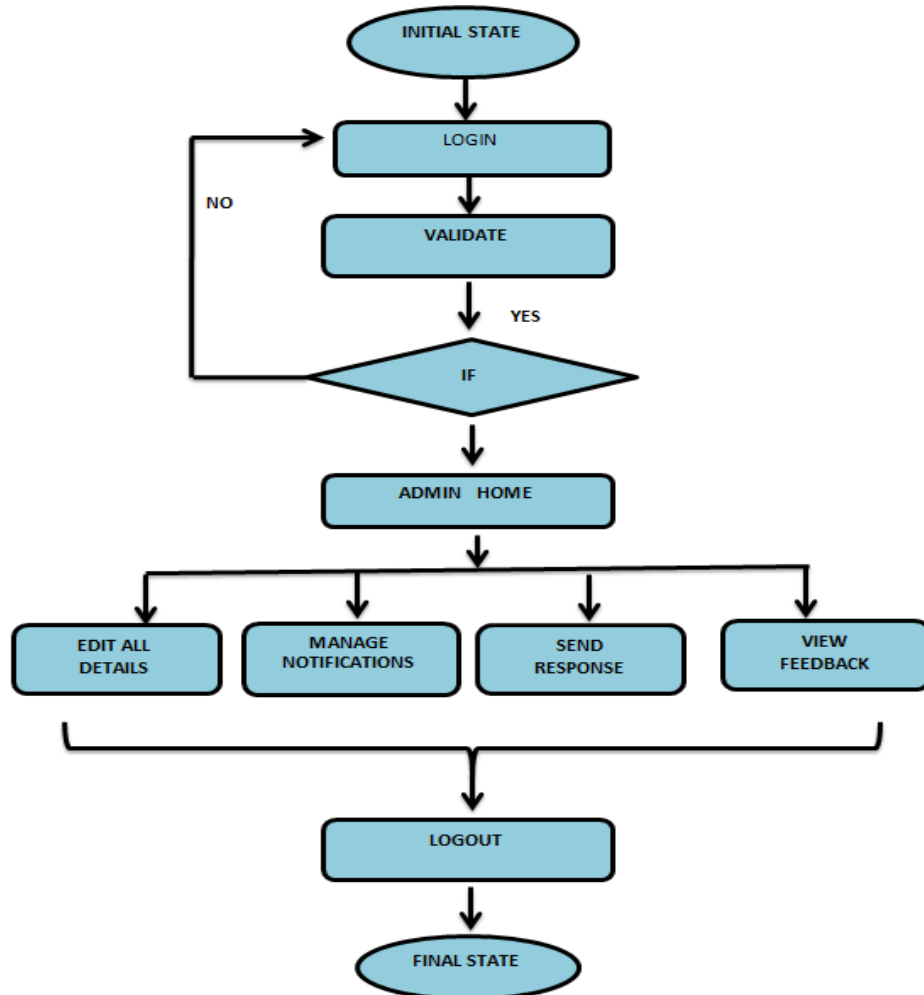
FIGURE 2: FLOW CHART OF ADMIN

1. LOGIN: Firstly admin can login on this scholarship web portal.

2. VALIDATE: In this section, login information is verified if it is true then admin will go on home page otherwise go to login section again and fill correct login information.

3. ADMIN HOME PAGE: After successfully login on the portal then admin can reach on Home page and check all needed details. Admin can be edit all details, manage notifications and view feedback.

3) STUDENT: The Student Flowchart is following:
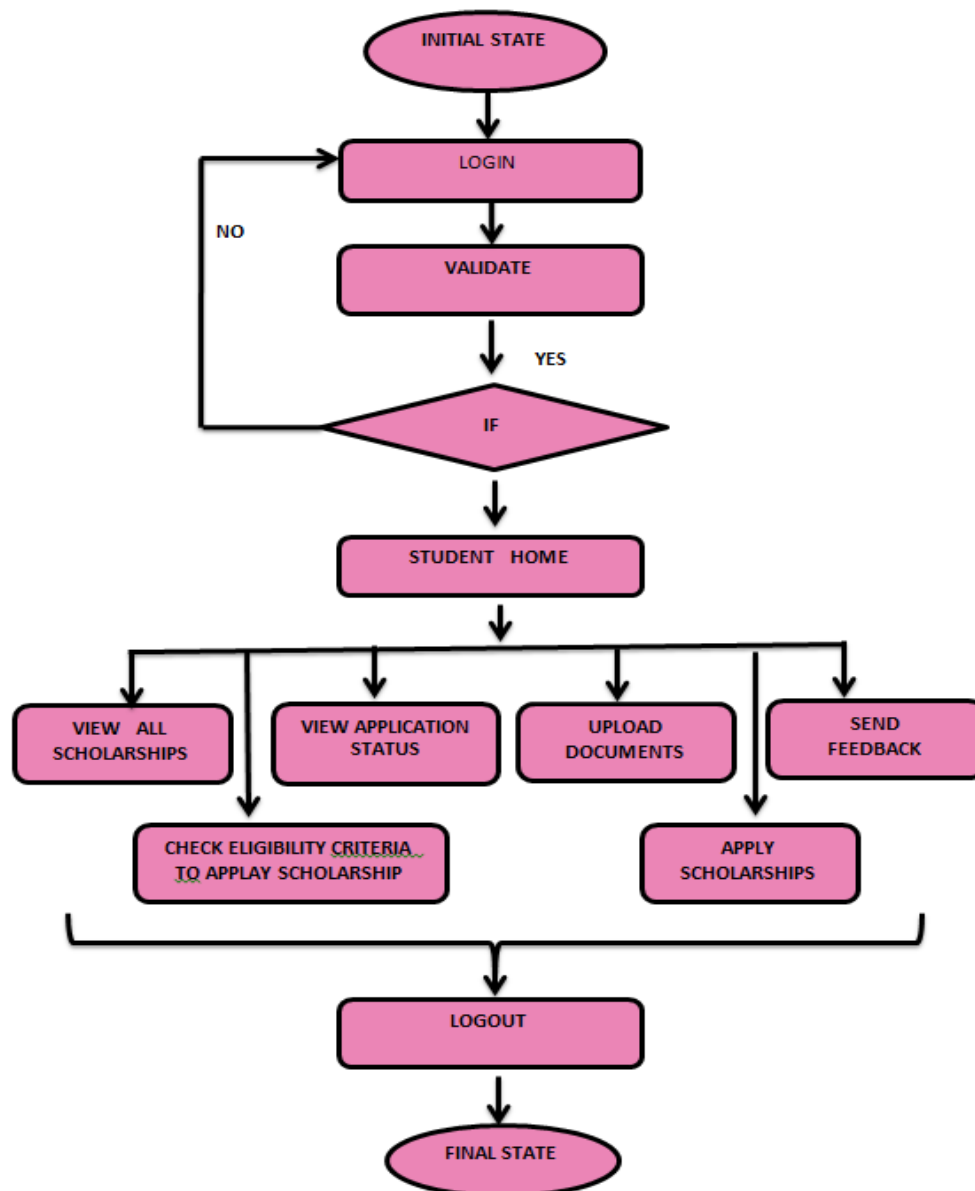
FIGURE 2: FLOW CHART OF STUDENT

1. LOGIN AND VALIDATE: Firstly Student login on this scholarship web portal.

2. STUDENT HOME PAGE: After successfully login on the portal then student can reach on Home page and check all needed details. Student can be view all scholarships, view appl. Status, apply scholarship and send feedback etc.

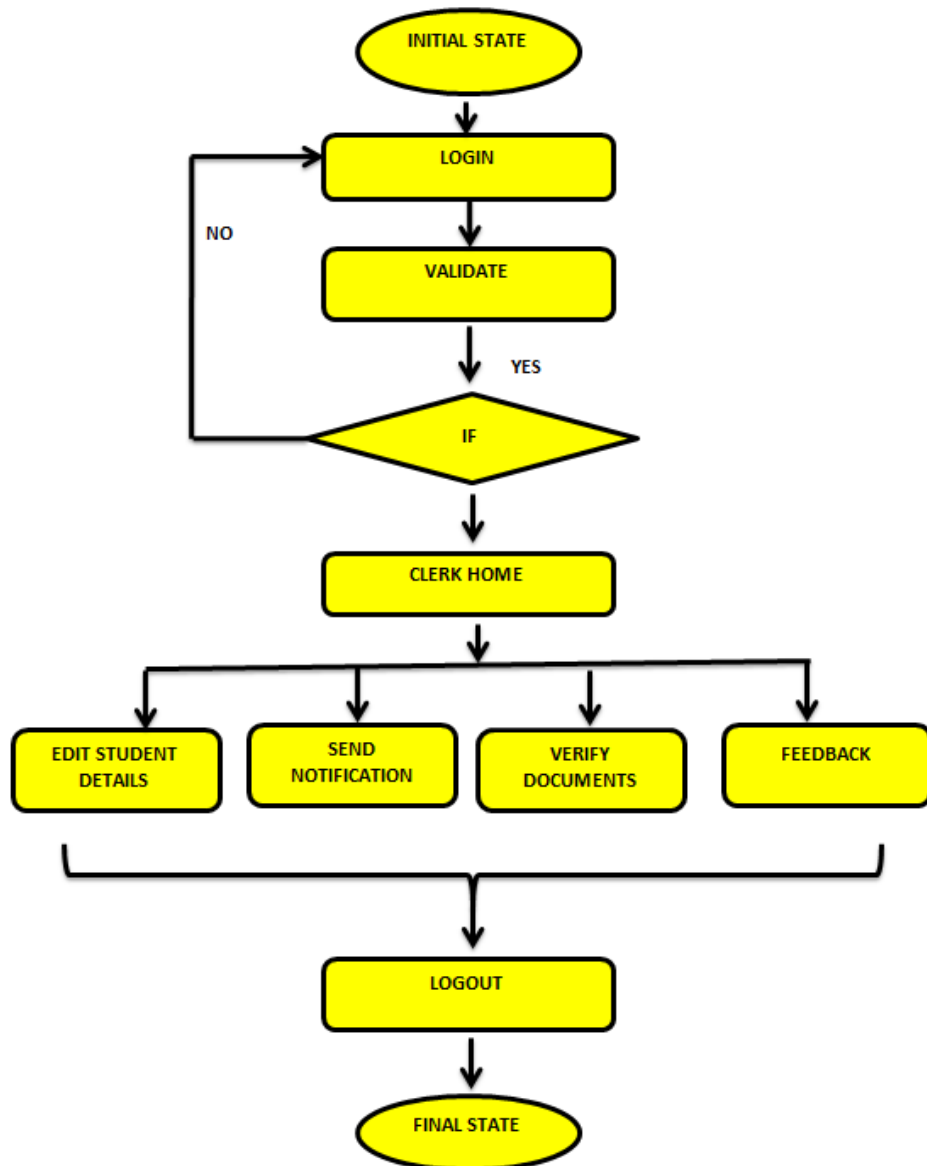**4) CLERK:** The Clerk Flowchart is following:

FIGURE 3: FLOW CHART OF CLERK

1. LOGIN AND VALIDATE: : Firstly Clerk login on this scholarship web portal.

2. CLERK HOME PAGE: After successfully login on the portal then clerk can reach on Home page and check all needed details. Clerk can be edit student details, send notifications, verify documents and feedback etc.

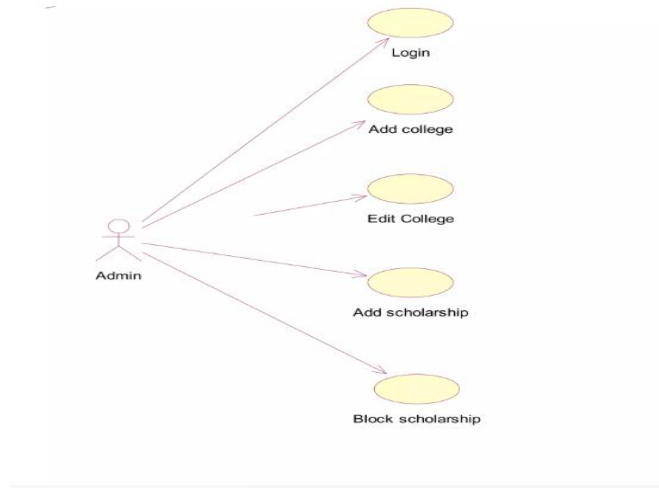# UML DIAGRAMS

ADMIN: Uml diagram for admin is given below:

FIGURE 4: UML FOR ADMIN

CLERK: Uml diagram for admin is given below:
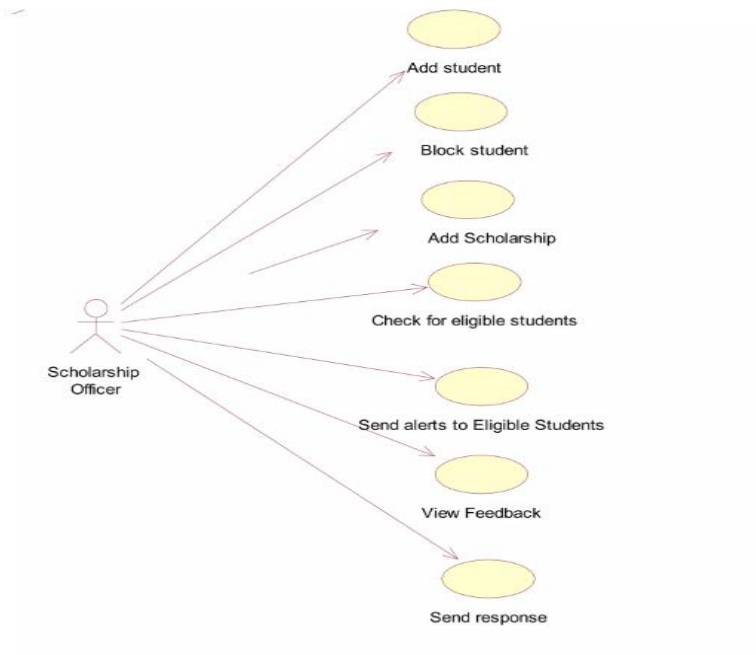
FIGURE 5: UML FOR CLERK

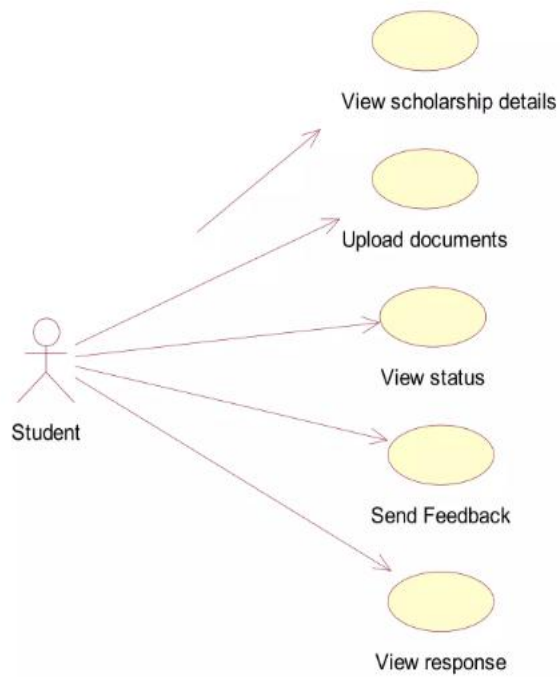**STUDENTS:** Uml diagram for admin is given below

FIGURE 6: UML FOR STUDENTS

TESTING MODULE

For the Scholarship Management System, testing should cover unit testing, integration testing, system testing, and user acceptance testing. Here's a breakdown of the key testing modules:

1. Unit Testing (Testing Individual Components)

Each module (frontend, backend, database) should be tested separately.

- **Frontend (React/HTML/CSS)**
  - Form validation for student applications
  - UI component rendering (e.g., buttons, tables, modals)
  - Navigation and routing
- **Backend (Flask/Django/Node.js)**
  - API endpoint responses (GET, POST, PUT, DELETE)
  - Authentication and authorization (Admin, Student, Clerk)
  - Business logic (scholarship eligibility, application workflow)
- **Database (MySQL)**
  - Data insertion, updates, and retrieval
  - Constraints and relationships (foreign keys, indexes)
  - Backup and recovery procedures

2. Integration Testing (Testing Module Interactions)

Ensuring that different modules interact correctly.

- **API and Frontend**
  - Verify that API calls return the correct data
  - Handle success and failure cases
- **Database and Backend**
  - Test database transactions (commit/rollback)
  - Check CRUD operations for scholarships and users
- **Authentication Flow**
  - User login, logout, and session management
  - Role-based access control (Admin, Student, Clerk)

3. System Testing (End-to-End Testing)

Testing the full system with real-world scenarios.

- **Scholarship Application Process**
    - Student submits an application
    - Clerk reviews and approves/rejects
    - Admin finalizes the selection
- **Email and Notification System**
    - Verify email notifications for application status updates
    - Ensure correct recipient and content
- **Performance Testing**
    - Load test (handling multiple users at once)
    - Response time and database query optimization

4. User Acceptance Testing (UAT)

Validating the system with actual users.

- **Students**
    - Can they apply for scholarships easily?
    - Is the application form intuitive?
- **Clerks**
    - Can they efficiently review applications?
    - Do they receive proper notifications?
- **Admins**
    - Can they manage scholarships and users effectively?
    - Is the dashboard providing useful insights?

THE PERFORMANCE OF PROJECT

The performance of the Scholarship Management System (SMS) refers to how efficiently and effectively the system operates at its current stage of development. This includes factors like system speed, reliability, security, scalability, and usability. Evaluating these aspects helps determine whether the system meets user expectations and where improvements are needed.

1. System Speed & Response Time

The system's speed determines how fast different components (frontend, backend, and database) process user requests.

☐ Current Performance Analysis

- API calls for fetching scholarship details and user data should execute quickly.
- Page load times should be minimal for a smooth user experience.
- If the system experiences delays, database query optimization and caching mechanisms may be required.

2. Functionality & Features

This evaluates whether all the planned system features are properly implemented and functioning.

☐ Current Performance Analysis

- Students should be able to register, log in, and apply for scholarships seamlessly.
- Clerks should be able to review, approve, or reject applications efficiently.
- Admins should have full control over user management and scholarship listings.

3. Scalability & Load Handling

Scalability refers to how well the system performs when multiple users access it simultaneously.

□ **Current Performance Analysis**

- The system should support multiple concurrent users without slowing down.
- The database should handle large volumes of applications efficiently

4. User Experience (UX) & Ease of Use

This assesses how user-friendly the interface is for students, clerks, and administrators.

□ **Current Performance Analysis**

- The system should have a simple, clear, and intuitive design.
- Navigation should be easy for different users.

5. Security & Data Integrity

Security ensures that sensitive user information is protected from unauthorized access or data breaches.

□ **Current Performance Analysis**

- User authentication (login/logout) must be secure and error-free.
- Data encryption and access control should be properly implemented.
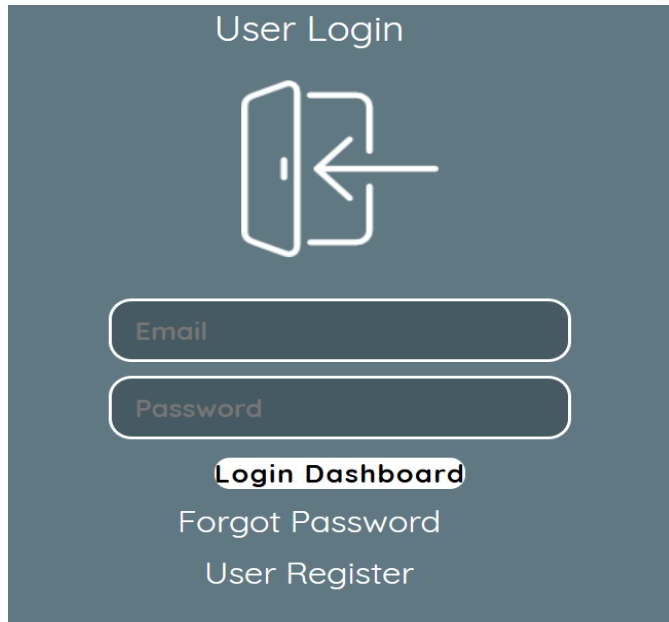
6. Error Handling & Reliability

A reliable system should handle errors gracefully without crashing.

□ **Current Performance Analysis**

- The system should display **clear error messages** when users enter invalid data.
- If an error occurs, the system should **recover quickly** instead of freezing.

  The **Scholarship Management System**'s **performance so far** depends on how well it meets the above criteria. If areas like speed, scalability, security, or usability are weak, improvements should be made before final deployment.
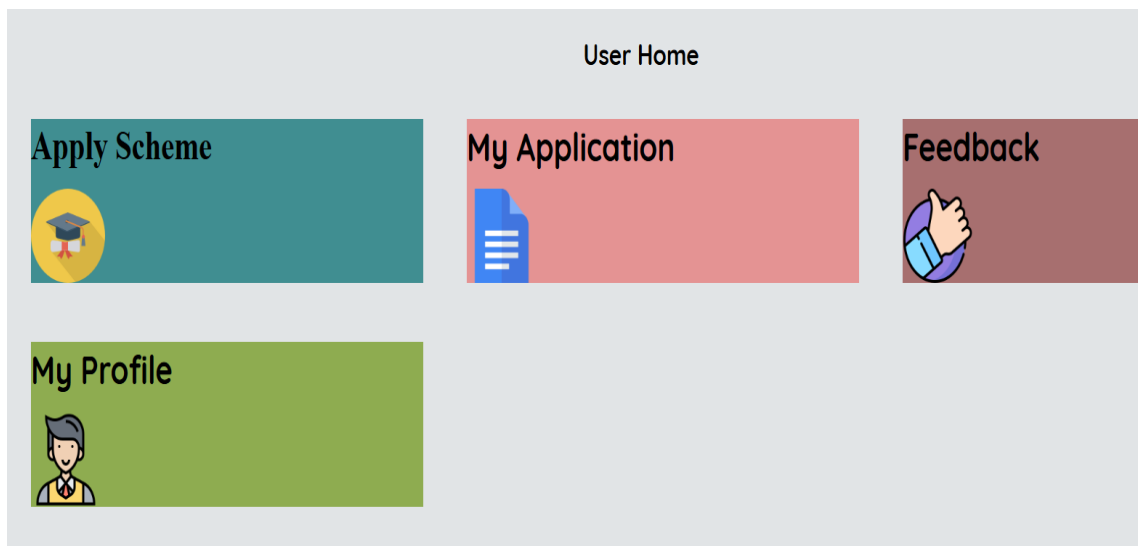
OUTPUT SCREENSHOTS

OUTPUT 1

OUTPUT 2

Scheme

Search

ID: {{x.cus_id}}

Service: {{x.field_1}}

Scholarship Type :   {{x.field_6}}

Grade :   {{x.field_7}}

Year of Scholarship :   {{x.field_8}}

Category: {{x.field_2}}

Eligibility {{x.field_3}}

Required Doc: {{x.field_4}}

Time Limit   {{x.field_5}}

Apply

OUTPUT 3

Give Feedback

Name

Feedback

Submit

OUTPUT 4

Staff Home

Applications

Services

Report

OUTPUT 5

Application List

Search

Application ID: {{x.field_3}}

Update Status

Staff Status: {{x.field_8}}

Officer Status:{{x.field_9}}

Service: {{x.field_1}}

Category: {{x.field_2}}

Adhaar Card Download
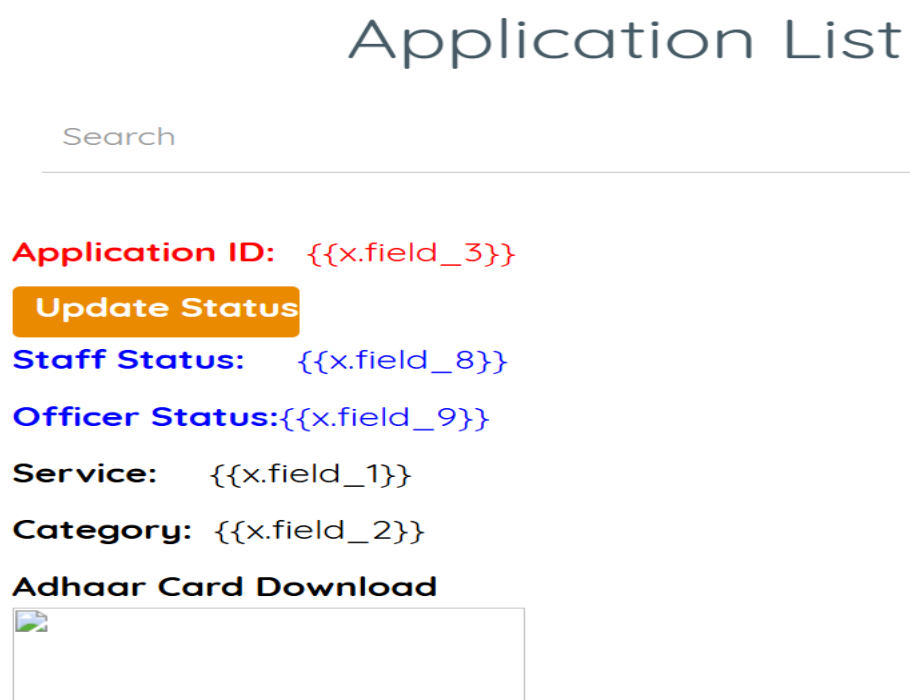
OUTPUT 6

Services List

Search

ID: {{x.cus_id}}

Service: {{x.field_1}}

Scholarship Type :   {{x.field_6}}

Grade :   {{x.field_7}}

Year of Scholarship :   {{x.field_8}}

Category: {{x.field_2}}

Eligibility   {{x.field_3}}

Required Doc: {{x.field_4}}
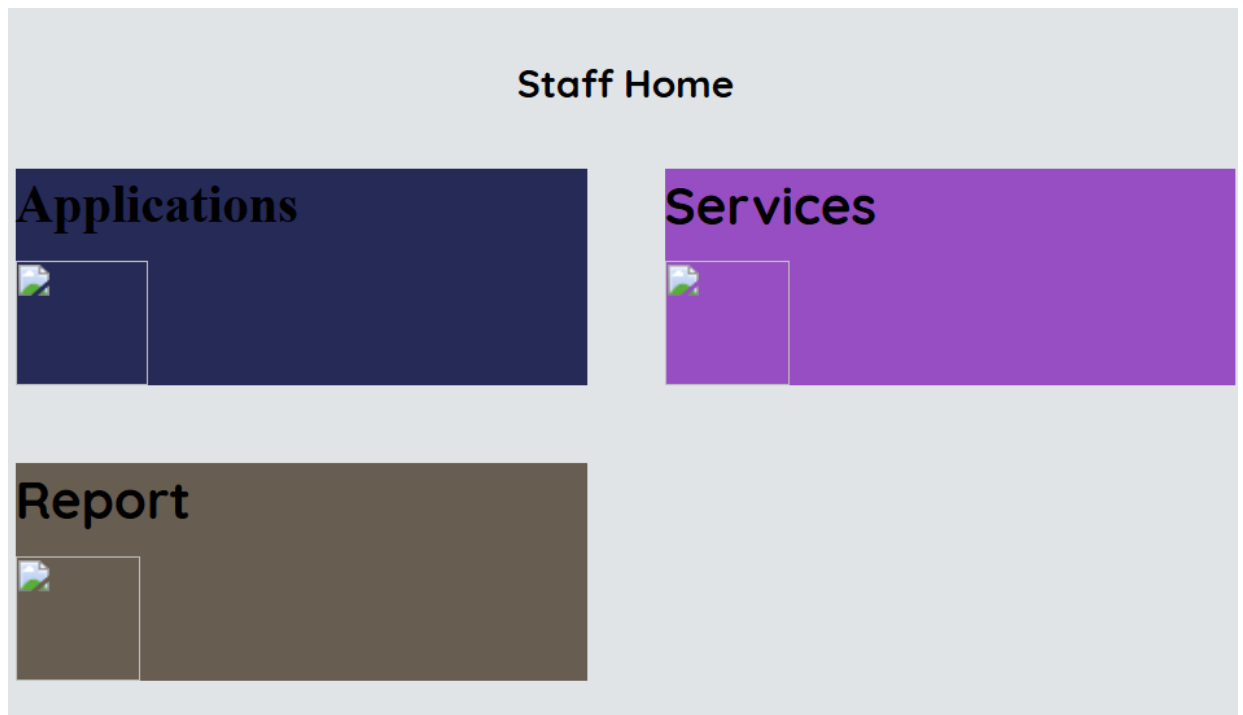
Time Limit   {{x.field_5}}

OUTPUT 7

All Report

Pending: {{x.count_open}}

On Progress: {{x.count_progress}}

Rejected: {{x.count_rejected}}

Completed: {{x.count_complete}}

OUTPUT 8

Admin Login

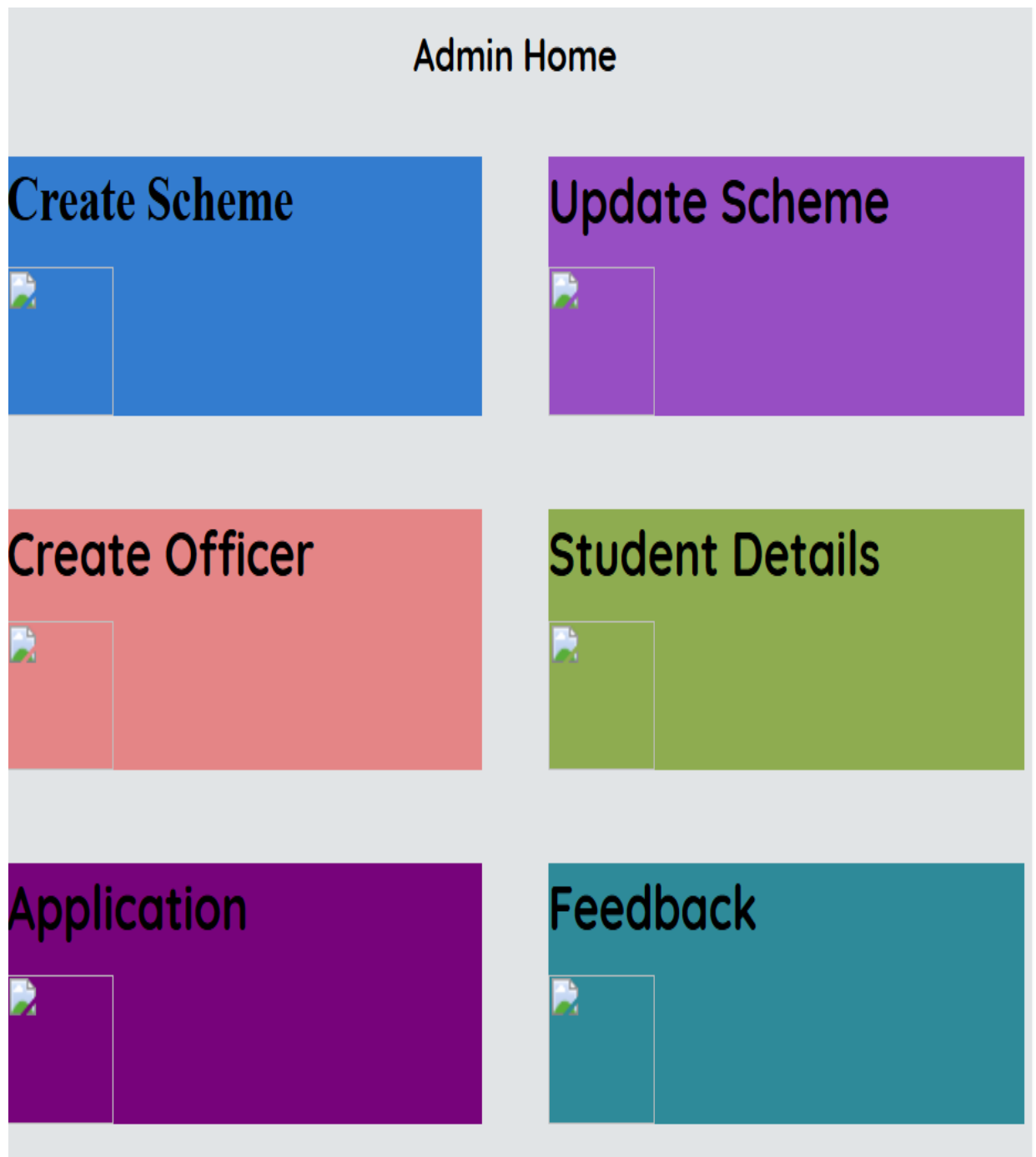Email   Password

Login

OUTPUT 9

Create Scheme

Scheme Name

Scholarship Type

Scholarship grade

Year of Scholarship (DD-MM-YYYY)

Category

Eligibility

Required Doc

OUTPUT 10

Admin Home

Create Scheme

Update Scheme

Create Officer

Student Details

Application

Feedback

OUTPUT 11

Scheme

Search

ID: {{x.cus_id}}

Scheme: {{x.field_1}}

Type: {{x.field_6}}

Grade: {{x.field_7}}

Year: {{x.field_8}}

Category: {{x.field_2}}

Eligibility: {{x.field_3}}

Required Doc: {{x.field_4}}

Time Limit {{x.field_5}}

Update   Delete

OUTPUT 12

Officer Register

Name

Email

Password

Mobile

Location

College

Register

OUTPUT 1 3

View User Details

Search

Name	Email	Mobile	College	Year	Class/Department	Address

OUTPUT 14

Application List

Search

Application ID: {{x.field_3}}

Update Status

Staff Status: {{x.field_8}}

Officer Status: {{x.field_9}}

Comment: {{x.field_11}}

Service: {{x.field_1}}

Category: {{x.field_2}}

Academic Certificate

OUTPUT 15

Feedback Details

Search

ID : {{x.cus_id}}

Email: {{x.email}}

Name: {{x.field_1}}

Feedback: {{x.field_2}}

OUTPUT 16

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