

# TA & Demonstrator Management System

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PROJECT REPORT

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SECTION B

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## **1. Project Description:**

The TA & Demonstrator Management System has been designed to meet the needs of our institution. The purpose of the application is to improve the administration of Teacher Assistants (TA's) and Lab Demonstrators, specifically involving allocation, rescheduling, and supervision. Administrators, tutors, and all learners will communicate together through one channel in this case. This will help to assign appropriate tasks concerning labs and other academic processes seamlessly.

## **2. Problem Statement:**

The manual handling of TAS and Lab Demonstrators causes inefficiencies, mismatch of assignments and communication gaps in schools and colleges. Coordination of tasks, availability, and detailed profiles make it difficult to carry forward academic operations effectively. This necessitates having a specific system that is used to find solutions to these challenges and improve the current way of TA and Demonstrator management which is relatively manual.

## **3. Problem Solution:**

This solution provides an integrated approach for effective distribution, arrangement, and administration involving TAs and Lab Demonstrator. The system seeks to incorporate a user-friendly interface, role-based access control and also comprehensive profile management in order to automate the whole process. Additionally, integration of feedback and evaluation mechanisms leads to enhanced provision of educational support by TAS and Demonstration.

## **4. Advantages/Benefits of Proposed System:**

- **Enhanced Efficiency:** An automated approach to assigning tasks and scheduling is a great way to reduce costs related to resource management.
- **Improved Communication:** Communication between administrators, faculty, and TA/demonstrators is easier through a centralized platform.
- **Optimized Workload:** Workload balancing, and optimization is also done through detailed profiles and tracking of availability.
- **Quality Assurance:** On-going assessment and evaluation are important for development of TAs and Lab Demonstrators, which makes this feature an essential component.

## **5. Scope/List of Features:**

### **Users:**

1. TAs/Lab Demonstrators: Task assignment, profile maintenance, and task review.
2. Faculty Members: Supervision of task assignment, provision of feedback, and evaluation of TAs and Demonstrators).
3. Administrators: System administration, managing users, and general system supervision.

## **Modules:**

1. Task Management: Delegation, supervision, and oversight of certain assignments or sub-topics.
2. Profile Management: Developing and maintaining specific profiles of TAs and Demonstrators.
3. Role-Based Access Control: Secure authentication and authorization mechanisms.
4. Feedback and Evaluation: Supervision of faculty members offering evaluation and feedback for TAs/demonstrators.

## **Functional Requirements/Features:**

- User authentication and authorization.
- Login and registration pages.
- The ability of creating or changing user profiles.

## **6. Planning Approach:**

The stakeholder interviews, faculty surveys were observed along with the manual process requirements were collected. Comprehensive understanding of the problems and requirements pertaining to TA and Demonstrations enabled elaboration of highly usable system.

## **7. Modules:**

### **1. Task Management Module:**

Delegation and Assignment: Allows faculty to assign tasks, set deadlines, and specify the course or subject for those tasks.

Supervision: Enables faculty to oversee the progress of tasks, including status updates and completion.

Oversight: Provides a means for faculty to monitor TA/Demonstrator involvement and contributions to assigned tasks.

Task Details: View and manage task descriptions, deadlines, and current status.

### **2. Profile Management of TA Module:**

Profile Creation: Ability for TAs/Demonstrators to create and maintain individual profiles.

Personal Information: Update and display personal details, including contact information, qualifications, availability schedule, etc.

Assigned Tasks: View and manage tasks assigned to them, along with associated details.

Role-Specific Information: Display specific roles they are assigned to and associated responsibilities.

### **3. Profile Management of Faculty Module:**

Profile Creation: Allow faculty members to create and maintain their profiles.

Contact and Department Information: Update and display contact details, department information, office hours, etc.

Assigned Tasks: Overview of tasks assigned to them, along with task details and deadlines.

Role-Specific Information: Display roles, subjects, and responsibilities related to their teaching assignments.

### **4. Profile Management of Student Module:**

Profile Creation: Students can create and manage their profiles.

Personal Information: Update and display personal details like email, contact information, major, etc.

Course Enrolment: View and manage enrolled courses, including details like course names, credits, etc.

Task Details: View tasks assigned and deadlines, especially those related to their courses.

### **5. Role-Based Access Control Module:**

User Authentication: Provide secure login functionality for users with different roles (faculty, TA, student, etc.).

Authorization: Assign specific permissions and access levels based on user roles.

Role Assignment: Allow administrators to assign and manage user roles.

Security Measures: Implement security protocols to protect user data and system resources.

### **6. Feedback and Evaluation Module:**

Evaluation Forms: Create forms for faculty to evaluate TAs/Demonstrators' performance.

Feedback Submission: Allow faculty to submit detailed feedback on TA performance.

Evaluation Records: Store and display historical evaluations, feedback, and ratings.

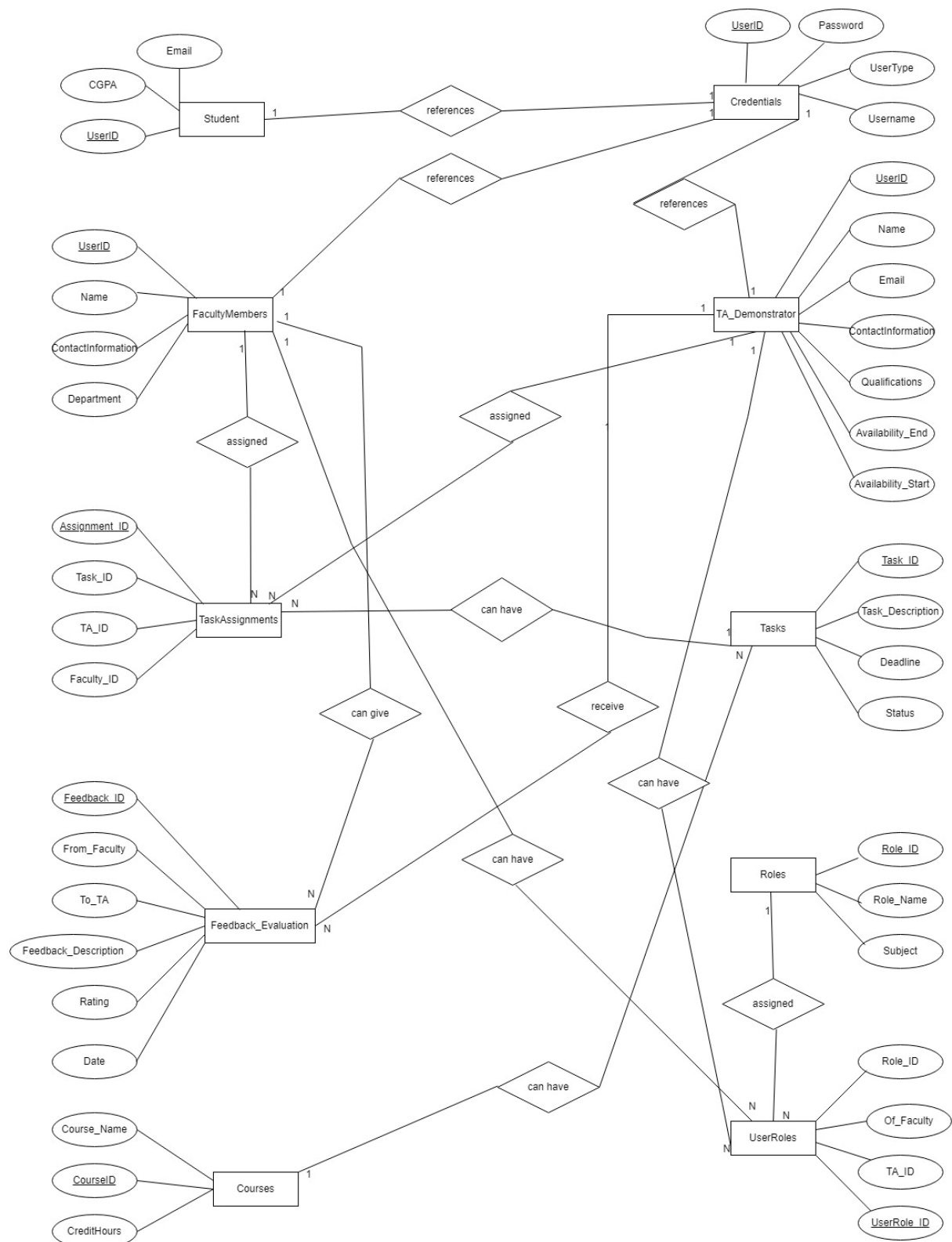
Accessibility: Provide a secure platform for exchanging evaluations and feedback.

### **7. Audit Trail and Information Gathering on System Operations**

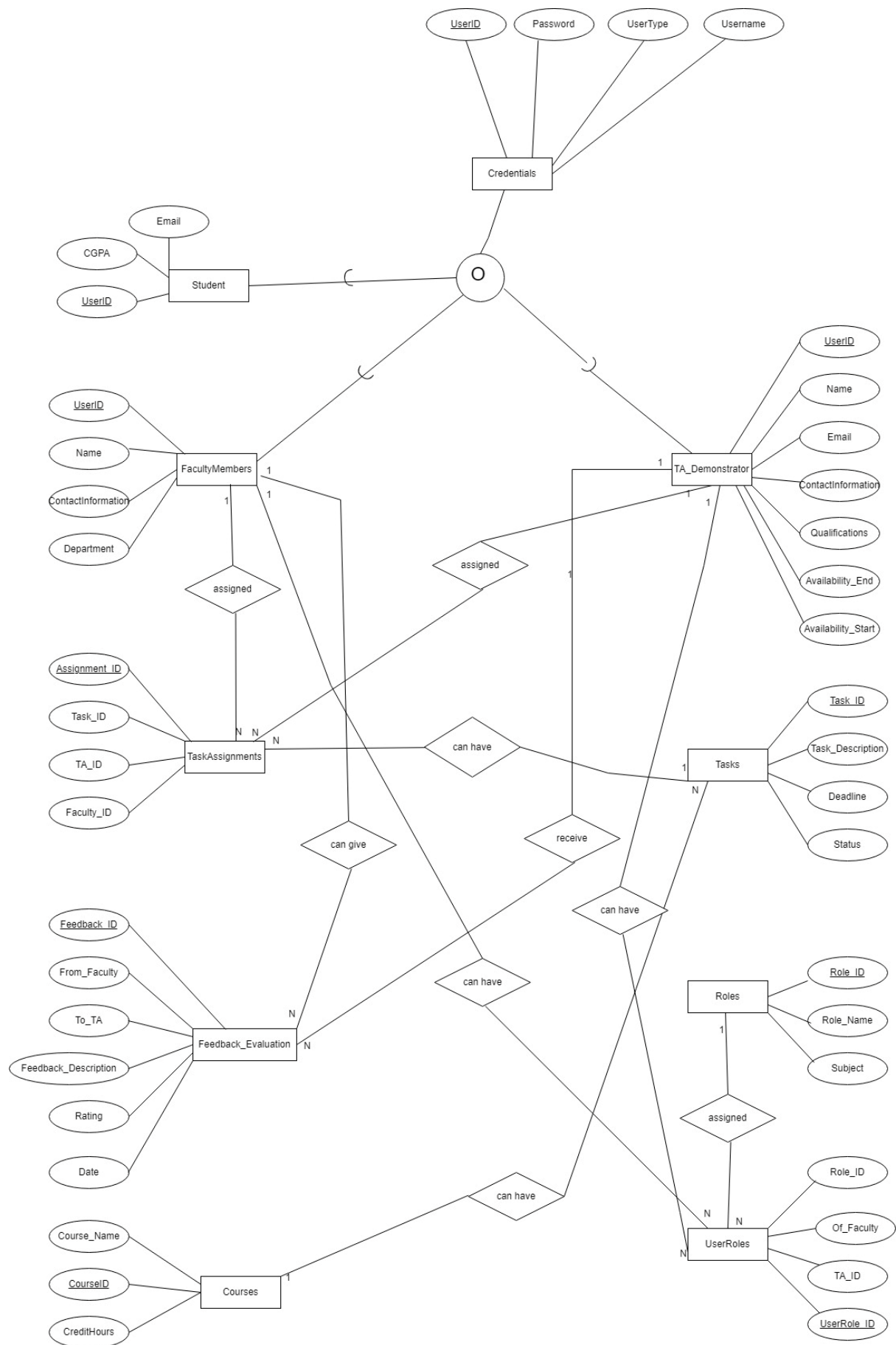
Description: Recording and tracking system activities for auditing and accountability purposes.

Functionality: Capturing logs of user actions, modifications, and system events for monitoring and audit trails.

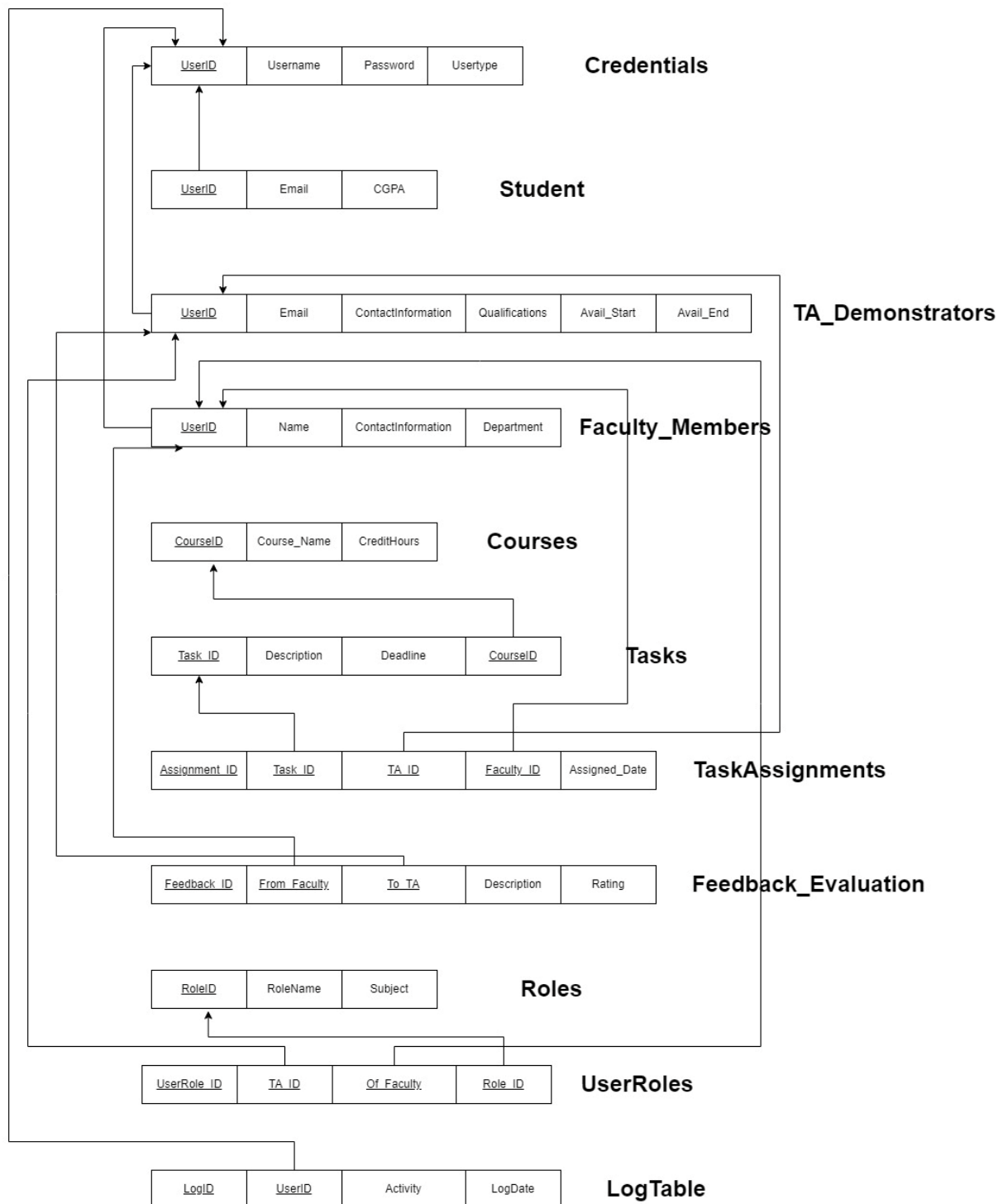
## 7. ERD:



## 8. EERD:



## 9. Relational Database Schema:





## 10. 3NF Tables:

```
CREATE TABLE Credentials (  
    UserID INT PRIMARY KEY,  
    Username VARCHAR(50) NOT NULL UNIQUE,  
    Password VARCHAR(50) NOT NULL,  
    UserType VARCHAR(20)  
);  
  
CREATE TABLE Student (  
    UserID INT PRIMARY KEY,  
    Email VARCHAR(100) NOT NULL UNIQUE,  
    CGPA FLOAT (CGPA >= 0.0 AND CGPA <= 4.0),  
    FOREIGN KEY (UserID) REFERENCES Credentials(UserID)  
);  
  
CREATE TABLE TA_Demonstrator (  
    UserID INT PRIMARY KEY,  
    Name VARCHAR(100) NOT NULL,  
    Email VARCHAR(100) NOT NULL UNIQUE,  
    ContactInformation VARCHAR(100) NOT NULL,  
    Qualifications VARCHAR(200) NOT NULL,  
    Availability_Start TIME NOT NULL,  
    Availability_End TIME NOT NULL,  
    FOREIGN KEY (UserID) REFERENCES Credentials(UserID)  
);  
  
CREATE TABLE FacultyMembers (  
    UserID INT PRIMARY KEY,  
    Name VARCHAR(100) NOT NULL,  
    ContactInformation VARCHAR(100) NOT NULL,  
    Department VARCHAR(50) NOT NULL,  
    FOREIGN KEY (UserID) REFERENCES Credentials(UserID)  
);
```

```
CREATE TABLE COURSES (  
    CourseID INT PRIMARY KEY,  
    Course_Name VARCHAR(50) NOT NULL,  
    CreditHours INT NOT NULL  
);  
  
CREATE TABLE Tasks (  
    Task_ID INT PRIMARY KEY,  
    Task_Description VARCHAR(255),  
    Deadline DATE NOT NULL,  
    CourseID INT NOT NULL,  
    Status BIT,  
  
    FOREIGN KEY (CourseID) REFERENCES COURSES(CourseID)  
);  
  
CREATE TABLE TaskAssignments (  
    Assignment_ID INT PRIMARY KEY,  
    Task_ID INT NOT NULL,  
    TA_ID INT NOT NULL, -- TA who is assigned the task  
    Faculty_ID INT NOT NULL, -- Faculty who assigned the task  
    Assigned_Date DATE NOT NULL,  
    FOREIGN KEY (Task_ID) REFERENCES Tasks(Task_ID),  
    FOREIGN KEY (TA_ID) REFERENCES TA_Demonstrator(UserID),  
    FOREIGN KEY (Faculty_ID) REFERENCES FacultyMembers(UserID)  
);
```

```
CREATE TABLE Feedback_Evaluation (  
    Feedback_ID INT IDENTITY(1,1) PRIMARY KEY,  
    From_Faculty INT NOT NULL,  
    To_TA INT NOT NULL,  
    Feedback_Description VARCHAR(255),  
    Rating INT NOT NULL CHECK (Rating < 5),  
    Date DATE NOT NULL,  
    FOREIGN KEY (From_Faculty) REFERENCES FacultyMembers(UserID),  
    FOREIGN KEY (To_TA) REFERENCES TA_Demonstrator(UserID)  
);  
  
CREATE TABLE Roles (  
    Role_ID INT PRIMARY KEY,  
    Role_Name VARCHAR(50) NOT NULL,  
    Subject VARCHAR(255) NOT NULL  
);  
  
CREATE TABLE UserRoles (  
    UserRole_ID INT IDENTITY(1,1) PRIMARY KEY,  
    TA_ID INT NOT NULL,  
    Of_Faculty INT NOT NULL,  
    Role_ID INT NOT NULL,  
    FOREIGN KEY (TA_ID) REFERENCES TA_Demonstrator(UserID),  
    FOREIGN KEY (Of_Faculty) REFERENCES FacultyMembers(UserID),  
    FOREIGN KEY (Role_ID) REFERENCES Roles(Role_ID)  
);  
  
CREATE Table Logtable(  
    LogID INT IDENTITY(1,1),  
    UserID INT,  
    Activity varchar(30),  
    LogDate DATETIME  
);
```

# **11. User Documentation and Usage Guidelines**

## **1. Logging In**

Access the system using the provided login credentials.

Select your user type (Faculty, TA, Student, etc.) for appropriate access.

Enter your username and password to log in.

## **2. Profile Management**

### **For Faculty:**

Update personal information: name, contact details, department, and office hours.

Assign and manage tasks: create, assign, monitor, and update task details.

Evaluate TA performance: provide feedback and ratings for TA/Demonstrators.

### **For TA/Demonstrators:**

Maintain personal profiles: update contact info, qualifications, and availability.

Check assigned tasks: view, manage, and update task statuses and deadlines.

### **For Students:**

Create and update student profiles: enter contact information, major, and enrollment details.

Check enrolled courses: view course details and tasks assigned.

## **3. Task Management**

Faculty: Assign tasks to TAs/Demonstrators, set deadlines, and monitor progress.

TAs: View assigned tasks, update task status, and submit task completion status.

## **4. Role-Based Access Control**

Access is based on user roles: Faculty, TA, Student, etc.

Each role has specific permissions and access levels.

## **5. Feedback and Evaluation**

Faculty: Provide detailed feedback on TA/Demonstrator performance.

Access historical evaluation records for performance improvement.

## **6. Security Measures**

Keep login credentials confidential.

Log out after each session to prevent unauthorized access.

Follow data security guidelines to protect sensitive information.

## 7. Support and Assistance

Contact system administrators or support personnel for technical issues or assistance.

## 8. Troubleshooting

If encountering technical issues, try logging out and logging in again.

Report any system bugs or malfunctions to the support team.

## 11. Screenshots:

### 1. Main Page

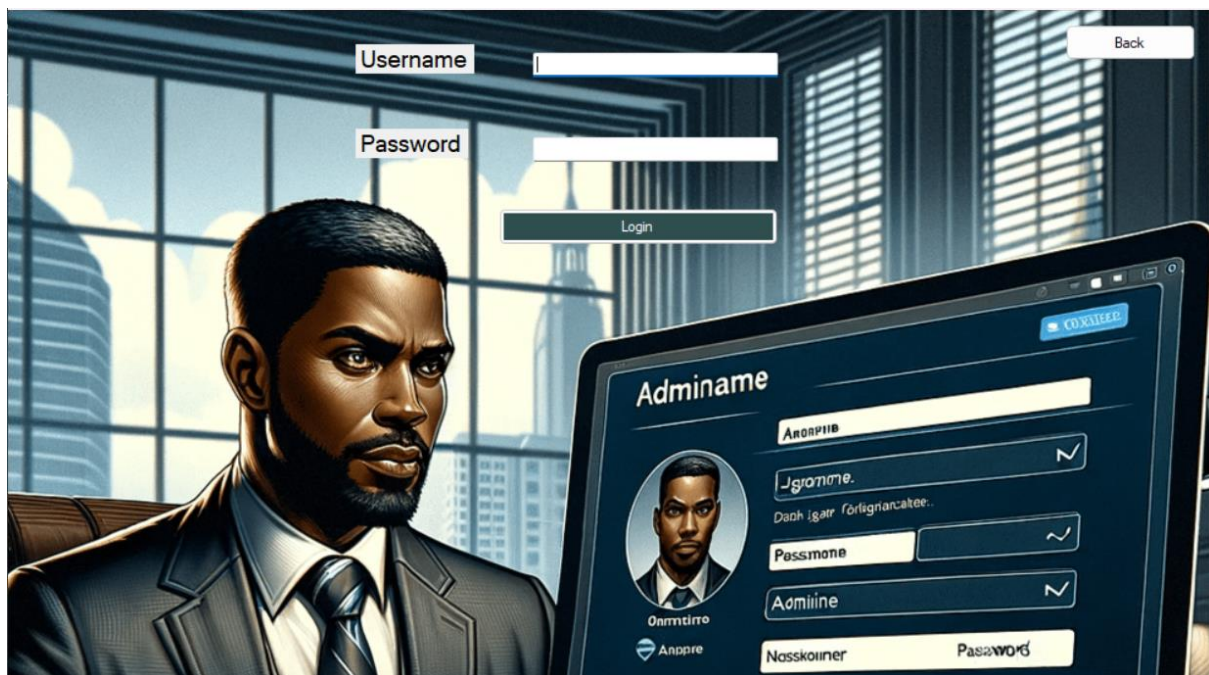




## 2. Signup As Page



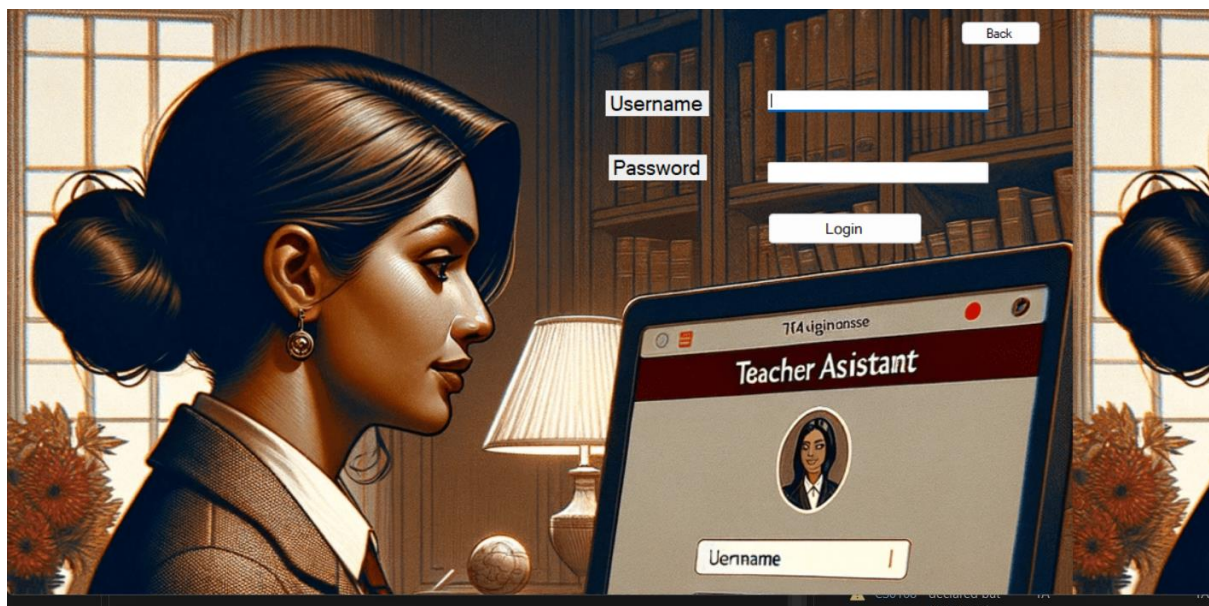
## 3. Admin Login Page



#### 4. Admin View Page

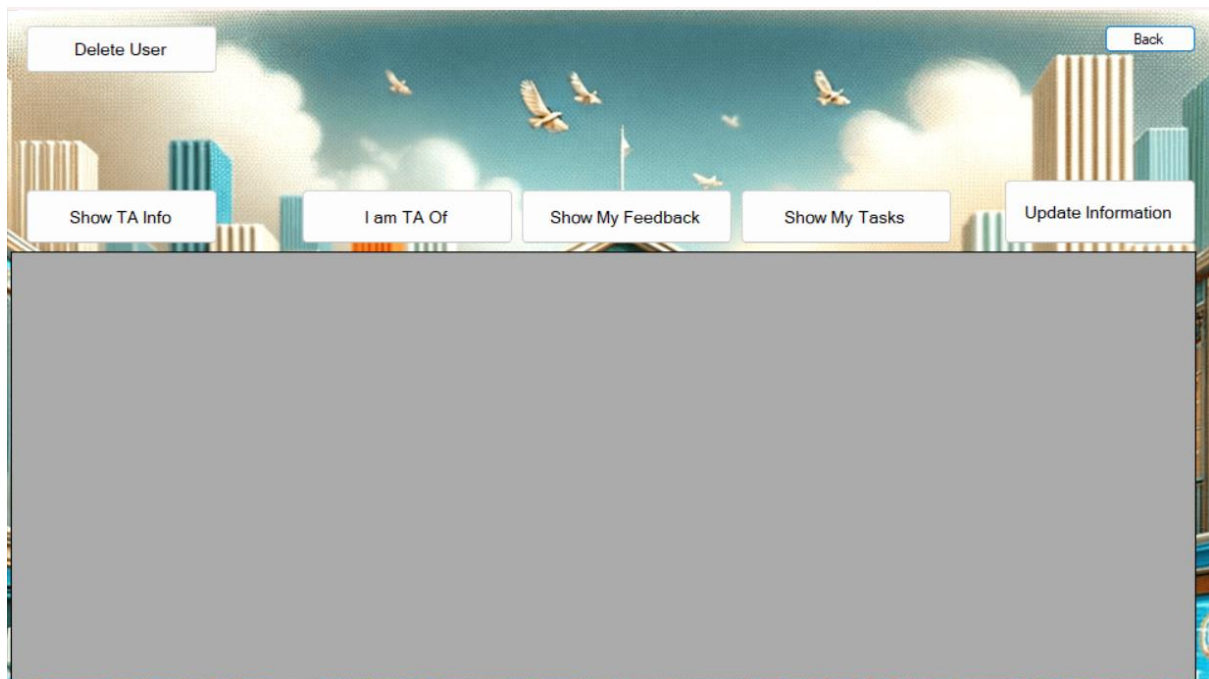


#### 5. TA Login Page

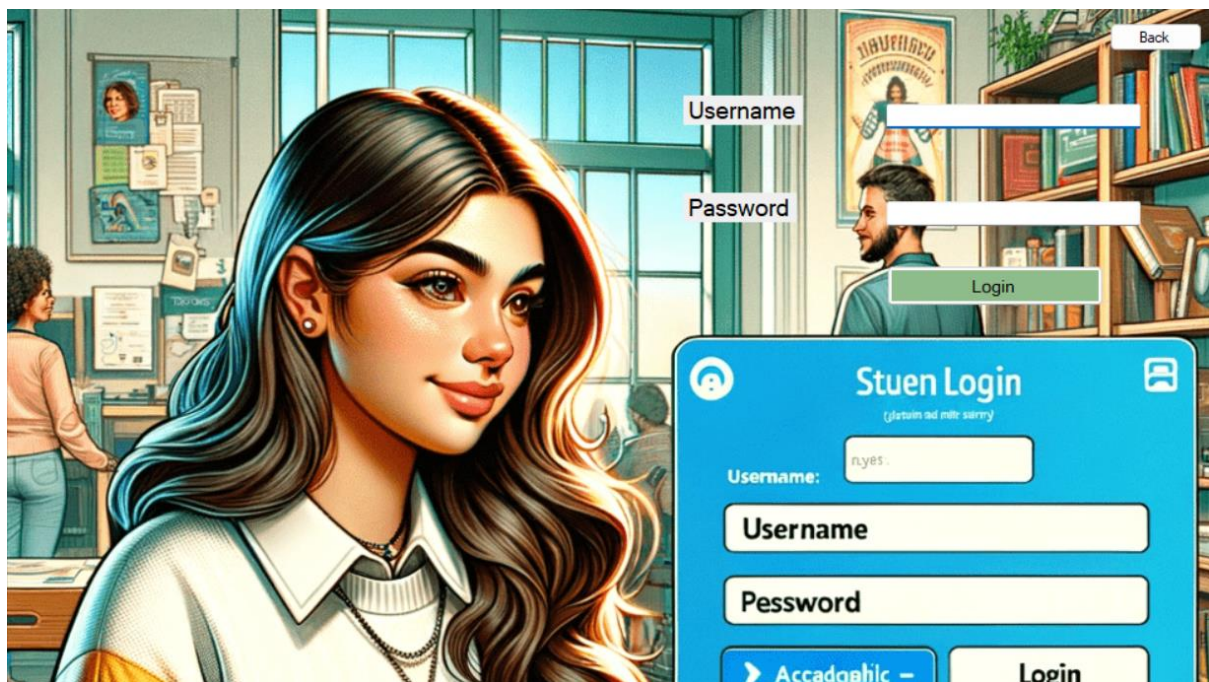




## 6. TA View Page



## 7. Student Login Page





## 8. Faculty Login Page



## 9. Faculty View Page

