

## **Introduction to Unicom Management System**

The Unicom Management System is a considerable software solution designed to efficiently manage and streamline the day-to-day administrative and academic operations of a college. This system supports the organization in handling essential functions related to students, lecturers, and staff, and integrates several key modules such as:

- Course and Subject Management
- Class, Examination and Marks Management
- Timetable and Hall Allocation
- Attendance Tracking
- Student Information Management

Each module is interconnected to ensure seamless data flow and operational efficiency, reducing manual workload and improving accuracy across departments. With user-friendly interfaces and secure role-based access.

## **Functioning of System**

The system includes a centralized dashboard accessible by the Admin, which provides access to all system features. Students have restricted access, allowing them to view only their personal details within the Student Management module. Lecturers can access modules related to Exams and Marks, Attendance Management, and Student Information for all students. Staff members have access to Timetable and Hall Management as well as Attendance Management.

The system operation begins with the Admin, who is responsible for creating and managing user accounts by assigning specific roles. This ensures that only registered users can access the system. When a new user is created with an assigned role by the Admin, they can then register their account and receive a username and password. Upon logging in, the system automatically detects the user's role and grants access permissions accordingly, ensuring that each user can only access features relevant to their role.

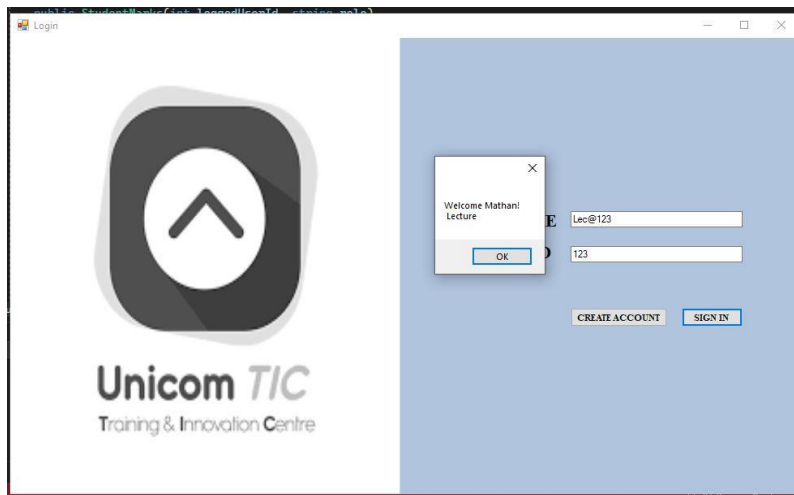
## Steps of Function in the Unicom Management System

1. **User Registration by Role**  
The Admin registers users by assigning roles (Student, Lecturer, Staff), ensuring role-based access to system features.
2. **Course and Subject Creation**  
Courses are created and linked with relevant subjects to organize academic structure.
3. **Add Exams and Classes**  
Exams and classes are added and assigned to subjects for academic planning and assessment.
4. **Hall Allocation**  
Halls are scheduled and allocated based on sessions and course requirements.
5. **Marks Entry for Students**  
Lecturers input student marks for each exam under the appropriate subject.
6. **Timetable Creation**  
Timetables are generated based on lecturers, halls, dates, and time slots to manage class schedules efficiently.
7. **Attendance Management**  
Attendance is recorded for students, lecturers, and staff for each session.
8. **Student Access to Information**  
Students can securely view their **timetable**, **exam marks**, and **attendance records** from their dashboard.

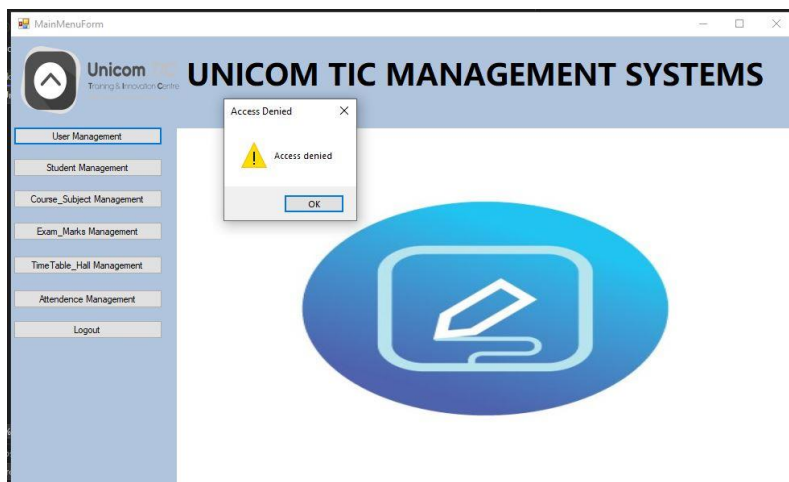
## Key Features Implemented

Inserted Role based notification when User logged in to the System.

I have implemented role-based notifications that appear when a user logs into the system, displaying a personalized welcome message and informing them of their available features and access level based on their assigned role (Admin, Lecturer, Student, or Staff).



Given User based Access. It is Allowing Modules Based On the Features



Given CRUD operation features for all Forms(Add,Edit,Delete,Search and Clear)

TIME SLOT

Delete Edit Add Clear

I have given Add features for subjects based on the Course Selection:

MainMenuForm

**Unicom TIC** Training & Innovation Centre  
**UNICOM TIC MANAGEMENT SYSTEMS**

User Management  
Student Management  
Course\_Subject Management  
Exam\_Marks Management  
TimeTable\_Hall Management  
Attendance Management  
Logout

**COURSE SUBJECT MENU**

Create Course  
Create Subjects  
Exit

COURSE NAME   
SUBJECT CODE   
SUBJECT NAME

Delete Edit Add Clear

SubID	SubCode	Subname	CourseName
1	101	Java	Dip in Comp.
2	102	Python	Dip in Comp.
3	103	Communication	Diploma in E
4	104	Spoken	Diploma in E

System will Allocate Class room according to the required Exam or Class Session

MainMenuForm

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Logout

**TIME TABLE MENU**

Create Rooms  
Create Time  
Add Rooms  
Add Time Tables  
Exit

STUDY MODE   
SESSION NAME   
ROOM NAME   
ROOM TYPE

RoID	Roname	Rotype	StudyMode
1	Class	Class1	Exam
2	Lap	Lap1	Exam

Add Attendance based on the Student, Subject and Date With Status

Statusday	Status	Subname	StudentName
Friday, June 20, 2025	Present	Java	Mithu
Thursday, June 19, 2025	Present	Python	Mithu
Saturday, June 21, 2025	Present	Communication	Mithu

Add Marks based on Student name ,Subject and Mark.When Enter marks, it will Show grade and store.

MaID	Manark	Magrade	StdID
1	78	B	1
2	55	D	2
3	79	B	1

Add Timetable lecture Name, Course name, Subject name,Room ,day and Time.

When allocate a time in particular class room for a lecture ,it can not repeat.

The screenshot displays the 'MainMenuForm' window for 'UNICOM TIC MANAGEMENT SYSTEMS'. The left sidebar contains a menu with options: User Management, Student Management, Course\_Subject Management, Exam\_Marks Management, TimeTable\_Hall Management, Attendance Management, and Logout. The main area is titled 'TIME TABLE MENU' and includes a list of actions: Create Rooms, Create Time, Add Rooms, Add Time Tables, and Exit. To the right, there are input fields for LECTURE NAME (Mathan), COURSE NAME (Dip in Computing), SUBJECT NAME (Java), ROOM NAME (Class1), DAY (Friday, June 20, 2025), and TIME SLOT (8:00-9:00 AM). A 'Search' button is located next to the SUBJECT NAME field. Below these fields are 'Delete', 'Edit', 'Add', and 'Clear' buttons. At the bottom, a table lists existing time slots:

TID	Today	Tslot	Rcname
4	Friday, June 20, ...	8:00-9:00 AM	Class
5	Friday, June 20, ...	9:00-10:00 AM	Class
6	Friday, June 20, ...	11:00-12:00 AM	Class

Allocate Class With Topic name

The screenshot displays the 'MainMenuForm' window for 'UNICOM TIC MANAGEMENT SYSTEMS'. The left sidebar is identical to the previous screenshot. The main area is titled 'EXAM\_CLASS MENU' and includes a list of actions: Create Exam, Create Class, Allocate Exam, Allocate Class, Add Marks, and Exit. To the right, there are input fields for SUBJECT NAME, TOPIC NAME, and STUDY MODE. A 'Search' button is located next to the TOPIC NAME field. Below these fields are 'Delete', 'Edit', 'Add', and 'Clear' buttons. At the bottom, a table lists existing exam classes:

CID	Cname	Cmode	Subname
1	Cyber Crime	Physical	Cloud Computing
2	Computer Platform	Physical	Lan Network
3	Role Play	Online	Spoken

Allocate Exam For Specific Subject

The screenshot shows the 'EXAM\_CLASS MENU' interface. On the left is a sidebar with menu items: User Management, Student Management, Course\_Subject Management, Exam\_Marks Management, TimeTable\_Hall Management, Attendance Management, and Logout. The main area has a list of actions: Create Exam, Create Class, Allocate Exam, Allocate Class, Add Marks, and Exit. To the right are three dropdown menus: SUBJECT NAME (Java), EXAM NAME (Semester\_01), and EXAM TYPE (Online). Below these are buttons for Delete, Edit, Add, and Clear. At the bottom is a table with columns ExID, Exname, Exmode, and Subname.

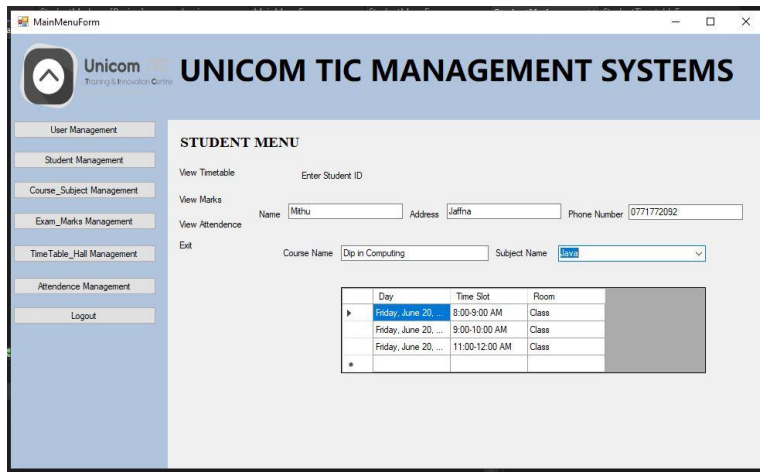
ExID	Exname	Exmode	Subname
1	Semester_01	Online	Java
2	Semester_02	Physical	Python
3	Semester_02	Physical	Spoken
4	Semester_01	Online	Communication

View Timetable for Admin,Staff and Lecture by enter Student Id. It is For View Marks,Attendance too

The screenshot shows the 'STUDENT MENU' interface. The sidebar is identical to the previous screen. The main area has actions: View Timetable, View Marks, View Attendance, and Exit. Below 'View Marks' is a text input for 'Enter Student ID' and a 'Search' button. Below 'View Attendance' are inputs for Name (Mithu), Address (Jaffna), and Phone Number (0771772092). Below 'Exit' are dropdowns for Subject (Java) and Date (Friday, June 20). At the bottom is a table with columns Date, Subject, and Status.

Date	Subject	Status
Friday, June 20, ...	Java	Present

View Timetable for Student by enter username and password.**It is For View Marks,Attendance too**



## Technologies used

### Environment:

Visual Studio with C# WinForms.

### Database:

SQLite, using System.Data.SQLite.Core (install via NuGet).

### User Interface:

WinForms with Form Designer, using Button, TextBox, ComboBox, DataGridView, DateTimePicker.

### OOP:

Encapsulation: Use private fields and public properties (e.g., private string name; with public string Name { get; set; }).

Inheritance (optional): Use a Person class for Student if you want to share Name.

### Design Pattern:

MVC: Keep data, forms, and logic separate.

### Error Handling:

Check inputs (e.g., Phone number is 10 digits ).

Show messages (e.g., “Wrong User name and password” or “Select Subject”).

Handle database errors (e.g., “Database is locked , No such column name m.score ”).



## **Challenges Faced and Methods to Solved**