

Report



Learning Management System (LMS)



Zer0 Day Team

LEARNING MANAGEMENT SYSTEM (LMS)



PROJECT SUMMARY

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1 .Introduction:

The Learning Management System (LMS) project aims to provide an efficient platform for managing student, doctor, TA, and admin accounts within an educational institution. The primary goals include centralized data management, user-friendly interfaces for different roles, and seamless interaction between users and the system.

2 .Project Structure:

The project is structured as a C++ program with distinct classes representing different user roles: Admin, Student, Doctor, and TA. Each class encapsulates functionalities specific to its role, ensuring a modular and organized codebase. The use of classes promotes code reusability and maintainability.

3 .Data Structures:

❖ Student_nodeL1, Student_nodeL2, Student_nodeL3:

Linked list structures for storing student data for academic levels L1, L2, and L3.

Each node contains information such as Gmail, password, rank, ID, group, GPA, and individual course grades.

❖ DoctorNode:

Linked list structure for storing doctor data, including email, password, name, and details of courses taught.

❖ AdminNode:

Linked list structure for storing admin data, including email, password, and name.

❖ TANode:

Linked list structure for storing TA data, including email, password, name, and details of courses assisted.

4 .Functionality:

❖ User Authentication:

Users are required to log in, and their credentials are verified against stored data.

Secure login procedures enhance system security.

5. Data Management:

Data for students, doctors, TAs, and admins are stored in distinct structures within each class. The program reads and exports data to CSV files, facilitating data persistence and allowing for easy updates.

Functions to read from and export data to CSV files.

Functions to add, edit, delete, and display user accounts.

❖ Role-Specific Dashboards:

Admin, Student, Doctor, and TA classes have dedicated dashboards with role-specific functionalities.

👉 Admin Class:

Manages the addition, editing, and deletion of admin accounts.

Displays admin information and performs actions like viewing final results and managing course schedules.

👉 Student Class:

Allows students to view their courses, profile, grades, and schedule.

Incorporates specific functions for each academic level (L1, L2, L3).

👉 Doctor Class:

Provides doctors with functionalities to view their courses, profiles, and edit student information.

Allows access to specific courses for editing and management.

👉 TA Class:

Similar to the Doctor class, offering TAs functionalities for course management.

Enables TAs to edit student information and access specific courses.

6 .User Interface:

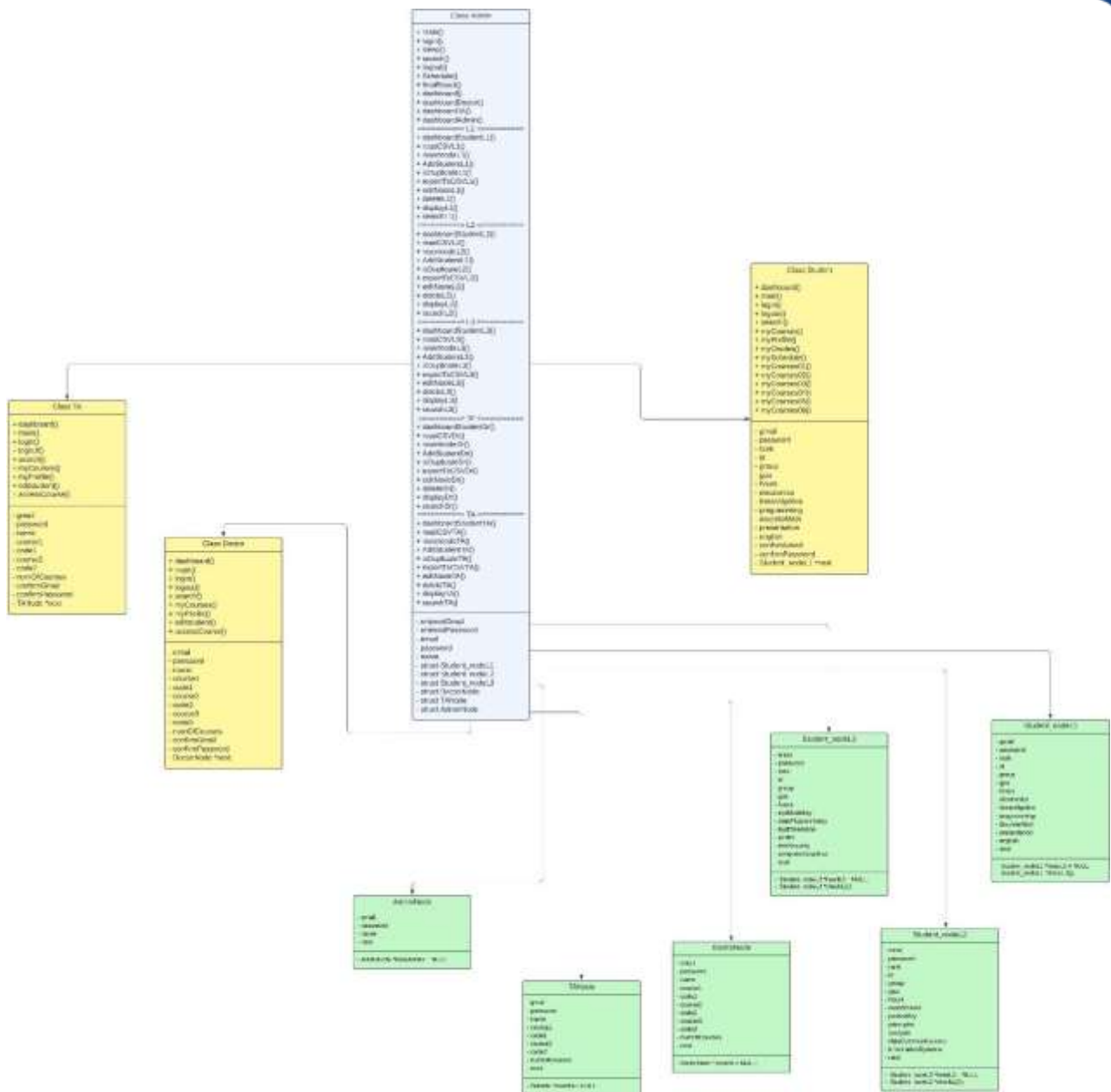
The program features a text-based user interface that is clear and intuitive. Users are presented with menus guiding them through available actions. The design emphasizes ease of navigation and understanding, ensuring a positive user experience.

Menus are presented to users, guiding them through available actions.

Input is collected using cin for user interaction.

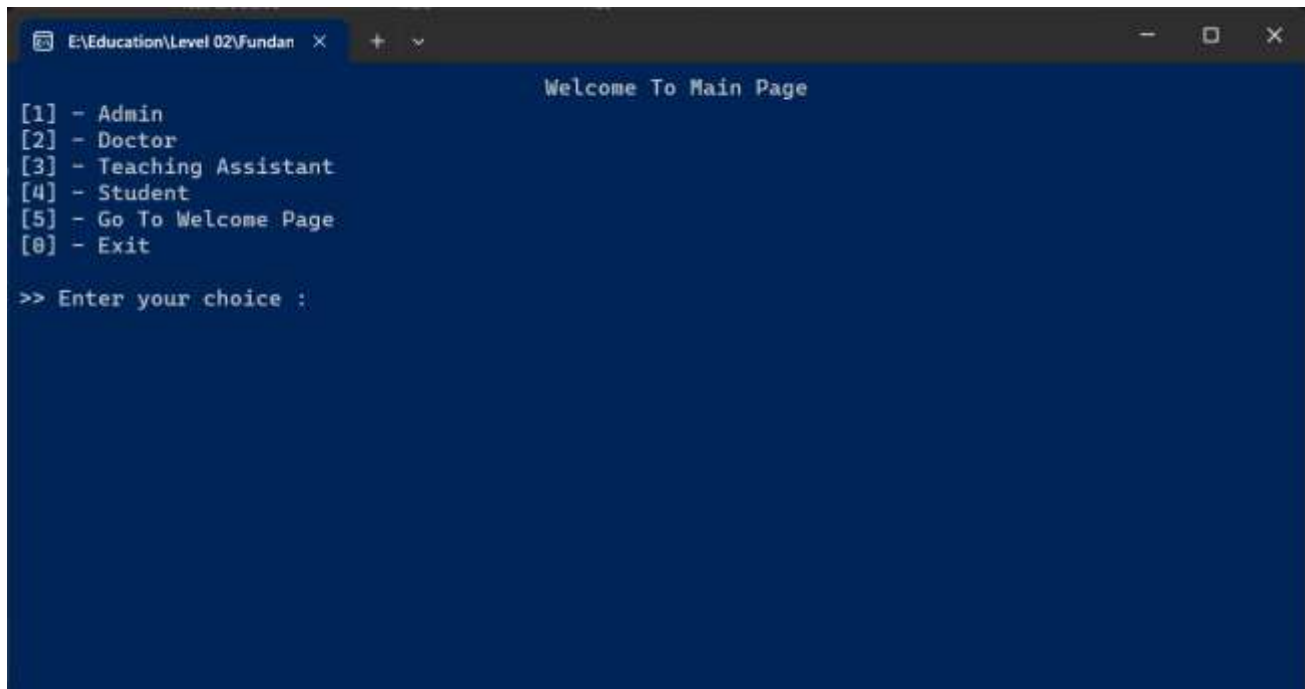
A color-coded console is used to enhance the visual appeal of the interface.

7 .Class Diagram:



8 .User Interface:

>> Welcome Page



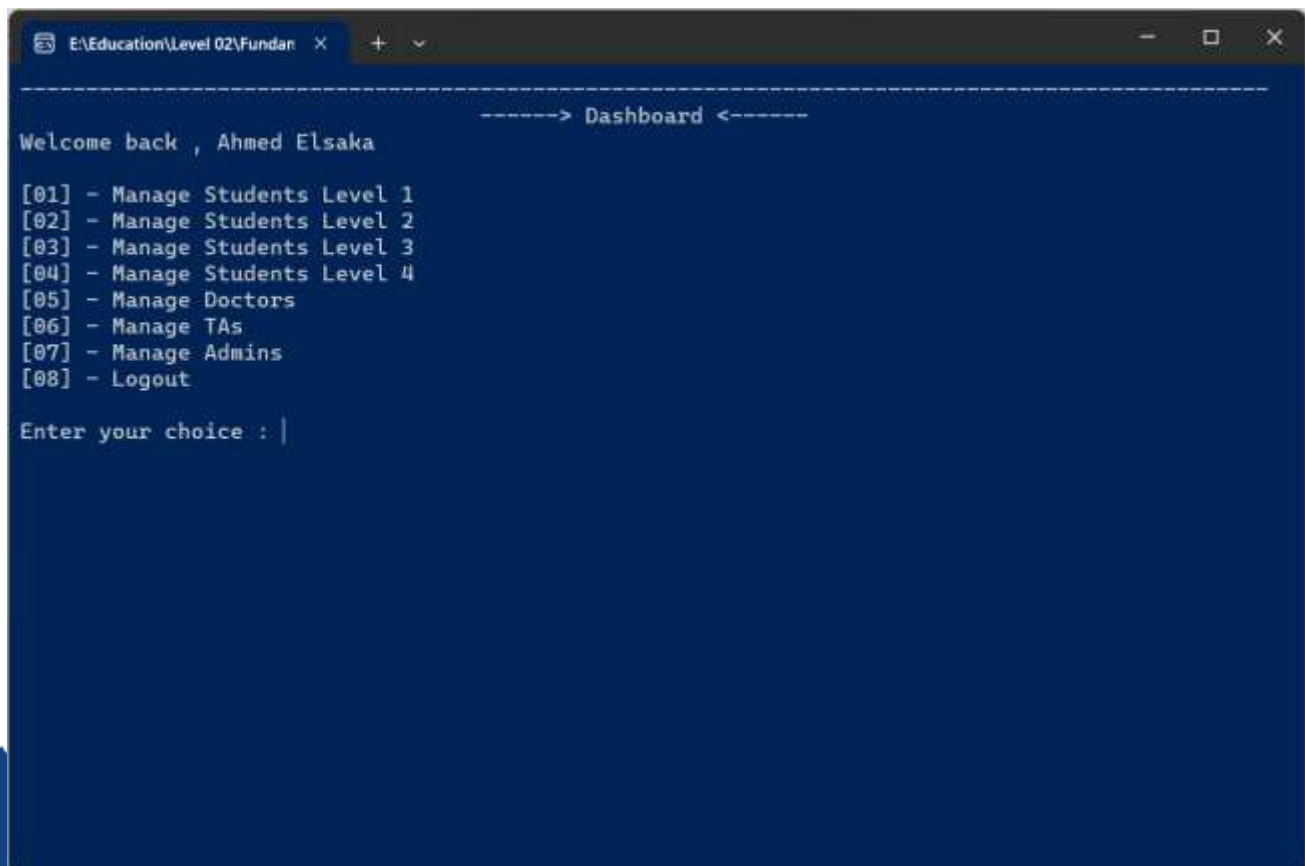
The screenshot shows a Windows terminal window with a dark blue background. The title bar at the top reads 'E:\Education\Level 02\Fundan' followed by a close button and window control buttons. The text inside the terminal is as follows:

```
Welcome To Main Page

[1] - Admin
[2] - Doctor
[3] - Teaching Assistant
[4] - Student
[5] - Go To Welcome Page
[0] - Exit

>> Enter your choice :
```

>> Dashboard Admin



The screenshot shows a Windows terminal window with a dark blue background. The title bar at the top reads 'E:\Education\Level 02\Fundan' followed by a close button and window control buttons. The text inside the terminal is as follows:

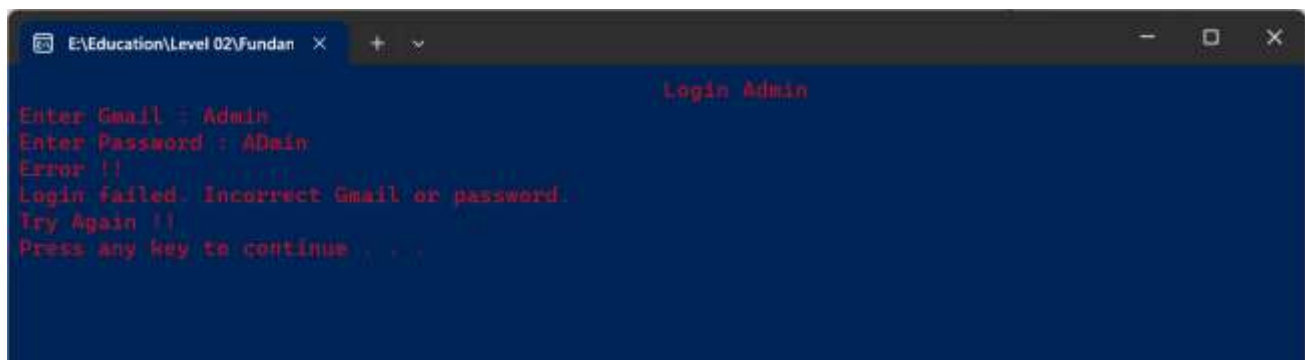
```
-----> Dashboard <-----

Welcome back , Ahmed Elsaka

[01] - Manage Students Level 1
[02] - Manage Students Level 2
[03] - Manage Students Level 3
[04] - Manage Students Level 4
[05] - Manage Doctors
[06] - Manage TAs
[07] - Manage Admins
[08] - Logout

Enter your choice : |
```

>> User Interface To Errors

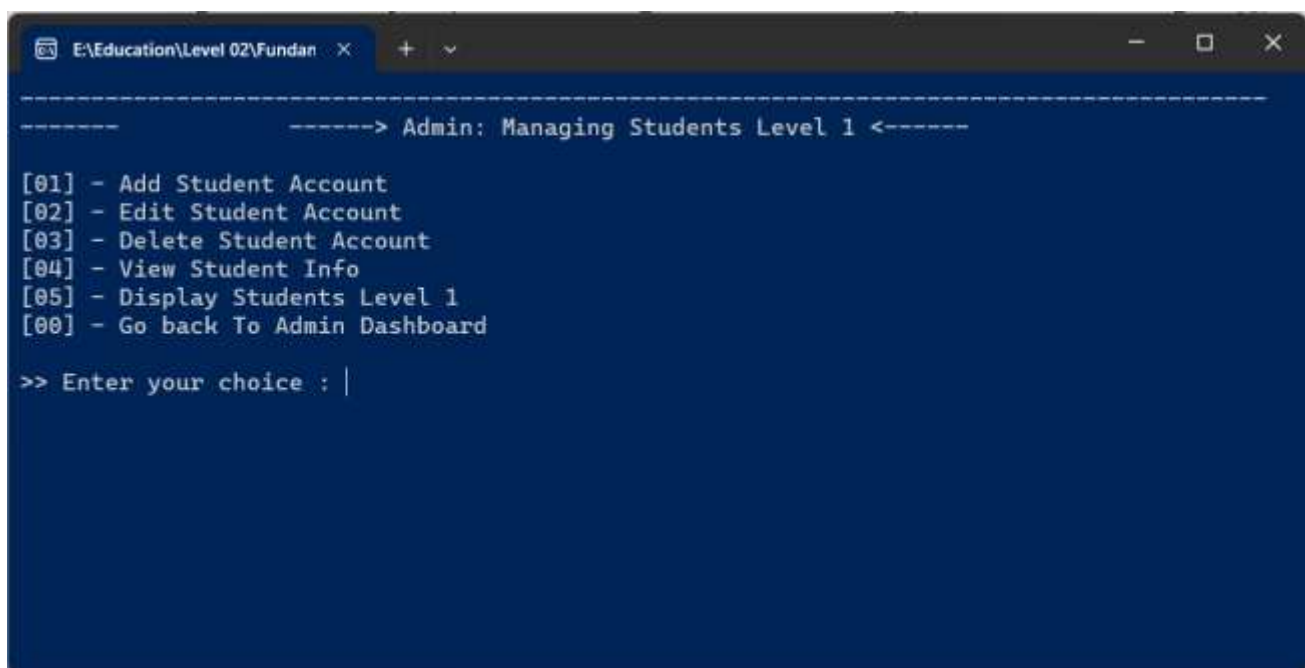


A screenshot of a Windows command prompt window. The title bar shows the file path "E:\Education\Level 02\Fundan". The window has a dark blue background with red text. The text displayed is as follows:

```
Enter Gmail : Admin
Enter Password : ADain
Error !!
Login failed. Incorrect Gmail or password.
Try Again !!
Press any key to continue . . .
```

>> Manage Students Level 1

And Same With L2 , L3 and L4



A screenshot of a Windows command prompt window. The title bar shows the file path "E:\Education\Level 02\Fundan". The window has a dark blue background with white text. The text displayed is as follows:

```
-----> Admin: Managing Students Level 1 <-----

[01] - Add Student Account
[02] - Edit Student Account
[03] - Delete Student Account
[04] - View Student Info
[05] - Display Students Level 1
[00] - Go back To Admin Dashboard

>> Enter your choice : |
```

>> Manage Doctors


```
E:\Education\Level 02\Fundan  X + v
-----
-----> Admin: Managing Doctors <-----

[01] - Add Doctor Account
[02] - Edit Doctor Account
[03] - Delete Doctor Account
[04] - View Doctor Info
[05] - Display All Doctors
[00] - Go back To Admin Dashboard

>> Enter your choice :
```

>> Manage Admins

```
E:\Education\Level 02\Fundan  X + v
-----
-----> Admin: Managing Admins <-----

[01] - Add Admin Account
[02] - Edit Admin Account
[03] - Delete Admin Account
[04] - View Admin Info
[05] - Display All Admins
[06] - Display Final Results
[07] - Course Schedule
[00] - Go back To Admin Dashboard

>> Enter your choice :
```

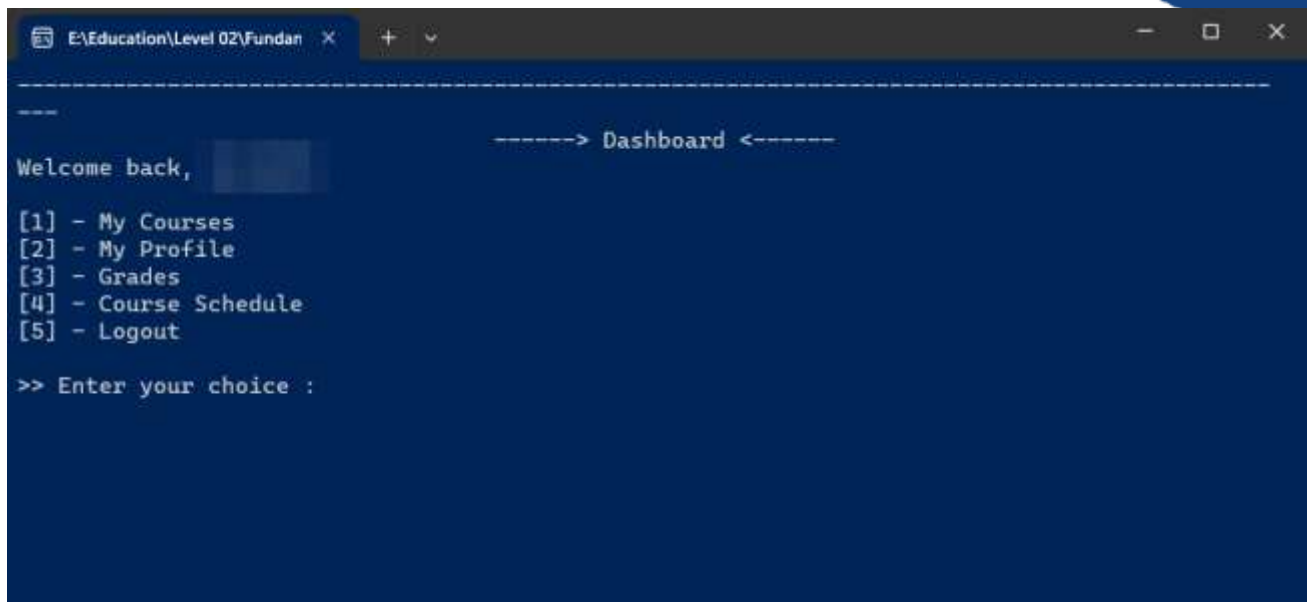
>> Dashboard Doctor

```
E:\Education\Level 02\Fundan x + v - □ x
-----
Welcome back, [REDACTED] -----> Dashboard <-----
[1] - My Courses
[2] - My Profile
[3] - Edit On Student
[4] - Logout
>> Enter your choice :
```

>> Dashboard TA

```
E:\Education\Level 02\Fundan x + v - □ x
-----
Welcome back, [REDACTED] -----> Dashboard <-----
[01] - My Courses
[02] - My Profile
[03] - Edit On Student
[04] - Logout
>> Enter your choice :
```

>> Dashboard Student

A screenshot of a Windows command prompt window. The title bar shows the file path 'E:\Education\Level 02\Fundan' and standard window controls. The command prompt has a dark blue background with white text. It displays a menu titled 'Dashboard' with a list of options: '[1] - My Courses', '[2] - My Profile', '[3] - Grades', '[4] - Course Schedule', and '[5] - Logout'. Below the menu, it prompts the user with '>> Enter your choice :'.

```
E:\Education\Level 02\Fundan >
-----
Welcome back, [redacted]
-----> Dashboard <-----
[1] - My Courses
[2] - My Profile
[3] - Grades
[4] - Course Schedule
[5] - Logout

>> Enter your choice :
```

9. Future Enhancements:

To further improve the LMS, future enhancements could include features like real-time notifications, additional user roles, and more advanced course management functionalities.

10 .Conclusion:

The Learning Management System project successfully addresses the key objectives, providing a well-structured and functional system for educational institutions. The project lays the foundation for future enhancements and improvements.