



ONLINE COURSE REGISTRATION SYSTEM

A PROJECT REPORT

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BONAFIDE CERTIFICATE

This is to certify that the project entitled, “**Online Course Registration System**” and submitted by “**Bonusree Datta**” in partial fulfillment of the requirements of **CSE-3204 Software Engineering and Information System Based Project** embodies the work done by her under my supervision-

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Abstract

The is a web-based application designed to provide a convenient and automated solution for students in a department to register for their courses. The system allows students to complete registration through a user-friendly interface and provides administrators with the necessary tools to manage the registration process efficiently. The system enables students to select their courses and add them to their schedules, with automatic validation checks to ensure course prerequisites and availability. Administrators can monitor the registration process, approve requests, and generate reports for analysis and planning and can provide admit card for required application.

Acknowledgements

I extend my heartfelt gratitude to a higher power for granting me the health and resilience necessary to complete this endeavor. I owe a debt of thanks to my outstanding supervisor, respected MESKAT JAHAN, who deserves special recognition. She always inspired and guided me to accomplish this project. I would also like to thank all of my teachers in the department who always inspire me to dream big.

Abbreviations

CSE	<i>Computer Science and Engineering</i>
DFD	<i>Data Flow Diagram</i>
MVT	<i>Model View and Template</i>

Chapter 1

Introduction

The Department of CSE currently manages course registration for its students through an offline process that involves the use of paper-based forms and manual data entry. This approach has become increasingly time-consuming and prone to errors, leading to frustration for both students and administrators. In order to overcome these challenges and improve the registration process, the department has decided to develop an . The purpose of this project is to provide a web-based platform that allows students to register for courses through an automated and user-friendly interface. The proposed system will enable students to add their courses, view their schedules, and receive real-time notifications on the availability of courses. The system will also provide administrators with the necessary tools to manage the registration process efficiently, including real-time data monitoring, report generation, and approval workflows. Overall, it will provide numerous benefits to both students and administrators, including improved efficiency, accuracy, and convenience. By implementing this system, the department will be able to streamline the registration process, reduce errors, and provide students with a more efficient and automated method for registering for courses.

1.1 Motivation

The motivation for developing an is to provide a streamlined and automated process for students to register for their courses in a department. The traditional manual registration process is often time-consuming and prone to errors, leading to frustration for both students and administrators. The proposed system aims to reduce the burden on both parties by providing a simple and user-friendly online platform that simplifies the registration process. By implementing this system, students will have an

easier time selecting and registering for their courses, while administrators will have access to real-time data to monitor and manage the registration process more effectively. The system will also help reduce the workload of the departmental staff, allowing them to focus on more critical tasks. Overall, the will improve the efficiency and accuracy of the registration process, benefiting both students and departmental administrators.

1.2 Aims and Objective

The aims and objectives of the project are focused on improving the efficiency and accuracy of the course registration process, while also providing a more user-friendly and convenient method for students to register for courses. The system will be designed to meet the specific needs of the department and provide real-time data monitoring and reporting tools for administrators. The aims and objectives of the Online Course Registration System project are as follows:

Aims:

- To improve the efficiency of the course registration process by providing a web-based platform that automates the registration process for students.
- To reduce errors in the registration process by eliminating the need for manual data entry and providing validation checks for course prerequisites and availability.
- To provide a more user-friendly and convenient method for students to register for courses, allowing them to view their schedules and receive real-time notifications on course availability.
- To provide administrators with real-time data monitoring and reporting tools that allow them to manage the registration process more efficiently and make data-driven decisions.

Objectives:

- To design and develop a web-based user interface that enables students to register for courses, view their schedules, and receive real-time notifications on course availability.

- To implement a database system for storing and managing registration data, with automatic validation checks for course prerequisites and availability.
- To develop reporting tools for administrators that allow them to monitor the registration process in real-time, generate reports for analysis and planning, and approve registration requests.
- To test and validate the Online Course Registration System to ensure that it meets the needs of students and administrators and is reliable, secure, and scalable.
- To provide training and support for students and administrators to ensure that they can effectively use and manage the system.

1.3 Project Outline

The Online Course Registration System project is developed over a period of 6th semester and consist of the following phases:

Phase 1: Requirement Analysis and Design

The first phase of the project will involve gathering requirements from stakeholders, analyzing the current registration process, and designing the system architecture. This phase will also involve developing use cases, user stories, and wire frames to guide the development process.

Phase 2: Development

The development phase of the Online Course Registration System project will involve building the core components of the system, including the user interface, database, and reporting tools.

Phase 3: Implementation and Deployment

The implementation and deployment phase will involve deploying the system to a production environment, configuring it for the specific needs of the department, and conducting user acceptance testing. The system will be deployed on a secure web server and integrated with the department's existing systems and infrastructure. This phase will also involve training sessions for students and administrators to ensure they are able to effectively use and manage the system.

Phase 4: Maintenance and Support

The maintenance and support phase will involve providing ongoing support for the system, including fixing bugs, addressing issues, and providing

updates as required. The project team will work closely with the department staff and students to ensure the system is meeting their needs and is operating effectively. This phase will also involve monitoring system performance, conducting regular backups, and providing technical support as needed.

Chapter 2

Literature Review

2.1 Overview of Online Course Registration systems

It's a smart system for students, staffs and administration. Student can complete their required course registration in time from anywhere and can get their admit card anytime if their registration has completed and if they have a device that has internet connection. Also the Staffs can look up student's data and registration process and he/she does not need to physically present for approve the form. So this system is time saving, better work quality , reliable and secure for all students, staffs and administration.

2.2 Current System

The current system for registration in your department is paper-pencil-based. This means that students must physically fill out paper forms with their personal information and course preferences, and submit them to the department's office. The department's staff then manually enter the information into a database or spreadsheet. This system has several drawbacks. Firstly, it is time-consuming and labor-intensive for both students and staff. Secondly, the paper-pencil-based system is prone to data loss or damage. Lastly, the paper-pencil-based system can be less efficient than a digital system, as it is not easily searchable or sort-able.

2.3 Characteristics

1. User should be aware of the internet.
2. User must have valid credentials to access the system.

3. When student will complete registration Staffs will get it automatically.
4. When Chairman, hall provost, exam controller will approve student's application , student can get access for downloading admit card.

Chapter 3

Methodology and design

In this chapter we will present an overall interpretation of the methodology and design of our proposed system.

3.1 Tools and Technology

Online Registration System is a web application built with python. To implement this web application following tools and technologies are used:

1. Development Platform: Visual Studio Code
2. Database: SQLite
3. Front-End: HTML,CSS,JS
4. Back-End Language: DJANGO (PYTHON)
5. Version control: GIT

3.2 Architectural Pattern

Here I applied MVT architectural pattern in my web application as I used django.

3.2.1 MVT Architecture

MVT (Model-View-Template) is a web application architecture that is commonly used in Python-based web frameworks like Django. The MVT architecture is similar to the popular Model-View-Controller (MVC) architecture, but with some key differences.

In the MVT architecture, the Model represents the data and database logic, while the View contains the user interface and presentation logic. The Template, on the other hand, is responsible for rendering the HTML

to create the final output that is sent to the user's browser. It helps to keep the code organized and maintainable by separating concerns into different components. It supports code reuse, since different Views can use the same Model and Template components. This can help to reduce the amount of duplicated code and make the application more efficient and scalable.

The MVT architecture is a powerful and flexible approach for building web applications that can provide a strong foundation for developing complex and dynamic web-based systems.

3.3 System Architecture

System architecture in software engineering is the process of designing the structure, behavior, and components of a software system. The system architecture defines the components of the system and their interactions, as well as the constraints and requirements that the system must meet.

3.3.1 Requirement gathering

Beginning of the project, I studied about such type of project and talked with my departmental student. Thus I gather basic requirement for this system. Besides my supervisor advised and gave suggestion for this system.

3.3.2 Architecture design

According to requirement designed the architecture for this application. Here I am showing architecture in two step

1. System Flowchart
2. User Case Diagram
3. Data Flow Diagram

System Flowchart

System flowchart is a type of diagram that represents an algorithm or process, showing the steps as boxes of various kinds, and their order by connecting these with arrows.

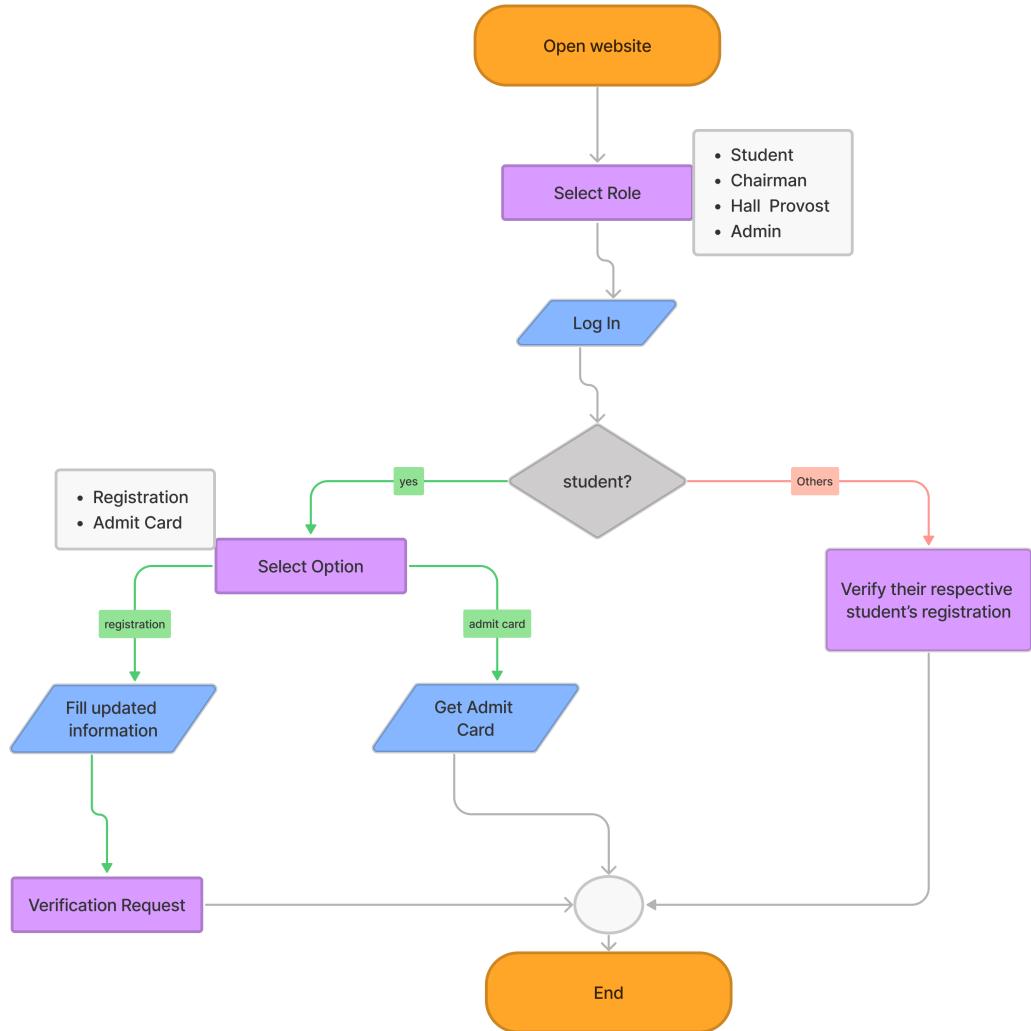


Figure 3.1: System Flow Chart

User case diagram

User-case diagram is a type of diagram used in software development that depicts the different ways that users can interact with a system. It is a graphical representation of the system's functionality from the user's point of view, and it helps to illustrate the system's behavior and how it supports users' needs.

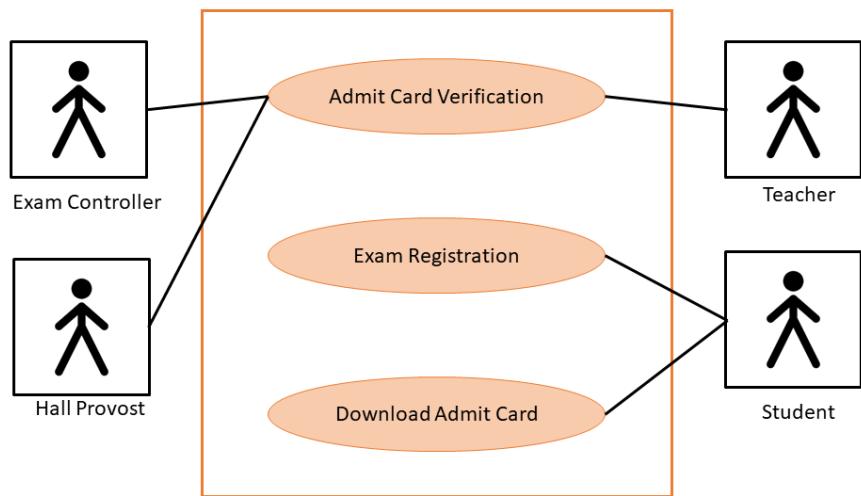


Figure 3.2: User Case diagram

3.3.3 Data Flow Diagram

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination.

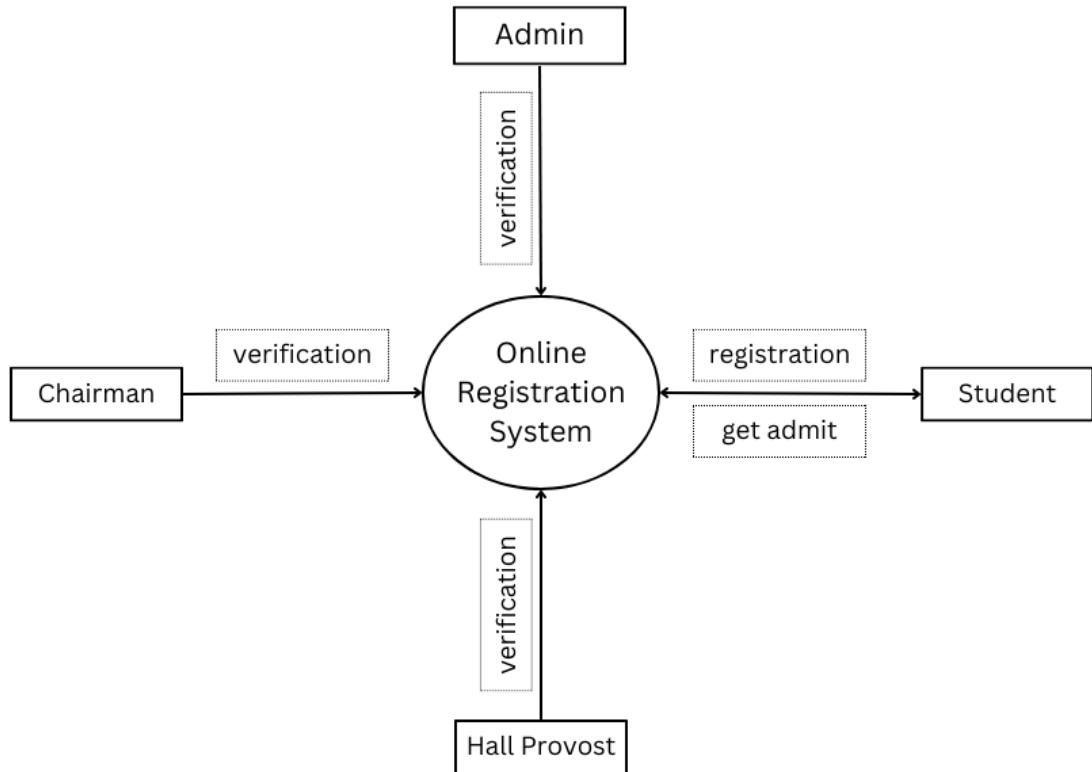


Figure 3.3: Data flow diagram level-0

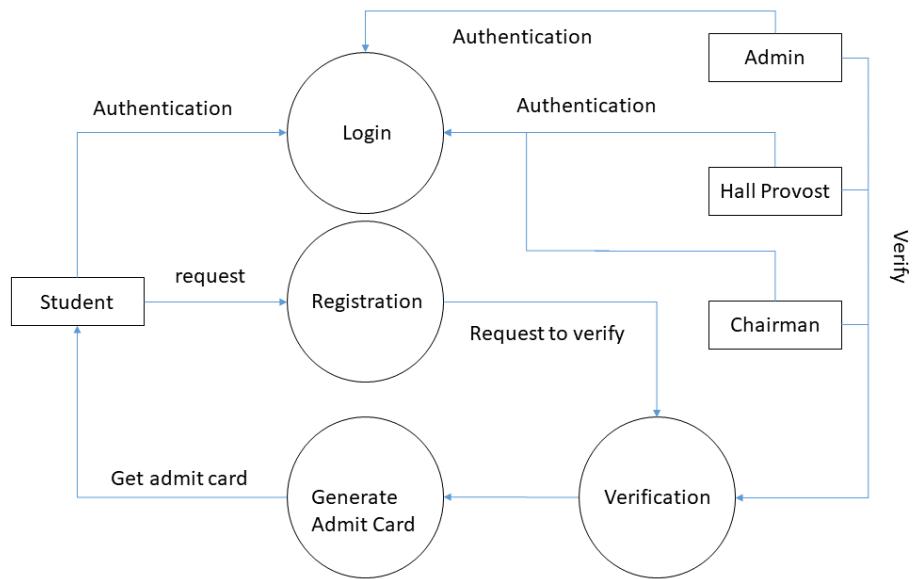


Figure 3.4: Data flow diagram level-1

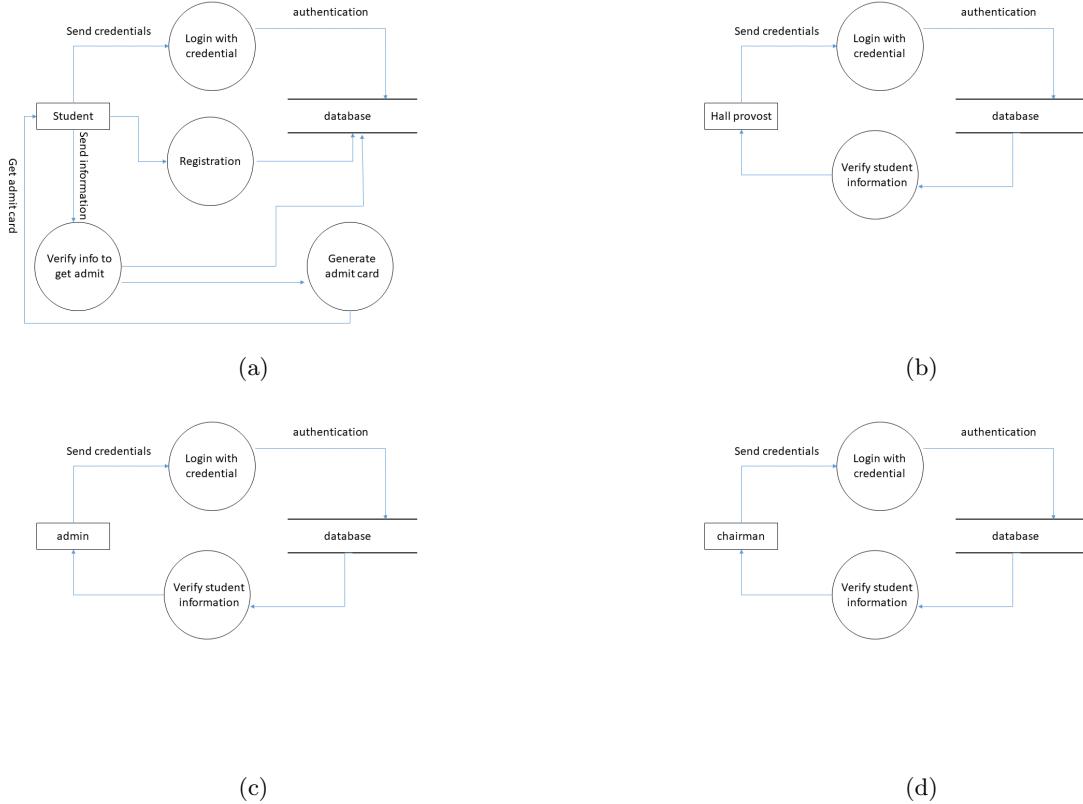
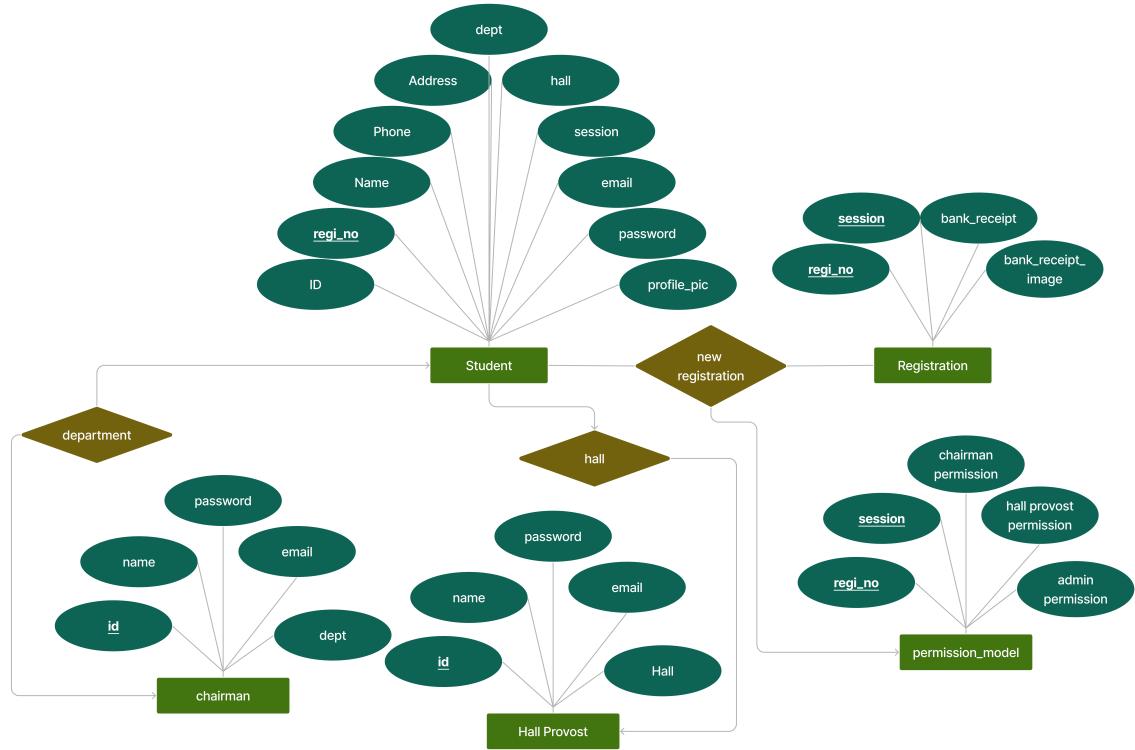


Figure 3.5: Data Flow Diagram level-2

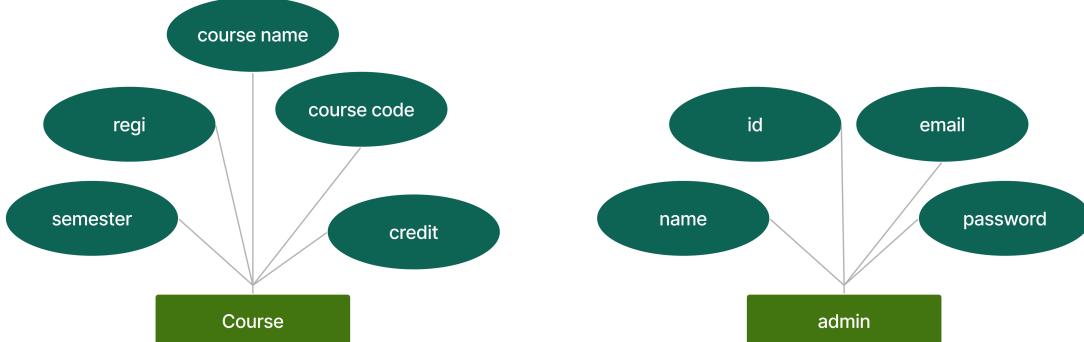
3.4 Database Design

3.4.1 E-R Diagram

An Entity Relationship (ER) Diagram is a type of flowchart that illustrates how “entities” such as people, objects or concepts relate to each other within a system. ER Diagrams are most often used to design or debug relational databases in the fields of software engineering, business information systems, education and research. Here 3.6a and 3.6b show my entity relational diagram.



(a)



(b)

Figure 3.6: Entity Relational Diagram

3.4.2 Relational Diagram

A relational diagram, also known as an entity-relationship (ER) diagram, is a graphical representation of the relationships between entities or tables in a relational database. It is used to model the structure of the database, showing the various tables, their attributes, and the relationships between them.

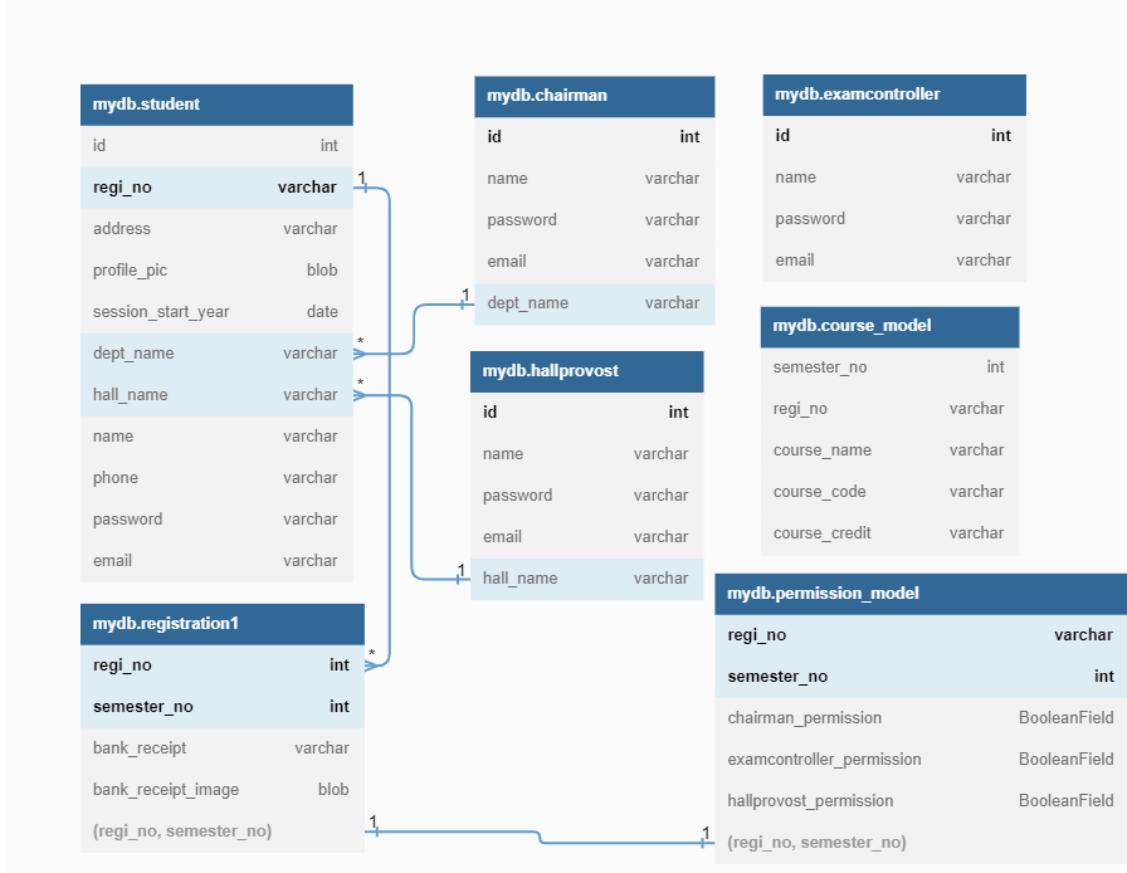


Figure 3.7: Relational Diagram

Chapter 4

Implementation and Result

Implementation is the stage in the project where the theoretical design is turned into a working system. The implementation phase constructs, installs and operates the new system. The most crucial stage in achieving a new successful system is that it will work efficiently and effectively.

4.1 Database Creation

Before initializing the website we have to create a database. First, we have to create a database. As I used django, I used SQLite for relational database management system. ?? shows the admin page of Database.

4.2 Dependency

Here are several module needed to implement and run this project.

- django
- whitenoise
- html2text
- pdfkit
- reportlab
- cryptography
- db-sqlite3

4.3 Interface Implementation

The system interface is implemented with HTML,CSS,JS for front-end and the django (python) is used in the back-end.

4.3.1 User Interface

In information technology, the user interface (UI) is everything designed into an information device with which a person may interact. This can include display screens, keyboards, a mouse and the appearance of a computer and even any other usable device. It is also the way through which a user interacts with an application or a website. The growing dependence of many companies on web applications and mobile applications has led many companies to place increased priority on UI in an effort to improve the user's overall experience

4.3.2 Home

Here fig-4.1 show the login interface.

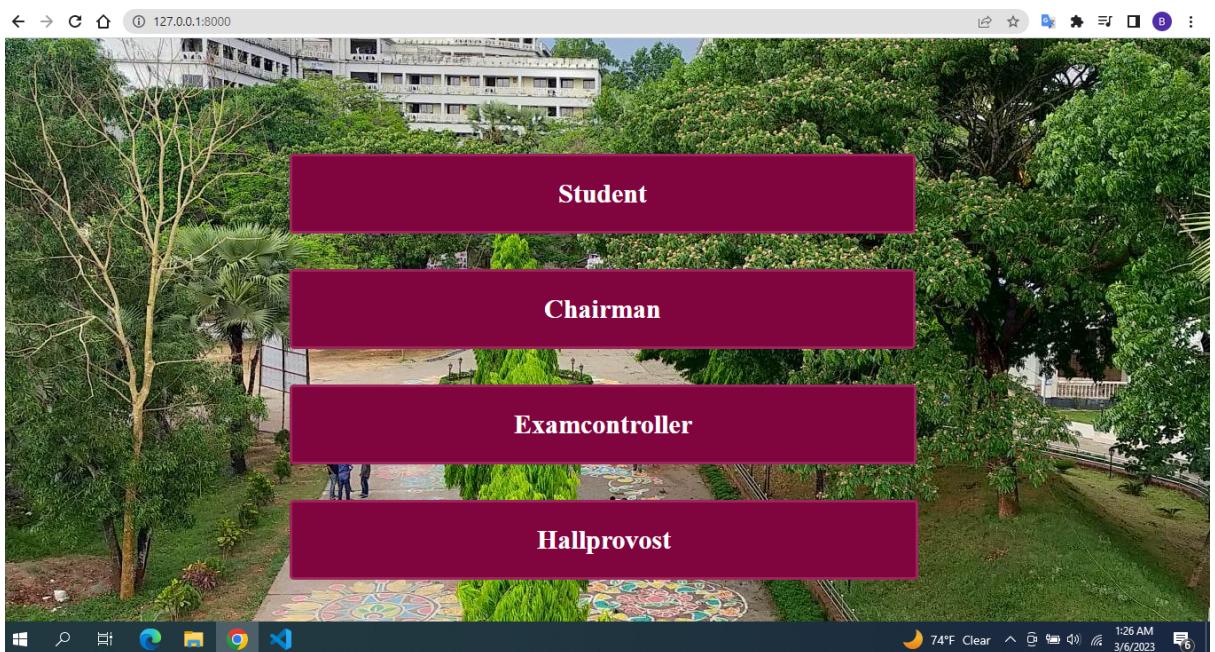


Figure 4.1: Home

4.3.3 login

Here fig-4.2 show the login interface.

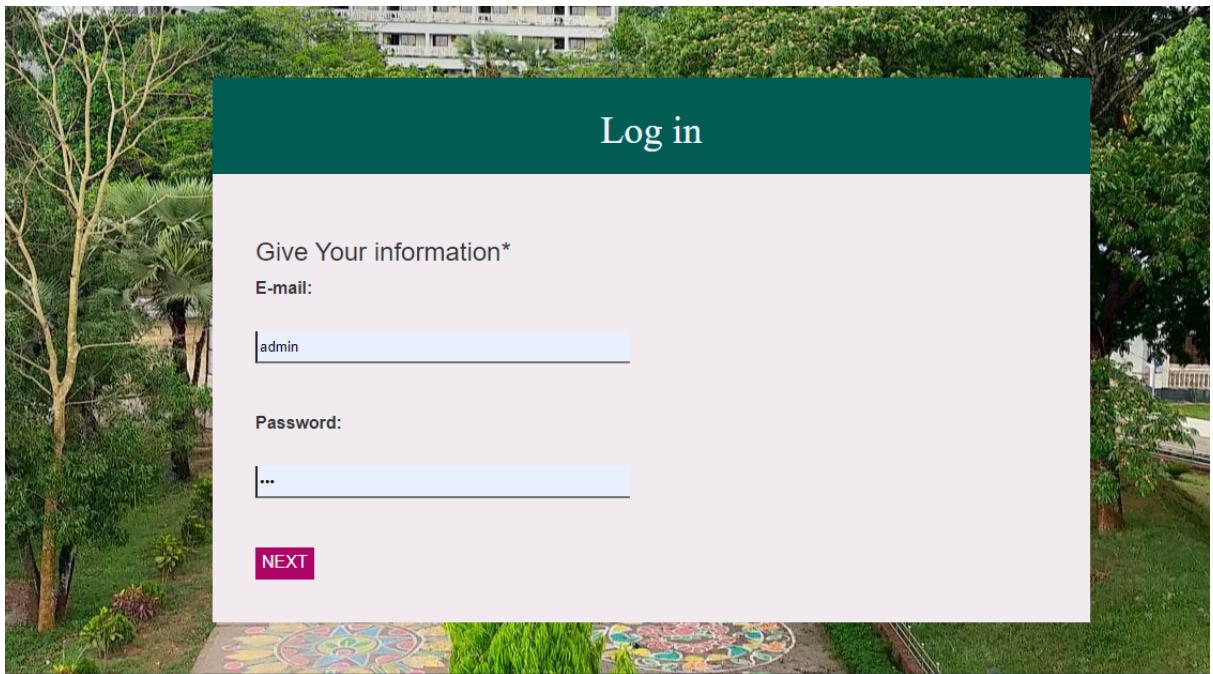


Figure 4.2: Login Window

4.3.4 Student Home

Here fig-4.3 show the Student Homepage interface.

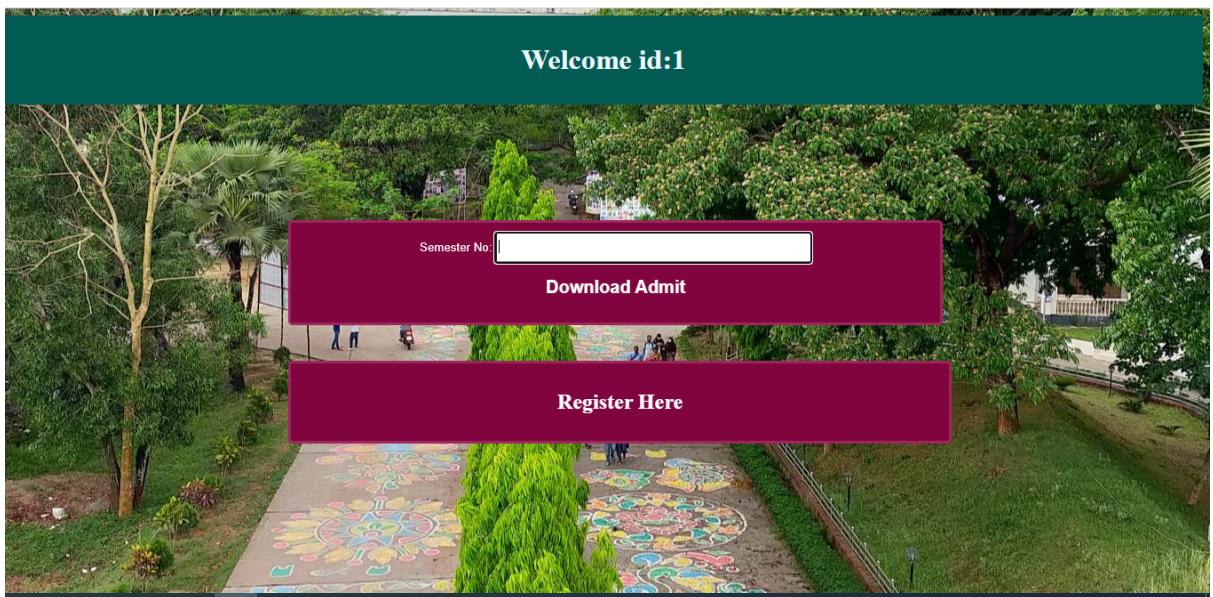


Figure 4.3: Student Home Page

4.3.5 Student Registration Form

Here fig-4.4 show the Registration Form interface.



Registration For Your Required Semester Final

Give Your information*

Department name:

Hall name:

Registration No. :

Phone Number:

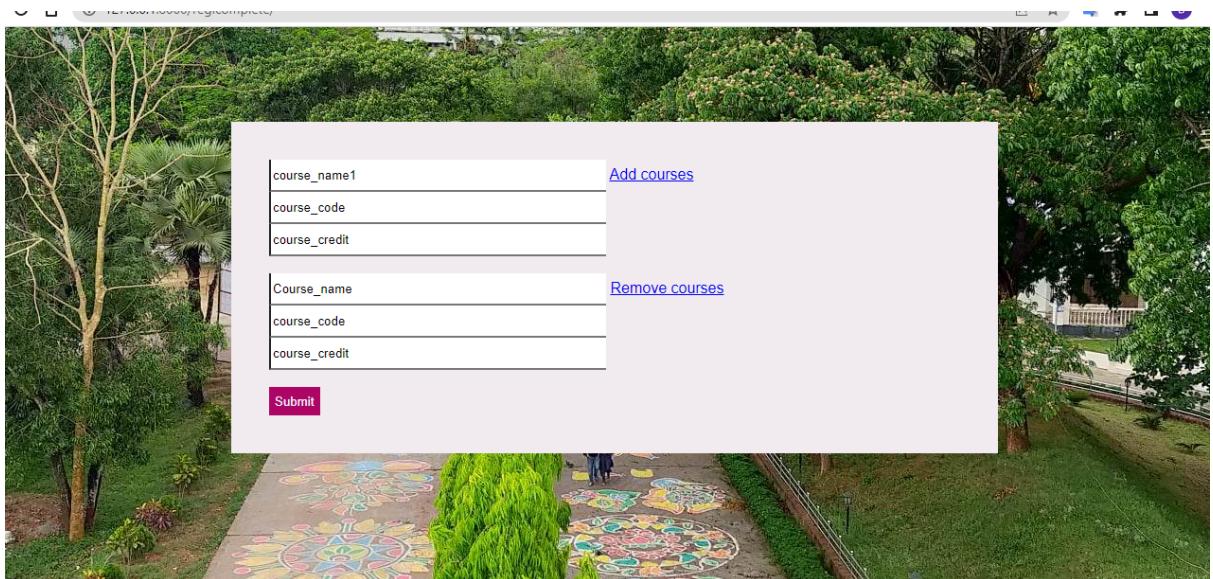
Semester no.:

bank receipt no.:

Figure 4.4: Student Registration Form

4.3.6 Student Add courses

Here fig-4.5 show the Add courses interface.



course_name1 [Add courses](#)

course_code

course_credit

Course_name [Remove courses](#)

course_code

course_credit

Submit

Figure 4.5: Add courses

4.3.7 Student's admit card

Here fig-4.6 show the admit card interface.



Figure 4.6: Admit card

4.3.8 Teacher's Homepage

Here fig-4.7 show the list of registration form to teachers interface.

A screenshot of a web browser window. The address bar shows the URL "127.0.0.1:8000/chairman_login/". The main content area has a teal background. In the center, there is a dark teal rectangular button with the white text "ID.1, semester no.1". The browser's toolbar is visible at the top, showing various icons for navigation and settings.

Figure 4.7: Teacher's homepage

Chapter 5

Conclusion and Future Directions

Effective implementation of this application will take care of the basic requirements of the online registration system because it is capable of providing an easy and effective system.

5.1 Future Work

This is almost a prototype of the online registration management system. In future, the system can be enhanced and expanded. While developing this project, there are some notable points mentioned below:

1. This whole work was done while we were undergraduate students in the 3rd year 1st semester in Bachelor of Science(Engg) at Comilla University.
2. Where we have quoted from the work of others, the source is always given.
3. All the main sources of help and reference have been acknowledged here.

Bibliography

[1] Django. Model field reference. <https://docs.djangoproject.com/en/3.2/ref/models/fields/>, n.d. Accessed March 8, 2023.

[1].