

**DIU COUNSELLING HOUR MANAGEMENT SYSTEM: A WEB
APPLICATION**

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This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science in Computer Science and Engineering

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DAFFODIL INTERNATIONAL UNIVERSITY
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APPROVAL

This Project titled “**DIU COUNSELLING HOUR MANAGEMENT SYSTEM : A Web Application**”, submitted by **Ziaur Rahman** to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 12/02/2024

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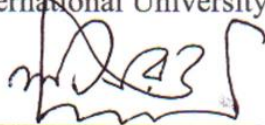
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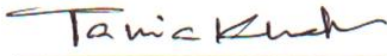
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We hereby declare that, this project has been done by me under the supervision of **Ms. Tania Khatun, Assistant Professor** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

The main focus of this outstanding paper is the "Online Education Management and Information System." It delves into crucial aspects of online control and communication between educational authorities and students. The project was developed using the Laravel framework along with HTML, CSS, JavaScript, and jQuery. It enables various communication channels between authorities and students, fostering a sense of community. Additionally, parents can also stay informed about their child's progress from the comfort of their home. The primary goal of this project is to eliminate distance barriers and enhance flexibility in communication between authorities and students.

TABLE OF CONTENTS

CONTENTS	PAGE
Approval Page	ii
Declaration	iii
Acknowledgements	iv
Abstract	v
List of Figures	viii
CHAPTER 1: INTRODUCTION	1-3
1.1 Introduction	1
1.2 Motivation	1
1.3 Objectives	1
1.4 Expected Outcomes	2
1.5 Project Management and Finance	2
1.6 Report Layout	3
CHAPTER 2: BACKGROUND	4-10
2.1 Preliminaries/Terminologies	4
2.2 Related Works	5
2.3 Comparative Analysis	7
2.4 Scope of the Problem	9
2.5 Challenges	9
CHAPTER 3: REQUIREMENT SPECIFICATION	11-21
3.1 Business Process Modeling	11
3.2 Requirement Collection and Analysis	12
3.3 Use Case Modeling and Description	14
3.4 Logical Data Model	19
3.5 Design Requirement	21

CHAPTER 4: DESIGN SPECIFICATION	22-27
4.1 Front-end Design	22
4.2 Back-end Design	23
4.3 Interaction Design and User Experience (UX)	26
4.4 Implementation Requirements	27
CHAPTER 5: IMPLIMENTATION AND TESTING	28-32
5.1 Implementation of Database	28
5.2 Implementation of Front-end Design	31
5.3 Testing Implementation	32
5.4 Test Results and Reports	32
CHAPTER 6: IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY	33-35
6.1 Impact on Society	33
6.2 Impact on Environment	34
6.3 Ethical Aspects	34
6.4 Sustainability Plan	35
CHAPTER 7: CONCLUSION AND FUTURE SCOPE	38-38
7.1 Discussion and Conclusion	38
7.2 Scope for Further Developments	38
REFERENCES	39

LIST OF FIGURES

FIGURES	PAGE NO
Figure 2.2.1: Waterfall Model	5
Figure 3.1.1: Business Process Model	11
Figure 3.2.1: Use Case of the System	13
Figure 3.2.2: Use Case of the Admin	14
Figure 3.2.3: Use Case of the Student	16
Figure 3.2.4: Use Case of the Teacher	18
Figure 3.3.1: Class Diagram	20
Figure 3.3.2: ER Diagram	21
Figure 4.1.1: Front-End Code	22
Figure 4.2.1: Code of the project	23
Figure 4.2.2: Code of the project	24
Figure 4.2.3: Back END	25
Figure 4.2.4: Back END	26
Figure 4.3.1 UX of home page	26
Figure 5.1.1: Implementation of Database	29
Figure 5.1.2: Implementation of Database	30
Figure 5.2.1: Interface	32
Figure 5.3.1: Testing Implementation	32

CHAPTER 1

INTRODUCTION

1.1 Introduction

Student counseling involves utilizing interpersonal connections to support students, employing a thorough understanding of academic significance to facilitate positive changes in their lives. Management of counseling hours is facilitated through a virtual platform where university students can access essential program guidance by logging into the university server. The crucial developmental period in a person's life is often shaped significantly by guidance and preparation. Whether transitioning from vocational guidance and preparation to higher education or entering the workforce, individuals have the opportunity to carve out their career paths. However, during this transitional phase, individuals may become sidetracked from their goals and receive conflicting information, which can be confusing for both students and their parents.

1.2 Motivation

There is a limited window available for consulting with our teachers. Our instructors have a hectic schedule throughout the day, often occupied during office hours. Occasionally, urgent meetings called by authorities disrupt the planned schedule. Consequently, there are instances where students repeatedly call teachers for appointments and guidance. Implementing a counseling hour management system can significantly reduce the volume of such calls. Both instructors and students can efficiently organize their time for counseling sessions. By employing a counseling hour management system, both teachers and students can effectively avoid wasting their valuable time.

1.3 Objectives

- Teachers have the capability to create timing sessions, while students can book appointments with any available teacher.
- Both teachers and students will have visibility into their appointment status.
- The admin panel provides access to all appointment information and statuses.
- Admins can create categories, campus information, and department lists to enhance system functionality.
- Students can view teachers' availability and schedule appointments accordingly.

- Teachers will receive comprehensive information about their upcoming appointments.
- Teachers have the authority to accept, reject, or reschedule appointments as necessary.

1.4 Expected Outcomes

The counseling hour management system facilitates efficient time management for both teachers and students, thereby preventing the wastage of their valuable time. Through the website application, students can effortlessly schedule appointments with available teachers. They have the flexibility to book appointments with specific teachers for particular subjects. This streamlined process reduces the need for unexpected phone calls when teachers are engrossed in their daily schedules.

1.5 Project Management and Finance

Project Management:

- **Planning:** Define project objectives, scope, deliverables, and timeline. Identify key stakeholders, project team members, and their roles and responsibilities.
- **Organizing:** Allocate resources, such as human resources, technology, and budget, required for the development of the web application. Establish communication channels and project management tools for collaboration.
- **Execution:** Develop the web application according to the project plan, including designing user interfaces, implementing features, and testing functionality.
- **Monitoring and Controlling:** Track project progress, monitor budget expenditures, and address any issues or risks that arise during development. Regularly communicate with stakeholders to provide updates on project status.
- **Closing:** Complete the development of the web application, conduct user acceptance testing, obtain feedback from stakeholders, and make any necessary revisions. Prepare documentation and training materials for users, and officially close the project.

Finance:

- **Budgeting:** Estimate the costs associated with developing the web application, including software development, design, testing, hosting, and maintenance. Allocate funds for each phase of the project, considering factors such as labor costs, software licenses, and infrastructure expenses.

- **Funding:** Secure funding for the project from internal sources, such as university budgets or grants, or external sources, such as sponsors or investors.
- **Cost Management:** Monitor project expenditures throughout the development process to ensure they stay within budget. Identify cost-saving opportunities and optimize resource utilization to maximize project value.
- **Financial Analysis:** Evaluate the financial feasibility of the project by analyzing the potential return on investment (ROI) and assessing the cost-benefit ratio. Consider factors such as the expected revenue generated from the web application, cost savings from improved efficiency, and the long-term sustainability of the project.
- **Return on Investment (ROI):** Calculate the ROI of the project by comparing the expected benefits, such as increased efficiency in scheduling counseling appointments and improved communication between students, teachers, and administrators, to the costs incurred during development and maintenance.

1.6 Report Layout

In the first chapter, we outline the objective and anticipated outcome of the task we have undertaken, along with an overview of the report structure.

The second chapter serves as a foundational overview. Here, we provide details about the initial conditions of our project and offer a summary of related studies and a preliminary project structure.

Moving on to the third chapter, we delve into the design specifications. This section focuses on the mission plan, which includes both front-end layout work and back-end design considerations.

In the fourth chapter, we detail the implementation and testing of the project. Here, we explain the steps taken to execute the design accurately and successfully test its functionality.

The fifth chapter explores the project's impact on society, the environment, and sustainability. This section discusses the effects of online platform tutoring on community engagement, environmental considerations, and ethical validity.

Finally, in the sixth section, we provide a Conclusion and outline future prospects for the application.

CHAPTER 2 BACKGROUND

2.1 Preliminaries/Terminologies

The exhibit that forms the basis of our approach is the Waterfall Model, which outlines a sequential progression of phases in a structured manner. The initial focus lies on feasibility analysis. Once this phase is completed, project planning and assessment commence. If modifications or additions to the existing system are necessary, the evaluation of the current system serves as a reference point. Following the completion of the assessment, the planning phase begins, followed by coding. Subsequently, testing is carried out. In this model, the sequence of activities in a software development project should typically include:

- Requirement Estimation
- Project Planning
- System Design
- Detail Design
- Coding
- Unit Testing
- System Integration and Testing

In this context, it is crucial to emphasize the completion and adherence to each stage of the process. The conclusion of one phase and the transition to the next is a collective responsibility. Each team member is accountable for ensuring that their part of the process is successfully completed and that the handover to the next stage occurs smoothly.

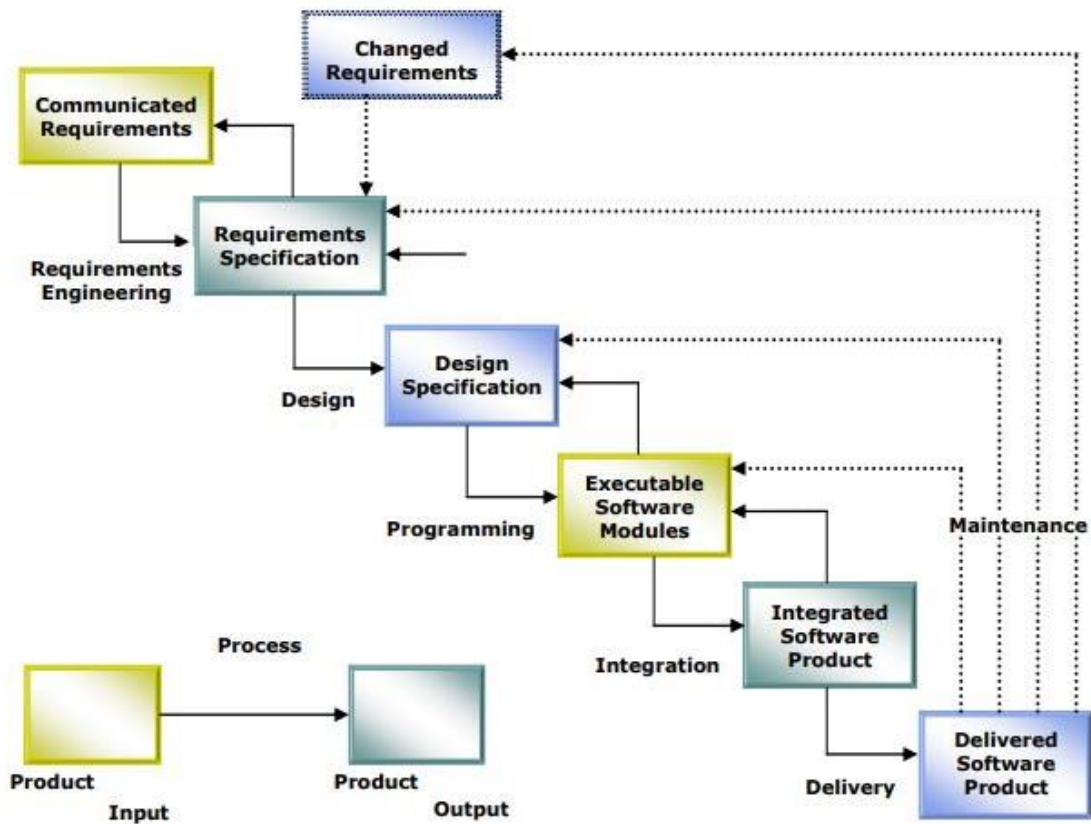


Figure 2.2.1: Water Fall Model

2.2 Related Works

After careful evaluation, the system has been identified to consist of the following modules:

- Admin panel
- Teacher panel
- Student panel
- Teacher registration
- Student registration
- Log reader

Admin: Within the administrator module, all functionalities and responsibilities regarding data management, including the ability to add, modify, or delete information pertaining to teachers and students, as well as their respective statuses, are integrated. The administrator also possesses the authority to remove appointment statuses for both students and teachers. Additionally, the admin panel provides access to various options, including teacher list, student list, campus list, and department list.

Teacher list: The admin can view the list of teachers who have logged into the system and determine their availability to provide appointments to students.

Student list: The admin can view the list of students who have logged into the system and their respective statuses regarding appointment requests with specific teachers.

Campus list: Admin has the capability to add or delete campuses where counseling facilities are available.

Department list: admin can view departments that are utilizing the counseling hour management facilities. The admin also has the authority to add or remove departments from the system as needed.

Control panel: The control panel for the admin includes the functionality to update site information, such as the website email, phone number, address, description, and links to the website's Facebook page and YouTube channel. This empowers the admin to ensure that the website's information remains accurate and up-to-date for users.

Log reader: Yes, the admin panel includes a "Log Reader" feature where the administrator can monitor the system logs to detect any errors or anomalies. This allows for timely identification and resolution of issues, ensuring the smooth functioning of the system.

Teacher: The Teacher Panel allows teachers to log in to the system after registering. Upon registration, teachers gain access to various features, including:

- Providing a counseling schedule for specific subjects.
- Accepting or rejecting appointment requests from students.
- Editing their biography to provide relevant information.
- Editing contact details for communication purposes.
- Modifying campus and room numbers for counseling sessions.
- Editing specifications to ensure accurate representation of expertise or specialization.

Student: In the Student Panel, students can log in to the system after completing the registration process. The registration page facilitates student registration. After logging in, students gain access to various functionalities, including:

- Scheduling appointments with specific teachers for particular subjects.
- Once a teacher approves their status, students receive confirmation of their appointment.
- Editing their biography to provide relevant information.
- Editing contact details for communication purposes.
- Modifying specifications as needed.

Verification: All the modules described above contain valid user data, ensuring secure access to the system. Users must provide a valid email and password to access the system. Without a valid email and password combination, users will be unable to log in and access the system. This ensures that only authorized individuals with valid credentials can utilize the system's functionalities.

2.3 Comparative Analysis

The primary components consist of a web application for administrators to create appointment slots with necessary details, which students can then book with specific teachers for particular subjects based on their preferences. Additionally, there is a mobile application that displays available and functional spots for users.

For the development of the website, PHP is chosen as the programming language, with Laravel utilized as a framework to enhance usability. The front end of the website is built using HTML, CSS, JavaScript, and jQuery. Web interactions are managed by the Apache MYSQL server. The application is developed using PHP and Laravel within a software development tool like Visual Studio.

This approach allows for the creation of a robust and user-friendly system, leveraging PHP and Laravel for backend functionality, while utilizing standard web development languages and technologies for the frontend. The choice of Visual Studio as the development environment provides a familiar and efficient platform for software development.

For the frontend

I. Web Server: When a user visits a website, data is transmitted to their browser, while package data travels through the server. In our development process using Laravel, which follows the MVC (Model-View-Controller) architecture, the model requests are handled by a web server. There are various types of web servers available, and for our project, we utilized XAMPP.

XAMPP is a popular choice among developers as it provides a comprehensive environment for developing and testing web applications locally. It includes components such as Apache, MySQL, PHP, and Perl, allowing for a complete server environment to be set up on a local machine. This setup facilitates efficient development and testing of Laravel applications before deployment to a live server.

II. PHP: We've been tasked with developing a robust system, and for that purpose, we've opted to utilize PHP, a widely renowned programming language. PHP and its associated libraries are open-source, eliminating the need for additional expenditures. Moreover, PHP is compatible with nearly every operating system, ensuring versatility in deployment. Notably, PHP is a scripting language renowned for its flexibility and ease of use.

It's important to note that PHP isn't solely restricted to web development; it can also be employed in desktop applications. Additionally, MySQL, a popular database management system, seamlessly integrates with PHP, supporting various languages. This compatibility between PHP and MySQL facilitates efficient data management and manipulation within our system.

III. Viewer: For the front-end of our website, we employ HTML, CSS, and JavaScript. HTML serves as the foundation, akin to the bricks of a building, providing the structure and layout for the main pages of our site. CSS (Cascading Style Sheets) is utilized to enhance the appearance and visual appeal of the website, ensuring a polished and professional look. Additionally, JavaScript is employed to add interactivity and dynamic elements to the website, further enhancing its usability and attractiveness. Together, these technologies work in harmony to create an engaging and visually appealing user experience for visitors to our website.

For the Backend

MYSQL: MySQL is an integral component of the open-source software stack known as LAMP. LAMP stands for Linux (the operating system), Apache (the web server), MySQL (the relational database management system), and PHP (the programming language). Initially developed by the Swedish company MySQL AB, MySQL was acquired by Sun Microsystems in 2008, which was later acquired by Oracle in 2010.

However, it's important to note that while MySQL remains open-source, businesses may need to obtain a commercial license from Oracle for certain use cases.

Laravel: CUBET unquestionably utilizes the PHP language and its framework, Laravel, for developing web projects that adhere to the model below. Laravel, being a PHP framework, is widely recognized for its comprehensive set of features that enable developers to build web applications rapidly and efficiently. Many developers acknowledge that Laravel encompasses all the essential features required for developing fast and effective web applications.

2.4 Scope of the Problem

Acknowledging the current online-based education system due to the Covid-19 pandemic, we have developed an online counseling management system to assist both students and teachers. However, due to limitations, we were unable to incorporate a parent panel within the counseling hour system. This panel would have facilitated communication between administration, teachers, and parents. Despite this limitation, our system aims to streamline the counseling process for students and teachers, providing them with the necessary tools and support for effective communication and guidance.

2.5 Challenges

We encountered several challenges during the development process, one of which was the limited availability of API data. Utilizing APIs, such as the Google Calendar API, could have enabled us to incorporate features like appointment status notifications for both students and teachers. However, due to this limitation, we were unable to fully leverage the capabilities of external APIs.

Another challenge we faced was related to the functionality of GPS. Inaccuracies in GPS data could potentially lead to errors in student information, resulting in significant discrepancies in the data exchange process. Moreover, the possibility of duplicate entries in counseling report generation could compromise the consistency and reliability of the data.

Despite these challenges, we have endeavored to overcome them and ensure the functionality and reliability of our counseling management system to the best of our abilities.

CHAPTER 3

Requirement Specification

3.1 Business Process Modeling (BPM)

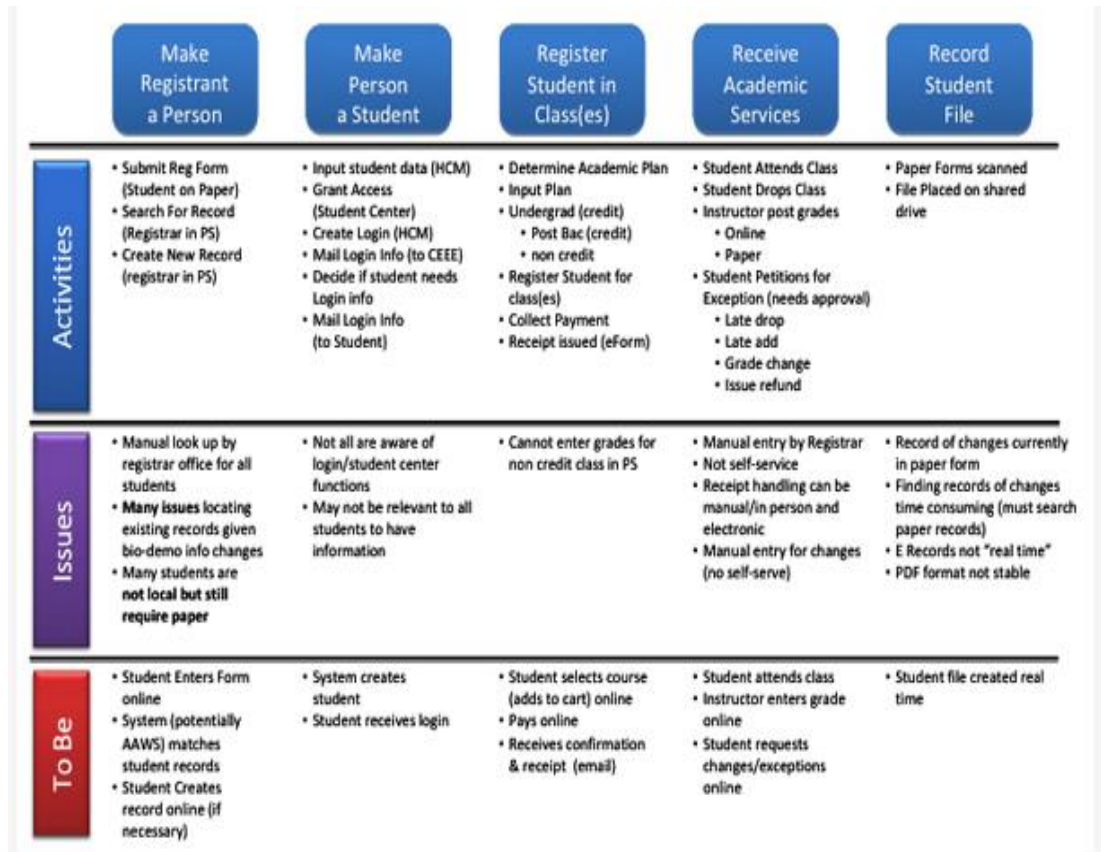


Figure 3.1.1: Business process modeling

Business Process Modeling (BPM) is a technique used to visually represent the processes, activities, and workflows within an organization. It involves creating graphical representations of business processes to better understand, analyze, and improve how work is performed.

Here's a basic overview of the steps involved in business process modeling:

Identify Processes: The first step is to identify the key processes within the organization that need to be modeled. These processes could include customer onboarding, order fulfillment, inventory management, etc.

Define Scope: Determine the scope of each process to be modeled. This includes identifying the start and end points of the process, as well as any subprocesses or activities that are part of the overall process.

Gather Information: Collect relevant information about each process, including inputs, outputs, resources, roles, responsibilities, and decision points.

Create Models: Using modeling techniques such as flowcharts, BPMN (Business Process Model and Notation), or UML (Unified Modeling Language), create visual representations of the processes. These models should clearly depict the sequence of activities, decision points, and interactions between different elements of the process.

Analyze and Optimize: Once the models are created, analyze them to identify bottlenecks, inefficiencies, or areas for improvement. Look for opportunities to streamline processes, eliminate redundant steps, or automate tasks to improve overall efficiency and effectiveness.

Implement Changes: Based on the analysis, make necessary changes to the processes and workflows. This could involve updating procedures, reassigning responsibilities, or implementing new technology solutions.

Monitor and Review: Continuously monitor the performance of the processes and review the models to ensure they accurately reflect the current state of operations. Make adjustments as needed to address changing business requirements or evolving customer needs.

3.2 Requirement Collection and Analysis

In the research team, the process of creating and refining use cases yields three important outcomes — clarification, consensus, and commitment. It's not uncommon for individuals to feel uncertain about how a system they're involved with actually operates for stakeholders! Crafting a use case allows stakeholders to align the narrative with the specifics of real-world processes. Remarkably, use cases also foster the initial establishment of shared consensus on "best practice" procedures. Diverse perspectives are embraced, acknowledged, and valued within a collaborative team environment. As

a result of this approach, team members are genuinely dedicated to supporting both management and colleagues in enhancing processes.

Below is our project's use case:



Figure 3.2.1: Use Case of the System

3.3 Use Case Modeling and Description

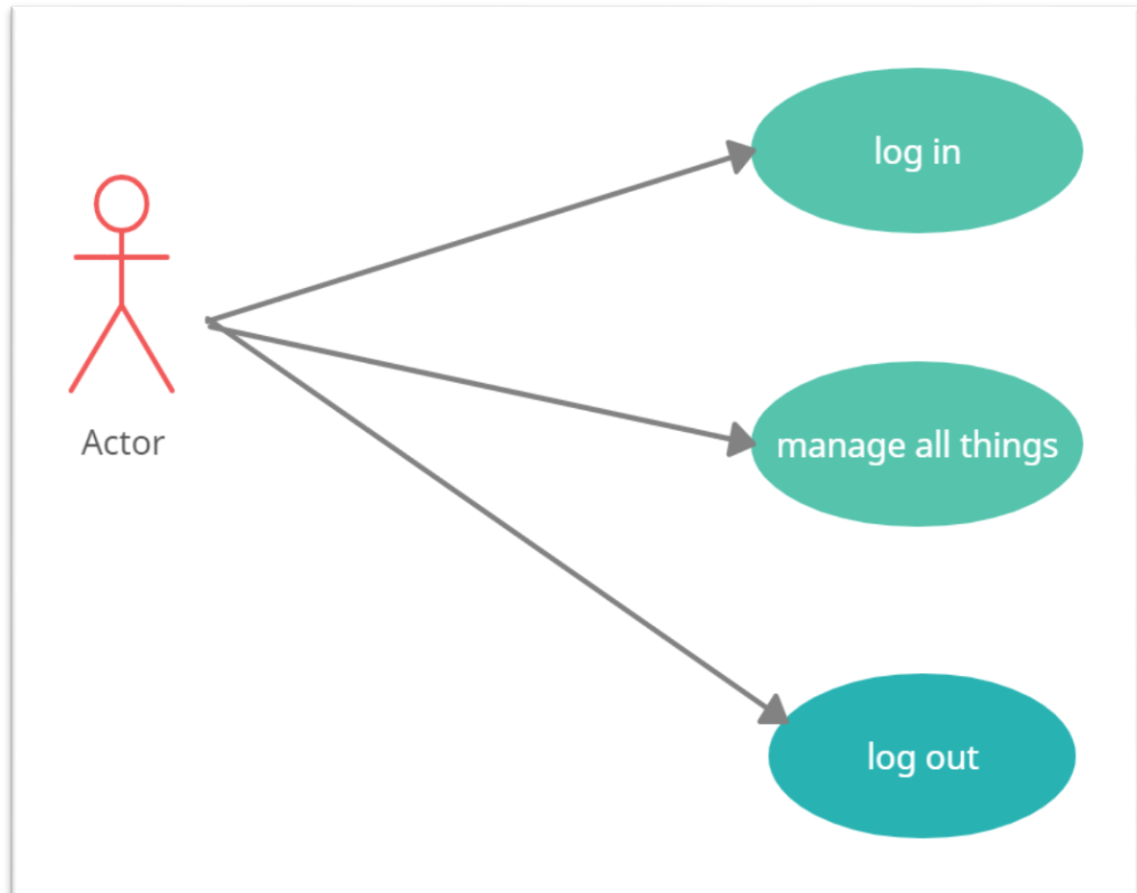


Figure 3.2.2: Use Case of the Admin

This use case describes the process of scheduling a counseling session between a teacher and a student.

Preconditions:

- The teacher, administrator, and student must be logged into the system.
- The teacher must have available time slots for counseling sessions.
- The student must select a teacher and subject for the counseling session.
- Flow of Events:

- The teacher or administrator accesses the scheduling interface.
- The system displays available time slots for counseling sessions.
- The teacher selects an available time slot for the counseling session.
- The system prompts the teacher to select the student for the session.
- The teacher selects the student from a list of registered students.
- The system confirms the scheduling of the counseling session and notifies the student.
- The student receives a notification about the scheduled counseling session.
- The student confirms the appointment.

Alternative Flow (if the selected time slot is unavailable):

- The system informs the teacher that the selected time slot is unavailable.
- The teacher selects another available time slot.
- The flow continues from step 4 of the main flow.

Postconditions:

- The counseling session is scheduled successfully.
- Both the teacher and student receive confirmation of the scheduled session.

This use case illustrates how a teacher or administrator can schedule counseling sessions for students in the "DIU Counseling Hour Management System" project. It outlines the steps involved, including selecting available time slots, choosing the student, and confirming the appointment.

3.3.1 Use Case of Admin:

Actor: Admin

Use Case 1 for Sign In:

The administrator holds the highest authority within the application. To access their full privileges, the individual must log in with the correct email ID and password.

Use Case 2 for Control everything:

Only the administrator has the capability to manage all aspects of this application.

Use case 3: Sign Out:

Once the administrator completes their tasks, they should return to the homepage. Upon entering their name, it will appear in the top right corner, and a logout button will appear when they click on their profile. Logging out will redirect them to the main page.

Violation: Incorrect Email & Password

3.3.2 Use Case of Student:

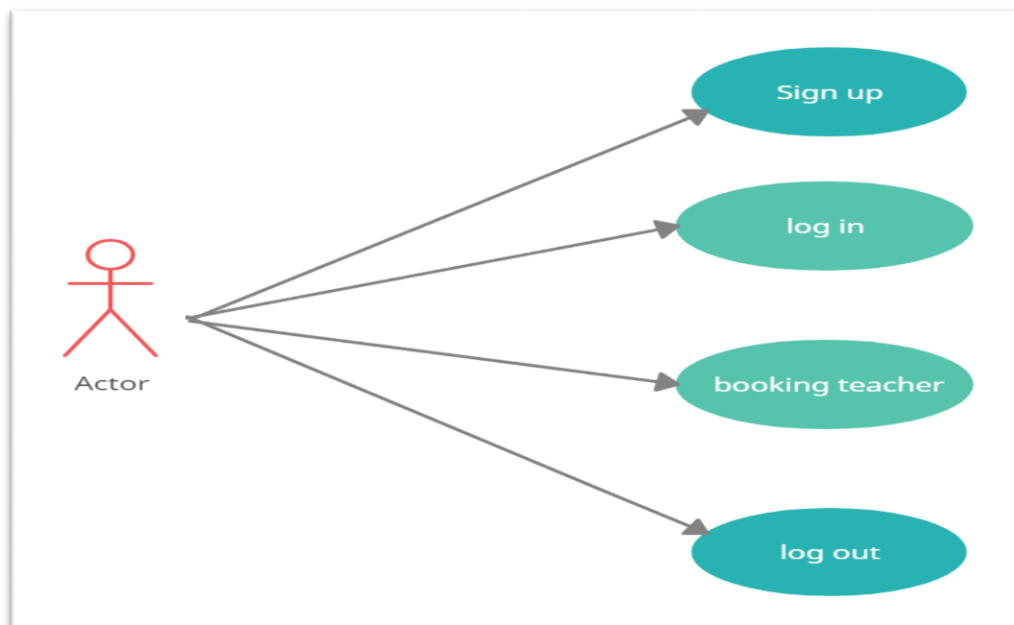


Figure 3.2.3: Use Case of the Student

Actor: Student

Use Case 1 for sign up:

Students are required to register with accurate information.

Use Case 2 for sign in:

Once students complete their registration, they should be able to log in to the system using the correct information provided during enrollment. Upon successful login, students gain access to their dashboard, where they can receive updates on posts.

Use Case 3 for booking teacher:

Students can schedule appointments with teachers remotely, without the need for physical presence.

Use Case 4 for Log Out:

When a student completes their tasks, they should return to the homepage. Upon entering their personal information, their name will appear in the top right corner, and a logout button will appear for them to log out.

3.3.3 Use Case of Teacher:

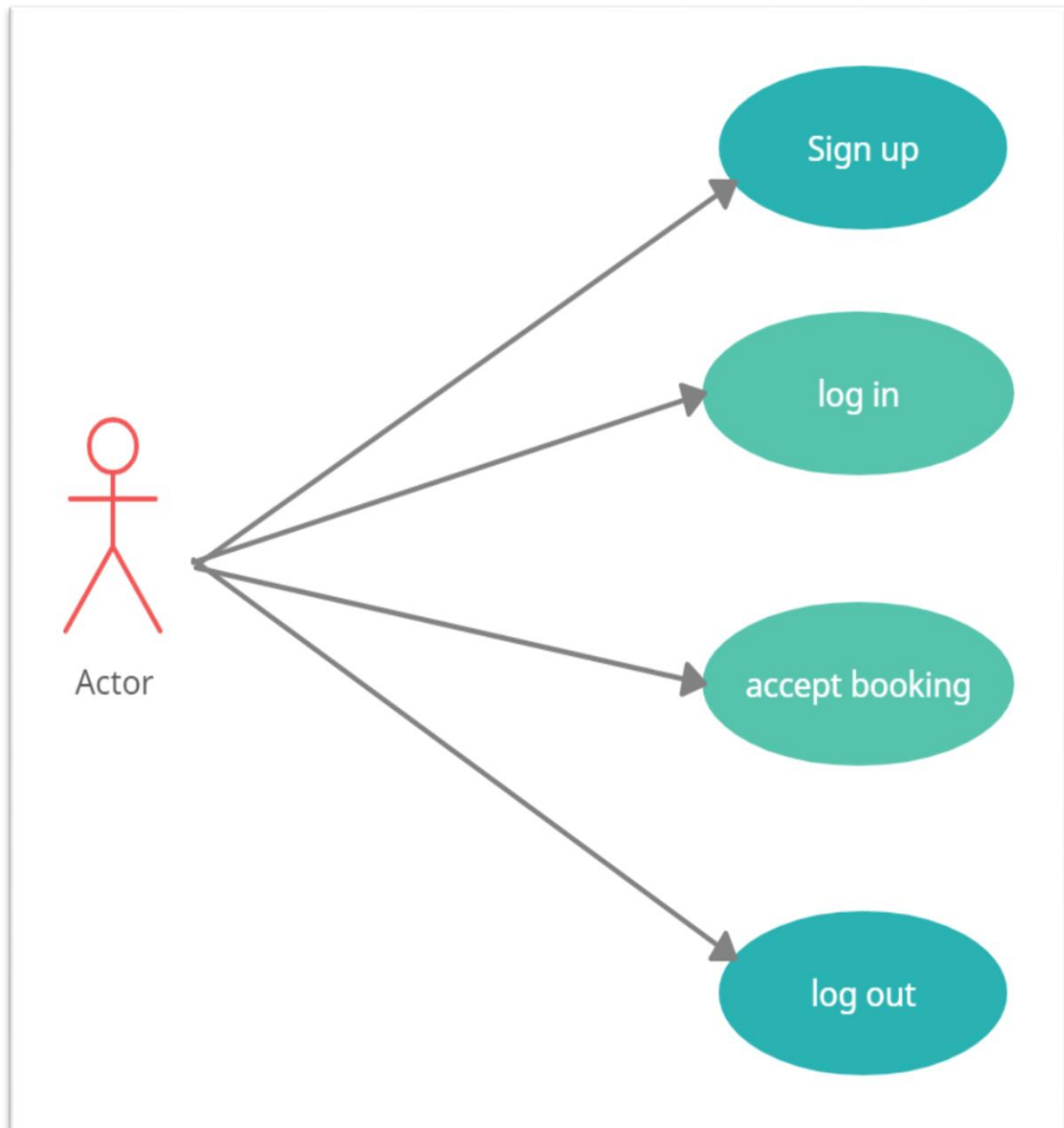


Figure 3.2.4: Use Case of the Teacher

Actor: Teacher

Use Case 1 for sign up:

Teachers are required to register with accurate information.

Use Case 3 for booking teacher:

When a teacher wishes to use the system, they must first complete the registration process. After registration, they can log in to the system using the login credentials they provided during registration. Upon logging in, the teacher will be able to view new updates in their dashboard. Additionally, teachers have the ability to accept or reject student requests within the system.

Use case 4 for Log Out:

Once the teacher has completed their tasks, they should return to the homepage. By clicking on their name, they will see it displayed in the top right corner, where a logout button will appear.

3.4 Logical Data Model

3.4.1 Class Diagram:

It illustrates conditions/standards that can be utilized to assess the behavior of a system rather than the functionality of a system. Non-functional requirements typically concentrate on how well the system performs, often measuring response times, data volumes, and security considerations. It is argued that non-functional requirements are more critical than functional requirements because if these are not met, then the system would be essentially useless. A non-functional requirement is also a type of necessity. The key non-functional requirements of an online system intended for Student Examination Management, which were identified, are presented below in the table.

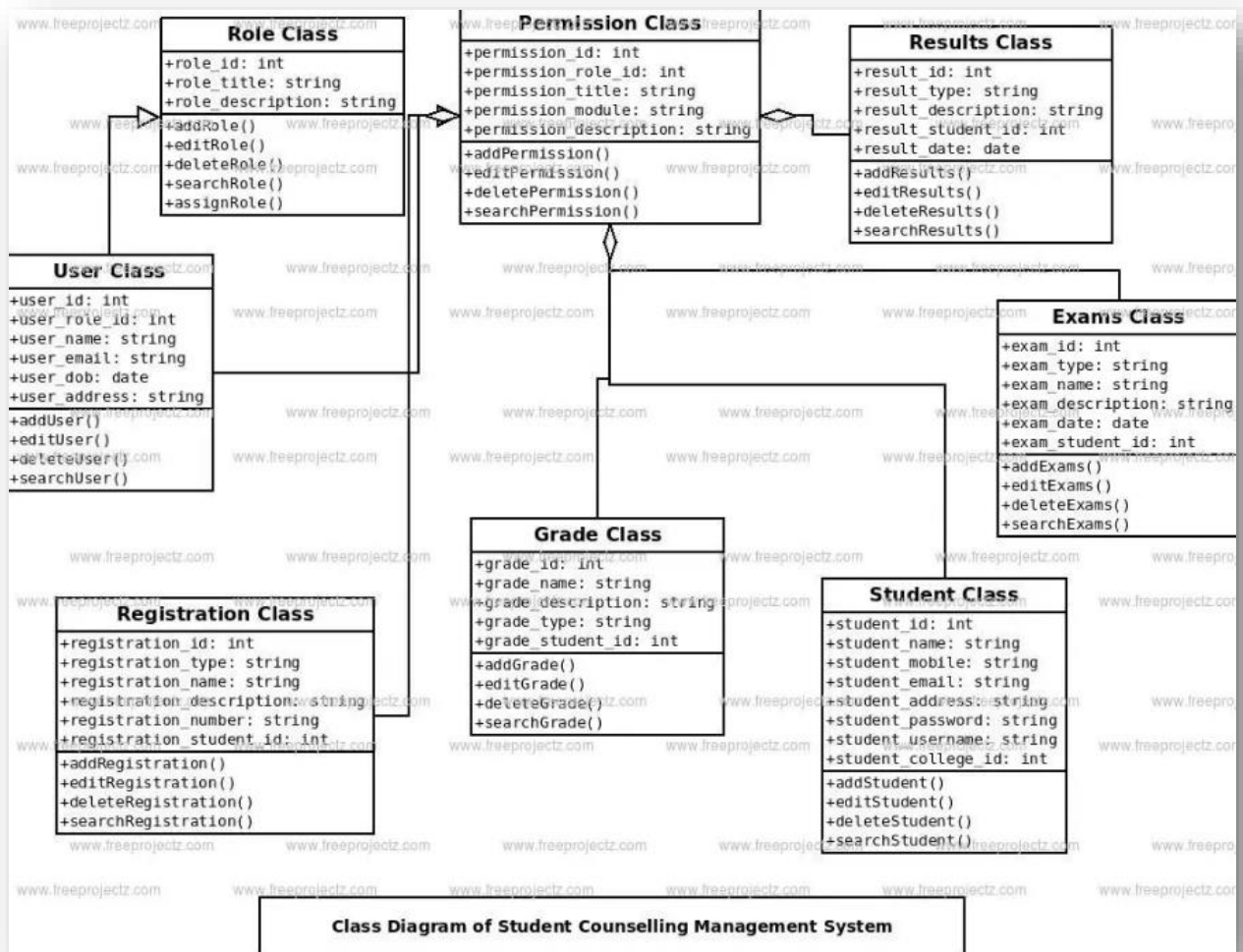


Figure 3.3.1 Class Diagram

3.4.2 ER Diagram:

A basic ER model includes entities called entities and specifies the relationship between them. Entities have attributes such as name, category, ID, etc. An entity can represent various things such as a human, an animal, a plant, an event, or an occurrence. Entities, along with attributes, form entity sets. These sets of fundamental entities establish specific relationships among themselves, creating a relational structure. These relationships are typically one-to-one or one-to-many. For example, a department and employee may have "one-to-many" relationships, meaning that one department may have multiple employees, of which only one employee is related to one supervisor.

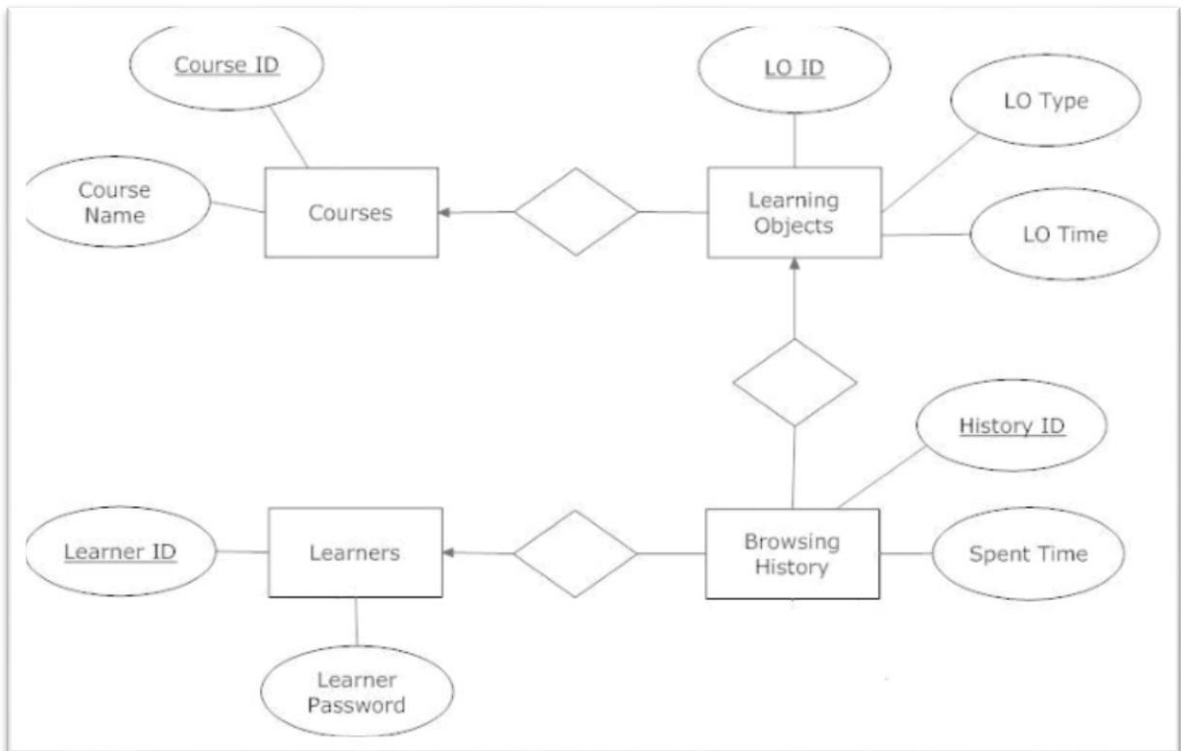


Figure 3.3.2 ER Diagram

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end Design

```
1 <!doctype html>
2 <html>
3 <head>
4 <meta charset="UTF-8">
5 <title>index.html</title>
6 </head>
7
8 <body>
9 <div class="carousel">
10 <div class="carousel_control">
11 </div>
12 <div class="carousel_stage">
13 <div class="spinner spinner--left">
14 <div class="spinner__face js-active" data-bg="#27323c">
15 <div class="content" data-type="iceland">
16 <div class="content__left">
17 <h1>ICELAND</span><span>EUROPE</span></h1>
18 </div>
19 <div class="content__right">
20 <div class="content__main">
21 <p>As I flew north to begin my third circuit of Iceland in four years, I was slightly anxious. The number of visitors to Iceland has doubled in that period, and I
22 feared this might mean a little less magic to go around. At the end of this trip, 6889w later, I'm thrilled to report that the magic levels remain high. It's found
23 in glorious football victories and Viking chants, kayaking among icebergs, sitting with puffins under the midnight sun and crunching across brand-new lava fields.</p>
24 <p>Carolyn Bain</p>
25 <h3 class="content__index">01</h3>
26 </div>
27 </div>
28 <div class="spinner__face" data-bg="#19384a">
29 <div class="content" data-type="china">
30 <div class="content__left">
31 <h1>CHINA</span><span>ASIA</span></h1>
32 </div>
33 <div class="content__right">
34 <div class="content__main">
35 <p>Its modern face is dazzling, but China is no one-trick pony. The world's oldest continuous civilisation isn't all smoked glass and brushed aluminium and while
36 you won't be tripping over artefacts – three decades of round-the-clock development and cash town-planning have taken their toll – rich scenes of antiquity
37 await.</p>
38 <p>Damian Harper</p>
39 <h3 class="content__index">02</h3>
40 </div>
41 </div>
42 <div class="spinner__face" data-bg="#2b2533">
43 <div class="content" data-type="usa">
44 <div class="content__left">
45 <h1>USA</span><span>NORTH AMERICA</span></h1>
46 </div>
47 <div class="content__right">
48 <div class="content__main">
49 <p>When it comes to travel, America has always floored me with its staggering range of possibilities. Not many other countries have so much natural beauty –
50 mountains, beaches, rainforest, deserts, canyons, glaciers – coupled with fascinating cities to explore, an unrivalled music scene and all the things that make travel
51 so rewarding (friendly locals, great restaurants and farmers markets, and plenty of quirky surprises).</p>
52 <p>Regis St Louis</p>
53 <h3 class="content__index">03</h3>
54 </div>
55 </div>
56 <div class="spinner__face" data-bg="#312f2d">
57 <div class="content" data-type="peru">
58 <div class="content__left">
59 <h1>PERU</span><span>SOUTH AMERICA</span></h1>
60 </div>
61 <div class="content__right">
62 <div class="content__main">
63 <p>For me, Peru is the molten core of South America, a distillation of the oldest traditions and the finest building, weaving and art made by the most sophisticated
64 cultures on the continent. In Peru the wildest landscapes – from frozen Andean peaks to the deep Amazon – help us re-forge our connection to the natural world. It is
65 also a cultural stew, where diverse peoples live side by side, negotiating modern life with humor and aplomb. Beyond that, the cuisine alone makes it worth the trip.
66 Every return is rich and surprising.</p>
67 <p>Carolyn McCarthy</p>
68 <h3 class="content__index">04</h3>
69 </div>
70 </div>
71 </div>
72 </div>
73
74 <!-- Poor man's preload! -->
75 <div style="height: 0; width: 0; overflow: hidden">
76 
77 </div>
79 </body>
80 </html>
body div carousel div carousel_stage div spinner.spinner--left div spinner_face.js-active
HTML INS 14:68
```

Figure 4.1.1: Front-End Code

4.2 Back-end Design

```
web.php x
routes > web.php
1 <?php
2
3 /*
4 |-----
5 |                               Web & Setup Routes
6 |-----
7 */
8
9
10 Route::get('/install', 'FrontendController@install');
11 Route::get('/clear', 'FrontendController@clear');
12 Route::get('/', 'FrontendController@indexpage')->name('frontEndRoot');
13 Route::get('/dashboard', function () { return redirect (route('user.dashboard')); });
14 Route::get('/admin', function () { return redirect (route('admin.dashboard')); });
15 Route::get('/home', function () { return redirect (route('user.dashboard')); });
16
17 /*
18 |-----
19 |                               Auth Routes
20 |-----
21 */
22 Auth::routes();
23 Route::get('logout', '\App\Http\Controllers\Auth\LoginController@logout');
24 // Route::get('register', 'Auth\RegisterController@showRegistrationForm')->name('register');
25 Route::get('password/reset', 'Auth\ForgotPasswordController@showLinkRequestForm');
26 Route::get('password/reset/{token}', 'Auth\ResetPasswordController@showResetForm');
27
28
29
30 /*
31 |-----
32 |                               Admin Routes
33 |-----
34 */
35
36 Route::group(['as'=>'admin.', 'prefix' => 'admin', 'namespace' => 'Admin', 'middleware' =>['auth', 'admin']], function() {
37
```

```
Route::group(['as'=>'admin.', 'prefix' => 'admin', 'namespace' => 'Admin', 'middleware' =>['auth', 'admin']], function() {
    Route::get('dashboard', 'DashboardController@index')->name('dashboard');
    Route::get('password/change', 'ProfileController@passChange')->name('change.password');
    Route::post('password/change', 'ProfileController@passChangeReq')->name('change.password');
    Route::get('settings', 'SiteSettingsController@index')->name('settings');
    Route::post('settings-update', 'SiteSettingsController@store')->name('settings.store');

    Route::get('show/all_teachers', 'DashboardController@showDoctorAll')->name('showAllDoctor');
    Route::get('show/all_user', 'DashboardController@showAllUser')->name('showAllUser');
    Route::get('show/all_student', 'DashboardController@showAllNurse')->name('showAllNurse');

    Route::get('/delete/user/{id}', 'DashboardController@destroy')->name('deleteUser');
    Route::get('/delete/teacher/{id}', 'DashboardController@destroy_teacher')->name('deleteDoctor');

});

Route::group([
    'namespace' => '\Haruncpi\LaravelLogReader\Controllers',
    'middleware' => ['auth', 'admin']
], function () {
    Route::get(config('laravel-log-reader.view_route_path'), 'LogReaderController@getIndex');
    Route::post(config('laravel-log-reader.view_route_path'), 'LogReaderController@postDelete');
    Route::get(config('laravel-log-reader.api_route_path'), 'LogReaderController@getLogs');
});

/*
|-----
|                               Booking Routes
|-----
*/
Route::get('/status-change/{id}', 'BookingController@statusChangeForBooking')->name('statusChangePage');
Route::post('status change', 'BookingController@bookingsStatusStore')->name('statusChangeOpt');
```

Figure 4.2.1: Code of the project

```

86
87     Route::get('/view/department', 'CategoryController@view')->name('showCategory');
88     Route::get('/department/delete/{id}', 'CategoryController@delete')->name('deletecategory');
89     Route::get('/department/add', 'CategoryController@index')->name('addcategory');
90     Route::post('store-category', 'CategoryController@store');
91
92     /*
93     |-----
94     | Teacher as Doctor Routes
95     |-----
96     */
97     Route::group(['as'=>'doctor.', 'prefix' => 'teacher', 'namespace' => 'Doctor', 'middleware' =>['auth', 'doctor']], function() {
98
99         Route::get('dashboard', 'DashboardController@index')->name('dashboard');
100        Route::get('profile/settings', 'DashboardController@profile_seetings')->name('doctorProfileSeetings');
101        Route::post('profile/update/pic', 'DashboardController@updateProfilePic')->name('update.profile_pic');
102        Route::post('profile/update', 'DashboardController@profileSettings')->name('upadateprofileSeetings');
103
104    });
105
106    Route::get('/change-password', 'CustomAuthController@passwordChange')->name('password.change');
107    Route::post('/change-password', 'CustomAuthController@FormPassChange')->name('passwordFrom');
108    Route::get('/custom/login', 'CustomAuthController@showPage')->name('customDoctorLogin');
109    Route::post('custom-login', 'CustomAuthController@login');
110    Route::get("teacher/register", "TeacherController@signUpForm")->name("doctorSignUpForm");
111    Route::post("doctor/signup", "TeacherController@signUpFormSubmit")->name("doctorSignUpFormSubmit");
112
113    Route::get('profile/{username}', 'ProfileController@show')->name('profile.show');
114
115    // New Code Start
116    Route::get('/teacher/counseling_hour/schedule/show', 'ScheduleController@index')->name('showSchedule');
117    Route::post('schedule/post', 'ScheduleController@store')->name('schedulePost');
118    Route::get('/schedule/delete/{id}', 'ScheduleController@delete')->name('deleteSchedule');
119
120
121    // Teacher Appointment Booking Action
122

```

Figure 4.2.2: Code of the project

All our executed code is organized in switch records, which are compiled in the courses inventory. The courses/web.php file delineates routes specifically designed for web page interactions. These routes are assigned the web middleware group, which provides functionalities like session management and CSRF protection.

Broadly, there are two types of methods: GET and POST. The GET method is typically used for passing data of long string type in the server log, visible in the browser's address bar. However, the limitation of the GET method is that it can only send up to 1024 characters. Another constraint of the GET method is its unsuitability for transmitting sensitive data such as passwords or any binary data like images or word documents to the server. This method employs the QUERY_STRING environment variable.

On the other hand, the POST method transfers data primarily through the HTTP header. Unlike the GET method, the POST method can transmit both ASCII and binary data. It does not have any data transmission limitations. The POST method is suitable for sending sensitive information like passwords, bank account transaction details, and other similar data to the server.

Below are some images showcasing the user interface of our web application:

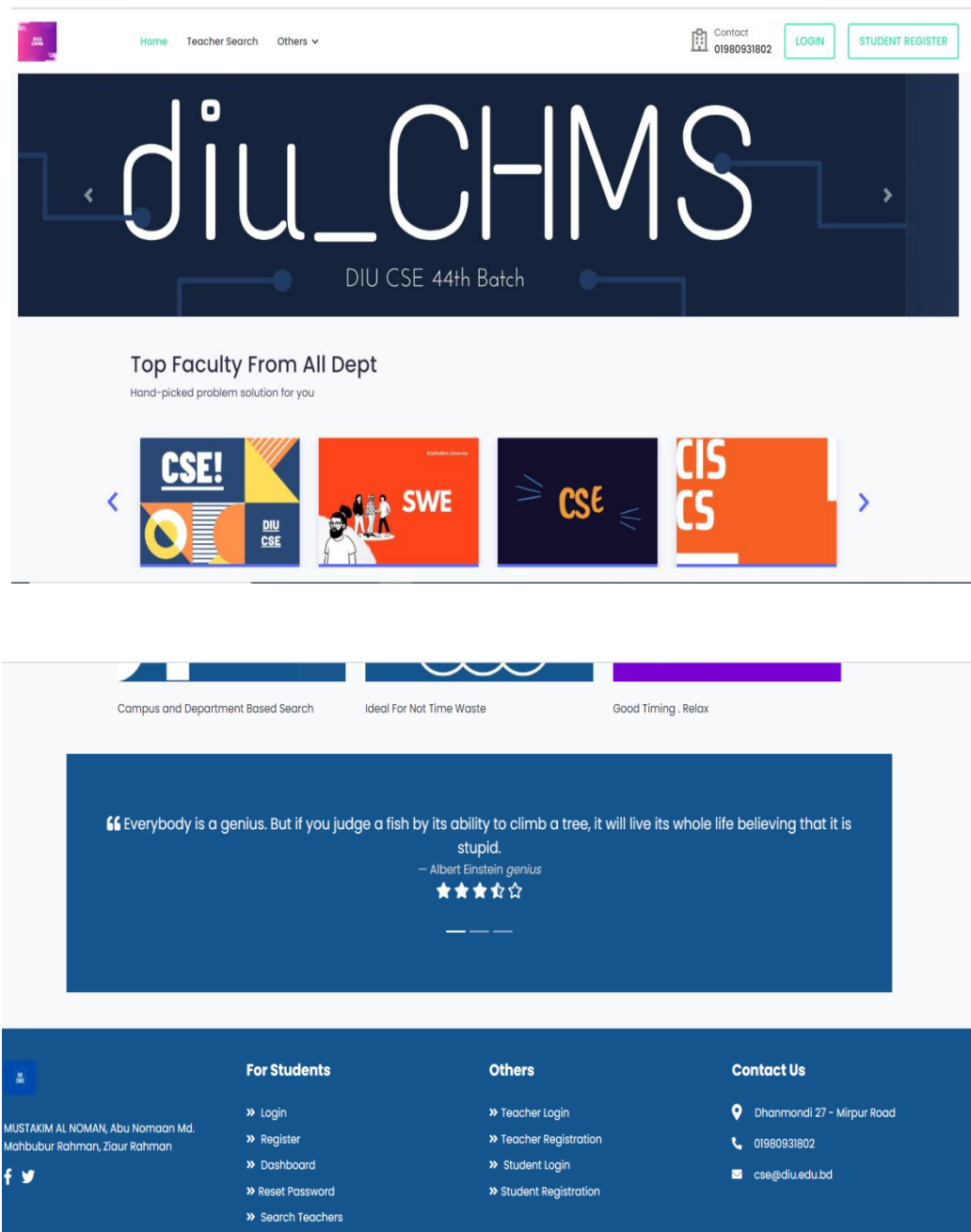


Figure 4.2.3: Back End

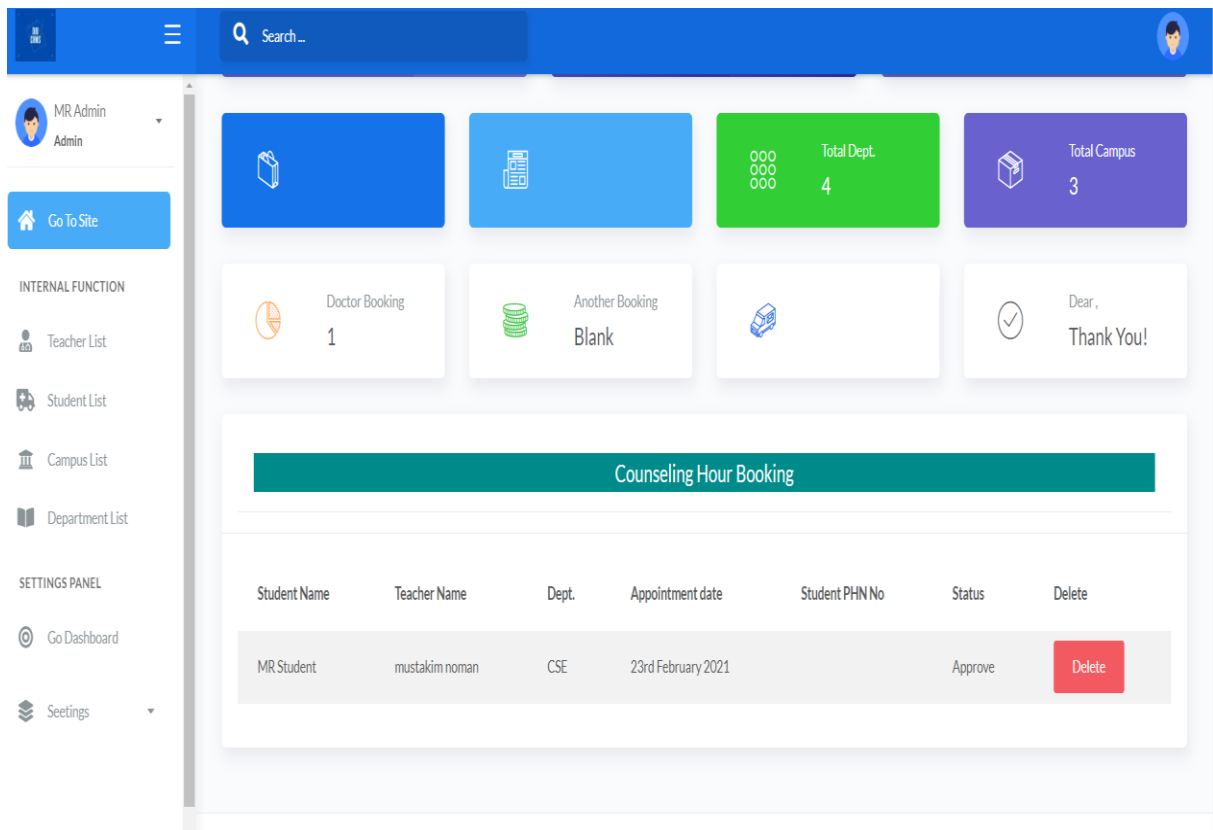


Figure 4.2.4: Back End

4.3 Interaction Design and User Experience (UX)



Figure 4.3.1 UX of home page

4.4 Implementation Requirement

Based on the database image, we observed several data tables containing information for administrators, students, and teachers, facilitating login, registration, and counseling appointment statuses. The data tables are organized according to department and campus categories. Appointments are scheduled with time slots to enhance user convenience while using the system.

Chapter-5

IMPLEMENTATION AND TESTING

5.1 Implementation of DataBase

Ensuring project integrity is crucial, and we will diligently oversee the entire project to ensure its smooth progression. By implementing this framework, we can effectively track down any bugs or errors and address them promptly. Software testing primarily aims to identify and eliminate bugs to ensure the proper functioning of the application. There are several well-known methods for detecting bugs in an application, and these bug-fixing techniques are essential for the application's success. By employing these methods, we can gain a clear understanding of the bugs and determine the necessary adjustments to fix them. Following this, we will conduct beta testing and re-evaluate the system to identify any remaining bugs.

This process can be divided into two main areas: the user interface (UI) and the backend infrastructure. The UI represents the user-facing aspect, while the backend consists of the underlying code and databases, such as Laravel and MySQL. The PHP-based website is powered by MySQL data and operations. The diagram illustrates the interaction between the client and server-side components. We discussed this in detail in the previous section (2).

Here are some sample of data base

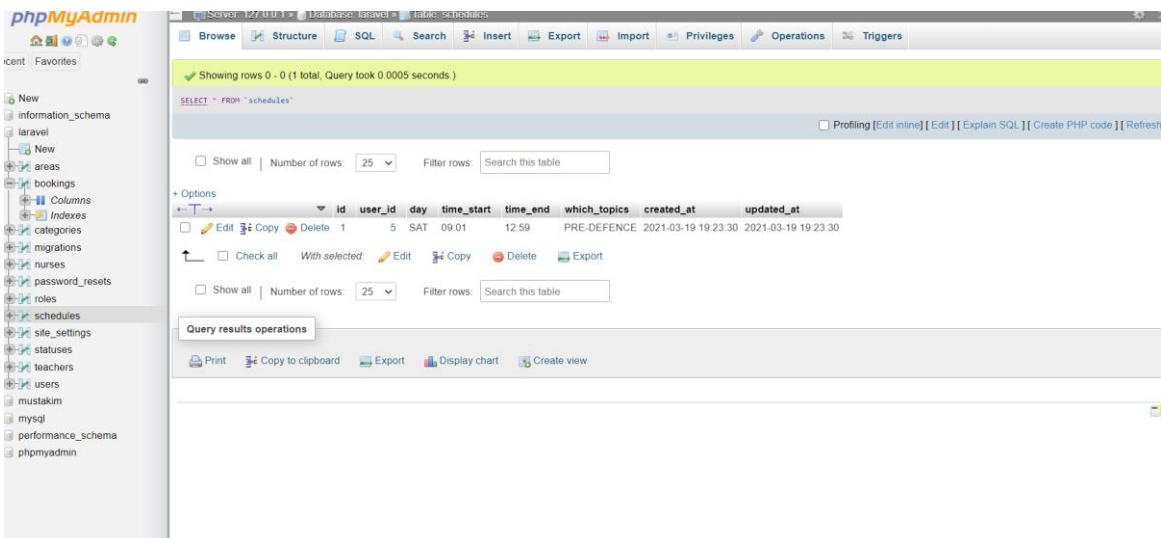
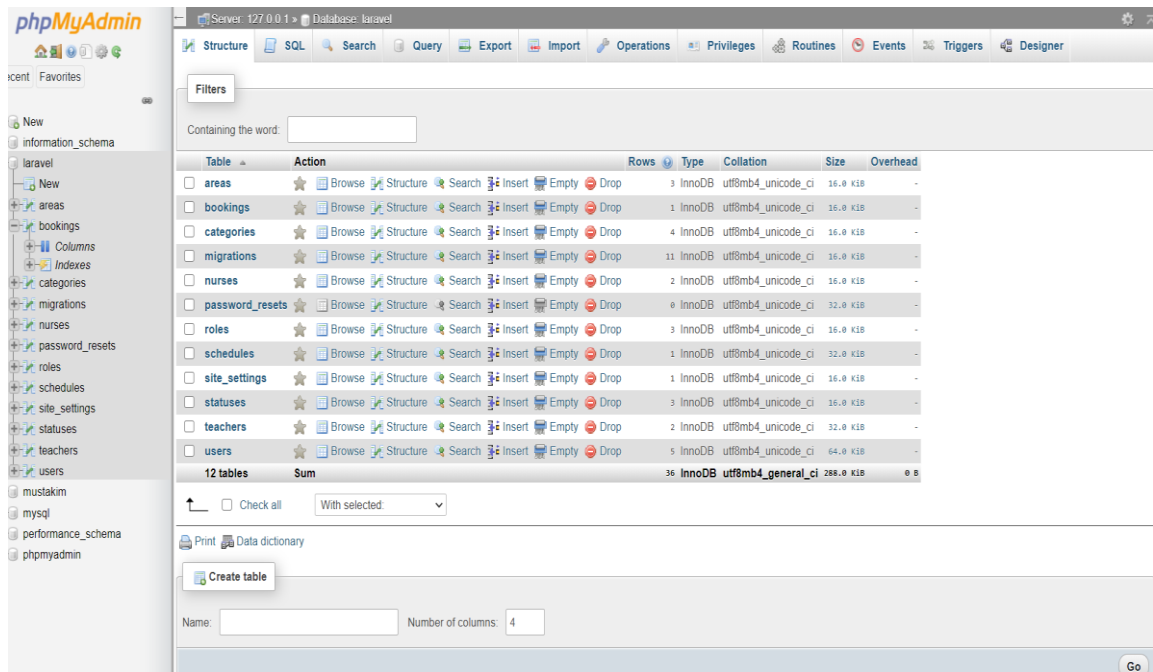


Figure 5.1.1: Implementation of Database

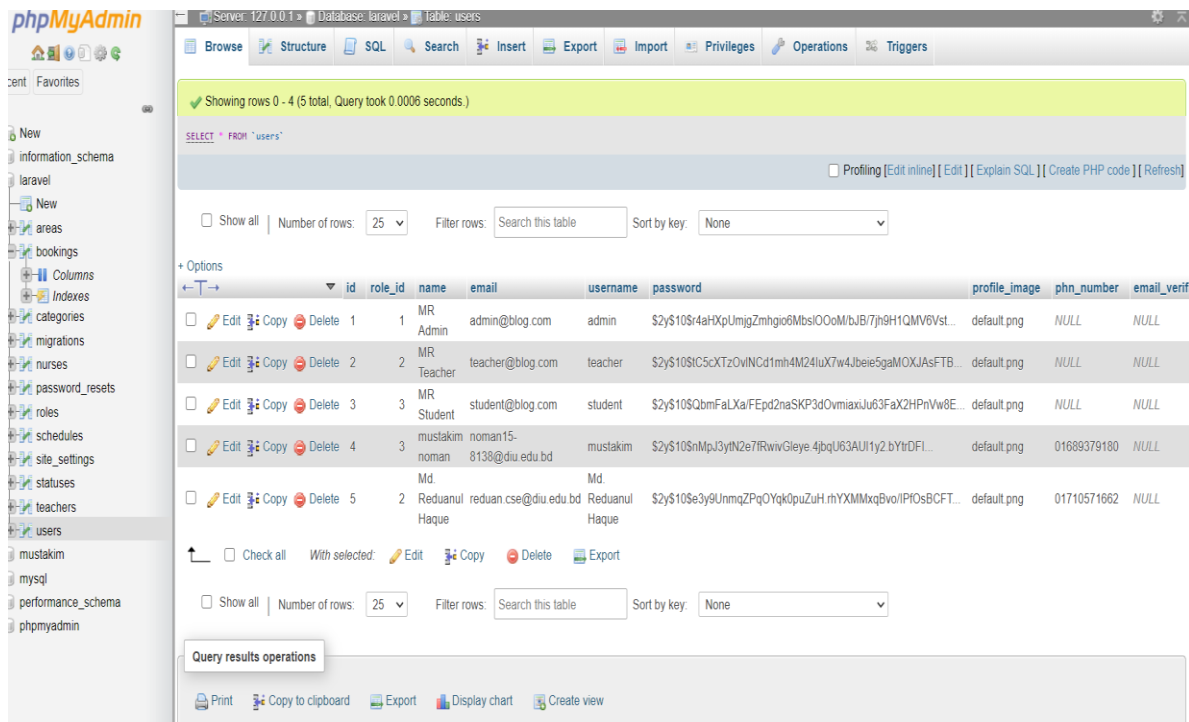
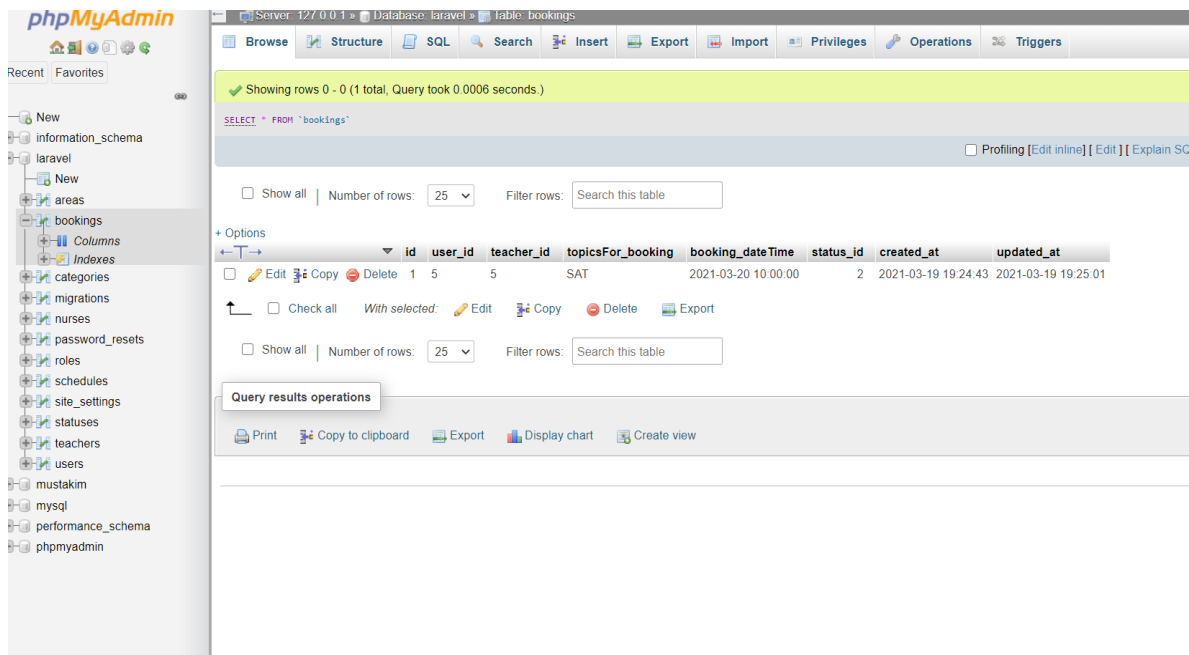
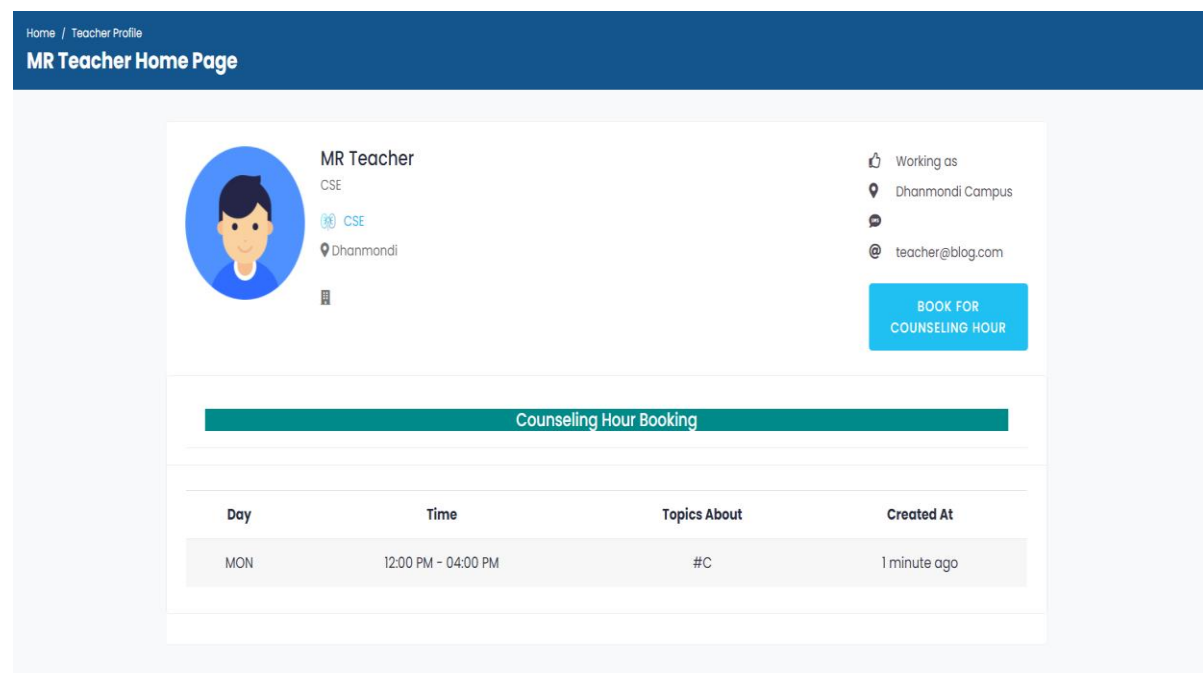


Figure 5.1.2: Implementation of Database

5.2 Implementation of Front-End Design

In our country, virtual education has become increasingly prevalent, necessitating the development of a user-friendly platform to ensure students' comfort. To achieve this, we have created a straightforward UI for the project, making it accessible to all users. The system includes an admin panel for comprehensive management. Both students and teachers can register using the registration form, providing their email and password to gain access. Upon logging in, teachers can update their counseling hours and subjects, visible to students on their dashboard. Students can search for teachers based on campus and department, viewing available appointments and requesting appointments with specific teachers. These requests are visible on the teacher's dashboard, where they can accept, reject, or leave them pending. Once a teacher accepts a student's appointment request, they can hold a meeting. Given the current pandemic situation, where education heavily relies on online platforms, this counseling hour management system is crucial for providing students with proper guidance. Below are some screenshots of the project to illustrate the application's UI.



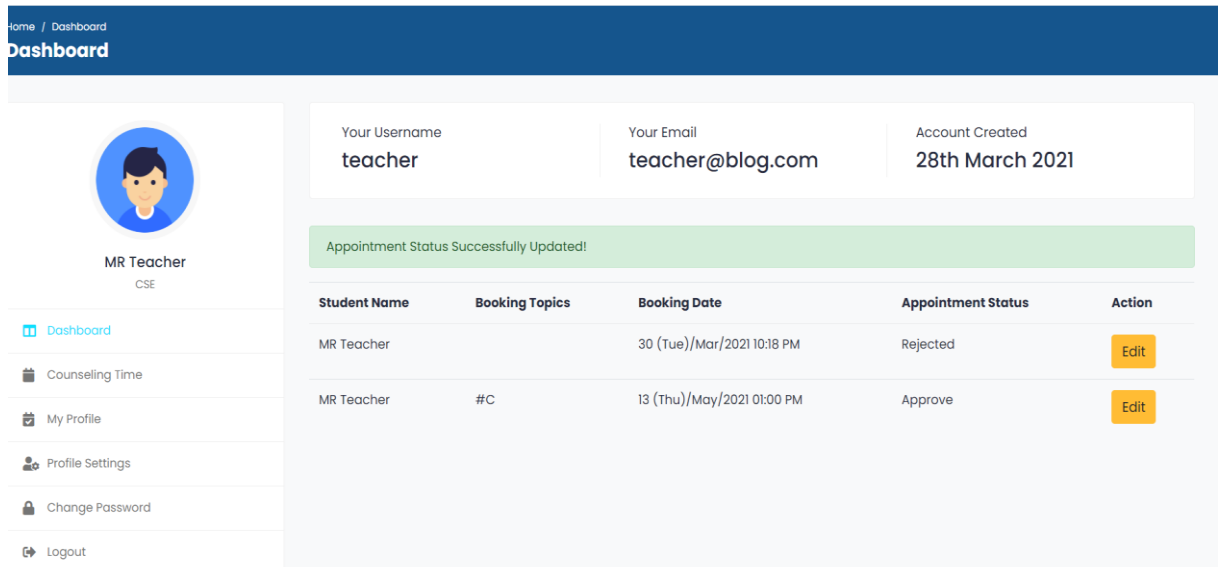


Figure 5.2.1: Interface

5.3 Testing Implementation

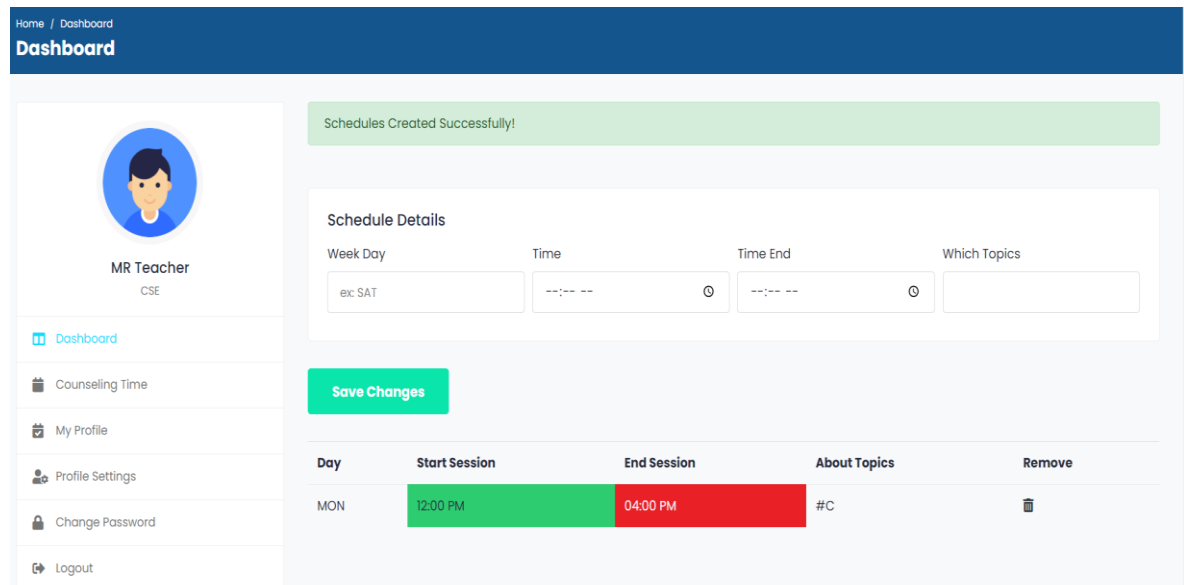


Figure 5.3.1: Testing Implementation

CHAPTER 6

IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY

6.1 Impact on Society

The impact of the project on society is significant, especially considering the current educational landscape heavily reliant on online platforms due to the COVID-19 pandemic. By providing a user-friendly counseling hour management system, the project facilitates seamless communication between students and teachers, ensuring students receive proper guidance despite the challenges posed by the pandemic.

Accessibility: The project ensures accessibility to educational resources and guidance irrespective of physical limitations. Students can easily schedule appointments with teachers, fostering a conducive learning environment regardless of location or mobility constraints.

Academic Support: The system enhances academic support by streamlining the appointment scheduling process and enabling effective communication between students and teachers. This promotes personalized guidance and support tailored to individual student needs, ultimately improving academic performance and success rates.

Mental Health and Well-being: Access to counseling and guidance services is essential for students' mental health and well-being, particularly during challenging times. The project provides a platform for students to seek assistance and support from teachers, thereby promoting mental health awareness and resilience within the educational community.

Adaptability and Resilience: By embracing technology and innovation, the project demonstrates adaptability and resilience in addressing the evolving needs of the education sector. It sets a precedent for integrating digital solutions into education, paving the way for future advancements in online learning and counseling services.

6.2 Impact on Environment

Reduced Carbon Emissions: By enabling counselors and clients to conduct counseling sessions remotely via the internet, the need for travel to physical counseling locations is minimized or eliminated. This reduction in commuting and associated transportation emissions can lead to a significant decrease in carbon dioxide and other greenhouse gas emissions.

Energy Conservation: Conducting counseling sessions online requires significantly less energy compared to operating physical counseling offices or clinics. This is because online sessions do not require heating, cooling, lighting, or other energy-intensive activities associated with maintaining physical spaces. Therefore, the system contributes to energy conservation and reduces the overall environmental footprint.

Resource Efficiency: The efficient management of counseling hours and appointments facilitated by the web application can lead to better resource utilization. This includes the optimization of counselor time, reduction in office space requirements, and minimization of resource waste associated with inefficient scheduling practices. By maximizing resource efficiency, the project helps conserve natural resources and minimizes environmental impact.

6.3 Ethical Aspects

Several ethical considerations arise when developing and implementing a Counseling Hour Management System. Here are some key ethical aspects to consider:

Confidentiality and Privacy: Ensuring the confidentiality and privacy of client information is paramount. Counselors have a duty to protect the sensitive information shared during counseling sessions. Implement robust security measures to safeguard data, including encryption, access controls, and secure data storage practices.

Informed Consent: Obtain informed consent from clients before collecting and storing their personal information. Clients should be fully informed about how their data will be used, who will have access to it, and the measures in place to protect their privacy. Respect client autonomy and provide them with the opportunity to consent or decline participation in the system.

Data Security and Protection: Implement comprehensive data security measures to prevent unauthorized access, disclosure, or misuse of client information. Regularly update security protocols and conduct audits to identify and address potential vulnerabilities. Comply with relevant data protection laws and regulations, such as GDPR or HIPAA, depending on the jurisdiction and nature of the counseling services provided.

Cultural Sensitivity and Diversity: Respect cultural differences and diversity among clients. Ensure that the system is inclusive and culturally sensitive, taking into account the unique backgrounds, beliefs, and values of clients. Provide counseling services in a manner that respects cultural norms and promotes cultural competence among counselors.

Professional Boundaries: Maintain clear and appropriate boundaries between counselors and clients within the online platform. Avoid engaging in dual relationships or conflicts of interest that could compromise the integrity of the counseling relationship. Establish guidelines for ethical conduct and professional behavior within the system.

Quality of Care: Ensure that the Counseling Hour Management System enhances the quality of care provided to clients. Prioritize the well-being and interests of clients in all aspects of system design and implementation. Monitor and evaluate the effectiveness of the system in meeting the needs of clients and counselors, making adjustments as necessary to improve service delivery.

Accountability and Transparency: Foster a culture of accountability and transparency within the organization responsible for operating the system. Hold counselors and administrators accountable for their actions and decisions related to the use of the system. Provide clients with transparent information about how the system operates and how their data is managed.

Continuous Professional Development: Encourage ongoing professional development and training for counselors involved in the project. Stay informed about emerging ethical issues, best practices, and developments in the field of counseling and technology. Foster a commitment to ethical conduct and continuous improvement among all stakeholders.

6.4 Sustainability Plan

Developing a sustainability plan for the Counseling Hour Management System involves identifying strategies to ensure the project's long-term viability, effectiveness, and positive impact. Here's a comprehensive sustainability plan for the project:

Financial Sustainability:

Establish a revenue model to cover operational expenses and ensure the project's financial sustainability. This may include subscription fees for counselors, pay-per-use models for clients, or partnerships with organizations willing to sponsor counseling services.

Continuously monitor and evaluate the financial performance of the project, adjusting pricing strategies or seeking additional funding sources as needed to maintain sustainability.

Technical Sustainability:

Adopt scalable and adaptable technology infrastructure to accommodate growth and changing needs over time.

Regularly update and maintain the software and hardware components of the system to ensure compatibility, security, and reliability.

Implement backup and disaster recovery protocols to protect against data loss and system downtime.

Environmental Sustainability:

Continue promoting the use of online counseling services to reduce carbon emissions and environmental impact associated with traditional in-person counseling.

Implement energy-efficient practices in data centers and server operations to minimize energy consumption.

Encourage remote work and virtual meetings to reduce the need for office space and transportation, further contributing to environmental sustainability.

Social Sustainability:

Foster partnerships with mental health organizations, universities, and community groups to expand access to counseling services and promote mental well-being.

Provide training and support for counselors to ensure they maintain high standards of care and ethical conduct within the system.

Promote diversity and inclusion within the counseling community, ensuring that the system is accessible and culturally sensitive to individuals from diverse backgrounds.

Legal and Regulatory Compliance:

Stay informed about relevant laws, regulations, and industry standards related to data privacy, security, and healthcare practices.

Maintain compliance with data protection regulations such as GDPR, HIPAA, or other applicable laws governing the handling of sensitive client information.

Regularly audit and review policies and procedures to ensure ongoing compliance with legal and regulatory requirements.

Community Engagement and Feedback:

Establish mechanisms for gathering feedback from clients, counselors, and other stakeholders to continuously improve the system's functionality and user experience.

Engage with the community through outreach efforts, educational programs, and awareness campaigns to promote the benefits of counseling and mental health support.

Encourage active participation and collaboration among users to foster a sense of ownership and community around the project.

Evaluation and Monitoring:

Develop key performance indicators (KPIs) and metrics to track the project's progress toward sustainability goals.

Conduct regular evaluations and assessments of the project's impact on environmental, social, and economic factors.

Use feedback and data insights to inform strategic decision-making and prioritize initiatives that support long-term sustainability.

Chapter 7

CONCLUSION AND FUTURE SCOPE

7.1 Discussion and Conclusion

The Counseling Hour Management System provides an effective means to store and evaluate student counseling interactions in a digital automated system. It offers alerts to counselors regarding any abnormal or distressed students, whether due to mental/emotional or academic stress. With this system, teachers can take necessary action and notify the guardians or parents about their child's situation. The prevalence of online education platforms during the pandemic has prompted the development of our Counseling Hour Management System to support online educational endeavors. Notably, our system's design includes innovative features not currently available, aiming to enhance user experience. We have incorporated multiple unique components, such as teachers updating their status in their dashboard, visible to students, who can then send appointment requests based on the teacher's availability. Teachers have the option to accept, reject, or leave appointment requests pending. Students can specify the appointment subject, date, and time in their request. Our development team has carefully planned and executed the implementation of essential features within a suitable timeframe, ensuring the successful completion of the project according to the specifications outlined.

7.2 Scope for Further Developments

In our current system implementation, we have plans to introduce several unique features in the near future. One such feature is an online module that allows teachers to send meeting invitations to both students and their parents. The system will provide a meet link through which students can connect with the teacher after scheduling an appointment. Additionally, we aim to implement a chat feature where teachers and students can communicate with the admin in case they encounter any issues with registration or login to the system. This feature is scheduled for implementation in the upcoming development phases.

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