

**WEB APPLICATION FOR**  
**HUMAN MENTAL TREATMENTS AND COUNSELLING**

By

K.A.Ashen Shanuka

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**A report submitted in partial fulfilment of the requirements for the degree of Bachelor  
of Science Honors in Information Technology  
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**Name of the Supervisor: Prof. Janaka Wijayanayake**

Department of Industrial Management

Faculty of Science

University of Kelaniya

Sri Lanka

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## **ABSTRACT**

The website development project aims to create a platform that connects professional counsellors with clients seeking mental health support. The website will be designed to provide a user-friendly interface for both counsellors and clients to interact with each other.

The web site will utilize advanced algorithms to match clients with the most suitable counsellors based on their preferences and needs. It will also incorporate a secure and private messaging system that enables clients and counsellors to communicate with each other without any third-party interference.

The website will be built with a strong focus on user experience and accessibility, ensuring that clients can easily access the support they need at any time, from anywhere. It will also provide a range of features such as appointment scheduling, video calling, and in-site payments, to ensure a seamless and convenient experience for both clients and counsellors.

Overall, the web site will website as a vital platform for connecting individuals seeking mental health support with qualified counsellors, providing a safe, confidential, and accessible space for clients to seek the help they need.

# **CHAPTER 1- INTRODUCTION**

This chapter outlines the introduction to the platform, it's clients, the nature of the current business process of online counselling, problems in the current process, aims and objectives of the project, and a clear explanation of its scope.

## **Outline of the Chapter**

- 1.1 Description of the business organization and the business area chosen
- 1.2 Business Process
- 1.3 Existing System-Problems and weaknesses
- 1.4 Aims and Objectives
- 1.5 Scope with clear boundaries
- 1.6 Organization of the report
- 1.7 Summary

## **1.1 Description of the business organization and the business area chosen**

As a result of our day-to-day activities, many people suffer from a variety of psychological problems nowadays. We are afflicted with work stress, study stress, relationship issues, economic issues, and more. In this situation, mental conditions are quite poor. Most individuals are poor listeners. They do not seek professional assistance for a variety of interpersonal reasons.

On the other hand, getting a professional counsellor is extremely challenging. Due to these factors, this mental condition becomes a psychiatric disease, resulting in suicide and self-harm. Each year, up to 800,000 individuals worldwide commit suicide. That's one individual every 40 seconds. The proposed system acts as a friend, a counselling tool, and a bridge to connect counsellors, mental treatment specialists, and clients in need of assistance. They will be able to receive assistance from professionals without hesitation. It would be of great assistance to alter their fate so that it does not end in tragedy.

The website will act as a tool to improve the client's attitude into pleasant and positive. On the other hand, the website will provide counsellors and mental therapists with an excellent opportunity to grow their brand and attract more clients.

## **1.2. Business process**

In the existing system, the patient/client must always meet the counselor or therapist in person. This is an internet platform designed to link them. The website allows clients and counsellors to register.

When registering as a counsellor, the user must upload verification documents for the registration to be authorized. The approval of documents is performed manually by site admin. After the approval of the paper, the counsellor will be able to log in to the site. Counselors are able to upload articles, videos, recommendations (movies, music, books, etc.), and live sessions in accordance with several categories pertaining to motives, personality development, hints, etc. By posting in this section, counsellors are able to demonstrate their expertise and abilities to address issues. Counselors can communicate with clients, accept channeling invitations sent by clients.

The patient/client must register in order to connect with or chat with the counselor. The user can register as a client by completing a common questionnaire and providing information. After logging into the site, clients are displayed in posts in the post area based on their responses to the questionnaire. They are able to alter their mental state through reading and viewing. If they require a counsellor, they will be redirected to the channelling page. This section contains counsellor recommendations based on their questionnaires. They may also search and channel. They can determine which counsellor is best for them based on the reviews and posts of other clients. They are capable of sending messages to the counsellor prior to channelling. When it comes to channelling, both clients and counsellors can invite each other. When accepting an invitation, the client must cover the cost of channelling. Appointment can be a virtual or in-person meeting. The website gains some presentation by incurring this cost. After completing an appointment, clients are allowed to provide feedback and ratings. It can also be done anonymously. When a user is emotionally depressed, the chatbot will act as a friend to talk to.

### **1.3. Problems and weaknesses**

Existing system is accomplished through physical channeling. Globally, close to 800,000 people die from suicide every year. That's one person every 40 seconds. According to the National Institute of Mental Health (NIMH), one in five adults in the United States is now suffering with a mental disorder. However, more than half of these individuals do not receive support. Regarding Asian nations, the situation is worse

- .The majority of individuals who have a mental illness do not seek or receive treatment.
- Individuals fear judgment, change, the unknown, and what they might discover in therapy; additionally, they're too prideful to admit they need help.
- Additionally, some people doubt the efficacy of mental health treatment: They're uncertain it will work or misunderstand how it works.
- Others might try it but don't give it enough time — change takes time and finding the right therapist is crucial.

People reject mental health treatments for the reasons listed above. If these people have someone to listen to their stories, they will be mentally resilient. They might be able to change their fate. More than half of individuals with mental problems do not obtain treatment. People frequently avoid or delay therapy because of fear of being treated differently or losing their jobs and means of survival. Many individuals are hesitant to discuss with coworkers out of fear of being judged or, worse, losing their job. Family and friends are often unaware of how symptoms of diseases such as depression and PTSD impact our daily life. Some individuals post things on social media in an effort to heal others emotionally. However, occasionally it makes the situation worse. Numerous individuals who create such content lack the necessary professional skills. This platform's content is created by professionals and specialists in mental conditions.

## **1.4. Aims and Objective**

This website aids in the improvement of self-esteem, self-acceptance, motivation, and personality growth. When a user experiences loneliness, emotional pain, or any other unpleasant mental condition, the website will assist them in avoiding these sensations and developing a psychologically healthy personality. By communicating with counsellors, users will be able to overcome depressive states. This counsellors will assist in the identification of mental problems. Conversely, counseling sessions will aid in avoiding suicidal and other self-destructive behaviors. On the side of the counselors, they will be able to deliver far better and more effective service to their audience. And the content they are posting on the website will also help to enhance their brand. It will assist them attract more clients, which will affect their revenue.

## **1.5. Scope with clear boundaries**

This online platform will enhance the connection between clients and counselors.

### **Filtration Options**

According to the respondent's mental condition, the website's posted content will be screened and displayed to the appropriate clients.

### **Online Payments**

Payments can be arranged according to the counselor's appointment.

### **Chatting options**

Clients will be able to converse with both the counselors and the chat bot.

### **Content Uploading and Posting options**

Only counselors will be authorised to upload and post content because the website must maintain a professional service.

### **Registering Options**

counselors. Counselors must submit softcopy of required documents. Upon registering, clients must answer a quick questionnaire. Answers will aid in providing better customer service.

In addition to these services, this website will be an incredible tool for providing mental comfort and happiness to people who are in a negative or unpleasant mood.

## **1.6. Organization of the report**

This section will briefly explain the contents of each chapter of the “Web-Based hotel reservation system report.

### **Chapter 1 – Introduction**

Chapter 1 outlines the introduction to the platform, its clients, the nature of the current business process of online counselling, problems in the current process, aims and objectives of the project, and a clear explanation of its scope.

### **Chapter 2 - System Analysis**

Chapter 2 presents a clear analysis of the existing online process for buying and selling furniture and the requirement analysis of the existing process. It further analyses the business system options (BSOs) and defines the best BSO for the project.

### **Chapter 3 – System Design**

Chapter 3 of the project report deals with the System Design phase which comes after the Requirement Analysis and Specification phase. This chapter focuses on presenting the proposed system's behavior and relationships using various diagrams. Each diagram is interconnected with another to explain the system's functionality, entities, and relationships. The chapter also includes a database design section that demonstrates the data tables that will be used in the system.

### **Chapter 4 – Conclusion**

Chapter 4 will summarize the report and provides a conclusion to all the things which have been discussed throughout the report. It also discusses the degree of objectives met, usability, reliability, friendliness, limitations and drawbacks, future modifications, improvements, and extensions possible.

## **1.7 Summary**

The introduction to the platform, its clients, and the nature of the current business process of online counselling was adequately defined in this chapter. Problems in the current process was identified. The aims, objectives and scope of the project were defined to provide solutions to these identified problems.

## **CHAPTER 2 - SYSTEM ANALYSIS**

This chapter outlines the analysis of the existing process of counselling online using Object-Oriented Modelling (OOM) techniques. Use case diagrams and activity diagrams related to the current process are depicted. This chapter will also cover the requirement analysis of the platform and possible BSOs for the project. Then the selected BSO with justification will be at the end of the chapter.

Since MINDBOOST is a unique platform in the Sri Lankan context, I have considered currently available sites and platforms in Sri Lanka which support counsellors as the existing process in drawing the diagrams in this section

### **Outline of the chapter**

- 2.1 Overall Use Case Diagram for the Existing Process
- 2.2 Activity Diagrams for the Existing Process
- 2.3 Requirements Catalogue
- 2.4 Business System Options
- 2.5 Cost Benefit Analysis
- 2.6 Selected BSO with Sound Justification
- 2.7 Summary

## 2.1 Overall Use Case Diagram for the Existing Process

Use Case diagrams to demonstrate the user's interactions with the system. And also, they display the relationships between users and various use cases. A collection of actions, facilities, and functions the system executes are called use cases. An actor is a person or an external system that interacts with the current system. In this counselling process current system there are two actors that can be identified. They are,

1. Client
2. Counsellor

The overall use case diagram for the existing process in a general counselling process in Sri Lanka is displayed in figure 1.

The business process is straightforward because my client only schedules physical meetings after discussing availability. As a result, there will be few activity diagramss for the current procedure

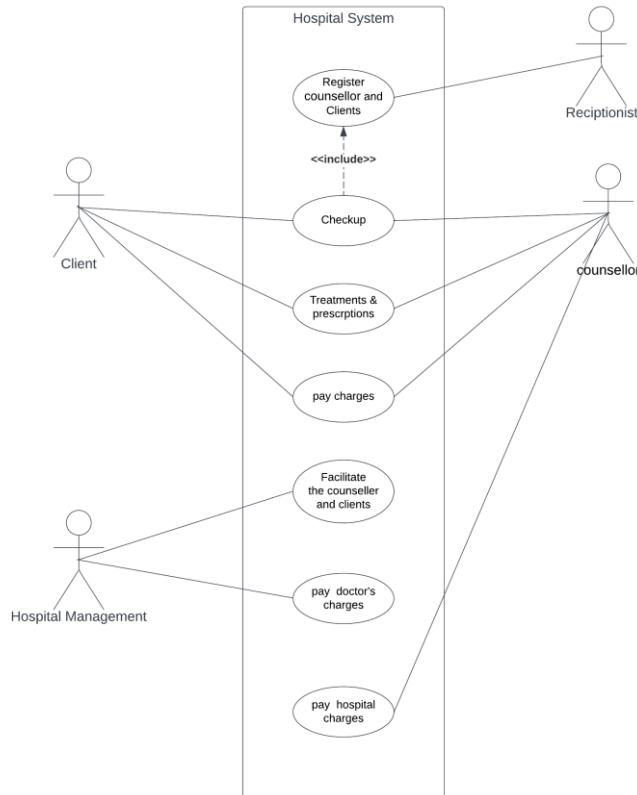


Figure 1 : Overall use case diagram for the Existing Process

## **2.2 Activity Diagrams for the Existing Process**

The activity diagrams below further detail the functionality of the above use cases

The business process is straightforward because my client only schedules physical meetings after discussing availability. As a result, there will be few activity diagramss for the current procedure.

### 2.2.1 Activity Diagram for the manage clients of Existing Process

Activity diagram to explain how the manage clients by counsellors in the Existing process.

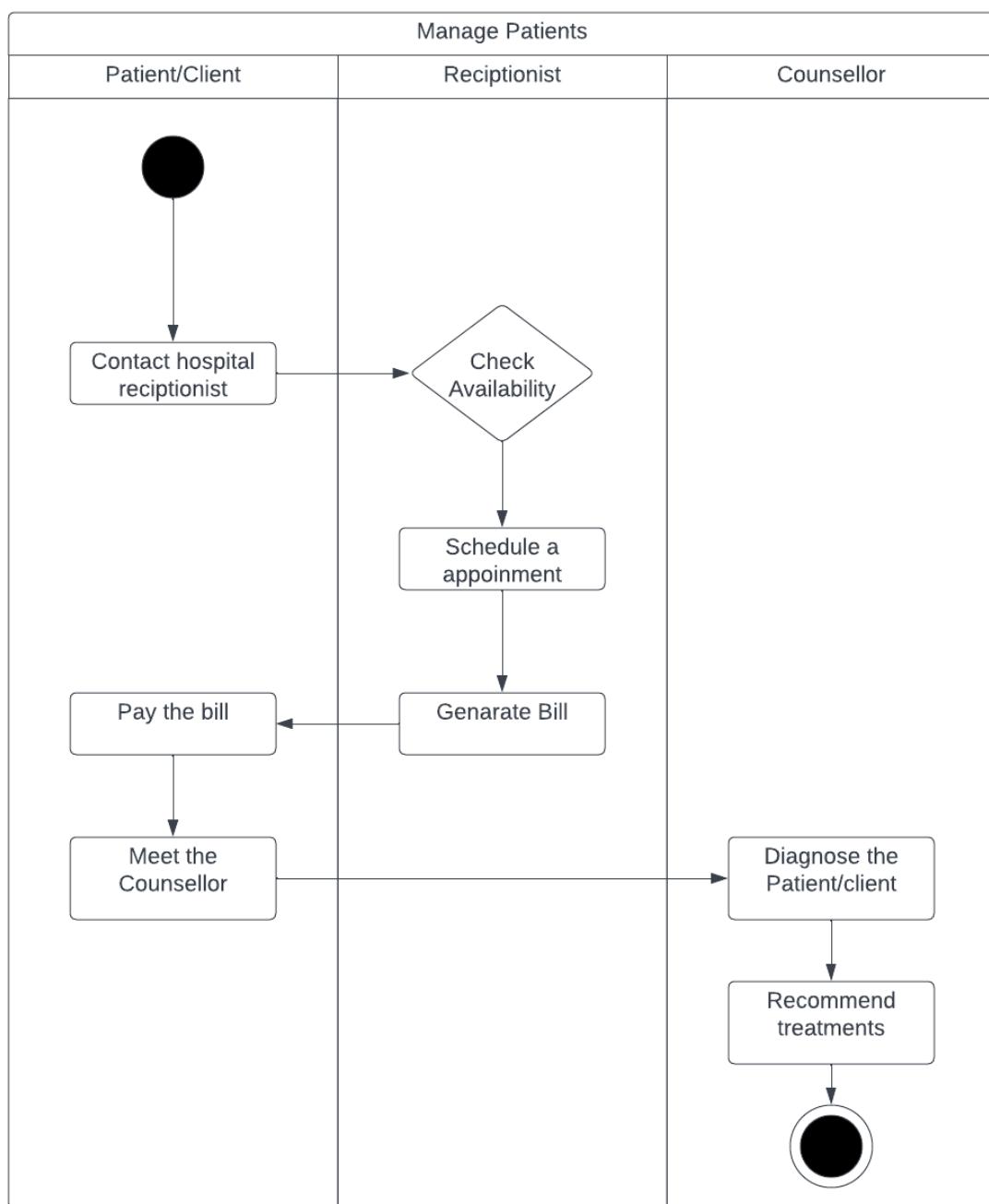


Figure 2Activity Diagram for the manage clients of Existing Process

## 2.2.2 Activity Diagram for the handle payments of Existing Process

Activity diagram to explain how the manage payments in the Existing process

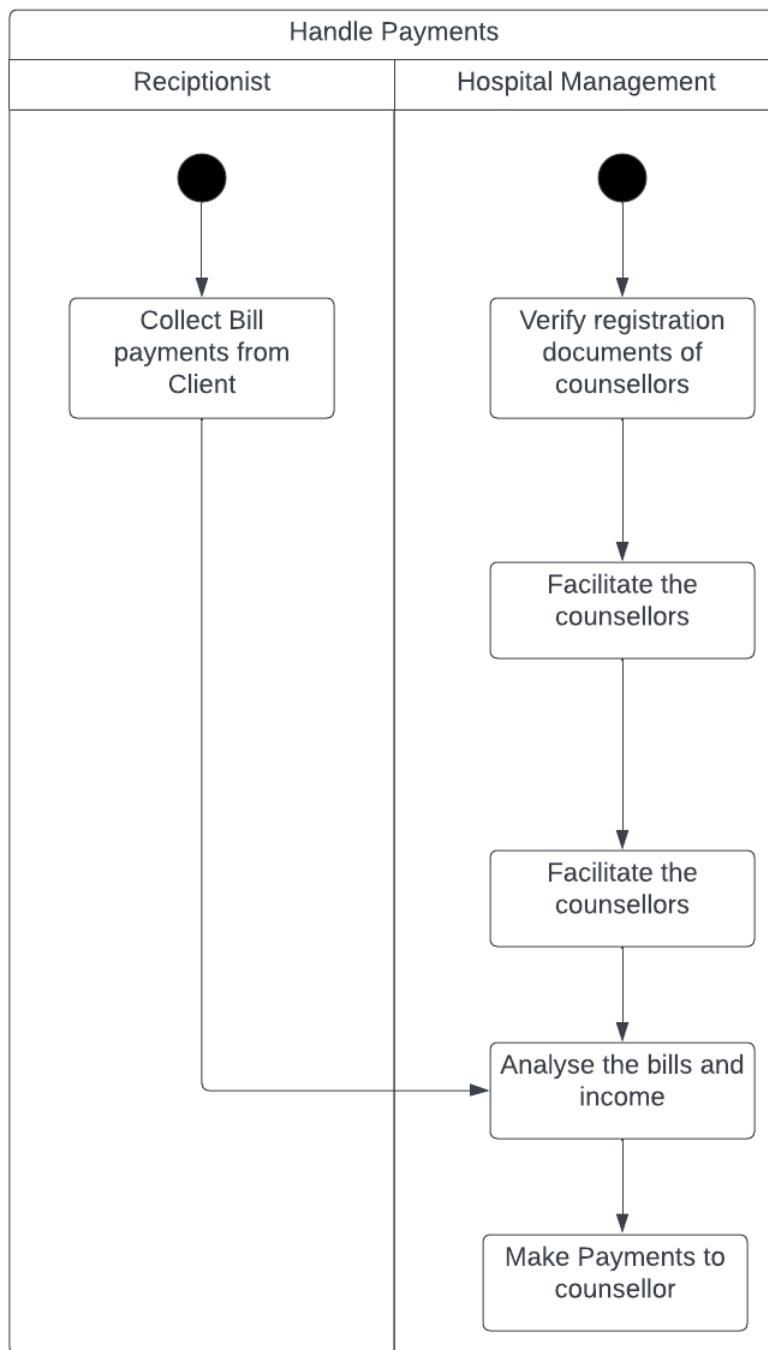


Figure 3 Activity Diagram for the handle payments of Existing Process

## 2.3 Requirements Catalogue

### 2.3.1 System Requirement Specification (SRS)

The process of analyzing system requirements aims to provide a thorough understanding of the problem by applying the principles stated in the specific problem. In the system analysis stage, the functional and non-functional requirements that have been identified will be briefly described. The requirements will be categorized as compulsory, using the term 'shall', and non-compulsory, using the term 'should'.

Include the order on priority (H-High, M-Moderate, L-Low), Mandatory or Optional (M/O), Weight\* (H- High, M-Moderate, L-Low)

### 2.3.2.1 Functional requirements

Functional requirements are the system features or functions that should be identified when developing the system to allow users to perform their activities. These requirements can be nice to have functionalities or mandatory functionalities. These requirements basically outline the roles or functions that can be performed by the system after development.

Id	Description		Priority H/M/L	M/O	Weight H/M/L
1	Shall be able to manage accounts		H	M	H
1.1	Shall be able to create an admin account		H	M	H
1.2	Shall be able to create user accounts(client/counsellor)		H	M	H
1.3	shall have the ability to verify counsellors by administrators		H	M	H
1.4	Shall facilitate login/log out from the system		H	M	H
1.5	Should be able to reset the account password		H	O	H
1.6	Shall be able to edit/manage the account		H	M	H
2	Shall be able to manage Content in the media center		H	M	H
2.1	Shall be able to manage content in the website by counsellors		H	M	H
2.2	Shall be able to react to content provided by counsellors.		H	O	H
3	Shall be able to manage online appointments		H	M	H
3.1	Shall be able to make online appointments		H	M	H
3.2	Shall be able to cancel appointments.		H	M	H
3.3	Shall be able to review appointment details		H	M	H
3.5	Shall be able to update the reservations in calendars.		H	M	H
3.7	Shall be able to put special notes about appointments.		H	O	M

4	Shall be able to keep a private diary		H	M	M
	4.1	Shall be able to maintain a personal diary.		H	M
	4.2	Should be able to add a security password to the diary.		H	O
4	Shall be able to select a payment method		H	M	H
5	Shall be able to conduct self-assessment using the methodologies provided.		H	M	H
	4.1	Shall be able to provide payment details		H	M
6	Should be able to send an appointment confirmation email after successful payment		H	O	O
7	Shall be able to keep transaction details		H	M	H
8	Shall be able to generate payment receipts		H	M	H
9	Shall facilitate to browse the client history		H	M	H
10	Should be able to send messages with counselors		M	O	M
10	Should be able to communicate through a chatbot		M	O	L
11	Should be able to send notifications to clients(appointments,content)		M	O	L
12	Should be able to write reviews about counselors.		M	O	M

Table 1 -Functional requirements

### 2.3.2.2 Non-Functional requirements

The specifications that are indirectly required to maintain the functionality of the system are called non-functional requirements. Non-functional requirements define the usability, reliability, performance, maintainability, and other related features of the system. This collection of requirements may not be strictly related to the main function, but for the optimal functioning of the system, these are also massively important.

ID	Description	Priority H/M/L	M/O	Weight H/M/L
1	Should provide a responsive user interface	H	M	H
2	Shall support for almost all android devices	H	M	H
3	Shall ensure clients information will only be accessible to authorized persons.	H	M	H
4	Shall facilitate concurrent access up to 500 users at a time	H	M	H
5	Shall be able to generate a response to a given user request within 05 seconds	H	M	H
6	Shall be able to load the system quickly(within a few minutes)	H	M	H
7	Shall ensure that all the transferable data as for example customers credit or debit card number, CVV Code, e-payment should be done in secured connection	H	M	H
8	Shall provide customers 24*7 hours service.	H	M	H

Table 2-Non-Functional requirements

### 2.3.2 User Stories List

Users - Clients - C  
 Counsellors - S  
 Admin- A

User Story ID	User type	User story
US-1	Client	As a client, I want to be able to register on the web so that I can access the various features and connect with counsellors.
US-2	Client	As a client, I want to be able to register on the app by completing a questionnaire so that I can be matched with appropriate counsellors based on my responses.
US-3	Client	As a client, I want to be able to view posts and reviews of counsellors on the web so that I can determine which counsellor is best for me.
US-4	Client	As a client, I want to be able to communicate with counsellors and send messages prior to channelling so that I can discuss my needs and expectations.
US-5	Client	As a client, I want to be able to initiate a channelling session with a counsellor either virtually or in-person so that I can receive the help and support I need.
US-6	Client	As a client, I want to be able to provide feedback and ratings after a channelling session so that I can help improve the quality of the web's services and provide helpful insights for other users.
US-7	Client	As a user, I want to be able to access self-assessment tools, meditation management, and stress-releasing methods within the web so that I can manage my mental health and wellbeing.
US-8	Client	As a user, I want to be able to use the chatbot feature within the web as a friend to talk to when I am feeling emotionally depressed or overwhelmed.
US-8	Counsellor	As a counsellor, I want to be able to create and manage my profile on the web site, including my qualifications, specialties, and availability, so that clients can find me and learn about my services.

US-9	Counsellor	As a counsellor, I want to upload my verification documents for site admin approval so that I can be authorized to offer my services on the website.
US-10	Counsellor	As a counsellor, I want to be able to upload articles, videos, recommendations, and live sessions to the web site, so that I can share my expertise and help clients with their mental health issues.
US-11	Counsellor	As a counsellor, I want to be able to accept or decline channelling invitations from clients, and to schedule virtual or in-person appointments with them, so that I can provide them with personalized counselling sessions
US-12	Counsellor	As a counsellor, I want to be able to receive feedback and ratings from clients after counselling sessions, so that I can improve my services and build my reputation on the website.
US-13	Counsellor	As a counsellor, I want to be able to access support and resources from the site's administrators, including troubleshooting help, marketing advice, and billing support, so that I can focus on providing high-quality counselling services to my clients.
US-14	Counsellor	As a counsellor, I want to set and adjust my counselling fees, and to receive timely and accurate payments from the web site, so that I can sustain my counselling practice and help more clients in need.
US-15	Admin	As a admin, I want to be able to manage and monitor the web site's content, including articles, videos, recommendations, and live sessions, to ensure that they are appropriate and in line with the app's goals.
US-16	Admin	As a admin, I want to be able to respond to client and counsellor inquiries and concerns, and to troubleshoot any issues that arise on the web.
US-17	Admin	As a admin, I want to be able to track usage and engagement metrics of the web site's features, to gain insights into how users are interacting with the web site and to make data-driven decisions for future development.
US-18	Admin	As an admin, I want to ensure user data's security and privacy, and to comply with all relevant laws and regulations regarding data protection.
US-20	Admin	As a admin, I want to be able to add, remove, or modify web site features, and to work with developers and designers to improve the web site's functionality, user experience, and visual design.

US-21	Admin	As a admin, I want to be able to manage the web site's business operations, including billing, payments, and marketing, to ensure that the web site is sustainable and successful in the long term.
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*Table 3-User Stories*

## **2.4 Business System Options**

### **2.4.1. BSO 1 Responsive web-based platform**

Create a responsive web-based platform with all of the client-required features. Counsellors, clients, and the system administrator can access the system via the internet using desktop computers, laptops, tablet devices, and mobile web browsers. This BSO is concerned with introducing a web-based application that allows consumers to place orders using their own mobile and desktop devices. On a server, the website will reside. All system functions are accessible at any time and from any location. The system will be hosted on the cloud platform and will be online at all times.

### **2.4.2 BSO 2 Responsive web-based platform and a mobile application**

Design a responsive web-based platform and a mobile application (Android and IOS) that enables patients, pharmacists, delivery agents, and the system administrator to access the system using desktop computers as well as mobile devices. This BSO is concerned about the introduction of a mobile application and PC-friendly web application that allow consumers to place orders from their own devices. On a cloud server, the website and mobile application will be hosted. All system functions are accessible at any time and from any location. The system will be operational at all times.

### **2.4.3 BSO 3 Mobile application**

Design a single mobile application (Android and iOS) with all client-required features. In this configuration, patients, pharmacists, delivery agents, and system administrators can access the system via the internet and mobile application using only their mobile or tablet devices. On a cloud server will be hosted the mobile application. All system functions are accessible at any time and from any location.

#### 2.4.4 Functional Requirements vs BSO

Id	Description		BSO 1	BSO 2	BSO 3
1	Shall be able to manage accounts		X	X	X
	1.1	Shall be able to create an admin account	X	X	X
	1.2	Shall be able to create user accounts(client/counsellor)	X	X	X
	1.3	shall have the ability to verify counsellors by administrators	X	X	X
	1.4	Shall facilitate login/log out from the system	X	X	X
	1.5	Should be able to reset the account password	X	X	X
	1.6	Shall be able to edit/manage the account	X	X	X
2	Shall be able to manage Content in the media center		X	X	X
	2.1	Shall be able to manage content in the app by counsellors	X	X	X
	2.2	Shall be able to react to content provided by counsellors.	X	X	X
3	Shall be able to manage online appointments		X	X	X
	3.1	Shall be able to make online appointments	X	X	X
	3.2	Shall be able to cancel appointments.	X	X	X
	3.3	Shall be able to review appointment details	X	X	X
	3.5	Shall be able to update the reservations in calendars.	X	X	X

	3.7	Shall be able to put special notes about appointments.	X	X	X
4		Shall be able to keep a private diary	X	X	X
	4.1	Shall be able to maintain a personal diary.	X	X	X
	4.2	Should be able to add a security password to the diary.	X	X	X
4		Shall be able to select a payment method	X	X	X
5		Shall be able to conduct self-assessment using the methodologies provided.	X	X	X
	4.1	Shall be able to provide payment details	X	X	X
6		Should be able to send an appointment confirmation email after successful payment	X	X	X
7		Shall be able to keep transaction details	X	X	X
8		Shall be able to generate payment receipts	X	X	X
9		Shall facilitate to browse the client history	X	X	X
10		Should be able to send messages with counselors	X	X	X
10		Should be able to communicate through a chatbot	X	X	X
11		Should be able to send notifications to clients(appointments,content)	X	X	X
12		Should be able to write reviews about counselors.	X	X	X

Table 4-Functional Requirements vs BSO

#### 2.4.5 Functional Requirements vs BSO

ID	Description	BSO 1	BSO 2	BSO 3
1	Should provide a responsive user interface	X	X	X
2	Shall support for almost all android devices	X	X	X
3	Shall ensure clients information will only be accessible to authorized persons.	X	X	X
4	Shall facilitate concurrent access up to 500 users at a time	X	X	X
5	Shall be able to generate a response to a given user request within 05 seconds	X	X	X
6	Shall be able to load the system quickly(within a few minutes)	X	X	X
7	Shall ensure that all the transferable data as for example customers credit or debit card number, CVV Code, e-payment should be done in secured connection	X	X	X
8	Shall provide customers 24*7 hours service.	X	X	X

Table 5-Functional Requirements vs BSO

## **2.5 Cost-Benefit Analysis**

### **2.5.1 BSO 1**

#### **Benefits**

- Efficiency increased
- Fewer errors caused
- Medium cost
- Easily maintainable
- Fewer development times
- Does have all functionalities

#### **Issues**

- Delivery agent should use responsible mobile application

<b>Service</b>	<b>Estimated Cost (LKR)</b>
Hosting Services (Annual cost)	18,000/=
Developer Cost	0.00/=
Domain Name Cost (Annual cost)	5,000.00/=
Payment Gateway Cost (Annual cost)	7,000.00/=
Total Cost (For the first year)	<b>30,000.00/=</b>

## 2.5.2 BSO 2

### Benefits

- Efficiency increased
- Fewer errors caused
- Usability increased
- Does have all functionalities Issues

### Issues

- Customers should download and install the mobile application
- High cost
- Hard to maintain
- Long development time

Service	Estimated Cost (LKR)
Hosting Services (Annual cost)	18,000/=
Developer Cost	0.00/=
Domain Name Cost (Annual cost)	5,000.00/=
Payment Gateway Cost (Annual cost)	7,000.00/=
Android Play Store Account Cost (25\$) (One-time cost)	7.500.00/=
Total Cost (For the first year)	<b>37,500.00/=</b>

1 \$ = Rs. 380.00

## 2.5.3 BSO 3

### Benefits

- Efficiency increased
- Medium cost
- Easily maintainable
- Fewer development times
- Improved customer experience
- Mobile apps can be easy to use for delivery agents because they can have access to the platform on-the-go, receive notifications and updates in real-time.

### Issues

- Compatibility issues
- Performance issues

Service	Estimated Cost (LKR)
Hosting Services (Annual cost)	18,000/=
Developer Cost	0.00/=
Payment Gateway Cost (Annual cost)	7,000.00/=
Android Play Store Account Cost (25\$) (One-time cost)	7.500.00/=
Total Cost (For the first year)	<b>32,500.00/=</b>

## **2.6 Selected BSO with Justification**

After conducting requirement collection and analysis, the functional and non-functional requirements of the system are identified and specified in this chapter. The intent of the requirement specification is to provide a more comprehensive view of the system's functionality. Three BSOs are examined and discussed. BSOs are evaluated based on their benefits and problems. BSO1 is the least expensive when compared to the other BSOs. And satisfy the majority of Functional and Non-functional requirements. Then, BSO1 is chosen as the finest option for the design and development process..

## **2.8. Summary**

This chapter analyzed the existing features of the project management process and thus specified the functional and non-functional requirements. Based on that, BSOs were determined and the best option was selected.

# **CHAPTER 3 - SYSTEM DESIGN**

This chapter outlines the system design of the FurnitureMart3D web platform. Object- Oriented Modelling (OOM) techniques are used in system design, where use case diagrams, activity diagrams, sequence diagrams and class diagrams are depicted to explain the proposed system. This chapter will also cover the database design of the system using an entity-relationship diagram and normalized database design. Proposed graphical user interfaces will be at the end of the chapter.

## **Outline of the chapter**

- 3.1 Use Case Diagrams for the Proposed System
- 3.2 Use Case Descriptions for the Proposed System
- 3.3 Activity Diagrams for the Proposed System
- 3.4 Sequence Diagrams for the Proposed System
- 3.5 Class Diagrams for the Proposed System
- 3.6 Normalized Database Design
- 3.7 ER diagram for the proposed system
- 3.8 Graphical User Interfaces
- 3.9 Summary

### **3.1 Use Case Diagrams for the Proposed System**

Use case diagrams are designed in order to capture and show an overview of a system's functional requirements including internal and external factors. These specifications are requirements for the design and implementation of the system. Therefore, use cases are developed and actors are identified. This is very important because the next phase of the Software Development Life Cycle is system design. The Use Case diagrams have various use cases and the system's actors. The users that use the system are called actors. Following usecase diagrams represent the functionality of the proposed system and interaction of users with the system, using actors and use cases.

### 3.1.1 Overall Use case diagrams for the proposed system

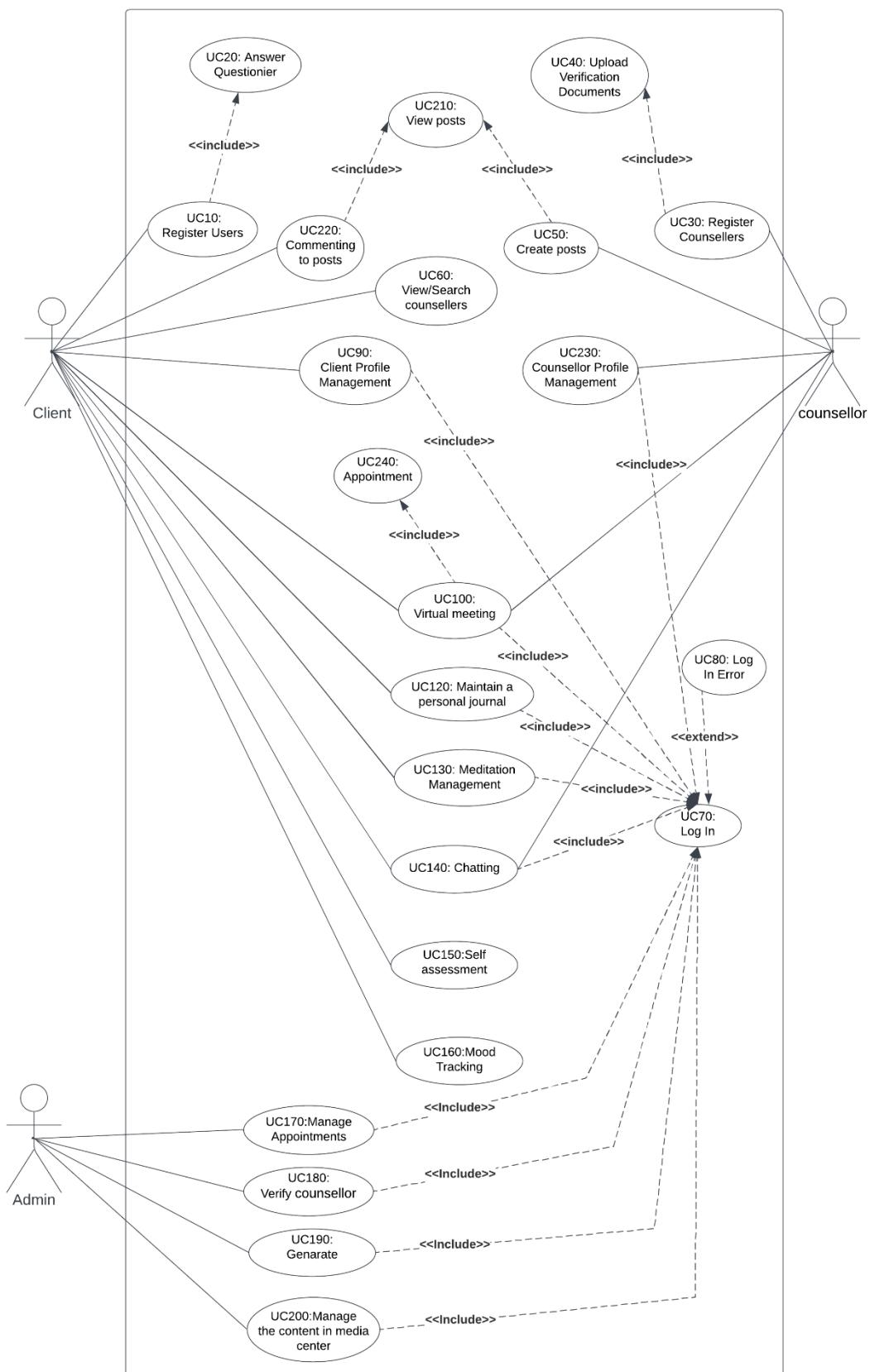


Figure 4 Overall Use case diagrams for the proposed system

### 3.1.2 Use case diagrams for Registration in the proposed system

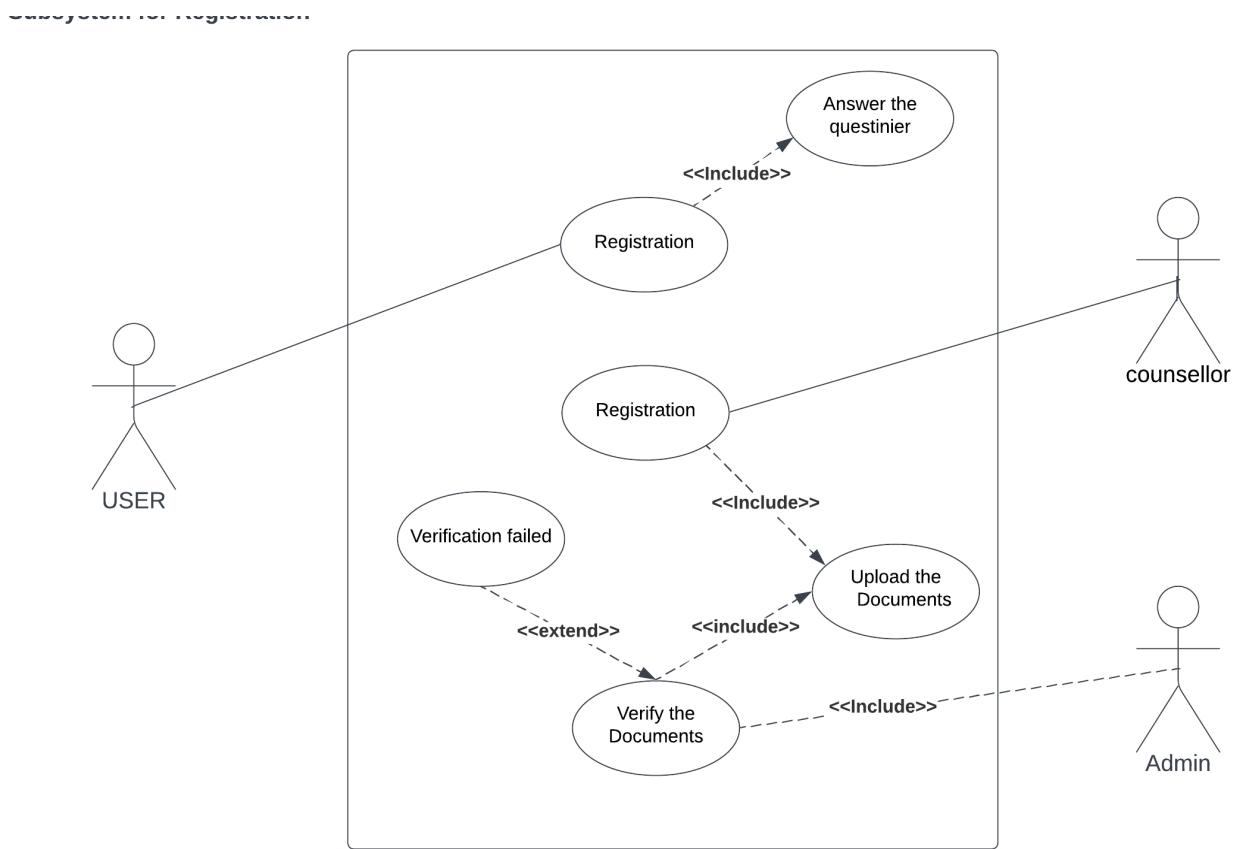


Figure 5 Use case diagrams for Registration in the proposed system

### 3.1.3 Use case diagrams for Media Handling in the proposed system

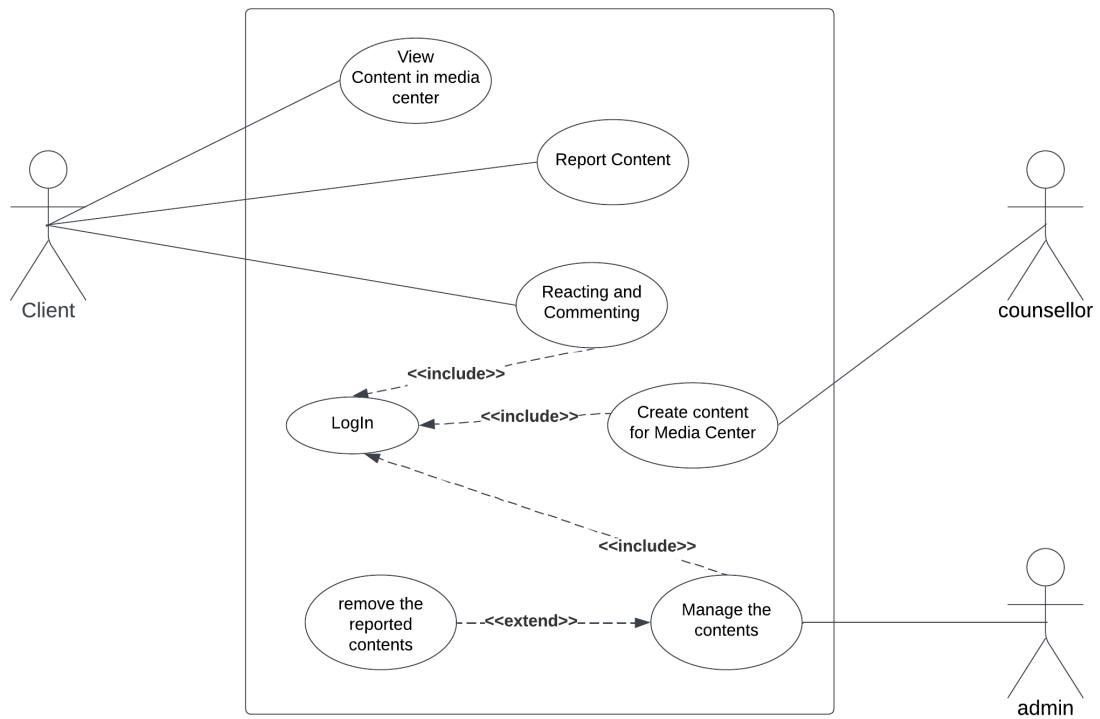


Figure 6-Use case diagrams for Media Handling in the proposed system

### 3.1.4 Use case diagrams for create posts in the proposed system

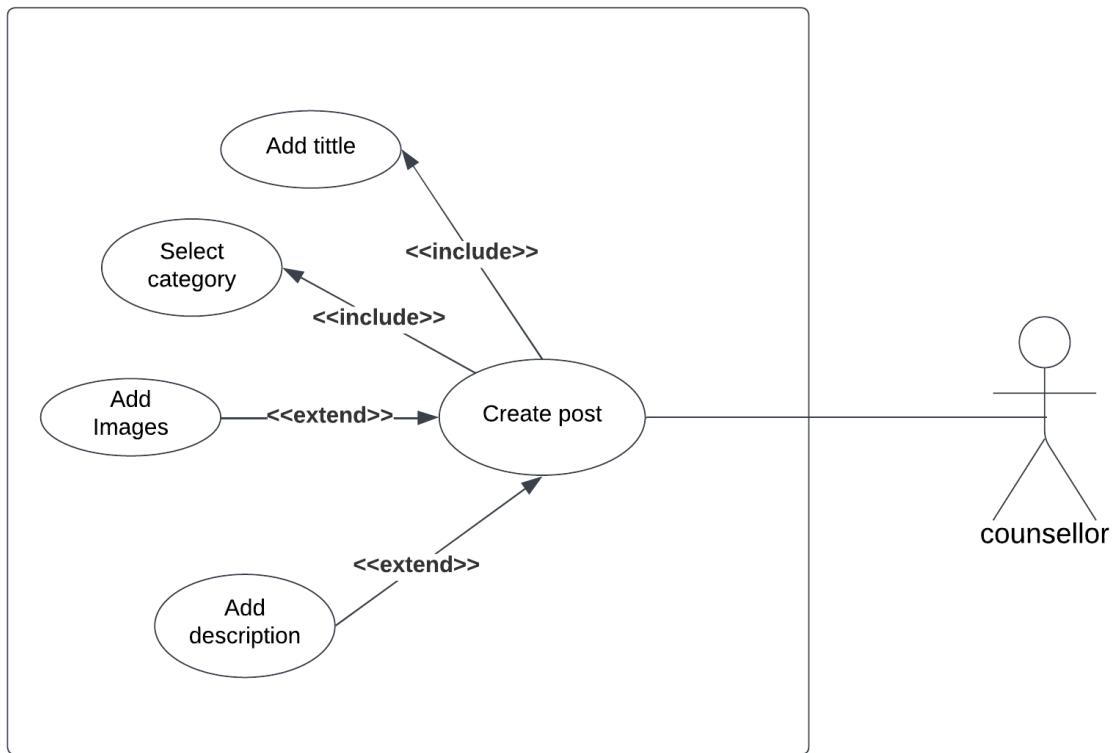


Figure 7 Use case diagrams for create posts in the proposed system

### 3.1.5 Use case diagrams for create appointments in the proposed system

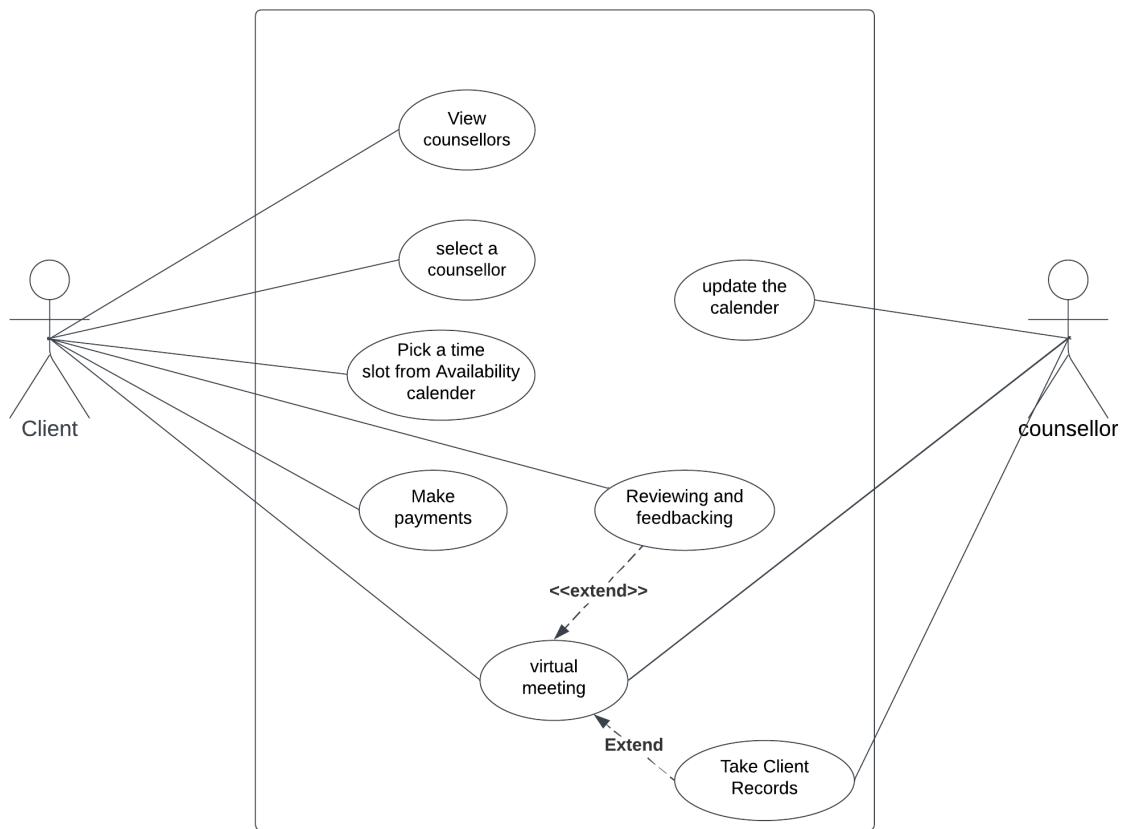


Figure 8-Use case diagrams for create appointments in the proposed system

### 3.1.6 Use case diagrams for mood tracking in the proposed system

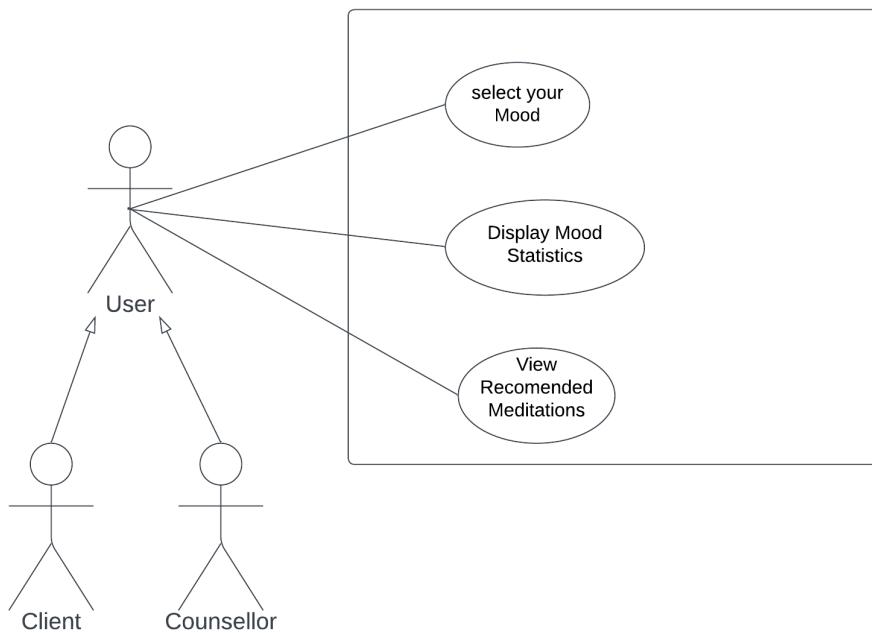


Figure 9-3.1.6 Use case diagrams for mood tracking in the proposed system

### 3.1.7 Use case diagrams for profile management in the proposed system

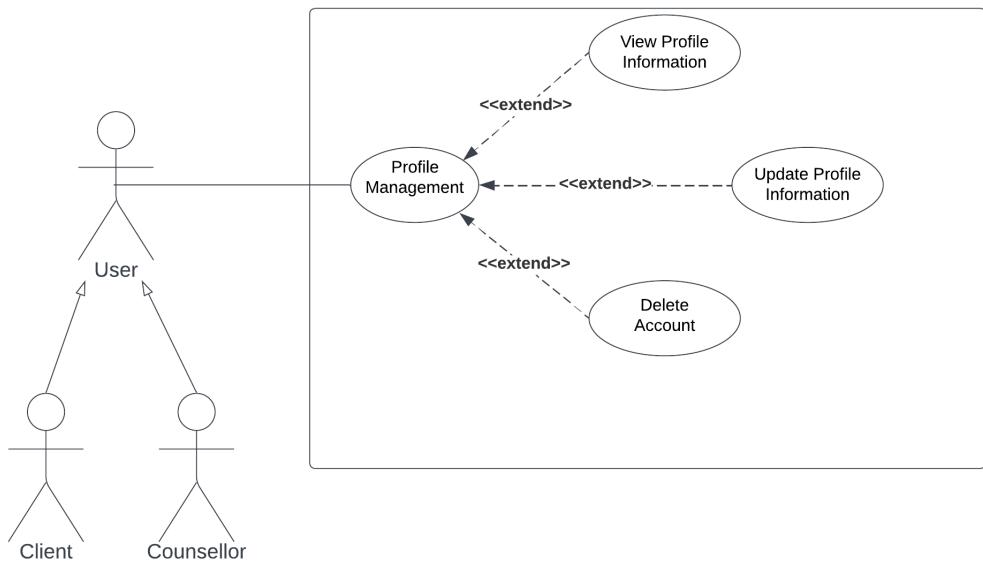


Figure 10--Use case diagrams for profile management in the proposed system

### 3.1.8 Use case diagrams for Journal in the proposed system

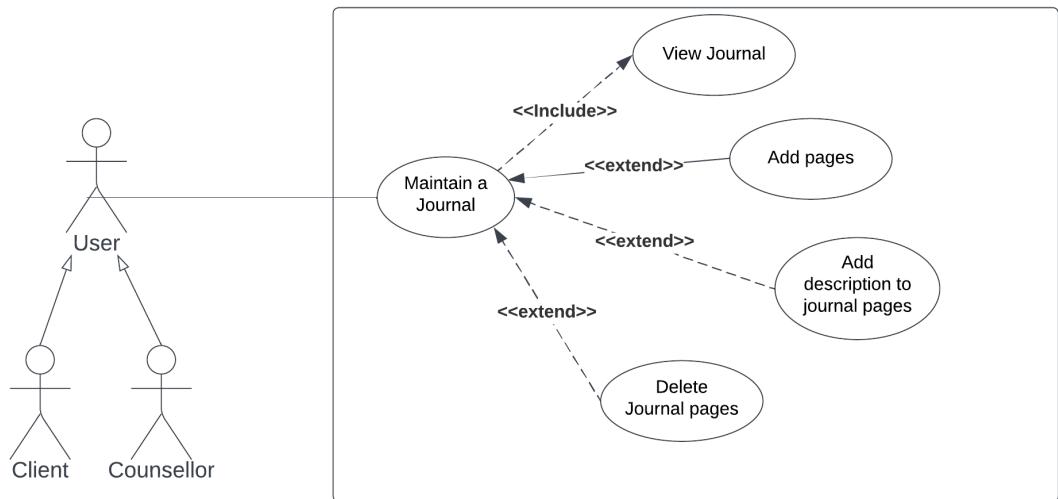


Figure 11-Use case diagrams for Journal in the proposed system

### **3.2 Use case descriptions for proposed System**

#### **3.2.1 Use case description for Login**

Use case ID	UC70
Use case name	Login
Actors	client, counselor, admin
Precondition	The actors are registered and have a username and password
Normal flow	<ol style="list-style-type: none"><li>1. User requests login page.</li><li>2. Website displays login page.</li><li>3. User enters username and password.</li><li>4. Web site validates the credentials.</li><li>5. Web site redirects the user to their respective home page based on their user type.</li></ol>
Alternate flow	<ol style="list-style-type: none"><li>4a. If the credentials are invalid, Web site displays error message and returns to login screen</li><li>4b. Actor can reset their password</li><li>5a. If the actor is not yet verified by the admin, Web site displays message and blocks access to certain features</li><li>7a. If actor logs out of the Web site, use case ends  </li></ol>
Postcondition	Actor is logged into the web site and can access their features

*Table 6-Use case description for Login*

### 3.2.2 Use case description for Register Clients

Use Case ID	UC10
Use Case Name	Register Clients
Actors	Client
Precondition	User is not registered in the web site.
Normal Flow	<ol style="list-style-type: none"> <li>1. User opens the registration form.</li> <li>2. User fills out the form with required details.</li> <li>3. User selects "Client" as the user type.</li> <li>4. User submits the form.</li> <li>5. The system validates the form and creates a new account for the client.</li> <li>6. The system redirects the client to the home page.</li> </ol>
Alternate Flow	<ol style="list-style-type: none"> <li>7a. User provides incorrect information in the form.</li> <li>7b. The system displays an error message and asks the user to correct the information.</li> <li>8a. User resubmits the form.</li> <li>8b. The system validates the form and creates a new account for the client.</li> <li>9. The system redirects the client to the home page.</li> </ol>
Post Condition	The user is registered as a client in the web site.

Table 7- Use case description for Register Clients

### 3.2.3 Use case description for Answer Questionier

Use Case ID	UC20
Use Case Name	Answer Questionnaire
Actors	Client
Precondition	Client is registered in the web site as a client.
Normal Flow	<ol style="list-style-type: none"> <li>1. Client opens the questionnaire.</li> <li>2. Client answers the questions in the questionnaire.</li> <li>3. Client submits the questionnaire.</li> <li>4. The system validates the questionnaire and saves the answers.</li> <li>5. The system redirects the client to the home page.</li> </ol>
Alternate Flow	<p>1a.Client provides incorrect answers in the questionnaire.</p> <p>1b.The system displays an error message and asks the client to correct the answers.</p> <ol style="list-style-type: none"> <li>2. Client resubmits the questionnaire.</li> <li>3.The system validates the questionnaire and saves the answers.</li> <li>4.The system redirects the client to the home page.</li> </ol>
Post Condition	The client's questionnaire answers are saved in the Web site.

Table 8-Use case description for Answer Questionier

### 3.2.4 Use case description for Register Counsellors

Use Case ID	UC30
Use Case Name	Register Counsellors
Actors	Counselor,Admin
Precondition	User is not registered in the Web site.
Normal Flow	<ol style="list-style-type: none"> <li>1. User opens the registration form.</li> <li>2. User fills out the form with required details.</li> <li>3. User selects "Counsellor" as the user type.</li> <li>4. User submits the form.</li> <li>5. The system validates the form and creates a new account for the counsellor.</li> <li>6. The system prompts the counsellor to upload verification documents.</li> <li>7. The counsellor uploads the documents.</li> <li>8. The system verifies the documents and approves the counsellor's account.</li> <li>9. The system redirects the counsellor to the home page.</li> </ol>
Alternate Flow	<ol style="list-style-type: none"> <li>10a. User provides incorrect information in the form.</li> <li>10b. The system displays an error message and asks the user to correct the information.</li> <li>10c. User resubmits the form.</li> <li>11. The system validates the form and creates a new account for the counsellor.</li> <li>12a. The system prompts the counsellor to upload verification documents.</li> <li>12b. The counsellor uploads the documents. The system verifies the documents and approves the counsellor's account.</li> <li>12c. The system redirects the counsellor to the home page.</li> </ol>
Post Condition	The user is registered as a counsellor in the Web site and their account is verified by Admin

Table 9-Use case description for Register Counsellors

### 3.2.5 Use case description Login

Use Case ID	UC40
Use Case Name	Counsellor's Documents Verification
Actors	Counsellor, Admin
Precondition	Counsellor has registered and uploaded verification documents
Normal Flow	<ol style="list-style-type: none"> <li>1. Admin logs in to the system</li> <li>2. Admin navigates to the verification section</li> <li>3. Admin selects the Counsellor verification option</li> <li>4. System displays the list of unverified Counsellor's documents</li> <li>5. Admin selects a Counsellor for verification</li> <li>6. System displays the Counsellor's uploaded documents</li> <li>7. Admin verifies the documents</li> <li>8. System updates the Counsellor's verification status as verified</li> <li>9. System sends a notification to the Counsellor regarding the verification</li> </ol>
Alternate Flow	<p>6a. If the Counsellor's documents are not satisfactory, Admin rejects the documents</p> <p>6b. System sends a notification to the Counsellor regarding the rejection</p>
Post Condition	Counsellor's verification status is updated and the Counsellor is notified of the status

Table 10-Use case description Login

### 3.2.6 Use case description for Create posts

Use Case ID	UC50
Use Case Name	Create Post
Actors	Counsellor
Precondition	User is logged in
Normal Flow	<ol style="list-style-type: none"> <li>1. Counsellor selects to create a post</li> <li>2. Counsellor enters post details</li> <li>3. Counsellor publishes the post</li> </ol>
Alternate Flow	<ol style="list-style-type: none"> <li>1a. Counsellor decides not to publish the post and cancels the process</li> <li>2a. Counsellor decides to edit the post</li> </ol>
Post Condition	New post is published and visible to all users

Table 11-Use case description for Create posts

### 3.2.7 Use case description for view posts

Use Case ID	UC210
Use Case Name	View Posts
Actors	Counsellor, Client
Precondition	None
Normal Flow	<ol style="list-style-type: none"> <li>1. User selects to view posts</li> <li>2. Web site displays a list of published posts</li> <li>3. User selects a post to view</li> </ol>
Alternate Flow	None
Post Condition	User is able to view the post

Table 12- Use case description for view posts

### 3.2.8 Use case description for Commenting

Use Case ID	UC220
Use Case Name	Comment on Posts
Actors	Counsellor, Client
Precondition	User is logged in
Normal Flow	<ol style="list-style-type: none"><li>1. User selects to comment on a post</li><li>2. Web site displays the comment box</li><li>3. User enters their comment</li><li>4. User posts the comment</li></ol>
Alternate Flow	None
Post Condition	Comment is posted and visible on the post

Table 13-Use case description for Commenting

### 3.2.9 Use case description for view counsellors profiles

Use Case ID	UC14
Use Case Name	View Counsellor Profiles
Actors	Client
Precondition	The user should be logged in
Normal Flow	<ol style="list-style-type: none"> <li>1. The user selects the "View Counsellor Profiles" option from the Web site menu.</li> <li>2. The app displays a list of counsellors with their profile picture and basic information.</li> <li>3. The user can scroll through the list to view counsellors.</li> <li>4. The user can search for counsellors using various filters like location, specialization, etc.</li> <li>5. The user selects a counsellor from the list to view their full profile.</li> <li>6. The Web site displays the selected counsellor's full profile with their detailed information, ratings, reviews, and appointment scheduling.</li> </ol>
Alternate Flow	<p>4a. If no counsellors are found with the given search criteria, the Web site displays a message "No counsellors found with given search criteria."</p> <p>6a. If the user selects the "Schedule Appointment" option, the Web site redirects the user to the appointment scheduling screen.</p>
Post Condition	The user views the counsellor's profile and can schedule an appointment if desired.

Table 14-Use case description for view counsellors profiles

### 3.2.10 Use case description for Client Profile Management

Use Case ID	UC17
Use Case Name	Client Profile Management
Actors	Client, Counsellor
Precondition	The user must be logged in and have a profile created
Normal Flow	<ol style="list-style-type: none"> <li>1. The user accesses the web site's profile page.</li> <li>2. The user clicks on "Edit Profile" option.</li> <li>3. The user can update their personal details like name, email, phone number, etc.</li> <li>4. The user clicks on "Save" button.</li> <li>5. The system verifies the updated details and saves them.</li> <li>6. The updated profile is displayed to the user.</li> </ol>
Alternate Flow	
Post Condition	The user's profile is updated and saved in the database.

Table 15-Use case description for view counsellors profiles

### 3.2.11 Use case description for Virtual appointment

Use Case ID	UC100
Use Case Name	Virtual Appointment
Actors	Client, Counsellor
Precondition	The client should have selected a counsellor and scheduled an appointment
	<ol style="list-style-type: none"> <li>1. The client logs into the web site and goes to the appointment section.</li> <li>2. The client selects the scheduled appointment with the counsellor.</li> <li>3. The client enters the virtual call.</li> <li>4. The counsellor joins the virtual call.</li> <li>5. The counsellor and the client have their appointment.</li> </ol>
Alternate Flow	<p>3a. The client is unable to attend the virtual call and cancels the appointment.</p> <p>4a. The counsellor is unable to attend the virtual call and reschedules the appointment.</p>
Postcondition	The client and the counsellor have had their appointment.

Table 16-Use case description for Virtual appointment

### 3.2.12 Use case description for view Journal records

Use Case ID	UC120
Use Case Name	View Journal Records
Actors	User
Precondition	User is logged in and has created a personal journal
Normal Flow	<ol style="list-style-type: none"><li>1. User opens the web site and navigates to the Journal section.</li><li>2. web site displays the list of available journal records.</li><li>3. User selects a record to view.</li><li>4. web site displays the selected record to the user.</li></ol>
Alternate Flow	
Postcondition	User can view the selected journal record.

Table 17-Use case description for view Journal records

3.2.13 Use case description for chatting clients and counsellors

Use Case ID	UC140
Use Case Name	Chatting client and counsellor
Actors	Client, Counsellor
Precondition	The client and the counsellor are logged in and are able to access the chat feature
Normal Flow	<ol style="list-style-type: none"> <li>1. The client or counsellor navigates to the chat feature.</li> <li>2. The web site loads the chat interface for the user.</li> <li>3. The user selects the counsellor or client they want to chat with.</li> <li>4. The web site loads the chat history for the selected counsellor or client.</li> <li>5. The user enters a message in the chat box and sends it.</li> <li>6. The message is delivered to the recipient.</li> <li>7. The recipient receives a notification that they have a new message.</li> <li>8. The recipient navigates to the chat feature and sees the new message.</li> <li>9. The recipient can respond to the message.</li> <li>10. The conversation continues until the user ends the chat session.</li> </ol>
Alternate Flow	<p>4a. If the selected counsellor or client is not available, the web site displays a message indicating their status and prompts the user to try again later.</p> <p>5a. If the message fails to send, the web site displays a message indicating the reason for the failure and prompts the user to try again.</p>
Postcondition	The client and counsellor have successfully exchanged messages in a chat session.

Table 18-Use case description for chatting clients and counsellors

### 3.2.14 Use case description for chatting clients and counsellors

Use Case ID	UC160
Use Case	Mood Tracking
Actors	Client
Precondition	Client should be logged in to the web site
Normal Flow	<ol style="list-style-type: none"> <li>1. Client opens the mood tracking feature in the web site.</li> <li>2. The web site displays a list of moods to choose from.</li> <li>3. Client selects their current mood from the list.</li> <li>4. The web site records the mood and adds it to the mood tracking database.</li> <li>5. The web site generates statistics and insights based on the recorded mood data.</li> </ol>
Alternate Flow	<ol style="list-style-type: none"> <li>1a. If the web site encounters an error while recording the mood data, it displays an error message to the user.</li> <li>2a. The user may choose to retry or cancel the operation.</li> </ol>
Post Condition	The mood data is recorded in the database, and the web site generates insights and statistics for the user.

Table 19-Use case description for chatting clients and counsellors

3.2.15 Use case description for chatting clients and counsellors

Use Case ID	UC170
Use Case	Manage Appointments
Actors	Admin
Precondition	Admin is logged in and has appropriate permissions
Normal Flow	<ol style="list-style-type: none"> <li>1. Admin selects "Manage Appointments" option.</li> <li>2. System displays a list of all the appointments.</li> <li>3. Admin selects the appointment to manage.</li> <li>4. System displays the appointment details and options to manage it.</li> <li>5. Admin can either cancel, reschedule or mark the appointment as completed.</li> <li>6. System updates the appointment status and notifies the relevant parties.</li> </ol>
Alternate Flow	
Postcondition	The appointment is either cancelled, rescheduled or marked as completed as per the admin's action.

Table 20-Use case description for chatting clients and counsellors

3.2.16 Use case description for chatting clients and counsellors

Use Case ID	UC190
Use Case Name	Generate Reports
Actors	Admin
Precondition	Admin is logged in and has access to web site statistics
Normal Flow	<ol style="list-style-type: none"> <li>1. Admin selects the type of report to be generated.</li> <li>2. System generates and displays the report based on the selected criteria.</li> <li>3. Admin reviews and downloads the report.</li> </ol>
Alternate Flow	
Post Condition	Report is generated and downloaded by the admin.

Table 21-Use case description for chatting clients and counsellors

3.2.17 Use case description for chatting clients and counsellors

Use Case ID	UC180
Use Case	Verify Counsellor Account
Actors	Admin
Precondition	Admin must be logged in
Normal Flow	<ol style="list-style-type: none"> <li>1. Admin selects the counsellor account to be verified.</li> <li>2. Admin examines the verification documents uploaded by the counsellor.</li> <li>3. Admin approves the counsellor's account if the documents are valid.</li> <li>4. Admin rejects the counsellor's account if the documents are invalid.</li> </ol>
Alternate Flow	<p>3a. If the documents are not valid, admin requests the counsellor to upload valid documents.</p> <p>4a. If the documents are not valid and admin rejects the account, admin sends a notification to the counsellor.</p>
Postcondition	The counsellor's account is either approved or rejected by the admin.

Table 22-Use case description for chatting clients and counsellors

3.2.18 Use case description for chatting with clients and counsellors

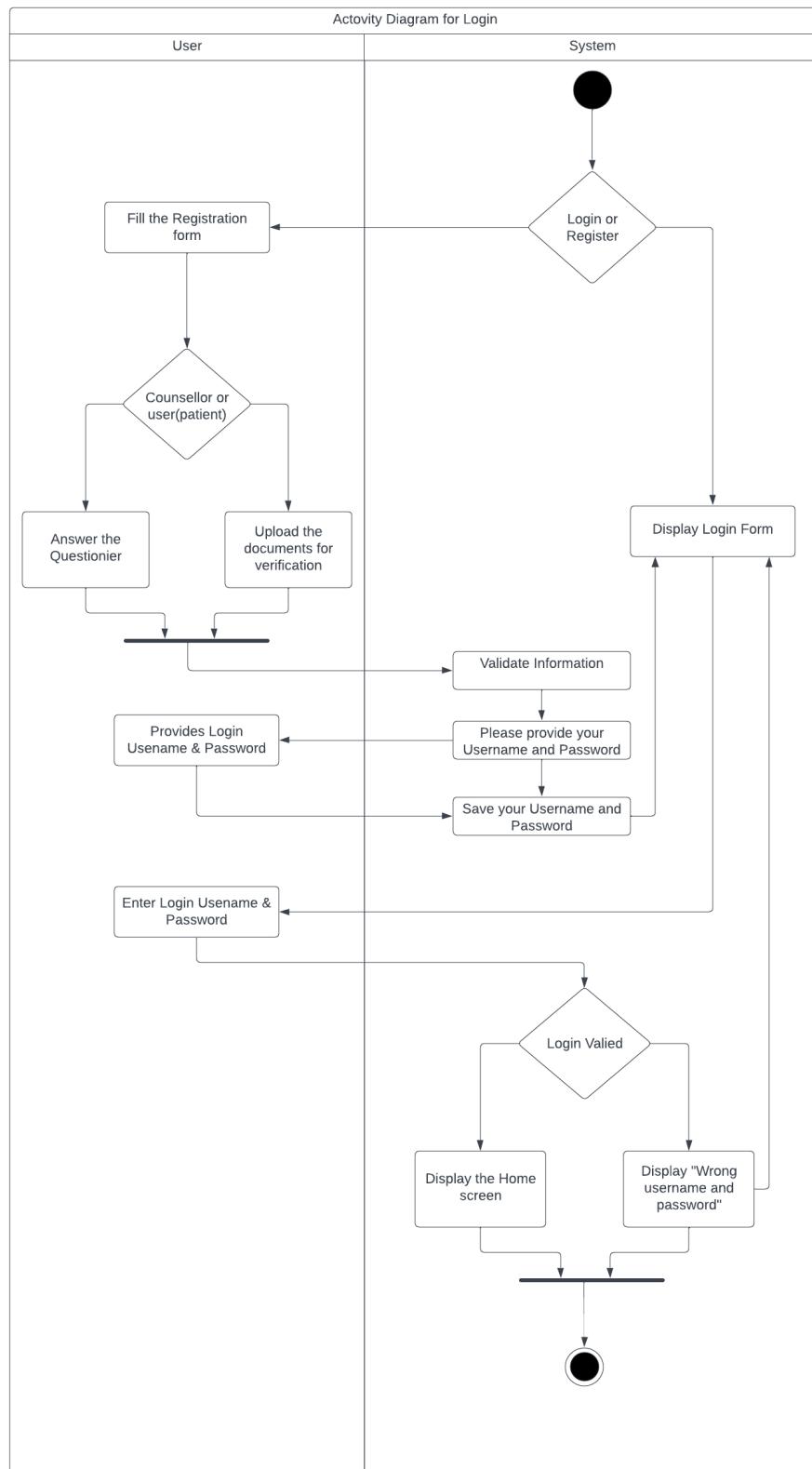
Use Case ID	UC200
Use Case	Manage Content by Admin
Actors	Admin, Counsellor, User
Precondition	Admin is logged in
Normal Flow	<ol style="list-style-type: none"> <li>1. Admin selects the reported content to manage.</li> <li>2. Admin reviews the reported content.</li> <li>3. Admin decides to either remove or keep the content.</li> <li>4. If the content is removed, Admin deletes the content from the website and notifies the Counsellor who posted the content.</li> <li>5. If the content is kept, Admin notifies the User who reported the content about the decision.</li> </ol>
Alternate Flow	
Post Condition	Content is either removed or kept according to Admin's decision.

Table 23-Use case description for chatting with clients and counsellors

### 3.3 Activity Diagrams for the Proposed System

The functionality of the use cases is further detailed in the activity diagrams below.

#### 3.3.1 Activity Diagram for Registration & Login



### 3.3.2 Activity Diagram for Making appointment

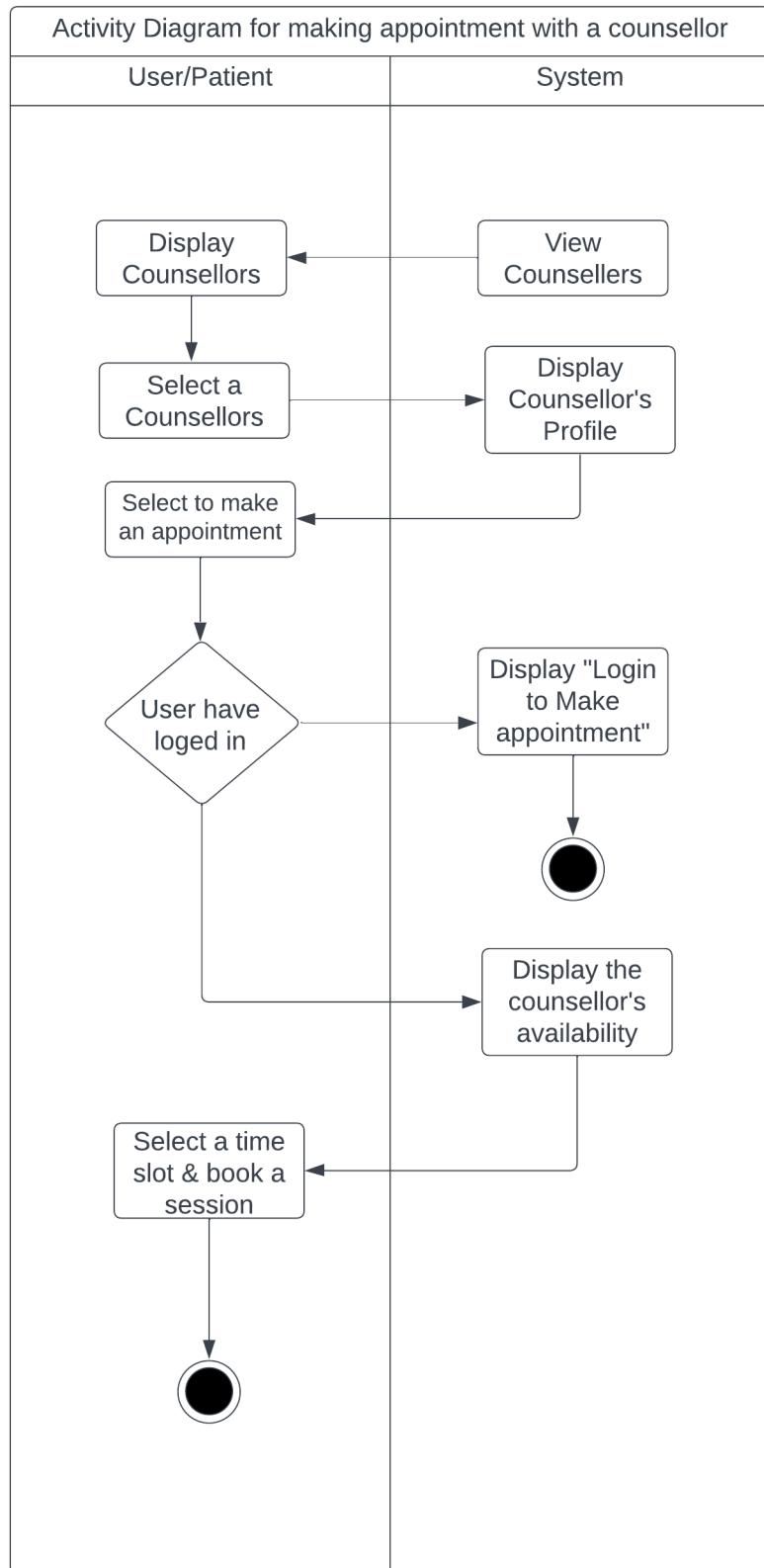


Figure 13-Activity Diagram for Making appointment

### 3.3.3 Activity Diagram for media Center

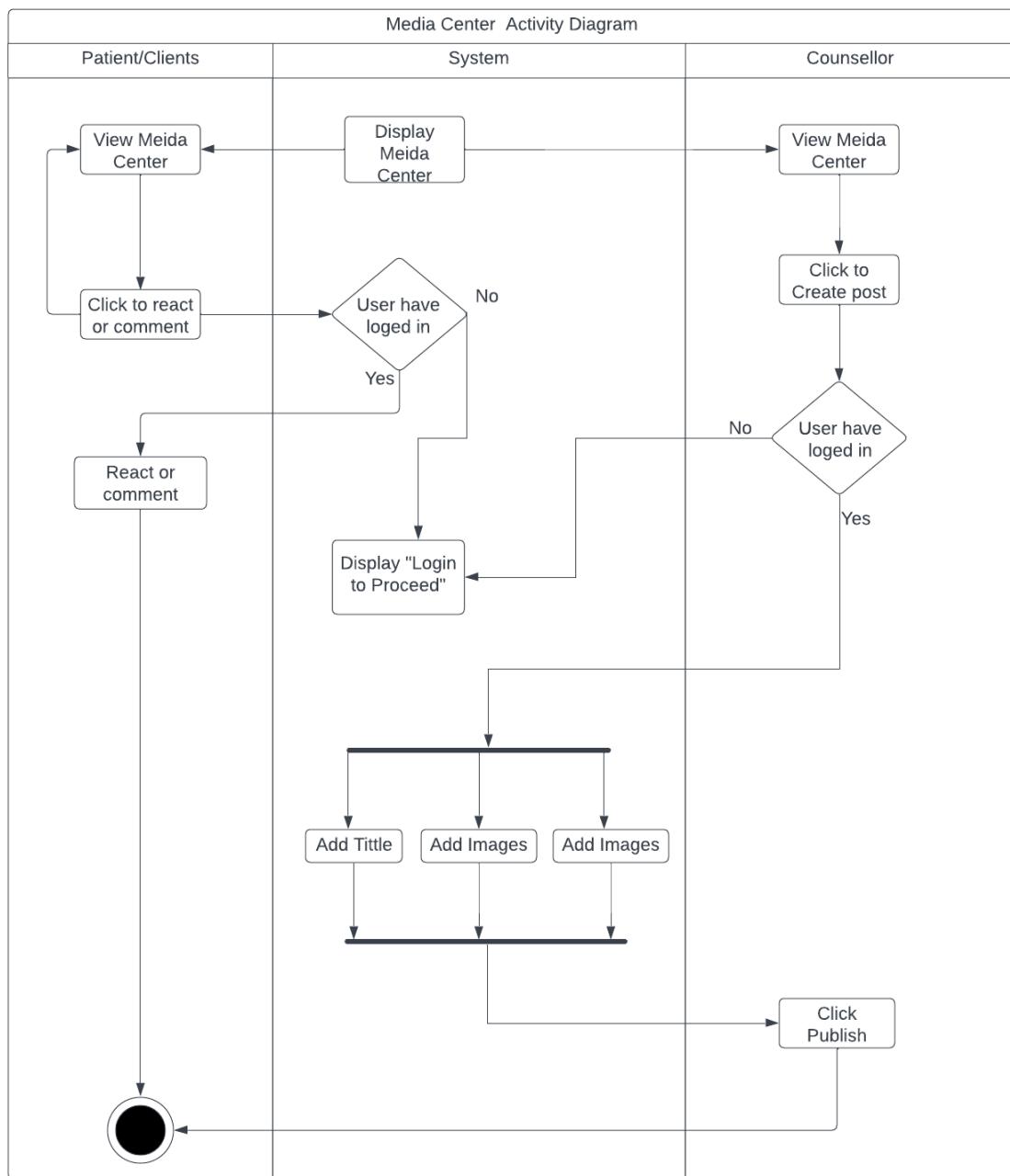


Figure 14-Activity Diagram for media Center

### 3.3.4 Activity Diagram for Generate Reports

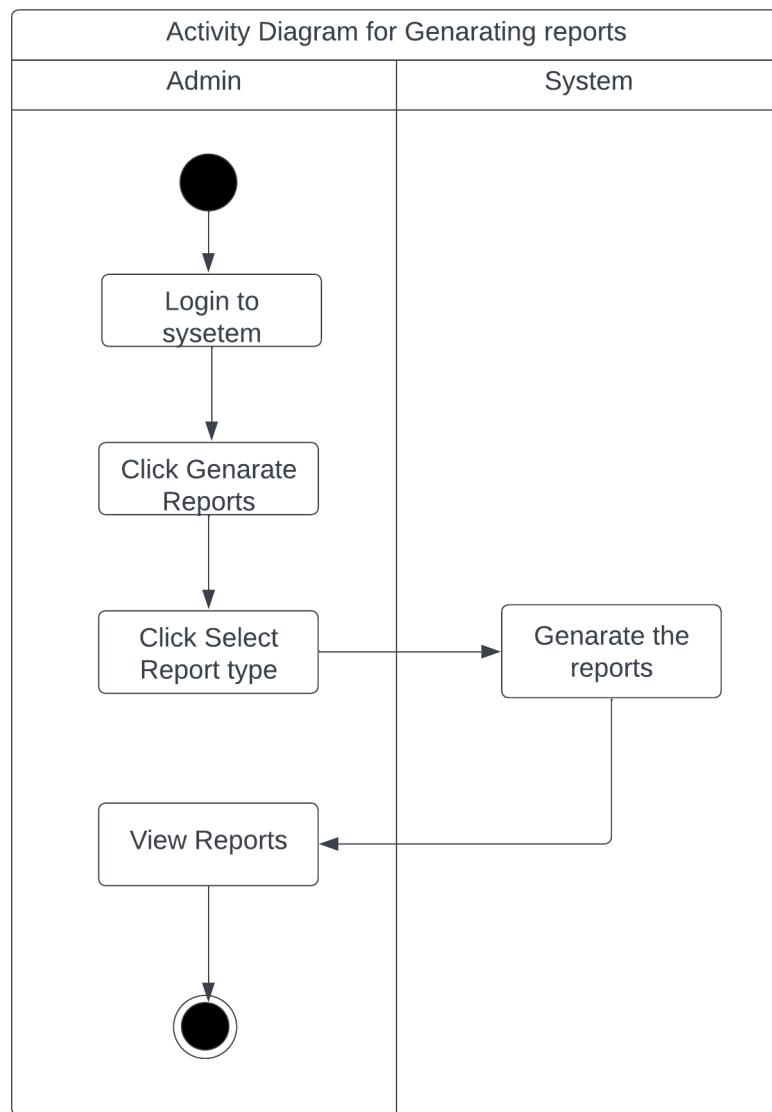


Figure 15-Activity Diagram for Generate Reports

### 3.4. Class diagrams for the Proposed System

A class diagram in the Unified Modeling Language (UML) is a type of static structure diagram. Class diagrams below describe the structure of the proposed system by showing the system's entity classes, interface classes, and controller classes with their attributes, operations(methods), and the relationships among the classes.

#### 3.4.1. Entity Class diagram for the proposed system

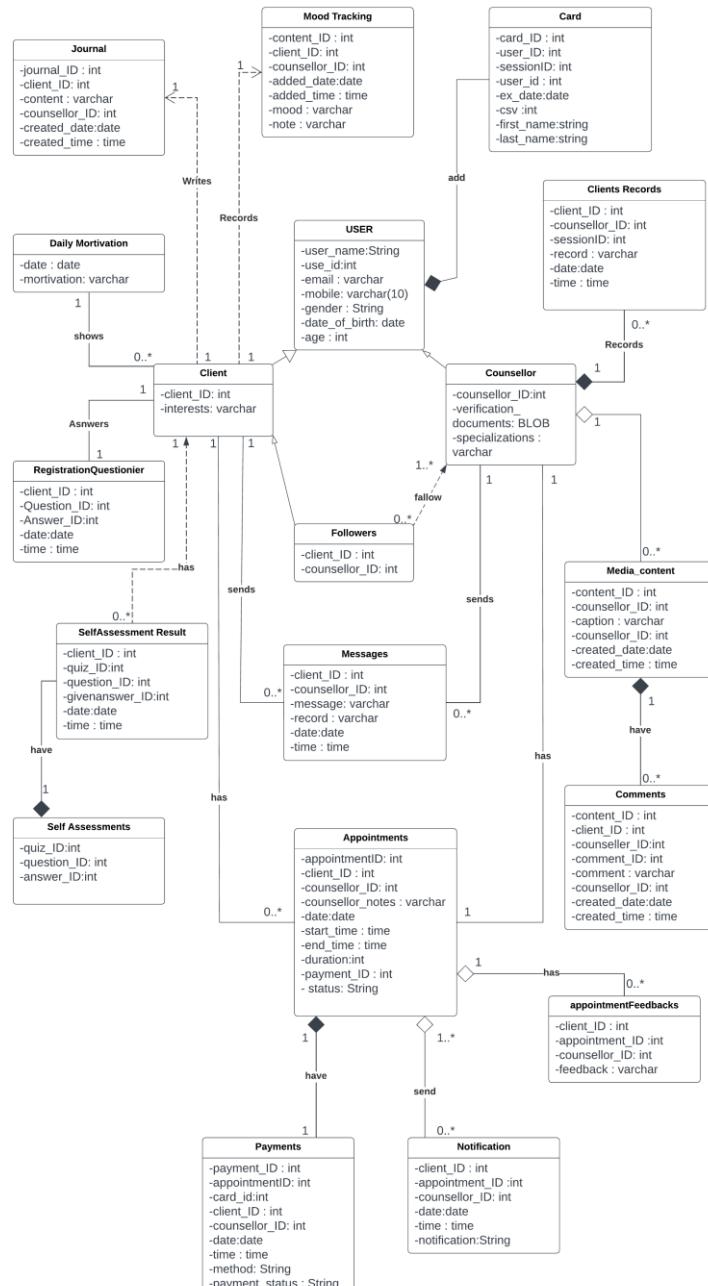


Figure 16-Entity Class diagram for the proposed system

### 3.4.1. Interface Class diagram for the proposed system

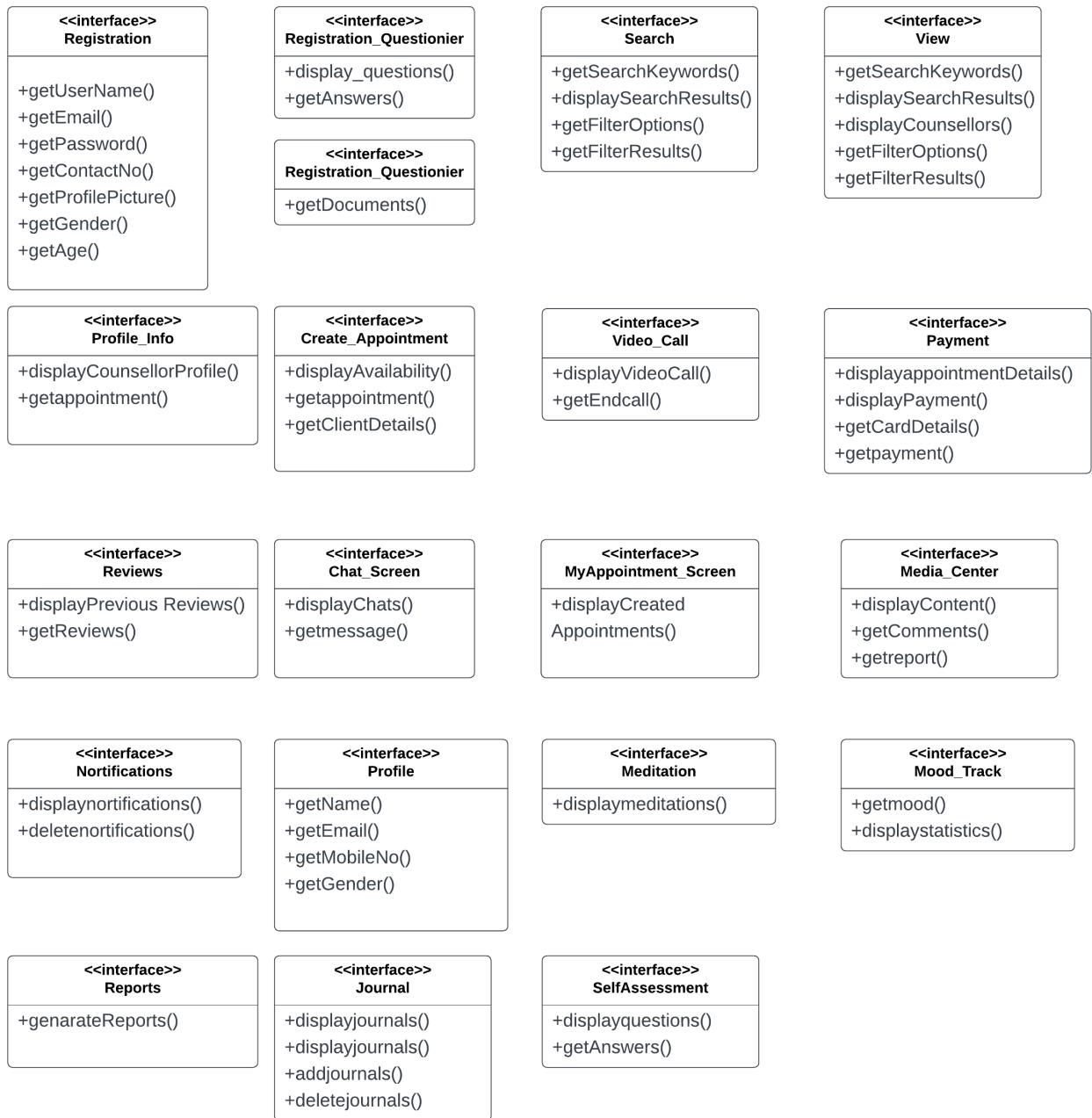


Figure 17-Interface Class diagram for the proposed system

### 3.4.1.Controller Class diagram for the proposed system

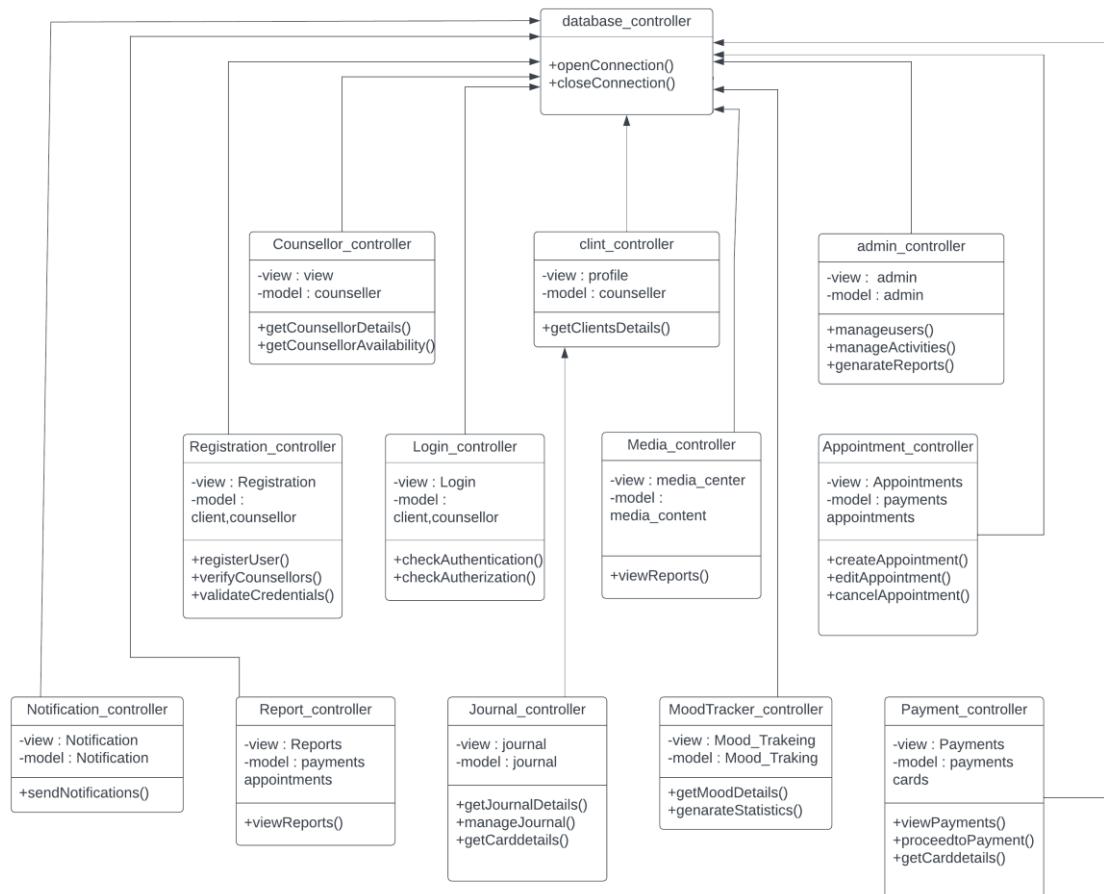


Figure 18-Interface Class diagram for the proposed system

### 3.5 Normalized Data Model

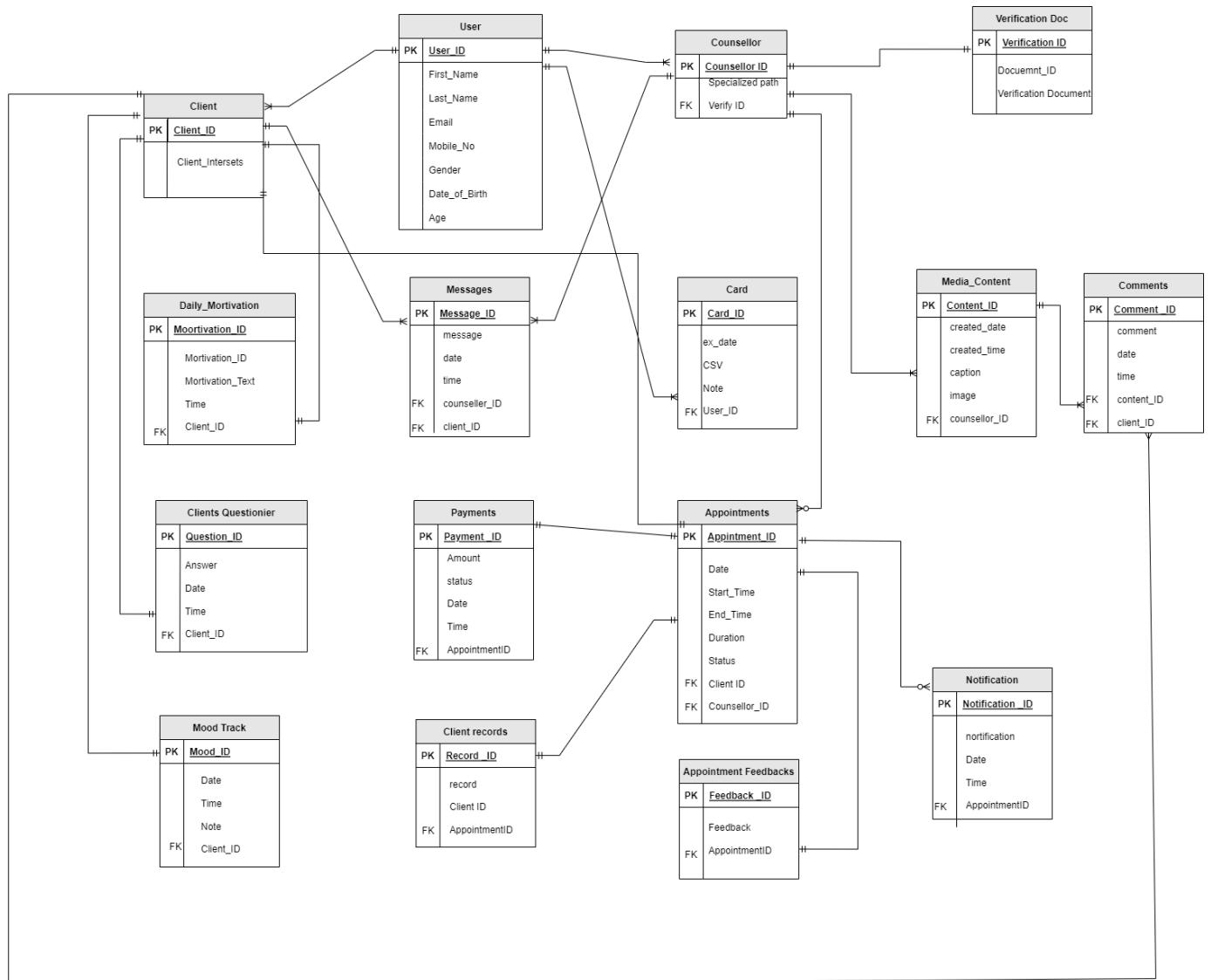


Figure 19-Interface Class diagram for the proposed system

### 3.6 ER diagram for the proposed system

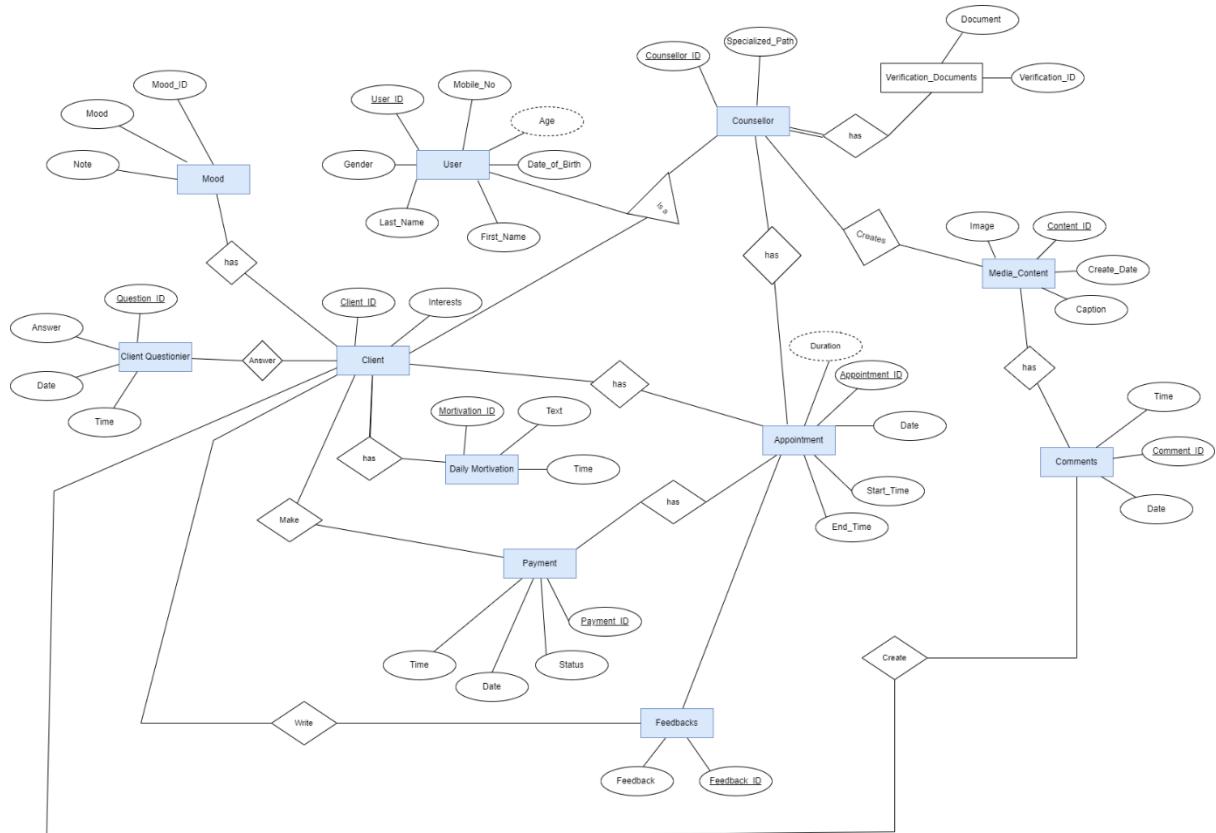


Figure 20-ER diagram for the proposed system

### 3.7. Sequence Diagrams for the Proposed System

#### 3.5.1 Sequence Diagram for Login & Registration

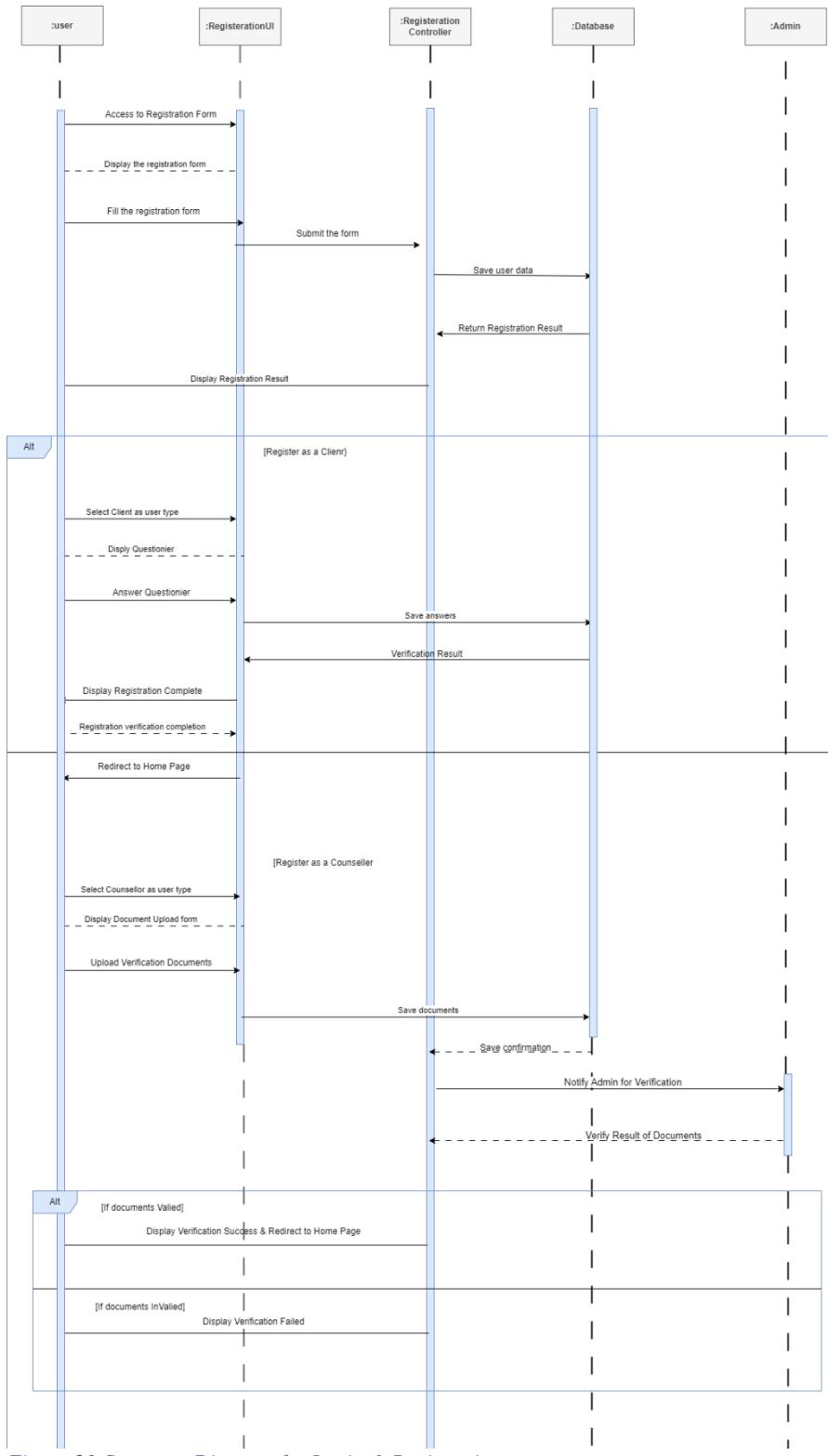


Figure 21-Sequence Diagram for Login & Registration

### 3.5.2 Sequence Diagram for Make Appointments

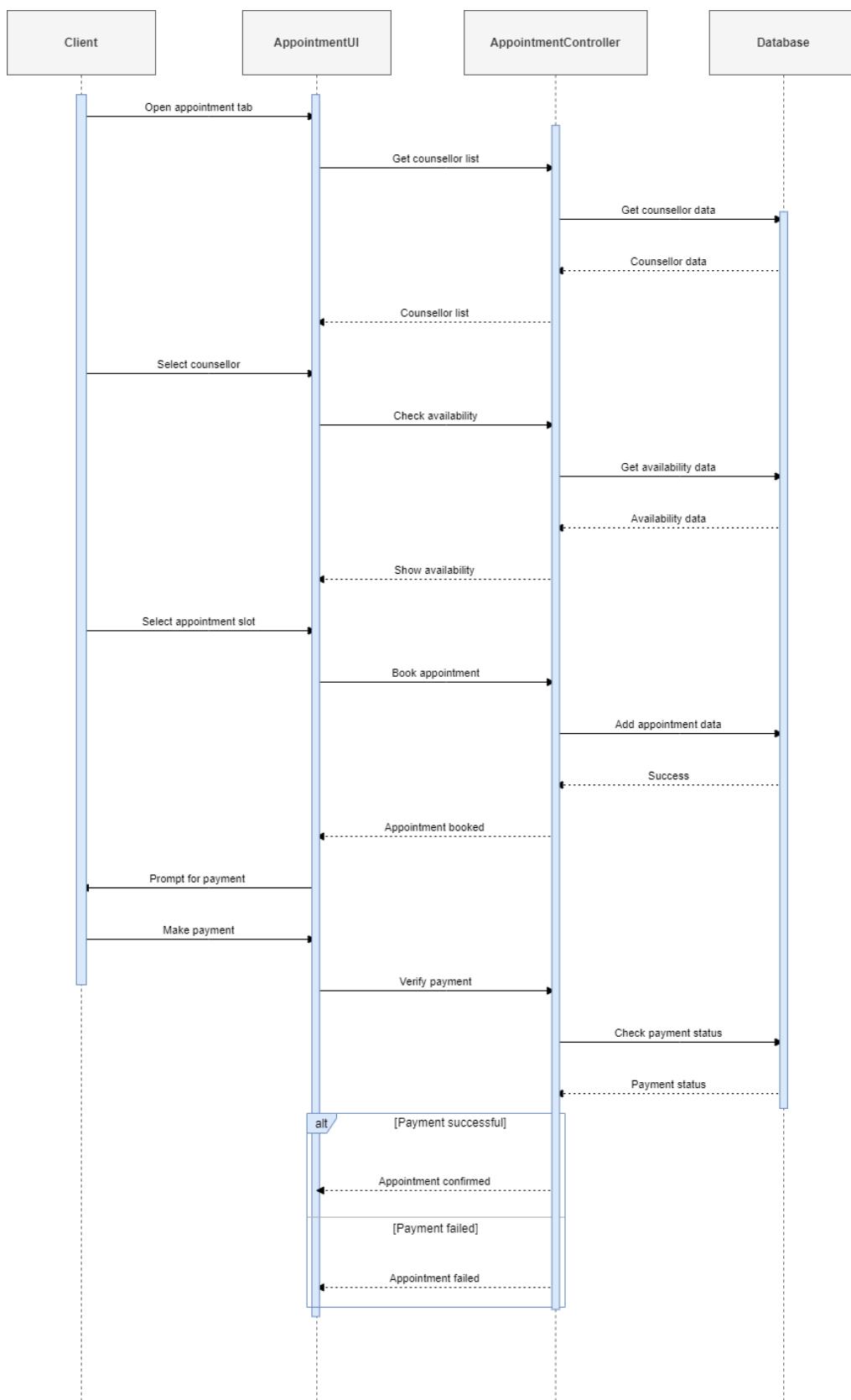


Figure 22-Sequence Diagram for Make Appointments

### 3.5.3 Sequence Diagram for Media Center

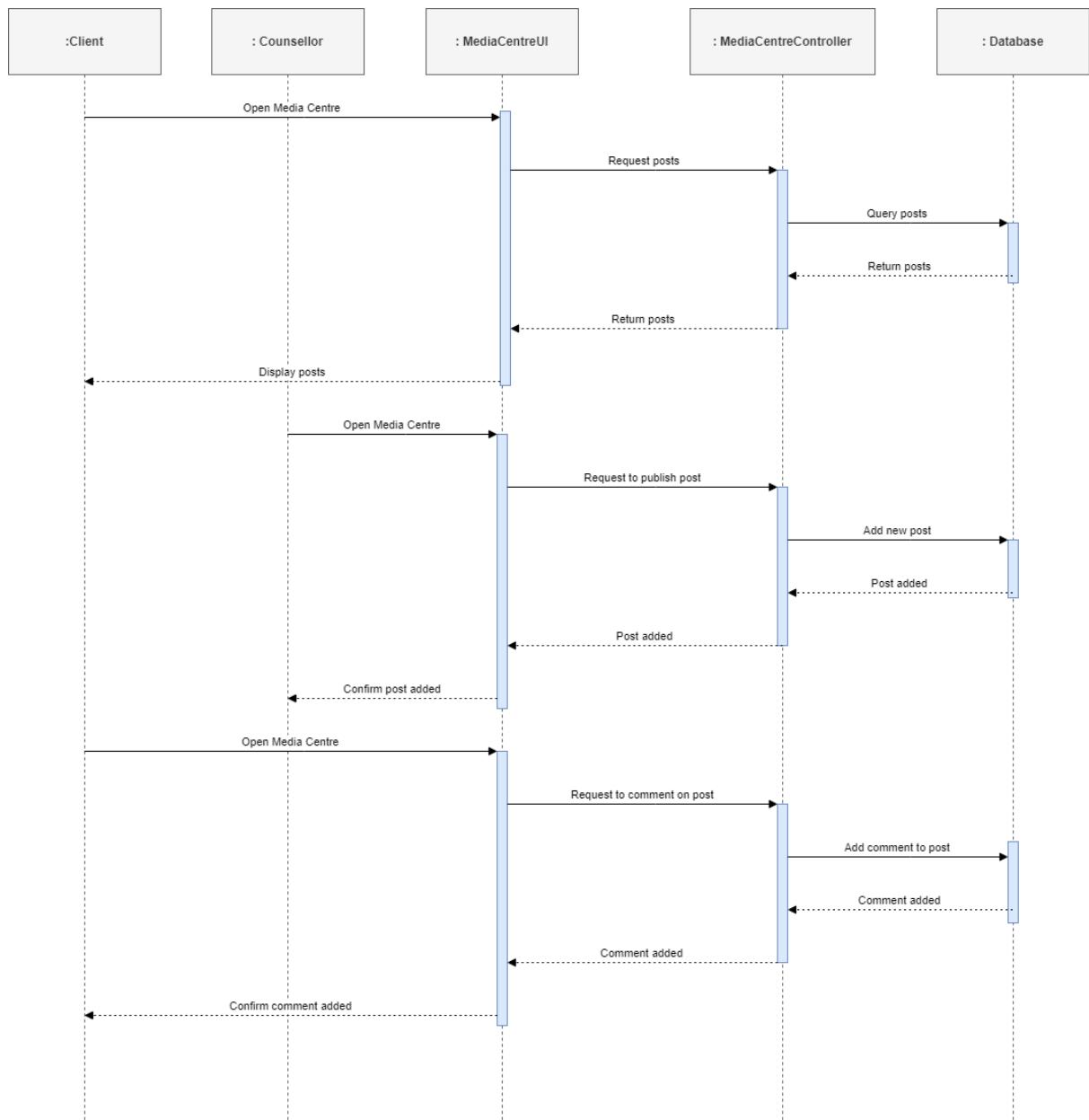


Figure 23-Sequence Diagram for Media Center

### 3.5.4 Sequence Diagram for Mood Tracking

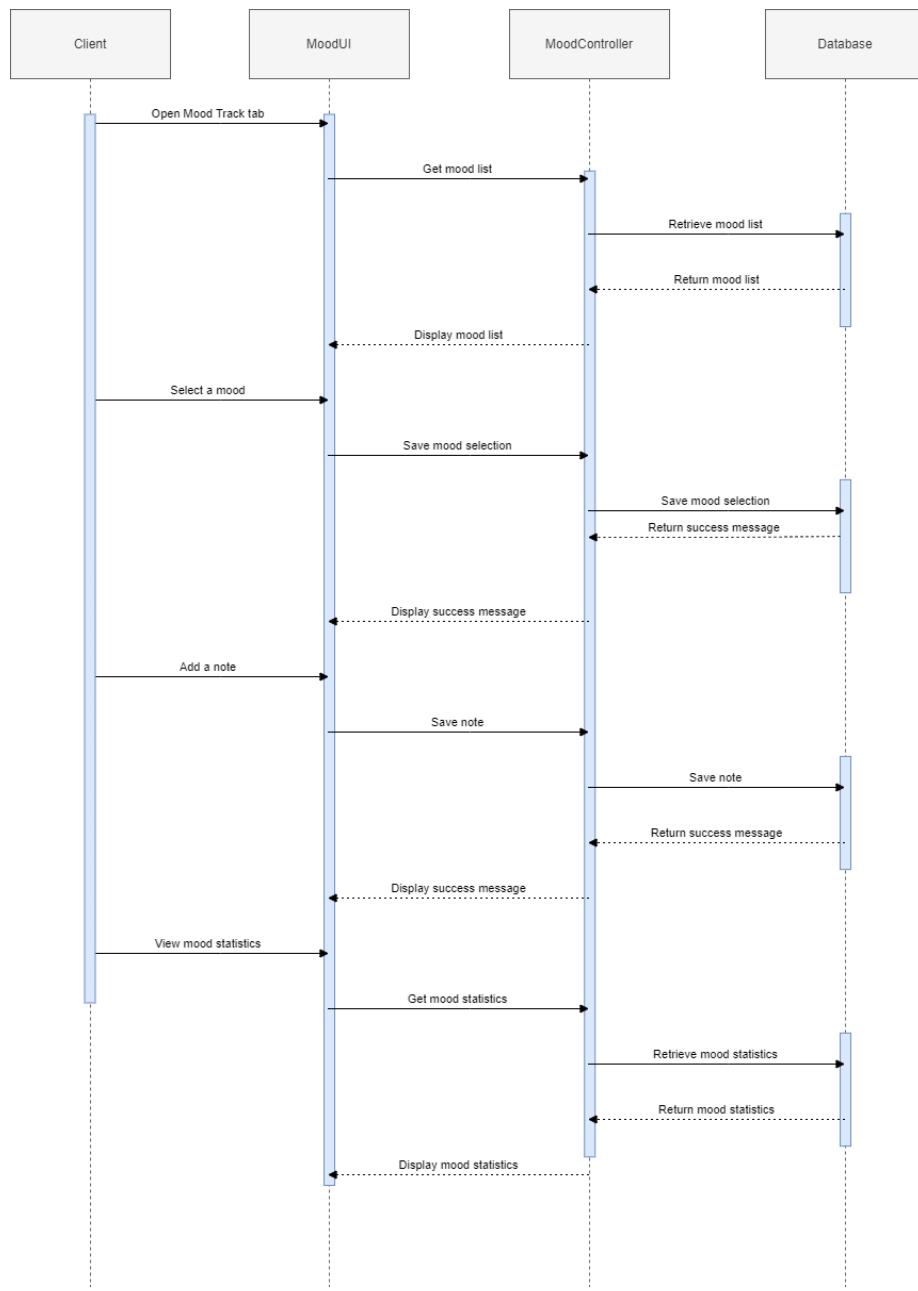


Figure 24-Sequence Diagram for Mood Tracking

## 3.8 Graphical User Interfaces

### 3.8.1 User Application Interfaces

#### 3.8.1.0 Onboarding User home

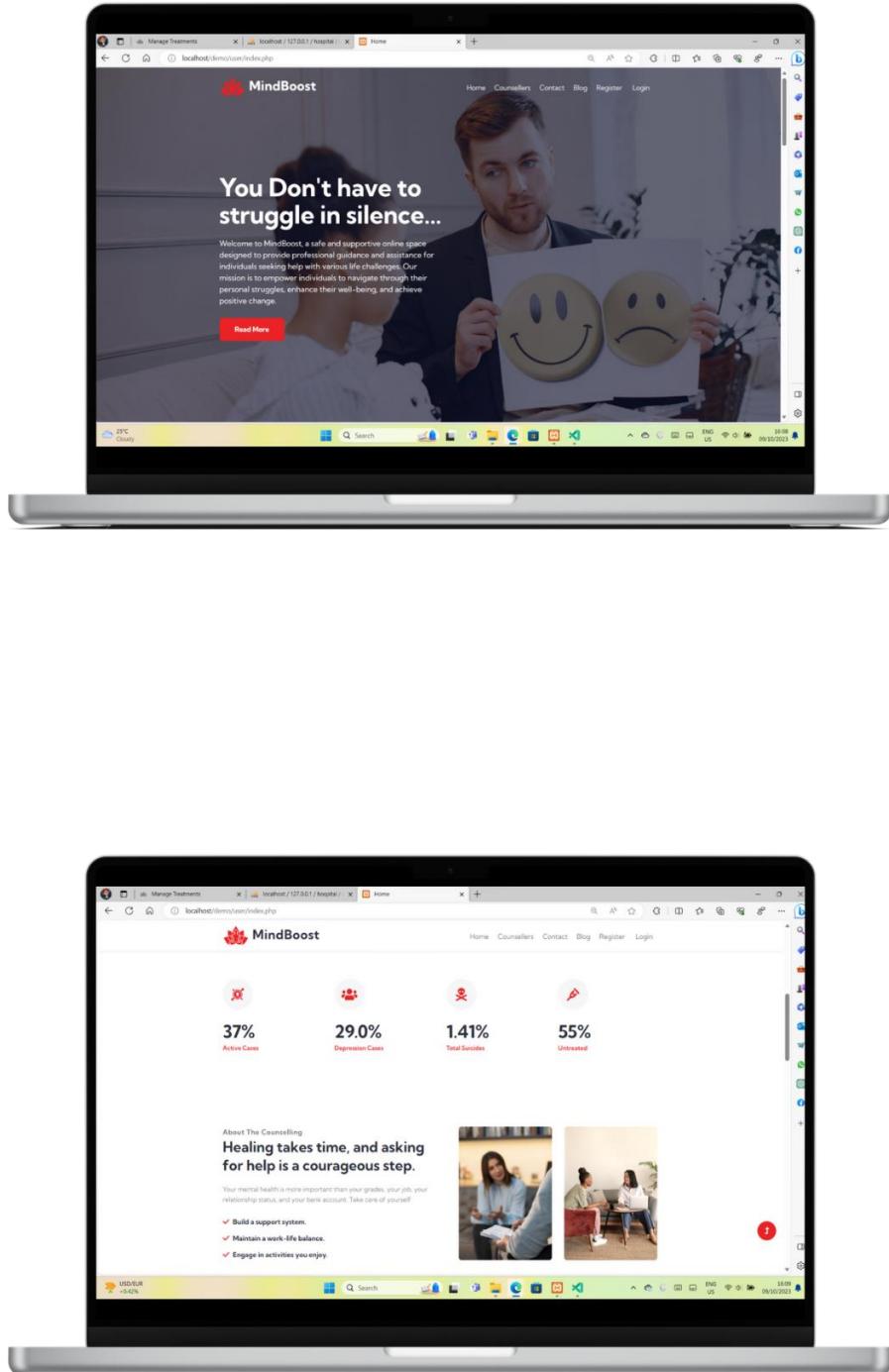


Figure 25-Onboarding User Home Screens\_I

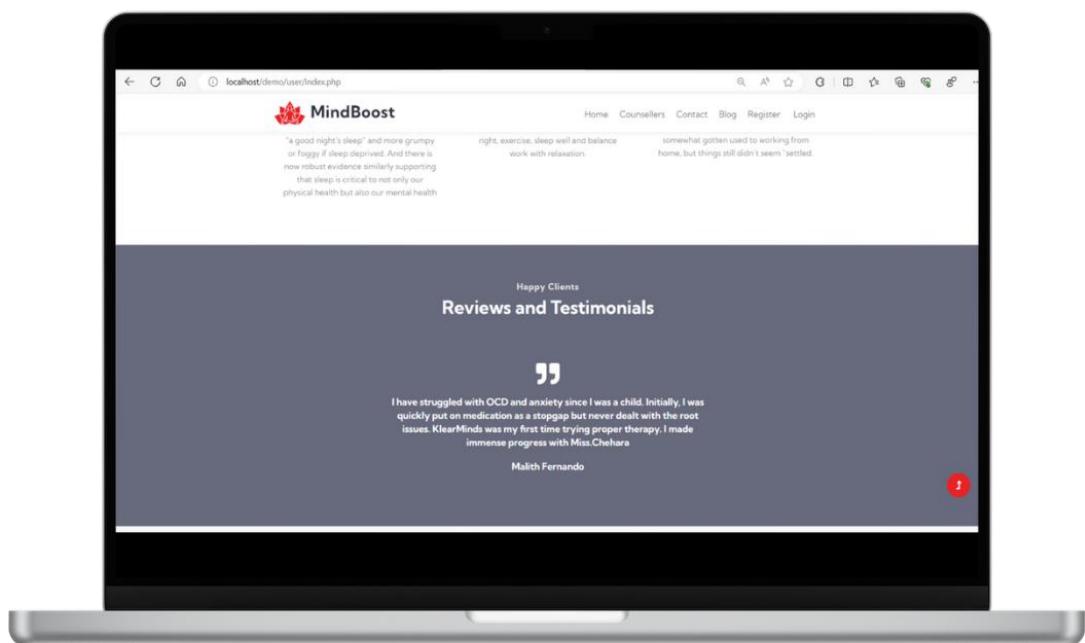
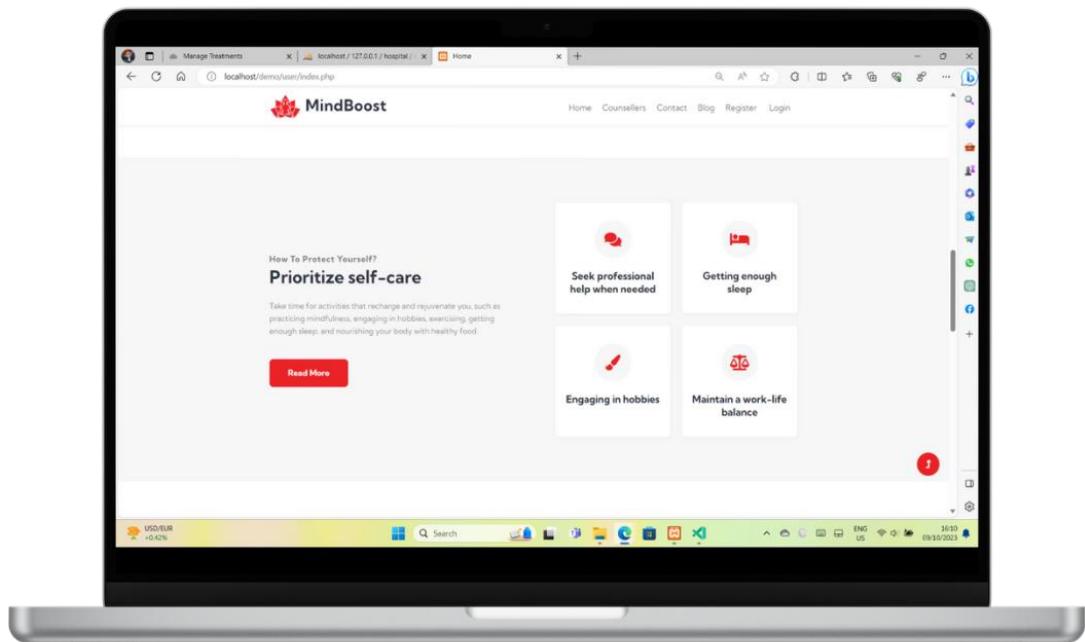


Figure 26-Onboarding User Home Screens\_2

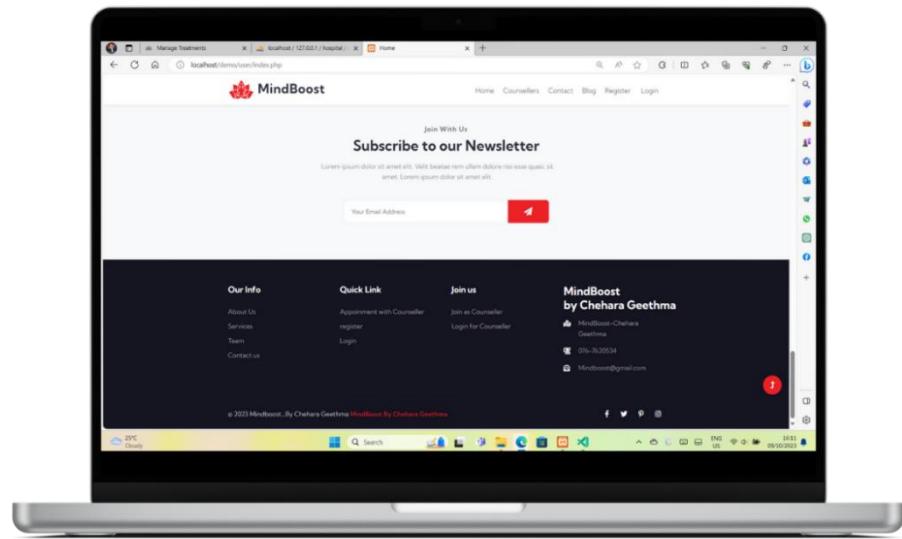


Figure 27-Onboarding User Home Screens\_2

### 3.8.1.1 Register User Interfaces

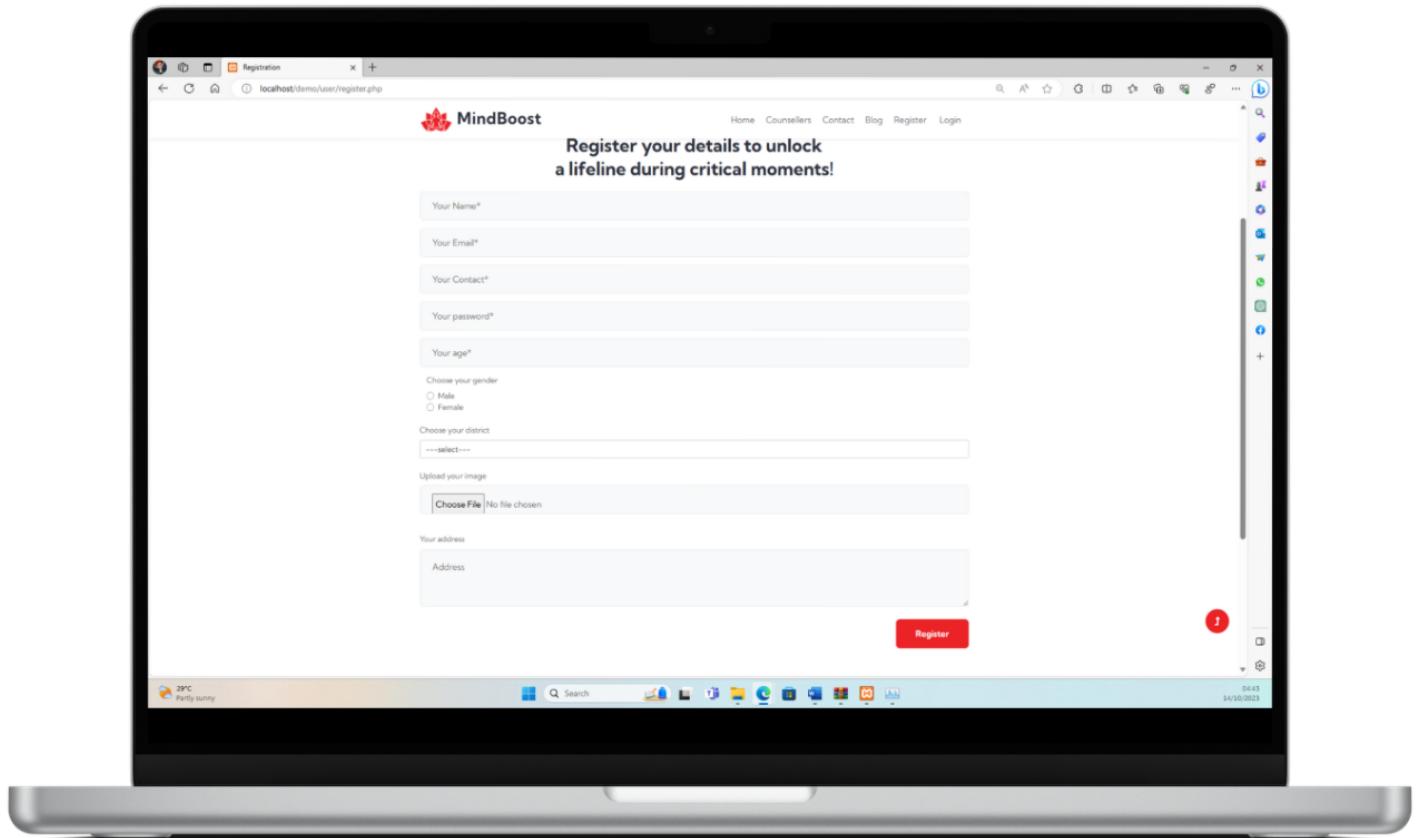


Figure 28-user registration

### 3.8.1.2 User Login Interface

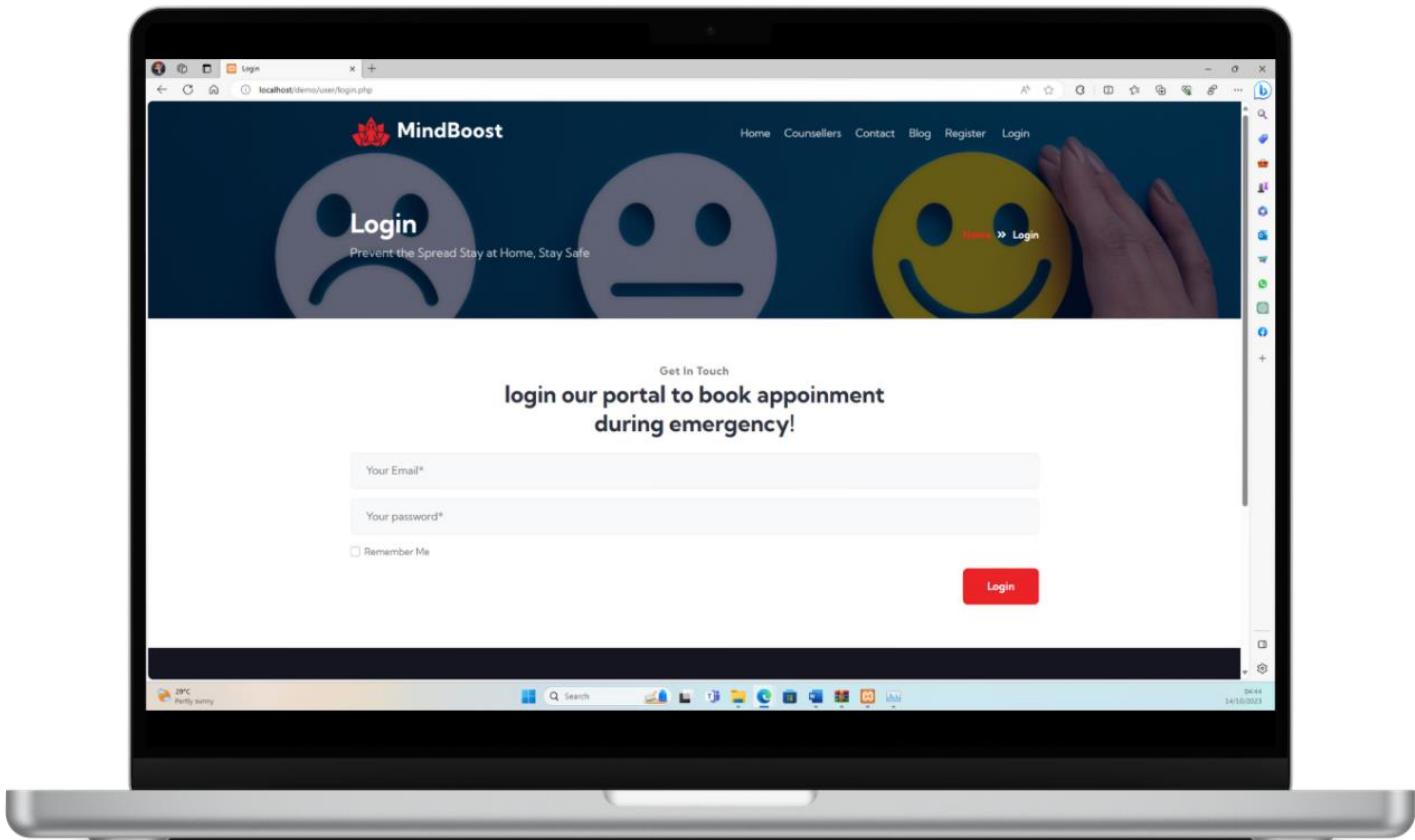


Figure 29-user login

### 3.8.1.3 Counsellor registration interfaces

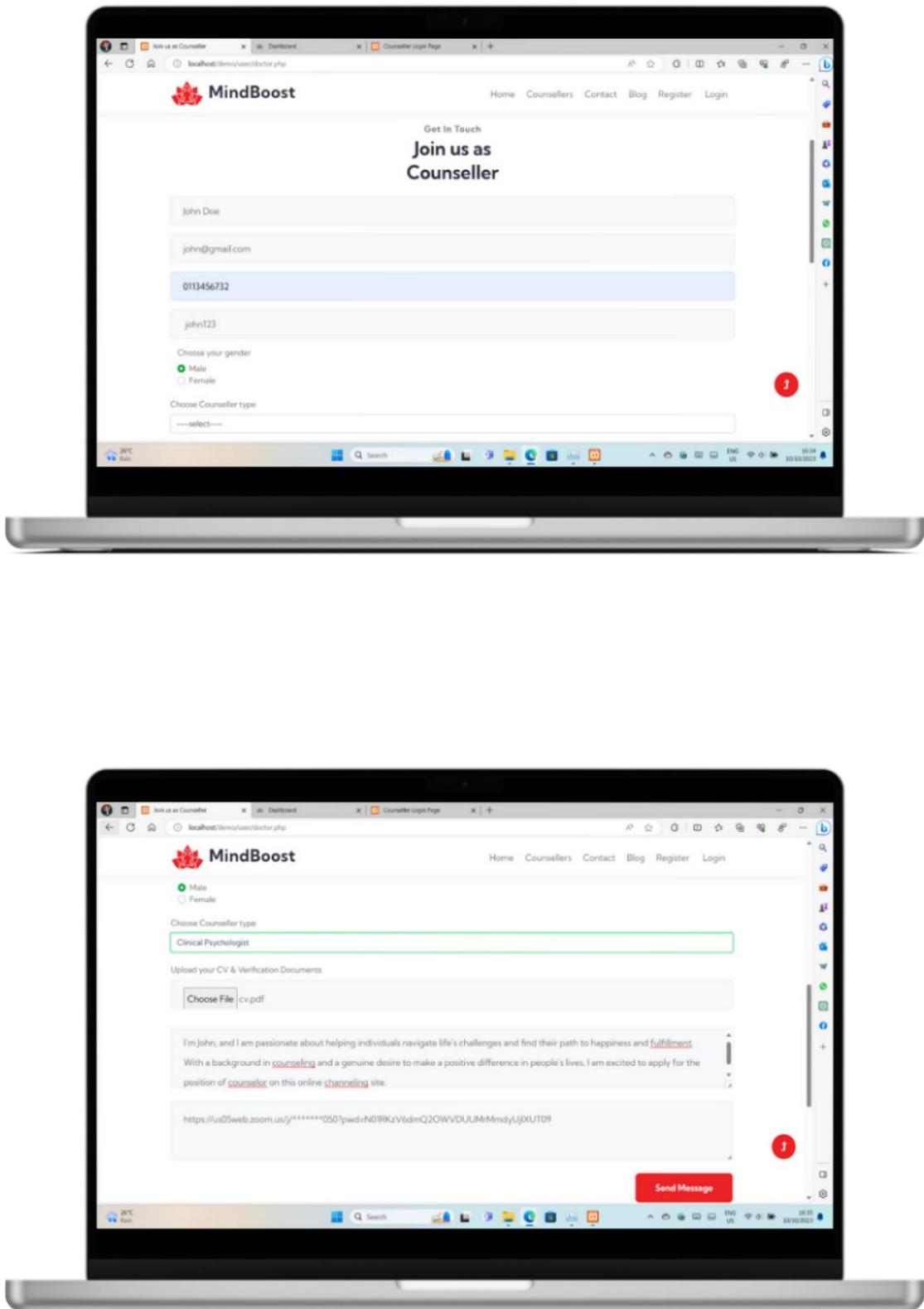


Figure 30-counsellor registration

### 3.8.1.4 Contact Us interface

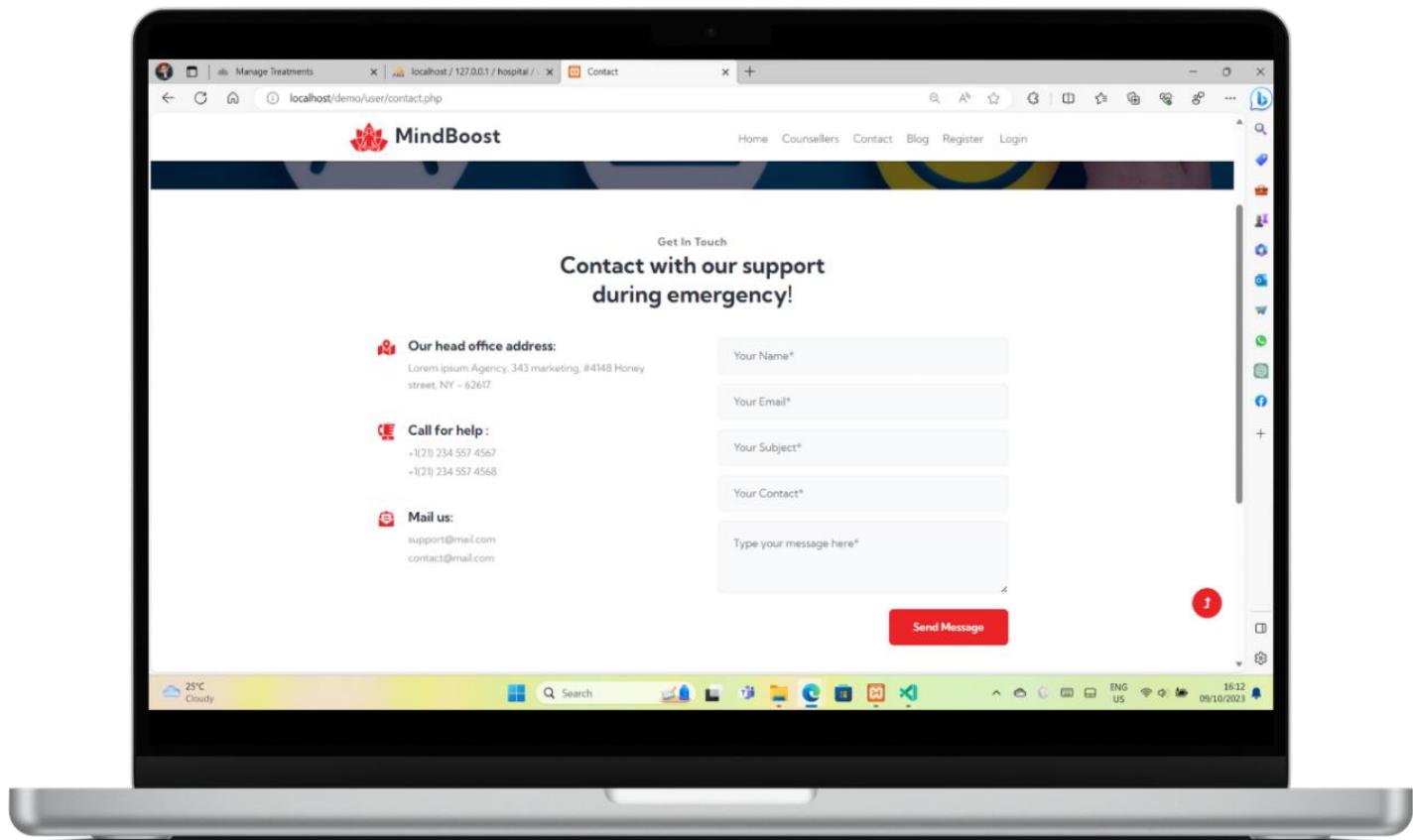


Figure 31-User Contact Us

### 3.8.1.5 Blog list interface

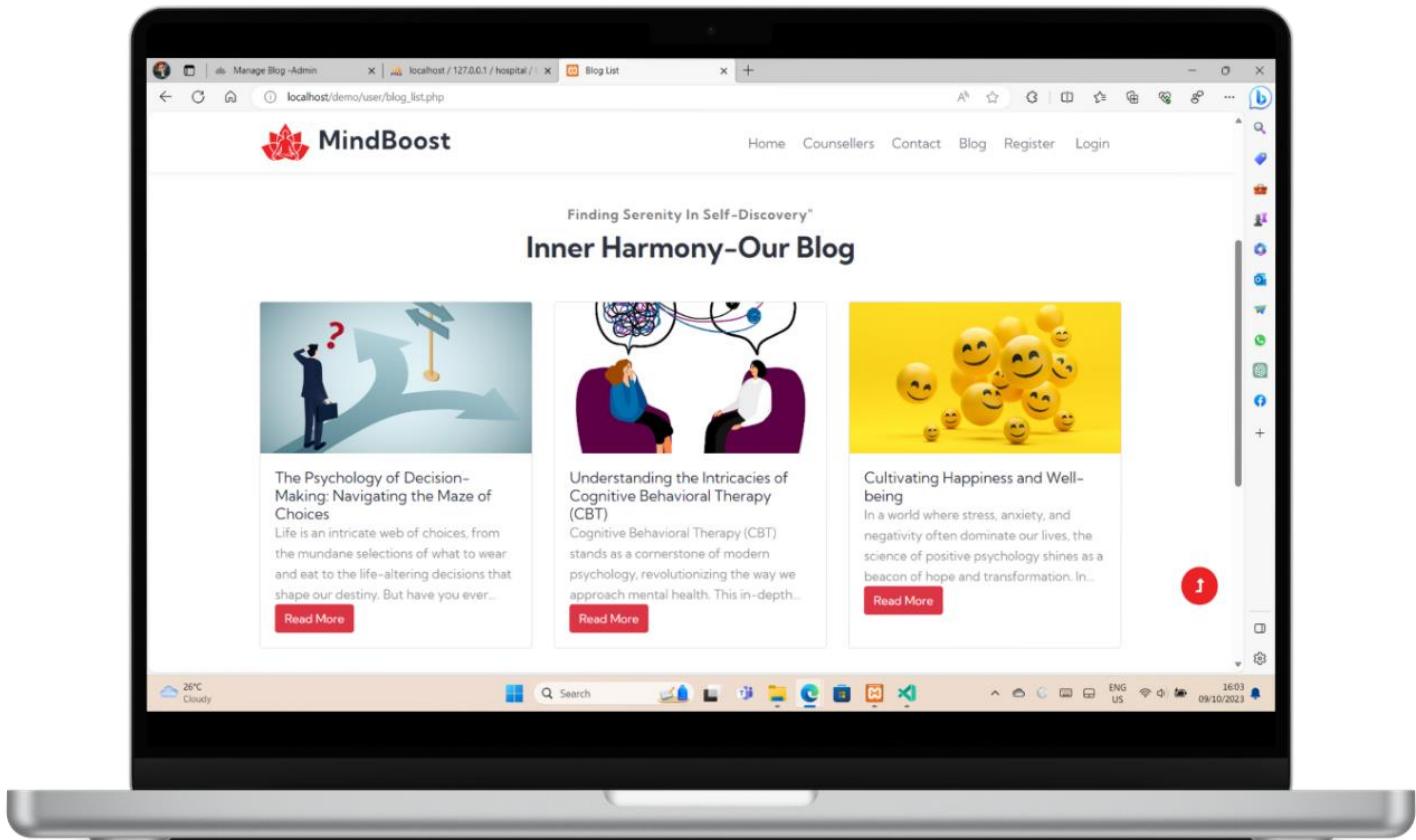


Figure 33-Blog list

### 3.8.1.6 Blog view Interfaces

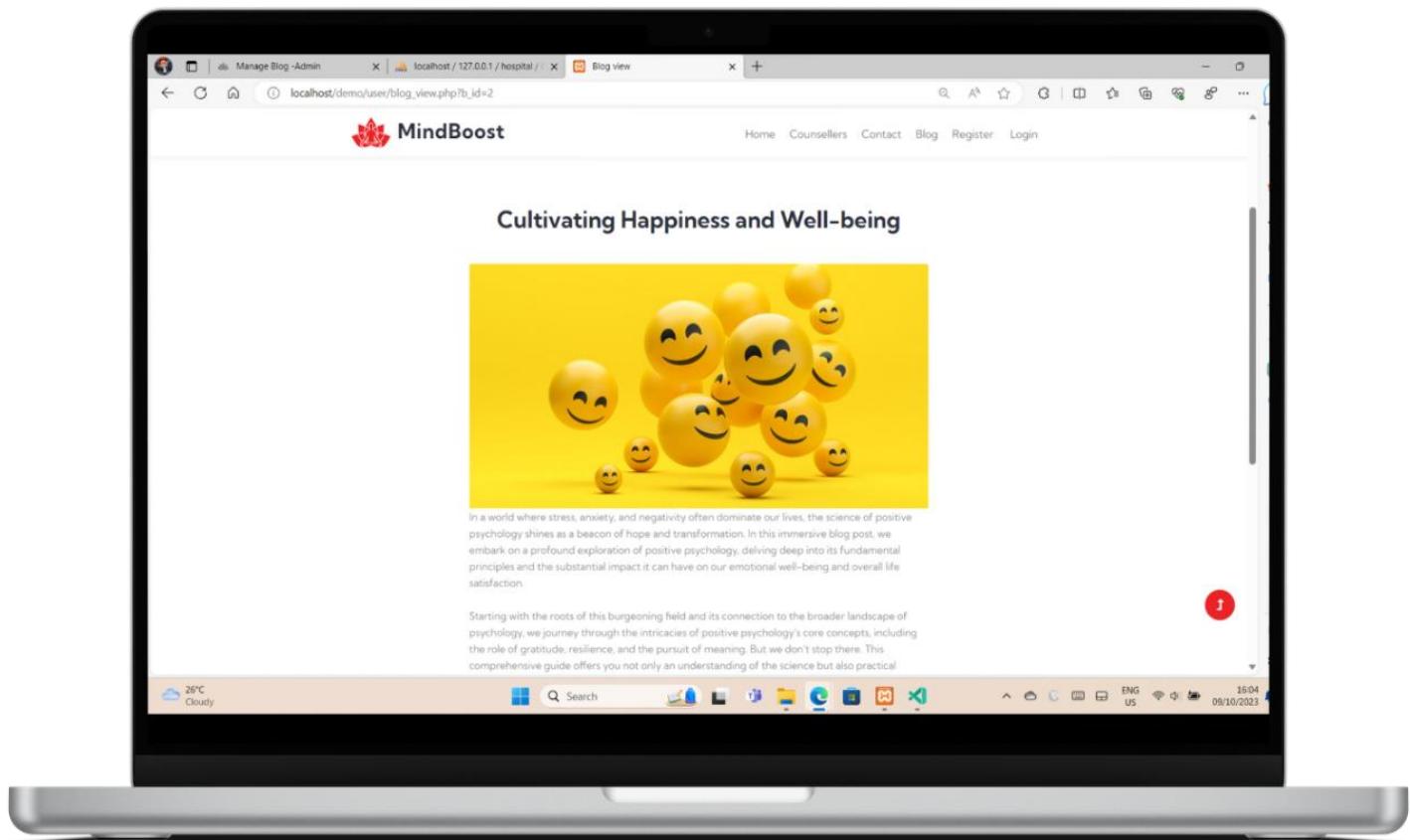


Figure 34-Blog view Interface

### 3.8.1.7 Counsellor List Interface

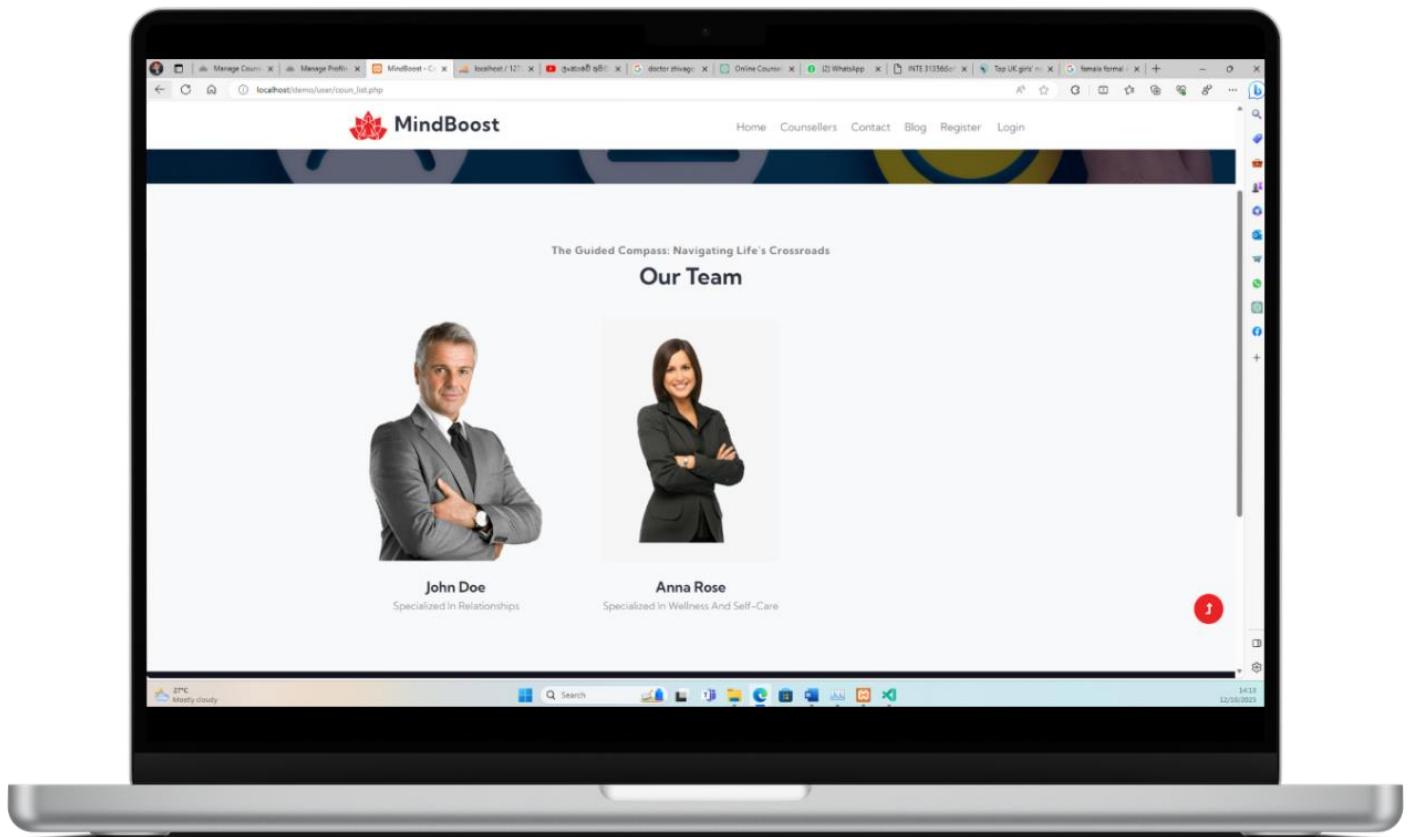


Figure 35-Counsellor list Interfaces

### 3.8.1.8 Counsellor Profile View Interface

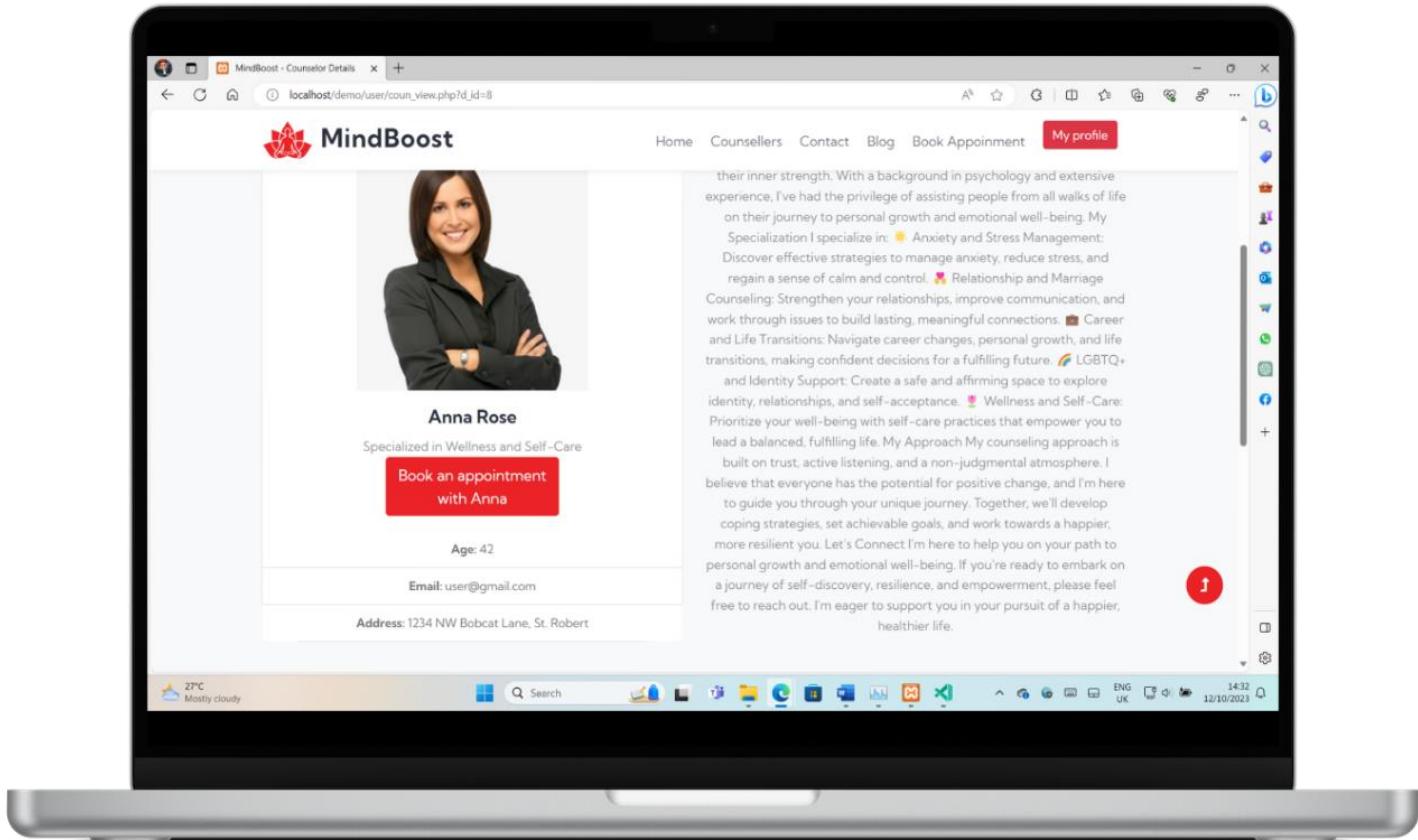


Figure 36-Counsellor profile View Interface

### 3.8.1.9 Counsellor reviews

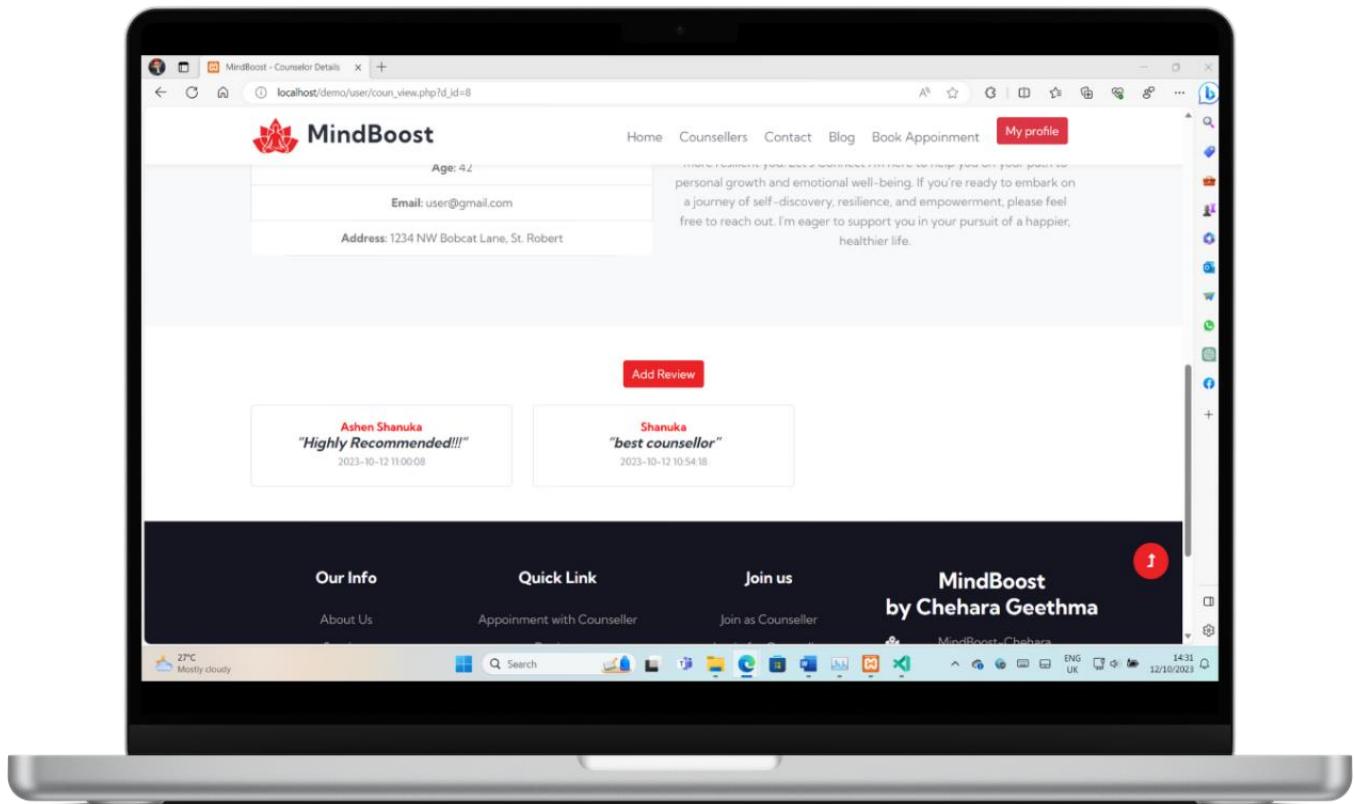


Figure 37-Counsellor reviews

### 3.8.1.10 Add review

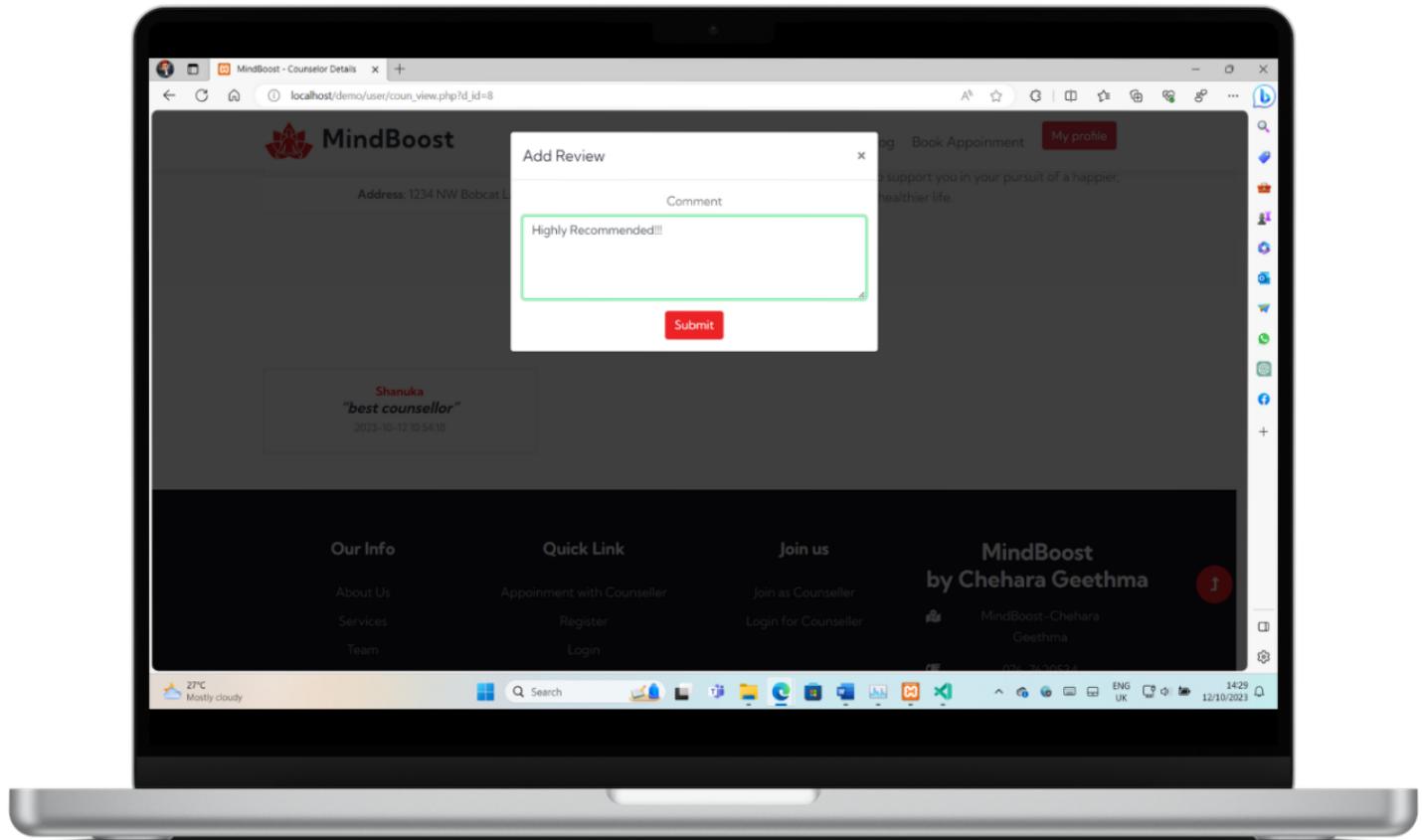


Figure 38-Add review

### 3.8.1.11 User make appointment

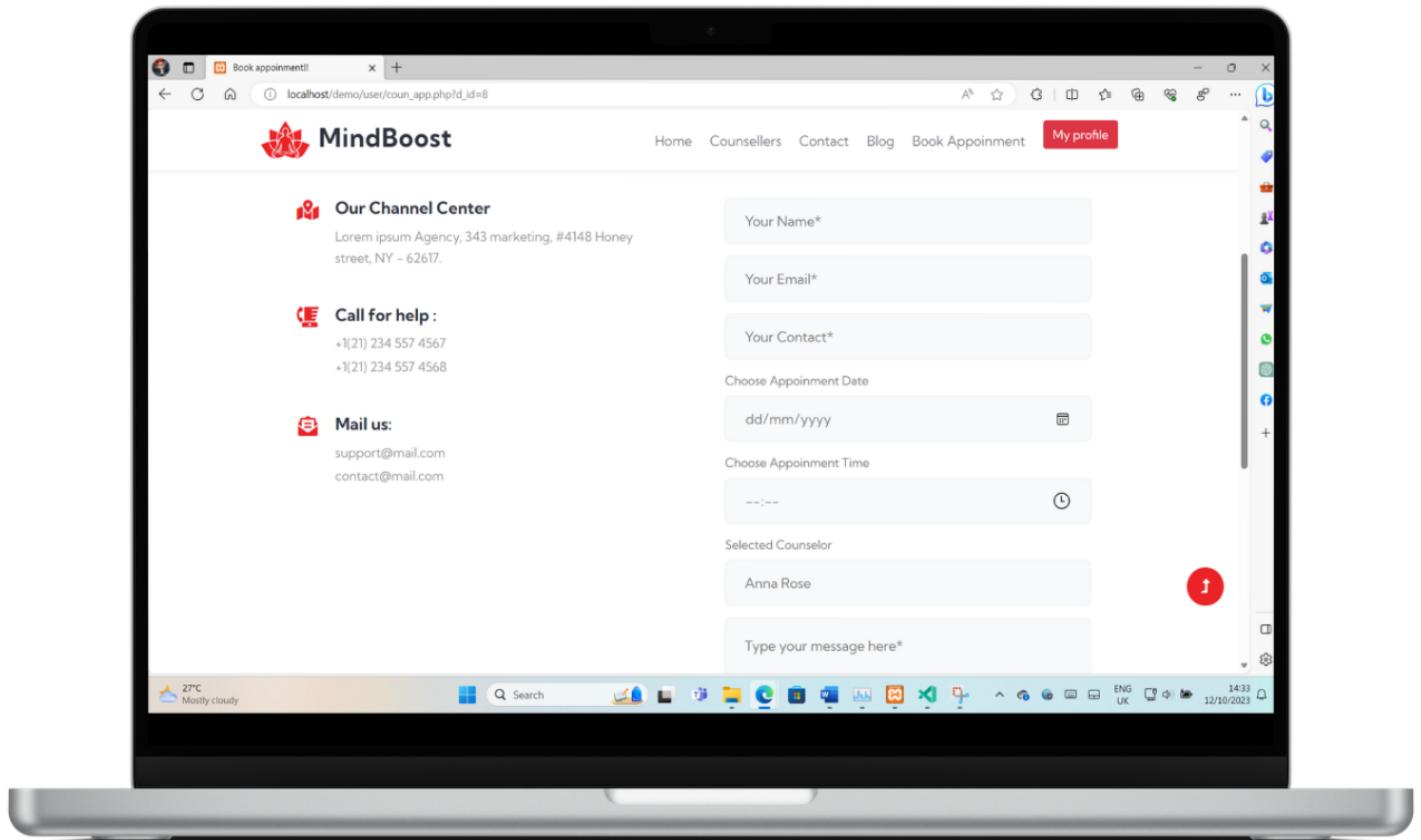


Figure 39-Make Appointment Interface

### 3.8.1.12 User Appointment list

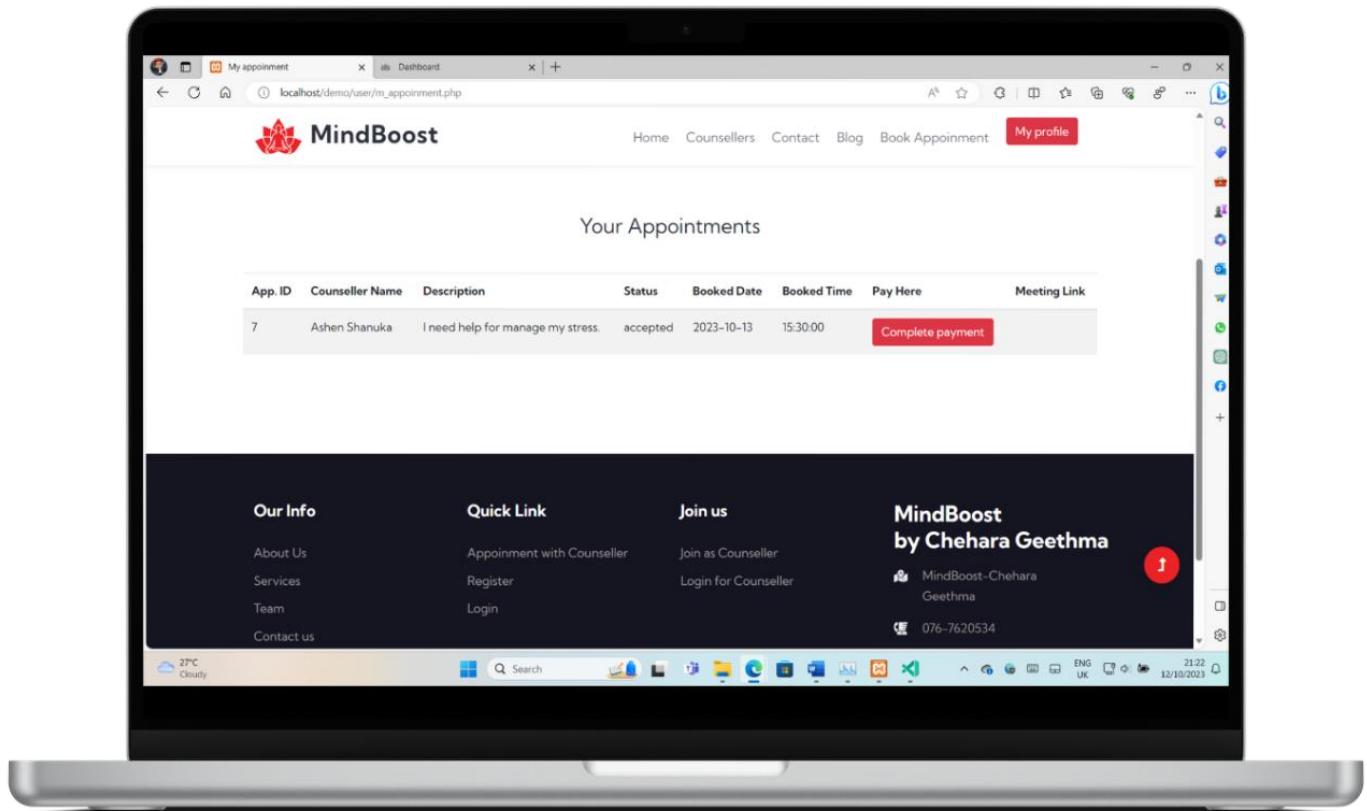


Figure 40-appointment list

### 3.8.1.13 Make Payment Appointment

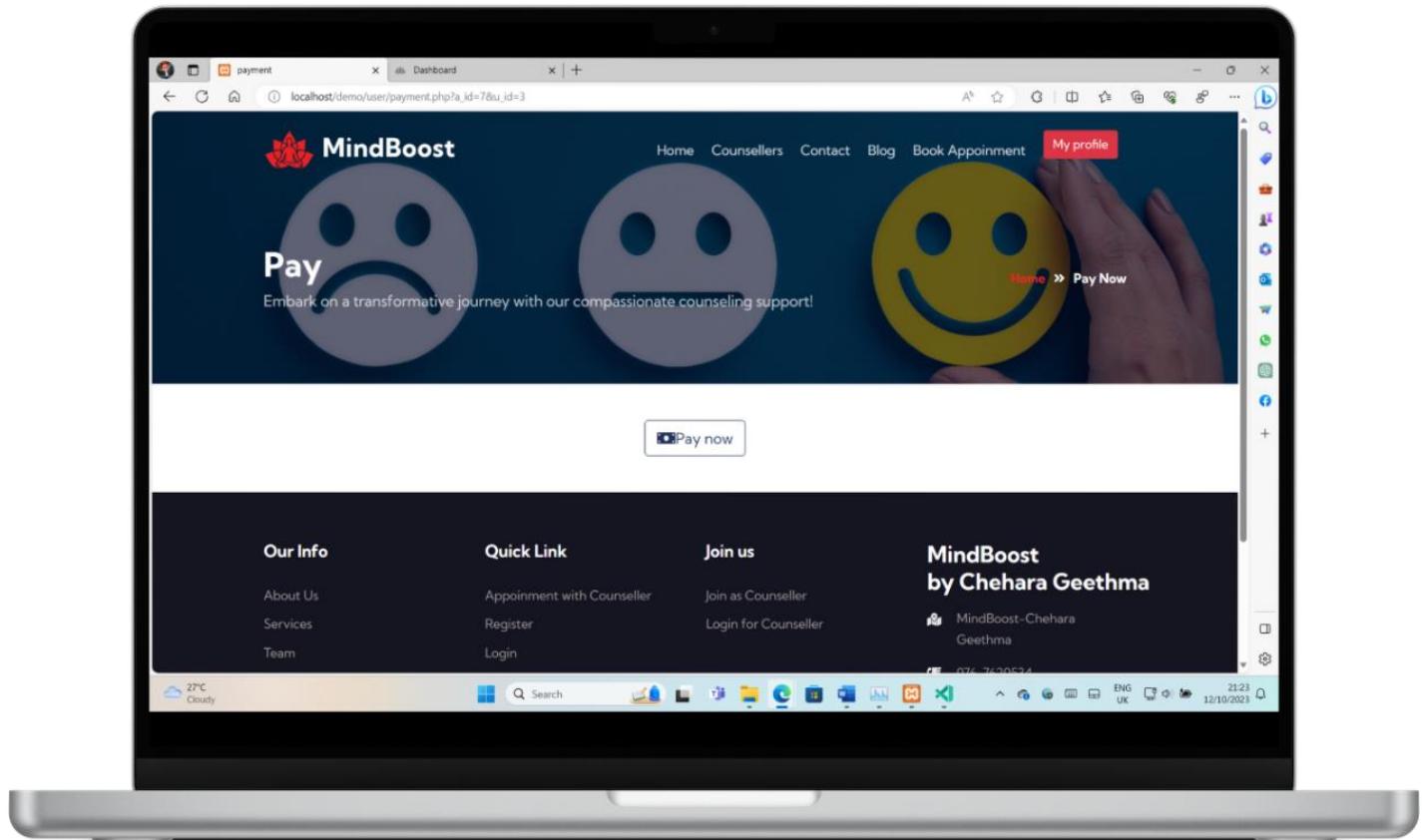


Figure 41-Make Payment Interfaces

### 3.8.1.14 Paid appointment with meeting link

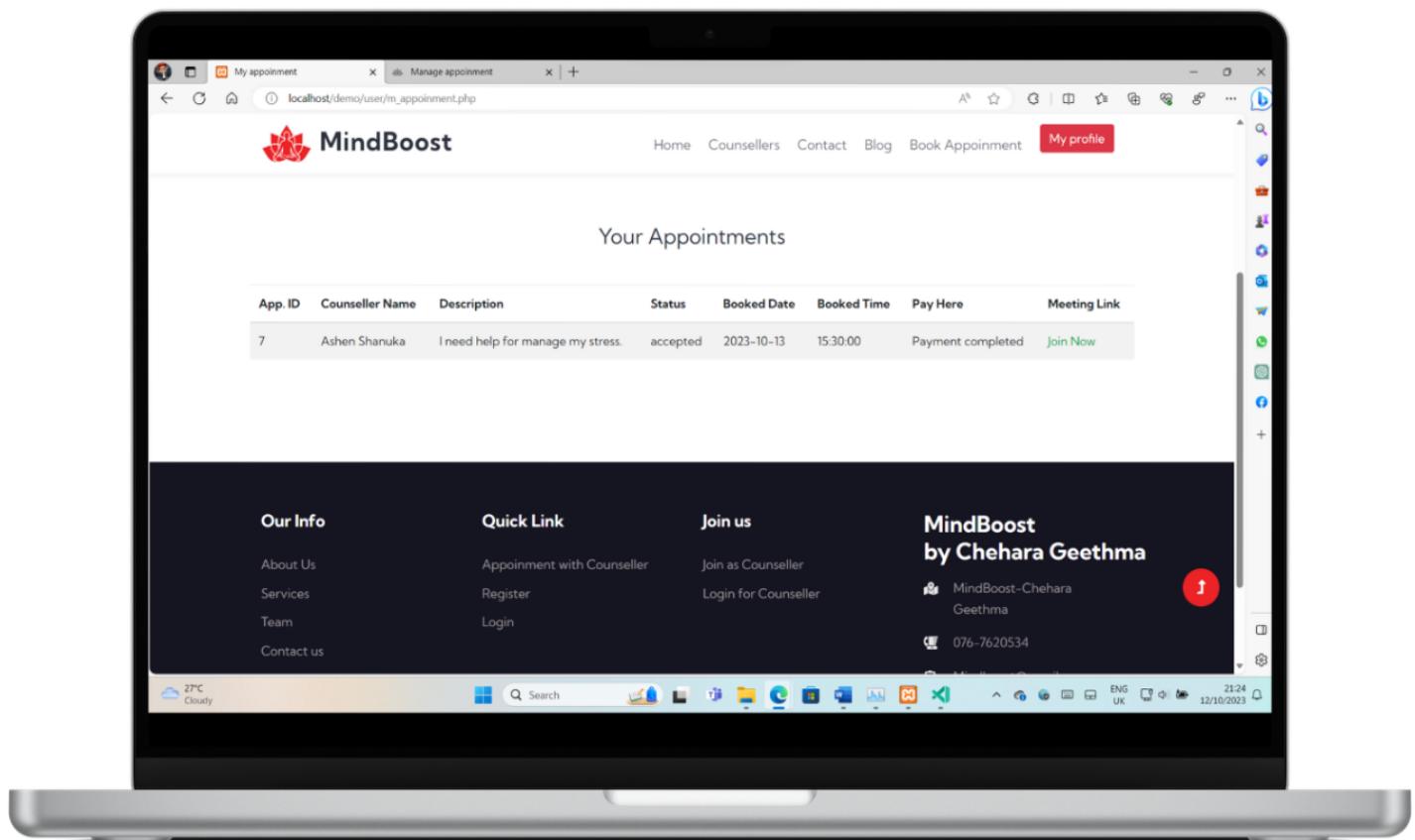


Figure 42-Paid appointment with meeting link

### 3.8.2 Counsellor Application Interfaces

#### 3.8.2.0 Counsellor Login

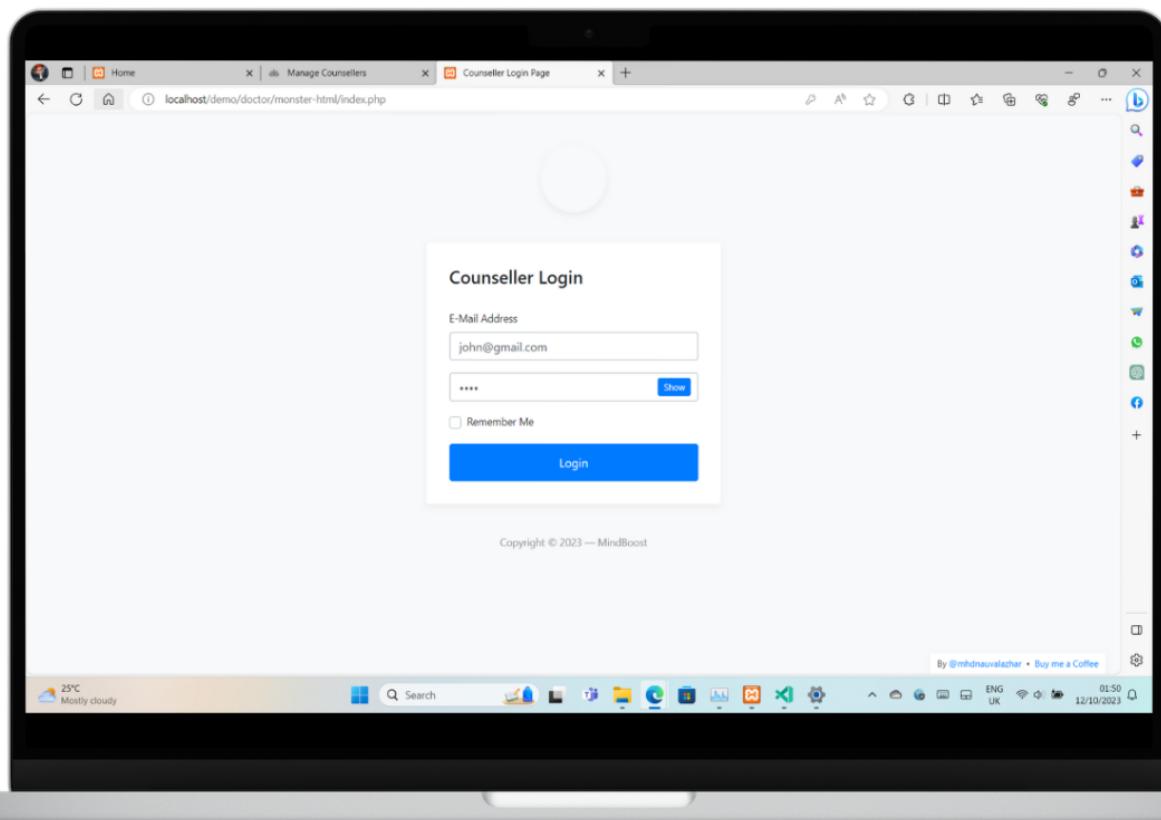


Figure 43-counsellor login

### 3.8.2.1 Counsellor Dashboard

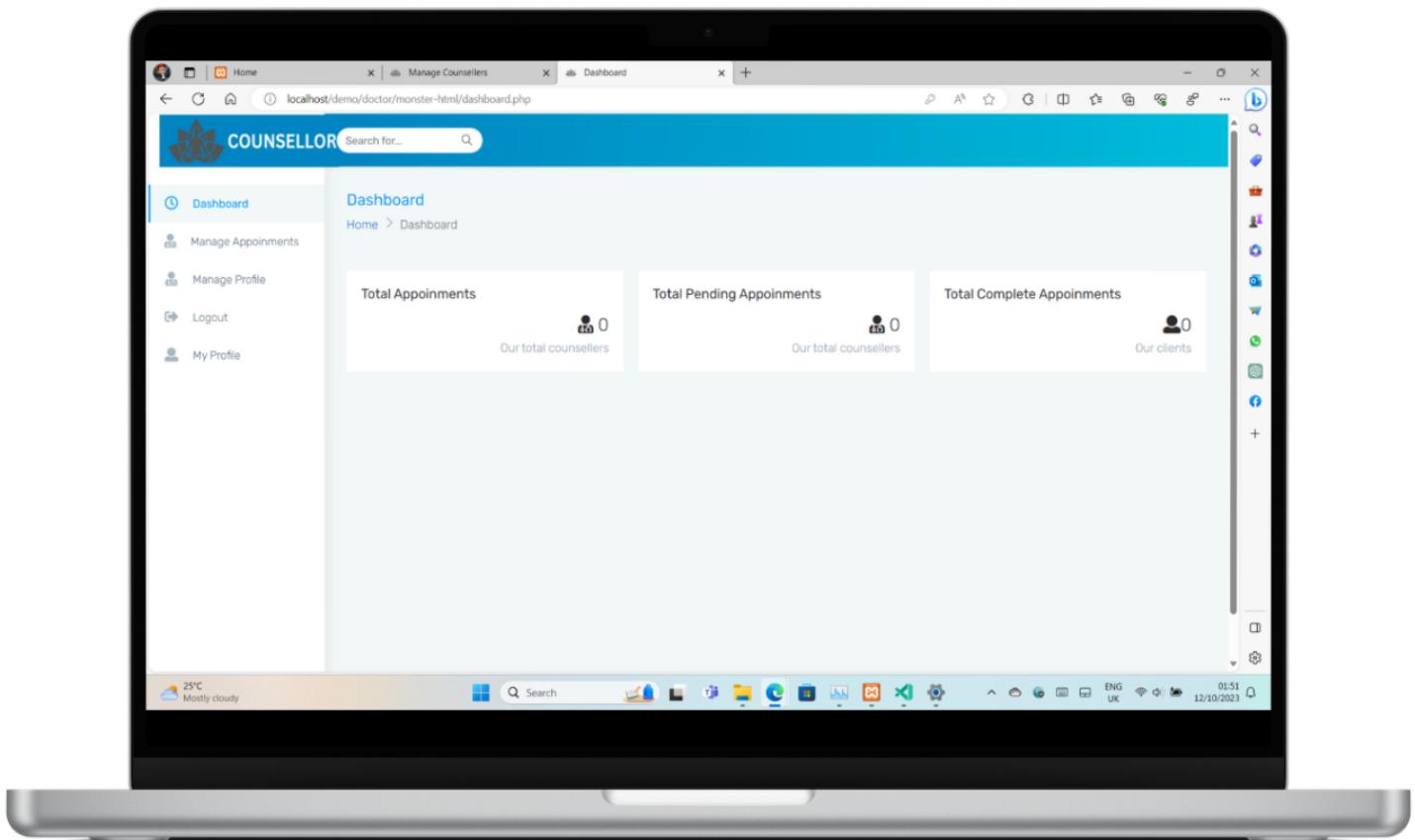


Figure 44-Counsellor Dashboard

### 3.8.2.2 Counsellor Profile

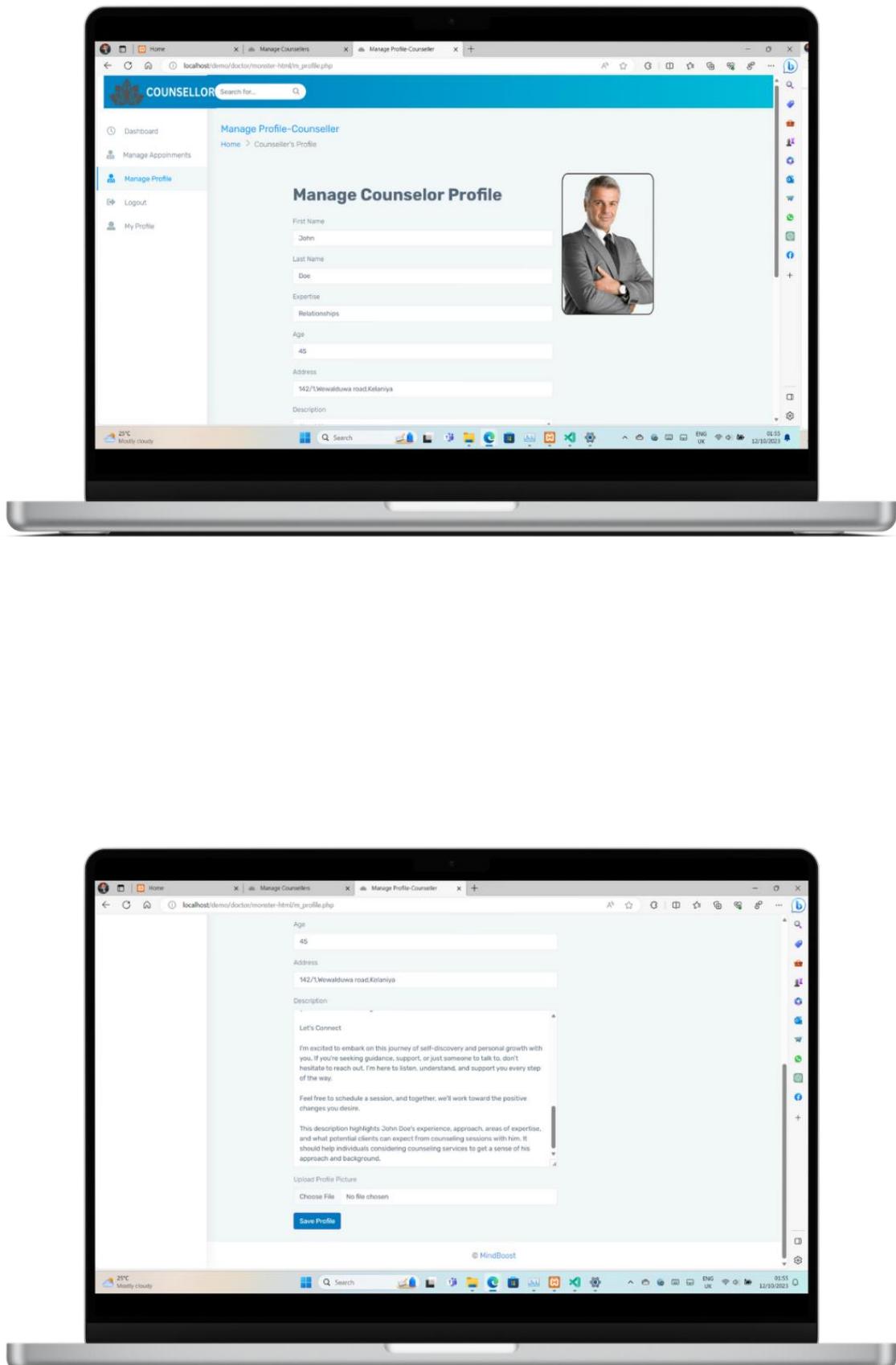


Figure 45-Media Center Interface

### 3.8.2.3 Counsellors accept appointment

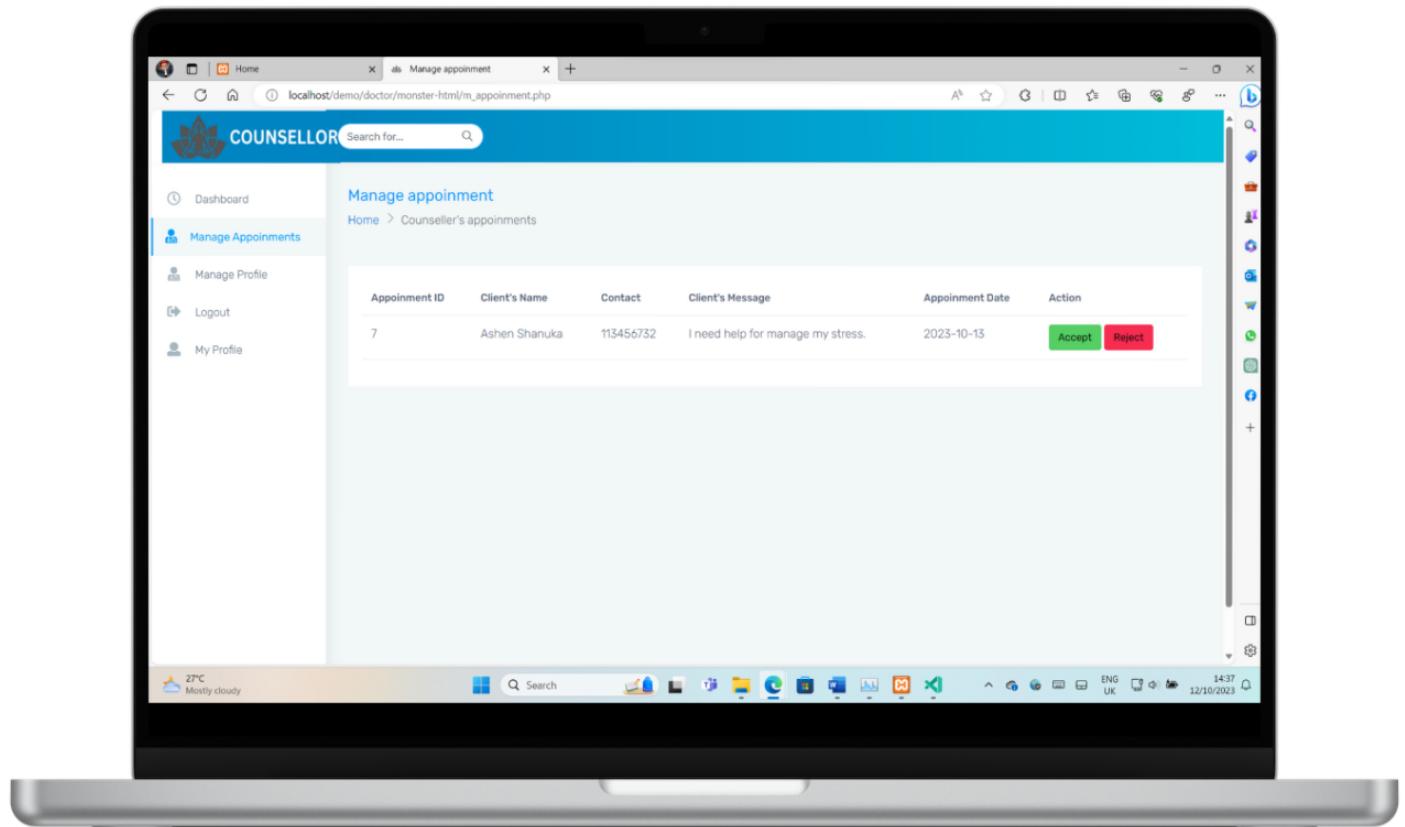


Figure 46-Counsellors accept appointment interface

### 3.8.3 Admin Application Interfaces

#### 3.8.3.0 Admin Login

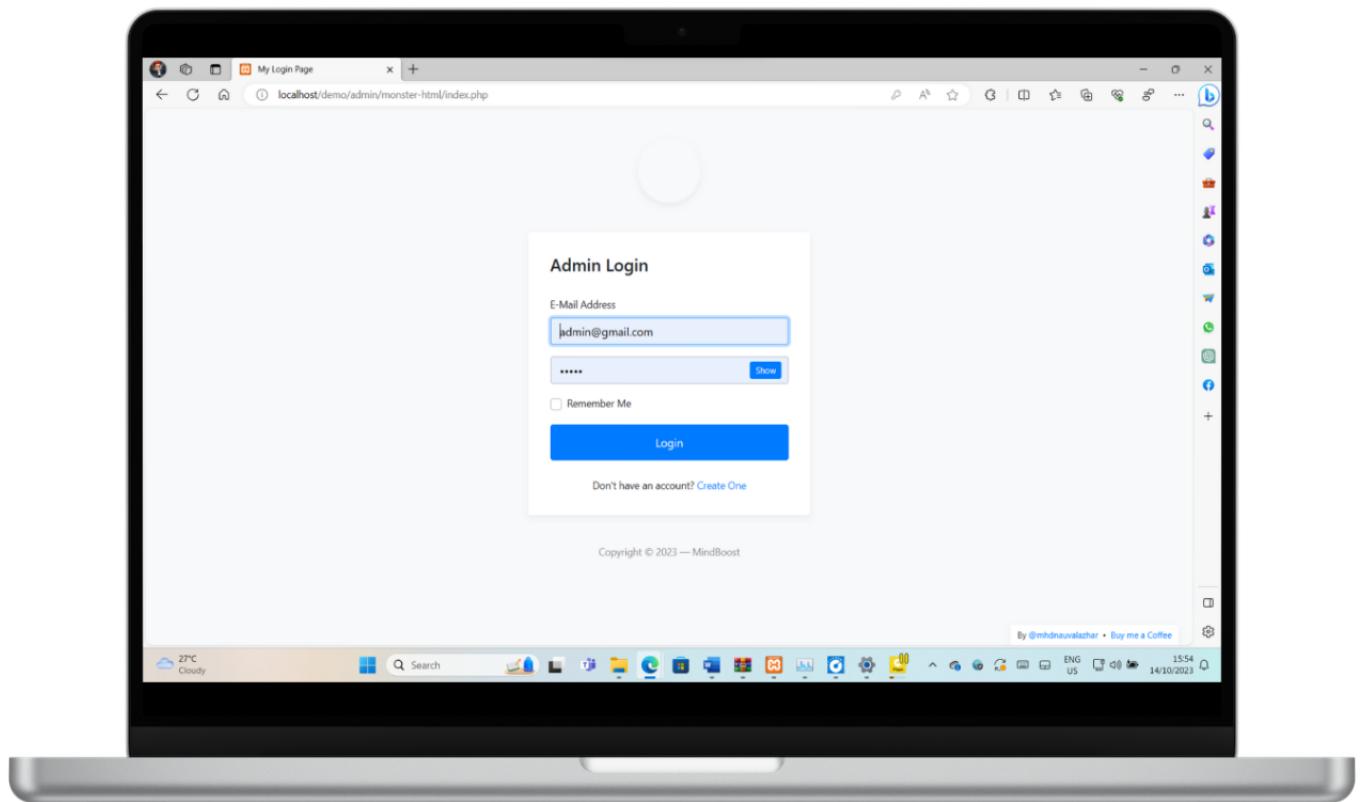


Figure 47-Admin login Interface

3.

### 3.8.3.1 Admin Dashboard

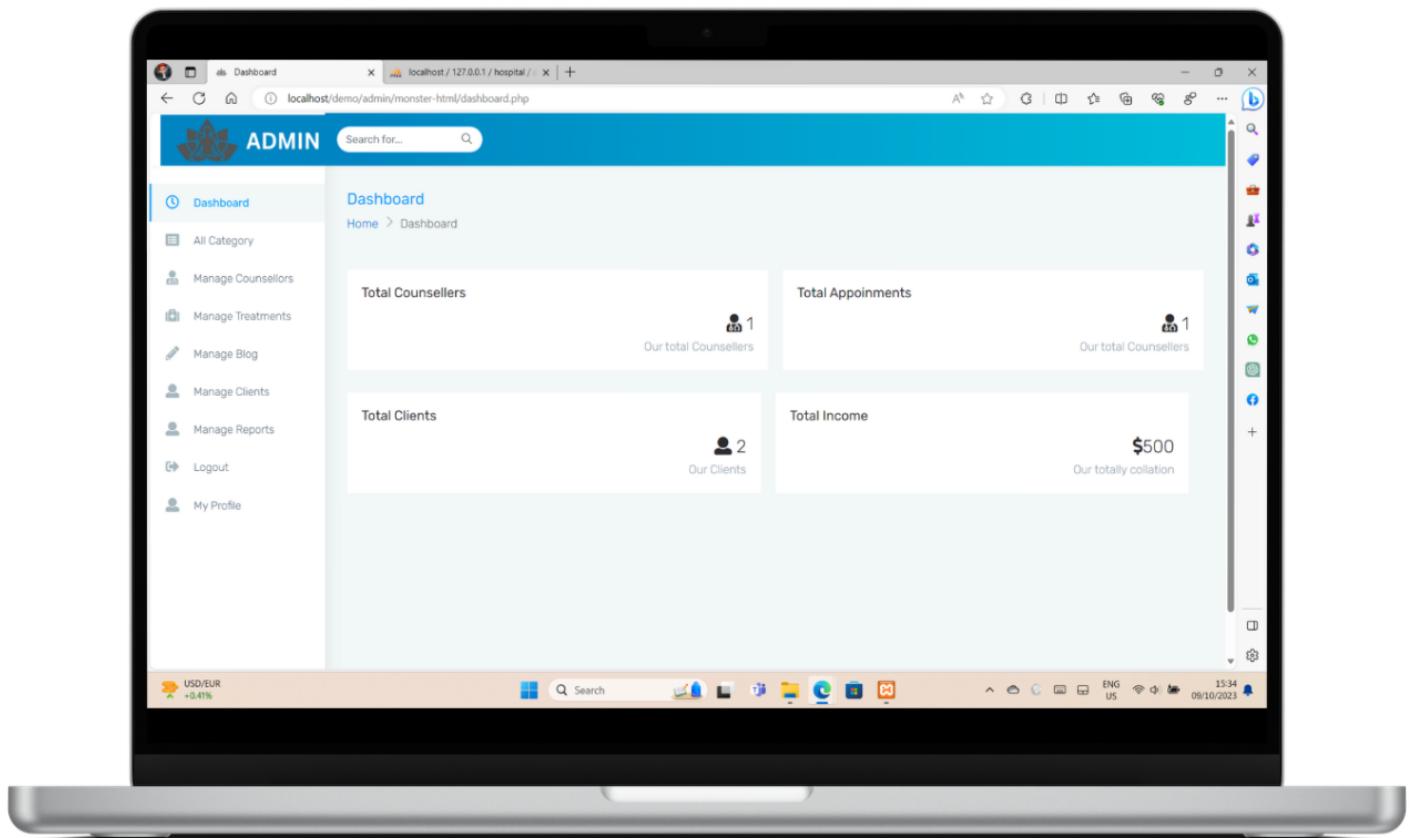


Figure 48-Admin Dashboard

### 3.8.3.2 Admin Counsellor Categories

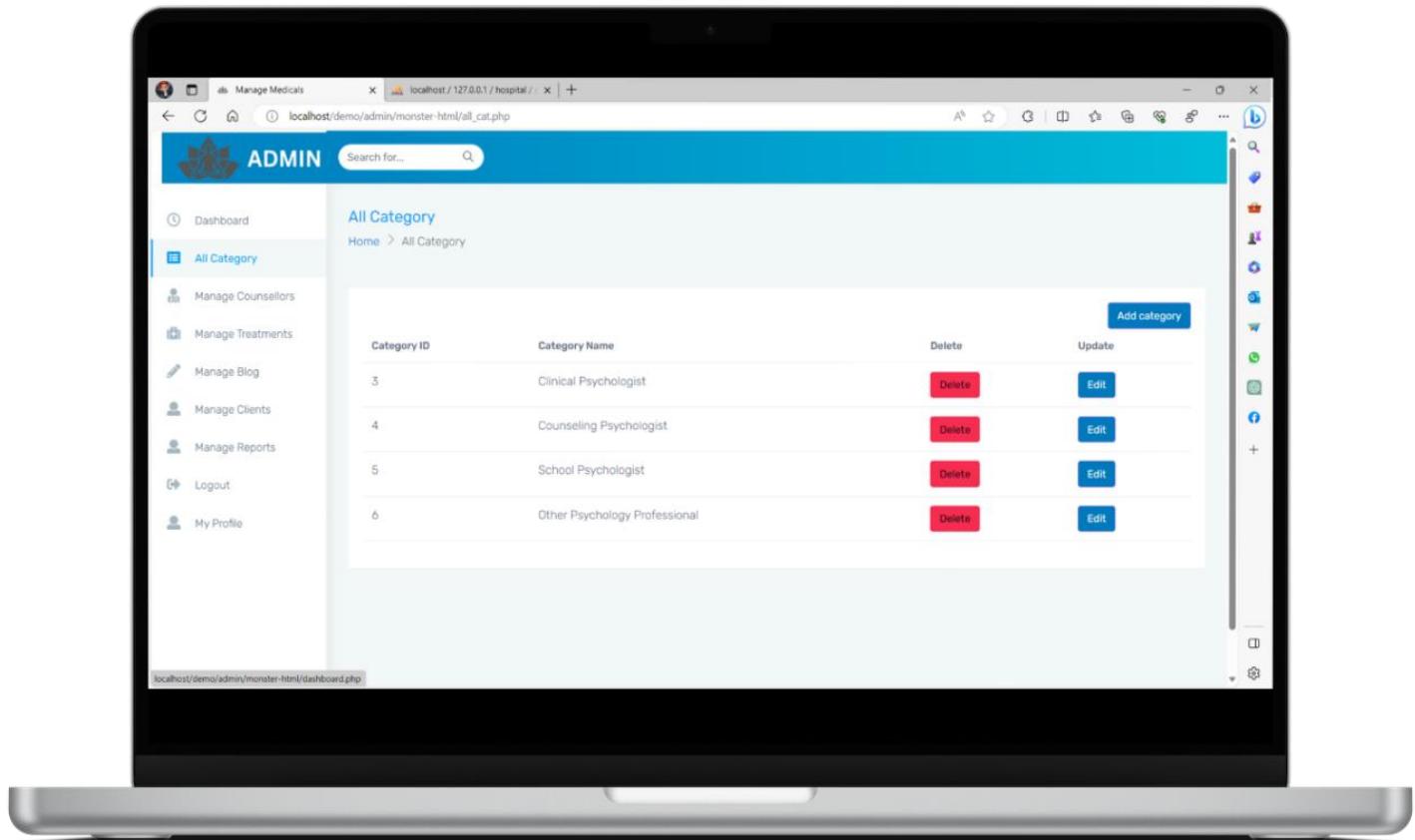


Figure 49-Admin counsellor categories interface

### 3.8.3.3 Admin Counsellor List

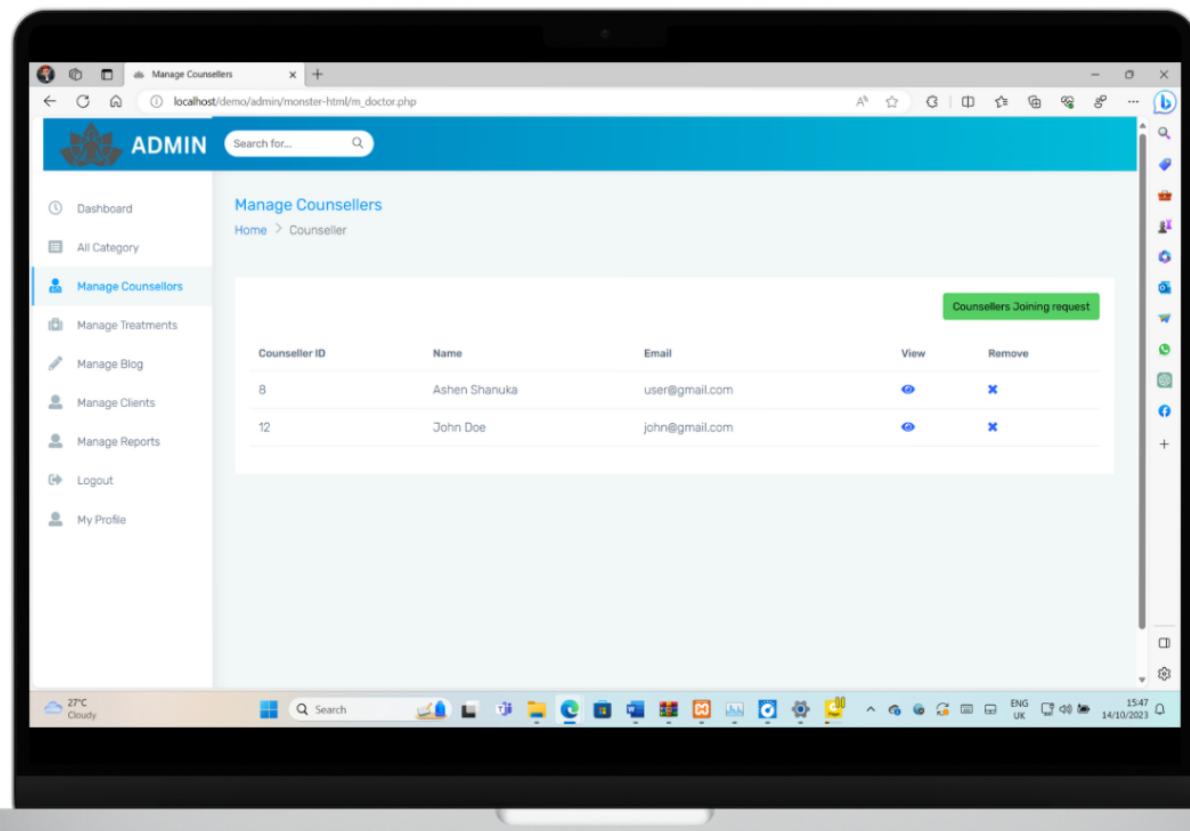


Figure 50-Admin counsellor list interface

### 3.8.3.4 Admin Counsellor Join Request List

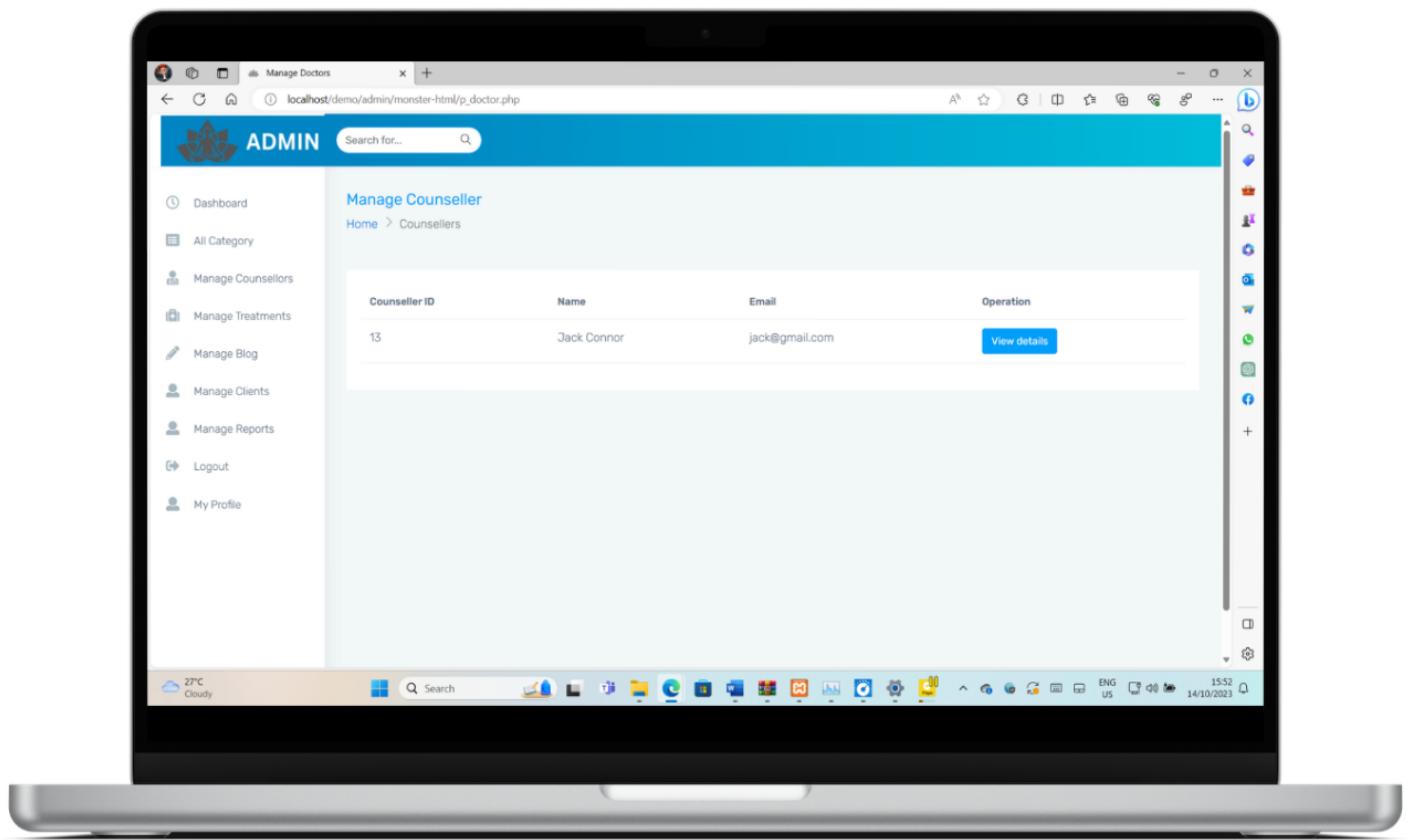


Figure 51-Admin Counsellor Join Request List

### 3.8.3.5 Admin Counsellor Request View

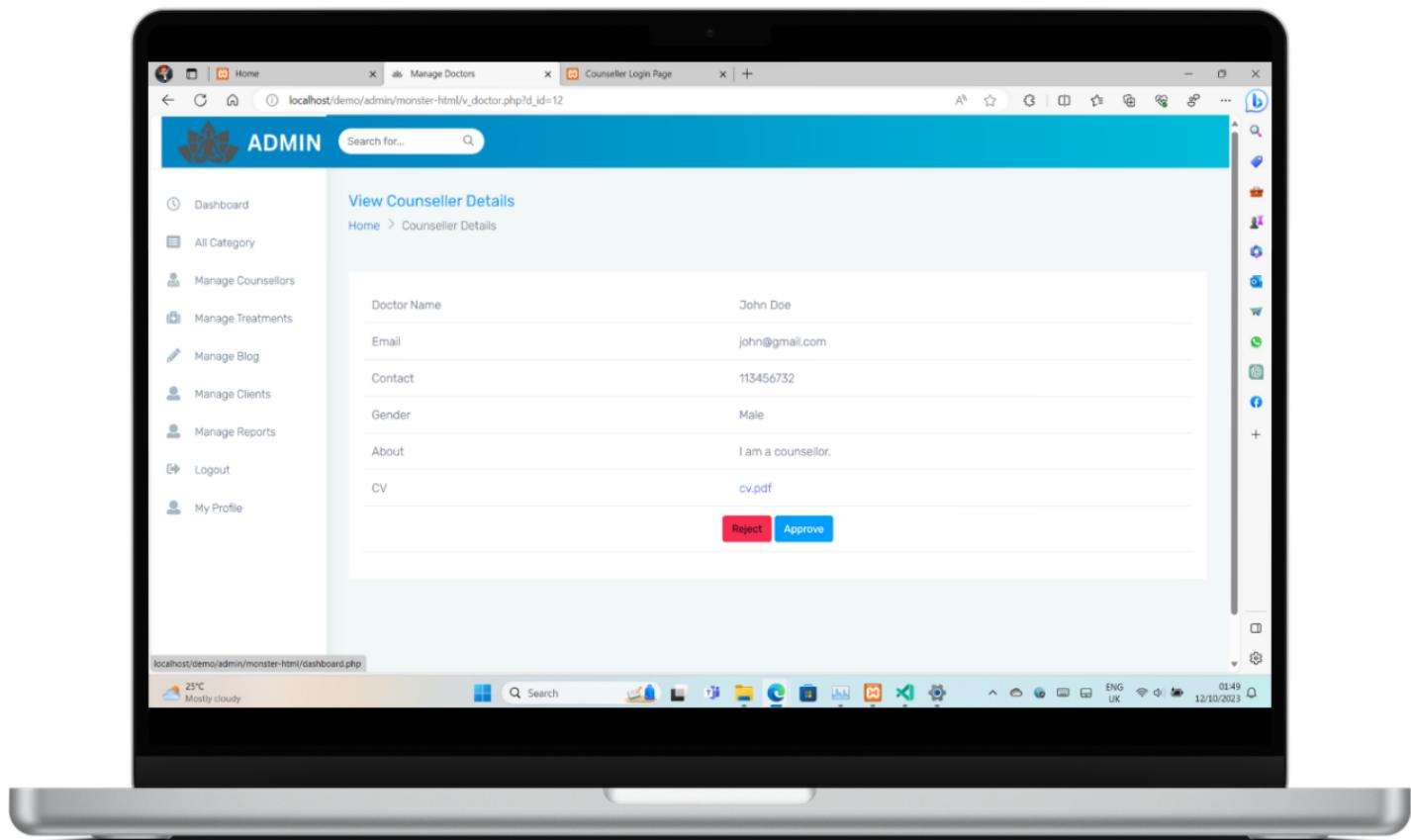


Figure 53-Admin Counsellor Request View

### 3.8.3.6 Admin Blog List interface

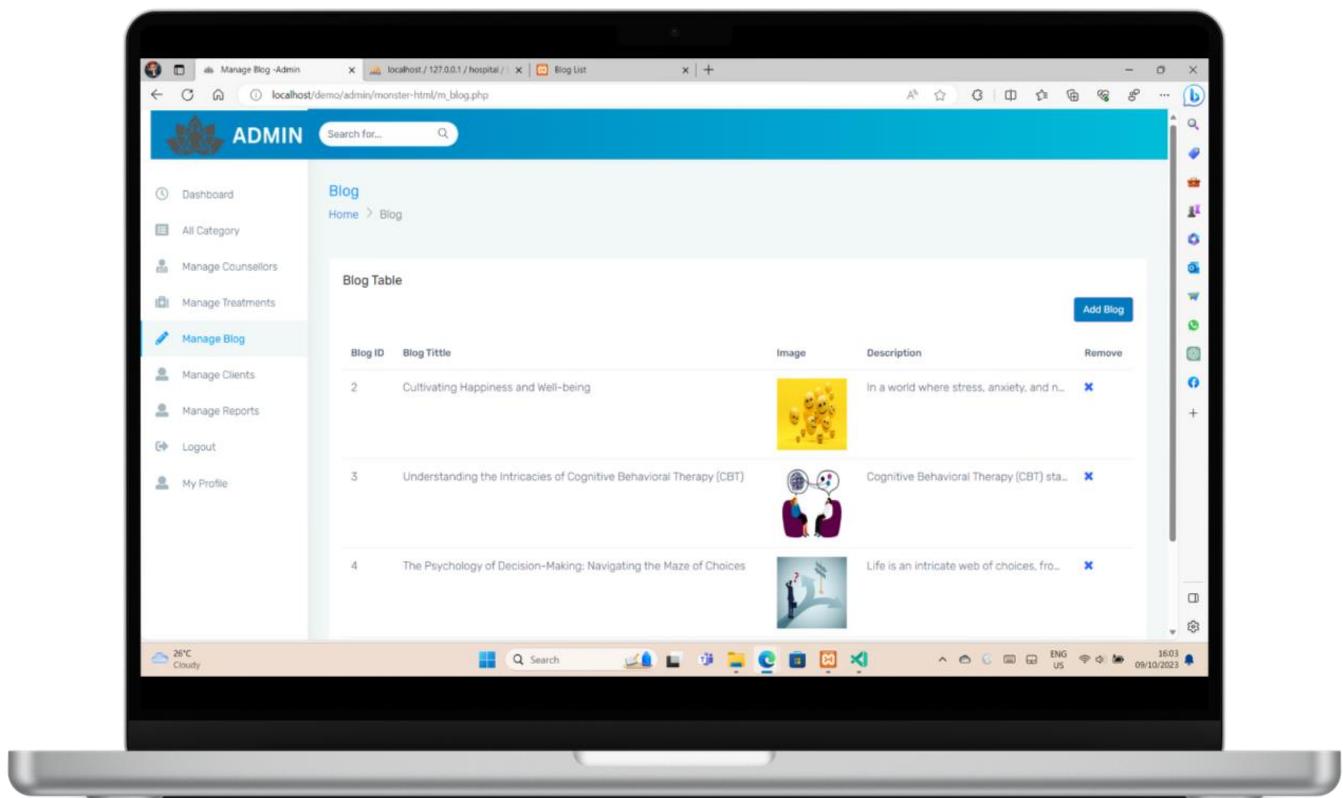


Figure 54-Admin Blog List

### 3.8.3.7 Admin Add Blog

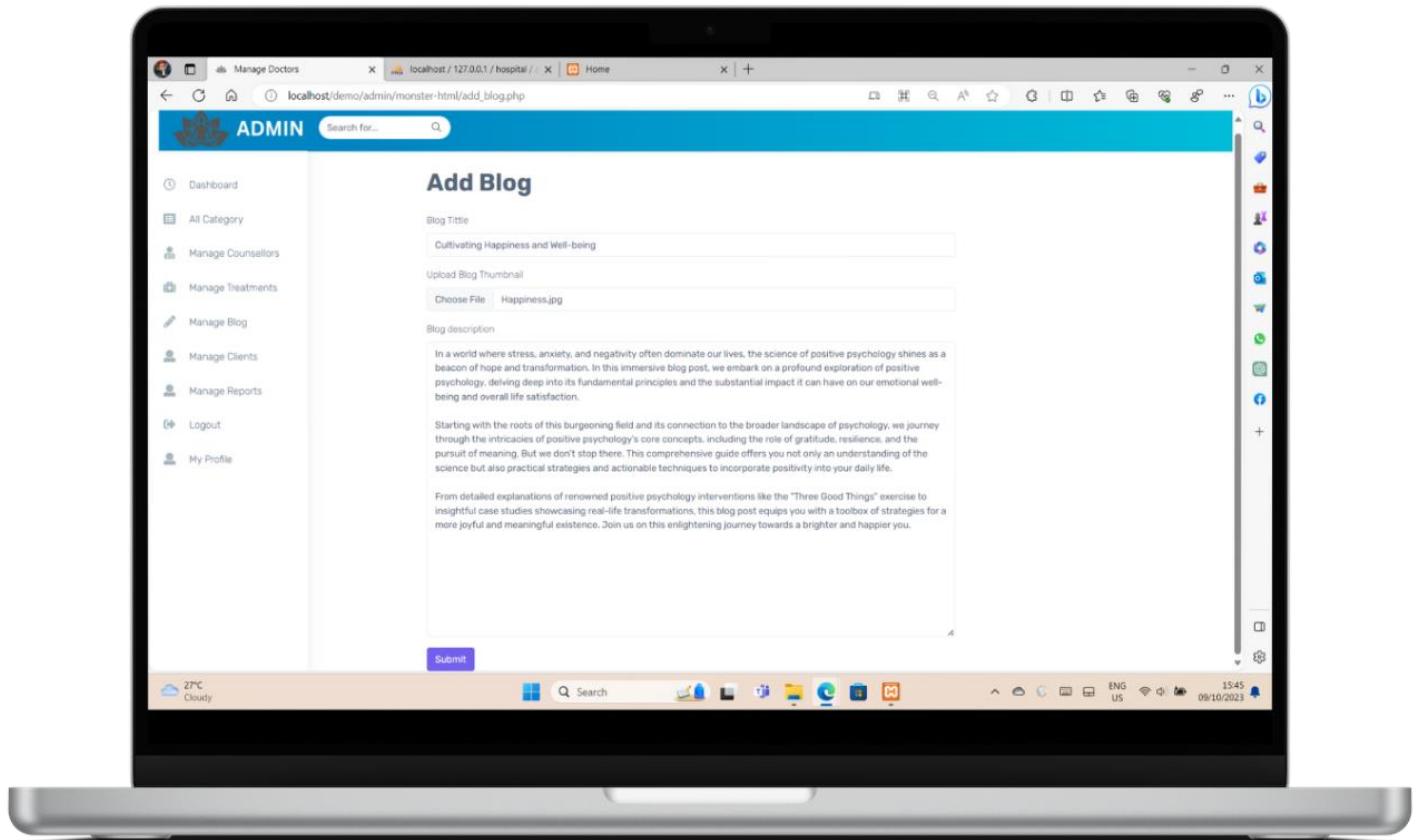


Figure 55-Admin Add Blog

### 3.8.3.8 Admin Profile

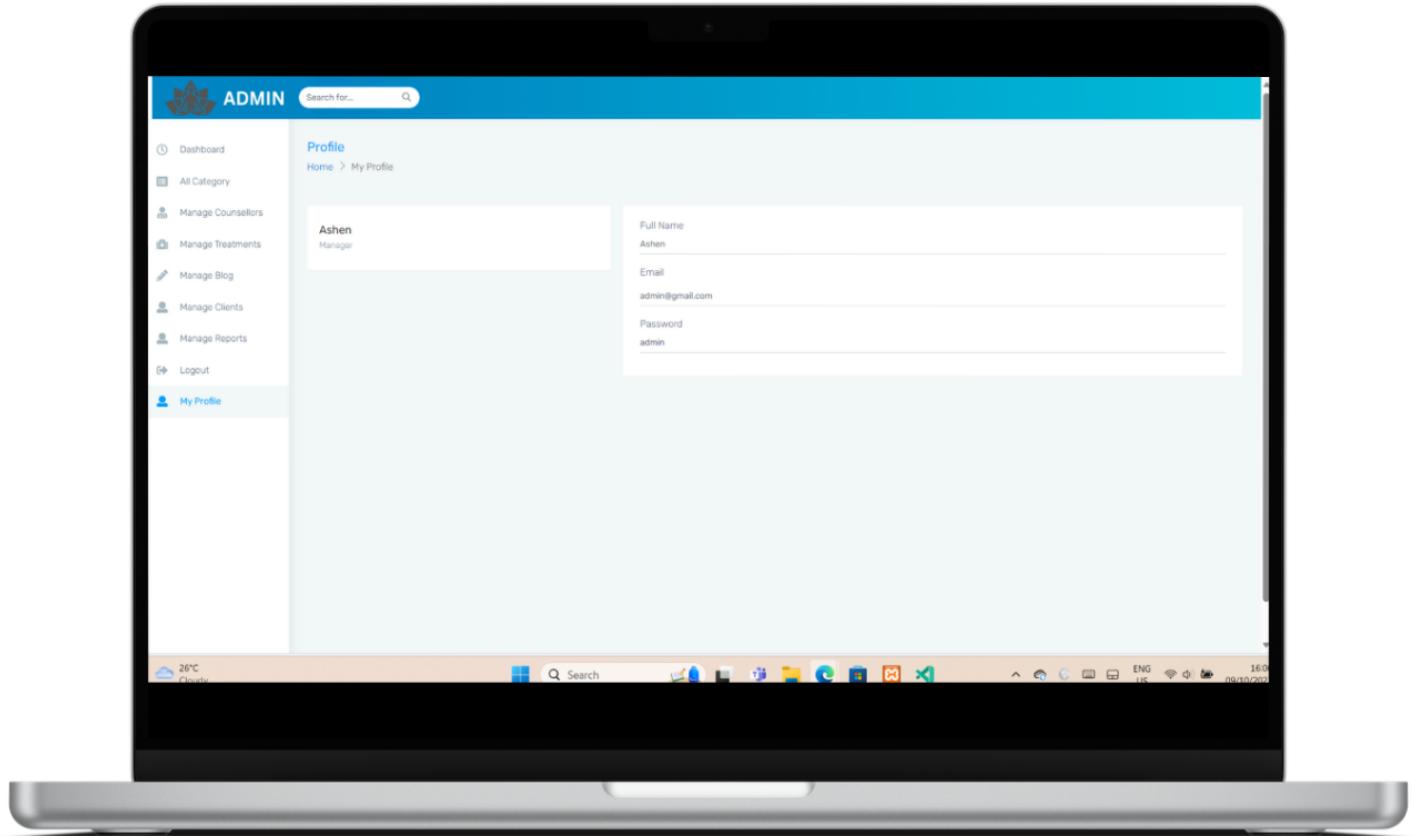


Figure 56-Admin Profile

### 3.8.3.9 Admin Reports

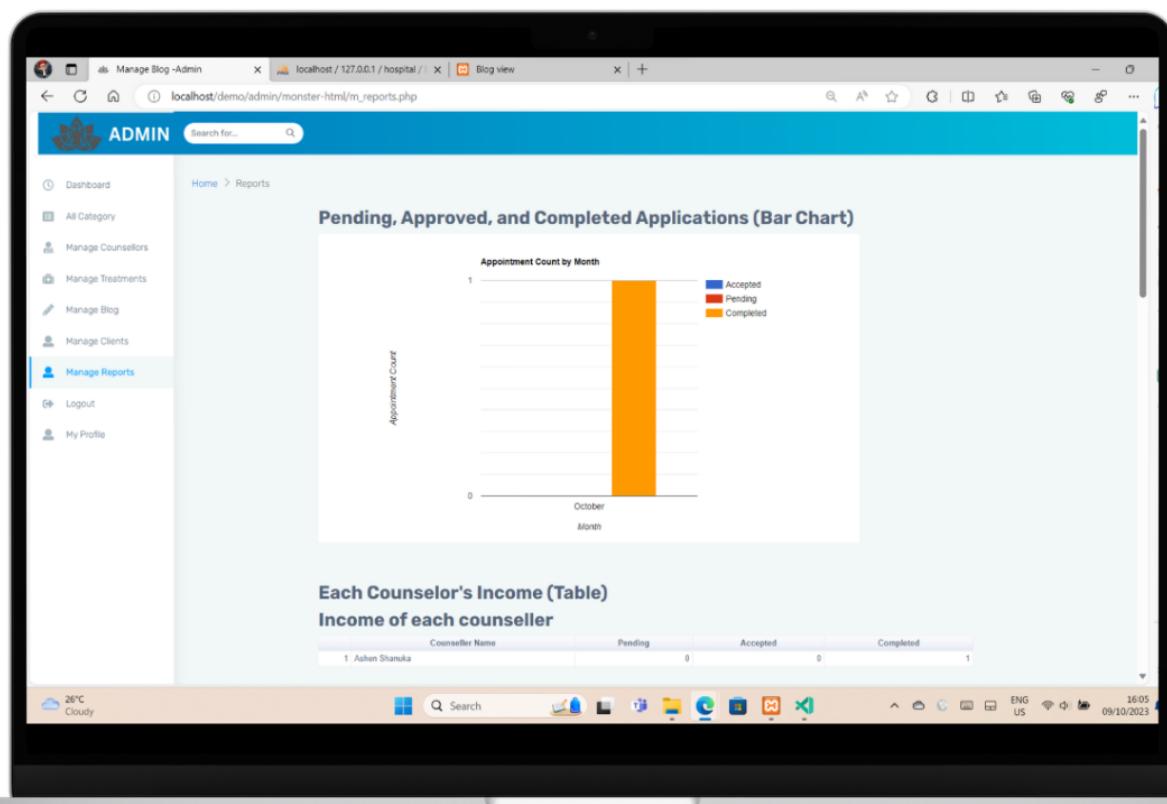


Figure 57-Admin Reports

### 3.9 Summary

This chapter primarily represented the proposed system using the Object-Oriented Modelling Approach with the use of Use Case Diagrams, Use Case Descriptions, Activity Diagrams, and Sequence Diagrams associated with each Use Case. Additionally, the Class Diagrams which define the classes that are used to implement the system have been demonstrated. Database Design is presented with the use of the Relational Database Model and the ER – Diagram. Finally, designs of a few main sample data capturing and displaying interface layouts using wireframes and some main report layouts are also included in this chapter.

## **Chapter 4 – System Development**

In this chapter, we will explore the system development process for the counseling platform. We will discuss the selection of programming languages, third-party components/libraries, and frameworks, as well as the development tools and technologies employed in bringing the platform to life.

### **4.1 Programming Languages**

The counseling platform is designed to offer online counseling services and facilitate the management of counseling sessions, making it accessible over the internet. The choice of programming languages was based on the initial feasibility study, resource availability, and the requirement for cross-device accessibility.

#### **4.1.1 Frontend Programming Languages**

For the frontend development of the system, the following programming languages were utilized:

HTML5: Employed for structuring and presenting content on the platform.

CSS3: Utilized for styling and designing the user interface, ensuring an appealing and user-friendly experience.

JavaScript: Implemented for creating interactive and dynamic features on the platform.

These languages were selected to provide a responsive and user-centric interface for the counseling platform.

#### **4.1.2 Backend Programming Languages**

To power the backend of the system, PHP was selected. PHP is a robust and versatile language that enables efficient data handling and processing, critical for real-time interactions during counseling sessions.

### **4.2 Third-Party Components, Libraries, and Frameworks**

The development of the counseling platform incorporated various third-party components, libraries, and frameworks to enhance functionality and streamline the development process.

Bootstrap: This frontend framework offers pre-designed design templates, ensuring a consistent and modern appearance for the platform.

jQuery: A JavaScript library that simplifies the development of interactive elements and dynamic content, enhancing the user experience.

Google charts: Google Charts is a library that enables the creation of interactive, customizable charts and graphs for data visualization on web applications, enhancing data presentation and analysis.

These tools were integrated to expedite development and provide a polished and responsive user interface.

### **4.3 Development Tools and Technologies**

During the development of the counseling platform, a selection of essential development tools and technologies was employed to ensure a seamless and efficient development process.

MySQL: This SQL database service is utilized to store and manage data related to counseling sessions, ensuring data accuracy and consistency.

Visual Studio Code: An integrated development environment (IDE) chosen for its efficiency and effectiveness in programming, making the development process more manageable.

Live Server: Used to run the platform on a local host server during development, allowing for real-time testing and debugging.

JSON: A modern and widely-used technology for data storage and handling, offering a well-organized, lightweight, and easily accessible format that surpasses older technologies like XML.

These tools and technologies play a crucial role in ensuring that the counseling platform functions smoothly and securely.

### **4.4 Summary**

This chapter has provided a detailed account of the selection and use of programming languages, third-party components, libraries, frameworks, and development tools and technologies in the development of the counseling platform. These choices were made to provide a user-friendly, efficient, and reliable platform for online counseling and session management.

# **Chapter 5 – System Testing**

In this chapter, we will discuss the system testing process for the counseling platform, which is a crucial step in ensuring the platform's reliability and functionality.

## **5.1 Test Plan and Test Strategy**

System testing is conducted to verify that the platform meets the requirements outlined in the Software Requirements Specification (SRS) and that these requirements are implemented accurately. To accomplish this, a well-structured testing plan is developed to identify which functionalities require testing based on their significance and priority. The testing plan also specifies the testing order. Test cases are created based on use case descriptions, and these tests are performed manually while recording the results. Any issues discovered during testing are rectified and retested. Two distinct testing methods are used for assessing the functionality of the counseling platform:

Black Box Testing

White Box Testing

### ***5.1.1 Black Box Testing***

Black box testing is employed to evaluate the overall functionality of the platform. As each specific functionality is completed, it is subjected to testing using a set of random inputs to compare the actual outcome with the expected outcome. Any identified issues are addressed, ensuring that potential user errors are rectified before the platform is deployed for actual use. Black box testing is instrumental in guaranteeing the reliability of all main functionalities within the counseling platform.

### ***5.1.2 White Box Testing***

White box testing is performed during the coding phase of the application. It involves testing each significant statement and decision structure as soon as the coding for that section is finished. Unlike black box testing, white box testing does not require the completion of the entire functionality. It is used to identify and debug small errors arising from coding mistakes, logic errors, and other issues in the counseling platform.

Furthermore, four primary test types were employed to assess the platform under these testing methodologies:

Concept Testing: To ensure that the concepts integrated into the system align with the specified business processes.

**Unit Testing:** To individually test each unit, class, or module associated with each functionality, with integration occurring only when unit tests pass.

**Integration Testing:** To test entire functionalities after the successful unit testing of related components.

**Interface Testing:** To assess the usability and user-friendliness of the graphical user interfaces (GUIs).

## **5.2 Test Report**

Thorough testing is a critical aspect of system development as it helps minimize costly updates and bug fixes. The testing of the counseling platform primarily focused on interface and navigation, processes, and the concepts utilized. The number of identified issues decreased progressively with each testing iteration. Both unit and integrated testing were executed effectively. Since the platform does not have a direct client, testing involved comparing the platform with existing online counseling sites, contributing significantly to its improvement.

Concept Testing: Passed

All Units Testing: Passed

All Integrated Testing: Satisfactory

UI Testing: Passed

All Functional Testing: Completed

System Testing: Completed

Concept testing, all units testing, all integrated testing, and all functional testing ensured the platform's alignment with the SRS requirements. UI testing enhanced usability and interactivity. The majority of identified bugs were successfully debugged.

## **5.3 Summary**

This chapter provides an overview of the testing plan and strategy employed in testing the counseling platform. It encompasses various testing methodologies and test types used. The chapter concludes with a test report based on the progress made across different testing types.