Software Requirements Specification

for

Mental Health Support Platform and Appointment Booking System

Prepared by

Ayesha Nasrin Ripa

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1. Introduction:

The introduction of the Software Requirements Specification (SRS) offers a comprehensive overview, including its purpose, scope, definitions, acronyms, abbreviations, references, and a summary of the document. The goal of this document is to acquire, appraise, and provide in-depth information about the whole Mental Care and Psychologist Appointment System by describing the issue statement in detail. In addition to outlining the characteristics of a high-quality product, it also emphasizes the benefits and needs of the stakeholders involved. Detailed information regarding the "Mental Care and Psychologist Appointment Booking System" is provided within this document.

1.1 Problem Statement:

In Bangladesh, more than 10,000 lives are lost to suicide annually, with a significant portion being students according to the National Library of Medicine (Official Website of the United States government), which underscores the pressing need for mental health support. The alarming rise, fueled by career stress, relationship issues, and depression, demands urgent intervention. Traditional mental health systems, often centralized in hospitals or under individual psychologists, primarily focus on appointment bookings and chatting; however, the communication system is not very interactive between psychologists and patients, lacking user-friendly communication. To address this, a proposed comprehensive mental health support and appointment booking system seeks to create a proactive solution. This user-friendly system empowers individuals to select their preferred psychologists and efficiently manage appointments, including booking and cancellations. ensuring seamless coordination with mental health professionals. Additionally, the system integrates chat functionality, video calling, and blog integration to enhance communication and engagement between patients and psychologists, fostering a supportive and interactive environment.

1.2 Purpose:

The purpose of this proposed mental health support and appointment booking system is to bridge the gap in existing mental health services by offering a proactive, user-friendly, and decentralized solution. By empowering individuals to select their preferred psychologists, manage appointments efficiently, and engage in seamless communication, the system aims to enhance accessibility and foster a healthier societal environment. Through innovative features such as chat functionality, blog integration, and video calling capabilities, the system aims to create a more personal and interactive experience between patients and psychologists. Ultimately, this initiative seeks to serve as a comprehensive and supportive resource, addressing the unique needs of users and contributing to the overall well-being of the community.

1.3 Project Scope:

The project will focus on developing a comprehensive Mental Care and Psychologist Appointment Booking System to enhance mental health services in Bangladesh. The system aims to provide a proactive, user-friendly, and decentralized solution, enabling users to:

- Search for psychologists based on location or name.
- Access a comprehensive database of psychologists, allowing selection based on qualifications, expertise, and availability.
- Schedule and cancel appointments with preferred psychologists through the system.
- Incorporate chat and video call features for real-time interaction between patients and psychologists.
- access blogs written by psychologists on various psychological issues.

1.4 Glossary:

This section provides definitions for all document names, acronyms, and abbreviations. The application domain's terms and concepts are defined.

HTML – Hyper Text Markup Language

JS – JavaScript

CSS – Cascading Style Sheets

XML – Extensible Markup Language

SRS – Software Requirement Specification

UI – User Interface

API – Application Programming Interface

1.5 References:

IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.

1.6 Overview:

My project aims to tackle the urgent need for better mental health support in Bangladesh, especially considering the alarming rate of suicide, with many of the victims being students. Current mental health systems lack user-friendliness, focusing mainly on basic appointment bookings and communication tools. To solve this, my system will offer proactive solutions, empowering users to effectively manage their mental well-being. It will provide users with the ability to easily locate and select psychologists based on their location and expertise, as well as to schedule appointments effortlessly and communicate seamlessly through chat and video calling. Additionally, my system will include a dedicated blog section offering valuable resources and insights into various psychological issues. One key aspect of my platform is its decentralized nature, making it easy for psychologists to join without being tied to specific hospitals or clinics. My ultimate goal is to provide users with convenient access to mental health professionals and helpful resources, thereby contributing to a healthier society overall.

2. Stakeholders and Characteristics:

2.1 Patients:

- Individuals seeking mental health support.
- Direct end-users of the application.
- Utilize chat and video features for consultations.
- Unregistered users may access some features for informational purposes but cannot engage in online or offline booking without signing up.

2.2 Psychologists:

- Professionals providing counseling services.
- Directly involved in delivering mental health support.
- Utilize chat and video features for consultations.
- Access to patient records, and scheduling flexibility.

2.3 Administrators:

- Personnel managing user accounts and system operations.

- Responsible for overseeing the smooth functioning of the application.

2.4 Developers:

- Team responsible for building and maintaining the application.

- Responsible for software development and maintenance.

3. Design and Implementation Constraints:

To ensure the project's success, we implemented design and implementation constraints. The tool is described as well, allowing programmers and testers to observe and interact with the user interface (UI) components of the application.

3.1 Language:

UI Design, or User Interface Design, involves arranging the parts of a website or product that users interact with visually. It's about how things look. Meanwhile, the back end is the code that runs behind the scenes, handling data and operations invisibly to the user. This code, written in different programming languages, powers the functionality of the system.

3.1.1 HTML:

HTML, or Hypertext Markup Language, is the standard language used to create and design web pages. It provides the structure for content on the internet, defining elements like headings, paragraphs, links, images, and more. HTML uses tags to mark elements, allowing browsers to interpret and display the content correctly. It forms the backbone of every webpage, working in conjunction with other technologies like CSS (Cascading Style Sheets) and JavaScript to create visually appealing and interactive websites.

3.1.2 CSS Framework:

A language called CSS is used to specify how an HTML document should look. CSS outlines the presentation of HTML components. Utilize the most widely used front-end component library in the world to create responsive, mobile-first web applications. An open-source toolkit for HTML, CSS, and JS development is called Bootstrap. With our Sass variables and mix INS, responsive grid system, large prebuilt components, and potent plug-ins made on jQuery, you can quickly prototype your ideas or create your full project. The bootstrap code has been minified, which means that white spaces have been eliminated to reduce the file size and speed up file loading, which in turn improves page loading times. When a user hovers over a link, the main design that bootstraps advertisements without particularly adding design to components. If the bootstrap CSS file is included before the original, then bootstrap will override the custom ones and the modifications will not be seen. This can be rectified with some basic CSS-code added to the CSS-file. Before using Bootstrap, one should have a fundamental understanding of how it functions in order to maximize efficiency and speed in achieving the project's intended goals.

3.1.3 JavaScript and React Library:

Along with HTML and CSS, the computer language known as JavaScript, or JS, is one of the foundational elements of the World Wide Web. By 2022, 98% of websites will employ JavaScript on the client side to control how web pages behave, frequently using third-party libraries. A dedicated JavaScript engine is available in every major web browser and is used to run the code

on users' devices. JavaScript is an ECMAScript-compliant high-level, frequently just-in-time compiled language. It has first-class functions, prototype-based object orientation, and dynamic typing. It supports event-driven, functional, and imperative programming paradigms and is multi-paradigm. It offers application programming interfaces (APIs) for using the Document Object Model, regular expressions, dates, and standard data structures (DOM).

React is a JavaScript library created by Facebook. React is a User Interface (UI) library. React is a tool for building UI components.

3.1.4 Bootstrap:

Bootstrap (formerly Twitter Bootstrap) is a free and open-source CSS framework directed at responsive, mobile-first front-end web development. It contains HTML, CSS, and (optionally) JavaScript-based design templates for typography, forms, buttons, navigation, and other interface components. The primary purpose of adding it to a web project is to apply Bootstrap's choices of color, size, font, and layout to that project.

3.2 Server-Side Technology:

When an application is used, server-side development refers to the processes that happen in the background. Databases, scripting, website architecture, backend logic, APIs, and servers are the main topics covered.

3.2.1 Database Server:

Microsoft SQL Server is a leading relational database management system (RDBMS) developed by Microsoft. It offers a robust and scalable platform for storing, managing, and analyzing data. SQL Server supports a wide range of transaction processing, business intelligence, and analytics applications. With features like high availability, security, and integration with other Microsoft products, SQL Server is a preferred choice for enterprise-level database solutions.

3.2.2 Asp .Net Core

ASP.NET Core is a modern and powerful framework for building web applications. It allows developers to create fast, scalable, and cross-platform web applications using C# programming language. With ASP.NET Core, developers can build websites and web APIs that run on Windows, Linux, and macOS. It offers robust features like dependency injection, middleware pipeline, and support for cloud-based hosting. ASP.NET Core simplifies web development, making it easier to create secure and high-performance applications.

4. Requirement Specification:

The complete requirement specification based on the elicitation process is described in this section.

4.1 Functional Requirements:

A wide audience may read the Functional Requirements Specification. The text shouldn't require specialized technical expertise for readers to grasp the system.

4.1.1 User Registration:

FR-1	User Registration		
Description	Allow users (patients and psychologists) to register for an account by providing required information such as username, email, password, and additional details based on their role (e.g., psychologist's qualifications). For psychologists, the registration request will be sent to an administrator for verification before full access is granted.		
Stakeholders	Patients, Psychologists	**Priority**	High

4.1.2 User Login:

FR-2	User Login		
Description	This module helps users (patient, psychologist, admin) to use the system as a registered user. Users must enter their username and password to authenticate.		
Stakeholders	Patients, Psychologists, Admin	**Priority**	High

4.1.3 User Profile Management:

FR-3	User Profile Management		
Description	This module will help users (patients and psychologists) manage their profile information, including updating personal details, viewing/editing their appointment history, and changing account settings.		
Stakeholders	Patients, Psychologists	**Priority**	High

4.1.4 Search Psychologists:

FR-4	Search Psychologists		
Description	Allow users to search for psychologists based on location or name. The system should retrieve and display a list of psychologists matching the search criteria.		
Stakeholders	Patients, Psychologists	**Priority**	High

4.1.5 Appointment Booking:

FR-5	Appointment Booking		
Description	Enable users to book appointments with psychologists, either for online or offline consultations. Users should be able to view available appointment slots, select a suitable time, and confirm the booking.		
Stakeholders	Patients, Psychologists	**Priority**	High

4.1.6 Blog Management:

FR-6	Blog Management		
Description	Provide psychologists with the ability to write and manage blogs on various psychological topics. Users (patients and psychologists) can read these blogs within the application.		
Stakeholders	Patients, Psychologists	Priority	High

4.1.7 Admin Dashboard:

FR-7	Admin Dashboard		
Description	Implement an administrative dashboard that allows admins to manage user accounts, approve/reject psychologist registration requests, delete blogs, and remove psychologists from the system.		
Stakeholders	Admin	Priority	High

4.1.8 Appointment History:

FR-8	Appointment History		
Description	Allow users (patients and psychologists) to view their appointment history within the system. Display past and upcoming appointments.		
Stakeholders	Patients, Psychologist	Priority	Medium

4.1.9 Video Calling:

FR-9	Video Calling		
Description	This module facilitates patients and psychologists to engage in video conversations for online consultations.		
Stakeholders	Patients, Psychologist	**Priority**	High

4.1.10 Payment:

FR-10	Payment		
Description	Enable patients to make payments for appointments. After successful payment, the system sends a confirmation email to the patient.		
Stakeholders	Patients, System	**Priority**	High

4.2   Data Requirement:

In my system, registered or unregistered users both can find psychologists based on location or name. The system will show psychologists based on search criteria.

4.2.1   Searching Psychologists

DR-1	Searching psychologist using the psychologist's name or location.		
Description	If Any user of my system wants to find out a psychologist. He can search by psychologist's name or location.		
Stakeholders	User (registered or unregistered user)	**Priority**	Medium

4.3 Performance Requirement:

It is important that maintain the performance of the system. To ensure the best performance of the system I maintain the following steps:

4.3.1 Speed and Latency Requirements:

PR-1	Faster searching for a psychologist		
Description	When any user of my system wants to search for a psychologist then the user can feel the fast searching.		
Stakeholders	User	**Priority**	High

PR-2	Online Payment Gateway Speed		
Description	The system requires a fair amount of speed especially while browsing online payment gateway to make online payment.		
Stakeholders	User (patients making payments), Payment gateway service provider	**Priority**	High

4.3.2 Precision and Accuracy Requirements:

There are no specific precision and accuracy requirements.

4.4 Dependability Requirements

Because current frameworks are flexible, system architects are encouraged to include reconfiguration mechanisms that redirect available, safe resources to serve the most critical services rather than overburdening the system. As a result, certain requirements must be met.

4.4.1 Reliability and Availability

To enable globalization and boost production, the system must be accessible 24 hours a day, seven days a week.

DR-01	The system must be available 24x7
Description	• The system must be available 24 hours in a day • The system must be updated occasionally
Stakeholders	System Admin, Teacher, student

4.4.2 Robustness and Fault Tolerance Requirements

DR-02	Problem and error handling
Description	Multiple people may have access to this system at the same time. Multiple users can access the system completely.
Stakeholders	System

4.5 Maintainability and Supportability:

"Maintenance" basically means how easy it is to fix, improve, and understand software code. Once users have the product, the software development cycle moves into the maintenance phase. That's when we start providing ongoing support and updates.

4.5.1 Maintenance Requirements:

MR-1	Develop maintainable code		
Description	Maintainability must be ensured so that it can be modified later and will be readable.		
Stakeholders	Developers	Priority	High

4.5.2 Supportability Requirements:

This system satisfies the supportability requirements for testability, maintainability, compatibility, configurability, serviceability, and install ability.

4.6 Security Requirements:

Security requirements refer to specifications and measures that must be implemented in a system to protect it against unauthorized access, data breaches, and other security threats.

4.6.1 Access Requirements:

This system will restrict access to sensitive information and system functions to authorized users only. Users will gain access based on their roles and permissions, supported by strong authentication methods like passwords. Moreover, it will also prevent unauthorized entry into the system.

4.6.2 Integrity Requirements:

This system will maintain data integrity to ensure accuracy and consistency. It will implement measures to prevent unauthorized data changes, deletions, or corruption. Furthermore, all data alterations will be recorded and traceable, ensuring accountability and transparency.

4.7 Legal Requirements:

Legal requirements often refer to an organization's terms and conditions or privacy policy. No third-party software or individual is permitted to use our data for commercial purposes, according to the terms and conditions of our application.

5. Requirement Engineering Process

Software requirements are established using requirements engineering (RE), which takes into account customer wants or requirements. Requirement's elicitation, needs modeling, requirements analysis, requirements assurance & validation, and requirements management are all parts of the requirements engineering process.

5.1 Requirement Elicitation Techniques

Requirement elicitation techniques are the means by which systems analysts determine the problems, opportunities, and needs of the customers, so that systems developer can construct systems that actually resolve those problems, leverage those opportunities, and/or address customers" needs". Elicitation techniques are tools of finding & exact understanding. The goal of Elicitation technique is to find out as many problems as possible so that it could become easier for stakeholders to get the best suitable application according to the requirements. We mainly used these techniques for gathering Requirement:

- Interview
- Questionnaire
- Paper prototype

5.1.1 Hold Interviews

I have conversations that can be had alone or with a small group of people. They are a useful approach to accessing services without having to spend a lot of time with participants because i simply meet with them to go through a few key program criteria. Negotiations are useful for getting specific demands from participants in setting up workshops where those program participants gather to address any problems or conflicts. My interviews are primarily conducted using a set of predetermined standards.

5.1.2 Perform Document Analysis

Existing documentation can assist in demonstrating how systems are being used or what I should do with them. Documents contain textual details regarding existing programs, operational procedures, required specifications, and market research on competitors. Once again, textual analysis can be useful. Determine which features should be removed and which performances should stay by consulting the Software Requirements Specification. The previous document in our investigation, we discovered a number of issues with the current system.

- Current psychologist appointment booking systems are centralized in hospitals or under individual psychologists. limiting access for a significant number of psychologists.

- The existing systems lack blog functionality.

- The existing systems lack user-friendliness.

5.1.3 Distribute Questionnaires

The questionnaire is a helpful tool for examining user satisfaction with priorities and preferences, changes in attitudes and ideas, and styles. We tried to keep our question lists to a minimum. The response can be worn out or angry. A fundamental justification for each question and grouped the subject areas together for the respondent to concentrate on. The primary benefit of the survey responses was that they were gathered in the expected manner. Many others provided summaries of the information.

5.1.4 Sample of Requirement Collection

Table 5.1 Requirement Collection 01

Requirement Elicitation Techniques	Interview, Field Observation
Collected From	Md. Abu Tareque, Psychologist, NSTU
Findings	1) Psychologist Profile Information 2) Main Certification Needed for psychologist verification. (Honors in Psychology certificate, Masters in Applied psychology certificate, supervision period certificate) 3) The treatment processes for psychological patients, aiding in understanding user needs. 4) Lacking's of the current system.
Suggestion	Don't use the comment feature in the blog section.

Table 5.2 Requirement Collection 02

Requirement Elicitation Techniques	Interview
Collected From	Tasnim Israt, Former Trainee Clinical Psychologist at Dhaka Medical College and Hospital
Findings	1) Identified various user roles such as psychologists, patients, and administrators, each requiring different levels of access and functionality. 2) Discovered the need for a flexible and intuitive appointment scheduling system to accommodate varying availability and preferences. 3) Recognized the importance of implementing robust security measures to safeguard sensitive patient information and ensure compliance with privacy regulations.

Table 5.3 Requirement Collection 03

Requirement Elicitation Techniques	Interview
Collected From	Student, NSTU
Findings	1) Access to Psychologist Profiles: Detailed profiles of psychologists, including qualifications, specialties, and patient reviews, to help them choose the right therapist. 2) Confidentiality Assurance: Assurance that their personal information and sessions will be kept confidential and secure. 3) Appointment Reminders: Reminders for upcoming appointments via email or SMS to help me stay organized and prepared. 4) Feedback Mechanism: A way to provide feedback on their experience with the psychologist. 5) Blog: Needed for blog section functionality which will offer insights into psychological issues and solutions.

5.2 Requirement Validation

Requirement validation criteria make sure they are accurate and match the standard you desire from this program. Our requirements initially appeared to be good, but after reading them and attempting to implement them, we discovered that they contained gaps and ambiguities.

5.2.1 Review the Requirements

One of the best ways to manage software quality is peer-to-peer assessment, especially a comprehensive type of review known as evaluation. Create a small team of reviewers with members from a variety of perspectives, and have them carefully evaluate stated needs, analytical models, and related items to identify errors.

5.2.2 Simulate the Requirements

We can use trading tools to simulate a suggested system in place or to add specifics to textual specifications in order to stimulate requirements. The simulation advances the concept of prototyping.
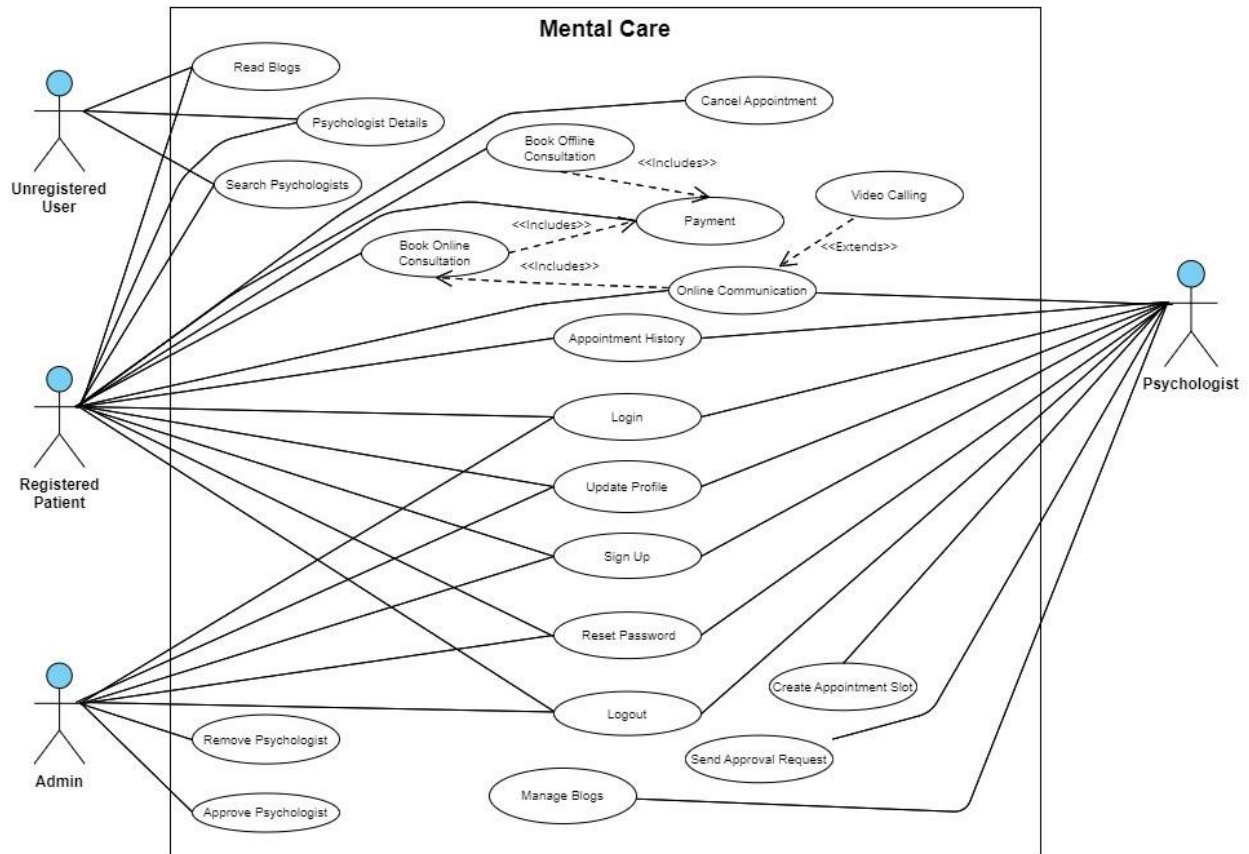
6. Use Case Diagram

Figure 6.1 Use Case Diagram

7. Use case description

All of the use cases from the use case diagram are detailed in this section.

Table 7.1 Sign Up

Use Case- 01	Sign Up	
Goal	Users can create a new account by providing their necessary information to access the application's features.	
Preconditions	Stable internet connection and accessible mental health web application.	
Success End Condition	User has a new account and system has a new user information.	
Failed End Condition	User account creation fails due to invalid information.	
Primary Actors: Secondary Actor:	Patient, Psychologist. Admin	
Trigger	Click "Sign up"	
Main Success Flows	Step	Action
	1	User navigates to the registration page.
	2	User selects their role (patient or psychologist).
	3	User (patient or psychologist) provides required information: Name, Email address, Password, Additional details specific to role (e.g. psychologist's qualifications).
	4	User submits the registration form by clicking "Sign Up."
	5	System validates user-provided information.
	6	System generates and sends an OTP.
	7	User enters the OTP received.
	8	System verifies OTP and confirms account creation.
	9	User receives confirmation of successful account creation.
Alternative Flows	Step	Branching Action
	2a	Some information is not valid
	2a1	Provide valid information.
	7a	User provide incorrect OTP.
	7a1	Give correct OTP
Quality Requirements	Step	Requirement
	1	The registration process must be user-friendly. OTP must be secure.

Table 7.2 Login

Use Case- 02	Login	
Goal	Allow registered users (patients, psychologists, Admin) to securely access the application based on their roles.	
Preconditions	Must be a registered user.	
Success End Condition	User is authenticated and granted access based on their role.	
Failed End Condition	Login fails due to incorrect credentials.	
Primary Actors:	Patient, Psychologist, Admin	
Secondary Actors:	N/A	
Trigger	User clicks the "Login" button.	
Main Success Flows	Step	Action
	1	User navigates to login page.
	2	User enters username, password.
	3	User submits login form.
	4	If correct, User Logged in.
Alternative Flows	Step	Branching Action
	1a	Forget password
	1a1	User request for new password
	1a2	System sends an OTP
	1a3	Confirm OTP
	1a4	User set a new password
	3a	Incorrect login details
	3a1	System displays error message.
	3a2	Provide correct information.
Quality Requirements	Step	Requirement
	1	Role-based dashboard for personalized user experience.

Table 7.3 Logout

Use Case- 03	Logout	
Goal	A user (Patient, Psychologist, Admin) can log out from the system.	
Preconditions	Log in to the system successfully and must be a user (psychologist, admin, patient).	
Success End Condition	The user successfully logged out from the system.	
Failed End Condition	The user could not log out from the system.	
Primary Actors:	User (patient, psychologist, admin)	
Secondary Actors:	System	
Trigger	The user clicks the "Logout" button.	
Main Success Flows	Step	Action
	1	The primary actor logged in to the system.
	2	The primary actor clicks "Logout" button.
	3	The primary actor has successfully logged out from the system.
Alternative Flows	Step	Branching Action
	2a	The primary actors do not click logout button.
Quality Requirements	Step	Requirement
	2	The system should ask "Are you sure to Logout?" after clicking the logout button.

Table 7.4 View Psychologist Details

Use Case- 04	View psychologist details.	
Goal	Allow users to view detailed information about a specific psychologist.	
Preconditions	N/A	
Success End Condition	User successfully views the detailed information of the selected psychologist.	
Failed End Condition	User cannot view the detailed information of the selected psychologist.	
Primary Actors:	Patient, Psychologist, Admin	
Secondary Actors:	N/A	
Trigger	User clicks the "View Details" button on a specific doctor's profile.	
Main Success Flows	Step	Action
	1	User is on the home page and views the available list of Psychologists.
	2	The user clicks on a specific doctor's "View Details" button.
	3	The system shows detailed information about the psychologist, including qualifications and experience.
Alternative Flows	Step	Branching Action
		N/A
Quality Requirements	Step	Requirement
	1	Psychologist details should appear quickly when users request them.

Use Case- 05	Book Online Consultation	
Goal	Enable users to book an online consultation appointment with a psychologist.	
Preconditions	The user is logged in and the System has available appointment slots for online consultations.	
Success End Condition	The user successfully books an online consultation appointment.	
Failed End Condition	The user is not able to book an appointment.	
Primary Actors: Secondary Actors:	Patient Psychologist	
Trigger	User selects "Online Consultation" for a specific psychologist.	
Main Success Flows	Step	Action
	1	User selects "Online Consultation" for a specific psychologist.
	2	System displays available appointment slots for online consultations.
	3	User selects a suitable time slot.
	4	User completes payment procedure.
	5	System confirms the appointment booking.
Alternative Flows	Step	Branching Action
	1a	If the user is not logged in, redirect to the login page before proceeding.
	1a1	After login, redirect to the previous page.
	4a	Payment procedure is not completed.
	4a1	Appointment booking failed.
Quality Requirements	Step	Requirement
	1	Provide real-time availability updates.

Table 7.6 Book Offline Consultation

Use Case- 06	Book Offline Consultation	
Goal	Enable users to book an offline (in-person) consultation appointment with a psychologist.	
Preconditions	The user is logged in and the System has available appointment slots for offline consultations.	
Success End Condition	The user successfully books an offline consultation appointment.	
Failed End Condition	The user is not able to book an appointment.	
Primary Actors:	Patient	
Secondary Actors:	Psychologist	
Trigger	User selects "Offline Consultation" for a specific psychologist.	
Main Success Flows	Step	Action
	1	User selects "Offline Consultation" for a specific psychologist.
	2	System displays available appointment slots for offline consultations.
	3	User selects a suitable time slot.
	4	User completes payment.
	5	System confirms the appointment booking.
Alternative Flows	Step	Branching Action
	1a	If the user is not logged in, redirect to the login page before proceeding.
	3a	If the selected time slot is unavailable, inform the user and suggest alternative slots.
Quality Requirements	Step	Requirement
	1	Ensure secure handling of offline appointment bookings.

Table 7.7 Cancel Appointment

Use Case- 07	Cancel Appointment	
Goal	Enable users to cancel a previously booked appointment with a psychologist.	
Preconditions	The user is logged in and the user has one or more existing appointments.	
Success End Condition	User successfully cancels the selected appointment.	
Failed End Condition	N/A	
Primary Actors:	Patient	
Secondary Actors:	Psychologist	
Trigger	User accesses their list of booked appointments and selects an appointment to cancel.	
Main Success Flows	Step	Action
	1	User navigates to their list of booked appointments.
	2	User selects the appointment to cancel.
	3	System confirms the cancellation request.
	4	Consultation fee is refunded after deduction.
Alternative Flows	Step	Branching Action
		N/A
Quality Requirements	Step	Requirement
	1	Provide confirmation prompts to prevent accidental cancellations.
	2	Ensure accurate updates to appointment status upon cancellation.

Table 7.8 Search Psychologists

Use Case- 08	Search Psychologists.	
Goal	Enable users to search psychologists by location or name.	
Preconditions	User is on the home page.	
Success End Condition	System displays a list of psychologists matching the search criteria.	
Failed End Condition	User could not find out the psychologist.	
Primary Actors:	User	
Secondary Actors:	System	
Trigger	User enters text in the search field	
Main Success Flows	Step	Action
	1	User enters some text in the input field.
	2	User clicks the "Search" button.
	3	System retrieves and displays a list of psychologists matching the search criteria.
	4	The desired Psychologist is found.
Alternative Flows	Step	Branching Action
	1a	The user wants to search by location or name.
	1a1 1a2	The user enters location in the search field. The user enters name in the search field.
	4a	The desired psychologist is not found.
	4a1	The system shows a "sorry" message.
Quality Requirements	Step	Requirement
	1	Provide responsive and user-friendly search functionality.

Table 7.9 Read Blogs

Use Case- 09	Read Blogs	
Goal	Enable users to read blogs written by psychologists on various psychological issues and solutions.	
Preconditions	System has a collection of blogs written by psychologists.	
Success End Condition	User successfully reads the psychologists' blogs	
Failed End Condition	N/A	
Primary Actors:	User	
Secondary Actors:	Psychologist	
Trigger	User clicks on the "Blog" option in the navigation bar.	
Main Success Flows	Step	Action
	1	User clicks on the "Blog" option in the navigation bar.
	2	System displays a list of blogs written by psychologists.
	3	User read blogs.
Alternative Flows	Step	Branching Action
		N/A
Quality Requirements	Step	Requirement
	1	Provide user-friendly interface for reading and navigating through blogs.

Table 7.10 Update Profile Information

Use Case-10	Update Profile Information	
Goal	Change or update Profile Information. (Patient, Psychologist)	
Preconditions	Must be a registered user.	
Success End Condition	User successfully updates their profile information.	
Failed End Condition	Users could not update their profile information.	
Primary Actors:	Patient, Psychologist	
Secondary Actors:	Admin	
Trigger	The user clicks the profile settings section.	
Main Success Flows	Step	Action
	1	User is logged in and clicks "Profile Setting" from the side bar.
	2	System displays the user's current profile information (e.g., name, email, password, etc.).
	3	User clicks the "Update Profile Information" button.
	4	User update his profile Information.
	5	User submits the updated profile information.
	6	The system shows a "Successful" message.
	7	Profile is updated
Alternative Flows	Step	Branching Action
		N/A
Quality Requirements	Step	Requirement
		N/A

Table 7.11 Create Appointment Slots

Use Case- 11	Create Appointment Slots		
Goal	Enable psychologists to create appointment slots (both online and offline).		
Preconditions	Must be a registered psychologist.		
Success End Condition	Psychologist successfully creates appointment slots.		
Failed End Condition	N/A		
Primary Actors: Secondary Actors:	Psychologist Patient		
Trigger	Psychologist clicks on "Create Appointments" in the sidebar.		
Main Success Flows	Step	Action	
	1	The psychologist clicks on "Create Appointment" in the sidebar.	
	2	The psychologist selects the type of appointment (online or offline).	
	3	Psychologist chooses the preferred dates and times for appointment slots.	
	4	The system confirms and creates the appointment slots.	
Alternative Flows	Step	Branching Action	
		N/A	
Quality Requirements	Step	Requirement	
		N/A	

Table 7.12 Manage Blogs

Use Case- 12	Manage Blogs	
Goal	The psychologists will be able to write new blogs and view previous blogs.	
Preconditions	Must be a registered psychologist.	
Success End Condition	Psychologist successfully writes new blogs and views previous blogs.	
Failed End Condition	N/A	
Primary Actors: Secondary Actors:	Psychologist Patient	
Trigger	Psychologist clicks on "My Blogs" in the sidebar.	
Main Success Flows	Step	Action
	1	Psychologist clicks on "My Blogs" in the sidebar.
	2	Psychologist views his previous blogs.
	3	Psychologist writes a new blog post on a specific psychological issue or topic.
	4	Psychologist clicks "Post" Button
	5	Blog posted.
Alternative Flows	Step	Branching Action
		N/A
Quality Requirements	Step	Requirement
	3	Ensure secure and user-friendly interface for writing and managing blogs.

Table 7.13 Remove Psychologist

Use Case- 13	Remove Psychologist	
Goal	Allow admin to remove a psychologist from the application.	
Preconditions	Admin is logged in.	
Success End Condition	Admin successfully removes the selected psychologist.	
Failed End Condition	N/A	
Primary Actors: Secondary Actors:	Admin Psychologist	
Trigger	Admin selects a psychologist from the psychologist list for removal.	
Main Success Flows	Step	Action
	1	Admin is logged in and accesses the psychologist list.
	2	Admin sees a list of psychologists and clicks the "Remove" button next to a psychologist.
	3	System displays a confirmation prompt: "Are you sure you want to remove this psychologist?"
	4	Admin confirms the removal action.
	5	System shows a confirmation message: "You have successfully removed this psychologist."
	6	Psychologist is removed.
Alternative Flows	Step	Branching Action
	4a	Admin cancels the removal action.
	4a1	System aborts the removal process.
Quality Requirements	Step	Requirement
	3a	Provide confirmation prompts for removal actions.

Use Case- 14	Approve Psychologist Approval Request.	
Goal	Admin can approve a registration request of a psychologist.	
Preconditions	Admin is logged in.	
Success End Condition	Admin successfully approves the registration request of psychologist.	
Failed End Condition	Admin could not approve the registration request.	
Primary Actors: Secondary Actors:	Admin Psychologist	
Trigger	Admin clicks the "View Psychologist Approval Request" button.	
Main Success Flows	Step	Action
	1	Admin is logged in and clicks on the "Dashboard".
	2	Admin clicks the "View Psychologist Approval Request" button. (Sent from Psychologist)
	3	Admin clicks the "Approve" button next to a psychologist.
	4	The system updates the database.
	5	The system shows a confirmation message: "You have successfully approved this psychologist."
Alternative Flows	Step	Branching Action
	3a	Admin clicks the "Reject" button.
	3a1	The system sends an email of rejection as a response to the user's email account.
Quality Requirements	Step	Requirement
	3a	The database must be updated after every operation is performed.

Table 7.15 Send Approval Request

Use Case- 15	Send Approval Request	
Goal	Enable psychologists to gain authorized access to the system by submitting a registration request for admin approval.	
Preconditions	Must be a psychologist.	
Success End Condition	Psychologist receive approval and can access the system as a psychologist.	
Failed End Condition	Psychologist does not receive approval and cannot access the system as a psychologist.	
Primary Actors:	Psychologist	
Secondary Actors:	Admin	
Trigger	Psychologist click sign up button.	
Main Success Flows	Step	Action
	1	Psychologist completes the signup form with all required information and uploads necessary documents.
	2	Psychologist submits the registration request for approval.
	3	Admin receives the psychologist's registration request.
	4	Admin verifies the provided information and documents for accuracy and completeness.
	5	Admin approves the psychologist's registration request.
	6	System sends a confirmation message to the psychologist: "Your registration request is approved".
	7	Psychologist gains access to the system as a registered psychologist.
Alternative Flows	Step	Branching Action
	5a	Admin rejects the registration request.
	5a1 5a2	Admin sends a rejection notification to the psychologist. Psychologist receives a message indicating that his request was not approved.
Quality Requirements	Step	Requirement
	5	Give psychologists clear approval/rejection feedback.

Table 7.16 View Appointment History

Use Case- 16	View Appointment History	
Goal	Allow users (patients and psychologists) to view their appointment history within the system.	
Preconditions	The user is logged into the system. User has a valid account (patient or psychologist).	
Success End Condition	User successfully views their appointment history.	
Failed End Condition	User is unable to access or view their appointment history.	
Primary Actors:	Patient, Psychologist	
Secondary Actors:	System	
Trigger	User navigates to the appointment history section.	
Main Success Flows	Step	Action
	1	User logs into the system.
	2	User clicks "Appointments" in the sidebar.
	3	System retrieves the user's appointment history.
	4	System displays the user's appointment history, including past and upcoming appointments.
Alternative Flows	Step	Branching Action
	3a	No appointment history is available
	3a1	The system displays a message indicating no appointments found.
Quality Requirements	Step	Requirement

Table 7.17 Forget Password

Use Case- 17	Forget Password.	
Goal	User can reset their password.	
Preconditions	Must be a registered user.	
Success End Condition	Old password is replaced with new password.	
Failed End Condition	Old password is not replaced.	
Primary Actors:	User	
Secondary Actors:	System	
Trigger	User clicks the reset password option	
Main Success Flows	Step	Action
	1	User click the reset password option.
	2	Provides log in email
	3	Provides new password
	4	System verifies the user
	5	A Confirmation link is sent to the user via email
	6	User presses the confirmation link
	7	Password is reset
Alternative Flows	Step	Branching Action
	4a	User doesn't provide a valid email.
	4a1	Again, ask for log in email.
Quality Requirements	Step	Requirement
		N/A

Table 7.18 Payment

Use Case- 18	Payment	
Goal	Payment is completed and appointment slot is confirmed.	
Preconditions	Must select an available slot.	
Success End Condition	Appointment slot is confirmed for the user for consultation.	
Failed End Condition	Appointment slot is not confirmed for the user for consultation.	
Primary Actors:	User	
Secondary Actors:	System	
Trigger	User clicks "Payment" option.	
Main Success Flows	Step	Action
	1	User selects an available slot.
	2	Then chooses Payment Option.
	3	Redirected to Payment Gateway.
	4	Fill up the required information for payment.
	5	Successfully makes payment.
	6	Appointment slot booking is confirmed.
Alternative Flows	Step	Branching Action
	4a	Invalid information for payment.
	4a1	Fills the required information with valid information.
Quality Requirements	Step	Requirement
	1	Secure payment method with all the available payment gateways.

Table 7.19 Online Communication

Use Case-19	Online Communication	
Goal	Users can communicate with the psychologist through online consultation to get the desired help from psychologist they needed.	
Preconditions	Desired appointment slot must be confirmed before.	
Success End Condition	Users can communicate with the psychologist through online communication.	
Failed End Condition	Users can't communicate with the psychologist online.	
Primary Actors:	User	
Secondary Actors:	Psychologist	
Trigger	User clicks "Message" button from his booked appointments.	
Main Success Flows	Step	Action
	1	Message options became available at the specified time.
	2	User clicks "Message" button.
	3	Chat interface gets visible.
	4	User communicates with psychologist
Alternative Flows	Step	Branching Action
		N/A
Quality Requirements	Step	Requirement
	1	Ensure security and privacy.

Table 7.20 Video Calling

Use Case-20	Video Calling	
Goal	Video conversation with psychologist.	
Preconditions	Must complete payment.	
Success End Condition	The patient and Psychologist both can attend in video conversation.	
Failed End Condition	Can't place video calls.	
Primary Actors: Secondary Actors:	Patient, Psychologist Admin	
Trigger	Clicks on "Video call" icon.	
Main Success Flows	Step	Action
	1	The patient clicks on "Message" button from his booked appointment slot.
	2	The chat interface is open.
	3	The patient clicks on the "Video Call" icon to initiate a video session.
	4	The psychologist accepts the request.
	5	The patient and psychologist both turn on the camera.
	6	The patient and psychologist are connected in a video conversation.
Alternative Flows	Step	Branching Action
	3a	Video Session Connection Issue.
	3a1	The system notifies both the patient and psychologist about the connection problem.
Quality Requirements	Step	Requirement
	1	Ensure stable and reliable video chat functionality.

8. Activity Diagram

All of the activity diagram from the use case description are illustrated in this section.

Activity Diagram (**Sign Up**):
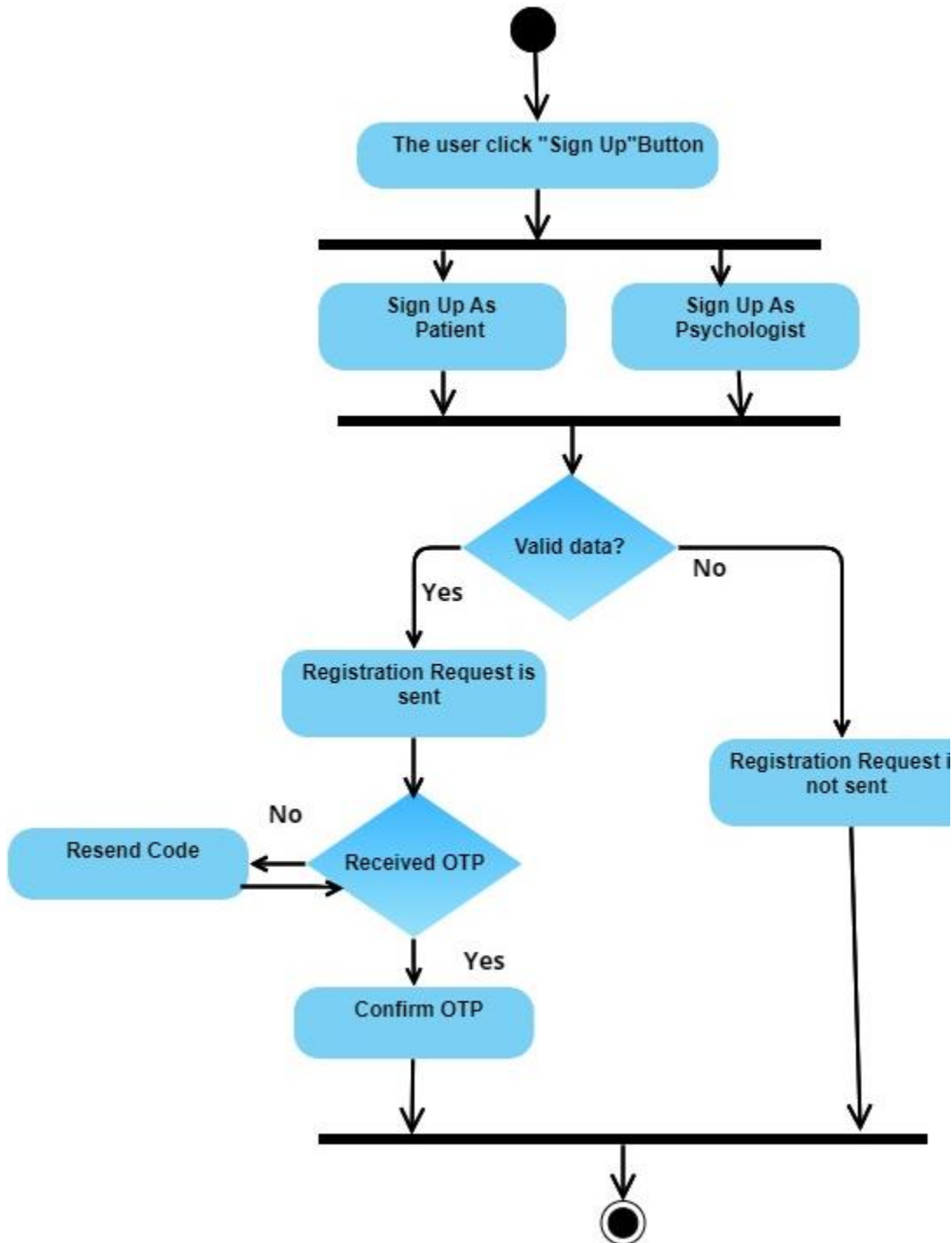
Figure 8.1 Sign Up

Activity Diagram (**Login**):
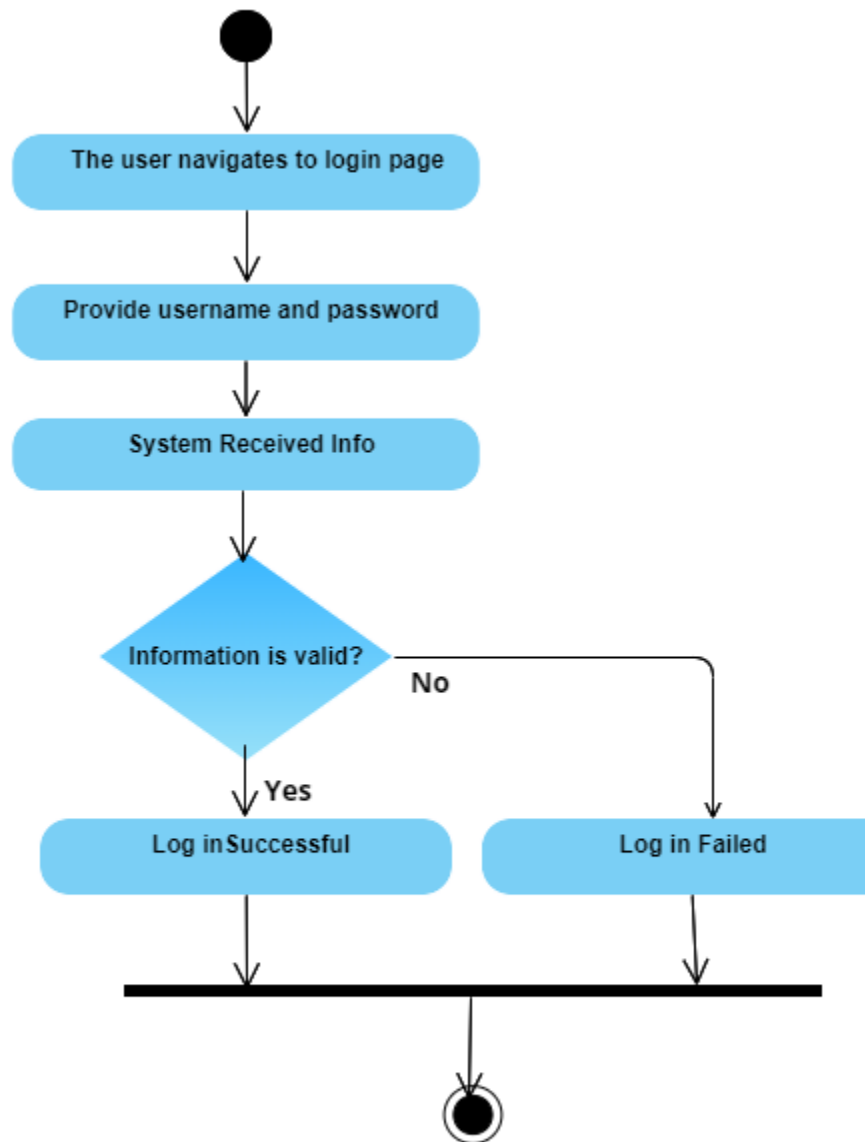
Figure 8.2 Login

Activity Diagram (**Logout**):
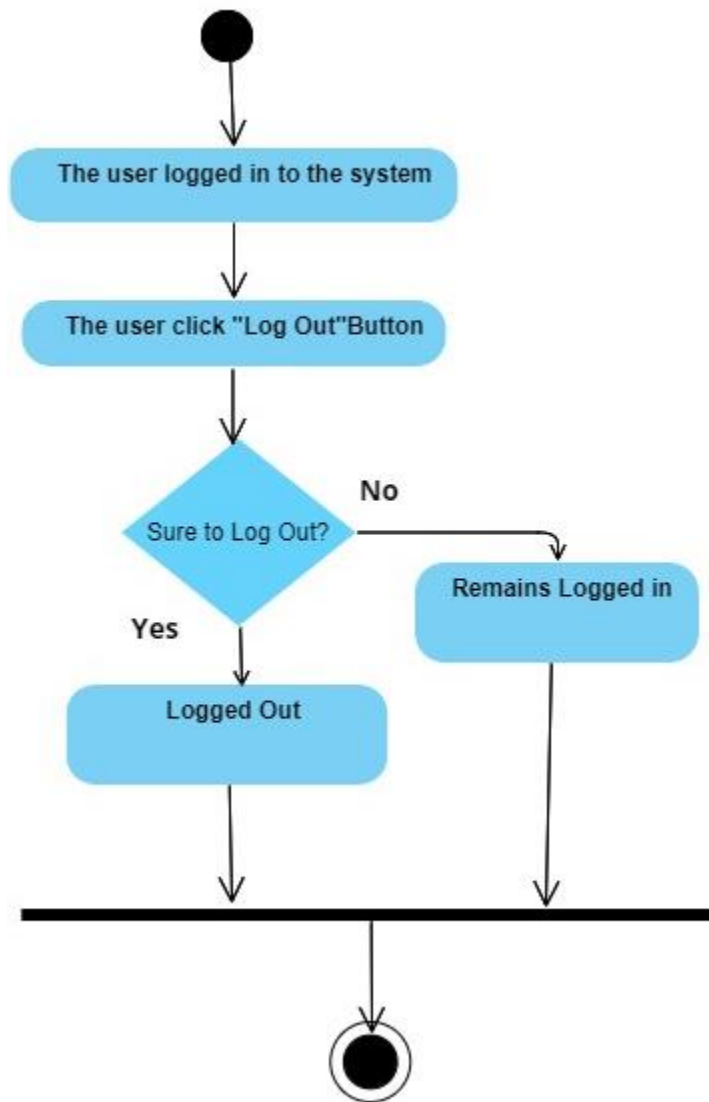
Figure 8.3 Logout

Activity Diagram (**Search Psychologists**):
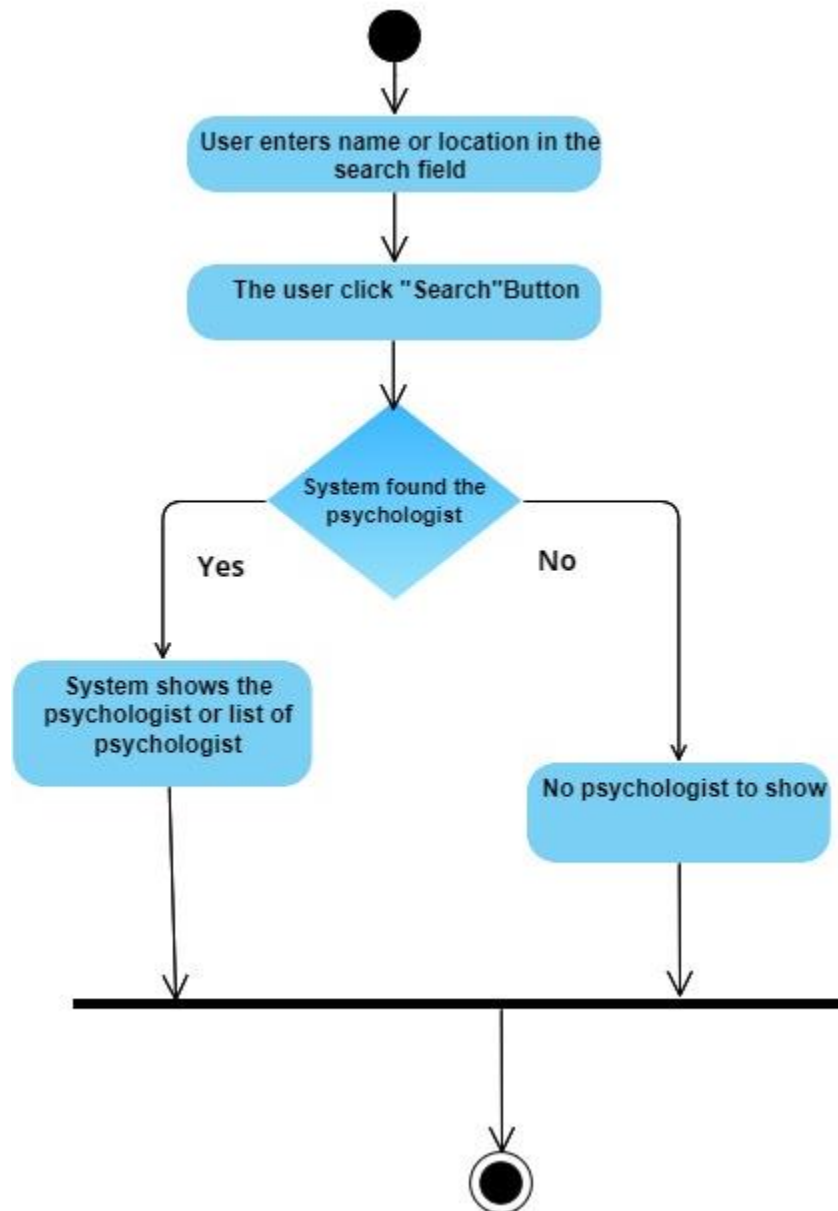
Figure 8.4 Search Psychologists

Activity Diagram (**Book Online Consultation**):
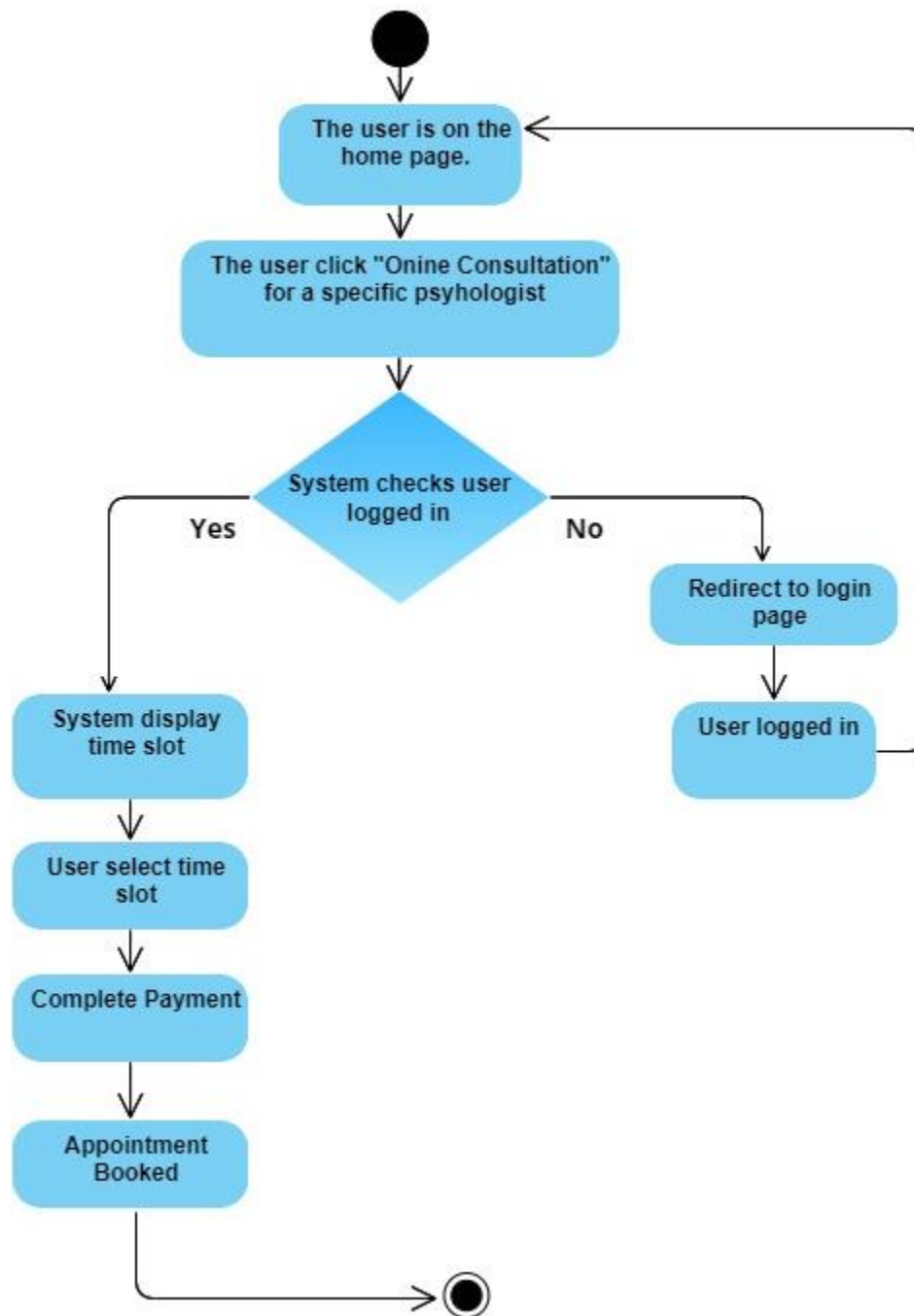
Figure 8.5 Book Online Consultation

Activity Diagram (**Book Offline Consultation**):
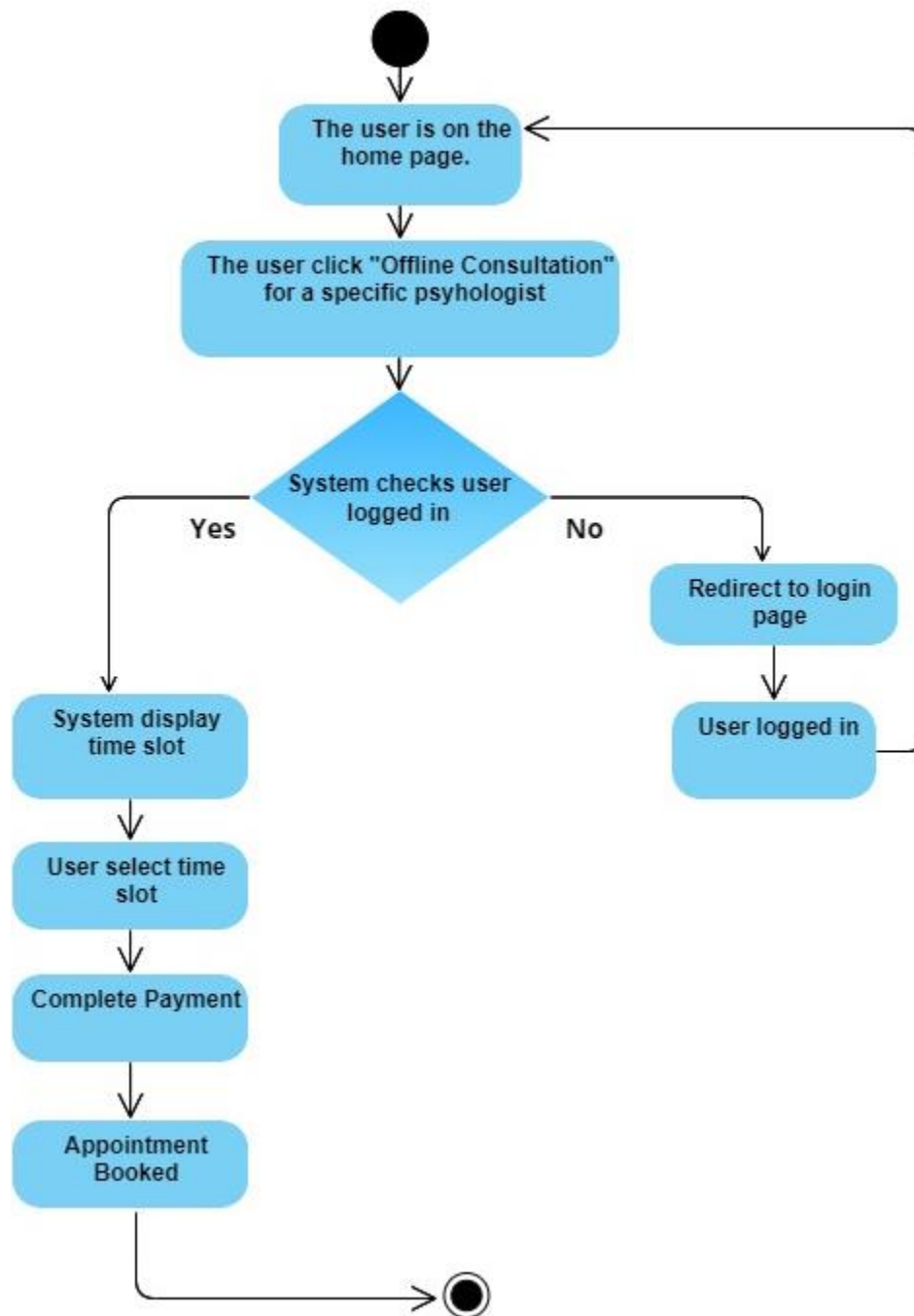
Figure 8.6 Book Offline Consultation

Activity Diagram (**View Psychologist Details**):
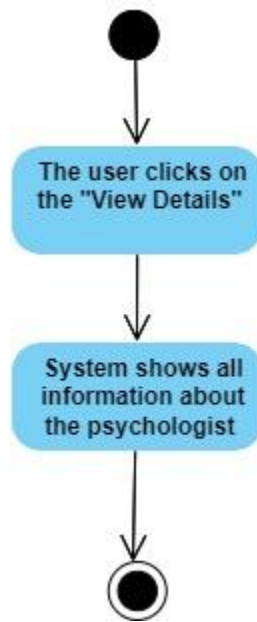
Figure 8.7 View Psychologist Details

Activity Diagram (**Cancel Appointment**):
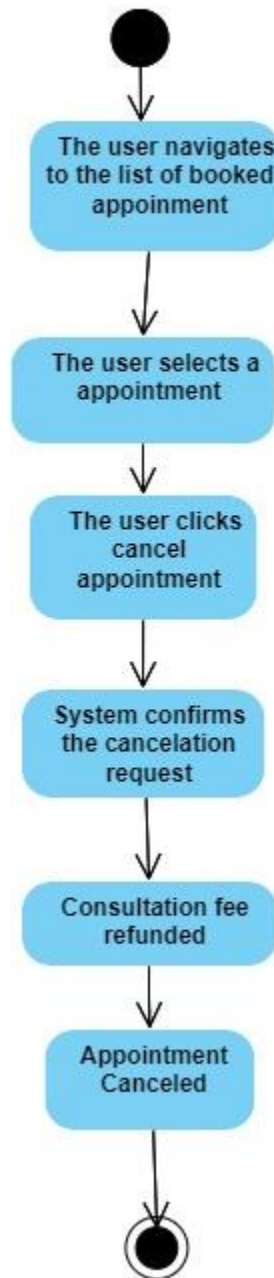
Figure 8.8 Cancel Appointment

Activity Diagram (**Read Blogs**):
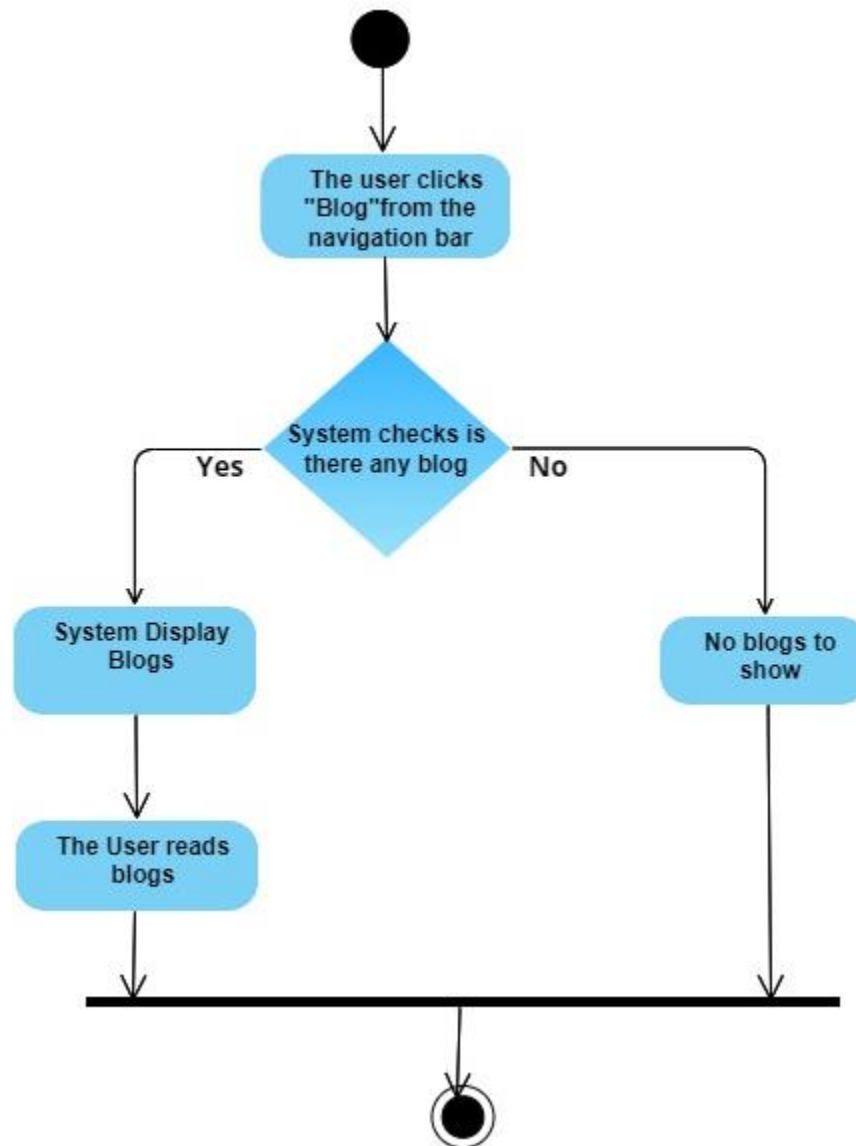
Figure 8.9 Read Blogs

Activity Diagram (**Create Appointment Slots**):
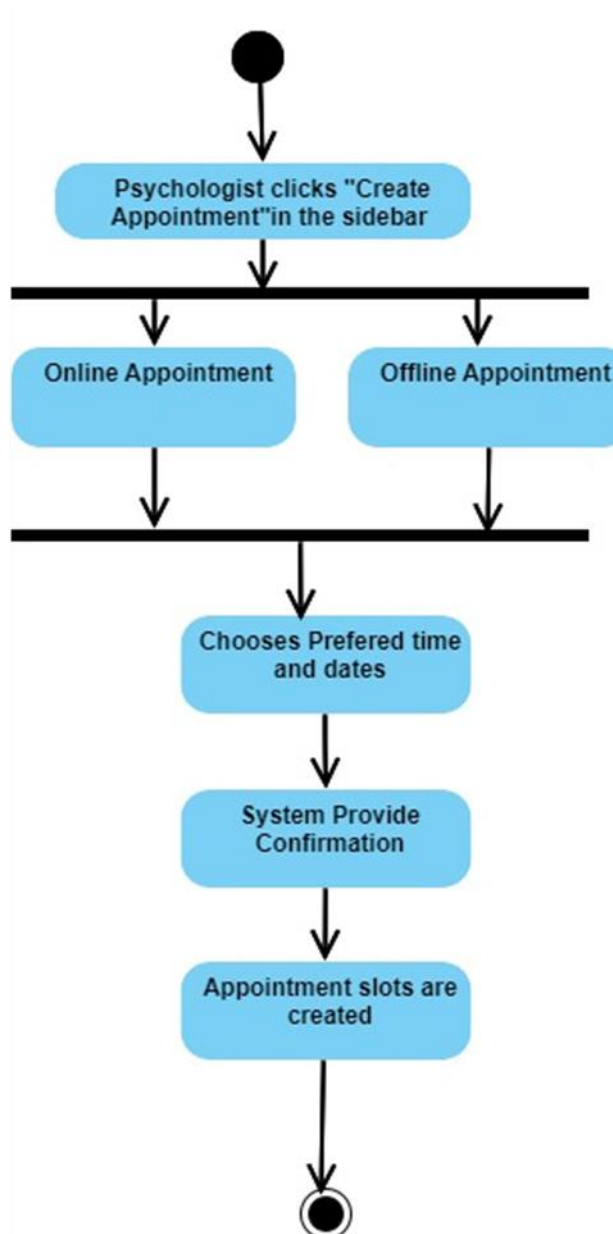
Figure 8.10 Create Appointment Slots

Activity Diagram (**Update Profile Information**):
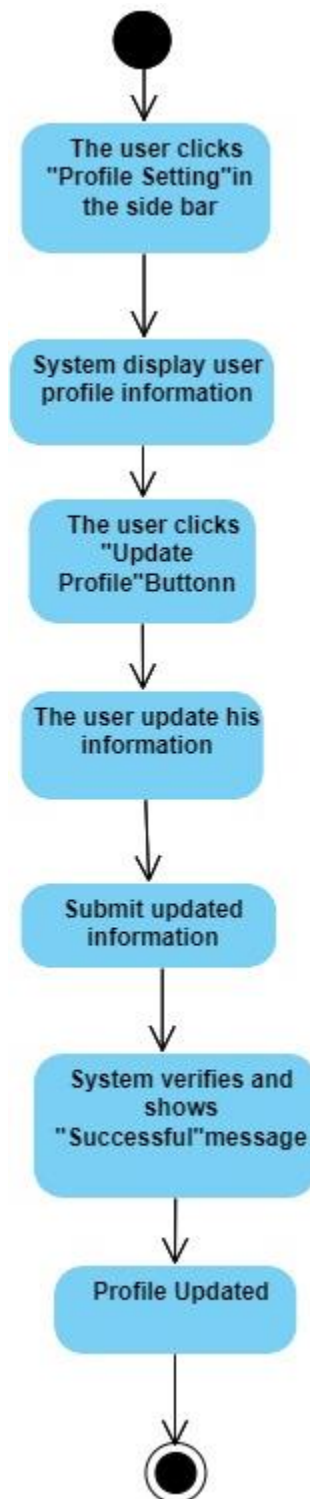
Figure 8.11 Update Profile Information:

Activity Diagram (**Manage Blogs**):
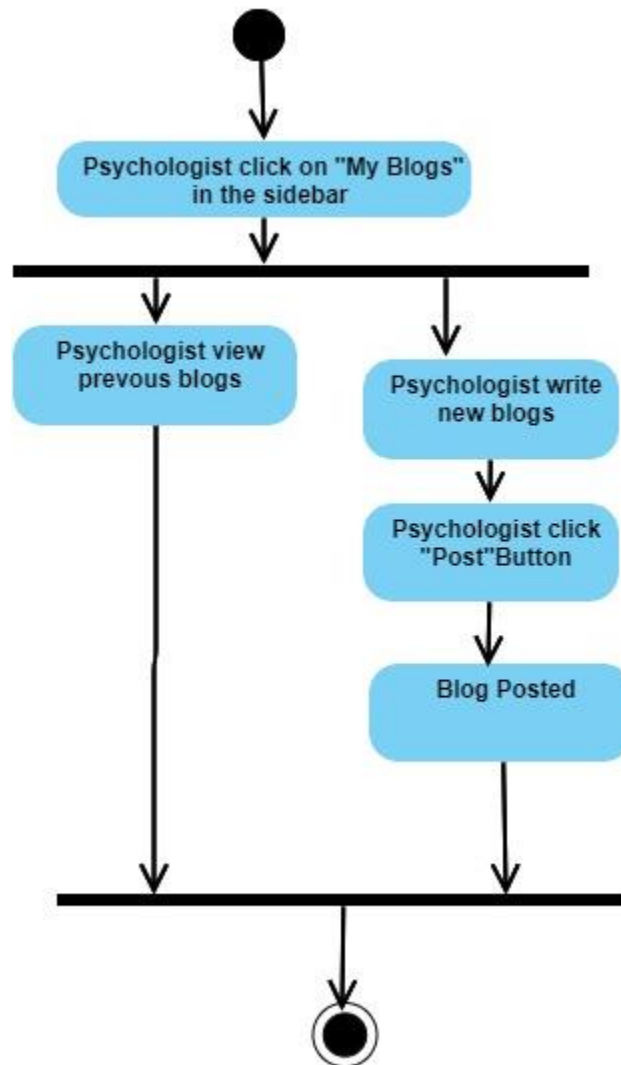
Figure 8.12 Manage Blogs

Activity Diagram (**Remove Psychologist**):
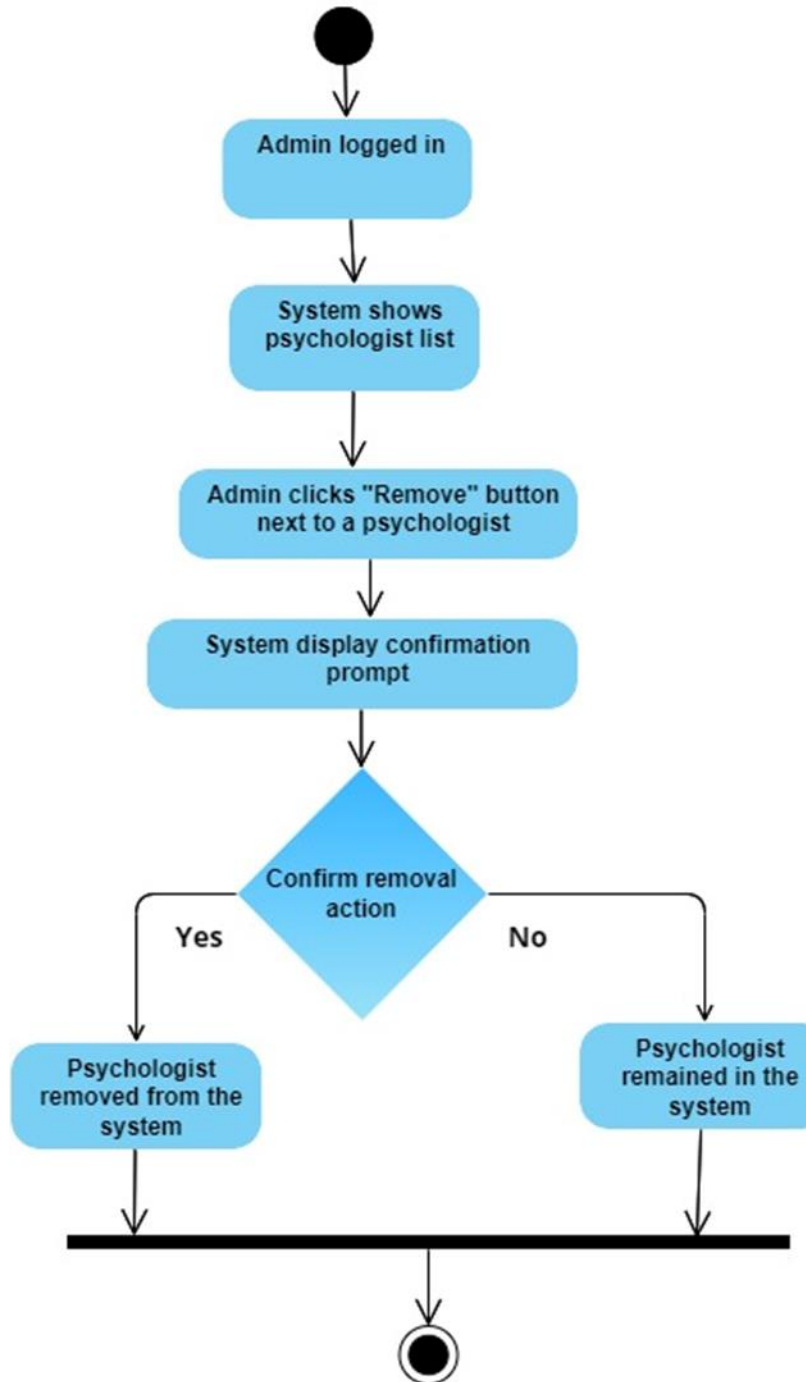
Figure 8.13 Remove Psychologist:

Activity Diagram (**Video Calling:**):

Figure 8.14 Video Calling

Activity Diagram (**Online Communication**):
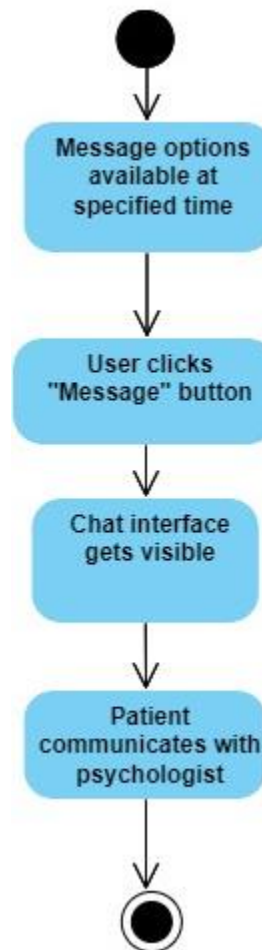
Figure 8.15 Online Communication

Activity Diagram (**Payment**):
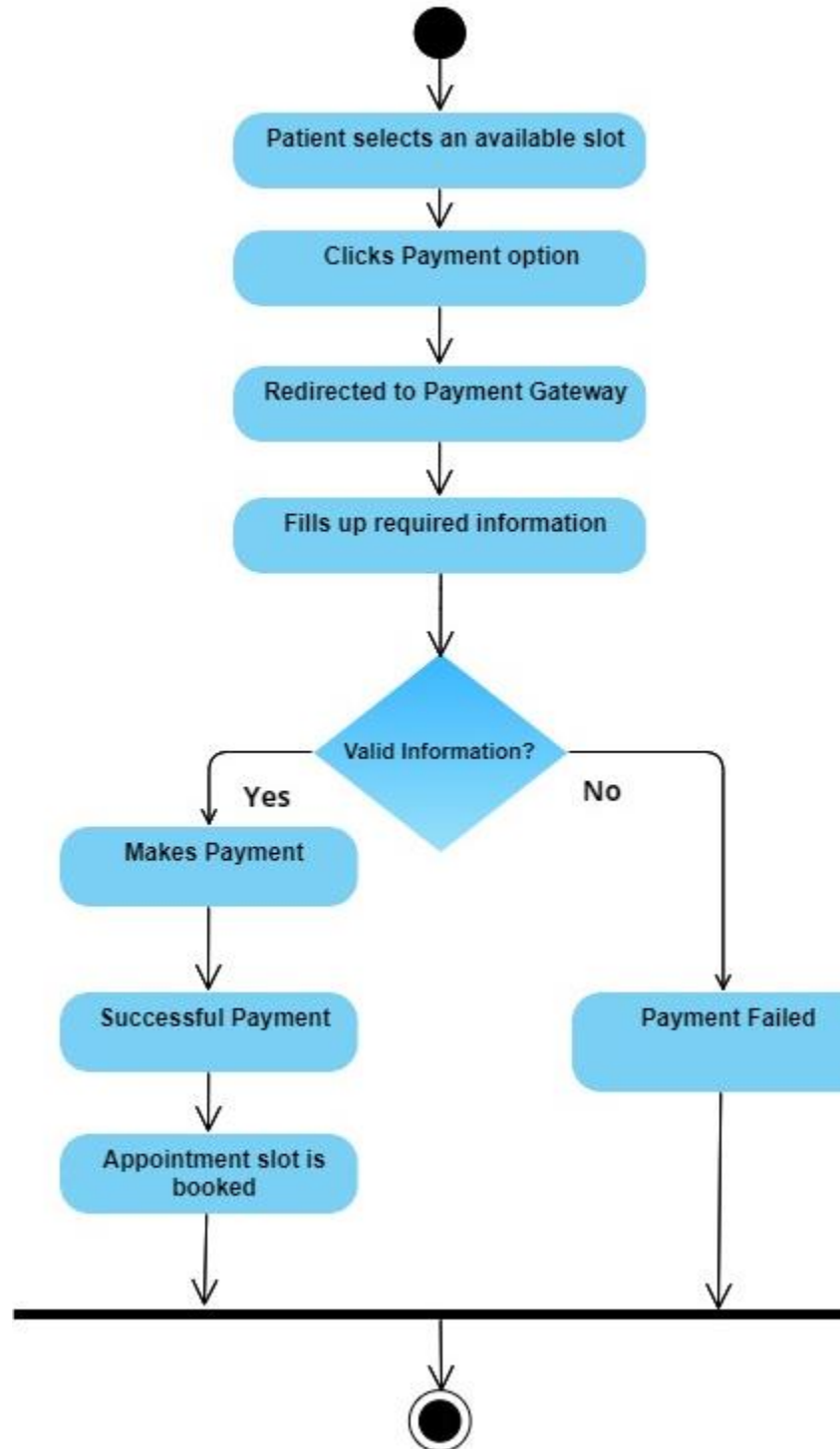
Figure 8.16 Payment

Activity Diagram (**View Appointment History**):
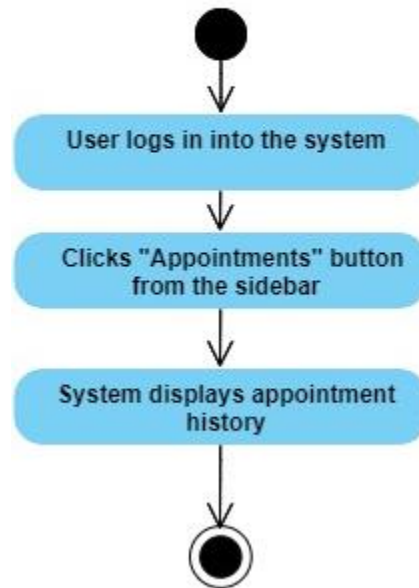
Figure 8.17 View Appointment History

Activity Diagram (**Approve Psychologist Approval Request**):
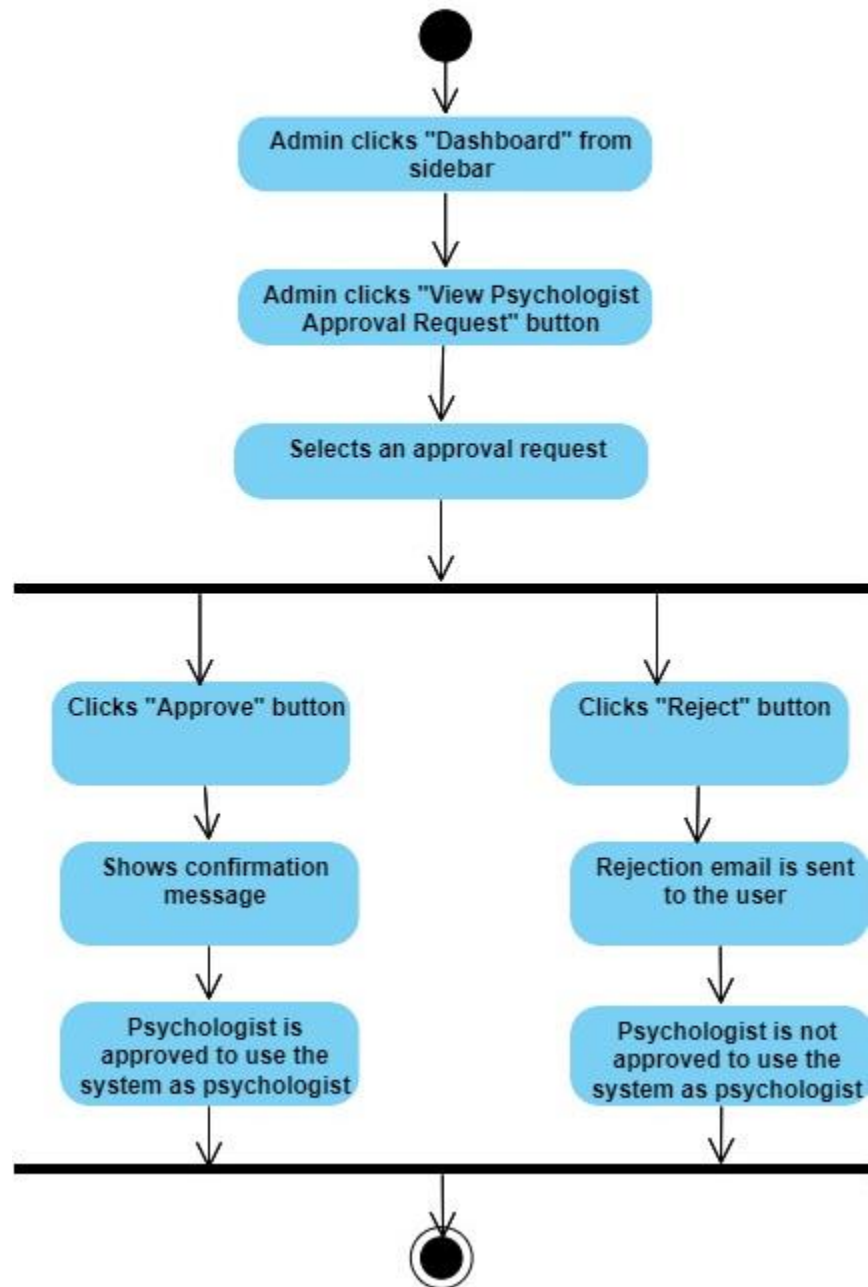
Figure 8.18 Approve Psychologist Approval Request:
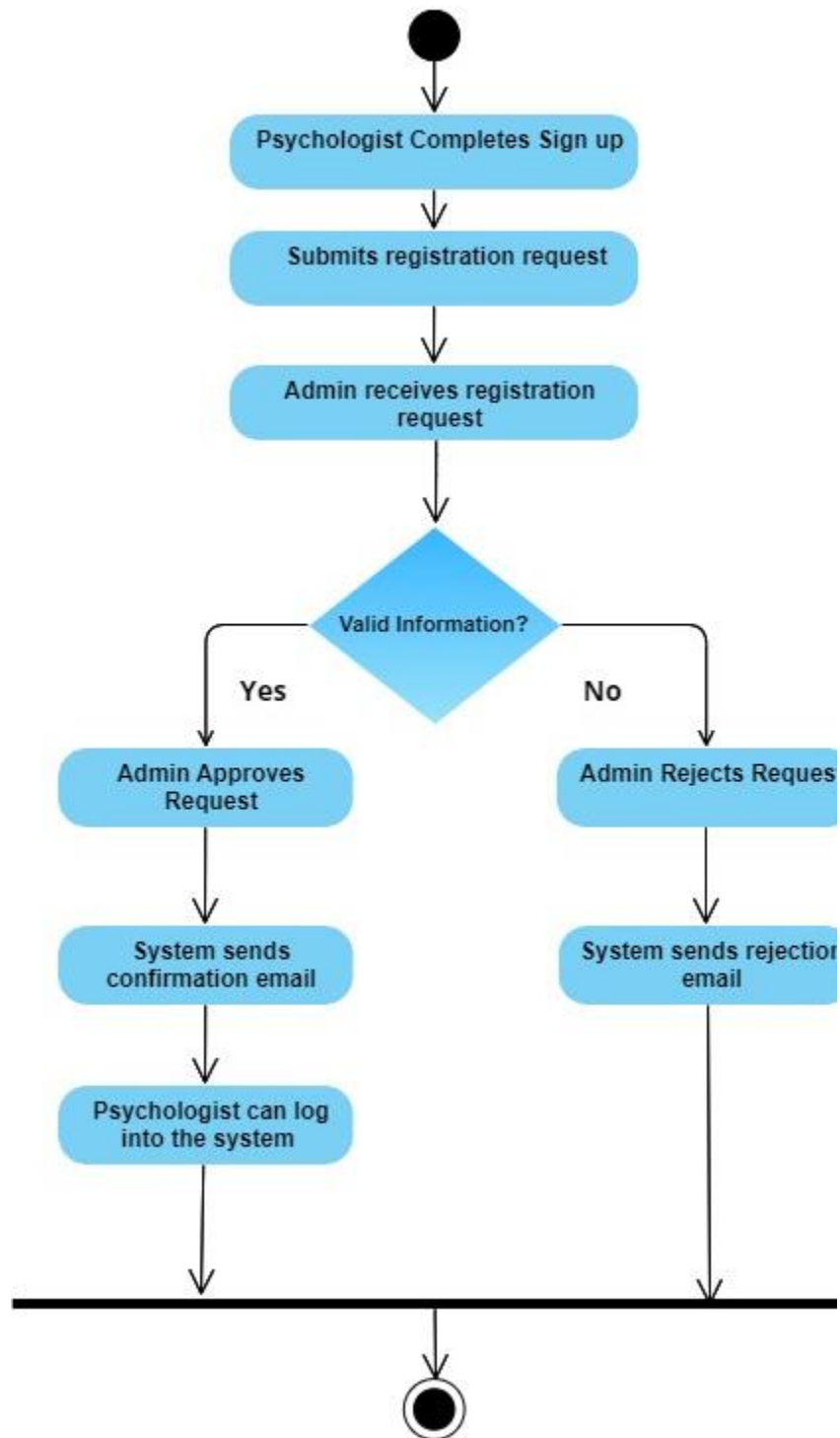
Activity Diagram (**Send Approval Request**):

Figure 8.19 Send Approval Request

Activity Diagram (**Forget Password**):

Figure 8.20   Forget Password

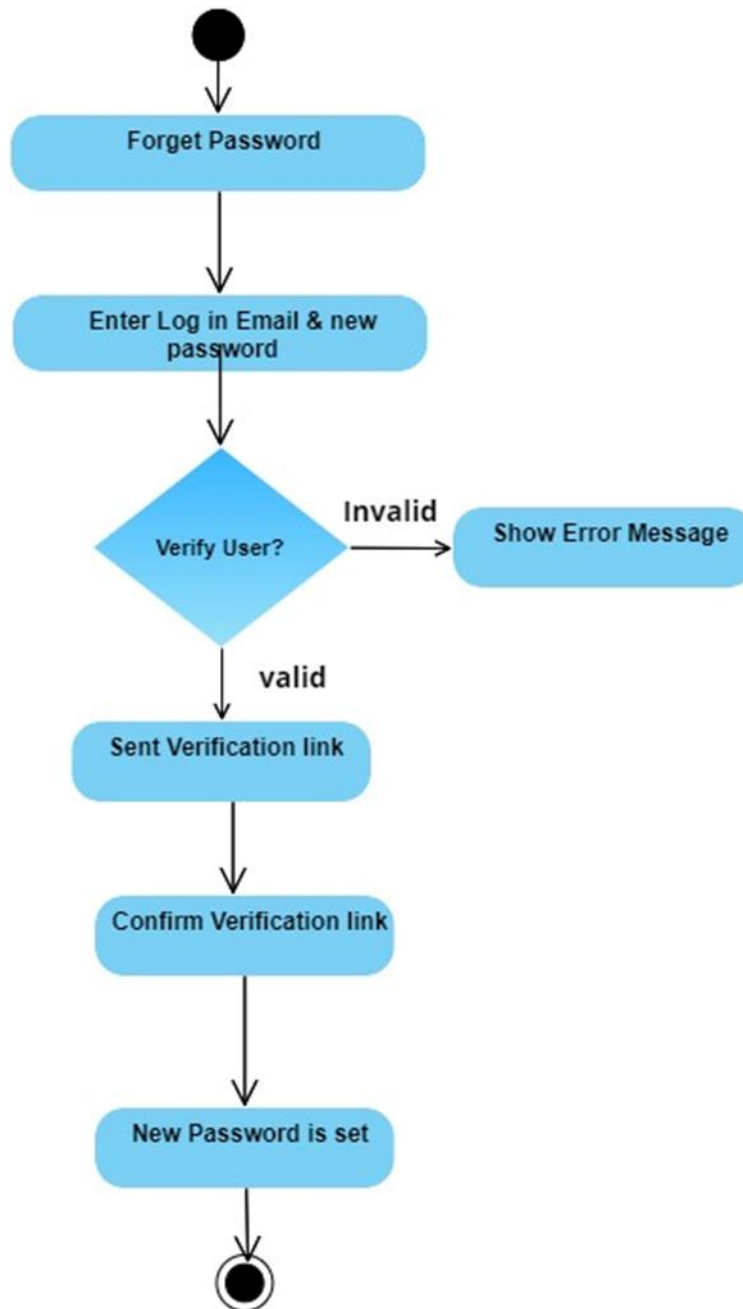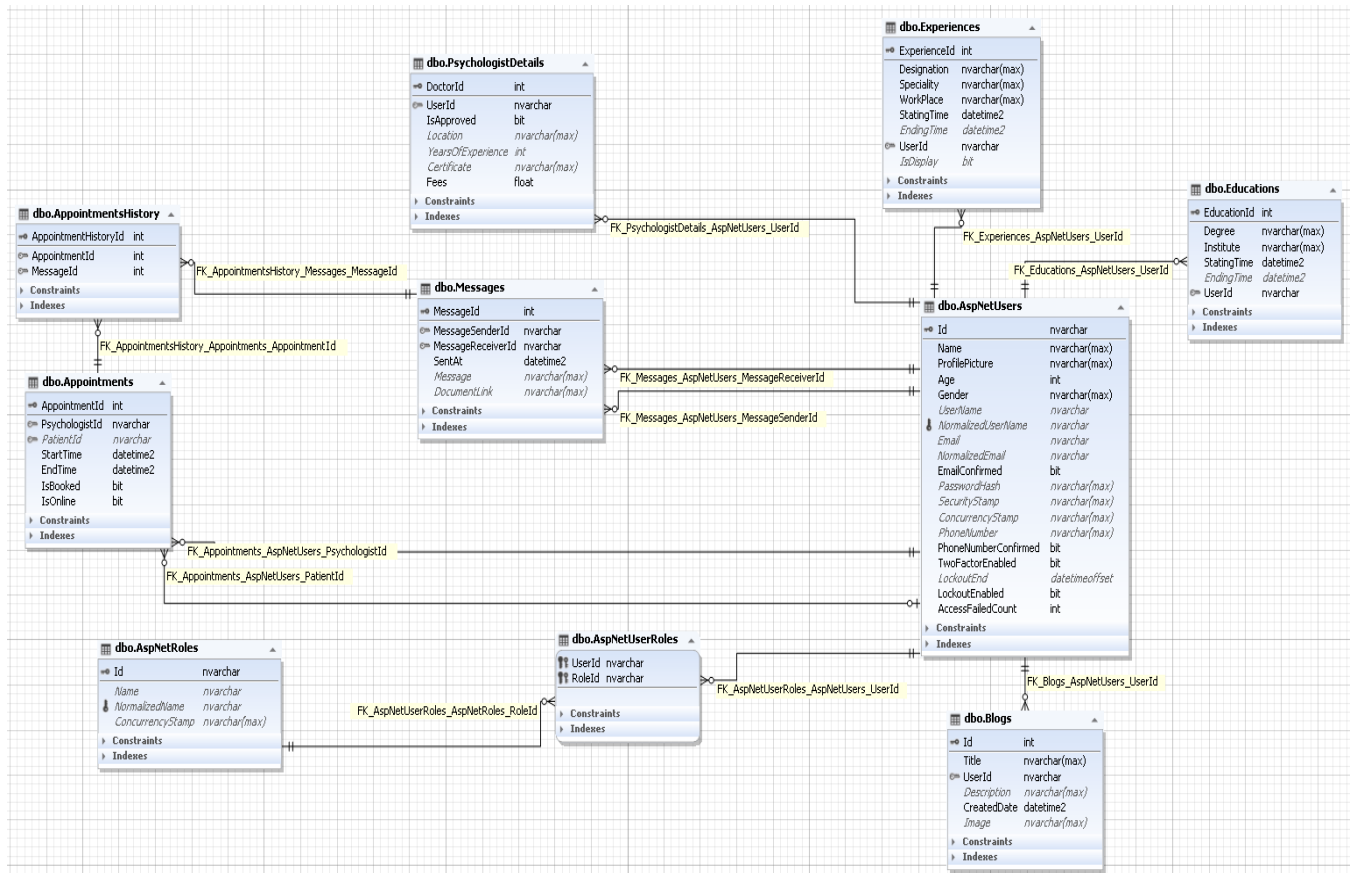# 9. Database Design

Figure 9.1 Database design of Mental Care