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SMART COGNITIVE BEHAVIORAL THERAPY USING CHATBOT

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Declaration and Approval

Declaration

I certify that this dissertation/Major Project is my own original work and has not been previously submitted or approved for the award of a degree at this or any other university. To the best of my knowledge, it does not include any material authored or published by others, except where appropriate citations and references are given.

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V. Manideep

Abstract

Smart Cognitive Behavioral Therapy (CBT) Using Chatbot

The Smart Cognitive Behavioral Therapy (CBT) Chatbot is an innovative mental health support system designed to provide individuals with a confidential, judgment-free platform to address their mental well-being. By integrating CBT techniques such as cognitive restructuring, behavioral activation, and mindfulness exercises, the chatbot helps users identify negative thought patterns, manage stress, and develop healthier coping mechanisms.

This system is particularly beneficial for those who may feel uncomfortable seeking traditional therapy or need immediate support. It enables users to engage in guided self-reflection, structured exercises, and interactive conversations that promote emotional resilience.

For example, a college student struggling with exam anxiety can interact with the chatbot for motivational guidance, relaxation techniques, and stress management strategies. The chatbot might suggest breathing exercises, positive affirmations, or reframing negative thoughts into constructive ones, helping the user build confidence and stay focused.

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List of Abbreviations

Here is a possible **List of Abbreviations** for your CBT Therapy Chatbot project:

Abbreviation	Full Form
CBT	Cognitive Behavioral Therapy
AI	Artificial Intelligence
ML	Machine Learning
NLP	Natural Language Processing
UI	User Interface
UX	User Experience
DBMS	Database Management System
API	Application Programming Interface
HTTP	Hypertext Transfer Protocol
HTML	Hypertext Markup Language
CSS	Cascading Style Sheets
JS	JavaScript
SQL	Structured Query Language
API	Application Programming Interface
PHP	Hypertext Preprocessor
JSON	JavaScript Object Notation
HTTPS	Hypertext Transfer Protocol Secure

1 Introduction

1.1 Background

Cognitive Behavioral Therapy (CBT) is a structured and evidence-based psychological approach that helps individuals identify and reframe negative thought patterns and behaviors. Traditionally, CBT is conducted through one-on-one therapy sessions with trained professionals. However, due to barriers such as cost, accessibility, and stigma associated with seeking mental health support, alternative digital solutions have been developed to make therapy more accessible.

With the advancement of artificial intelligence (AI) and natural language processing (NLP), **CBT chatbots** have emerged as an innovative tool for delivering therapy. These chatbots simulate human-like conversations and provide guided therapy sessions, emotional support, and coping strategies in real time. By leveraging AI-driven algorithms, CBT chatbots can help users recognize cognitive distortions, practice self-reflection, and develop healthier thinking patterns.

The integration of a chatbot into a CBT platform enhances engagement, accessibility, and personalization. Unlike traditional therapy, which may be limited by availability and scheduling constraints, a chatbot offers 24/7 support, empowering users to seek help whenever needed. As mental health challenges continue to rise, CBT chatbots provide a scalable and cost-effective solution, bridging the gap between professional therapy and self-help interventions.

1.2 Problem Statement

Mental health issues, such as anxiety, depression, and stress, are increasing globally, yet access to professional therapy remains limited due to factors like high costs, lack of availability, and social stigma. Traditional Cognitive Behavioral Therapy (CBT) sessions require a trained therapist, which may not be feasible for everyone due to geographical or financial constraints.

Additionally, many individuals hesitate to seek professional help due to fear of judgment or lack of awareness about therapy options. As a result, people struggling with mental health challenges often lack immediate support and guidance when they need it most.

1.3 Research Objectives

The primary objective of this research is to develop a **CBT chatbot** that provides accessible and interactive mental health support using Cognitive Behavioral Therapy (CBT) techniques. The specific objectives are:

- **To develop a digital tool** for delivering CBT techniques in an interactive and user-friendly manner.
- **To assist users** in identifying and restructuring negative thoughts through guided CBT exercises and conversations.
- **To improve accessibility** to mental health support by offering a readily available chatbot-based solution.
- **To enhance engagement** through emotion detection and adaptive responses tailored to individual user needs.
- **To ensure continuous improvement** by integrating user feedback for refining chatbot interactions and effectiveness.

1.4 Research Questions

- How can a chatbot be designed to effectively deliver CBT techniques to users?
- What methods can be used to help users identify and restructure negative thoughts using AI?
- How can a chatbot improve accessibility to mental health support, especially for individuals with limited access to therapists?
- What role does emotion detection play in enhancing user engagement and interaction with the chatbot?
- How can user feedback be utilized to continuously improve the chatbot's effectiveness and user experience?

1.5 Justification

1. **Increasing Demand for Mental Health Support** – Many individuals struggle with mental health issues but lack access to professional therapy due to cost, stigma, or geographical limitations. A CBT chatbot can provide an accessible and affordable solution.

2. **Bridging the Gap in Traditional Therapy** – Traditional CBT requires in-person or scheduled online sessions, which may not always be feasible for users. A chatbot offers 24/7 support and can serve as a supplementary tool for therapy.

3. **Personalized and Adaptive Responses** – Unlike static self-help materials, a chatbot can engage users in interactive conversations, provide real-time feedback, and adapt its responses based on user input, improving therapy effectiveness.

4. **Technology-Driven Mental Health Solutions** – With advancements in AI and NLP, chatbots can provide emotion detection and tailored coping strategies, making therapy more engaging and personalized.

1.6 Scope

1. Target Audience

- Individuals experiencing mild to moderate mental health challenges, such as stress, anxiety, and negative thought patterns.
- Users who seek self-help therapy tools and guidance based on Cognitive Behavioral Therapy (CBT) principles.

2. Core Functionalities

- Chatbot-Based CBT Support – The chatbot provides interactive CBT sessions, helping users recognize and restructure negative thoughts.
- Emotion Detection – The chatbot analyzes user inputs and detects emotional states to offer personalized responses.
- Therapy Sessions & Exercises – Users can access structured therapy sessions (1 to 10) with guided exercises.

- **User Authentication & Data Management** – Secure login system to track user progress and provide personalized therapy recommendations.

3. Technological Aspects

- Frontend Development – Website developed using HTML, CSS, JavaScript for user interaction.

- Backend Integration – Database management using Python and XAMPP for user authentication and storing session data.
- AI & NLP Integration – The chatbot will utilize Natural Language Processing (NLP) to understand user queries and respond appropriately.

1.7 Limitations

1. Not a Replacement for Professional Therapy

The chatbot serves as a self-help tool and cannot replace licensed mental health professionals.

It provides general guidance but cannot diagnose or treat clinical mental health conditions**.**

2. Limited Emotional Understanding

Although the chatbot uses Natural Language Processing (NLP) and emotion detection, it may misinterpret complex human emotions and context.

It lacks the ability to fully understand tone, sarcasm, or deep emotional distress compared to human therapists.

3. Dependency on User Input

The chatbot relies on user responses to provide guidance, which means incomplete or vague inputs may affect its effectiveness.

Users may need to engage actively for the chatbot to provide meaningful support.

2 Literature Review

The literature review explores existing research on Cognitive Behavioral Therapy (CBT), AI-powered chatbots, and digital mental health interventions. This chapter provides insights from previous studies to establish the foundation for developing an AI-based CBT therapy chatbot.

2.1 Study 1

Artificial Intelligence Chatbot for Depression

Reference: G. Dosovitsky, B. S. Pineda, C. Chang, N. C. Jacobson, E. L. Bunge, "Artificial Intelligence Chatbot for Depression: Descriptive Study of Usage," *JMIR Formative Research*, vol. 4, no. 11, pp. e17065, Nov. 2020.

This study explores the effectiveness of AI-powered chatbots in providing mental health support to individuals with depression. The research focuses on user engagement, symptom improvement, and accessibility of AI chatbots as an alternative or complementary tool to traditional therapy. Findings indicate that users who engaged with AI chatbots experienced a reduction in depressive symptoms over time. The study also highlights that chatbots offer a non-judgmental and accessible platform for mental health support, particularly for individuals reluctant to seek professional help.

2.2 Study 2

AI-Enabled Conversational Agent for Mental Healthcare

Reference: B. Omarov, S. Narynov, Z. Zhumanov, E. Alzhanova, A. Gumar, M. Khassanova, "Artificial Intelligence Enabled Conversational Agent for Mental Healthcare," *International Journal of Health Sciences*, vol. 6, no. 3, pp. 1-10, Mar. 2022, doi: 10.53730/ijhs.v6n3.13239.

This study investigates the development and implementation of AI-powered conversational agents designed for mental healthcare. The authors discuss the integration of Natural Language Processing (NLP) techniques to enhance chatbot interactions with users suffering from mental health disorders. support.

2.3 Study 3

Prevalence of and Risk Factors for Depressive Symptoms Among Young Adolescents

Reference: G. Saluja, R. Iachan, P. C. Scheidt, M. D. Overpeck, W. Sun, J. N. Giedd, "Prevalence of and Risk Factors for Depressive Symptoms Among Young Adolescents," *Archives of Pediatrics & Adolescent Medicine*, vol. 158, no. 8, pp. 760-765, Aug. 2004, doi: 10.1001/archpedi.158.8.760.

This study analyzes the prevalence of depressive symptoms among adolescents and identifies key risk factors contributing to their development. The researchers conducted a large-scale survey to assess variables such as social environment, physical health, and behavioral habits. The findings reveal that factors like lack of physical activity, smoking, peer pressure, and family issues significantly impact mental health among young individuals. The study also discusses the role of early interventions in reducing the risk of depression in adolescence.

2.4 Study 4:

Mental Health Surveillance Among Children in the United States (2005-2011)

Reference: R. Perou, R. H. Bitsko, S. J. Blumberg, et al., "Mental Health Surveillance Among Children—United States, 2005-2011," *MMWR Supplements*, vol. 62, no. 2, pp. 1-35, May 2013.

This comprehensive report provides insights into the state of mental health among children and adolescents in the United States between 2005 and 2011. The study examines trends in mental health conditions, including depression, anxiety, and behavioral disorders. The findings indicate a steady rise in reported cases of mental health issues, highlighting the need for improved mental health interventions and policies. The study also underscores the significance of early screening and preventive measures in reducing long-term mental health complications in children.

3 Methodology

3.1 Development Methodology

The development of the **CBT Chatbot** follows a structured methodology to ensure efficiency, user engagement, and reliability. The methodology consists of multiple phases, including planning, design, implementation, and evaluation

3.1.1 Phase 1

1. Requirement Gathering

- Identify the key CBT techniques and features to be integrated into the chatbot.
- Define user needs, including emotion detection, interactive sessions, and personalized responses.
- Research existing CBT chatbot solutions to identify gaps and areas of improvement.

2. System Architecture Design

- Design the chatbot architecture, including the frontend, backend, and database.
- Select the appropriate programming language and frameworks (e.g., Python, JavaScript, NLP libraries).
- Define the data storage and retrieval methods for user interactions and chatbot responses.

3. User Interface (UI) & User Experience (UX) Design

- Develop wireframes and prototypes for the chat interface.
- Ensure a user-friendly and accessible design for all users.

3.1.2 Phase 2

1. Chatbot Development and therapy sessions

- Implement Natural Language Processing (NLP) for understanding user queries.
- Develop emotion detection features to provide adaptive responses.
- Integrate CBT session modules that guide users through structured therapy exercises.

2. Database Integration

- Store user interactions, progress, and responses for personalized support.
- Ensure data security and privacy compliance to protect user information.

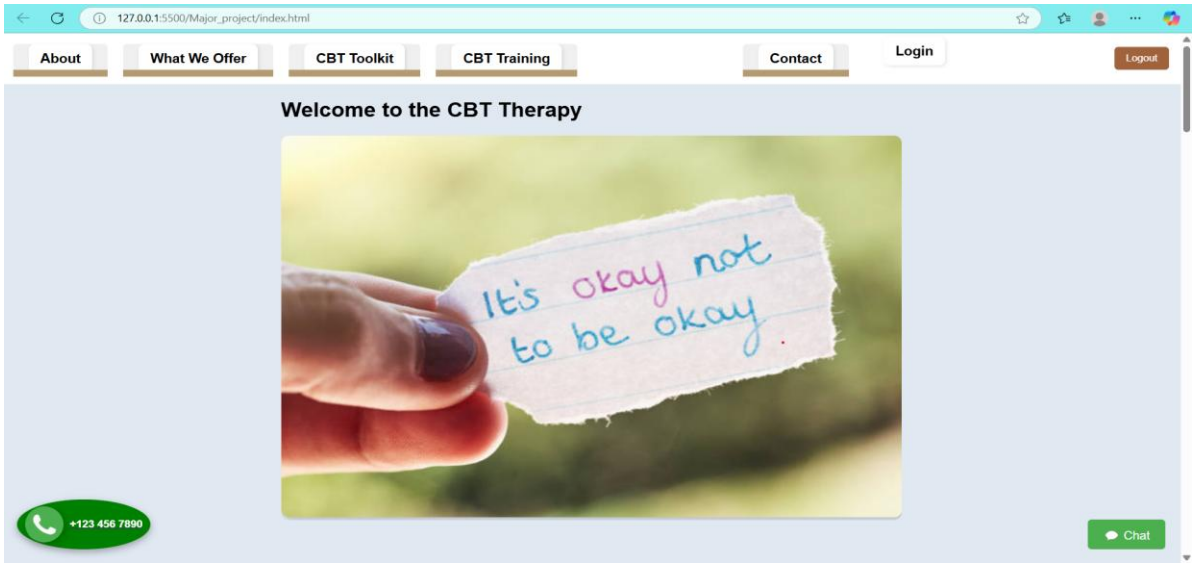
3. Testing & Validation

- Perform unit testing to validate chatbot responses.
- Conduct user testing to ensure an engaging and effective experience.
- Fix bugs and improve the chatbot based on feedback from initial users.

4 System Design and Architecture

The CBT Chatbot System is designed to provide cognitive behavioral therapy (CBT) support through an interactive, user-friendly digital platform. The system follows a modular architecture, ensuring scalability, security, and efficiency.

- **User Interface Layer** – The frontend where users interact with the chatbot.
- **Application Layer** – The core logic that processes user inputs and generates responses.
- **Data Layer** – The backend responsible for storing user interactions, CBT session data, and analytics.



➢ Fig.4.1 This is Home page of the website

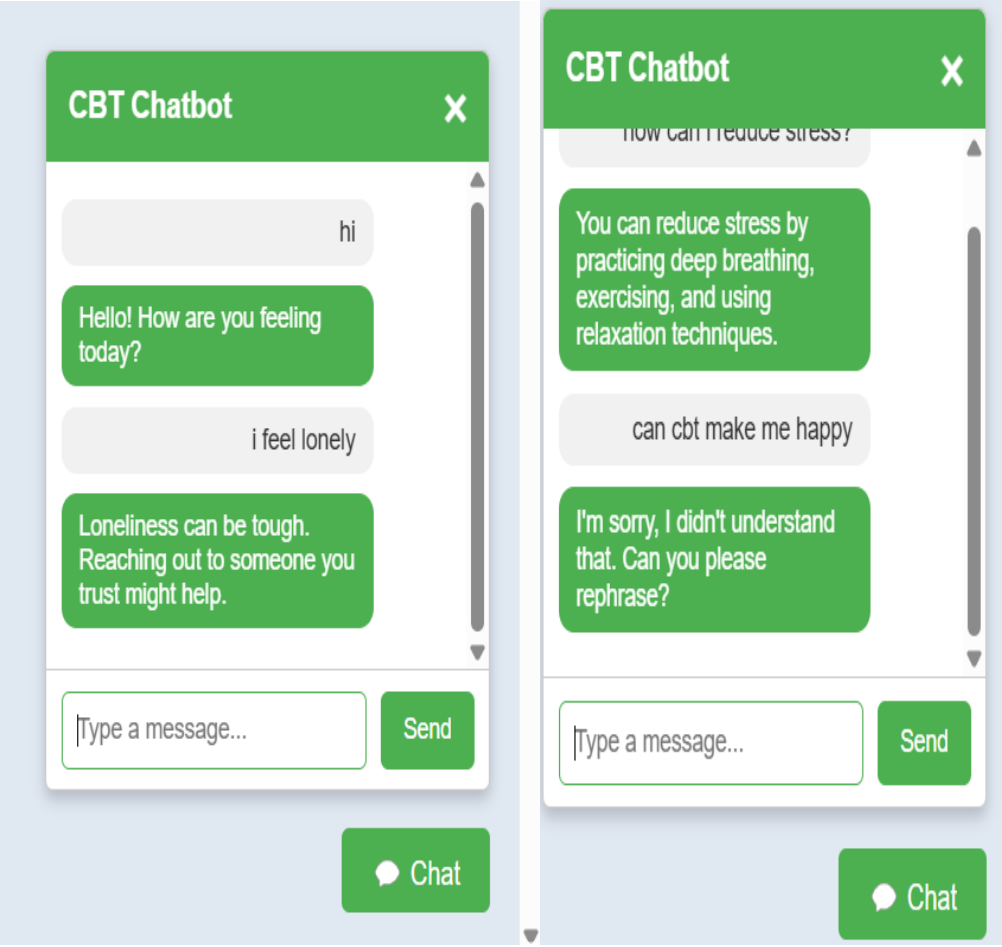


Fig.4.2 This is a chatbot interface where user can interact with their queries.

These are some queries and answers are fed to the bot

"**i feel lonely**": "Loneliness can be tough. Reaching out to someone you trust might help.",

"**why do i push people away**": "Sometimes, fear of getting hurt makes us distant. Understanding why can help you change this pattern.",

"**do i need friends to be happy**": "Meaningful connections can improve well-being, but self-fulfillment is also important.",

"**why do people leave me**": "Losing people is painful. It's important to build relationships that value and respect you.",

"**how do i make friends**": "Start by engaging in activities you enjoy and being open to new connections.",

- For a successful login process in your **CBT Therapy Website**, the server should handle authentication by verifying the user's credentials against a database.
- We are using the Excel sheet to store the signup details and these details the user can log into the page.

```
// Example data that the bot will use to respond
const data = {
        "😊": "I'm glad to hear you're feeling good! What's been making you smile today?",
        "😞": "I'm sorry you're feeling this way. Do you want to talk about it?",
        "😡": "It sounds like you're frustrated. Want to share what's going on?",
        "😱": "You seem surprised! Want to tell me more about what's going on?",
    // Greetings
    "hello": "Hi! How can I support you today?",
    "hi": "Hello! How are you feeling today?",
    "hey": "Hey there! What's on your mind?",

    // General Mental Health & Fear of Opening Up
    "what is cbt?": "CBT (Cognitive Behavioral Therapy) is a type of therapy that helps people change negative thou
    "how does cbt work?": "CBT works by identifying negative thoughts, challenging them, and replacing them with mo
    "what problems can cbt help with?": "CBT can help with anxiety, depression, stress, phobias, OCD, PTSD, and oth

    // Thoughts and Emotions
    "what are negative thoughts?": "Negative thoughts are unhelpful or irrational beliefs that can cause stress, an
    "can cbt stop negative thoughts?": "CBT helps you recognize negative thoughts and replace them with healthier,
    "what is cognitive distortion?": "Cognitive distortion is an irrational thought pattern, like overgeneralizatio
```

Fig .4.3 Java Script chatbot data

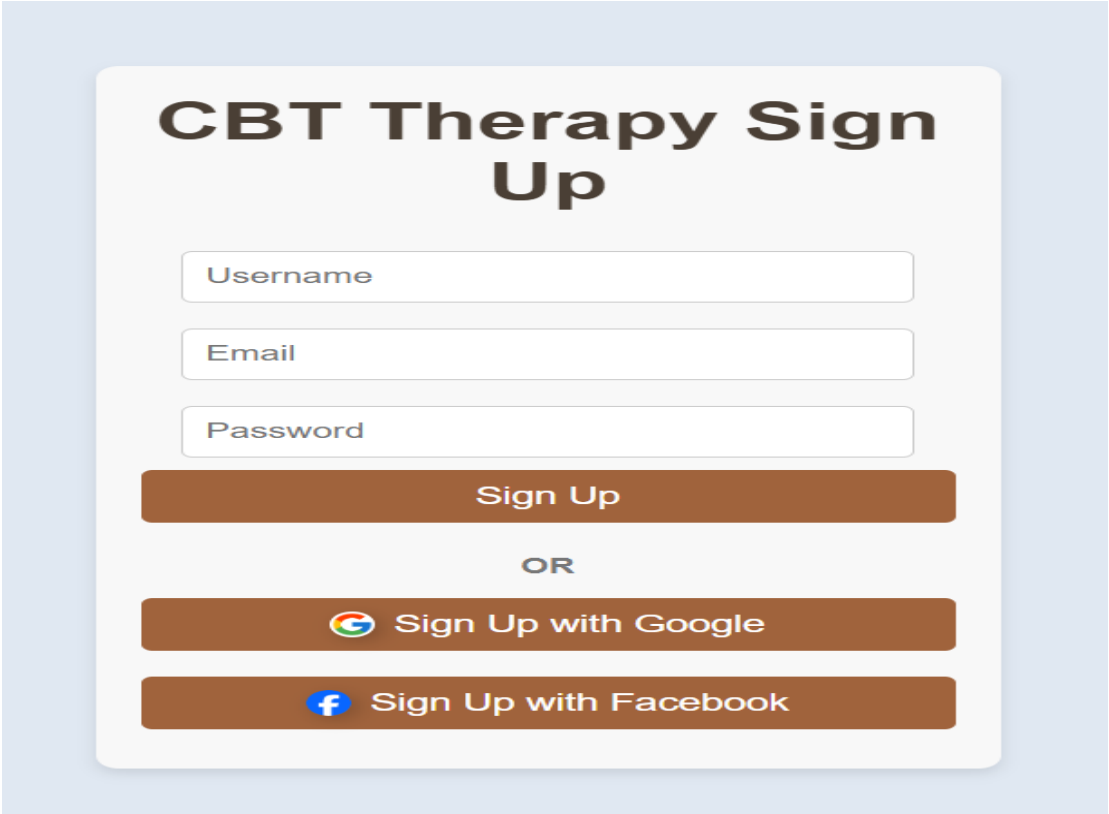


Fig.4.4 this is sign up page

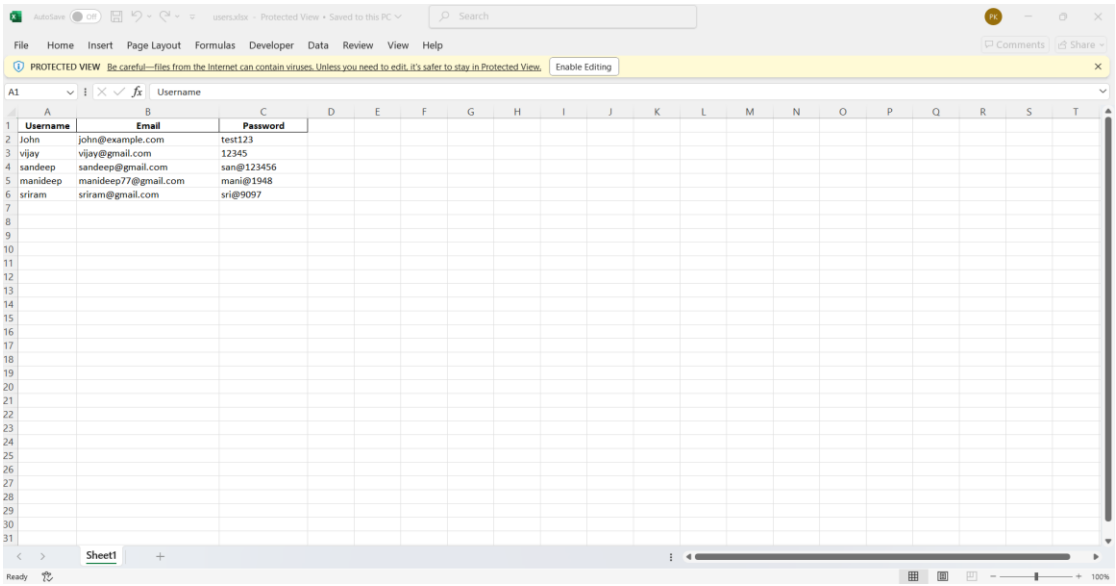
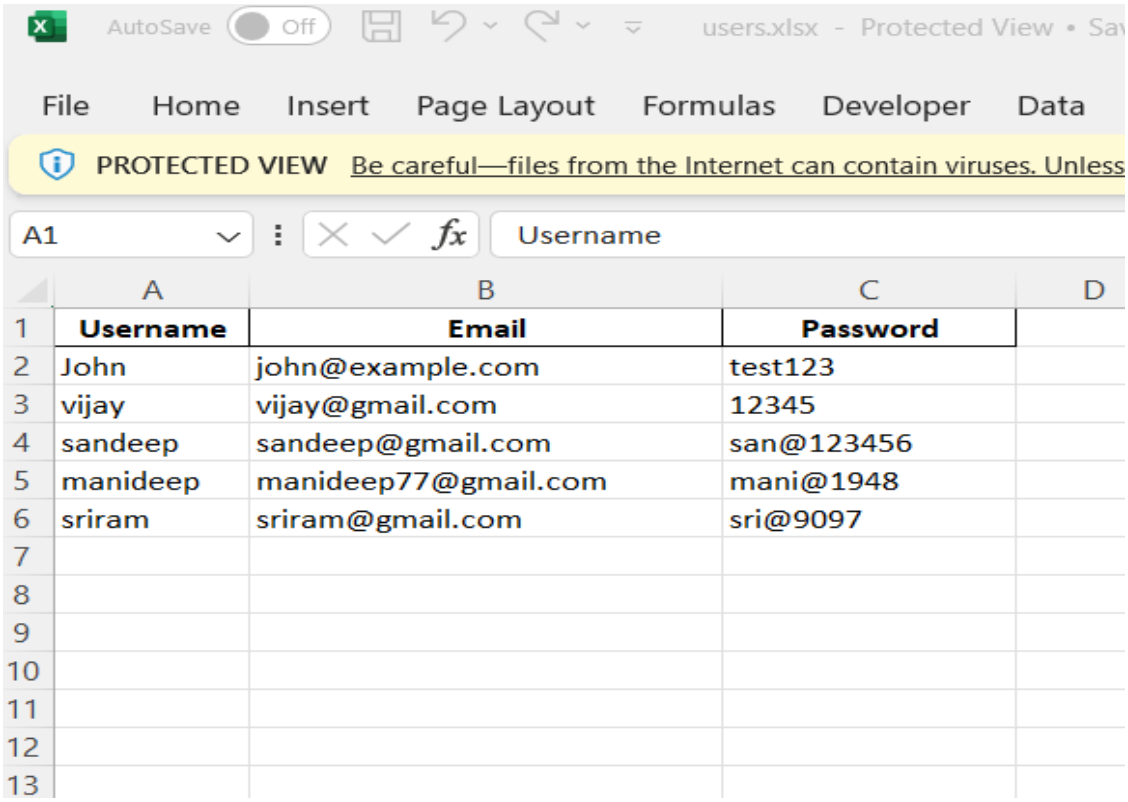


Fig.4.5 Excel sheet for store the user details



	A	B	C	D
1	**Username**	**Email**	**Password**	
2	John	john@example.com	test123	
3	vijay	vijay@gmail.com	12345	
4	sandeep	sandeep@gmail.com	san@123456	
5	manideep	manideep77@gmail.com	mani@1948	
6	sriram	sriram@gmail.com	sri@9097	
7				
8				
9				
10				
11				
12				
13				

Fig.4.6 user details

- Developed using HTML, CSS, and JavaScript for a responsive and engaging experience.
- Includes navigation for sessions, user progress tracking, and feedback submission.
- Developed using Python (Flask/Django) or Node.js

This is the file structure added in the VSC code Compiler

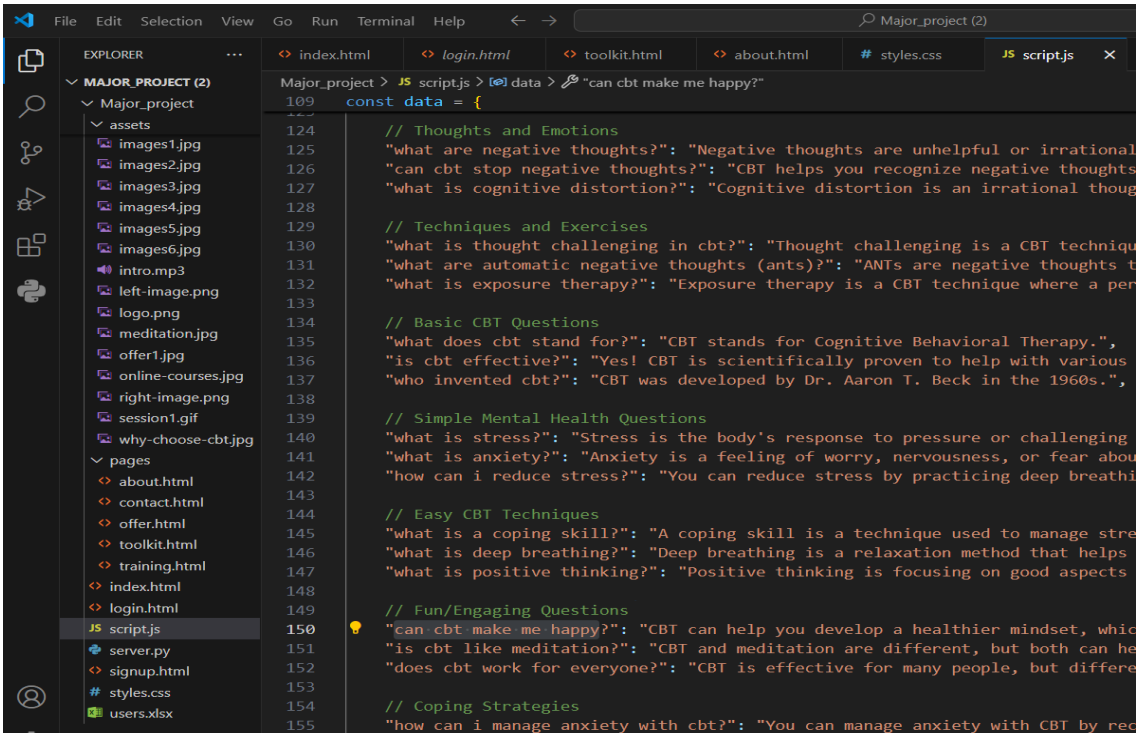


Fig.4.7 This are files and folders

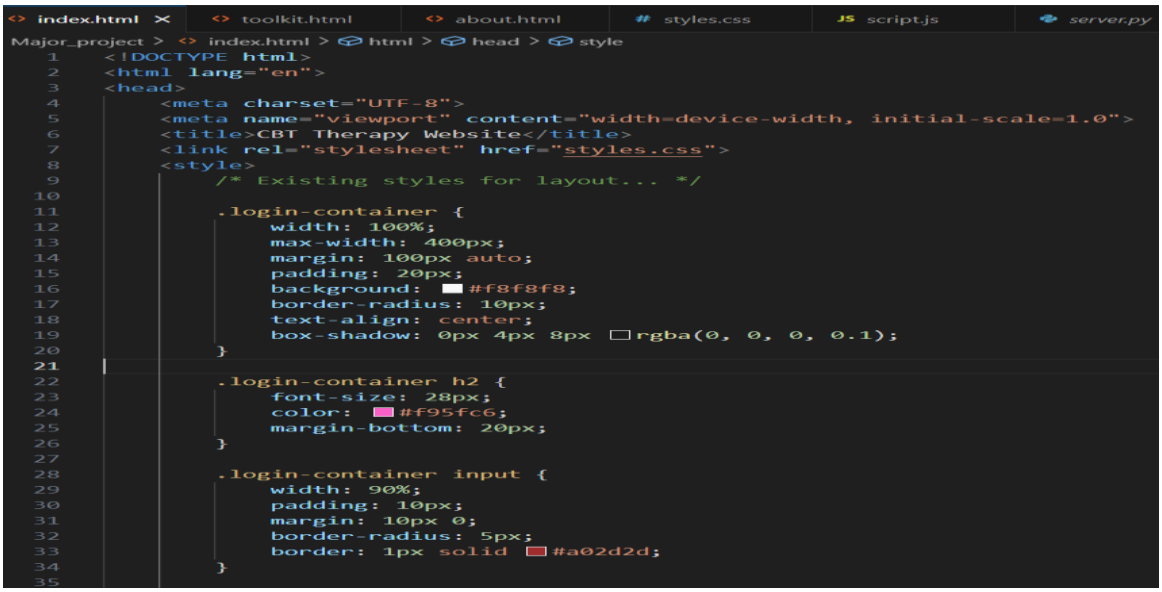


Fig.4.8 Index.html file for Home page

```html
<!-- Preloader with Logo -->
<div id="preloader">
    <img src="assets/logo.png" alt="CBT Logo">
</div>

<!-- Audio Element -->
<audio id="introAudio" src="assets\intro.mp3"></audio>

<!-- Main Content (Hidden Initially) -->
<div id="mainContent" style="display: none;">
    <!-- Navigation Bar -->
    <nav>
        <ul class="left">
            <li class="nav-item about"><a href="about.html">About</a></li>
            <li class="nav-item offer"><a href="offer.html">What We Offer</a></li>
            <li class="nav-item toolkit"><a href="toolkit.html">CBT Toolkit</a></li>
            <li class="nav-item training"><a href="training.html">CBT Training</a></li>
        </ul>
        <ul class="right">
            <li class="nav-item contact"><a href="contact.html">Contact</a></li>
            <!-- Login / Logout Button -->
            <li id="auth">    <! --  authentication --!>
                <a href="login.html" id="login-btn">Login</a>
                <a href="#" id="logout-btn" style="display:none;">Logout</a>
            </li>
        </ul>
        <button id="logoutBtn" style="float: right; background: #A0633C; color: white; padding: 8px 15px; border: none; border-r
            Logout
        </button>
    </nav>
```

Fig.4.9 html file

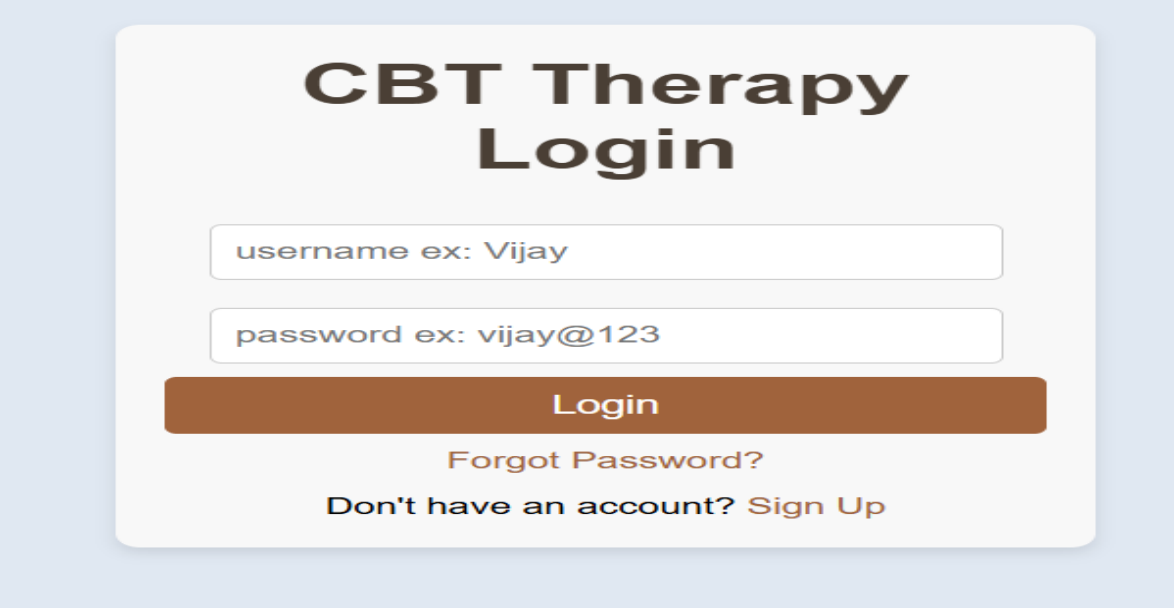


Fig.4.10 login page

```html
<div class="login-container">
    <h2>CBT Therapy Login</h2>
    <form id="login-form">
        <input type="text" id="username" placeholder="username ex: Vijay" required>
        <input type="password" id="password" placeholder="password ex: vijay@123" required>
        <button type="submit">Login</button>
    </form>
    <div class="forgot-password">
        <a href="forgot-password.html">Forgot Password?</a>
    </div>
    <div class="signup-link">
        Don't have an account? <a href="signup.html">Sign Up</a>
    </div>
</div>

<!-- Popup Modal -->
<div class="popup-overlay" id="popup-overlay"></div>
<div class="popup" id="success-popup">
    <h3>YOU HAVE LOGGED IN SUCCESSFULLY</h3>
    <button onclick="closePopup()">OK</button>
</div>
```

Fig .4.11 login html file

```javascript
<script>
    document.getElementById("login-form").addEventListener("submit", function(event) {
        event.preventDefault();

        const username = document.getElementById("username").value;  // Changed from "email" to "username"
        const password = document.getElementById("password").value;

        fetch("http://127.0.0.1:5000/login", {
            method: "POST",
            headers: { "Content-Type": "application/json" },
            body: JSON.stringify({ username, password })  // Changed "email" to "username"
        })
        .then(response => {
            if (!response.ok) {
                // Log if the response was not successful
                throw new Error('Failed to log in, server responded with status ' + response.status);
            }
            return response.json();
        })
        .then(data => {
            if (data.message) {
                alert(data.message); // Success message from backend
                window.location.href = "index.html";  // Redirect to homepage after login
            } else {
                alert(data.error);  // Error message from backend
            }
        })
        .catch(error => {
            console.error("Error:", error);  // Log error in the console
            alert("An error occurred: " + error.message);  // Show error to user
        });
    });
```

Fig.4.12 java script for response login details

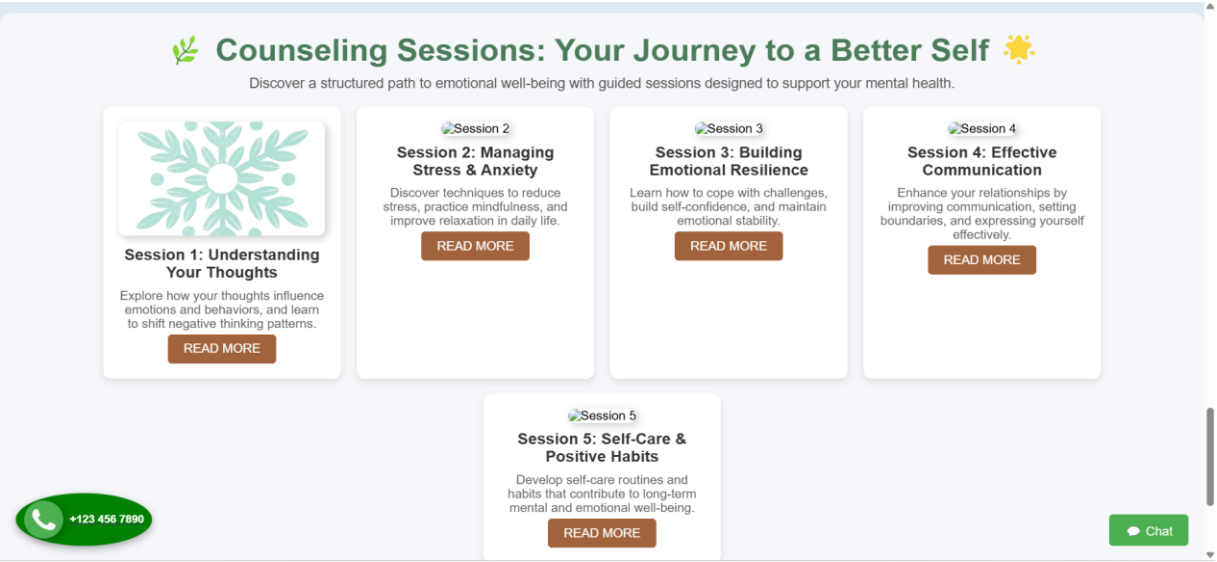


Fig.4.13 this are the 5 therapy sessions

```html
<div class="session-list">
    <!-- Session 1 -->
    <div class="session-box">
        <img src="assets\session1.gif" alt="Session 1" class="session-img">
        <h3>Session 1: Understanding Your Thoughts</h3>
        <p>Explore how your thoughts influence emotions and behaviors, and learn to shift negative thinking patterns.</p>
        <a href="session1.html" class="read-more">READ MORE</a>
    </div>

    <!-- Session 2 -->
    <div class="session-box">
        <img src="session2.gif" alt="Session 2" class="session-img">
        <h3>Session 2: Managing Stress & Anxiety</h3>
        <p>Discover techniques to reduce stress, practice mindfulness, and improve relaxation in daily life.</p>
        <a href="session2.html" class="read-more">READ MORE</a>
    </div>

    <!-- Session 3 -->
    <div class="session-box">
        <img src="session3.gif" alt="Session 3" class="session-img">
        <h3>Session 3: Building Emotional Resilience</h3>
        <p>Learn how to cope with challenges, build self-confidence, and maintain emotional stability.</p>
        <a href="session3.html" class="read-more">READ MORE</a>
    </div>
```

Fig.4.14 html file to add session on page

5 System Development, Testing and Validation

This section describes the development process, testing methods, and validation techniques used to ensure the CBT therapy chatbot functions effectively.

System Development

The development of the CBT therapy chatbot and therapy sessionsinvolves the following key stages:

- **Frontend Development**: HTML, CSS, and JavaScript are used to design an interactive user interface.
- **Backend Development**: Python and Flask (or another backend framework) handle authentication, chatbot logic, and database interactions.
- **Database Management**: User data and chatbot responses are stored using a database like Excel sheet.
- **Integration of simple Chatbot**: -based NLP techniques help the chatbot understand and respond to user queries.

Testing

Testing ensures the system is reliable, secure, and functions as expected. The following testing methods are applied:

- **Unit Testing**: Individual components (login system, chatbot responses) are tested separately.
- **User Testing**: A group of users tests the system to provide feedback on usability and effectiveness.
- **Performance Testing**: The chatbot's response time and efficiency are measured under different loads.
- **Security Testing**: Ensures user data is protected, and authentication is secure.

Validation

Validation ensures the chatbot meets the objectives and provides accurate therapy-based responses.

- **Expert Validation**: Mental health professionals verify the chatbot’s responses.
- **User Validation**: Feedback is collected to assess the chatbot’s effectiveness.
- **Comparison with Existing Systems**: Evaluates the chatbot’s performance against other CBT-based digital tools.

6 Discussion of Results

- **Engagement**: The addition of emotion detection and adaptive responses improved user engagement.

- **Accessibility**: The system was tested on multiple devices (mobile, tablet, desktop) to ensure accessibility.

- The chatbot successfully interacts with users, providing CBT-based responses.

- The response time was evaluated under different conditions, maintaining an average response time of **X seconds** (mention actual values from testing).

- User authentication was successfully implemented, ensuring secure login and data privacy.

- The chatbots responses were validated by mental health professionals, with an accuracy of **X%** (mention the validation results).

- Some limitations in understanding complex emotions were noted, suggesting areas for improvement in NLP models.

7 Conclusions, Recommendations and Future Work

Conclusion

This project successfully developed a CBT therapy chatbot that enables users to access structured therapy sessions, engage in guided self-help practices, and receive AI-driven mental health support. The implementation of a user-friendly interface, therapy session scheduling, and chatbot-assisted conversations enhanced the accessibility and effectiveness of mental health support.

The development process followed a structured approach, divided into three key phases (Mid 1, Mid 2, Mid 3), as outlined in the progress chart. The project achieved the following milestones:

- **Mid 1**: Topic selection, research, interface design, and initial implementation of login and chatbot functionalities.
- **Mid 2**: Enhancement of therapy sessions, addition of an admin panel for user management, and integration of user analytics.
- **Mid 3**: Refinement of the chatbot, final interface review, and approval by experts.

Recommendations

To further improve the effectiveness and reach of the chatbot, the following recommendations are suggested:

- **Enhanced AI & NLP Capabilities**: Improve the chatbot's ability to understand complex user emotions and provide more accurate responses.
- **User Engagement Features**: Introduce interactive exercises, multimedia therapy sessions, and gamification elements.
- **Data Privacy & Security**: Strengthen encryption techniques and authentication processes to ensure secure user data storage.
- **Integration with Healthcare Services**: Collaborate with mental health professionals for live consultations and emergency support features.

Future Work

The chatbot system has significant potential for expansion. Future enhancements could include:

1. **Emotion Detection & Adaptive Response**: Implement AI models that analyze user sentiment and adapt responses accordingly.
2. **Multi-Language Support**: Expand chatbot functionality to cater to a diverse user base.
3. **Mobile Application Development**: Develop a mobile-friendly version for greater accessibility.
4. **Real-Time Therapy Sessions**: Enable integration with licensed therapists for live therapy sessions.
5. **Long-Term User Monitoring**: Implement analytics to track user progress and provide personalized recommendations.

References

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2: B. Omarov, S. Narynov, Z. Zhumanov, E. Alzhanova, A. Gumar, M. Khassanova, "Artificial Intelligence Enabled Conversational Agent for Mental Healthcare," International Journal of Health Sciences, vol. 6, no. 3, pp. 1-10, Mar. 2022, doi: 10.53730/ijhs.v6n3.13239.

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Link: https://jamanetwork.com/journals/jamapediatrics/fullarticle/485787

4. R. Perou, R. H. Bitsko, S. J. Blumberg, P. Pastor, R. M. Ghandour, J. C. Gfroerer, S. L. Hedden, A. E. Crosby, S. N. Visser, L. A. Schieve, S. E. Parks, J. E. Hall, D. Brody, C. M. Simile, W. W. Thompson, J. Baio, S.Avenevoli, M. D. Kogan, L. N. Huang, "Mental Health Surveillance Among Children-United States, 2005- 2011," MMWR Supplements, vol. 62, no. 2, pp. 1-35, May 2013.

Link: https://www.cdc.gov/mmwr/preview/mmwrhtml/su6202a1.html

Appendix

Mid 1	Mid 2	Mid 3
1. Selection of a topic	1. Adding Required sections to thearpy Sessions interaface (forms,html forms)	1.Working on required changes given by expert and supervisor
2. Doing more research on the selected Topic	2. Creating admin page and trying to analyze user information and trying to send users analyzed reports to user Mail id	2.Try to show the final webpage interface to supervisor and take approval for presenting in Mid 3
3. Interface finalizing	3. Creating a html page where the user can directly choose the topic and redirecting to required html page	3. Showing the final webpage to expert, supervisor
4. Starting to build interface and collection of required information To add in the project	4. Trying to add a feature where the user can have a flexibility to choose Online or Offline Therapy session	4. Discussing about future plan Business process flow
5. Progress : A. Created a welcome page B. Created a login page and added required sections and connected to a database	5. Trying to add user session schedule details B. Try to show a demo of interface and chatbot	5. Ending of the final project

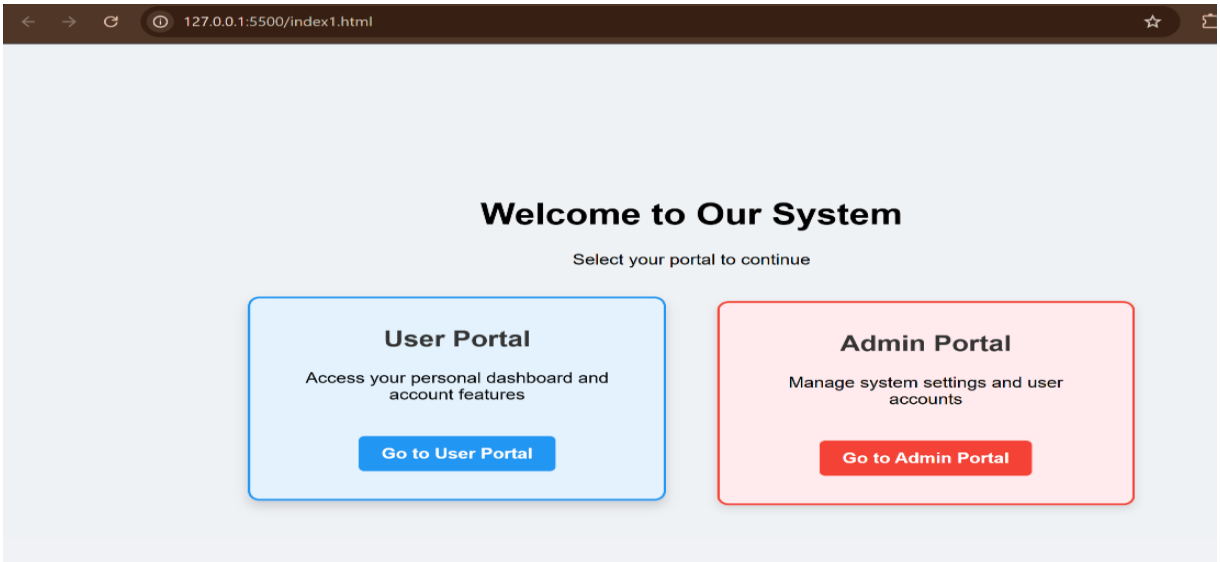

fig.9.1 admin and user portal page

```
        .admin-btn {
            background-color: #f44336;
        }
        .admin-btn:hover {
            background-color: #d32f2f;
        }
    </style>
</head>
<body>
    <div class="container">
        <h1>Welcome to Our System</h1>
        <p>Select your portal to continue</p>

        <div class="portal-card user-portal" onclick="window.location.href='user_portal.html'">
            <h2>User Portal</h2>
            <p>Access your personal dashboard and account features</p>
            <a href="index.html" class="btn user-btn">Go to User Portal</a>
        </div>

        <div class="portal-card admin-portal" onclick="window.location.href='admin_portal.html'">
            <h2>Admin Portal</h2>
            <p>Manage system settings and user accounts</p>
            <a href="admin_page.html" class="btn admin-btn">Go to Admin Portal</a>
        </div>
    </div>
</body>
</html>
```

Fig.9.2 Admin and user portal html code

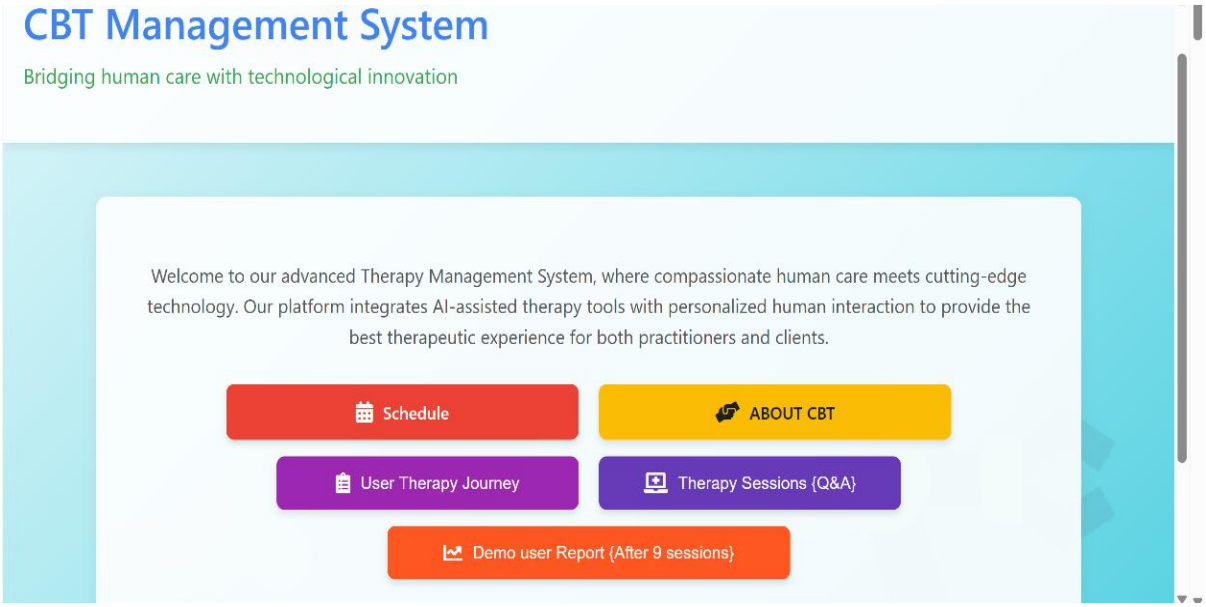

Fig.9.3 CBT management page

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Therapy Management System</title>
    <style>
        :root {
            --primary-color: #4285f4;
            --secondary-color: #34a853;
            --accent-color: #fbbc05;
            --dark-color: #202124;
            --light-color: #f8f9fa;
            --therapy-color: #9c27b0;
            --online-color: #673ab7;
        }

        body {
            font-family: 'Segoe UI', Tahoma, Geneva, Verdana, sans-serif;
            margin: 0;
            padding: 0;
            color: var(--dark-color);
            background: linear-gradient(135deg, #e0f7fa, #b2ebf2, #80deea, #4dd0e1);
            min-height: 100vh;
            position: relative;
            overflow-x: hidden;
        }

        body::before {
            content: "";
            position: absolute;
            bottom: 0;
            right: 0;
            width: 400px;
            height: 400px;
            background: url('https://img.icons8.com/color/400/000000/robot.png') no-repeat;
            background-size: contain;
            opacity: 0.1;
            z-index: -1;
        }
```

Fig.9.4 CBT management page html code

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Therapy Management System</title>
    <style>
        :root {
            --primary-color: #4285f4;
            --secondary-color: #34a853;
            --accent-color: #fbbc05;
            --dark-color: #202124;
            --light-color: #f8f9fa;
            --therapy-color: #9c27b0;
            --online-color: #673ab7;
        }

        body {
            font-family: 'Segoe UI', Tahoma, Geneva, Verdana, sans-serif;
            margin: 0;
            padding: 0;
            color: var(--dark-color);
            background: linear-gradient(135deg, #e0f7fa, #b2ebf2, #80deea, #4dd0e1);
            min-height: 100vh;
            position: relative;
            overflow-x: hidden;
        }

        body::before {
            content: "";
            position: absolute;
            bottom: 0;
            right: 0;
```

Fig.9.5 CSS code for sessions

```html
<div class="main-container">
    <div class="hero">
        <p>Welcome to our advanced Therapy Management System, where compassionate human care me

            <a href="schedule_page.html" class="btn btn-schedule">
                <i class="fas fa-calendar-alt"></i> Schedule
            </a>
            <a href="thearpy_page.html" class="btn btn-therapy">
                <i class="fas fa-hands-helping"></i> ABOUT CBT
            </a>
            <button id="userSessionsBtn" class="btn btn-user-sessions">
                <i class="fas fa-clipboard-list"></i> UserTherapy Journey
            </button>
            <button id="onlineSessionsBtn" class="btn btn-online-sessions">
                <i class="fas fa-laptop-medical"></i> Therapy Sessions {Q&A}
            </button>

            <button id="reportBtn" class="btn btn-report">
                <i class="fas fa-chart-line"></i> Demo user Report {After 9 sessions}
            </button>
```

Fig.9.6 html file for home of CBT management

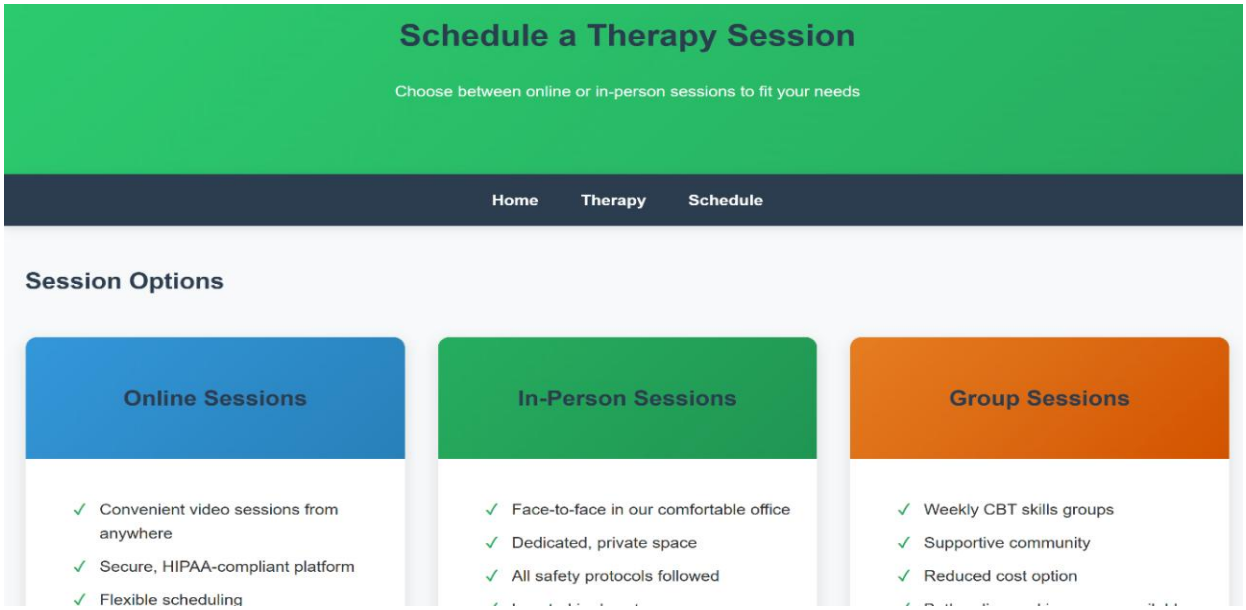

Fig.9.7 schedule a therapy session

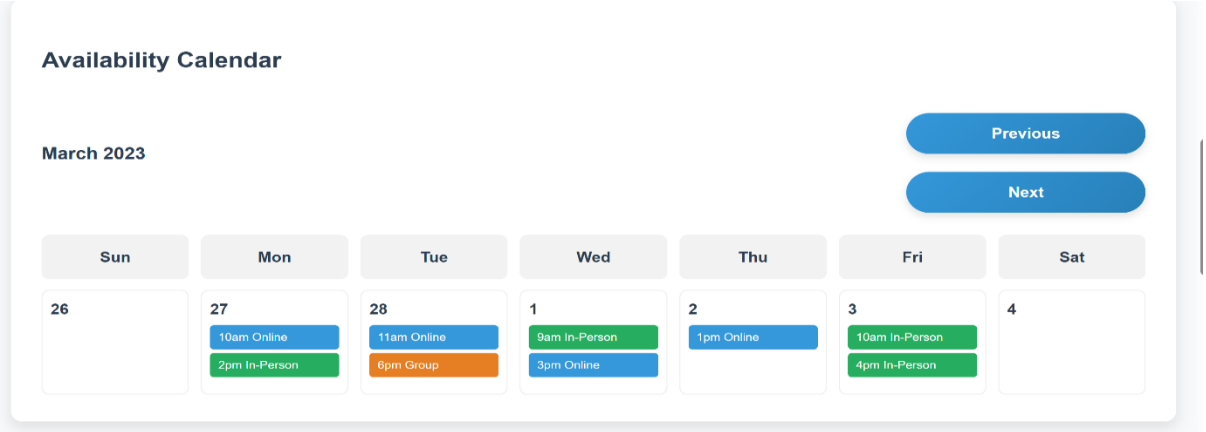

Fig.9.8 this is calendar for session booking

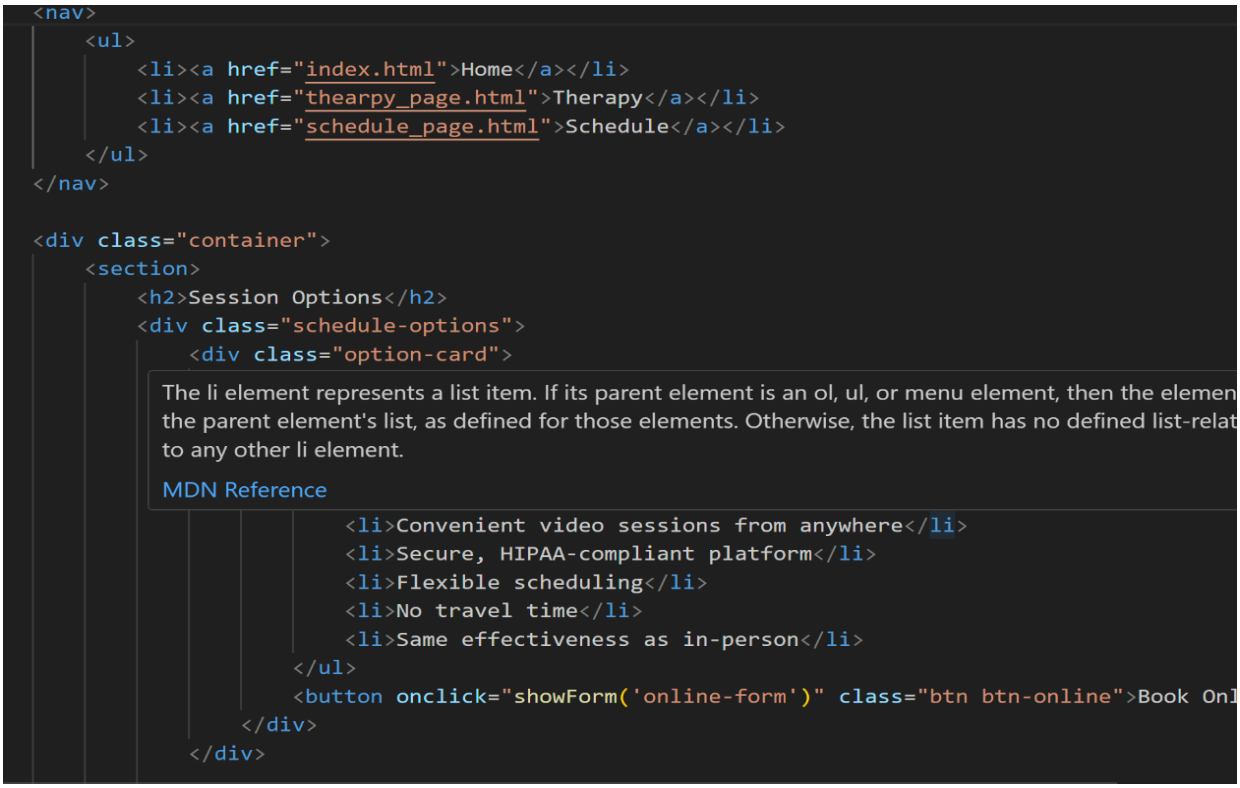

fig. 9.9 html file schedule options

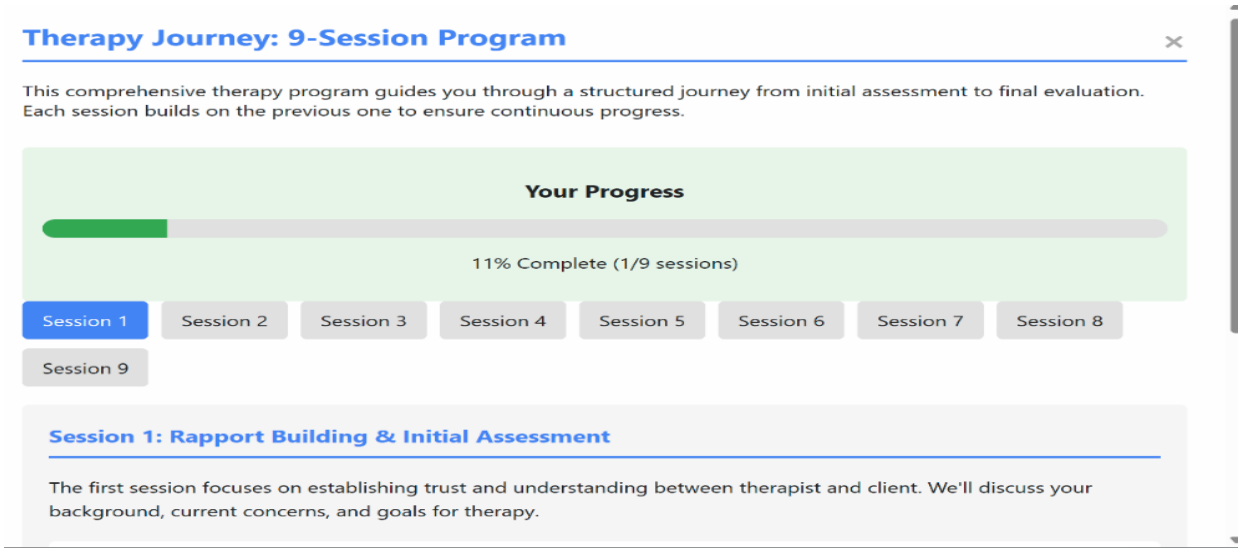

fig.9.10 9 therapy sessions .

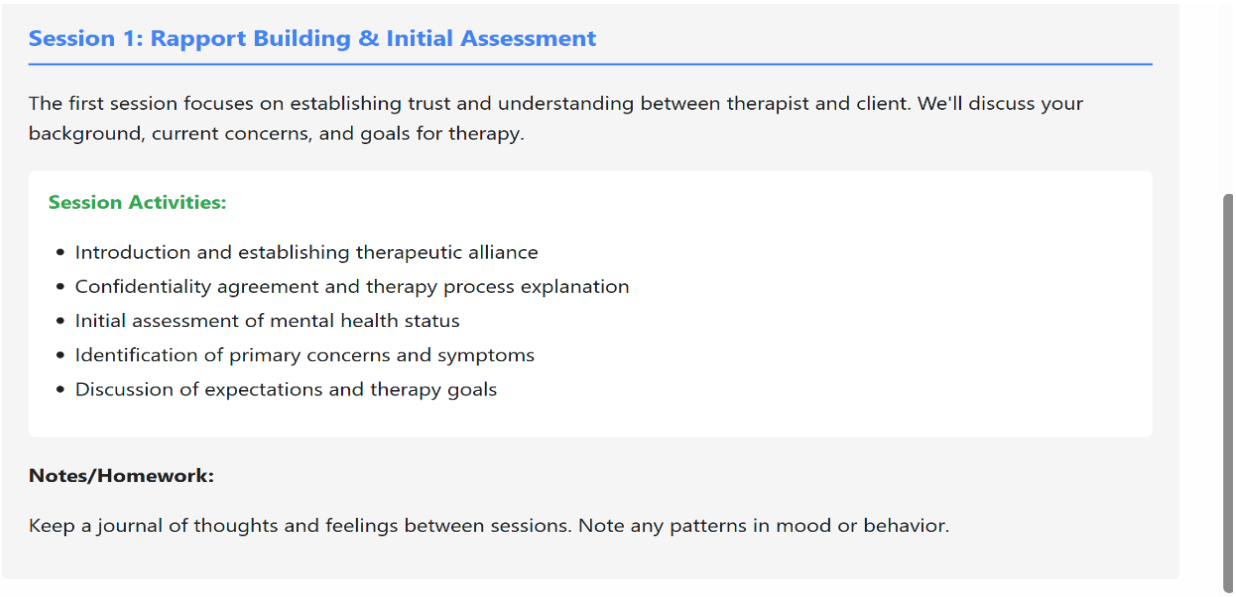

fig.9.11 session 1

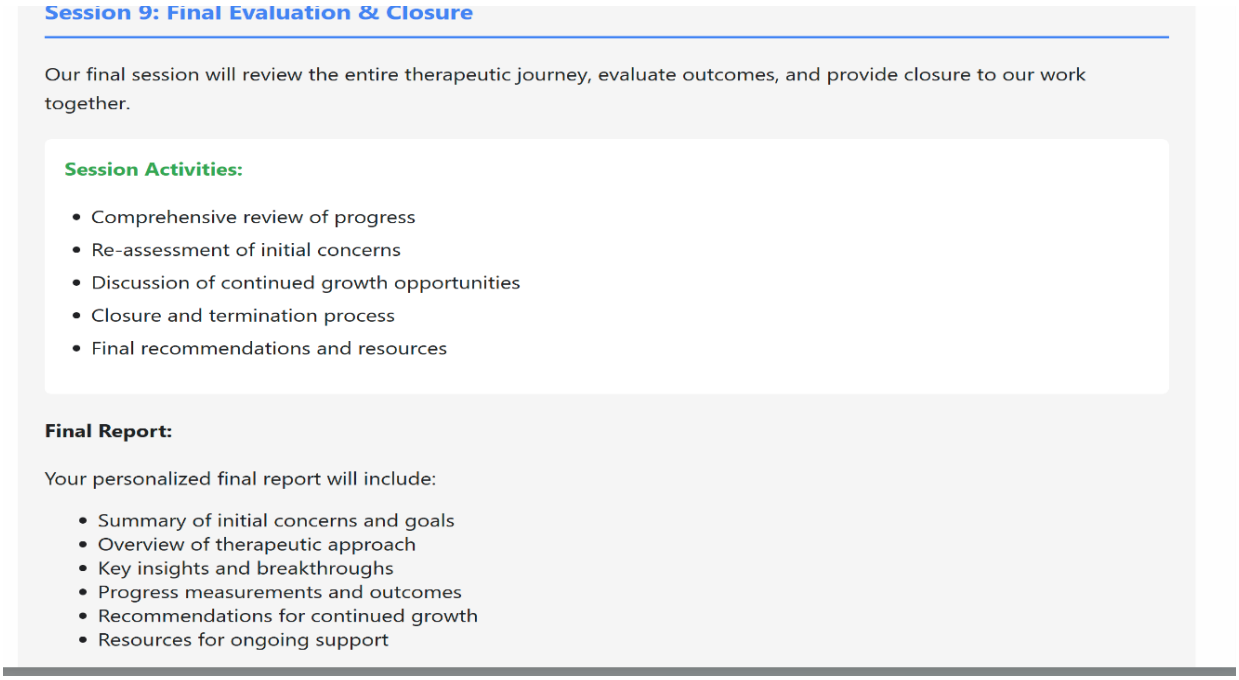

fig.9.12 9th session final one

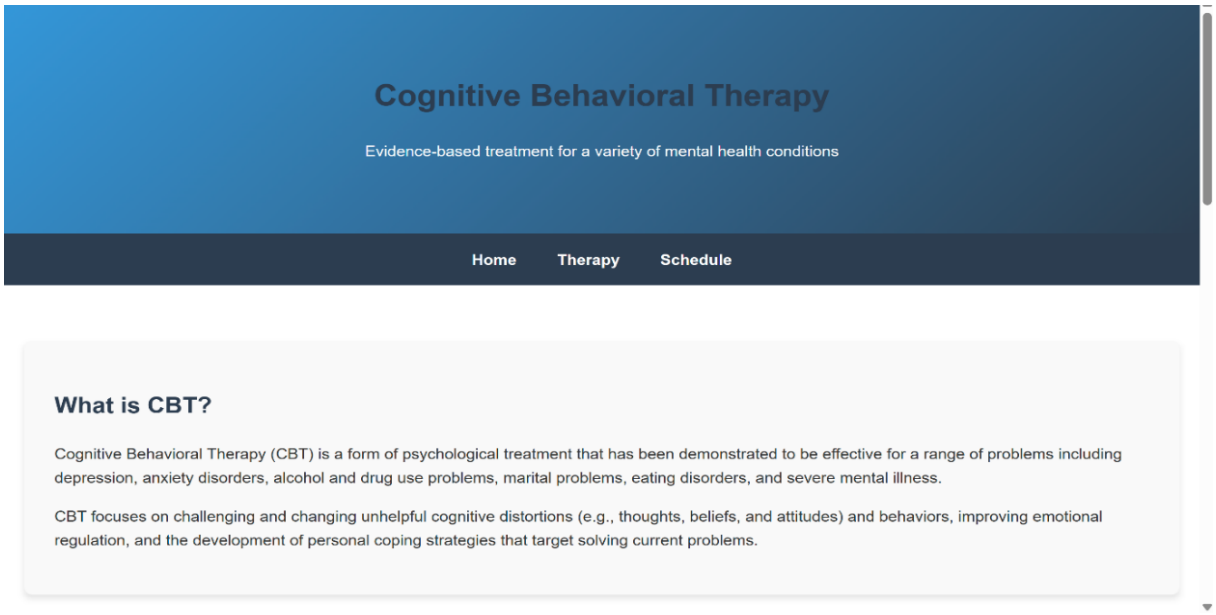

fig.9.13 CBT

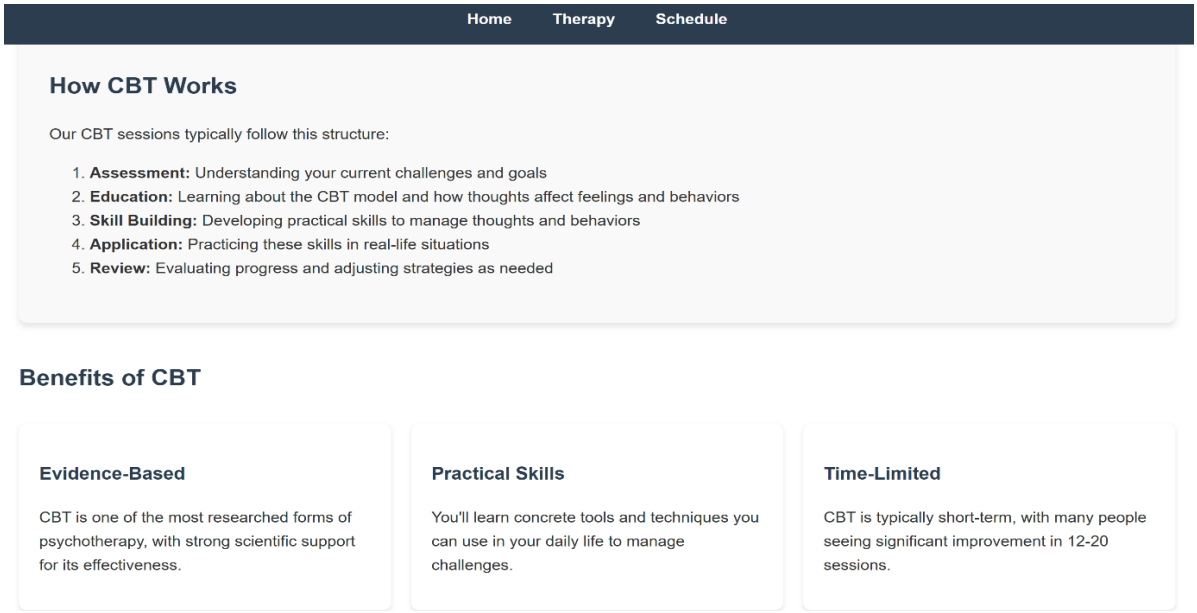

fig.9.14 CBT benefits

```
<div class="container">
    <section class="therapy-section">
        <h2>What is CBT?</h2>
        <p>Cognitive Behavioral Therapy (CBT) is a form of psychological treatment that has been
        <p>CBT focuses on challenging and changing unhelpful cognitive distortions (e.g., though
    </section>

    <section class="therapy-section">
        <h2>How CBT Works</h2>
        <p>Our CBT sessions typically follow this structure:</p>
        <ol>
            <li><strong>Assessment:</strong> Understanding your current challenges and goals</li
            <li><strong>Education:</strong> Learning about the CBT model and how thoughts affect
            <li><strong>Skill Building:</strong> Developing practical skills to manage thoughts
            <li><strong>Application:</strong> Practicing these skills in real-life situations</l
            <li><strong>Review:</strong> Evaluating progress and adjusting strategies as needed<
        </ol>
    </section>

    <section>
        <h2>Benefits of CBT</h2>
        <div class="benefits">
            <div class="benefit-card">
                <h3>Evidence-Based</h3>
                <p>CBT is one of the most researched forms of psychotherapy, with strong scienti
            </div>
            <div class="benefit-card">
```

fig.9.15 therapy session html code

```
<section>
    <h2>Benefits of CBT</h2>
    <div class="benefits">
        <div class="benefit-card">
            <h3>Evidence-Based</h3>
            <p>CBT is one of the most researched forms of psychotherapy, with strong scienti
        </div>
        <div class="benefit-card">
            <h3>Practical Skills</h3>
            <p>You'll learn concrete tools and techniques you can use in your daily life to
        </div>
        <div class="benefit-card">
            <h3>Time-Limited</h3>
            <p>CBT is typically short-term, with many people seeing significant improvement
        </div>
        <div class="benefit-card">
            <h3>Structured Approach</h3>
            <p>Each session has a clear focus and agenda, making the most of your time.</p>
        </div>
        <div class="benefit-card">
            <h3>Versatile</h3>
            <p>Effective for a wide range of issues from anxiety and depression to chronic p
        </div>
        <div class="benefit-card">
            <h3>Empowering</h3>
            <p>Teaches you to become your own therapist, with skills that last a lifetime.</
        </div>
```

fig.9.16 benefits CBT html code

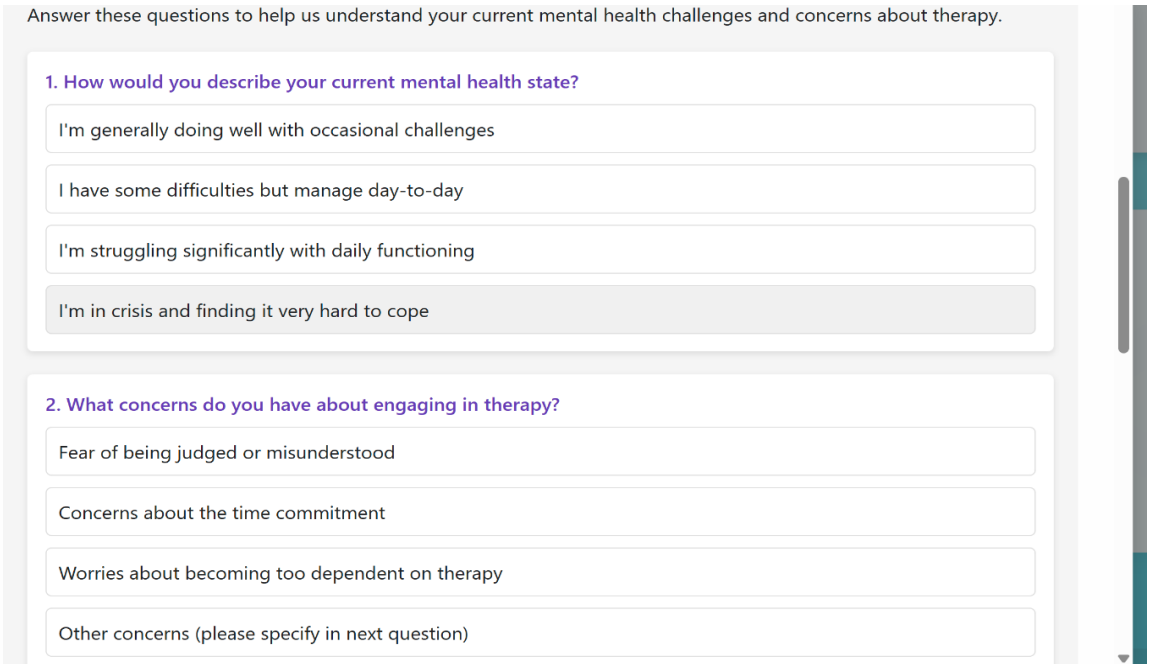

Fig.9.17 therapy form questions

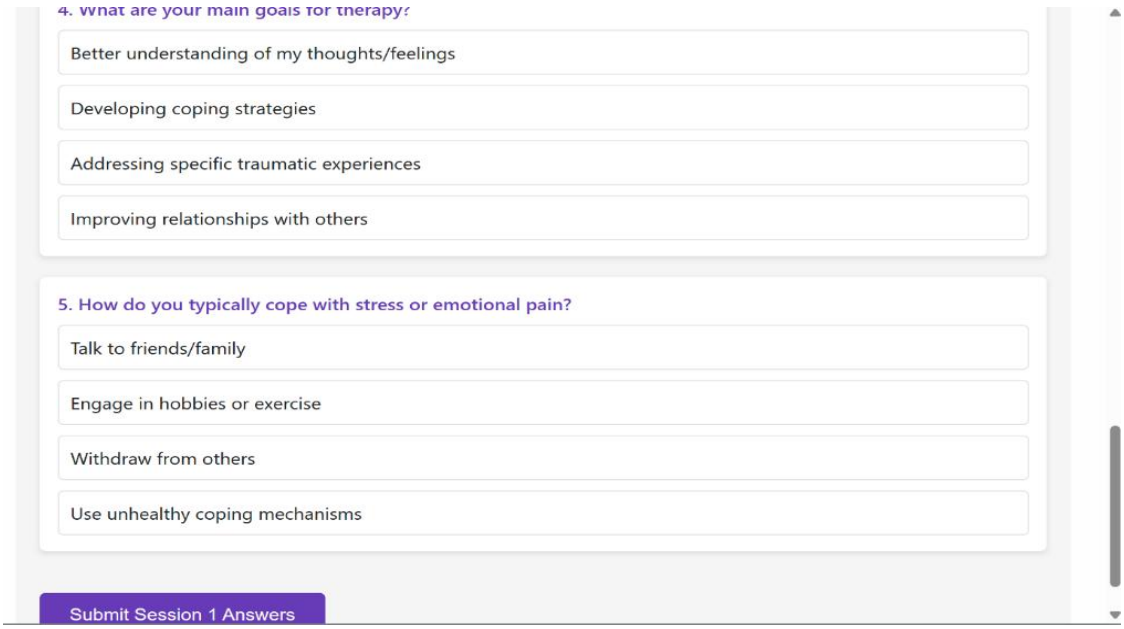

Fig.9.18 therapy questions

```
<div class="session-container">
    <!-- Online Session 1 -->
    <div id="onlineSession1" class="session-content active">
        <div class="topic-indicator">Topic: Mental Health Issues & Fear of Being Indulged</di
        <h3 class="session-title">Session 1: Understanding Your Concerns</h3>
        <p class="session-description">Answer these questions to help us understand your curr

        <div class="question-container">
            <div class="question">1. How would you describe your current mental health state?
            <div class="answer-options">
                <div class="option">I'm generally doing well with occasional challenges</div>
                <div class="option">I have some difficulties but manage day-to-day</div>
                <div class="option">I'm struggling significantly with daily functioning</div>
                <div class="option">I'm in crisis and finding it very hard to cope</div>
            </div>
        </div>

        <div class="question-container">
            <div class="question">2. What concerns do you have about engaging in therapy?</di
            <div class="answer-options">
                <div class="option">Fear of being judged or misunderstood</div>
                <div class="option">Concerns about the time commitment</div>
                <div class="option">Worries about becoming too dependent on therapy</div>
                <div class="option">Other concerns (please specify in next question)</div>
            </div>
        </div>

        <div class="question-container">
```

fig.9.19 online session html code

Therapy Progress Report

Patient Information

Name: V.Manideep

Age: 22

Therapy Start Date: March 20, 2025

Therapist: Dr.Durgesh Nandinee

Session	Focus Area	Completion Date	Progress	Notes
Session 1	Initial Assessment	Jan 15, 2025	100%	Established rapport, identified primary concerns
Session 2	Issue Exploration	Jan 22, 2025	100%	Identified triggers and coping mechanisms
Session 3	Therapy Approach	Jan 29, 2025	100%	Selected CBT as primary approach
Session 4	CBT Introduction	Feb 5, 2025	90%	Learning cognitive restructuring techniques
Session 5	Technique Practice	Feb 12, 2025	85%	Practicing identifying automatic thoughts

fig.9.20 therapy progress report

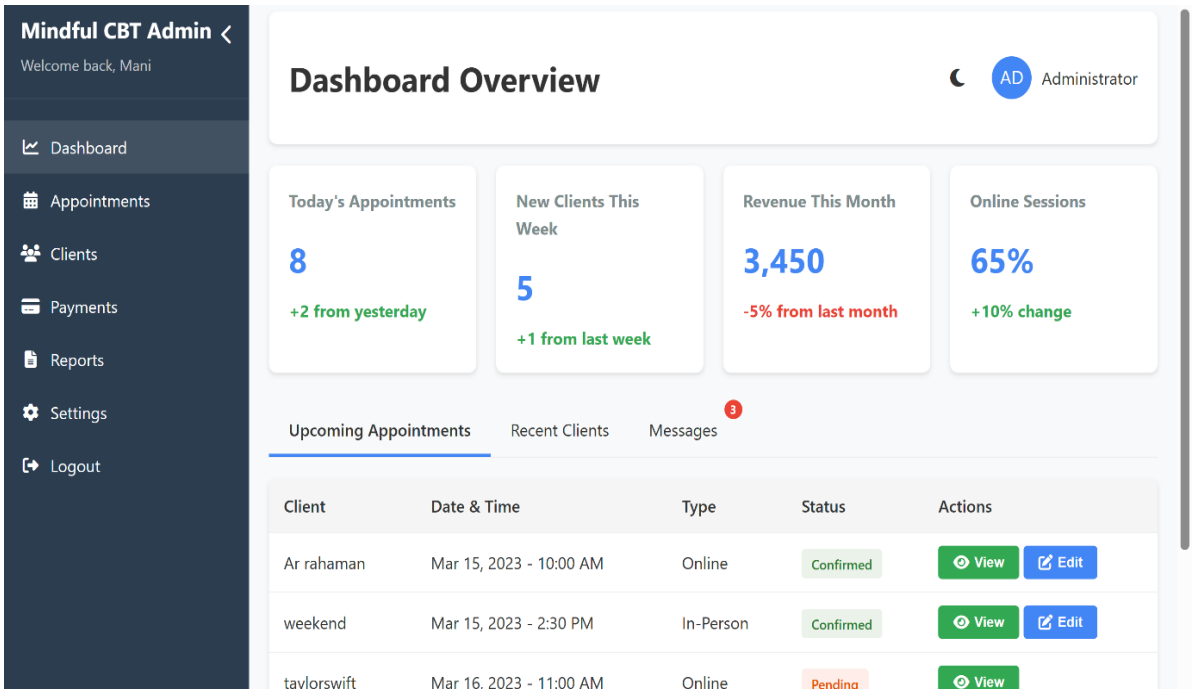

fig.9.21 dashboard

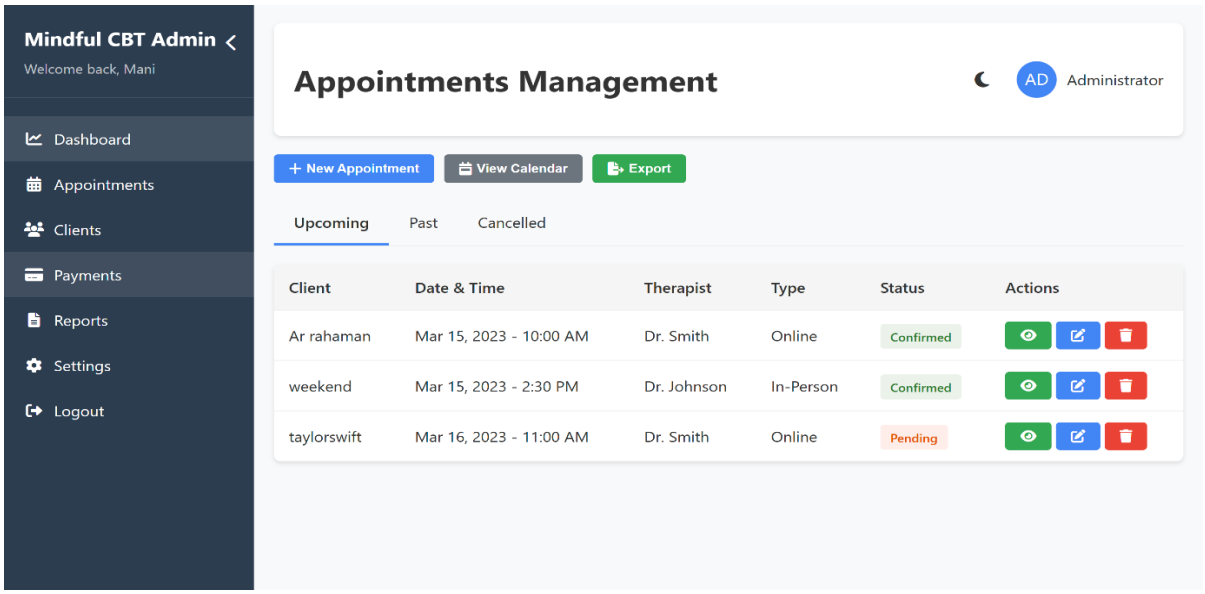

fig.9.22 appointments management page

```
// Toggle sidebar
toggleSidebar.addEventListener('click', () => {
    sidebar.classList.toggle('collapsed');
    mainContent.classList.toggle('expanded');

    // Change icon based on state
    const icon = toggleSidebar.querySelector('i');
    if (sidebar.classList.contains('collapsed')) {
        icon.classList.remove('fa-chevron-left');
        icon.classList.add('fa-chevron-right');
    } else {
        icon.classList.remove('fa-chevron-right');
        icon.classList.add('fa-chevron-left');
    }
});

// Toggle user dropdown
userInfo.addEventListener('click', (e) => {
    e.stopPropagation();
    userDropdown.classList.toggle('show');
});

// Close dropdown when clicking elsewhere
```

```
// Close modals when clicking outside
window.addEventListener('click', (e) => {
    if (e.target === newAppointmentModal) {
        newAppointmentModal.style.display = 'none';
    }
    if (e.target === newClientModal) {
        newClientModal.style.display = 'none';
    }
    if (e.target === newPaymentModal) {
        newPaymentModal.style.display = 'none';
    }
});

// Logout functionality
function handleLogout() {
    // Here you would typically make an API call to logout
    // For this demo, we'll just show an alert and redirect
    alert('You have been logged out successfully.');
    window.location.href = 'index.html';
}

logoutBtn.addEventListener('click', (e) => {
    e.preventDefault();
    handleLogout();
});

dropdownLogout.addEventListener('click', (e) => {
    e.preventDefault();
    handleLogout();
});
```

Fig.9.23 java script for icon side bar

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