



CHRIST
(DEEMED TO BE UNIVERSITY)
BANGALORE, INDIA

6BCA Project

MISSION

CHRIST is a nurturing ground for an individual's holistic development to make effective contribution to the society in a dynamic environment

VISION

Excellence and Service

CORE

VALUES

Faith in God | Moral Uprightness
Love of Fellow Beings
Social Responsibility | Pursuit of Excellence

Under the guidance of Dr Chanti S

Team Members:

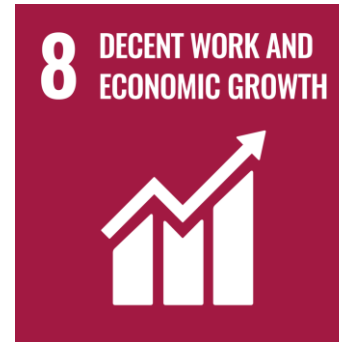
Pranav Srinivasan 2241149

Soravich Pinrat 2241158



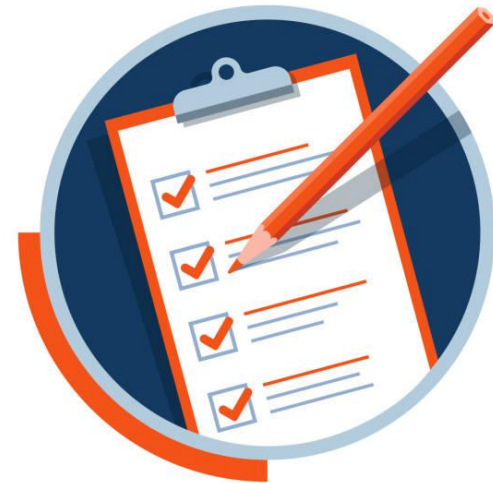
ABSTRACT

- Mental health professionals face administrative challenges with respect to appointment scheduling, session management, and patient tracking.
- VitalStep is a platform that is designed to address these issues.
- It also leverages machine learning to analyze session data, identify patient trends and provide actionable insights that improve patient care.
- By improving the organization and accessibility of patient data, it contributes to better outcomes in mental health treatment and support allowing professionals to focus on the more important challenges at hand.



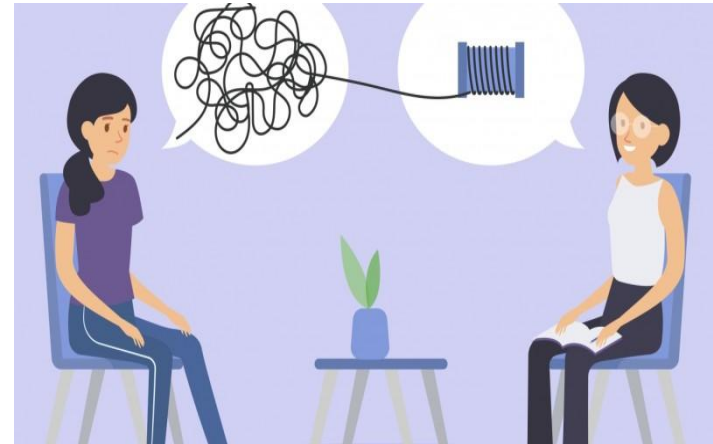
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3. Proposed System
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 - 4.1 Software Requirements
 - 4.2 System Requirements
5. Database Design
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AGENDA



INTRODUCTION

- VitalStep is digital platform designed to streamline the management of mental health services.
- It connects counselors and patients through a user-friendly interface, allowing for easy scheduling of appointments, tracking session notes, and managing self-assessments.
- The platform integrates machine learning to provide personalized insights into patients' progress, enabling mental health professionals to offer tailored care.
- By automating administrative tasks and offering data-driven recommendations, it enhances efficiency and ultimately improves patient outcomes.
- It also aims to foster greater engagement between counselors and patients, making mental health care more accessible and effective.



EXISTING SYSTEMS



Paper-based Notes: Traditional handwritten records of patient interactions, session notes, and treatment progress, stored in physical files.



Excel/Spreadsheets: Use of spreadsheets to organize client details, session schedules, and treatment progress, often requiring manual updates.



TheraNest: A cloud-based practice management system offering scheduling, billing, and progress notes for mental health professionals.



SimplePractice: A comprehensive platform for therapy practices that includes scheduling, documentation, and telehealth integration.



MyTherapist: A teletherapy platform that connects clients and therapists for virtual sessions and secure messaging.

LIMITATIONS OF EXISTING SYSTEMS

- Paper-based Notes: Prone to physical damage, difficult to search, and requires significant storage space. Additionally, handwritten records can deteriorate over time, making retrieval challenging. Sharing or updating records across multiple professionals is cumbersome and increases the risk of misplacing important patient data.
- Excel/Spreadsheets: Limited automation, prone to human error, and lacks real-time collaboration. While spreadsheets allow structured data storage, they require manual input, increasing the likelihood of mistakes. They also lack built-in security features for sensitive patient data and are inefficient for managing large-scale therapy practices.

TheraNest: Expensive for solo practitioners. Can be complex for beginners.

- *We're trying to improve by making our platform more affordable and user-friendly.*

SimplePractice: Subscription cost may be high for small practices. Limited customization for forms and reports.

We're trying to improve by offering better personalized features

MyTherapist: Lacks advanced practice management features. Limited therapist control over client selection.

- *We're trying to improve by offering better management tools for therapists*

PROPOSED SYSTEM

Appointment Management: Centralized system to schedule, track, and manage patient appointments efficiently.

Session Notes: Securely store and organize session notes, allowing for easy access and tracking over time.

Chatbot: For reference of counsellors and to provide guides.

Machine Learning Integration: Provides personalized insights and recommendations based on patient data to improve treatment outcomes.

Educational Resource Sharing: A feature that allows mental health professionals to upload and share educational materials (e.g., articles, videos) with other practitioners and patients for ongoing learning and development.

OBJECTIVES

1. Streamline Appointment Management – Centralize scheduling and tracking to enhance efficiency.
2. Patient Care – Leverage machine learning for actionable insights and tailored treatment plans.
3. Secure & Organized Documentation – Digitize session notes to eliminate manual record-keeping.
4. Enhance Collaboration – Enable professionals to share resources and best practices.
5. Improve Accessibility – Integrate telehealth, multilingual support, and mobile-friendly features.
6. Empower Patients – Provide self-assessment tools for active mental health tracking.
7. Automate Processes – Reduce administrative workload with automated scheduling and documentation.
8. Data-Driven Insights – Offer analytics to assess treatment effectiveness and practice performance.

REQUIREMENT ANALYSIS

Hardware Requirements

- Storage: Sufficient storage capacity for managing user data, session notes, self-assessments, appointment details, and educational resources.

Software Requirements

- Frontend: HTML, CSS, JavaScript (React) for creating an interactive and user-friendly interface for both counsellors and patients.
- Backend: Python for handling server-side logic, including user authentication, session management, NLP for note summarization, and analysis of self-assessments.
- Database: MySQL for managing user profiles, session notes, self-assessments, appointment details, and educational resources.
- Machine Learning Models: Integration with machine learning models for session note summarization, sentiment analysis, and risk-level evaluations in self-assessments.

Network Requirements

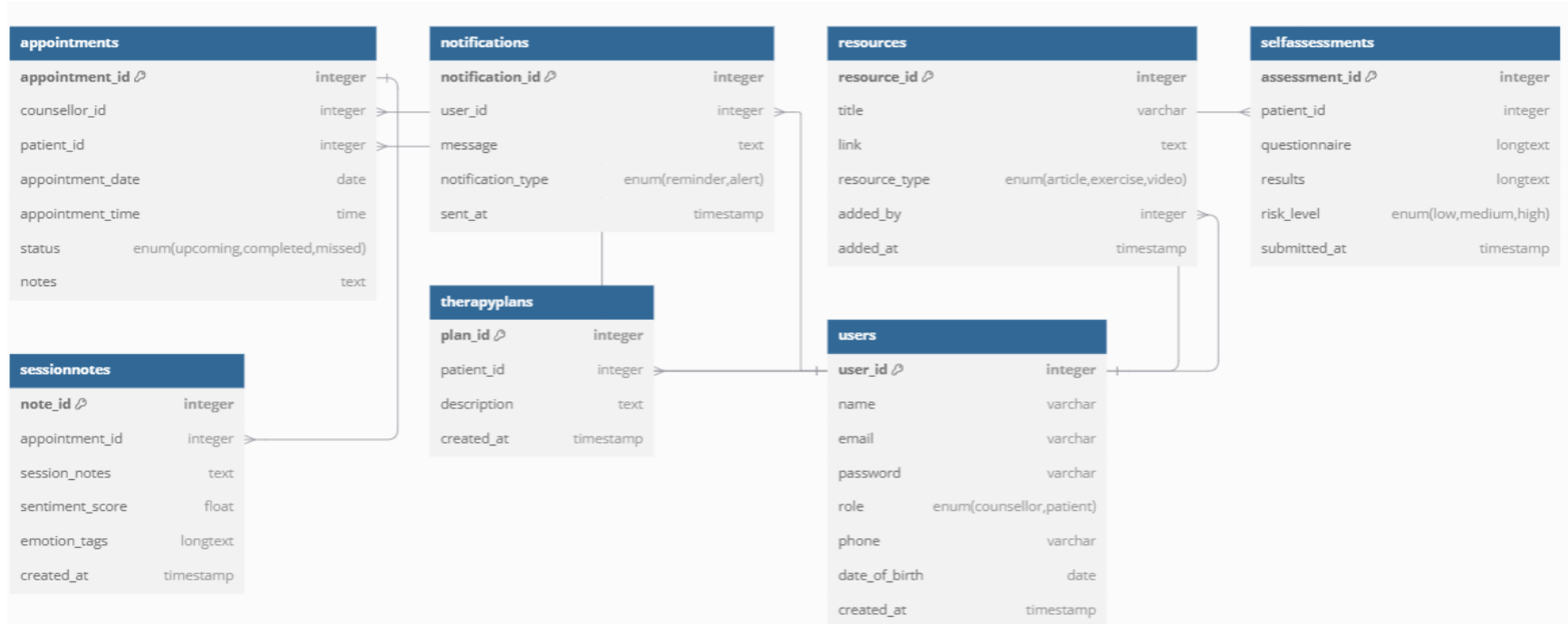
- WiFi required

FUNCTIONAL REQUIREMENTS

- FR01:** The system will ensure **secure user authentication and data privacy**, implementing role-based access control, encryption, and compliance with medical data protection standards (e.g., HIPAA).
- FR02:** Users (counsellors and patients) will be able to **register and manage profiles**, providing details such as name, contact information, and role. Patients will also input relevant health and treatment information.
- FR03:** Counsellors will be able to **schedule and manage appointments**, including setting dates, times, and statuses (e.g., upcoming, completed, cancelled).
- FR04:** The **session notes module** will allow counsellors to add, update, and securely store session notes for future reference, ensuring structured documentation.

- FR05:** The platform will enable **personalized patient insights (ML-Powered)** by analyzing session data and patient history to provide tailored treatment recommendations.
- FR06:** Patients will have access to **self-assessment tools (ML-Powered)** to evaluate their mental health, with machine learning assessing risk levels and providing actionable insights for counsellors.
- FR07: Administrative automation** will streamline tasks such as session documentation and report generation, reducing manual effort for professionals.
- FR08: Advanced data analytics (ML-Powered)** will generate insights on patient progress, treatment effectiveness, and practice performance, aiding data-driven decision-making.

SCHEMA DIAGRAM



DATABASE DESIGN

Tables_in_vitalstep
appointments
resources
reviews
sessionnotes
users

The following database is created to meet with the requirements of the application.

Users table

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
user_type	varchar(50)	YES		NULL	
firstname	varchar(100)	YES		NULL	
lastname	varchar(100)	YES		NULL	
email	varchar(100)	YES	UNI	NULL	
password	varchar(255)	YES		NULL	

User Management: Secure storage of user details, roles, and authentication credentials for both patients and counselors.

Profile Information: Stores user-specific details like name, contact info, and role (counselor or patient).

Access Control: Manages user login status and two-factor authentication for enhanced security.

Session Notes

Field	Type	Null	Key	Default	Extra
note_id	int	NO	PRI	NULL	auto_increment
appointment_id	int	NO	MUL	NULL	
session_notes	text	YES		NULL	
sentiment_score	decimal(3,2)	YES		NULL	
emotion_tags	varchar(255)	YES		NULL	
created_at	timestamp	YES		CURRENT_TIMESTAMP	DEFAULT_GENERATED

Session Documentation: Secure storage of counsellor session notes, patient interactions, and treatment progress.

Historical Access: Allows access to past session notes for ongoing treatment evaluation.

Sentiment Analysis: Stores sentiment scores and emotion tags for improved patient insights.

Resources

Field	Type	Null	Key	Default	Extra
resource_id	int	NO	PRI	NULL	auto_increment
title	varchar(255)	NO		NULL	
resource_type	enum('Article', 'Book', 'Video', 'Other')	NO		NULL	
description	text	YES		NULL	
url	varchar(255)	YES		NULL	
created_at	timestamp	YES		CURRENT_TIMESTAMP	DEFAULT_GENERATED

Resource Management: Stores educational content like articles, videos, and tutorials for counselors and patients.

Resource Sharing: Enables counselors to upload and share resources with other users.

Learning Support: Facilitates continuous professional development and mental health education.

Appointments

Field	Type	Null	Key	Default	Extra
appointment_id	int	NO	PRI	NULL	auto_increment
title	varchar(255)	NO		NULL	
start	datetime	NO		NULL	
status	enum('upcoming','completed','missed')	NO		NULL	
notes	text	YES		NULL	
created_at	timestamp	YES		CURRENT_TIMESTAMP	DEFAULT_GENERATED
patient_id	int	YES		NULL	
user_id	int	NO	MUL	NULL	

Appointment Scheduling: Tracks scheduled appointments, statuses, and time slots for patients and counselors.

Session Management: Records appointments with counselors, their timing, and status updates.

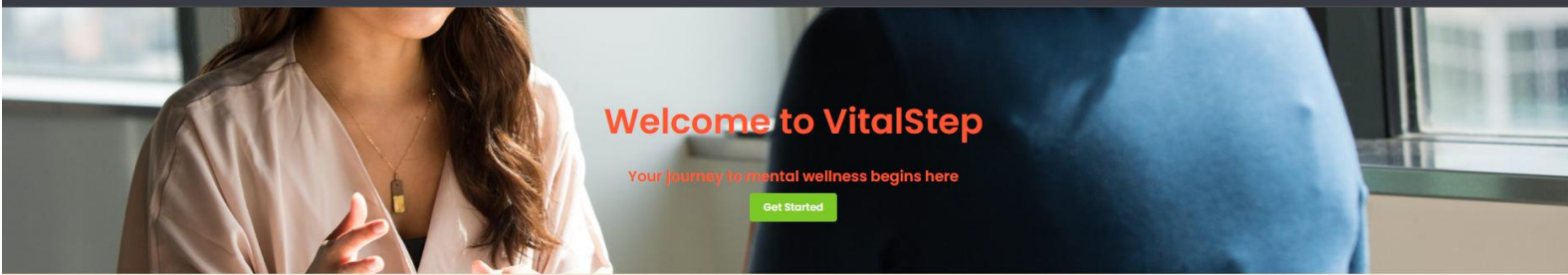
Reviews

Field	Type	Null	Key	Default	Extra
uid	int	YES		NULL	
cid	int	YES		NULL	
review_text	varchar(500)	YES		NULL	
rating	int	YES		NULL	

Lets patients see the counsellors they have had sessions with, and give ratings and feedback to them.

UI Design

Landing Page




Welcome to VitalStep


Your journey to mental wellness begins here

[Get Started](#)

Counseling Guides




3 Psychotherapy Techniques That Identify Your Client's Real Problem




Counseling | Stages of counseling | Skills, Techniques

Counseling

Prof. Suresh Bada Math





Counselling for Depression

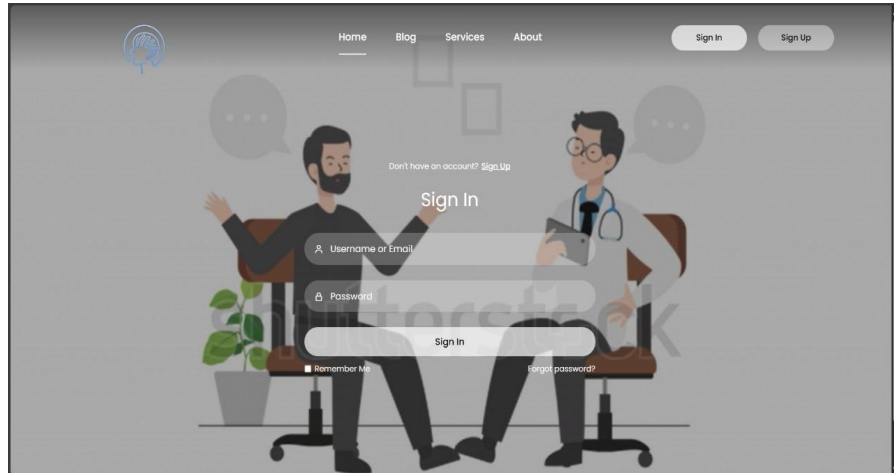
What Our Users Say

"VitalStep changed my life. The therapy plans are"

"Easy to use and extremely helpful for managing"

"A wonderful tool for mental health professionals and"

Login/ Sign up



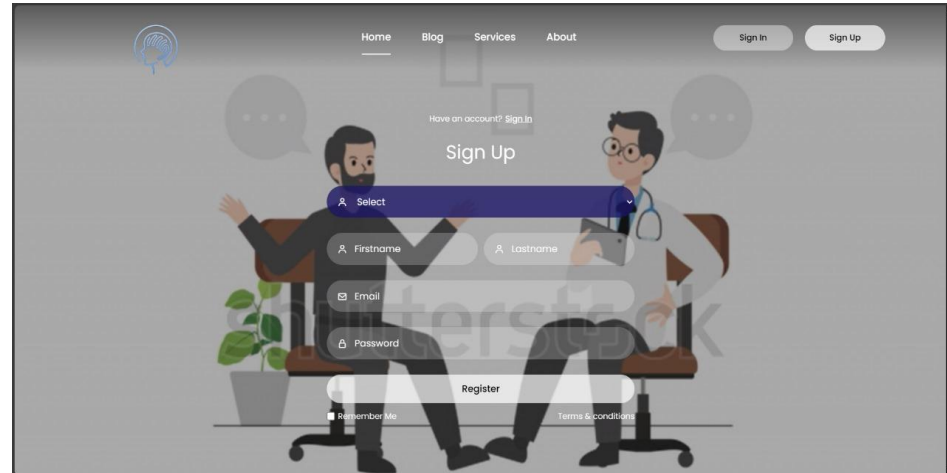
Home Blog Services About Sign In Sign Up

Don't have an account? [Sign Up](#)

Sign In

☐ Remember Me [Forgot password?](#)

The image shows a web form for signing in. It features a header with navigation links and buttons for 'Sign In' and 'Sign Up'. Below the header, there is a link for users who don't have an account to 'Sign Up'. The main heading is 'Sign In'. The form includes two input fields: 'Username or Email' and 'Password'. A 'Sign In' button is positioned below these fields. At the bottom, there is a 'Remember Me' checkbox and a link to 'Forgot password?'. The background of the form is a light gray with a faint illustration of two people sitting on chairs.



Home Blog Services About Sign In Sign Up

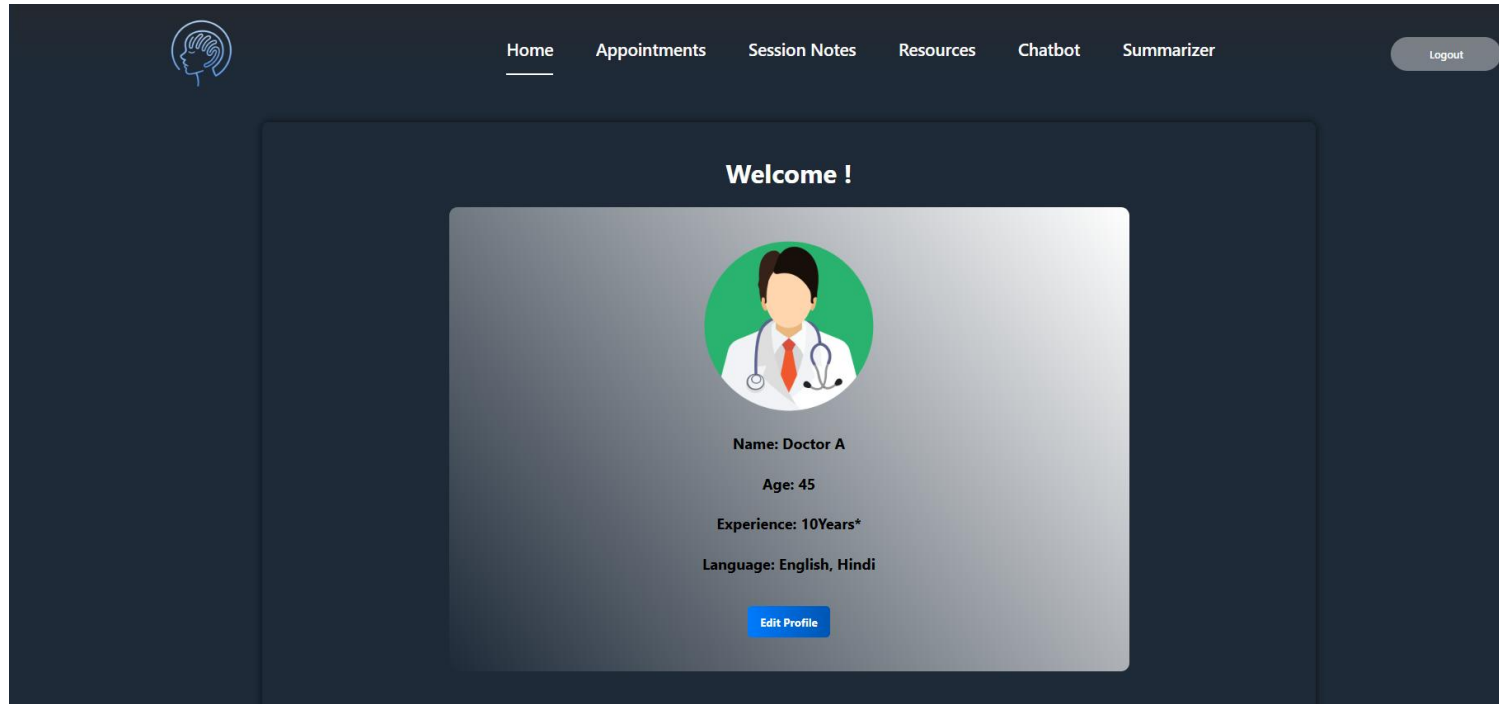
Have an account? [Sign In](#)

Sign Up


☐ Remember Me [Terms & conditions](#)

The image shows a web form for signing up. It features a header with navigation links and buttons for 'Sign In' and 'Sign Up'. Below the header, there is a link for users who have an account to 'Sign In'. The main heading is 'Sign Up'. The form includes a dropdown menu labeled 'Select', followed by two input fields for 'Firstname' and 'Lastname'. Below these are input fields for 'Email' and 'Password'. A 'Register' button is positioned below the 'Password' field. At the bottom, there is a 'Remember Me' checkbox and a link to 'Terms & conditions'. The background of the form is a light gray with a faint illustration of two people sitting on chairs.

Dashboard



Schedule Appointment



Home Appointments Session Notes Resources Chatbot Summarizer Logout

Add Appointment

Appointment Title
Enter appointment title

User Id
Select Patient

Date and Time
dd-mm-yyyy --:--

Status
Upcoming

Notes
Enter any notes

Save Appointment

Delete Appointment

Select Appointment to Delete

Select Appointment

Delete Appointment

< > today month week day

Sun	Mon	Tue	Wed	Thu	Fri	Sat
23	24	25	26	27	28	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15

Session Notes

Add Session Notes

Appointment

Select Appointment

Session Notes:

Sentiment Score:

Emotion Tags:



Add Note

Edit Session Notes

Select Session:

Select Session

Session Notes:

Sentiment Score:

Emotion Tags:

Save Changes

Resources

Add a Resource

Title:

Link:

Type:

Select Resource Type



Add Resource

Available Resources

Effects Psychological Stress

Type: Article


Link: [View Resource](#)

The role of self esteem

Chatbot

ChatBot

Enter Question?Send



What can I advise my patient if they are under work related stress?

Okay, advising patients about work-related stress is a common and important part of healthcare. Here's a breakdown of advice you can offer, categorized for clarity, along with explanations to help you tailor the advice to the individual:

I. Acknowledge and Validate Their Experience:

- **"It sounds like you're going through a tough time at work. Work-related stress is very common, and it's important to address it."**
(Validates their feelings and normalizes the

Notes Summarizer

Text Summarizer

Choose Session Notes:

1

Or Enter Text to Summarize:

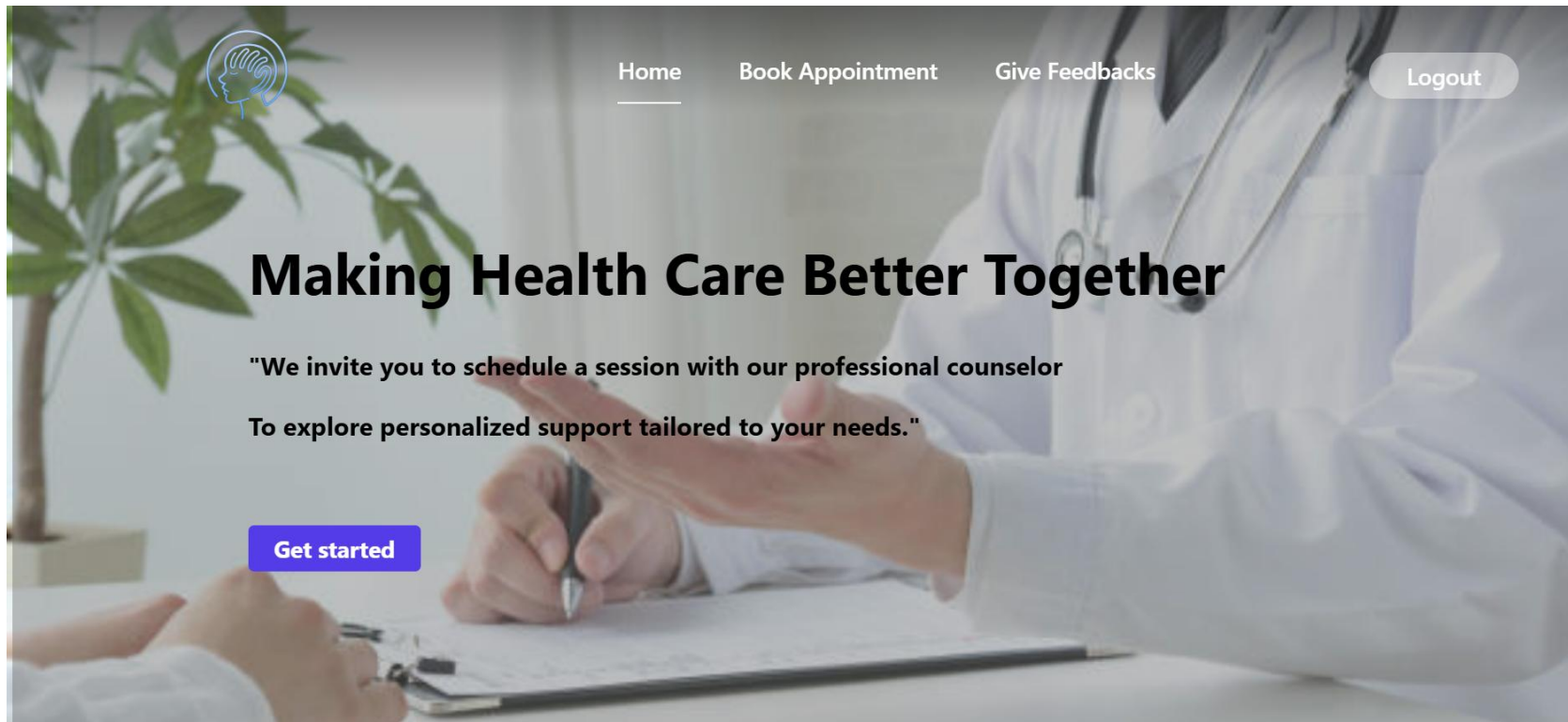
The patient expressed significant progress in managing anxiety symptoms through breathing exercises and mindfulness techniques. They reported feeling more confident in social settings and expressed gratitude for the coping strategies learned during previous sessions. The patient is motivated to continue practicing self-care routines.

Summarize

Summarized Text:

The patient expressed significant progress in managing anxiety symptoms through breathing exercises and mindfulness techniques . They reported feeling more confident in social settings and expressed gratitude for the coping strategies learned during previous sessions . The patient is motivated to continue practicing self-care routines .

Patient Home




Counsellor review

Submit Counselor Review

Select Counsellor:

Select Counsellor

Rating:



Your Review:

What did you think about this counseling session?

Submit Review

Counselor Reviews

All Ratings

All Time

well for me. Looking forward to our next appointment.

★★★★☆

February 28, 2025

Great session overall. The counselor was attentive and provided good insights. The only reason I didn't give 5 stars is because we ran out of time before covering everything I wanted to discuss.

★★★★★

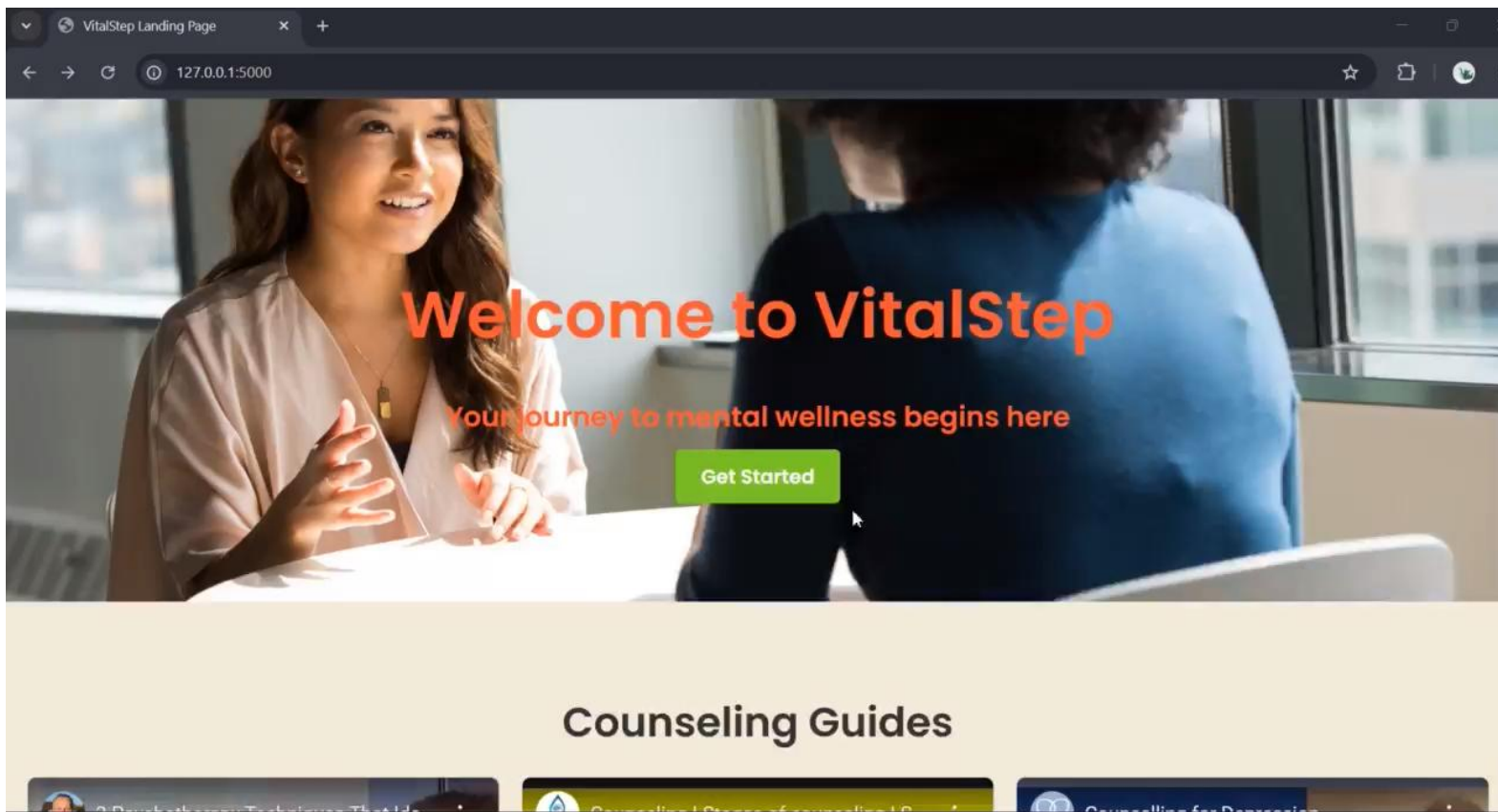
February 20, 2025

I can't express how much these sessions have helped me. The counselor's approach is exactly what I needed, and I've made more progress in the past month than I did in years of trying to manage on my own.

★★★★☆

February 15, 2025

The session was helpful but I felt like we spent too much time on background information that I had already provided in previous sessions. Would appreciate more focus on new strategies and techniques.



Future Enhancements

- We aim to leverage Gemini's advanced AI capabilities to further enhance patient care and counsellor performance analysis. The system will automatically read patient reviews, assign scores to counsellors based on sentiment analysis, and generate detailed reports on patient comfort levels with each counsellor. This feature will help identify areas of improvement for counsellors, ensuring a more personalized and effective mental health support system.
- Patients can fill out a form before sessions, and AI will analyze the answers to assess their emotional state before the appointment. If anyone is in urgent need of help it can be found more quicker than finding it manually.

THANK YOU