Software Requirements Specification (SRS) Document

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Project Title	Wave Diaries
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Brief problem statement

The problem focuses on aiding people suffering from mental health issues such as depression, stress, and anxiety. The core objective is to build an AI-based model, integrated with a speech-to-speech module which can track the user's mood, and empathetically respond to alleviate the distress that the user might be facing. The model's context-aware therapeutic responses can act as an alternative to treatment by professional psychologists where money, time and opportunity can all be constraints for patients. It can also act complementary to the treatment and help the user tackle issues on-the-go in real-time, while the patient's personal therapist can review these conversations. The problem requires a personalized, sensitive solution committed to the needs of the user with very little margin of error available.

System requirements

The system requirements for our solution is as follows:

1. A Trello Board has been created for task management.
2. V S Code is the primary editor which we shall be using.
3. MERN stack-based web-app
    a. MongoDB
    b. Express.js
    c. React (might use Next.js or Remix: react based Frameworks(undecided))
        i. Figma
        ii. Material UI/ Tailwind
    d. Node.js
    e. Associated Tools:
        i. Typescript
        ii. ESLint
        iii. Postman
        iv. JWT
4. GEN AI technologies (including for Automatic speech-to-text):
    a. LangChain: Whisper
    b. Groq
    c. Gemini
    d. GPT 4o

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    e. Smallest.ai
    f. Hugging Face
5. Python and python libraries required:
    a. PyTorch/ TensorFlow
    b. NumPy
    c. Pandas
    d. NLTK
    e. SpaCy
    f. PyAudio
6. Deployment:
    a. StreamLit
    b. Docker
    c. AWS

Users profile

Primary Target Audience: 13–19-year-old (Teenagers)

Mode of usage: Web-app

Technical Literacy (familiarity with software): High

Teenagers or adolescents preparing for competitive examinations, those dealing with college applications, and even those in school often face significant stress and anxiety due to intense competition. Some teenagers also grow up in a toxic environment, one which they have little control of, and these are more susceptible to such issues. Teenagers suffering from faltering relationships, or socially and morally depressed teenagers can end up using our application. This age group is particularly vulnerable to mental health challenges, both during and after puberty, as they navigate personal life complexities alongside academic pressures. As they mature, their ability to manage these challenges evolves, and we need to keep note of this while designing the application.

The responses of the model are intended to cater to these users' specific needs, personalized for our primary target audience. We note the general technical literacy and an appeal for aesthetic UIs that teenagers have and intend to design our web app as one that caters to their specific demands.

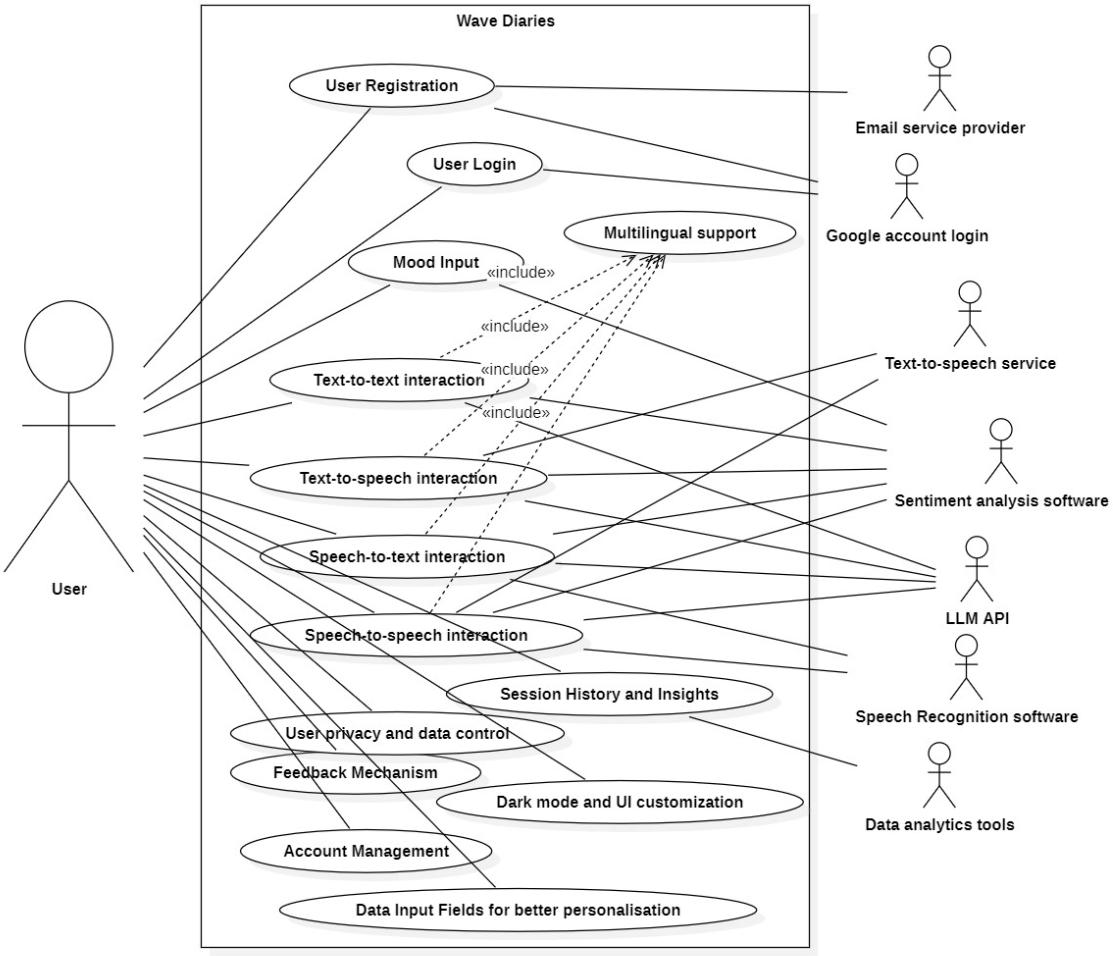
Feature requirements (described using use cases)

No.	Use Case Name	Description	Release
1	User Registration	Enables a new user to create an account by providing required details (e.g., email, password, and basic profile information). The system validates the information and sends a verification email to complete the registration.	R1
2	User Login	Allows a registered user to log in securely by entering their credentials. The system verifies the provided details and grants access to the personalized dashboard upon successful authentication.	R1

3	Mood Input	Allows the user to input their current mood in terms of presets. This helps personalise the responses better and aids the system in its sentiment analysis.	R1
4	Speech-to-Speech Interaction	Enables a registered user to interact with the system via voice. The system captures the user's spoken input, converts it to text using speech recognition, processes the text with a large language model (LLM), and then converts the LLM's response back into speech—all in the language chosen by the user.	R1
5	Text-to-speech interaction	Enables a registered user to interact with the system via a mixture of text and voice. The system captures the user's text input, processes the text with a large language model (LLM), and then converts the LLM's response back into speech—all in the language chosen by the user.	R1
6	Text-to-text interaction	Enables a registered user to interact with the system via a mixture of text and voice. The system captures the user's text input, processes the text with a large language model (LLM)—all in the language chosen by the user.	R1
7	Speech-to-text interaction	Enables a registered user to interact with the system via voice. The system captures the user's spoken input, converts it to text using speech recognition, processes the text with a large language model (LLM)—all in the language chosen by the user.	R1
8	Session History and Insights	Allows users to view past interactions and mood trends through saved session logs. This feature helps users reflect on their progress and gain insights into their emotional patterns over time. Can be extremely useful to mental health support professionals to track their patient's trends.	R1
9	Feedback Mechanism	Enables users to rate their experience and submit feedback about the system's interactions. The collected feedback supports continuous improvement of the AI and overall user experience.	R2
10	Dark Mode and UI Customization	Allows users to customize the application's appearance by selecting themes (such as dark mode). These preferences are saved in the user profile to ensure a personalized and consistent experience across sessions.	R2
11	Account Management	This use case describes how a logged-in user manages their account information within the AI-based mental health application. In addition to updating basic personal details, the user can modify their preferences—such as mood tracking settings (e.g., frequency of mood updates, notification preferences, and data sharing settings)—to tailor the application to their mental health needs. The process	R1

		emphasizes data integrity, privacy, and user control over sensitive information.	
12	User Privacy and Data Control	Lets users manage their personal data by reviewing and, if desired, deleting stored conversation logs and other personal information. This ensures that users have full control over their data in compliance with privacy standards.	R2
13	Data Input Fields for better personalisation	The system dynamically adapts to deliver a seamless personalized and localized experience.	R2

Use case diagram



Use case description

UC-1

Use Case Number:	UC-01

Use Case Name:	User registration
Overview:	Enables a new user to create an account by providing required details (e.g., email, password, and basic profile information). The system validates the information and sends a verification email to complete the registration.
Actors:	User, Email service Provider, Google account login
Pre condition:	• The system is up and running. • The user reaches the landing page or the registration page in the webapp.
Flow:	Main (success) Flow: 1. The user inputs required information (name, email, password, date of birth, etc.). 2. The user reviews and accepts the privacy policy and consent forms for data usage and mental health support. 3. The user submits the data entered, which is then sent to our system. 4. The system checks if the email or username already exists. 5. The system validates that mandatory fields are filled and comply with format requirements (valid email format, strong password). 6. The system creates a new account in the database. 7. The system sends a verification email or code to the user using our email service provider 8. The user enters the validation code from the verification message to verify themselves. 9. Registration Complete: The system displays a success message and redirects the user to the login page.
	Alternate Flow: *a) System crash 1. The system halts normal processing and displays a dedicated error notification page to the user, indicating that a system error has occurred. 2. The error page provides instructions to refresh the page, try again later, or contact support with a reference code for troubleshooting. 3. The system logs detailed crash information (including context and error codes) for troubleshooting and recovery purposes. Postconditions**:** • The user is redirected to a safe error state and informed about the system crash. • Any unsaved session data may be lost, and the user is advised to restart the session after the system is restored to normal operation. 1a) User selects ‘Signup with Google’ option 1. 4a) Duplicate Username: The user’s chosen username is already registered. 1. The system displays an error message indicating that the username is already in use. 2. The user is prompted to enter different credentials. 3. Goes back to step 3 in main flow Post Condition: Registration is not completed until a unique username is provided. 3a) a. Condition: Mandatory fields are missing, or the provided data fails format checks (e.g., invalid email).

	b. Flow: i. The system highlights the invalid fields and provides instructions for correction (if any). ii. The user updates the information and resubmits. c. Post Condition: Registration remains incomplete until valid data is provided. 1. AF3: User Declines Consent d. Condition: The user does not agree to the privacy policy or data usage terms. e. Flow: i. The system notifies the user that consent is required to create an account. ii. The user can either accept the terms or exit the process. f. Post Condition: Registration is terminated if the user does not provide consent.
Post Condition:	A new user account is successfully created and verified. The user can now log in to the AI-based mental health application and access personalized support, mood tracking, and other therapeutic features under secure and privacy-compliant conditions.

UC-2

Use Case Number:	UC-02
Use Case Name:	User Login, Google Account Login
Overview:	Allows a registered user to log in securely by entering their credentials. The system verifies the provided details and grants access to the personalized dashboard upon successful authentication.
Actors:	User, Google Account Login
Precondition:	• The system is online and capable of processing authentication requests. • The user has an existing account in the system. • The user is on the login route
Flow:	Main (success) Flow: 1. The user enters a valid username and password. 2. The user clicks the "Login" button. 3. The system checks the credentials provided against the stored user database. 4. If the credentials match, the system creates a session for the user. 5. The system redirects the user to the home page, indicating a successful login.
	Alternate Flow: *a) System Crash 1. The system halts normal processing and displays a dedicated error notification page to the user, indicating that a system error has occurred. 2. The error page provides instructions to refresh the page, try again later, or contact support with a reference code for troubleshooting. 3. The system logs detailed crash information (including context and error codes) for troubleshooting and recovery purposes. <u>Postconditions</u>**:** • The user is redirected to a safe error state and informed about the system crash.

	• Any unsaved session data may be lost, and the user is advised to restart the session after the system is restored to normal operation 1a) Login with Google 1. The user selects the "Login with Google" option. 2. The system redirects the user to the Google authentication page. 3. The user enters their valid Google account credentials on the Google sign-in interface. 4. Google authenticates the credentials and returns a valid authentication token to the system. 5. The system validates the token, creates a session, and optionally links the Google account to an existing local profile if applicable. 6. The system logs the usage of this alternative authentication method for auditing purposes. 1a*a) Google authentication System Unavailable 1. The authentication service is temporarily offline. 2. The system displays a dedicated error notification to the user indicating that the authentication service is currently unavailable. 3. The error notification provides instructions to refresh the page, try again later, or contact support with a reference code for troubleshooting. Postconditions: No session is created, and the user remains logged out until he uses the main flow, or the authentication service is restored to normal operation. Postconditions: • A secure user session is established using Google account authentication. • The user gains full access to the application without needing to provide local username and password credentials. • The system records that the login was completed via Google, ensuring a seamless and secure alternative authentication process. 3a) Invalid Credentials 1. The user enters an incorrect username or password. 2. The system displays an error message indicating invalid credentials. 3. The user is prompted to re-enter valid credentials or reset the password. Postconditions: • The user remains on the login page until valid credentials are provided or the user chooses to exit the login process.
Post Condition:	Upon successful login, the user is authenticated and gains access to the system's exclusive features and benefits.

UC-3

Use Case Number:	UC-03
Use Case Name:	Mood Input
Overview:	Allows the user to input their current mood in terms of presets. This helps personalise the responses better and aids the system in its sentiment analysis.
Actors:	User, Sentiment Analysis Software
Pre condition:	• The user must have an existing account.

	• The user is logged in. • The user should be in mood input page.
Flow:	Main (success) Flow: 1. User can choose between a set of predefined emotions (happy, sad, depressed, etc). 2. User closes the dropdown after selection, and the information goes in the input we give to the sentiment analysis software for more accurate analysis. 3. The user shall then be prompted to go to the chat page.
	Alternate Flow: *a) System Crash 1. The system halts normal processing and displays a dedicated error notification page to the user, indicating that a system error has occurred. 2. The error page provides instructions to refresh the page, try again later, or contact support with a reference code for troubleshooting. 3. The system logs detailed crash information (including context and error codes) for troubleshooting and recovery purposes. Postconditions**:** • The user is redirected to a safe error state and informed about the system crash. • Any unsaved session data may be lost, and the user is advised to restart the session after the system is restored to normal operation. 2a) The sentiment analysis software is not up 1. The user is prompted an error message to wait for the system to be back online. Postconditions: The user is shown an error message
Post Condition:	User can document their emotions, and for a given timeframe user can see how their emotions have fluctuated

UC-4

Use Case Number:	UC-04
Use Case Name:	Speech to Speech
Overview:	Enables a registered user to interact with the system via voice. The system captures the user's spoken input, converts it to text using speech recognition, processes the text with a large language model (LLM), and then converts the LLM's response back into speech—all in the language chosen by the user.
Actors:	User, LLM API, Text to Speech, Speech to Text
Pre condition:	• The user has an existing account and is logged in. • The user is in the chat page • The user has selected the speech-to-speech mode.
Flow:	Main (success) Flow: 1. The user selects their preferred language from a list of supported options. Default English, or user preset using UC-13. 2. Record Voice: The system prompts the user to choose an audio input device (if multiple devices are available) and to grant the necessary permission. The user records their voice input.

	3. Speech-to-Text Conversion: The system sends the recorded audio in small, parallelized chunks to a speech recognition service. The service converts the audio to text, supporting languages beyond English. 4. Interacting with the LLM: The converted text is forwarded to the LLM, which processes the input and generates a response. The response is formulated in the language initially selected by the user. 5. Text-to-Speech Conversion: The text-to-speech service converts the LLM's text response back into speech. The spoken response is delivered to the user.
	Alternate Flow: *a) System Crash 1. The system halts normal processing and displays a dedicated error notification page to the user, indicating that a system error has occurred. 2. The error page provides instructions to refresh the page, try again later, or contact support with a reference code for troubleshooting. 3. The system logs detailed crash information (including context and error codes) for troubleshooting and recovery purposes. Postconditions: • The user is redirected to a safe error state and informed about the system crash. • Any unsaved session data may be lost, and the user is advised to restart the session after the system is restored to normal operation. 2a) Microphone Not Detected: 1. The system lists all available audio capture devices and prompts the user to select one. 2. If the desired device is not listed, the user is advised to restart the system and update their audio drivers. Postcondition: The system proceeds only after a valid device is selected; otherwise, it remains in an error state. 2b) Microphone Permission Denied: 1. If the user denies microphone permission, the system displays a "Microphone Access Denied" error. Postcondition: The operation is paused, awaiting permission or a user-initiated abort. 2c) Microphone Malfunction: 1. If no audio input is detected even after a valid device is selected and permission is granted, the system assumes the microphone is malfunctioning. Postcondition: The system displays a "Microphone Not Functioning" error and suggests checking the hardware or contacting support. 3-5a) Network issue 1. Error message for network not available given 2. User redirected to dashboard Postcondition: Error message shown, user redirected. 3b) Speech-to-Text conversion fails: 1. The system fails to communicate with speech-to-text API due to service downtime.

	2. The user is shown error in ‘speech-to-text’ module. 3. The user is prompted to use text-to-speech. a. Same 5b Postcondition: The user is shown appropriate error and suggested alternate way of communication. 4b) LLM fails: 1. The system fails to communicate with LLM due to service downtime 2. The user is shown error message 3. The user is redirected to dashboard. Postcondition: The system halts further processing and informs the user until the issue is resolved. 5b) Text-to-Speech conversion fails 1. The system fails to communicate with text-to-speech API due to service downtime. 2. The user is shown error in ‘speech-to-text’ module. 3. The user is prompted to use text-to-text. Postcondition: The user is shown appropriate error and suggested alternate way of communication.
Post Condition:	• The user's voice input is successfully processed, and an audio response is generated in the selected language. • The conversation state is updated for future interactions. • In the event of an error, the system remains in a safe state, and the user receives clear instructions on how to proceed.

UC-5

Use Case Number:	UC-05
Use Case Name:	Text-to-Speech
Overview:	Enables a registered user to interact with the system via a mixture of text and voice. The system captures the user's text input, processes the text with a large language model (LLM), and then converts the LLM’s response back into speech—all in the language chosen by the user.
Actors:	User, LLM API, Text to Speech
Pre condition:	• The user has an existing account and is logged in. • The user is in the chat page • The user has selected the speech-to-speech mode.
Flow:	Main (success) Flow: 1. The user selects their preferred language from a list of supported options. Default English, or user preset using UC-13. 2. The user types their message into the interface. 3. Interacting with the LLM: The converted text is forwarded to the LLM, which processes the input and generates a response. The response is formulated in the language initially selected by the user. 4. Text-to-Speech Conversion: The text-to-speech service converts the LLM’s text response back into speech. The spoken response is delivered to the user.
	Alternate Flow: *a) System Crash

	1. The system halts normal processing and displays a dedicated error notification page to the user, indicating that a system error has occurred. 2. The error page provides instructions to refresh the page, try again later, or contact support with a reference code for troubleshooting. 3. The system logs detailed crash information (including context and error codes) for troubleshooting and recovery purposes. Postconditions: • The user is redirected to a safe error state and informed about the system crash. • Any unsaved session data may be lost, and the user is advised to restart the session after the system is restored to normal operation. 3-4a) Network issue 1. Error message for network not available given 2. User redirected to dashboard Postcondition: Error message shown, user redirected. 3b) LLM fails: 1. The system fails to communicate with LLM due to service downtime 2. The user is shown error message 3. The user is redirected to dashboard. Postcondition: The system halts further processing and informs the user until the issue is resolved. 4b) Text-to-Speech conversion fails 1. The system fails to communicate with text-to-speech API due to service downtime. 2. The user is shown error in 'speech-to-text' module. 3. The user is prompted to use text-to-text. Postcondition: The user is shown appropriate error and suggested alternate way of communication.
Post Condition:	• The user's text input is successfully processed. • An audio response is generated and played in the user's selected language.

UC-6

Use Case Number:	UC-06
Use Case Name:	Text-to-Text
Overview:	Enables a registered user to interact with the system via a mixture of text and voice. The system captures the user's text input, processes the text with a large language model (LLM)—all in the language chosen by the user.
Actors:	User, LLM API
Pre condition:	• The user has an existing account and is logged in. • The system's LLM is available and connected. • The user interface supports text input and output.
Flow:	Main (success) Flow: 1. The user selects their preferred language from a list of supported options. Default English, or user preset using UC-13. 2. Enter Text: The user types of their query or message into the interface.

	3. Interacting with the LLM: The converted text is forwarded to the LLM, which processes the input and generates a response. The response is formulated in the language initially selected by the user. 4. The text response is displayed.
	Alternate Flow: *a) System Crash 1. The system halts normal processing and displays a dedicated error notification page to the user, indicating that a system error has occurred. 2. The error page provides instructions to refresh the page, try again later, or contact support with a reference code for troubleshooting. 3. The system logs detailed crash information (including context and error codes) for troubleshooting and recovery purposes. Postconditions: • The user is redirected to a safe error state and informed about the system crash. • Any unsaved session data may be lost, and the user is advised to restart the session after the system is restored to normal operation. 3a) Network issue 1. Error message for network not available given 2. User redirected to dashboard Postcondition: Error message shown, user redirected. 3b) LLM fails: 1. The system fails to communicate with LLM due to service downtime 2. The user is shown error message 3. The user is redirected to dashboard. Postcondition: The system halts further processing and informs the user until the issue is resolved.
Post Condition:	The user's text input is successfully processed, and the text response is displayed in the selected language.

UC-7

Use Case Number:	UC-07
Use Case Name:	Speech-to-Text
Overview:	Enables a registered user to interact with the system via voice. The system captures the user's spoken input, converts it to text using speech recognition, processes the text with a large language model (LLM)—all in the language chosen by the user.
Actors:	User, LLM API, Speech to Text
Pre condition:	• The user has an existing account and is logged in. • A functional microphone is connected, detected, and permissions are granted. • The speech-to-text (STT) API is available.
Flow:	Main (success) Flow: 1. The user selects their preferred language from a list of supported options. Default English, or user preset using UC-13. 2. The user types their message into the interface.

	3. Speech-to-Text Conversion: The system sends the recorded audio in small, parallelized chunks to a speech recognition service. The service converts the audio to text, supporting languages beyond English. 4. Interacting with the LLM: The converted text is forwarded to the LLM, which processes the input and generates a response. The response is formulated in the language initially selected by the user. 5. The text response is displayed
	Alternate Flow: *a) System Crash 1. The system halts normal processing and displays a dedicated error notification page to the user, indicating that a system error has occurred. 2. The error page provides instructions to refresh the page, try again later, or contact support with a reference code for troubleshooting. 3. The system logs detailed crash information (including context and error codes) for troubleshooting and recovery purposes. Postconditions: • The user is redirected to a safe error state and informed about the system crash. • Any unsaved session data may be lost, and the user is advised to restart the session after the system is restored to normal operation. 2a) Microphone Not Detected: 1. The system lists all available audio capture devices and prompts the user to select one. 2. If the desired device is not listed, the user is advised to restart the system and update their audio drivers. Postcondition: The system proceeds only after a valid device is selected; otherwise, it remains in an error state. 2b) Microphone Permission Denied: 1. If the user denies microphone permission, the system displays a "Microphone Access Denied" error. Postcondition: The operation is paused, awaiting permission or a user-initiated abort. 2c) Microphone Malfunction: 1. If no audio input is detected even after a valid device is selected and permission is granted, the system assumes the microphone is malfunctioning. Postcondition: The system displays a "Microphone Not Functioning" error and suggests checking the hardware or contacting support. 3-4a) Network issue 3. Error message for network not available given 4. User redirected to dashboard Postcondition: Error message shown, user redirected. 3b) Speech-to-Text conversion fails: 4. The system fails to communicate with speech-to-text API due to service downtime. 5. The user is shown error in 'speech-to-text' module. 6. The user is prompted to use text-to-speech.

	a. Same as 5b Postcondition: The user is shown appropriate error and suggested alternate way of communication. 4b) LLM fails: 4. The system fails to communicate with LLM due to service downtime 5. The user is shown error message 6. The user is redirected to dashboard. Postcondition: The system halts further processing and informs the user until the issue is resolved.
Post Condition:	The spoken input is successfully converted to text and displayed for the user.

UC-8

Use Case Number:	UC-08
Use Case Name:	Session History and Insights
Overview:	Allows users to view past interactions and mood trends through saved session logs. This feature helps users reflect on their progress and gain insights into their emotional patterns over time. Can be extremely useful to mental health support professionals to track their patient's trends.
Actors:	User, Data Analytics Tool
Pre condition:	• User is logged into the system, • The Data Analytics Tool is operational and properly connected to the system.
Flow:	Main (success) Flow: 1. Access Request: The user selects the "Session History and Insights" option from their dashboard. 2. Data Retrieval: The system retrieves the user's session logs and associated mood data from the database. 3. Data Processing: The system sends the retrieved data to the Data Analytics Tool, which processes the information to generate visualizations like charts, graphs etc, and summary trends. 4. Display Results: The system displays the processed session history and insights to the user. 5. User Interaction: The user can filter or sort the displayed data (e.g., by date range or mood category) to gain specific insights.
	Alternate Flow: *a) System Crash 4. The system halts normal processing and displays a dedicated error notification page to the user, indicating that a system error has occurred. 5. The error page provides instructions to refresh the page, try again later, or contact support with a reference code for troubleshooting. 6. The system logs detailed crash information (including context and error codes) for troubleshooting and recovery purposes. Postconditions**:** • The user is redirected to a safe error state and informed about the system crash.

	• Any unsaved session data may be lost, and the user is advised to restart the session after the system is restored to normal operation. 2a) No Session Data Available 1. The system detects that insufficient session logs exist for the user requesting to see this page. 2. The system displays a message informing the user that no session data is available 3. The system also displays a button that takes the user to a new session, where mood tracking can be done. Postconditions: • The user is notified that there is no available session data. • The user is prompted to initiate new conversations and sessions. 3a) Data Analytics Tool Unavailable 1. The Data Analytics Tool fails to process the data or times out. 2. The system captures the error and transitions to the error handling routine for this alternate flow. 3. An error message is displayed to the user indicating that detailed insights are temporarily unavailable. Postconditions**:** The user is informed that the session insights could not be generated due to a temporary unavailability of the Data Analytics Tool.
Post Condition:	The user successfully views an interactive display of their session history and insights, enabling reflection on their emotional progress.

UC-9

Use Case Number:	UC-09
Use Case Name:	Feedback Mechanism
Overview:	Enables users to rate their experience and submit feedback about the system's interactions. The collected feedback supports continuous improvement of the AI and overall user experience.
Actors:	User
Pre condition:	The user is logged into the system.
Flow:	Main (success) Flow: 1. Access Feedback Section: The user navigates to the "Feedback" section. 2. Input Feedback: The user selects a rating and optionally enters detailed comments in the provided text box. 3. Submit Feedback: The user submits the feedback by clicking the "Submit" button. 4. Confirmation Display: The system processes the input, stores the feedback, and displays a confirmation message to the user.
	Alternate Flow: *a) System Crash 1. The system halts normal processing and displays a dedicated error notification page to the user, indicating that a system error has occurred. 2. The error page provides instructions to refresh the page, try again later, or contact support with a reference code for troubleshooting.

	3. The system logs detailed crash information (including context and error codes) for troubleshooting and recovery purposes. Postconditions: • The user is redirected to a safe error state and informed about the system crash. • Any unsaved feedback data may be lost, and the user is advised to restart the feedback submission process after the system is restored to normal operation. 2a) Incomplete or Invalid Feedback 1. The system detects that the submitted feedback is incomplete or contains invalid entries (e.g., no rating selected). 2. The system displays an error message prompting the user to complete all required fields. 3. The user corrects the feedback and resubmits the form. Postconditions: The user is notified that the feedback submission is incomplete or invalid. 4a) Feedback Submission Error 1. The system encounters an error while saving the feedback to the database. 2. An error message is displayed to the user indicating that the feedback submission failed and suggests trying again later. Postconditions: • The user is informed that the feedback could not be recorded due to a temporary issue • The system logs the error for further investigation.
Post Condition:	The user successfully submits feedback and receives a confirmation message that their input has been recorded, contributing to the system's continuous improvement.

UC-10

Use Case Number:	UC-10
Use Case Name:	Toggle Dark Mode
Overview:	This use case describes how a user toggles the dark mode setting on the home page of the application. Dark mode provides an alternative UI theme to reduce eye strain and create a more comfortable viewing experience, which is necessarily important in a sensitive mental health environment.
Actors:	User
Precondition:	The user has an account and is logged into the application.
Flow:	Main (success) Flow: 1. The navbar has a dark mode toggle button displayed. 2. User Clicks Dark Mode Toggle: The user clicks the dark mode toggle button to toggle the UI theme. 3. System Processes Request: The system registers the toggle action and initiates the theme switch. 4. Theme Change Execution: The system applies the dark mode theme across the application interface.
	Alternate Flow: *a) System Crash

	1. The system halts normal processing and displays a dedicated error notification page to the user, indicating that a system error has occurred. 2. The error page provides instructions to refresh the page, try again later, or contact support with a reference code for troubleshooting. 3. The system logs detailed crash information (including context and error codes) for troubleshooting and recovery purposes. Postconditions**:** • The user is redirected to a safe error state and informed about the system crash. • Any unsaved session data may be lost, and the user is advised to restart the session after the system is restored to normal operation. 4a) Theme Application Failure 1. The system encounters an error when attempting to apply the dark mode theme. 2. The system displays an error notification indicating that the theme change could not be applied. 3. The UI remains in the current mode (either dark or light), maintaining status quo. 4. The system logs the error for further investigation. Postconditions: The user is informed of the issue, and no preference is updated until the error is resolved.
Post Condition:	Upon successful completion, the user's interface is updated to the selected theme (dark or light), and the chosen preference is saved for future sessions

UC-11

Use Case Number:	UC-11
Use Case Name:	User Account Management
Overview:	This use case describes how a logged-in user manages their account information within the AI-based mental health application. In addition to updating basic personal details, the user can modify their preferences—such as mood tracking settings (e.g., frequency of mood updates, notification preferences, and data sharing settings)—to tailor the application to their mental health needs. The process emphasizes data integrity, privacy, and user control over sensitive information.
Actors:	User
Pre condition:	• The user is an existing account in the system and is logged into the system. • The user is in the account management page from the dashboard/navbar
Flow:	Main (success) Flow: 1. Display Current Account Details and Preferences**:** The system retrieves and displays the user's current account information (e.g., username, email) along with configurable preferences, including mood tracking settings (e.g., mood tracking frequency, notification options, and data sharing preferences). 2. Initiate Update Process: The user selects an "Edit" option to update specific details such as contact information or mood tracking preferences. 3. Present Editable Form: The system displays an editable form pre-populated with the current account data and mood tracking settings.

	4. User Makes Changes**:** The user updates one or more fields—such as changing email, updating password, or modifying mood tracking preferences (for instance, opting for daily or weekly mood reminders, enabling/disabling detailed mood analytics, or setting thresholds for notifications). 5. Validate Input Data**:** The system validates the entered data (e.g., checks for valid email format, password strength, and acceptable values for mood tracking frequency and notifications). 6. Save Updated Account Detail**s:** If validation succeeds, the system updates the account information in the secure database and logs the changes for auditing purposes. 7. Confirm Update**:** The system provides a confirmation message to the user indicating that the account information and preferences have been successfully updated.
	Alternate Flow: *a) System Crash 1. The system halts normal processing and displays a dedicated error notification page to the user, indicating that a system error has occurred. 2. The error page provides instructions to refresh the page, try again later, or contact support with a reference code for troubleshooting. 3. The system logs detailed crash information (including context and error codes) for troubleshooting and recovery purposes. Postconditions*:* • The user is redirected to a safe error state and informed about the system crash. • Any unsaved feedback data may be lost, and the user is advised to restart the feedback submission process after the system is restored to normal operation. 1a) Data Retrieval Failur**e** 1. The system fails to retrieve the user's account details and preferences from the database. 2. The system displays a dedicated error notification informing the user that the account information could not be loaded. 3. The notification advises the user to refresh the page or try again later and provides contact details for support if the issue persists. 4. Detailed error information is logged by the system for troubleshooting purposes. 3a) Update Process Cancellation 1. The user decides not to proceed with updating their account details and in the process click the cancel option or button before saving any changes. 2. The system discards any unsaved changes and returns the user to account overview screen. Postconditions*:* No changes are applied to the user's account; the account information and preferences remain as previously stored. 5a) Invalid Data Entry 1. The user submits updated account information that contains invalid entries (e.g., an invalid email format, a weak password, or an unacceptable value for mood tracking frequency) and the system detects such entries during validation step. P**o**stconditions: The update is not saved until all input data meets the validation criteria. 6a) Update Save Failure

	1. The system encounters an error (e.g., a database connectivity issue) while attempting to save the updated account details. 2. The system displays an error notification informing the user that the update could not be saved at this time. 3. The system logs the error details (including context and error codes) for troubleshooting purposes. 4. The user is prompted to attempt saving the changes again once the issue is resolved. Postconditions: No changes are committed to the user's account; the account remains unchanged until a successful update can be saved.
Post Condition:	• The user's account information and mood tracking preferences are updated securely and are reflected in subsequent sessions. • All modifications are logged for audit and security purposes, ensuring transparency and compliance with data protection and privacy guidelines.

UC-12

Use Case Number:	UC-12
Use Case Name:	User Privacy and Data Control
Overview:	This use case details how the AI-based mental health web application maintains user privacy throughout the collection, processing, and storage of sensitive data—including mood tracking, speech interactions, and therapeutic responses
Actors:	User
Pre condition:	• User is already authenticated and logged in and has provided explicit consent for data processing and storage. • Sensitive user data is stored securely in the database ensuring all safety protocols are taken care of.
Flow:	Main (success) Flow: 1. User Consent and Privacy Settings: The user reviews and agrees to the privacy policy and data usage terms during registration or initial setup. The system displays available privacy settings, allowing the user to choose preferences for data sharing and visibility. 2. Data Encryption and Secure Storage: As user data is generated (e.g., mood tracking information and speech interactions), the system automatically encrypts the data before storing it in a secure, access-controlled database. 3. Access Control Enforcement: The system enforces strict access controls so that only authorized parties (e.g., the user) can access sensitive data. Any data sharing is performed only after verifying user consent. 4. User Privacy Preferences Update**:** The user can update their privacy settings at any time through the account management interface. The system processes these changes immediately, ensuring that the user's updated preferences are enforced across all features.
	Alternate Flow:
Post Condition:	

UC-13

Use Case Number:	UC-13
Use Case Name:	Data Input Fields for better personalisation
Overview:	The system dynamically adapts to deliver a seamless personalized and localized experience.
Actors:	User
Pre condition:	• The system is up and running. • The LLM API is operational and properly connected. • The user navigates to the personalisation settings or data input page from their dashboard.
Flow:	Main (success) Flow: 1. The system displays various data input fields (e.g., preferred language, interests, location, personal information, relationship types, etc.) that are used to tailor the user experience. 2. The user fills in the input fields with the required details. 3. The user submits the information to the system. 4. The system sends the provided data to the database for processing and personalization logic for future chats. 5. The system displays a confirmation message indicating that the personalisation settings have been successfully updated.
	Alternate Flow: *a) System Crash 1. The system halts normal processing and displays a dedicated error notification page to the user, indicating that a system error has occurred. 2. The error page provides instructions to refresh the page, try again later, or contact support with a reference code for troubleshooting. 3. The system logs detailed crash information (including context and error codes) for troubleshooting and recovery purposes. Postconditions**:** • The user is redirected to a safe error state and informed about the system crash. • Any unsaved session data may be lost, and the user is advised to restart the session after the system is restored to normal operation. 2a) Invalid Input Data: The system detects that one or more input fields contain invalid data or are incomplete. 1. The system highlights the invalid fields and displays error messages with instructions for correction. 2. The user updates the information and resubmits the form. Post Conditions: • The user is clearly notified that the input data is invalid. • The data update process remains incomplete until valid data is provided. 4a) Network error 1. Error message to try again later is displayed 2. User is redirected to dashboard Postconditions: Error displayed, user redirected.

	4b) Database error 1. Error message shown for cannot connect to database, try again later. 2. User is redirected to dashboard Postconditions: Error displayed, user redirected.
Post Condition:	The system successfully applies the user's input data to update the personalisation settings, delivering a localized and tailored user experience.