# ***Mental Health AI Chatbot***

Team Number : 1

Team Members :

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# Mental Health AI Chatbot

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# 1. Introduction

## 1.1 Purpose :

The purpose of Mental Health AI Chatbot is to provide accessible, convinient, and timely mental health support. Few objectives of Mental Health AI Chatbot are Emotional Support, Crisis in Intervention, Mental Health Monitoring, Self-help Tools, 24/7 Availability

## 1.2 Intended Audience :

The inteneded audience for Mental Health AI Chatbot include Individuals with Mental Health Challenges, Young Adults and Teenagers, People in Remote or Underserverd Areas, Seeking Immediate Support, Users with Social Anxiety or Fear of Judgement, Caregivers and Family Members etc.,

## 1.3 Stakeholders :

Stakeholders plays an unique role in ensuring the success, accessibiltity, and ethical implementation in chatbot. They includes :

- Mental Health Professionals
- Developes and AI Engineers
- Data Scientists
- Healthcare Providers and Organizations
- Researches

## 1.4 Product Vision :

The Product Vision of a Menatl Health AI Chatbot is to demonstrate access to mental health support by providing an intelligent, empathetic, and accessible tool that helps individuals manage their mental well-being, anytime and anywhere. Key elements of Product Vision includes 24/7 Availability, Evidence-based and safe, scalable and affordable solution, Stigma-free engagement etc

# 2. Technologies

Developing a Mental Health AI Chatbot involves a range of technologies, from Natural Language Processing to machine learning. So the used technologies are :-

Front End :

- HTML
- CSS
- JavaScript

Back End :

- python

Database :

- MySQL

# 3. Requirements

## 3.1 Functional Requirements :

### 1. User Registration and Authentication :-

- Users should be able to sign up and login using email, social media accounts, or single sign-on (SSO).
- Secure password management, including reset and recovery options

### 2. Personalized User Profiles :-

- Ability for users to create and manage personal profiles, including personal information, preferences, and history of interactions with the chatbot.

### 3. Chatbot Interaction :-

- Users should be able to interact with the chatbot through text and potentially voice.
- The chatbot should be capable of understanding and responding to various mental health-related queries.

### 4. Mental Health Assessments :-

- The Chatbot should provide various assessments (e.g., depression, anxiety ) based on standardized questionnaries.

- Users should receive personalizes feedback based on their assessment results.

### 5. Content Delivery :-

- The chatbot should provide educational resources, articles, and coping strategies related to mental health.
- Recommandations for self-care activities mindfulness exercises, and relaxation techniques should be available.

### 6. Scheduling and Reminder :

- Users should be able to schedule sessions or remainders for exercise, medicatin, or upcoming appointments.

### 7. Data Analytics :-

- The system should track and analyze user interactions to provide insights and improve the chatbot's performance.
- Users should have access to a dashborad displaying thier progress and historical data.

## 4. Non-Functional Requirements

### 4.1 Security :-

- The application must comply with data protection regulations to ensure user data is secure.
- End-to-end encryption for all communications.
- Secure storage of sensitive data, with role-based acces control.

### 4.2 Performance :-

- The chatbot needs to respond to user queries within a short time frame.
- Latency should be minimized between the user's input and the chatbot's response.

### 4.3 Usability :

- The chatbot interface should be intutive, clear, and easy to navigate, ensuring users of all technologies skill level can interact with it easily.
- The conversation with the chatbot should feel natural and engaging.

### 4.4 Reliability :

- The chatbot must be available 24/7 to ensure users can access mental health support at anytime.
- Regular backups should be maintained so that a system failure, data can be recovered with minimal loss.
- The chatbot must provide consistent, accurate, and validated responses.

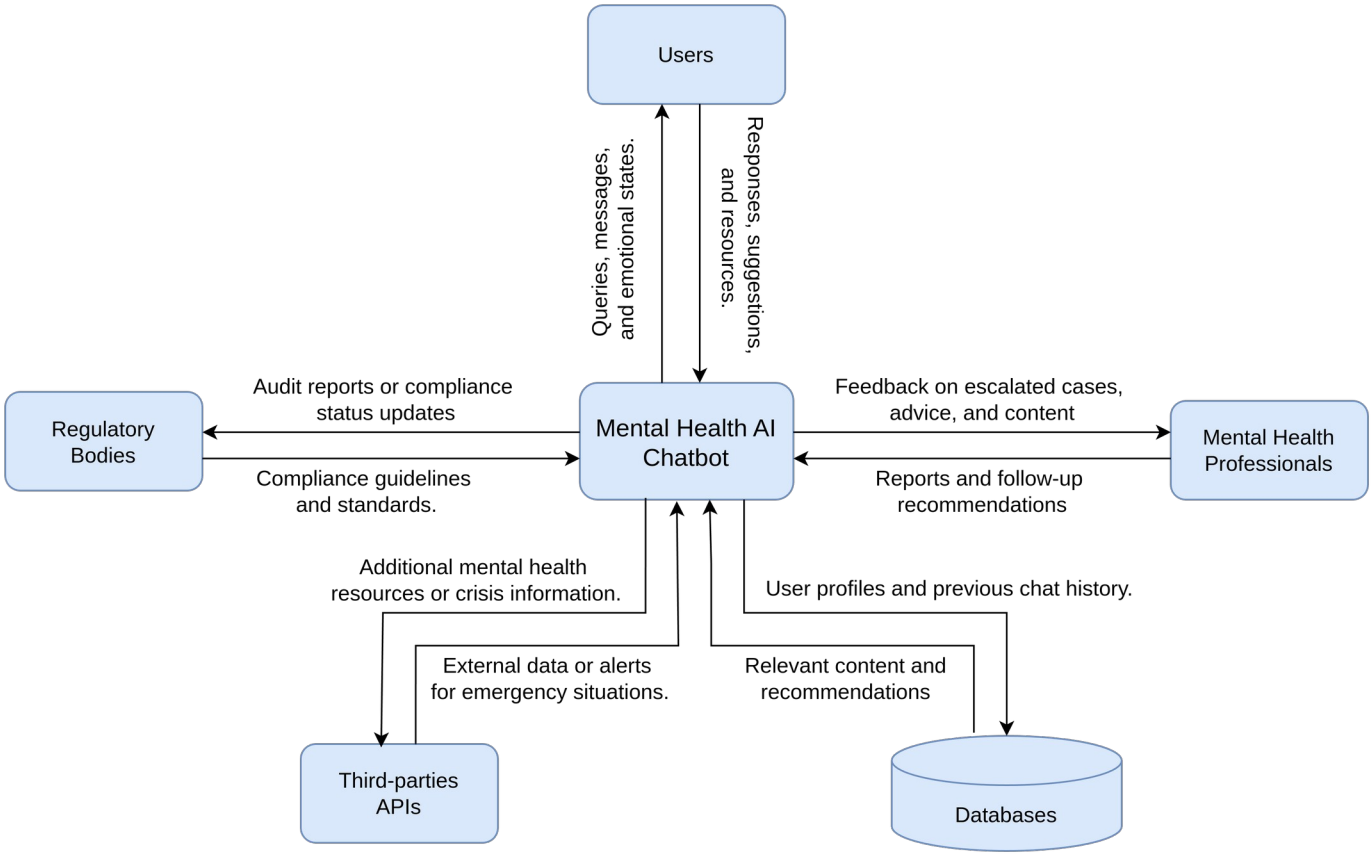
### 4.5 Scalability :

- The chatbot should be scalable enough to handle increasing number of users as demand grows.
- Efficient use of resources is crucial to ensure the chatbot can scale while keeping operational costs low.

## 5. Work Assignment :-

| Work Name | Assignment |
|---|---|
| Requriments Gathering | Entire Team |
| Interface | Entire Team |
| Story Board | Entire Team |
| WBS | Entire Team |
| URD | Entire Team |
| SRS | Entire Team |
| Risk Analysis | Entire Team |
| Frontend Design(HTML pages) | Entire Team |
| Backend Design(Database) | Entire Team |
| Code Integration | Entire Team |
| Testing | Entire Team |
| Final Demo | Entire Team |

# 6. Context Diagram :-




# 7. Work Breakdown Structure(WBS) :-

## 1. Project Management

- Project Planning and Scheduling.
- Resource Allocation.
- Budget Management.
- Risk Management.

## 2. Requirement Analysis

- Gather User Requirements.
- Identify Core Functionalities.
- Define Chatbot Use Cases.
- Regularity and Compliance Review.

## 3. Design and Architecture

- System Architecture Design.
- Database and Data Flow Design.
- User Interface Design.
- Integration with External Systems.

## 4. Frontend Developement

- Implement Chat Interface
- Design User interaction Elements
- Mobile Responsiveness
- Accessibility Design

## 5. Backend Developement

- Define Knowledge Base forMental Health Topics
- Create Emergency Response Guidelines
- Human-in-the-Loop Support
- Develop Standard Responses

## 6. Testing

- Unit Testing
- Integration Testing
- Usability Testing
- Load and Performance Testing
- Security Testing (Data Privacy and Compliance)
- Beta Testing with Users

## 7. Deployment

- Cloud Deployment Setup
- Continuous Integration/Continuous Deployment (CI/CD)
- Launch on Web and Mobile Platforms
- Set Up Monitoring Systems (Error Tracking, Analytics)

# 8. Use Case Diagram :-