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DEPRESSION SYMPTOMS DETECTION

DESCRIPTION

1. REAL-TIME CHAT

- Users can engage in conversations with an AI assistant, which is designed to:
    - Analyze user inputs.
    - Identify symptoms of depression based on their responses.
    - Provide empathetic and engaging responses tailored to the user's current and past conversations.

2. GENERAL MOOD AND SYMPTOM TRACKING

- **General Mood Score**:
    - Computed based on weighted analysis of depression symptoms, ranging from 0% (no signs of depression) to 100% (high likelihood of depression).

- **Symptom Scores**:
    - Individual symptoms such as anxiety, sadness, irritability, etc., are scored per conversation session.
    - These scores are saved and visualized to track trends over time.

3. DATA VISUALIZATION

- **General Mood Graph**:
    - Displays the trend of the user's general mood scores across multiple sessions.

- **Symptom Graphs**:
    - Plots each symptom's score over time, allowing users to identify patterns and improvements in specific areas.

- **Interactive Visualization**:
    - Graphs include tooltips, markers, and labels for better interpretability.

4. PRIVACY

- **Federated**:
    - Data is saved locally, instead of being stored on a remote server

- **Anonymity**:
    - It is not associated to any user, name or real person.

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TECHNICAL ARCHITECTURE
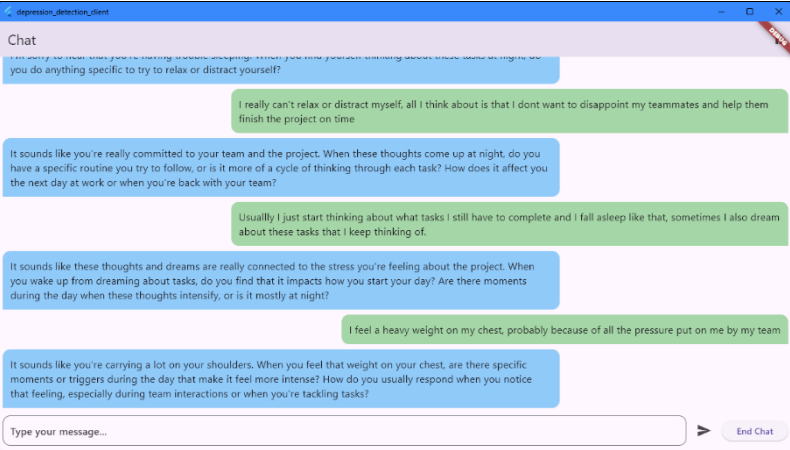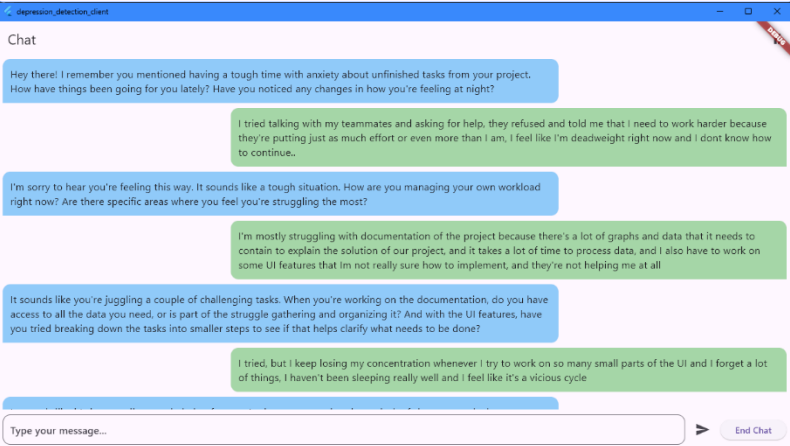
DATA MANAGER & PROCESSOR

- **Built with Node.js**:

  - Handles real-time communication using **Socket.IO (TCP)**.
  - Processes data storage and retrieval using **file-based JSON local storage**.

- **Key Functionalities**:

  1. **Start Chat**:
     - Generates initial questions based on past conversations or starts a generic conversation if no history exists.

  2. **Chat Analysis**:
     - Analyzes user responses using ChatGPT and extracts scores for depression symptoms and general mood.
     - Summarizes each conversation and updates the summary of all past interactions at the end of each conversation.

  3. **Data Storage**:
     - Stores user conversations, scores, and summaries in a structured JSON format.
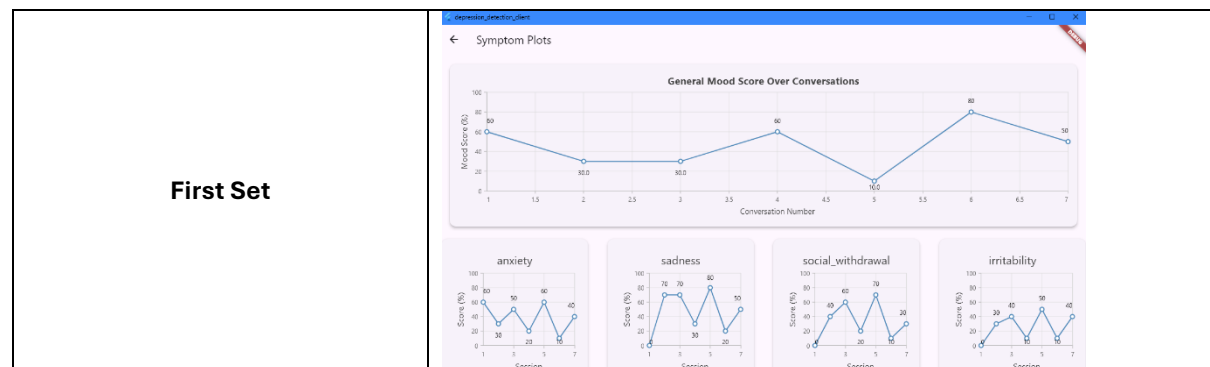
UI (FLUTTER)

- **Built with Flutter**:

  - Provides a seamless and interactive user interface.
  - Handles chat interaction, and data visualization.

- **Key Features**:

  1. **Chat Interface**:
     - Real-time chat bubbles with text wrapping and auto scrolling.
     - Supports starting and ending conversations dynamically.

  2. **Data Visualization**:
     - Fetches data on depression symptoms from Node client and the general mood scores across conversations (0% to 100%), higher scores indicate higher probability of depression.
     - Uses Syncfusion charts to display graphs for symptoms and general mood.

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EXAMPLES (SCREENSHOTS)

1. CHATS

Starting a chat	
Picking up the conversation after some time	

2. VISUALIZATION OF DATA

First Set	

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Second Set	
Third Set	

3. DATA STORAGE