

Capstone Project - Cognitive Behavioral Therapy Application

This capstone project focuses on developing an application that utilizes Cognitive Behavioral Therapy (CBT) to help users manage their mental health. The project integrates a chatbot powered by a large language model (LLM), which assists users by providing responses based on the stages of CBT. The backend processes ensure that the chatbot's responses are validated, context is retrieved from past conversations, and user interactions are stored safely in a database.

User stories

As a user, I want to use the Cognitive Behavioral Therapy chatbot, , so that I can receive support for managing my mental health.

As a returning user, I want the application to remember my past sessions, so that I can continue therapy without repeating previous steps.

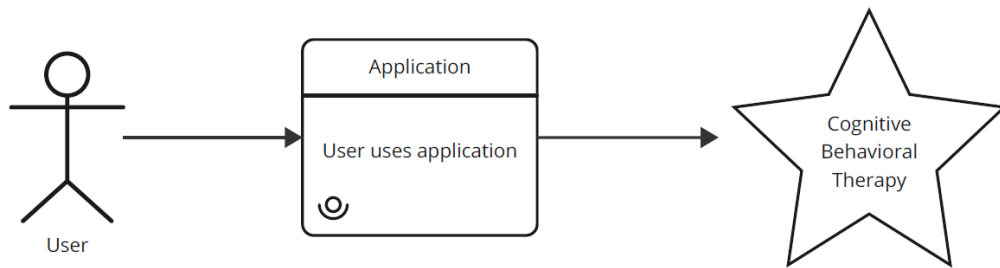
As a healthcare provider, I want to monitor user interaction with the chatbot, , so that I can track their progress and adjust treatment plans.

As an admin, I want to ensure that the chatbot does not provide harmful responses, , so that users have a safe experience.

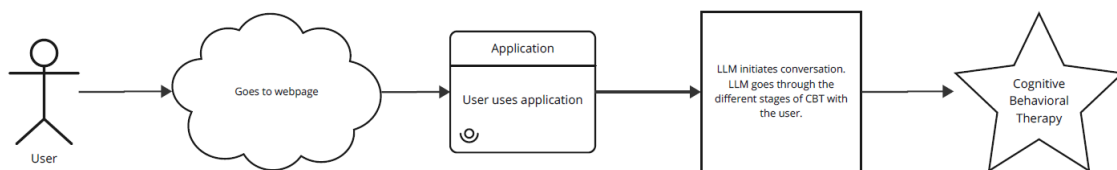
Design diagrams

The following diagrams depict the system's design, showing increasing levels of detail from the high-level overview (Design D0) to detailed subsystems and data processing components (Design D1 and Design D2).

Design D0: The user interacts with the chatbot, inputs their messages, and receives responses based on Cognitive Behavioral Therapy stages.



Design D1: This level introduces modules such as user authentication, message processing, and response validation.



Design D2: The final level provides the most detail, highlighting the role of the backend in retrieving past conversations, processing LLM responses, and ensuring responses are safe by checking against banned terms.

