Remedy Chatbot: A Relief from Stress and Problems

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Abstract- **Everyday events are frequent in our hectic life. People still find it uncomfortable to talk to others about their psychological states and usually prefer to keep their problems to themselves. This usually causes tension in their thoughts to build up, which hinders their ability to be productive at work. As these situations go longer, we usually come up with the idea of introducing a Therapy Chatbot to help and inquire about the client's mental health. The user is free to express his emotions without worrying about criticism. Consequently, fewer people will die from depression. In order to interpret user input, this paper presents a chatbot architecture that includes a dialogue management system and a natural language generation (NLG) module for handling user input, a natural language generation (NLG) module for producing responses in natural language, and a conversation management system for producing answers. The chatbot's functionality is enhanced through integration with external databases, knowledge bases, and APIs. This allows it to offer individualized support, respond to inquiries, carry out tasks, and expedite transactions. As these cases tend to extend, we tend to conceive it by introducing a Counselling Chatbot, that may assist and check with the person regarding his mental state. The user gets to share his feelings while not having the concern of being judged. Thus, reducing the number of deaths because of depression.**

Keywords: **Bot, Chatbot, Emotion, Mental Health, NLP (Natural Language Processing), Artificial intelligence (AI), Stress, Therapy, Tokenization.**

1.   INTRODUCTION

Based on the U.K Journal, mental health is the performance of the mental function resulting in productive activities, fulfilling correlation with other people, and providing the ability to fit to change and survive with Hardship.

The term mental illness or annoyance refers to all identifiable mental disorders— health conditions characterized by alterations in thinking, mood, or behaviour related to distress or impaired functioning

Mental health has traditionally been defined as the absence of mental illnesses, such as depression and anxiety. In today's world, depression can affect anyone, and is a significant issue.

Depression is a complex condition with uncertain origins. Potential triggers may include isolation, interpersonal connections, time pressures, hereditary factors, mistreatment, disagreements, pharmaceuticals, serious health conditions.

Some individuals may experience depression and feel helpless with sadness and isolation for unknown reasons. Individuals dealing with depression need to communicate their feelings to someone and often feel hesitant to talk to, such as their friends and family.

2.   METHODOLOGY

A fundamental Sequence to Sequence structure is utilized for constructing conversational Counselling chatbot using Dialog Flow framework.
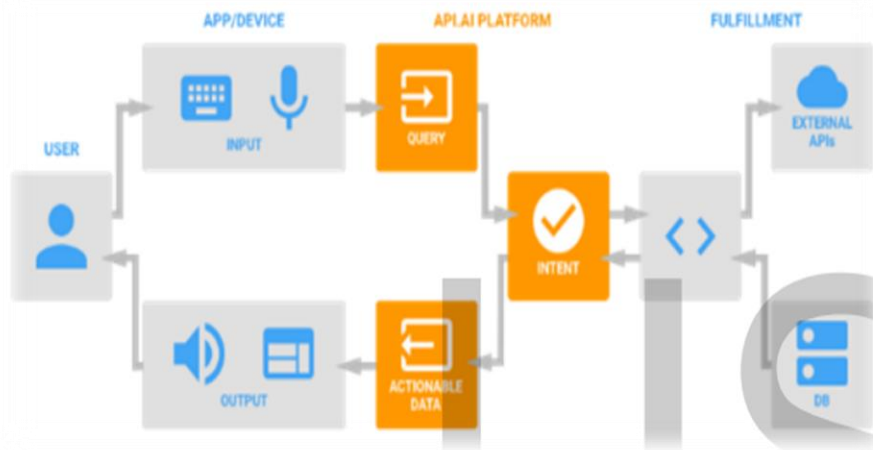
Figure1. This image shows the overview of Architecture of Dialog flow

Various entities are defined within an intent, with each entity tailored to respond to distinct scenarios.
Our remedy chatbot takes four entities:
- Financial Problems
- Exam Stress
- Family Problems
- Career Problems

The primary remarks and their replies are organized in a nested manner to maintain the order of "discussions" among the individuals. Alter the synonyms.

This chatbot tool is utilized within a web-based platform, employing supervised learning techniques to craft replies based on user input. The system identifies key terms within the text and formulates appropriate responses accordingly. Upon completing the data training, the Dialog Flow intent is linked with the Flutter application, enabling the web application to leverage this intent to develop a chatbot.

2.1 Software requirements
2.1.1 Text Editor Visual Studio
Visual Studio is a popular integrated development environment (IDE) created by Microsoft. It is widely used by developers for building a variety of applications, including web apps, mobile apps, desktop apps, cloud services, and more. Visual Studio provides a rich set of features that help developers write, debug, and deploy their code efficiently. One of the key features of Visual Studio is its powerful text editor, which offers a wide range of functionalities to enhance the coding experience.
2.1.2 Browser (Google Chrome)
When working on a web project, such as creating a webpage, using Google Chrome as your browser can be very beneficial. By using Google Chrome for your web development projects can provide you with a robust set of tools, excellent performance, and compatibility with web standards.
2.1.3 Dialog Flow
Dialog flow is a natural language processing (NLP) platform that can be used to build conversational applications and experiences for a company's customers in various languages and on multiple platforms.
Dialog flow can be used for a variety of applications, including:
- Customer service artificial intelligence (AI) agents-- Interfaces can be programmed to answer questions, access orders, make appointments and take requests.
- Conversational commerce- Bots can help customers make self-service purchases or schedule deliveries.
- Internet of things (IoT)- Dialog flow can be applied to IoT devices to make them better at understanding context and responding with precision.

3.   ARCHITECTURE / BLOCK DIAGRAM
The user enters the query in the interface as the input. The interface receives the customer inquiry and then transmits it to the conversational AI application.
In the chatbot application, before processing the abstract, there are pre-handling steps that involve tokenization where the words are split into tokens. After tokenization, stop words are removed and synonyms are replaced to enhance the understanding and quality of the texts.

The query responses are stored in the database to retrieve the response.

3.1 Tokenization

The words or sentences isolated word by word for expanded handling. It isolates text into words at whatever point it encounters one of the summaries of shown character. Every one of the words is isolated from sentences and the accentuation is discarded. This suggests the subsequent steps. modify the equivalents.

3.2 Stop words expulsion.

The unnecessary words removed from the sentences to extract important keyword. modify the equivalents.

It is mainly used to remove unnecessary words that occur frequently in sentences.

It is also utilized to eliminate words that are not important or the words with no specific meanings like one, a, or the.

This step is implemented to reduce processing time or computational complexity.

3.3 Recover the coordinated with the sentence.

The answers for the question that are obtained from the above interaction are retrieved and displayed in the user interface.
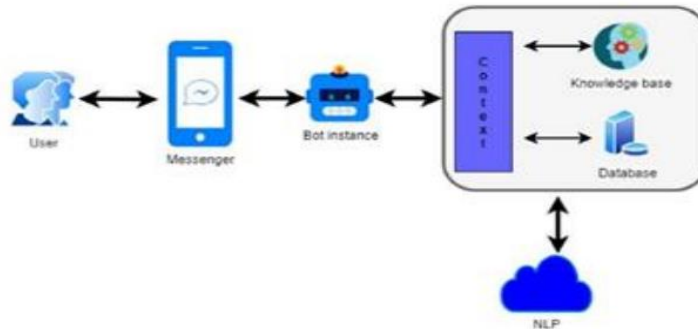

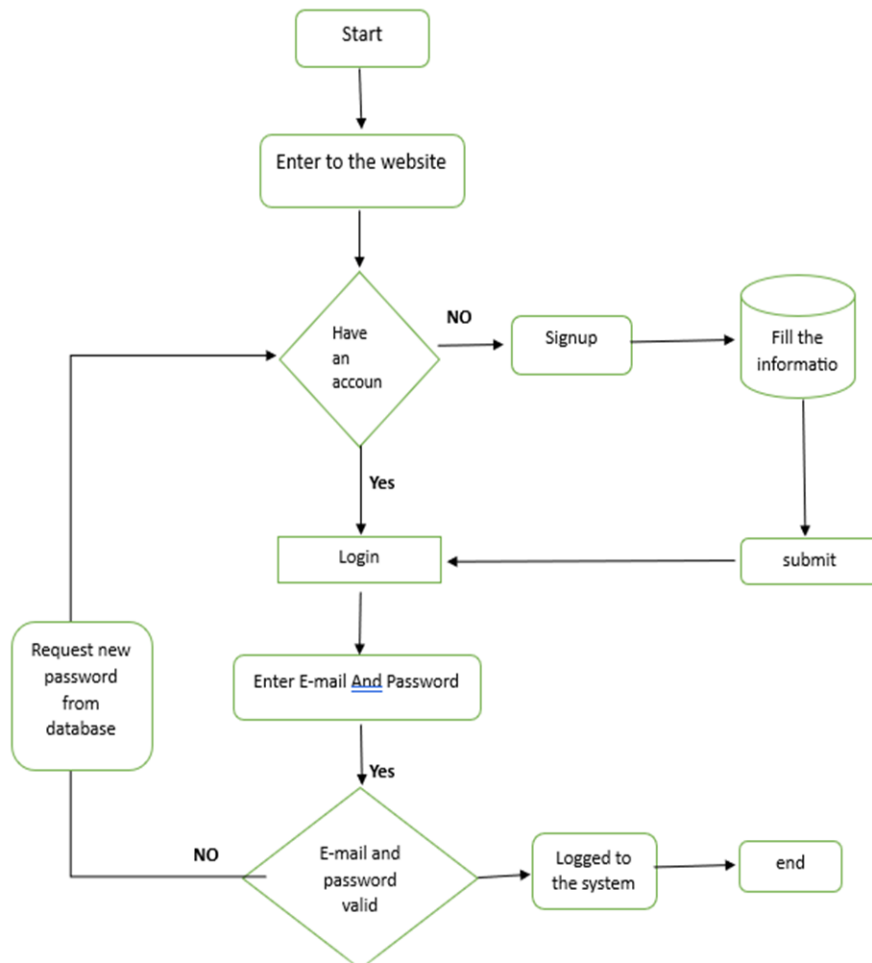Figure 2. The designed framework of AI chatbot functionality

Figure 3. The Flowchart diagram of web application.

1. The user first logs in or creates an account on the web application.

2. Upon accessing the homepage, the user can choose between two options: a. Engage in a chat with the AI bot, or b. Seek professional assistance.

3. Opting for the chat with the bot, the user can discuss their concerns, and the bot utilizes tokenization to identify keywords and respond accordingly.

4. The bot will ask the user a series of questions and offer suggestions to help cope better.

5. If the user requires further assistance, the bot recommends exploring the professional help section of the app.

6. Within the professional help section, the user is presented with top therapists along with their background information and links to schedule appointments.
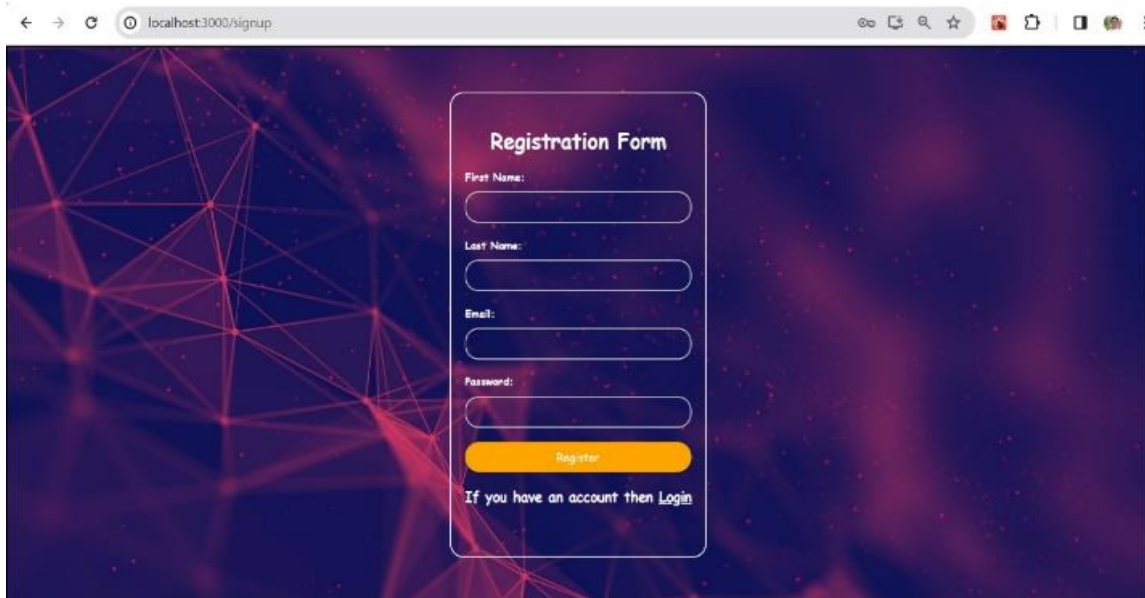
4.   RESULTS AND OUTPUT

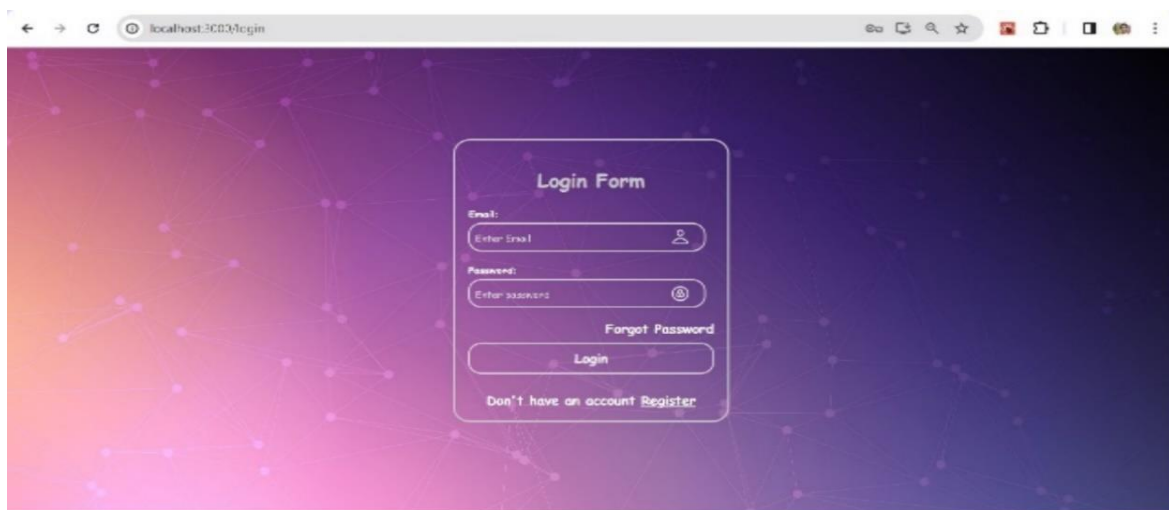Figure 4. Image showing Registration for login page
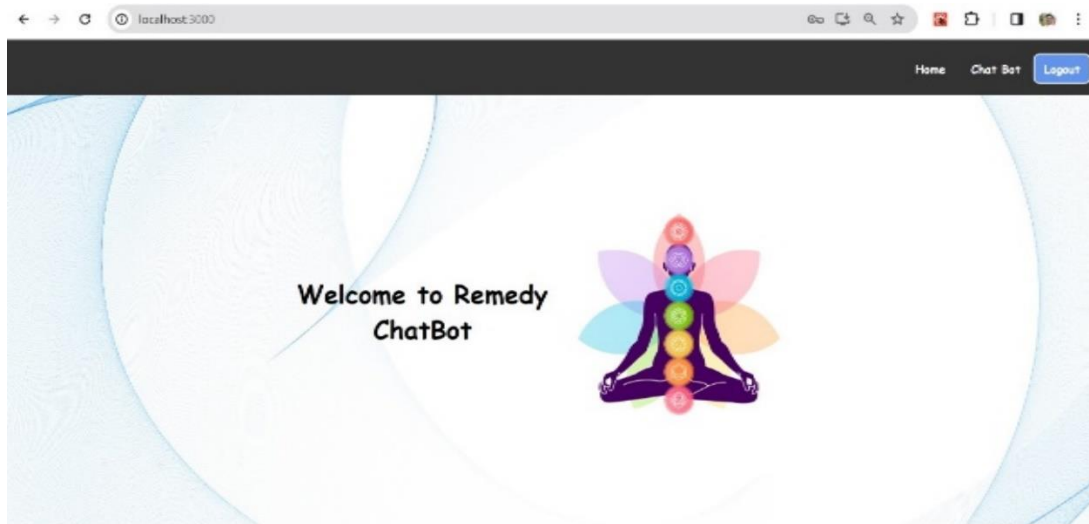

Figure 5. Login page
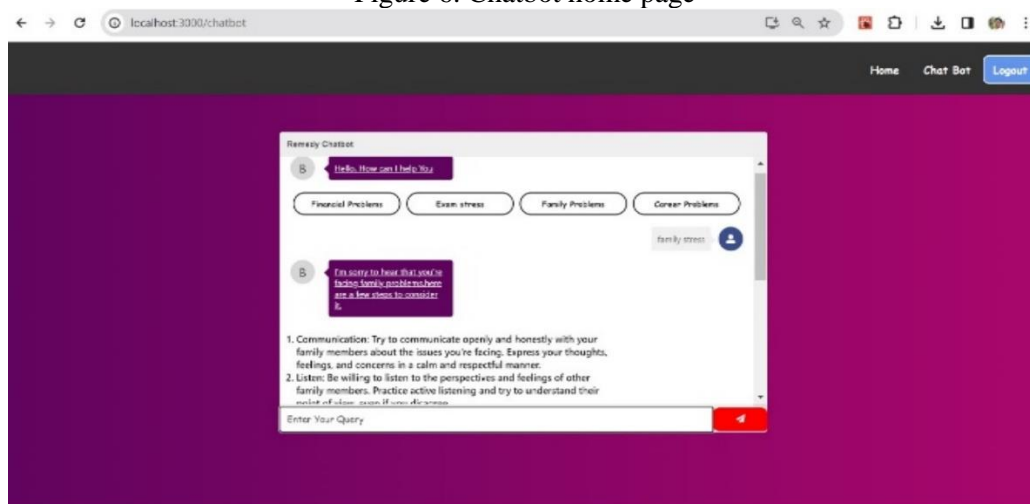
Figure 6. Chatbot home page

Figure 7. Image showing UI/UX of the chatbot page and help section

The bot has been trained on 2 user scenarios and needs to be regularly updated to stay current with the evolving issues. After extensive training on a diverse range of data, the bot will become more effective and adaptable to a wider range of situations. This will help improve its ability to understand and respond to various queries with different synonyms and contexts. Regular updates and maintenance will also be crucial to ensure the bot remains relevant and up-to-date with evolving issues.

That's great to hear that the bot is successful in detecting a user's problem and providing helpful responses for dealing with depression. By being able to detect and adapt to different context, the bot can effectively communicate with users and offer relevant support. This flexibility in understanding language variations can enhance the user experience and increase the bot's overall effectiveness in providing assistance.

- Financial Problems
- Exam Stress
- Family Problems
- Career Problems

Upon identifying each specific scenario, the bot tailors its responses accordingly and evaluates the user by asking a series of straightforward questions to gather details about the user's emotional state. This approach helps the bot understand the user better and provide more personalized support. By adjusting its language processing to recognize various synonyms and expressions, the bot can effectively engage with users and offer relevant assistance based on their unique needs and circumstances.

5.   CONCLUSION

Our Remedy chatbot operates smoothly and is able to function efficiently.

In summary, our chatbot is a dependable and efficient tool for offering assistance and direction to users in search of help. It functions seamlessly, effectively, and is created to provide a secure and private environment for individuals to delve into their thoughts and emotions. With its intuitive interface and tailored replies, the chatbot acts as a beneficial

resource for those requiring emotional support and guidance. And our chatbot can be performed as one to one interaction to support in best way as a friend in the current user situation. This allows it to offer individualized support, respond to inquiries, carry out tasks, and expedite transactions.

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