# COMPANION BOT USING FLUTTER FRAMEWORK

**SHARUN R , SUJITHA K , TAMILARASI P, VIGNESWARAN S**

**III CSE B**

## Introduction

Mental health is an important issue in the world today. With a large population now working from home and staying away from loved ones, the mental health situation has deteriorated. As such, it becomes important to track and remedy any problems before they get too serious. A robot that supports a person's everyday life. Social robots range from slightly animated stuffed animals to intelligent android-like devices that function as real companions. Advanced social robots may be able to recognize family members and remind them of events.

## Motivation

**Cross-platform Development**: Flutter is a powerful cross-platform framework developed by Google. It allows to build applications for multiple platforms, including iOS, Android, web, and desktop, using a single codebase.

**Native Performance**: Flutter provides a high-performance rendering engine that enables smooth animations and fluid user interfaces. It uses the Dart programming language, which is compiled to native code, allowing the companion bot to run efficiently on various devices.

## SCOPE of the Project

**Chat Interface**: The primary functionality of a companion bot is to engage in conversations with users. The scope would involve designing and implementing a chat interface using Flutter's UI components and customizing it to match the desired look and feel.

**Natural Language Processing (NLP)**: Implementing NLP capabilities allows the bot to understand user queries, intents, and provide relevant responses. The scope may include integrating an NLP library or API, training the bot with appropriate data, and handling natural language understanding and generation.

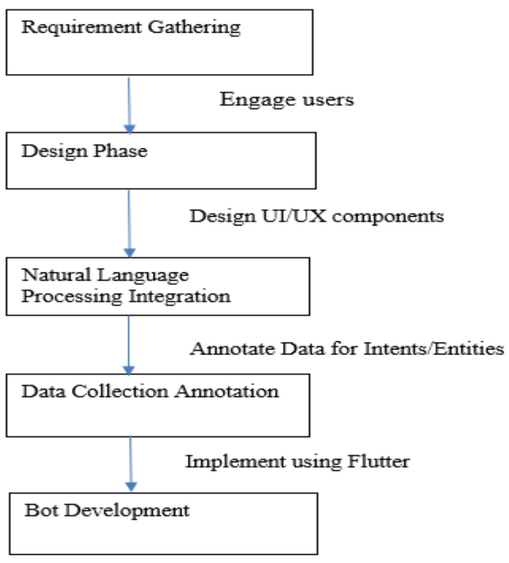
## Technologies Used

The companion bot uses the following technologies:

- Flutter (3.7.8)
- Visual studio code ( 1.78.2)
- Android studio ( 4.2.2)

## Methodology

- Designing Conversational Flows: Defining the conversational flows and user interactions that the bot will support. Determine the possible user inputs, intents, and corresponding bot responses. Creating a conversational flowchart or diagram to visualize the structure of the bot's conversations.
- Natural Language Processing (NLP): Identifing the NLP techniques and tools required for the bot to understand and generate natural language. This may involve selecting an NLP library or using a pre-trained language model. Training or fine-tune of the model if necessary to align with the bot's specific domain or context.
- Data Collection and Annotation: Collection of relevant data to train the NLP model. Annotating the data to define intents, entities, and dialogue states. This step is crucial for supervised learning approaches or building training datasets for machine learning models.
- Bot Development: Implementation the companion bot using the chosen technology stack, such as Flutter framework. Create the chat interface, integrate NLP components, and design the bot's conversational logic. Develop backend integrations, APIs, and connect with external services as required.




*System architecture*

## Results

It enhances the user experience by providing support and assigning tasks

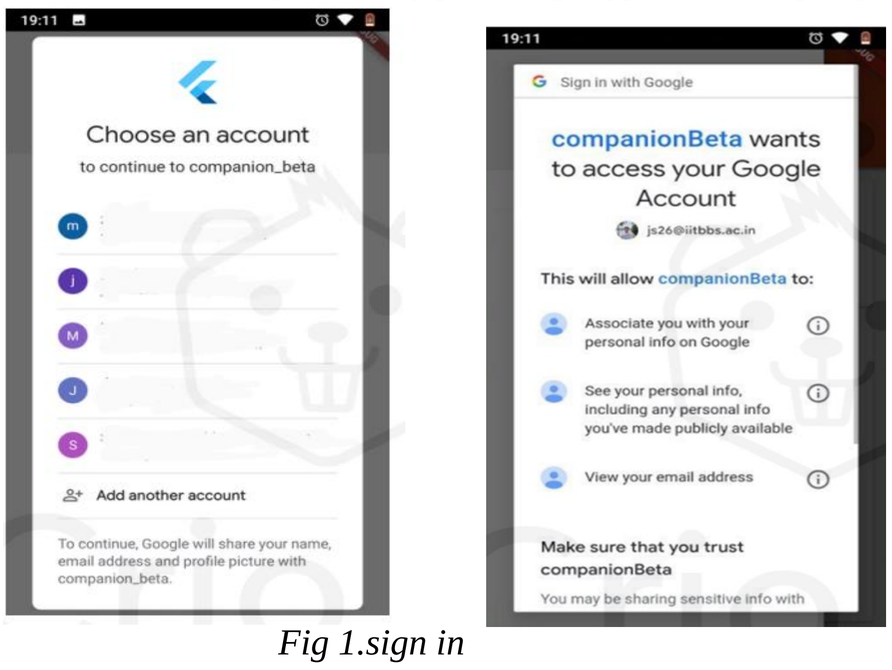



*Fig 1.sign in*

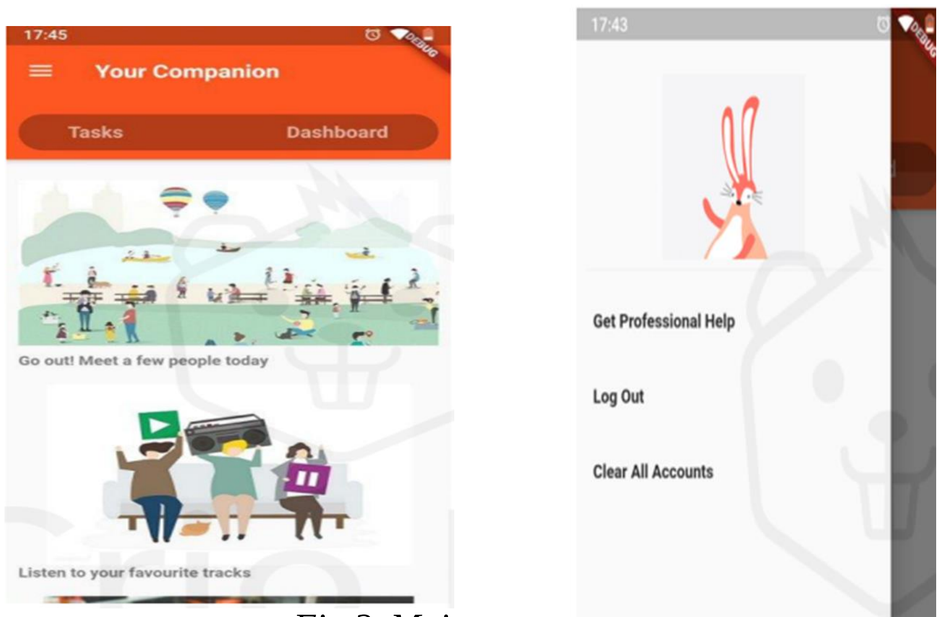



*Fig 2. Main screen*

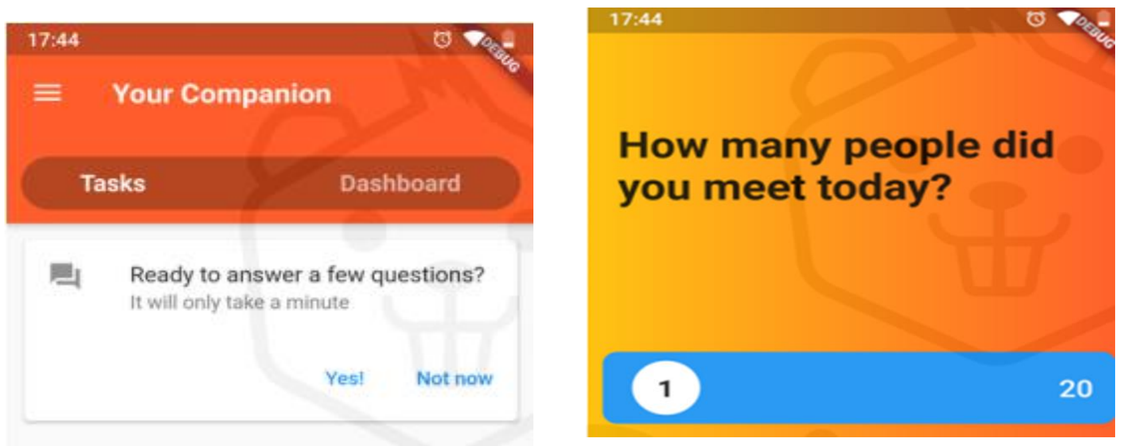



Fig 3.User interface

## Conclusion

We have provided empirical support for the necessity and designed in the development of companion bots targeted for mentally affected people. Our results demonstrate stark differences in preferences and requirement between mentally affected people and bots, suggesting that engaging the end user in the design and development of companion robots is essential. Further desirable functions were also identified that are not currently included as standard on companion robots, such as eye-contact, life-simulation features, personalisation, obeying commands and the potential for interactive language

.

## Reference

1. Xiong, Caihua; Huang, Yongan; Xiong, Youlun (2008). Intelligent Robotics and Applications: First International Conference, ICIRA 2008 Wuhan, China, October 15-17, 2008
2. Sojka, Petr; Horak, Ales; Kopecek, Ivan (2008). Text, Speech and Dialogue: 11th International Conference
3. Wang, Kelly. iPal robot companion for China's lonely children. phys.org. Retrieved 10 December 2021.
4. Lamers, Maarten H. Verbeek, Fons J. (2011). Human-Robot Personal Relationships: Third International Conference, HRPR 2010, Leiden.
5. "NICOBO, a robot born out of empathy with consumers and sense of mission". *Panasonic*. Panasonic. Retrieved 2 May 2023