**Phase 1: Problem Definition and Design Thinking**

**Problem Definition:**

The challenge is to create a chatbot in Python that provides exceptional customer service, answering user queries on a website or application. The objective is to deliver high-quality support to users, ensuring a positive user experience and customer satisfaction.

**For this project, we have planned to create a chatbot which can provide customer service for a web application of a hotel. Furthermore, we are thinking of expanding its functionality to placing orders, order tracking and room reservations.**

**Design Thinking:**

1. Functionality: Define the scope of the chatbot's abilities, including answering common questions, providing guidance, and directing users to appropriate resources.

**The chatbot would be able to understand customer queries and provide suitable answers. It would be able to give proper solutions and guidance to customer problems like poor service, late delivery, bad food quality, etc. Furthermore, we are thinking of including placing orders, order tracking and room reservations in this chatbot.**

1. User Interface: Determine where the chatbot will be integrated (website, app) and design a user-friendly interface for interactions.

**We have planned to integrate this chatbot in the hotel’s web application so that the customers will have easy access to it.**

1. Natural Language Processing (NLP): Implement NLP techniques to understand and process user input in a conversational manner.

**We are planning to use customised data designed to reply to customer queries and use a natural language understanding platform to meet our needs. We would also refer the provided dataset :** [**https://www.kaggle.com/datasets/grafstor/simple-dialogs-for-chatbot**](https://www.kaggle.com/datasets/grafstor/simple-dialogs-for-chatbot)

**But in our case of creating a customer service chatbot, custom data would be more suitable.**

1. Responses: Plan responses that the chatbot will offer, such as accurate answers, suggestions, and assistance.

**The chatbot would be able to understand user queries and provide pre-defined queries for frequently asked questions and in case if we add additional functionalities it would be able to integrate with our database and provide necessary information to users.**

1. Integration: Decide how the chatbot will be integrated with the website or app.

**We are planning to use a framework like streamlit for developing our web app and a natural language understanding platform like dialogflow for building and integrating our chatbot. We might change our frameworks used as per our future requirements.**

1. Testing and Improvement: Continuously test and refine the chatbot's performance based on user interactions.

**We would test our chatbot repeatedly by providing various prompts and improve its functionality accordingly.**