CHATBOT IN PYTHON:

PROBLEM DEFINITION:

In this part we will begin building our project by loading and preprocessing the dataset.We will write our python code for the same using Natural Language Processing Library to process the dataset for a simple chatbot.

DESIGN AND DEVELOPMENT OF CHATBOT:

Choose the Type of Chatbot:

Decide whether you want a rule-based chatbot, a machine learning-based chatbot, or a hybrid approach.

Select a Platform:

Choose where the chatbot will be deployed. Options include websites, messaging platforms (e.g., Facebook Messenger, Slack), or custom mobile apps.

Design of Conversation Flow:

Decide on the programming languages, frameworks, and tools you'll use to build the chatbot.

Build the Chatbot Backend:

Develop the backend logic that handles user interactions and processes user inputs.

Test the Chatbot:

Testing the chatbot thoroughly considering various inputs and scenarios.

PYTHON CODE:

```
import spacy

import csv

nlp = spacy.load('en_core_web_sm')

//function to preprocess and tokenize text.

def preprocess_text(text):

    doc = nlp(text)

    tokens = [token.text.lower() for token in doc if not token.is_stop and not token.is_punct]

    return tokens

//function to read and process the dataset.

def process_dataset(dataset_path):
```

```
    questions = []
    responses = []
    with open(dataset_path, 'r') as file:
        reader = csv.reader(file)
        for row in reader:
            if len(row) == 2:
                user_question = row[0]
                chatbot_response = row[1]
                user_tokens = preprocess_text(user_question)
                chatbot_tokens = preprocess_text(chatbot_response)
                questions.append(user_tokens)
                responses.append(chatbot_tokens)
    return questions, responses
dataset_path = 'your_dataset.csv'
questions, responses = process_dataset(dataset_path)
```

//Access preprocessed data for user questions and responses.

```
print("User Questions:", questions[0])
```

```
print("Chatbot Responses:", responses[0])
```

CONCLUSION:

The goal of the chatbot is used in customer service to provide instant responses to common customer queries and resolving issues in finding information.