### **Project 7: Chatbot**

#### **Objective:**

Build a simple rule-based chatbot that responds to basic user questions and stores the chat history in a text file.

### **Instructions**

#### **Step 1: Set Up the Environment**

1. Create a new Python file called chatbot.py.

#### **Step 2: Create a List of Questions and Responses**

Define a dictionary to hold predefined questions and their corresponding responses:  
python  
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responses = {

"hello": "Hi there! How can I help you today?",

"how are you": "I'm just a program, but I'm functioning as expected!",

"what is your name": "I'm ChatBot, your virtual assistant.",

"bye": "Goodbye! Have a great day!"

}

#### **Step 3: Create the Chat Loop**

1. Create a function called chat() that continuously prompts the user for input, matches the input with a response from the dictionary, and displays the response.

Store the conversation in a list to save it later:  
python  
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def chat():

chat\_history = []

print("Welcome! Type 'bye' to exit the chat.")

while True:

user\_input = input("You: ").lower()

if user\_input == "bye":

print("ChatBot: Goodbye! Have a great day!")

chat\_history.append(f"You: {user\_input}")

chat\_history.append("ChatBot: Goodbye! Have a great day!")

break

response = responses.get(user\_input, "Sorry, I didn't understand that.")

print(f"ChatBot: {response}")

chat\_history.append(f"You: {user\_input}")

chat\_history.append(f"ChatBot: {response}")

return chat\_history

#### **Step 4: Save Chat History to a File**

Create a function called save\_chat\_history(chat\_history) that saves the chat to a text file:  
python  
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def save\_chat\_history(chat\_history):

with open("chat\_history.txt", "w") as file:

for line in chat\_history:

file.write(line + "\n")

#### **Step 5: Run the Chatbot**

Add the following code at the bottom of your script to run the chatbot and save the chat history:  
python  
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if \_\_name\_\_ == "\_\_main\_\_":

history = chat()

save\_chat\_history(history)

#### **Step 6: Test the Chatbot**

1. Run the chatbot and test various inputs to ensure it responds correctly based on the predefined responses.
2. Check that the chat history is saved correctly in the chat\_history.txt file.