

Task one -Chat bot With rule based responses

TASK 1

CHATBOT WITH RULE-BASED RESPONSES

Build a simple chatbot that responds to user inputs based on predefined rules. Use if-else statements or pattern matching techniques to identify user queries and provide appropriate responses. This will give you a basic understanding of natural language processing and conversation flow.

Source code

```
def rule_based_chatbot():  
    print("Hello! I'm your chatbot. Type 'bye' to exit.")  
  
    while True:  
        user_input = input("You: ").lower()  
  
        if "hello" in user_input or "hi" in user_input:  
            print("Bot: Hello there! How can I help you today?")  
        elif "how are you" in user_input:  
            print("Bot: I'm just a program, but I'm doing fine! How about you?")  
        elif "your name" in user_input:  
            print("Bot: I'm a rule-based chatbot created by Jyoshna!")  
        elif "help" in user_input:
```

```
    print("Bot: Sure! You can ask me questions like 'What's your name?', 'How are you?',  
or 'Tell me a joke'.")
```

```
elif "joke" in user_input:
```

```
    print("Bot: Why did the computer go to therapy? Because it had too many 'bytes' of  
emotional baggage!")
```

```
elif "bye" in user_input:
```

```
    print("Bot: Goodbye! Have a great day!")
```

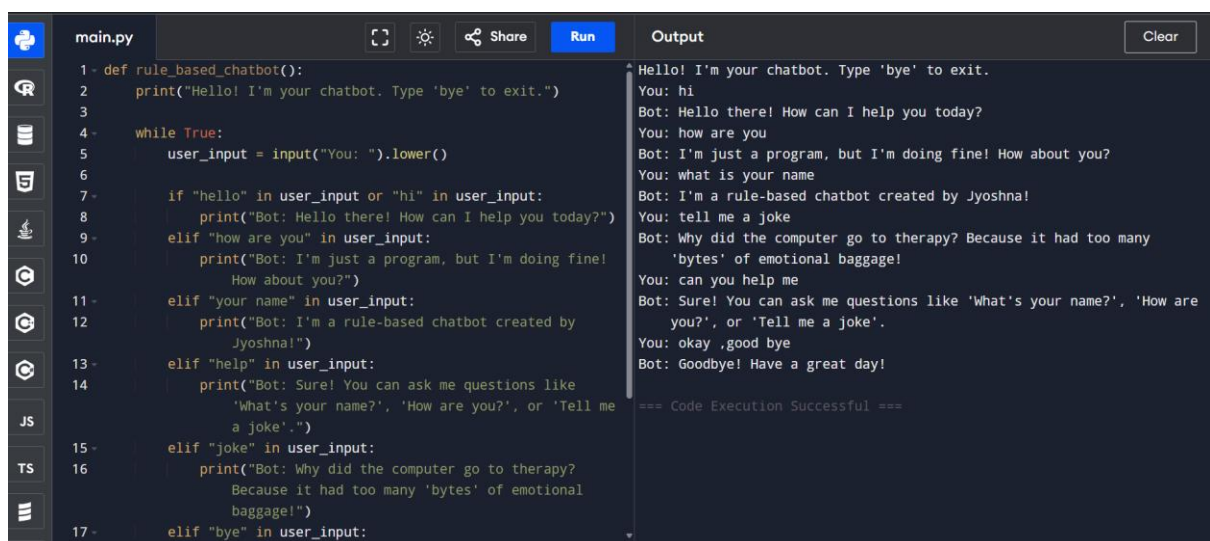
```
    break
```

```
else:
```

```
    print("Bot: I'm not sure how to respond to that. Try asking something else.")
```

Run the chatbot

rule_based_chatbot()

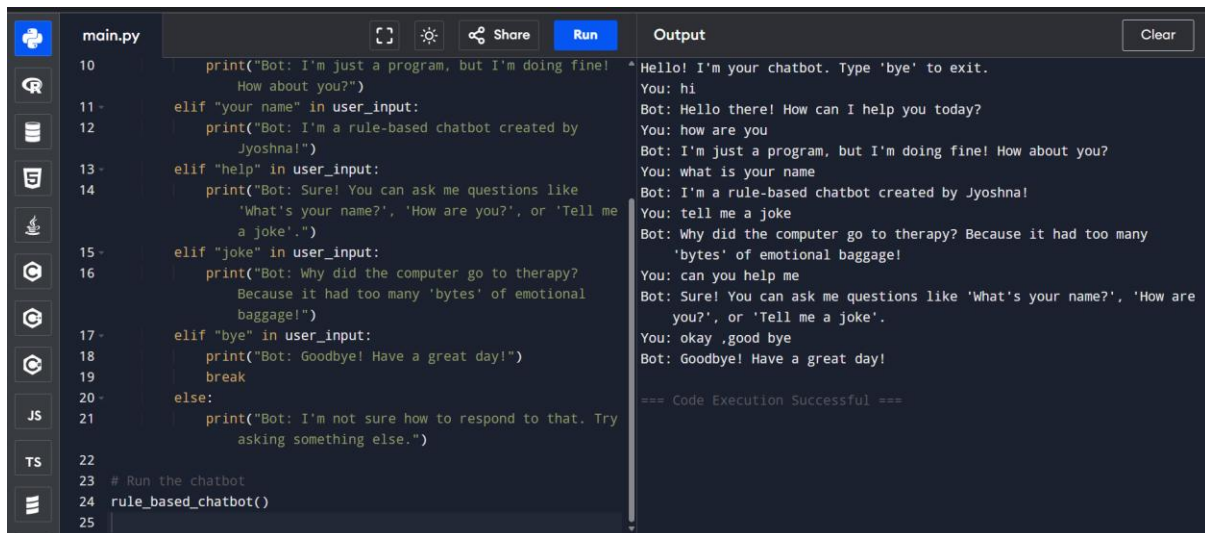


The screenshot shows a code editor with a file named 'main.py'. The code defines a function 'rule_based_chatbot()' which enters a 'while True' loop. Inside the loop, it takes 'user_input' and uses a series of 'if' and 'elif' statements to respond to specific inputs: 'hello' or 'hi', 'how are you', 'your name', 'help', 'joke', and 'bye'. For any other input, it provides a default response. The 'Run' button is highlighted in blue. To the right, the 'Output' panel shows the chatbot's responses to a series of user inputs: 'hi', 'Hello there! How can I help you today?', 'how are you', 'I'm just a program, but I'm doing fine! How about you?', 'what is your name', 'I'm a rule-based chatbot created by Jyoshna!', 'tell me a joke', 'Why did the computer go to therapy? Because it had too many 'bytes' of emotional baggage!', 'can you help me', 'Sure! You can ask me questions like 'What's your name?', 'How are you?', or 'Tell me a joke'.', 'okay ,good bye', and 'Goodbye! Have a great day!'. At the bottom of the output, it says '=== Code Execution Successful ==='.

```
1- def rule_based_chatbot():  
2-     print("Hello! I'm your chatbot. Type 'bye' to exit.")  
3-  
4-     while True:  
5-         user_input = input("You: ").lower()  
6-  
7-         if "hello" in user_input or "hi" in user_input:  
8-             print("Bot: Hello there! How can I help you today?")  
9-         elif "how are you" in user_input:  
10-            print("Bot: I'm just a program, but I'm doing fine!  
                How about you?")  
11-        elif "your name" in user_input:  
12-            print("Bot: I'm a rule-based chatbot created by  
                Jyoshna!")  
13-        elif "help" in user_input:  
14-            print("Bot: Sure! You can ask me questions like  
                'What's your name?', 'How are you?', or 'Tell me  
                a joke'.")  
15-        elif "joke" in user_input:  
16-            print("Bot: Why did the computer go to therapy?  
                Because it had too many 'bytes' of emotional  
                baggage!")  
17-        elif "bye" in user_input:
```

Output

```
Hello! I'm your chatbot. Type 'bye' to exit.  
You: hi  
Bot: Hello there! How can I help you today?  
You: how are you  
Bot: I'm just a program, but I'm doing fine! How about you?  
You: what is your name  
Bot: I'm a rule-based chatbot created by Jyoshna!  
You: tell me a joke  
Bot: Why did the computer go to therapy? Because it had too many  
    'bytes' of emotional baggage!  
You: can you help me  
Bot: Sure! You can ask me questions like 'What's your name?', 'How are  
    you?', or 'Tell me a joke'.  
You: okay ,good bye  
Bot: Goodbye! Have a great day!  
  
=== Code Execution Successful ===
```

The image shows a code editor interface with a dark theme. On the left, a sidebar contains icons for file explorer, search, and other IDE features. The main editor area displays a Python file named 'main.py'. The code defines a function 'rule_based_chatbot()' which uses a series of 'if' and 'elif' statements to respond to user input. The responses are based on keywords like 'your name', 'help', 'joke', 'bye', and a default response. To the right of the code editor is an 'Output' panel. It shows the execution of the chatbot, with user input on the left and the bot's response on the right. The output shows a successful execution of the code, with the bot responding to various user inputs. The code in the editor is as follows:

```
10 print("Bot: I'm just a program, but I'm doing fine! How about you?")
11 elif "your name" in user_input:
12     print("Bot: I'm a rule-based chatbot created by Jyoshna!")
13 elif "help" in user_input:
14     print("Bot: Sure! You can ask me questions like 'What's your name?', 'How are you?', or 'Tell me a joke'.")
15 elif "joke" in user_input:
16     print("Bot: Why did the computer go to therapy? Because it had too many 'bytes' of emotional baggage!")
17 elif "bye" in user_input:
18     print("Bot: Goodbye! Have a great day!")
19     break
20 else:
21     print("Bot: I'm not sure how to respond to that. Try asking something else.")
22
23 # Run the chatbot
24 rule_based_chatbot()
25
```

The output panel shows the following conversation:

```
Hello! I'm your chatbot. Type 'bye' to exit.
You: hi
Bot: Hello there! How can I help you today?
You: how are you
Bot: I'm just a program, but I'm doing fine! How about you?
You: what is your name
Bot: I'm a rule-based chatbot created by Jyoshna!
You: tell me a joke
Bot: Why did the computer go to therapy? Because it had too many 'bytes' of emotional baggage!
You: can you help me
Bot: Sure! You can ask me questions like 'What's your name?', 'How are you?', or 'Tell me a joke'.
You: okay ,good bye
Bot: Goodbye! Have a great day!

=== Code Execution Successful ===
```

Explanation

Chatbot Code Explanation

def rule_based_chatbot():

- This defines a function called rule_based_chatbot() that runs a simple chatbot using fixed rule-based responses.

print("Hello! I'm your chatbot. Type 'bye' to exit.")

- This prints a welcome message when the chatbot starts.
- **Output:**
- Hello! I'm your chatbot. Type 'bye' to exit.

while True:

- This starts an **infinite loop** so the chatbot keeps running until the user types "bye".

user_input = input("You: ").lower()

- Takes user input and converts it to lowercase for **case-insensitive matching**.
- Example: If you type Hello, it becomes hello.

```
if "hello" in user_input or "hi" in user_input:
```

```
    print("Bot: Hello there! How can I help you today?")
```

- If the user says "hello" or "hi", the bot responds with a friendly greeting.

Example Interaction:

You: Hello

Bot: Hello there! How can I help you today?

```
elif "how are you" in user_input:
```

```
    print("Bot: I'm just a program, but I'm doing fine! How about you?")
```

- If the user asks "**How are you?**", the bot gives a playful answer.

Example:

You: How are you?

Bot: I'm just a program, but I'm doing fine! How about you?

```
elif "your name" in user_input:
```

```
    print("Bot: I'm a rule-based chatbot created by Jyoshna!")
```

- If the user asks "**What's your name?**", the bot answers with your name.

Example:

You: What is your name?

Bot: I'm a rule-based chatbot created by Jyoshna!

```
elif "help" in user_input:
```

```
    print("Bot: Sure! You can ask me questions like 'What's your name?', 'How are you?',  
or 'Tell me a joke'.")
```

- If the user types "**help**", the bot gives suggestions on what to ask.

Example:

You: Help

Bot: Sure! You can ask me questions like 'What's your name?', 'How are you?', or 'Tell me a joke'.

```
elif "joke" in user_input:
```

```
    print("Bot: Why did the computer go to therapy? Because it had too many 'bytes' of  
emotional baggage!")
```

- If the user asks for a **joke**, the bot tells a computer-related joke.

Example:

You: Tell me a joke

Bot: Why did the computer go to therapy? Because it had too many 'bytes' of emotional baggage!

```
elif "bye" in user_input:
```

```
    print("Bot: Goodbye! Have a great day!")
```

```
    break
```

- If the user types **"bye"**, the bot says goodbye and the loop breaks, ending the chat.

Example:

You: Bye

Bot: Goodbye! Have a great day!

```
else:
```

```
    print("Bot: I'm not sure how to respond to that. Try asking something else.")
```

- For any other input not covered above, the bot responds with a fallback message.

Example:

You: What is the weather today?

Bot: I'm not sure how to respond to that. Try asking something else.

How to Run and Use

When you run the function:

```
rule_based_chatbot()
```

The chatbot starts interacting with you in the terminal. You keep typing until you say "bye".

