

Chatbot Code Documentation

Smriti Shrestha
Bsc Computing
L-4 2024/2025

Introduction

The chatbot program is a simple interactive application that uses keyword detection to respond to user inputs. It includes random responses for unrecognized queries and logs the conversation to a file.

Code Breakdown

1. Importing Required Modules

```
import random
import json
from datetime import datetime
```

Random: used to select random agent names and responses.

json: reserved for potential future expansions (currently unused)

datetime: used to generate timestamps for logging.

2. Keyword Responses Dictionary

```
#key word responses4
responses = {
    "tea": "The college tea shop is open from 7AM to 9 PM.",
    "ssd" : "SSD is open all time for students, call for any query.",
    "library": "The library is open from 7 AM to 5PM.",
    "admissions": "Admission office is now near SSD, open from 9AM to 5 PM.",
    "thanku": "You are welcome.",
    "okay": "Anything more?",
    "no": "Let me know if there is anything i can help you with."
}
```

- Maps the specific keywords to predefined responses
- If a user input matches a keyword, the corresponding response is displayed.

3. Random Responses List

```
random_responses =[
    "Sorry, I don't have an answer for that!",
    "I'm still learning-bear with me!",
    "I was programmed to say:'Good question!'",
    "If only i had brain!"
]
```

- Used when no keyword matches the user input.
- Provides generic, playful responses.

4. Agent Name Selection

```
#agent names
agent_names=["Sara","Lata","Josh","Shina","Shubu"]
agent_name= random.choice(agent_names)
```

- A random agent name is chosen from the list to personalize the conversation.

5. Timestamp Function

```
#Timestamp function
def get_timestamp():
    return datetime.now().strftime("[%Y-%m-%d %H:%M]")
```

- Returns the current date and time in the format [YYYY-MM-DD HH:MM].
- Used for logging user-bot interactions.

6. Greeting the User

```
#greetings
user_name=input("Hi there, What's your name? ")
greeting=f"Hello, {user_name}! My name is {agent_name}. How can i help you today?"
print(greeting)

#opening log file
```

- Prompts the user for their name and displays a greeting using a randomly chosen agent name

7. Opening the Log File

```
#opening log file
with open("chat_log.txt", "a") as log_files:
    log_files.write(f"{get_timestamp()} Bot: {greeting}\n")
```

- Opens or creates a chat_log.txt file in append mode.
- Logs the initial greeting with a timestamp

8. Chat Loop

```
#conditions and loop
while True:
    user_input= input(">").strip().lower()
    log_files.write(f"{get_timestamp()} User: {user_input}\n")

    if user_input in ["quit", "bye", "the end", "exit"]:
        farewell=f"Goodbye, {user_name}! It was wonderful talking to you!"
        log_files.write(f"{get_timestamp()} Bot: {farewell}\n")
        print(farewell)
        break
```

- Continuously prompts the user for input
- Converts the input to lowercase and removes extra spaces for easier processing.

9.Exit Conditions

```
#conditions and loop
while True:
    user_input= input(">").strip().lower()
    log_files.write(f"{get_timestamp()} User: {user_input}\n")

    if user_input in ["quit", "bye", "the end", "exit"]:
        farewell=f"Goodbye, {user_name}! It was wonderful talking to you!"
        log_files.write(f"{get_timestamp()} Bot: {farewell}\n")
        print(farewell)
        break
```

- Ends the chat if the user enters specific exit keywords.
- Logs and displays a farewell message.

10.Keyword Detection

```
#keyword detection and response
response_found= False
for keyword, response in responses.items():
    if keyword in user_input:
        log_files.write(f"{get_timestamp()} Bot: {response}\n")
        print(response)
        response_found= True
        break
```

Searches for keywords in the user input.

- If a keyword is found, the corresponding response is logged and displayed.
- Sets response_found to True to skip random responses.

11.Random Responses for Unrecognized Queries

```
#random responses if no keyword is found
if not response_found:
    random_responses = random.choice(random_responses)
    log_files.write(f"{get_timestamp()} Bot: {random_responses}\n")
    print(random_responses)
```

- Provides a random response when no keywords match the user input
- Logs the response with a timestamp.

Output:

As the user asks thst chatbot replies :

```
/a.py
Hi there, What's your name? smriti
Hello, smriti! My name is Sara. How can i help you today?
>when will ssd open?
SSD is open all time for students, call for any query.
>okay
Anything more?
>no
Let me know if there is anything i can help you with.
>bye
Goodbye, smriti! It was wonderful talking to you!
○ (base) smritishrestha@Smriti-Shrestha Chatbot %
```

All the chat history is stored in chatlog as below:

```
chat_log.txt
1 [2025-01-15 13:27] Bot: Hello, smriti! My name is Sara. How can i help you today?
2 [2025-01-15 13:27] User: when will ssd open?
3 [2025-01-15 13:27] Bot: SSD is open all time for students, call for any query.
4 [2025-01-15 13:27] User: okay
5 [2025-01-15 13:27] Bot: Anything more?
6 [2025-01-15 13:28] User: no
7 [2025-01-15 13:28] Bot: Let me know if there is anything i can help you with.
8 [2025-01-15 13:28] User: bye
9 [2025-01-15 13:28] Bot: Goodbye, smriti! It was wonderful talking to you!
```