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**Task:** AI chatbot with NLP

**Internship:** CODTECH PYTHON INTERNSHIP

## Objective:

To implement a chatbot application using Python, which responds to specific inputs based on a predefined knowledge base.

## Tools & Libraries Used:

- **Python:** Core language for scripting.
- **NLTK:** Natural Language Toolkit used for tokenization and chatbot implementation.

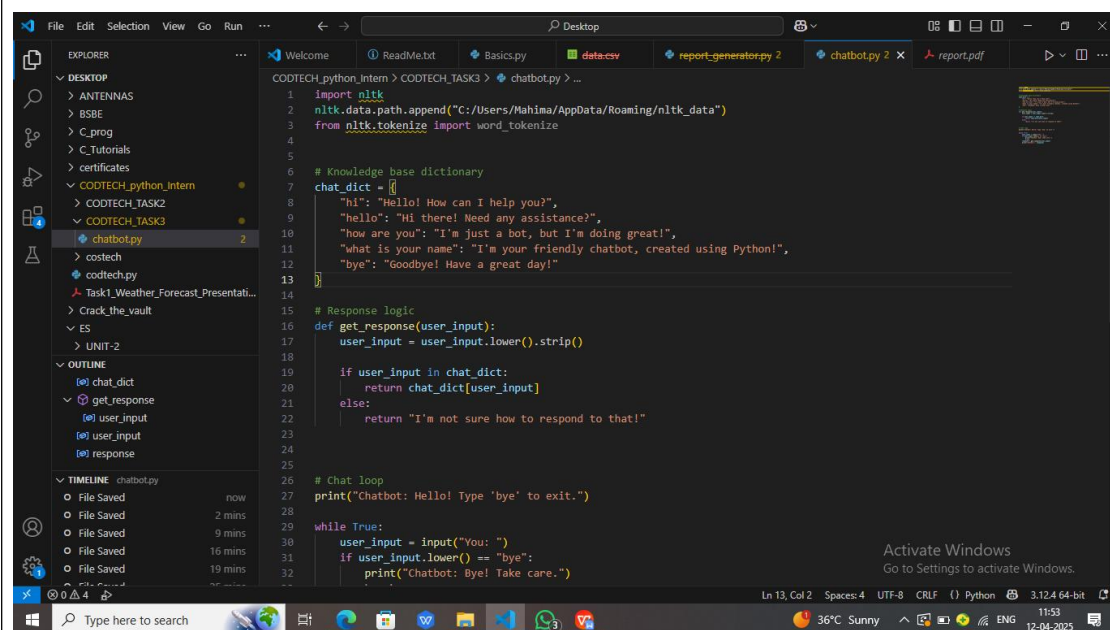
## Implementation:

The chatbot was implemented using a dictionary (`chat_dict`) that contains responses to common queries. The logic involves:

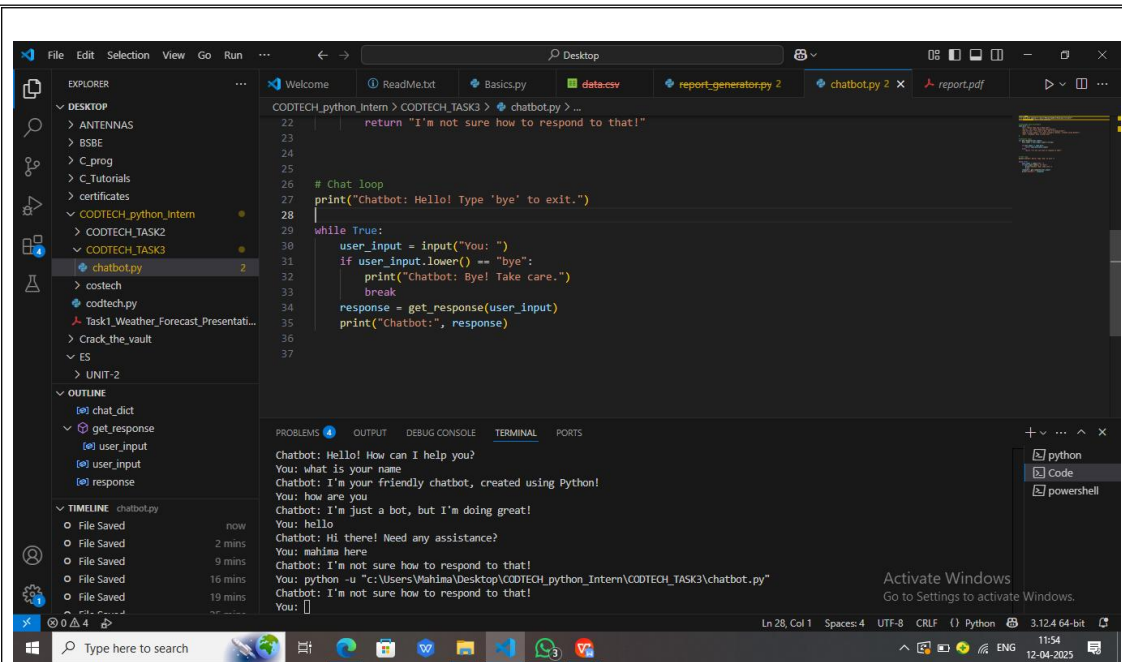
- Tokenizing user input.
- Matching user input with the knowledge base (dictionary).
- Returning predefined responses or a default reply if the query isn't recognized.

## Code:

Below is the Python script:



```
1 import nltk
2 nltk.data.path.append("C:/Users/Mahima/AppData/Roaming/nltk_data")
3 from nltk.tokenize import word_tokenize
4
5
6 # Knowledge base dictionary
7 chat_dict = {}
8 "hi": "Hello! How can I help you?",
9 "hello": "Hi there! Need any assistance?",
10 "how are you": "I'm just a bot, but I'm doing great!",
11 "what is your name": "I'm your friendly chatbot, created using Python!",
12 "bye": "Goodbye! Have a great day!"
13
14
15 # Response logic
16 def get_response(user_input):
17     user_input = user_input.lower().strip()
18
19     if user_input in chat_dict:
20         return chat_dict[user_input]
21     else:
22         return "I'm not sure how to respond to that!"
23
24
25 # Chat loop
26 print("Chatbot: Hello! Type 'bye' to exit.")
27
28 while True:
29     user_input = input("You: ")
30     if user_input.lower() == "bye":
31         print("Chatbot: Bye! Take care.")
```



## Usage Instructions:

- Install NLTK library using pip install nltk.
- Ensure the NLTK data path is correctly configured to:  
C:/Users/Mahima/AppData/Roaming/nltk\_data.
- Run the script in an IDE like VS Code.
- Interact with the chatbot via terminal input.

## Output:

The chatbot responds to predefined queries as demonstrated below:

**User Input:** "hi"

**Chatbot Response:** "Hello! How can I help you?"

## Conclusion:

Successfully implemented a chatbot using Python. Learned how to utilize dictionaries for knowledge bases and integrated NLTK for tokenization.

**Thanks to CODTECH for the opportunity.**