**TITLE:** CodTech IT Solutions Internship - Task Documentation: “SIMPLE CHAT BOT ” Using JAVA.

**INTERN INFORMATION:**

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**INTRODUCTION**

Chatbot Program is a Java application designed to simulate conversation with users, providing assistance and responding to queries in a conversational manner. Leveraging Java's object-oriented features and input/output capabilities, this program creates a virtual assistant capable of understanding and generating text-based responses.

**Implementation**

This code is implemented using the java where the user can ask any questions to the bot which was designed and specifically the addition, subtraction ,division and the multiplication operations can also be performed according to the users input.

**CODE EXPLAINATION**

**1. Main Method (main()):**

The main() method serves as the entry point of the program.

It contains the main logic for the chatbot's functionality, including user interaction and response generation.

**2. User Interaction Loop:**

The program enters a while loop that continues indefinitely (while (true)).

Within the loop, the chatbot continuously listens for user input and responds accordingly.

**3. Reading User Input:**

It uses a Scanner object (sc) to read user input from the console.

The prompt "ASK ME ANYTHING...." is displayed to the user to initiate the conversation.

The user input is stored in the User variable.

**4. Response Generation:**

Based on the user input, the program determines the appropriate response using a series of if-else statements.

Predefined responses are provided for various types of user queries, including greetings, inquiries, jokes, and mathematical operations.

**5. Mathematical Operations:**

The chatbot supports basic arithmetic operations such as addition, subtraction, multiplication, and division.

For arithmetic operations, the chatbot prompts the user to input numbers and performs the operation, displaying the result.

**6. Table Generation:**

Additionally, the chatbot can generate multiplication tables for a given number entered by the user.

It iterates from 1 to 10 and prints the multiplication table for the specified number.

**7. External Program Execution:**

The chatbot can execute an external program (Notepad) if the user requests to open it.

It uses the Runtime class to execute the command to open Notepad (rs.exec("notepad")).

**8. Program Termination:**

If the user types "EXIT" or "exit", the program terminates using System.exit(0).

**9. Exception Handling:**

In case of an IOException while executing the Notepad command, the exception is caught and displayed to the user.

**10. User Input Handling:**

User input is compared using equals() method for case-insensitive comparison.

Multiple variations of input are considered to account for different ways users may input the same query.

**11. Continuous Conversation:**

The chatbot continuously engages in conversation with the user, responding to each query or command until the user chooses to exit.

**CONCLUSION**

The implementation provides a functional chatbot program in Java that interacts with users through text-based input and output. It demonstrates the basics of user input handling, response generation, and conditional logic to provide an interactive conversation experience.

**OUTPUT**

