Project Proposal: Simple Rule-Based Chatbot

Project Title:

Simple Rule-Based Chatbot

Group Member:  
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**Objective:**

Develop a rule-based chatbot that can engage in basic text-based conversations using predefined patterns and responses. The chatbot will be designed to handle common queries, provide relevant information, and manage basic small talk.

**Project Duration:** 4 Days

**Project Scope:**

* The chatbot will use predefined rules and patterns to respond to user inputs.
* It will handle common conversation scenarios such as greetings, farewells, and simple FAQs.
* The chatbot will support basic small talk (e.g., “How are you?”).
* It will include simple error handling for unrecognized inputs.

**Day 1: Project Setup and Rule Definition**

**Tasks:**

* Set up the Python development environment.
* Define the list of common queries and corresponding responses.
* Create a set of rules/patterns to match user inputs with predefined responses.
* Begin scripting the basic chatbot structure.

**Day 2: Implementing Core Functionality**

**Tasks:**

* Implement pattern matching using regular expressions or simple string matching.
* Develop functions to handle greetings, farewells, and common questions.
* Set up a basic loop to continually interact with the user until they choose to exit.
* Test the chatbot's ability to respond correctly to predefined inputs.

**Day 3: Enhancing Responses and Handling Small Talk**

**Tasks:**

* Implement small talk responses (e.g., “How are you?” “Tell me a joke.”).
* Expand the list of patterns to cover more varied inputs.
* Implement a fallback response for when the chatbot does not understand the input.
* Refine the chatbot's response accuracy based on testing.

**Day 4: Final Testing and Documentation**

**Tasks:**

* Conduct extensive testing with various inputs to ensure reliability.
* Optimize code for readability and efficiency.
* Write documentation that explains how the chatbot works and how to use it.
* Prepare a simple presentation or demo of the chatbot.

**Tools and Technologies:**

* Programming Language: Python
* Libraries: Regular Expressions (re), optional: tkinter for a basic GUI
* IDE: Any Python-compatible IDE (e.g., VS Code, PyCharm)

**Expected Outcome:**

At the end of the project, a fully functional rule-based chatbot will be developed. This chatbot will be capable of engaging users in basic text-based conversations, handling predefined queries, and providing a simple, interactive experience without relying on machine learning.