Chatbot Using NLTK - Project Report

1. Problem Statement

The objective is to create a simple rule-based chatbot that can respond to basic user inputs such as greetings, farewells, gratitude, and requests for help. The chatbot should identify the user's intent using regular expressions and respond with pre-defined replies.

2. Tools and Libraries Used

1. Python: The programming language used for implementing the chatbot.
2. NLTK (Natural Language Toolkit): A Python library used for working with human language data.
   - nltk.tokenize.word_tokenize: Tokenizes the input sentence into words.
   - nltk.tag.pos_tag: Tags each word with its part-of-speech.
   - nltk.regexp_tokenize: Used to match patterns using regular expressions.
3. Random: To choose a random response from the predefined list of responses.

3. Working Explanation

- The chatbot defines a dictionary of intents with corresponding responses.
- Patterns for detecting intents (like greeting, goodbye, thanks, etc.) are defined using regular expressions.
- When a user types a message, the chatbot checks the message against each pattern.
- If a match is found, a random response corresponding to that intent is returned.
- If no pattern matches, a default message is returned indicating that the chatbot didn't understand.
- The chat function starts a loop where user input is taken until the user types 'exit'.