CHATBOT

Presented By:

M. SHRAVYA (HT NO:22D01A66B6)
M. SAI AKHIL (HT NO:22D01A66B5)
M. SRIKANTH (HT NO:22D01A66B8)
M. HARSHAVARDHAN (HT NO: 22D01A66B9)
M. RAKESH (HT NO: 22D01A66C0)

Under the guidance of
Mr.V.HARIKISHAN
(Asst.Professor Dept. of CSE(AI&ML))

ABSTRACT

Chatbots, or conversational agents, are software applications designed to simulate human-like conversations with users through text or voice interfaces. They are now deployed across various sectors, including customer service, healthcare, education, and entertainment. These automated dialogue systems simulate conversation through text or speech, providing information, completing tasks, and fostering a user-friendly experience. Two primary categories of chatbots exist: rule-based and intelligent. Rule-based chatbots function through predefined decision trees. They rely on a pre-programmed set of questions and corresponding responses, navigating the conversation based on user input. For instance, a rule-based chatbot on a bank's website might answer frequently asked questions regarding account balances or branch locations.

INTRODUCTION

Chatbots have become crucial for customer service, information dissemination, and user interaction. This project focuses on designing and implementing a rule-based chatbot to provide efficient and accurate responses within a predefined scope. Our objective is to develop a chatbot that accurately interprets user inputs, delivers appropriate responses through a well-structured rule set, and offers a seamless user experience. Specializing in a specific application domain, the chatbot will handle queries using a comprehensive set of if-then-else rules.

SYSTEM ANALYSIS

EXISTING SYSTEM:

1. **H&M's Virtual Assistant:**
   This retail chatbot helps customers find products, offers fashion advice, and assists with order tracking and customer service inquiries using predefined rules and scripted dialogues.

2. **KLM's BlueBot (BB):**
   While some functionalities may use AI, the basic customer service interactions such as flight bookings and check-ins are handled through rule-based responses and scripted interactions.

3. **Domino's Pizza Bot:**
   This chatbot allows customers to order pizzas, track their orders, and find nearby stores using predefined options and scripted interactions, ensuring a seamless ordering experience.

SYSTEM ANALYSIS

DISADVANTAGES:

1. **Limited Understanding:** They can only respond to predefined inputs and might fail to understand or respond accurately to unanticipated queries.

2. **Lack of Personalization:** Responses are generic and not tailored to individual user preferences or histories.

3. **Inflexibility:** Cannot handle complex queries or adapt to changes in conversation flow, which can frustrate users if their needs fall outside the scripted scenarios.

SYSTEM ANALYSIS

PROPOSED SYSTEM:

1. **Library Assistant Chatbot:**
   Assists users in finding books, checking availability, and providing information on library hours and events through predefined responses.

2. **Appointment Scheduling Chatbot:**
   Helps users book, reschedule, or cancel appointments for services like salons, clinics, or business consultations using a structured dialogue system.

3. **Hotel Reservation Chatbot:**
   Facilitates room booking, provides information about amenities, and answers common guest inquiries using scripted interactions.

SYSTEM ANALYSIS

ADVANTAGES:

1. Predictability: Rule-based systems provide predictable responses, ensuring consistency and reliability in interactions.

2. Control: Organizations have full control over the responses and interactions, allowing for precise customization.

3. Cost-Effective: Generally less expensive to implement and maintain compared to AI-driven solutions.

APPROACHING TECHNIQUE/ALGORITHM

APPROACH:

The Python chatbot uses a rule-based approach without AI or machine learning. It relies on predefined rules and if-else logic to match user input and generate responses, making it simple and easy to implement for basic functions.

FUNCTIONALITY:

This chatbot matches user inputs to predefined rules, handling basic interactions like greetings, inquiries, and farewells. It identifies keywords or phrases to select the appropriate response. If no match is found, it gives a generic response or asks the user to rephrase. This allows for simple conversations without advanced language understanding.

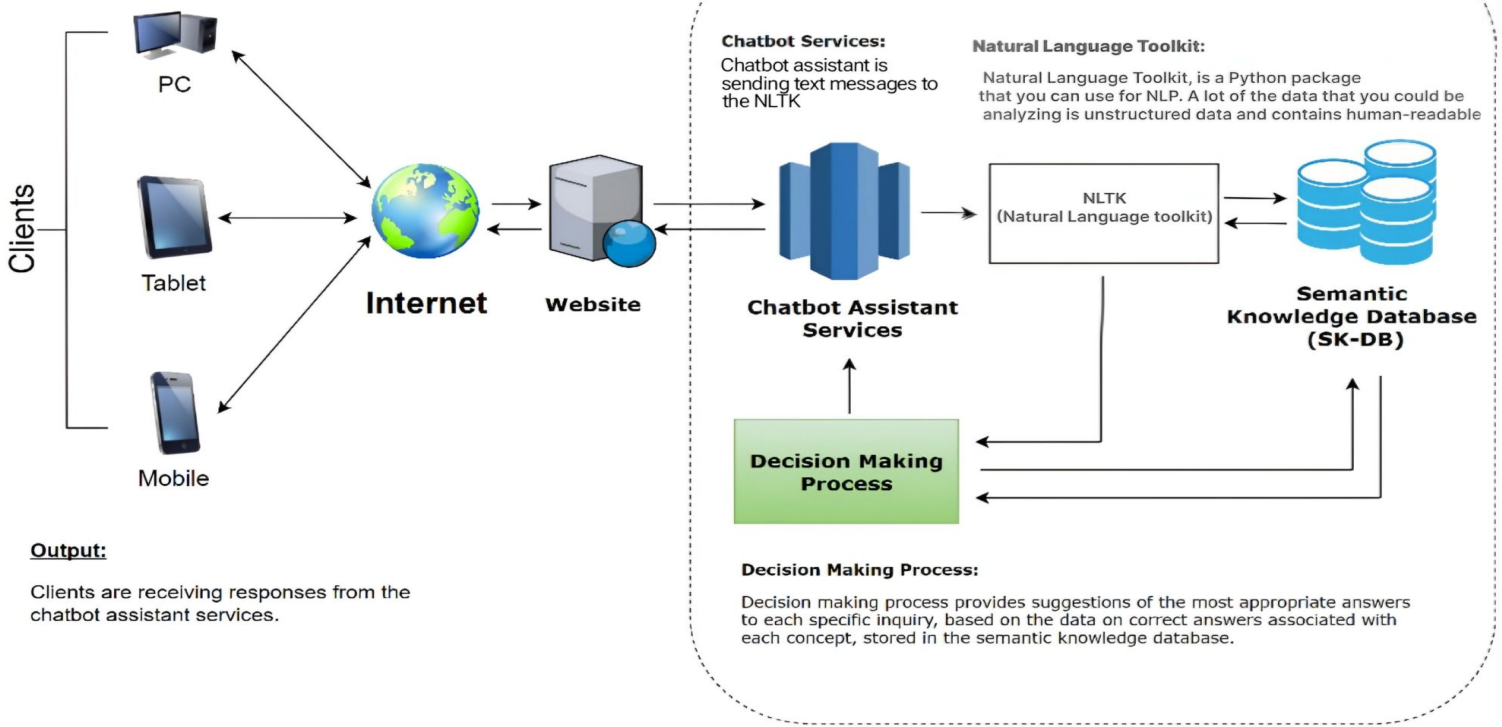
RESPONSE GENERATION:

The chatbot generates responses by matching user input to predefined rules using if-else statements. If a match is found, it provides the associated response. If no match is found, it defaults to a generic response or asks for clearer input. This deterministic process ensures the chatbot responds appropriately based on user intent, enabling effective communication.

APPROACHING TECHNIQUE/ALGORITHM

Input:

Clients are directing their inquiries to the automated chatbot assistant services



Output:

Clients are receiving responses from the chatbot assistant services.

SYSTEM SPECIFICATIONS

SOFTWARE SPECIFICATIONS

- **Operating System** : Windows 8 or above
- **Coding Language** : Python
- **Database** : SQL

SYSTEM SPECIFICATIONS

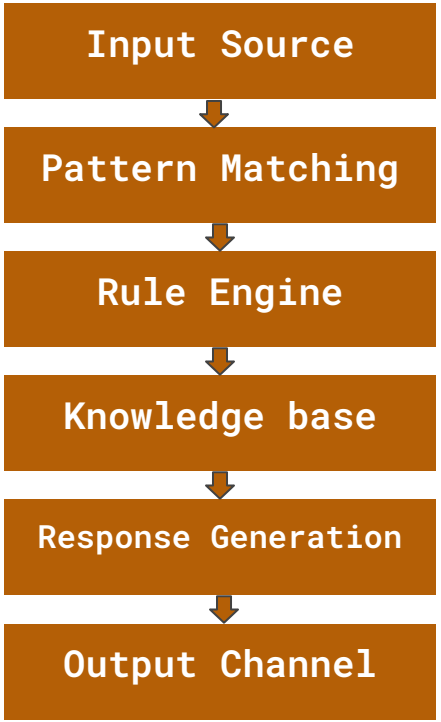
HARDWARE SPECIFICATIONS

- **System** : i3 or above
- **Ram** : 4gb
- **Hard disk** : 40gb

SYSTEM ARCHITECTURE

COMPONENTS:

1. **Input Source:** This is where the user enters their message. It can be a text box, chat window, or any other interface for user input.
2. **Pattern Matching:** This module takes the user's message and compares it against predefined patterns. These patterns can be keywords, phrases, or regular expressions.
3. **Rule Engine:** This is the core of the chatbot. It analyzes the matched patterns from the previous stage and activates the corresponding rules.
4. **Knowledge Base:** This component stores all the information the chatbot can access to respond to user queries. It can include pre-defined answers, data points, or links to external resources.
5. **Response Generation:** Based on the activated rules and retrieved information from the knowledge base, this module generates the chatbot's response.
6. **Output Channel:** This is where the chatbot delivers its response to the user. It can be the same interface used for input or another channel like a voice synthesizer.



THANKYOU