**Assignment No: 9**

**Problem Statement:-**

Create a chatbot application for any real-world scenario.

**Theory:-**

A **Chatbot** is a software application designed to simulate human conversation. Chatbots use Natural Language Processing (NLP) to understand and respond to user inputs in natural language. They can be used for various applications, such as customer service, online booking, or providing information.

**Methodology:-**

1. **Use Case Definition**:
   * Select a real-world use case for the chatbot, such as:
     + **Customer Support**: Answering customer queries and guiding them through troubleshooting.
     + **Appointment Booking**: Allowing users to schedule appointments through conversation.
2. **Design Conversation Flow**:
   * Map out the flow of the conversation:
     + Define possible user inputs (e.g., "What are your business hours?")
     + Define the corresponding bot responses (e.g., "Our business hours are 9 AM to 6 PM.")
3. **NLP Implementation**:
   * Use libraries like **Dialogflow**, **Rasa**, or **spaCy** for Natural Language Understanding (NLU) and Natural Language Generation (NLG).
   * Implement intent recognition and entity extraction to understand user queries.
4. **Backend Integration** (Optional):
   * Integrate the chatbot with backend systems (e.g., a database or an API) to fetch dynamic information like appointment slots or product availability.
5. **Deployment**:
   * Deploy the chatbot on a web or messaging platform (e.g., a website, Facebook Messenger).

**Conclusion:-**

We developed a chatbot for a real-world application scenario, enabling users to interact with the system through natural language and complete specific tasks such as booking appointments or obtaining information.