**Project Name: -** Implementation of Chabot Using NLP

**Student AICTE Id: -** STU6741e9086254e1732372744

**Student Name: -** ASHAPU LOKESH

**Problem Statement: -**

The aim is to craft an advanced Restaurants Chatbot designed for a 5-star guest experience. This virtual assistant will handle orders, table reservations, special offers, discounts and general inquiries. Using Natural Language Processing (NLP), it will understand guest questions and provide accurate, conversational responses. The chatbot ensures seamless interaction, enhancing convenience and luxury. It’s a step toward redefining hospitality with intelligent automation.

**Proposed Problem Solution: -**

Restaurants face the challenge of managing guest requests 24/7 without overwhelming staff. A chatbot streamlines this by automating responses to common inquiries, improving efficiency. This enhances the guest experience while lightening the operational load, and which can leads the restaurant growth.

**Requirements: -**

the key requirements for implementing a chatbot using NLP in 3 lines:

1. Strong NLP foundation: Accurate intent recognition, entity extraction, and fluent NLG.
2. High-quality data: Ample, diverse, and well-annotated data for training.
3. User-centric design: Prioritize user experience, accessibility, and continuous improvement.

**Tools Usage: -**

* **Programming Languages:** Python (with libraries like NLTK, spaCy, TensorFlow/PyTorch, Transformers)
* **Data Management & Analysis:** Pandas, NumPy, Scikit-learn
* **Cloud Services:** [**Specify cloud services to be used, e.g.,** AWS Lex, Google Cloud Dialogflow, Azure Bot Service]
* **Development Environment:** Jupyter Notebook/Google Colab, Visual Studio Code
* **Version Control:** Git (GitHub, GitLab, Bitbucket)
* **Project Management:** [**Specify tools to be used, e.g.,** Trello, Asana, Jira]

**Minimum Requirements: -**

**Hardware:**

* **Processor:** [Specify minimum CPU**,** e.g., Intel Core i5 or equivalent]
* **RAM:** [Specify minimum RAM**,** e.g., 8GB]
* **Storage:** [Specify minimum storage, e.g., 128GB SSD]

**Software:**

* **Operating System:** [Specify OS, e.g., Windows, macOS, Linux]
* **Python:** [Specify Python version, e.g., Python 3.x]
* **Required Libraries:** NLTK, spaCy, TensorFlow/PyTorch, etc. (as per the chosen tools)

**Knowledge of Data Modelling: -**

* Understanding of data structures and relationships (e.g., entities, attributes, relationships, primary keys, foreign keys).
* Ability to design and implement data models for storing and managing chatbot data (e.g., user data, conversation history, model parameters).
* Knowledge of database concepts (e.g., relational databases, NoSQL databases).