CHATBOT USING PYTHON

INNOVATION:

- **Python AI chatbots are essentially programs designed to simulate human-like conversation using Natural Language Processing (NLP) and Machine Learning.**
- **Python's NLTK library helps with everything from splitting sentences and words to recognizing parts of speech (POS). On the other hand, SpaCy excels in tasks that require deep learning, like understanding sentence context and parsing.**
- **Install the Chatterbot library using pip to get started on our chatbot journey.**
- **Implement voice recognition and synthesis for a voice-controlled chatbot.**
- **Use sentiment analysis to detect user emotions and tailor responses accordingly.**

CHATTERBOT:

- **Chatterbot is a Python library that makes it easy to create rule-based and machine learning-based chatbots.**
- **It's lightweight and suitable for simple chatbots and prototyping.**
- **Chatterbot can be extended with custom logic to create conversational agents.**

FRAMEWORK:

- **Rasa is an open-source, natural language understanding (NLU) and dialogue management library for building conversational AI applications.**
- **It allows you to build both text-based and voice-based chatbots.**

DESIGN THE CONVERSATION FLOW:

Plan to conversation with our chatbot will flow. Create a conversation flowchart and decide what questions the chatbot will ask and how it will respond.

USING MACHINE LEARNING:

Recurrent Neural Networks (RNNs):

- **Suitable for sequential data like dialogues.**

Long Short-Term Memory (LSTM) Networks:

- **A type of RNN that handles long sequences well.**

Transformers:

- **State-of-the-art models for natural language processing, including BERT, GPT-3, and more.**

Data Collection:

- **collecting a dataset for training your chatbot. This dataset should contain conversations or dialogues.**
- **It can be in the form of text data, and you can include both questions and answers from a variety of sources.**

CREATE THE CUSTOM LANGUAGE:

- **chatbot needs to perform custom actions, so, we can create Python scripts as actions and add them to our project.**
- **might create an action to fetch data from an external API.**
- **Then last to train the Natural Language Understanding (NLU) by using the collection of user database like feedback or types of Queries.**