**Create chatbot using python**

Team Member

711121106067-Pranesh.S

Artificial intelligence is used to construct a computer program known as "a chatbot" that simulates human chats with users. It employs a technique known as NLP to comprehend the user's inquiries and offer pertinent information. Chatbots have various functions in customer service, information retrieval, and personal support.

## **Novelty:**

### 1. Preparing the Dependencies:

The right dependencies need to be established before we can create a chatbot. [Python](https://www.simplilearn.com/learn-the-basics-of-python-article) and a Chatterbot library must be installed on our machine. With Pip, the Chatbot Python package manager, we can install Chatterbot.

### 2. Creating and Training the Chatbot:

Once the dependence has been established, we can build and train our chatbot. We will import the ChatterBot module and start a new Chatbot Python instance. If so, we might incorporate the dataset into our chatbot's design or provide it with unique chat data.

### 3. Communicating with the Python chatbot:

I can send a message and get a response once the chatbot Python has been trained. Creating a function that analyses user input and uses the chatbot's knowledge store to produce appropriate responses will be necessary.

**Innovation:**

### our Framework/Library:

Python offers various libraries and frameworks for building chatbots, such as NLTK, spaCy, and the more recent Transformers library like GPT-3.5, which powers this chatbot. Choosing the right one depends on our project's goals and complexity.

### 2. Natural Language Processing (NLP):

NLP is a crucial component for understanding and generating human-like responses. Utilize pre-trained models or train our own if necessary. The innovation here could involve using cutting-edge NLP models to improve the chatbot's understanding and responses.

### 3. Data Collection:

Gather a diverse dataset of text data to train our chatbot. This dataset is used to teach the bot how to understand and respond to user queries effectively.

### 4. Data Preprocessing:

Clean and preprocess our data. Tokenization, stemming, and lemmatization are common techniques to prepare text data for analysis.

### 5. Testing and Evaluation:

Regularly test our chatbot with real users and gather feedback for improvement. Use metrics like accuracy, response time, and user satisfaction to evaluate its performance.

**improvisation:**

### 1.Collect User Feedback:

Encourage users to provide feedback on their interactions with the chatbot. This feedback is invaluable for identifying areas of improvement.

### Analyze User Interactions:

Review chat logs and analyze how users interact with our chatbot. Look for common issues or misunderstandings in conversations.

### Enhance NLP Capabilities:

Improve the chatbot's natural language processing (NLP) capabilities by fine-tuning models, adding more training data, or using more advanced NLP techniques.

### Faster Response Times:

Optimize the chatbot's performance to provide faster response times, reducing user wait times.

### 5.Security and Privacy:

Enhance the security and privacy features of your chatbot to protect user data and ensure compliance with data protection regulations.

**Advantages:**

### 1. Provide fast, 24/7 customer service:

Customers want fast and easy service, even during peak hours. When bots step in to handle the first interaction, they eliminate wait times with instant support. Because chatbots never sleep, they can provide global, 24/7 support at the most convenient time for the customer, even when agents are offline.

### 2. Offer more personalized experiences:

Customers understand that bots collect personal data but want them to use it to create a better customer experience. According to our CX Trends Report, 59 percent of consumers who interact with chatbots expect their data will be used to personalize future interactions with a brand.

### 3. Deliver multilingual support:

With online shopping, customers are no longer limited to shopping at local brick-and-mortar businesses. Customers can buy products from anywhere around the globe, so breaking down communication barriers is crucial for delivering a great customer experience. Chatbots can offer multilingual support to customers who speak different languages.

### 4. Ensure more consistent support:

Customers who frequently interact with you rarely talk to the same support agent twice. Because the level of expertise and training varies from agent to agent, customers may experience inconsistencies when connecting with support teams. Although most businesses continuously work to improve their customer service training, chatbots function on predetermined frameworks and pull answers from a single source of truth every time—resulting in consistent customer service experiences.

### 5. Provide proactive customer service:

Businesses can use a chatbot to help them provide proactive support and suggestions to customers. By monitoring user activity on their websites, businesses can use chatbots to proactively engage with customers to answer common questions and help with potential issues on that page.

### 6. Collect customer feedback:

You can program chatbots to ask for customer feedback at the end of an interaction. The bot can send a single survey question in the chat to ask how the support interaction went. The customer can select a rating from one to five, with an option to include a written response for additional comments.

### 7. Reduce customer requests:

Chatbots intercept and deflect potential tickets, easing agents’ workloads. They handle repetitive tasks, respond to general questions, and offer self-service options, helping customers find the answers they need. This allows agents to focus their expertise on complex issues or requests that require a human touch.

**Disadvantages:**

### 1.Chatbots sound too Mechanical:

Chatbots are not human and so obviously they cannot interact as a human with customers. They sound too mechanical and can only give answers to problems that they have been programmed with. They cannot answer a customer according to the context and they cannot show any emotions if needed. Chatbots also cannot maintain a natural-sounding conversation in-depth with customers and that is why they are only useful in solving basic queries. But this can create a disconnect with customers who prefer the human approach when solving their problems.

### 2.Chatbots can only handle basic Questions:

Chatbots are still a basic Artificial Intelligence technology and so they can only answer the basic questions of customers and provide general information that is already available to them. They cannot solve complicated queries or answer out of script questions and companies need to have human customer service employees that can manage these for them. However, this is changing with time and currently, more and more advanced chatbots are entering the market.

### 3.Chatbots are Difficult to Create:

Chatbots are created using Natural Language Processing which is extremely popular for customer support applications. Natural Language Processing is a part of Machine Learning which can be used to interact with the users in textual form and solve their queries. However, this requires complex programming and is not easy for companies. This becomes especially difficult if companies have to create chatbots from scratch and that is why many online platforms help companies to build and manage chatbots easily.

### 4.Chatbots require Constant Maintenance:

Companies cannot just create a chatbot and then leave it hoping that it will correctly answer customer inquiries forever! The company products change with time and more advanced Natural Language Processing capabilities are also developed with time. All of these changes need to be programmed into the chatbot so that it has the most up to date information. In addition to that, chatbots also need to be periodically analyzed so that the most common questions that customers have can be identified and then their answers updated for future customers.

**Algorithm:**

Step 1) Start

Step 2) Select a data set, for which we need to develop a chatterbot.

Step 3) Prepare the set of tags with the patterns and responses.

Step 4) Install the required packages in Python.

Step 5) Train the Chatbot with predefined queries.

Step 6) Develop the GUI

Step 7) Execute the codes for the results.

Step 8) Stop.