

CREATE A CHATBOT IN PYTHON

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SUBMISSION DOCUMENT

Chatbot :

- 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.
- As simply as we all know that the Siri, Alexa, and Duolingo are some real-world examples of chatbots.

How Does the Chatbot Python Work?

The main approaches to the development of chatbots are as follows:

1. Rule-Based Approach:

The Chatbot Python adheres to predefined guidelines when it comprehends user



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questions and provides an answer. The developers often define these rules and must manually program them.

2. Self-Learning Approach:

Chatbots that learn their use of machine learning to develop better conversational skills over time. There are two categories of self-learning chatbots.

3. RetrievalBased Models:

Based on an input question, these models can obtain predefined responses from a knowledge base. They evaluate user input and compare it to the closest equivalent response in the knowledge base.

4. Generative Models:

Generative models create responses from scratch based on the input query. They employ approaches like sequence-to-sequence models or transformers, for example, to produce human-like answers.

What is ChatBot Library?

A Chatbot Python library called The ChatBot makes it simpler to create chatbots. It manages the challenges of natural language processing and provides a specific API. The following are some of Chatbot's primary features:



1. Language Independence

You can use Chatteíbot to cíeate chatbots in vaíious languages based on youí taíget demogíaphic.

2. How Does Chatbot Libíaiý Woík?

Chatbot combines a spoken language data database with an aítificial intelligence system to geneíate a íesponse. It uses I'F-IDF (I'eím Fíequency-Inveíse Document Fíequency) and cosine similaíity to match useí input to the píopeí answeís.

This command will download and install the ChattBot libíaiý and its dependencies.

- Impoted fíom Chatteíbot is ChatBotOnce setup is complete, add the following code to youí Chatbot using Python scíipt oí inteíactive enviíonment to include Chatbot.
- You may now use Chatteíbot to begin building youí chatbot. Using the ChatteíBot guide oí otheí íesouíces, you can leaín how to set up and tíain a chatbot.

Limitat ons With A Chatbot :

While chatbots have come a long



way, there are still some limitations to be aware of:

1. Lack of semantic understanding:

Chatbots may require assistance comprehending the discourse, which could result in misinterpretation or incorrect responses.

2. Dependency on training data:

The caliber and volume of training data greatly impact chatbot performance. There may be a need for more accurate or biased training data, which can result in incorrect responses.

3. Handling complicated queries:

Chatbots could encounter questions beyond simple pattern matching and call for greater comprehension or deductive reasoning.

File: my_chatbot.py

```
# using the ListMixin class
```

```
list_mixin = ListMixin(myBot)
```

```
for i in (small_convo, math_convo_1,
```



```
math_convo_2):  
    list_tíainee.tíain(i)
```

Explanation:

In the above snippet of code, we have created an instance of the ListÍáineí class and used the foí-loop to iteíate thíough each item píesent in the lists of íesponses.

Now, the Python chatbot is íeady to communicate.

Communicating with the Python chatbot :

We can use the get_íesponse() function in oídeí to inteíact with the Python chatbot. Let us consideí the following execution of the píogíam to undeístand it.

Output

```
# staíting a conveísation
```

```
>>> píint(myBot.get_íesponse("Hi, theíe!"))Hi
```

```
>>> píint(myBot.get_íesponse("What's youí name?"))
```



I'm Sakuía. Ask me a math question, please.

```
>>> print(myBot.get_response("Do you know Pythagorean theorem"))
```

a squared plus b squared equals c squared.

```
>>> print(myBot.get_response("I'll tell me the formula of law of cosines"))
```

$$c^2 = a^2 + b^2 - 2ab\cos(\gamma)$$

Explanation:

The above execution of the program tells us that we have successfully created a chatbot in Python using the chatbot library. However, it is also necessary to understand that the chatbot using Python.

