

What is a Chatbot?

A chatbot is an AI-based software designed to interact with humans in their natural languages. These chatbots are usually converse via auditory or textual methods, and they can effortlessly mimic human languages to communicate with human beings in a human-like manner. A chatbot is arguably one of the best applications of natural language processing. The Rule-based approach trains a chatbot to answer questions based on a set of pre-determined rules on which it was initially trained. These set rules can either be very simple or very complex. While rule-based chatbots can handle simple queries quite well, they usually fail to process more complicated queries/requests. As the name suggests, self-learning bots are chatbots that can learn on their own. These leverage advanced technologies like Artificial Intelligence and Machine Learning to train themselves from instances and behaviors. Naturally, these chatbots are much smarter than rule-based bots. Self-learning bots can be further divided into two categories – Retrieval Based or Generative.

1. Retrieval-based Chatbots:

A retrieval-based chatbot is one that functions on predefined input patterns and set responses. Once the question/pattern is entered, the chatbot uses a heuristic approach to deliver the appropriate response. The retrieval-based model is extensively used to design goal-oriented chatbots with customized features like the flow and tone of the bot to enhance the customer experience.

2. Generative Chatbots :

Unlike retrieval-based chatbots, generative chatbots are not based on predefined responses – they leverage seq2seq neural networks. This is based on the concept of machine translation where the source code is translated from one language to another language. In seq2seq approach, the input is transformed into an output. The first chatbot dates back to 1966 when Joseph Weizenbaum created ELIZA that could imitate the language of a psychotherapist in only 200 lines of code. However, thanks to the rapid advancement of technology, we've come a long way from scripted chatbots to chatbots in python today.

Chatbot in Today's Generation:

Today, we have smart AI-powered Chatbots that use natural language processing (NLP) to understand human commands (text and voice) and learn from experience. Chatbots have become a staple customer interaction tool for companies and brands that have an active online presence (website and social network platforms). Chatbots using python are a nifty tool since they facilitate instant messaging between the brand and the customer. Think about Apple's Siri, Amazon's Alexa, and Microsoft's Cortana. Aren't these just wonderful? Aren't you already curious to learn how to make a chatbot in Python? ChatterBot is a Python library that is designed to deliver automated responses to user inputs. It makes use of a combination of ML algorithms to generate many different types of responses. This feature allows developers to build chatbots using python that can converse with humans and deliver appropriate and relevant responses. Not just that, the ML algorithms help the bot to improve its performance with experience. Another excellent feature of ChatterBot is its language independence. The library is designed in a way that makes it possible to train your bot in multiple programming languages.

How does ChatterBot function?

When a user enters a specific input in the chatbot (developed on ChatterBot), the bot saves the input along with the response, for future use. This data (of collected experiences) allows the

chatbot to generate automated responses each time a new input is fed into it.

The program chooses the most-fitting response from the closest statement that matches the input, and then delivers a response from the already known selection of statements and responses. Over time, as the chatbot engages in more interactions, the accuracy of response improves.