Title: Intelligent Chatbot

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Introduction:

A **chatbot** or **chatterbot** is a software application used to conduct an on-line chat conversation via text or text-to-speech, in lieu of providing direct contact with a live human agent. Designed to convincingly simulate the way a human would behave as a conversational partner, charbot systems typically require continuous tuning and testing, and many in production remain unable to adequately converse, while none of them can pass the standard Turing test. The term "ChatterBot" was originally coined by Michael Mauldin (creator of the first Verbot) in 1994 to describe these conversational programs.

How do chatbot works?

Chatbots have varying levels of complexity, being either stateless or stateful. Stateless chatbots approach each conversation as if interacting with a new user. In contrast, stateful chatbots can review past interactions and frame new responses in context.

Why are chatbots important?

Organizations looking to increase sales or service productivity may adopt chatbots for time savings and efficiency, as artificial intelligence (AI) chatbots can converse with users and answer recurring questions. As consumers move away from traditional forms of communication, many experts expect chat-based communication methods to rise. Organizations increasingly use chatbot-based virtual assistants to handle simple tasks, allowing human agents to focus on other responsibilities.

Types of chatbots

As chatbots are still a relatively new business technology, debate surrounds how many different types of chatbots exist and what the industry should call them.

Some common types of chatbots include the following:

Scripted or quick reply chatbots. As the most basic chatbots, they act as a hierarchical decision tree. These bots interact with users through predefined questions that progress until the chatbot answers the user's question.

- **Menu-based chatbot** requires users to make selections from a predefined list, or menu, to provide the bot with a deeper understanding of what the customer needs.
- **Keyword recognition-based chatbots.** These chatbots are a bit more complex; they attempt to listen to what the user types and respond accordingly using keywords from customer responses. This bot combines customizable keywords and AI to respond appropriately. Unfortunately, these chatbots struggle with repetitive keyword use or redundant questions.
- **Hybrid chatbots.** These chatbots combine elements of menu-based and keyword recognition-based bots. Users can choose to have their questions answered directly or use the chatbot's menu to make selections if keyword recognition is ineffective.
- **Contextual chatbots.** These chatbots are more complex than others and require a data-centric focus. They use AI and ML to remember user conversations and interactions, and use

these memories to grow and improve over time. Instead of relying on keywords, these bots use what customers ask and how they ask it to provide answers and self-improve.

- **Voice-enabled chatbots.** This type of chatbot is the future of this technology. Voice-enabled chatbots use spoken dialogue from users as input that prompts responses or creative tasks. Developers can create these chatbots using text-to-speech and voice recognition APIs. Examples include Amazon Alexa and Apple's Siri.

Problem Statement:

To create an “Intelligent Chatbot”, which can conduct on-line chat conversation via text, in lieu of providing direct contact with a live human agent, with the help of predefined questions, using modern technology tools.

Motivation:

It is truly fascinating that a few predefined question and answers can acquire an effective and efficient accomplishment of productivity tasks. Can be used to obtain assistance or information. It can lessen the burden of many individuals, as simple queries can be entertained by the chatbot itself.

Prerequisite:

IBM cloud: The IBM Cloud platform combines platform as a service **(PaaS)** with infrastructure as a service (IaaS) to provide an integrated experience. The platform scales and supports both small development teams and organizations, and large enterprise businesses.

Watson Assistant: Watson Assistant lets you build conversational interfaces into any application, device, or channel. Add a natural language interface to your application to automate interactions with your end users. Common applications include virtual agents and chat bots that can integrate and communicate on any channel or device. IBM Watson is AI for business. Watson helps organizations predict future outcomes, automate complex processes, and optimize employees' time.

WordPress: WordPress is a content management system (CMS) that allows you to host and build websites. WordPress contains plugin architecture and a template system, so you can customize any website to fit your business, blog, portfolio, or online store. IBM provides a free trial site for our chatbot.

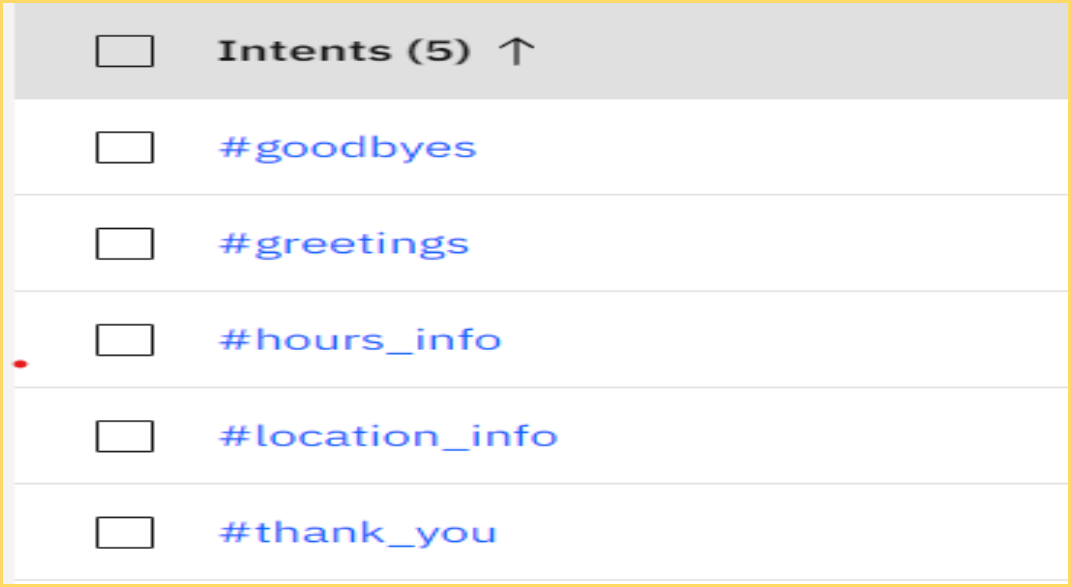
Creating a Chatbot

IBM's Watson provide us an interface where we can put the values systematically so that it can be further combined to form a Chatbot.

Intents: Within a chatbot, intent refers to the goal the customer has in mind when typing in a question or comment. Intents means what client's really mean.

Inserting Intents: We can directly insert intents in the intent window, in IBM's Watson.

And describe what each intent consists of, manually.

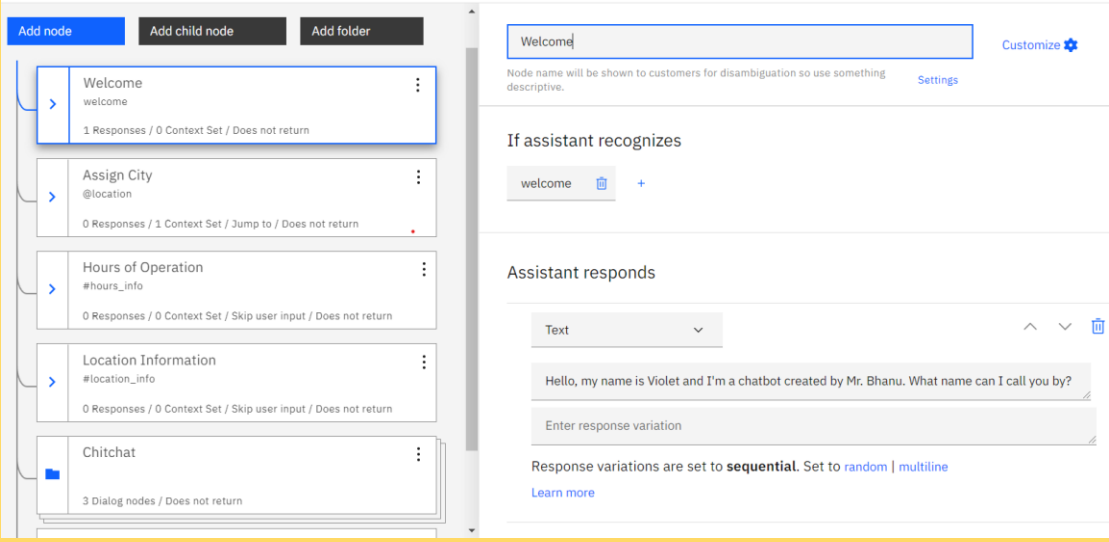


Entity: entity refers to the modifier the customer uses to describe their issue.

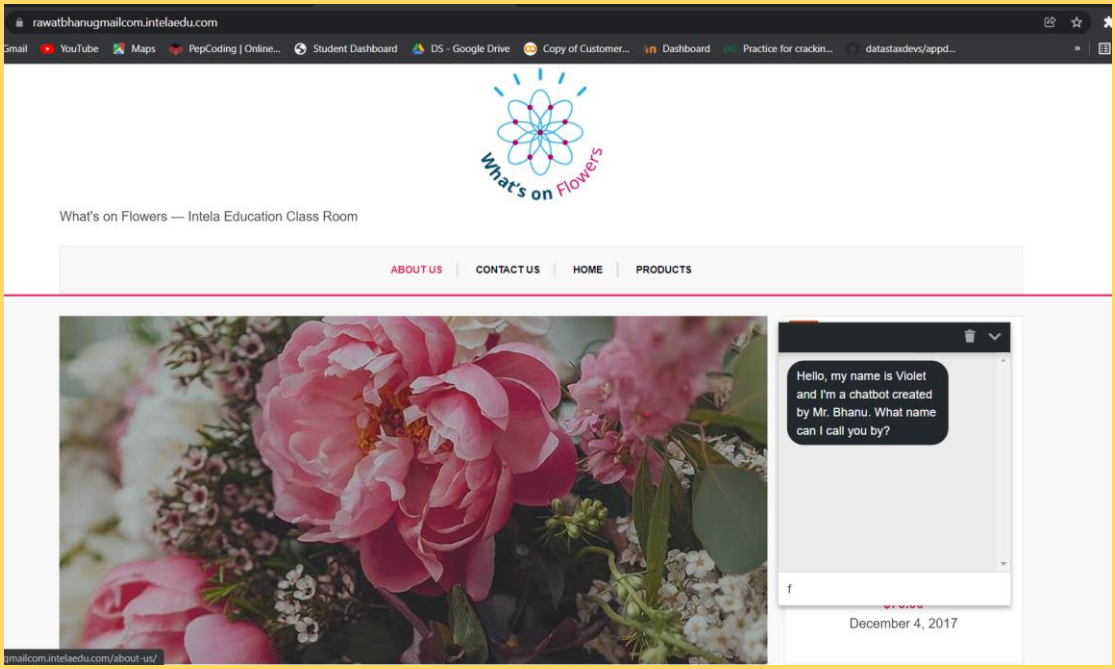
Inserting Entity: Like Intents we can insert Entities in the entity window.

Entity (3) ↑	Values
@location	Calgary, Toronto, Montreal, Vancouver
@occasion	Christmas, Wedding, Valentine's Day, Get Well, Anniversary, Retirement, Funeral, Birthday, Mother's Day, ...
@relationship	husband, wife, girlfriend, boyfriend, mother, father, relative, friend, couple, partner

Adding Dialogues: In the dialogue window, we need to assign the predefined answers, so that the chatbot can choose randomly from several different answers of the matched 'Intent'.



Deploying chatbot to WordPress site: IBM provides an exclusive free tier site for the Chatbot's deployment. Link the chatbot to the WordPress site by activating Watson Assistant Plugin. Using the link, https://rawatbhanugmailcom.intelaedu.com/, we can access the Chatbot from anywhere across the globe.



Conclusion:

From my perspective chatbots or smart assistants can dramatically change businesses. Chatbots can reach out to a large audience on messaging apps and be more effective than humans. There is a wide range of chatbot that are available for various enterprises, such as e-commerce, retail, banking, leisure, travel, healthcare, and so on. They may develop into a capable information-gathering tool in the near future.