

CHATBOT TO SHOP FOR ESSENTIALS DURING PANDEMIC USING WATSON ASSISTANT

Project Description:

Today, because of social distancing and other issues it can be risky for some people to shop for essential items in person. This project helps with this issue by giving people an online option to shop for essentials. With the help of Watson assistant, a chatbot is built. This chat should have the following capabilities:

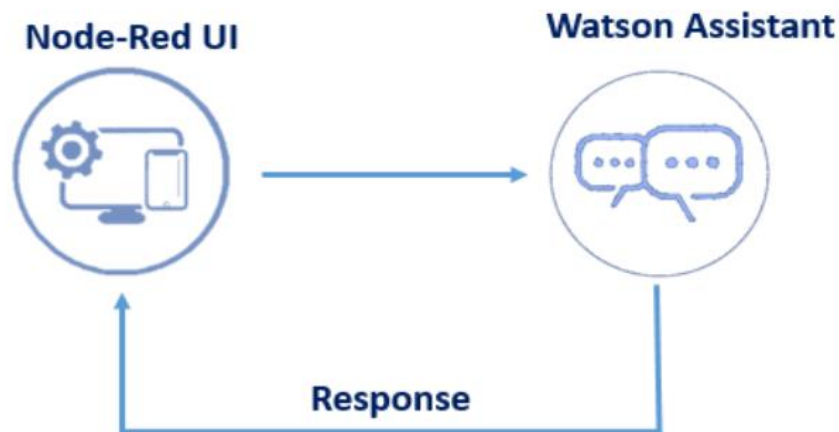
1. Give the list of items in the Store
2. Should show the prices of vegetables
3. Display if there are any offers or discounts
4. The bot should be able to take details like name, contact number, address, and the items to place the order.

Services Used:

IBM Watson Assistant

Node-Red

Architecture:



Process flow:

Chatbots use natural language recognition capabilities to discern the intent of what a user is saying, in order to respond to inquiries and requests. The following figure depicts the process flow of the project to build chatbot to shop for essentials during pandemic.



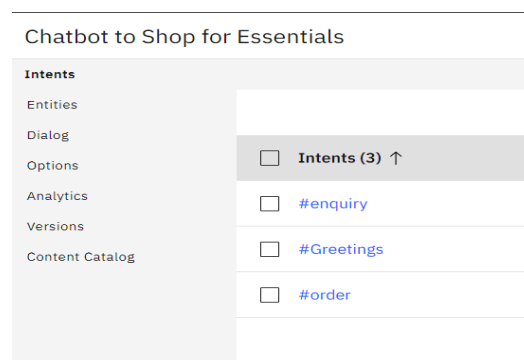
Create Watson Assistant:

In IBM Cloud, Watson Assistant service used to build applications that understand natural-language input and respond to users with human-like conversation. The steps below creates the project to build chatbot in Watson Assistant.

- Find the Assistant service in IBM Cloud Dashboard.
- Click on the service and Launch Watson Assistant.
- Create new Assistant to shop for essentials during pandemics
- Create new Skill

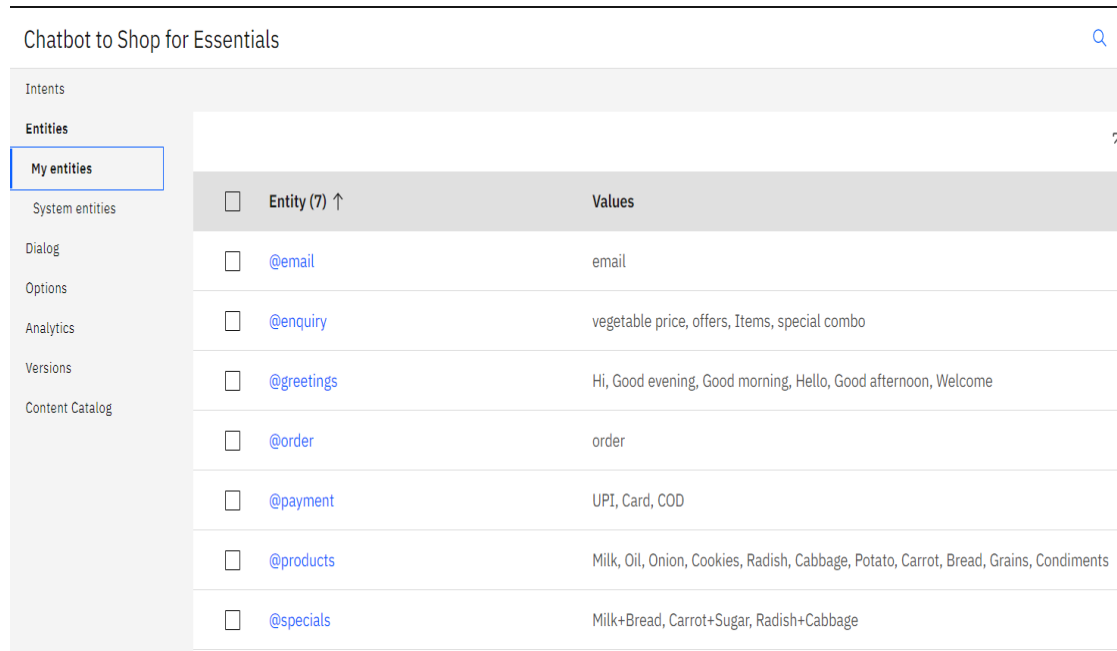
Define Intents & Entities:

Intent and entities in chatbots are both essential to delivering what the customers wants and needs. Intents are the intentions of the end-user conveyed to the bot. It refers to the goal the customer has in mind when typing in a question or comment.



The above 3 intents are created to identify the intention of user during their purchase. The intents are enquiry, Greetings and order. Each intents are trained with unique examples to help Watson understand the customer goal.

Entity refers to the modifier the customer uses to describe their issue ie., entity in a chatbot is used to add values to the search intent. The following are entities created to connect with customers.

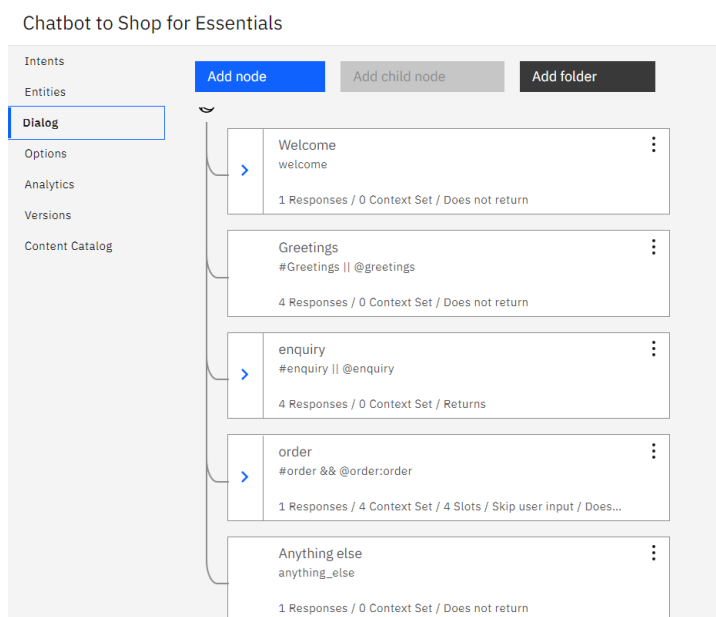


<input type="checkbox"/>	Entity (7) ↑	Values
<input type="checkbox"/>	@email	email
<input type="checkbox"/>	@enquiry	vegetable price, offers, Items, special combo
<input type="checkbox"/>	@greetings	Hi, Good evening, Good morning, Hello, Good afternoon, Welcome
<input type="checkbox"/>	@order	order
<input type="checkbox"/>	@payment	UPI, Card, COD
<input type="checkbox"/>	@products	Milk, Oil, Onion, Cookies, Radish, Cabbage, Potato, Carrot, Bread, Grains, Condiments
<input type="checkbox"/>	@specials	Milk+Bread, Carrot+Sugar, Radish+Cabbage

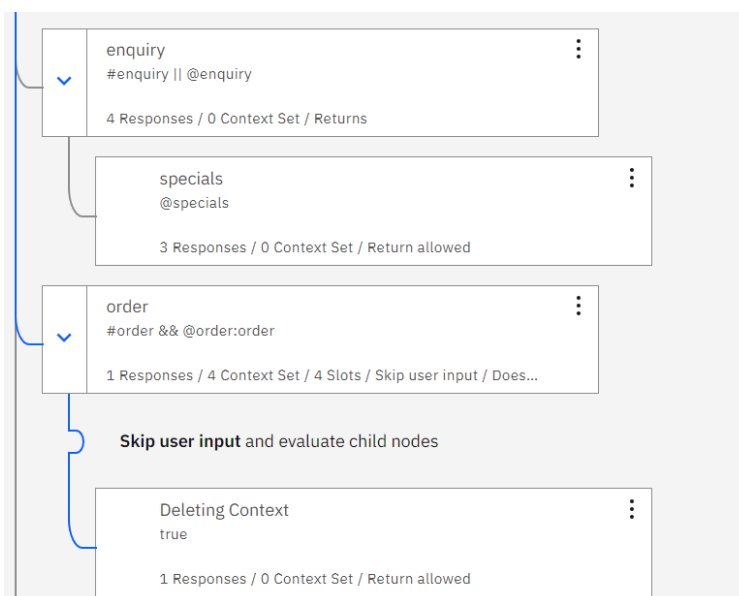
Build Dialog flow:

Dialog flow is a natural language understanding platform that makes it easy to design and integrate a conversational user interface into the mobile app, web application, device, bot, and interactive voice response system.

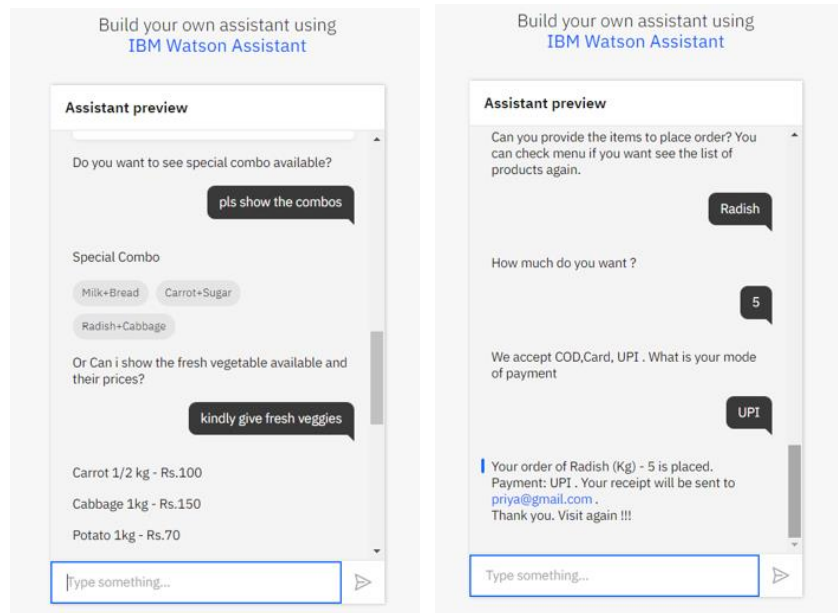
The below figure depicts the dialog flow build to shop essential items during pandemics. Total, 5 nodes are created to welcome, greet, handle enquiry and take orders. Anything else node used if assistant does not able to recognize user input.



The child nodes are added under enquiry node and order node to show special combo offers and manage context variables.

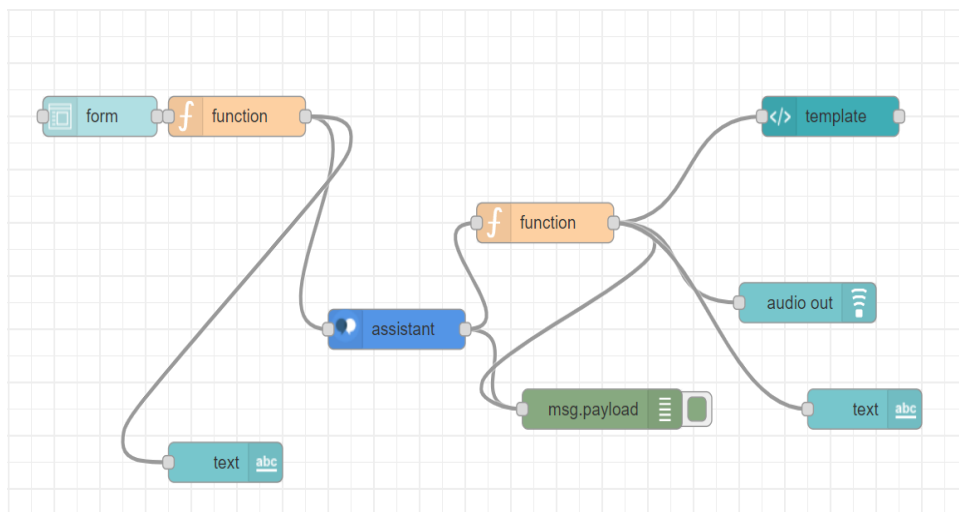


The preview of chatbot conversation to purchase essentials, show vegetable list with price, special combos, and finally to place and confirm order are shown below.



Create and Integrate Node Red to Chatbot:

In this activity, node-red is integrated with the chatbot by calling the API key and scoring end point of the model. The json file of chatbot flow is uploaded.



The Endpoint and API key are generated and saved to integrate the model with the application created in Node Red. The workspace ID retrieved from the chat bot skill is also updated in the assistant node of Node Red. The below figure shows the flow of chat bot. The audio out node is used to convert text to speech during conversation. Finally the flow is deployed and verified.

Conclusion:

The chatbot is built to shop for essentials during pandemic using the Watson Assistant and further deployed in Node Red in IBM cloud. This bot has the capabilities to provide the list of items in the Store, Show the prices of vegetables, Display offers or discounts and finally place order with the given details of the customer.