RESTAURANT CHATBOT

By
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1. Aim

The main aim of this restaurant chatbot is to assist the customers in placing an order, cancel an order and and to look at the menu available and reserve a table.

2. Introduction

Chatbot: A chatbot is an artificial intelligence (AI) software that can simulate a conversation (or a chat) with a user in natural language through messaging applications, websites, mobile apps or through the telephone especially over the internet. A chatbot is often described as one of the most advanced and promising expressions of interaction between humans and machines. Here we are making use of IBM's popular watson platform to build our chatbot.

Watson: Named after IBM's first CEO, Thomas J. Watson. IBM watson offers many services like Watson Assistant(AI), Machine Learning Studio, Visual recognition, text to speech convertion, speech to text convertion and language translators etc. This watson platform is available in IBM cloud(formerly called IBM Bluemix and IBM Softlayer). Watson Ecosystem is a market place where Watson related products and services can be sold.

3. The three main components of watson conversation service(Chatbot):

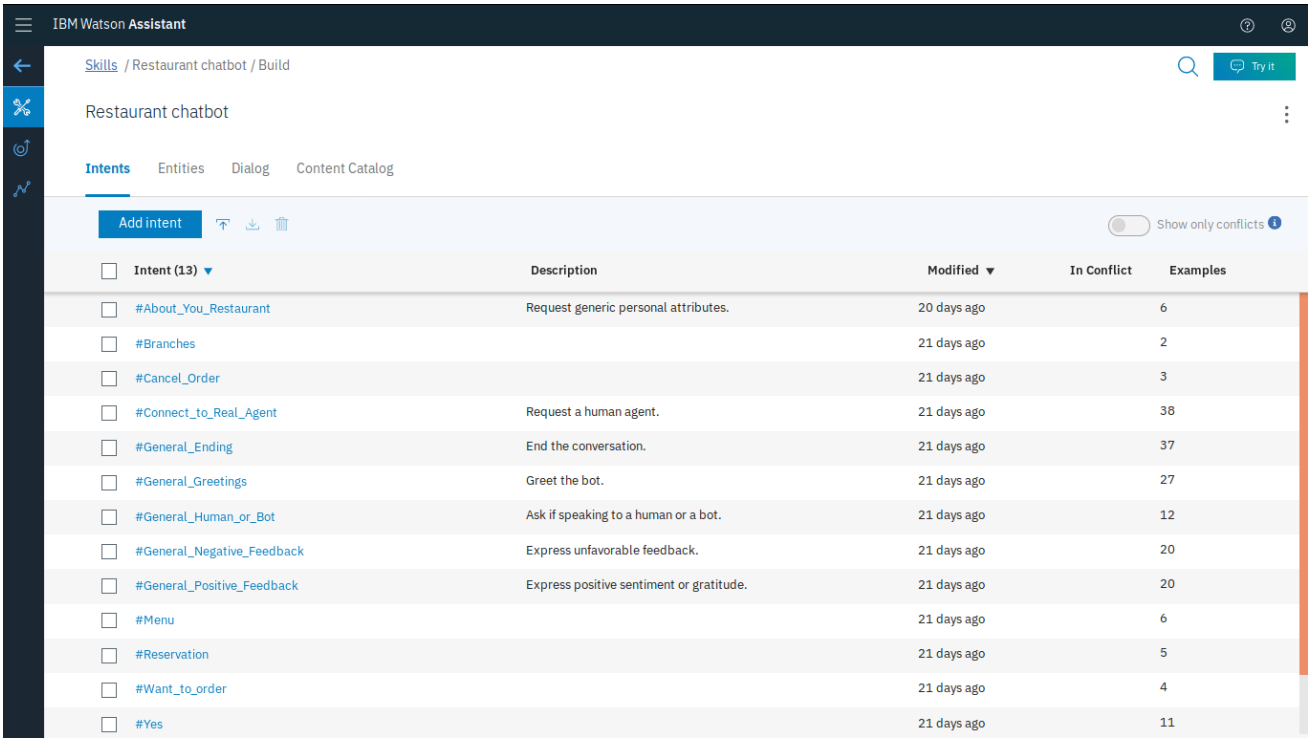
1. Intents: An intent represents the purpose of a user's input, such as a question about business locations, weather forecasting, bill payment. We should define an intent for each type of user request that we want our application to support. In the tool, the name of an intent is always prefixed with the # character. To train the workspace to recognize your intents, we have to supply lots of examples of user input and indicate which intents they map to.

2. Entities: An entity represents a term or object that is relevant to our intents and that provides a specific context for an intent. For example, an entity might represent a city where the user wants to find a business location, or the amount of a bill payment. In the tool, the name of an entity is always prefixed with the @ character. To train the workspace to recognize your entities, we have to supply the list of possible values for each entity and synonyms that users might enter.

3. Dialog: A dialog is a branching conversation flow that defines how your application responds when it recognizes the defined intents and entities. You use the dialog builder in the tool to create conversations with users, providing responses based on the intents and entities that you recognize in their input.

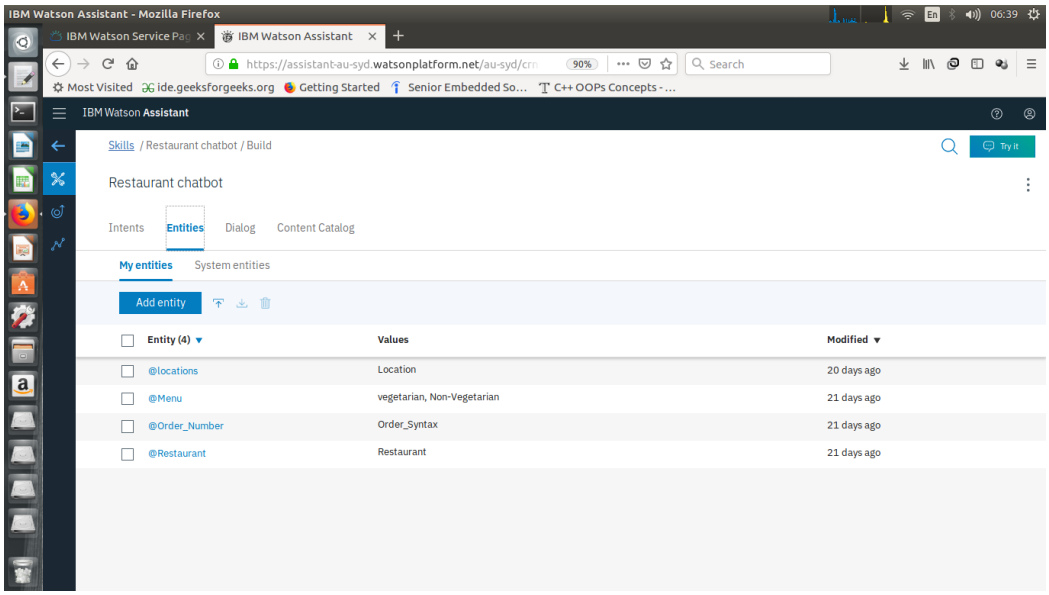
4. Implementation Flow

First, we have created intents according to how user can ask the same question in different ways. List of intents is exported from IBM cloud and saved in the same directory of this report. Below is the screenshot of intents we created for this restaurant chatbot.

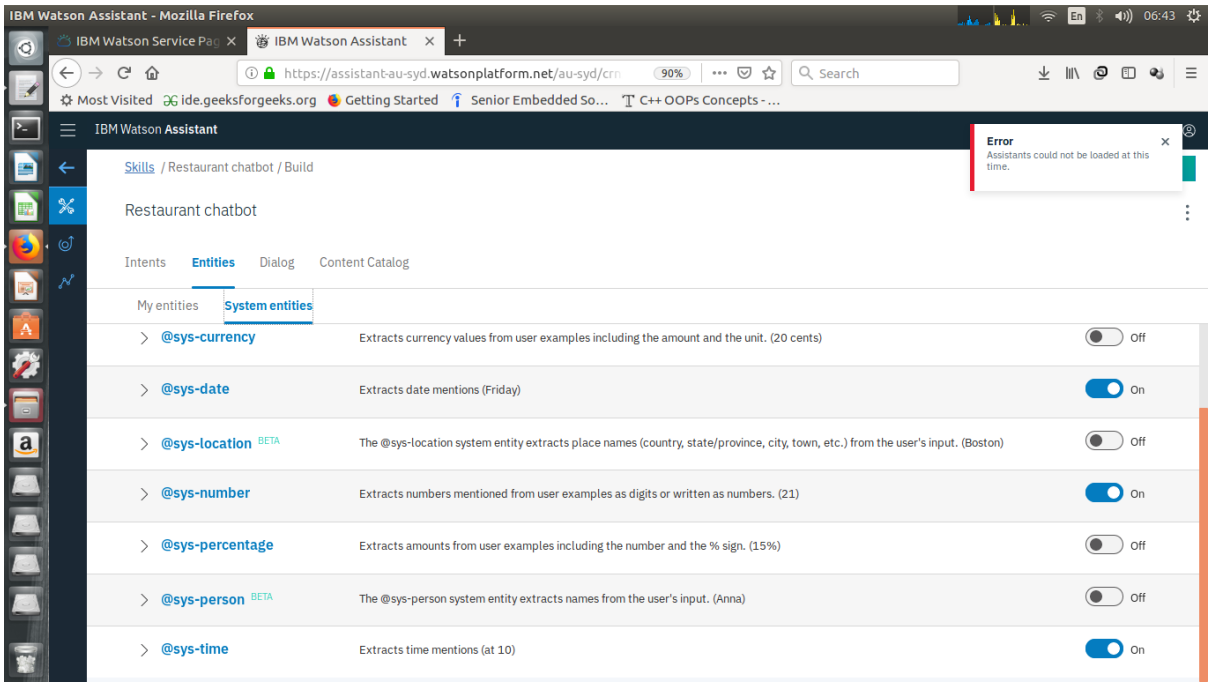


Then, we have created entities based on synonyms for nouns and a fixed pattern order ID. List of entities is exported from IBM cloud and saved in the same directory of this report. Below is the screenshot of entities we created for this restaurant chatbot.

Custom(User) entities:



System entities:

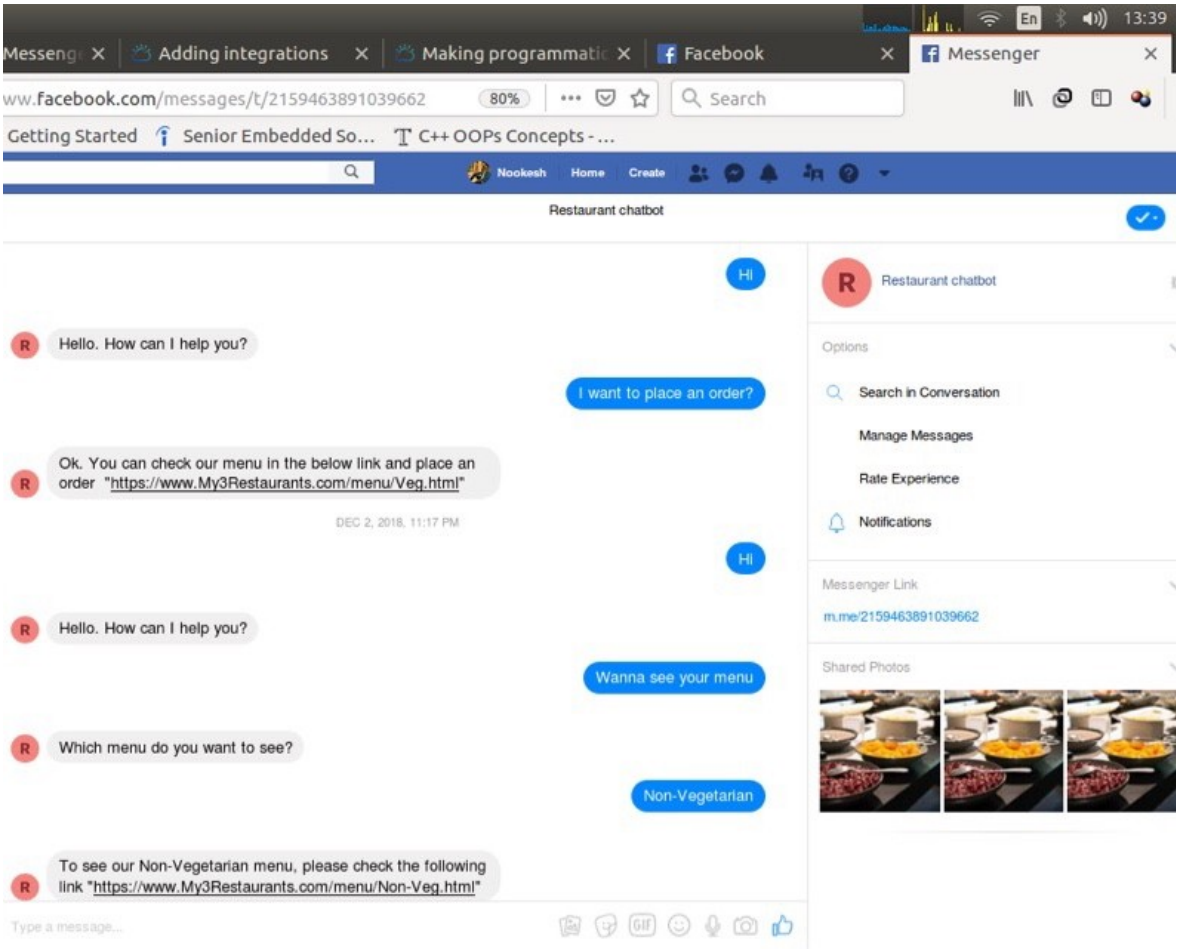


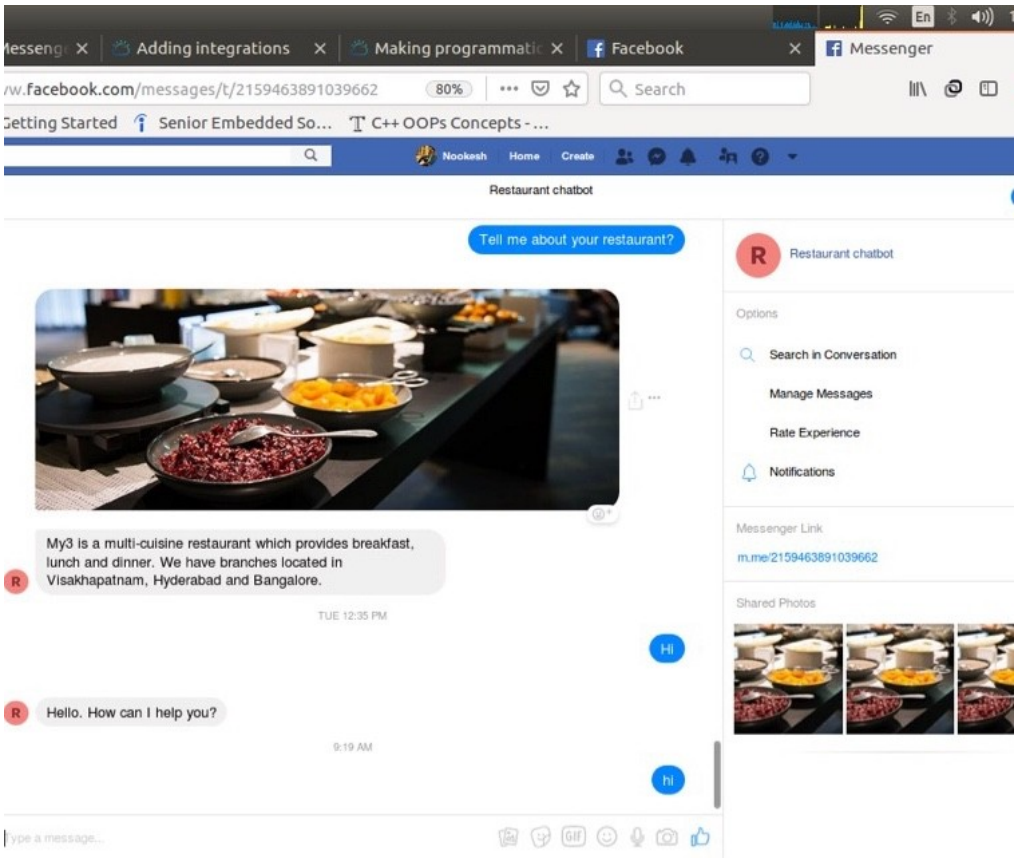
Finally, we created dialogues that serve as response to user input. These dialogues can be customized to specific intents or entities or both. In this dialogue node we can add child nodes or sibling nodes(like nested if statements in c). We can either give image or options or sentence as a reply to user input.

4. Intergrations

To deploy our skill, we need an assistant, and then add integrations to the assistant that publish our bot to the channels where our customers go for help. We can integrate our chatbot application to facebook messenger, skype or other social media messengers. Here we integrated our chatbot to my facebook messenger. So I can contact my restaurant chatbot through my facebook messenger.

Below are a few screenshots when I was I asking some queries through my facebook messenger.


Messenger
Adding integrations
Making programmatic
Facebook
Messenger
www.facebook.com/messages/t/2159463891039662
80%
Search
Getting Started
Senior Embedded So...
C++ OOPs Concepts - ...
Nookesh
Home
Create
Restaurant chatbot
Hi
Hello. How can I help you?
I want to place an order?
Ok. You can check our menu in the below link and place an order "https://www.My3Restaurants.com/menu/Veg.html"
DEC 2, 2018, 11:17 PM
Hi
Hello. How can I help you?
Wanna see your menu
Which menu do you want to see?
Non-Vegetarian
To see our Non-Vegetarian menu, please check the following link "https://www.My3Restaurants.com/menu/Non-Veg.html"
Type a message...
Restaurant chatbot
Options
Search in Conversation
Manage Messages
Rate Experience
Notifications
Messenger Link
m.me/2159463891039662
Shared Photos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Home
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Tell me about your restaurant?
My3 is a multi-cuisine restaurant which provides breakfast, lunch and dinner. We have branches located in Visakhapatnam, Hyderabad and Bangalore.
TUE 12:35 PM
Hi
Hello. How can I help you?
9:19 AM
hi
Type a message...
Restaurant chatbot
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Search in Conversation
Manage Messages
Rate Experience
Notifications
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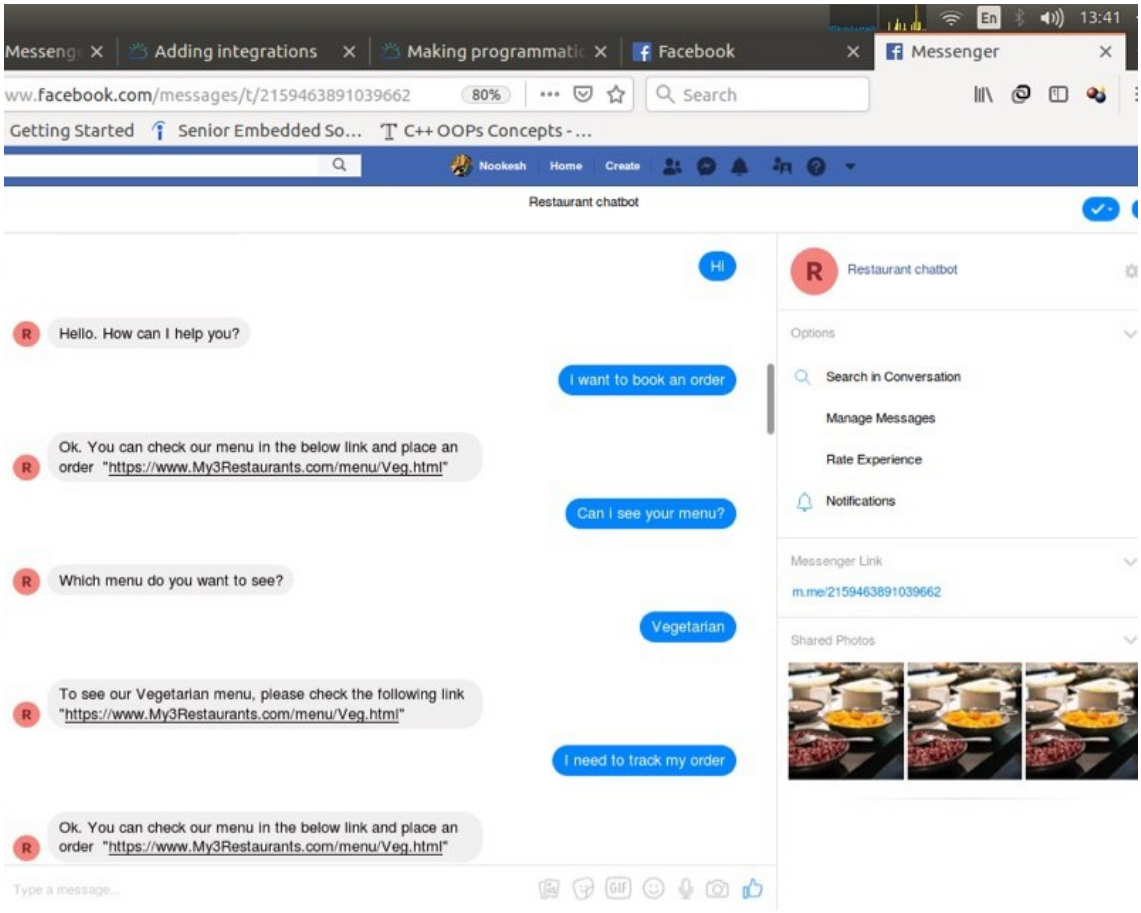
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Home
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Hi
Hello. How can I help you?
I want to book an order
Ok. You can check our menu in the below link and place an order "https://www.My3Restaurants.com/menu/Veg.html"
Can i see your menu?
Which menu do you want to see?
Vegetarian
To see our Vegetarian menu, please check the following link "https://www.My3Restaurants.com/menu/Veg.html"
I need to track my order
Ok. You can check our menu in the below link and place an order "https://www.My3Restaurants.com/menu/Veg.html"
Type a message...
Restaurant chatbot
Options
Search in Conversation
Manage Messages
Rate Experience
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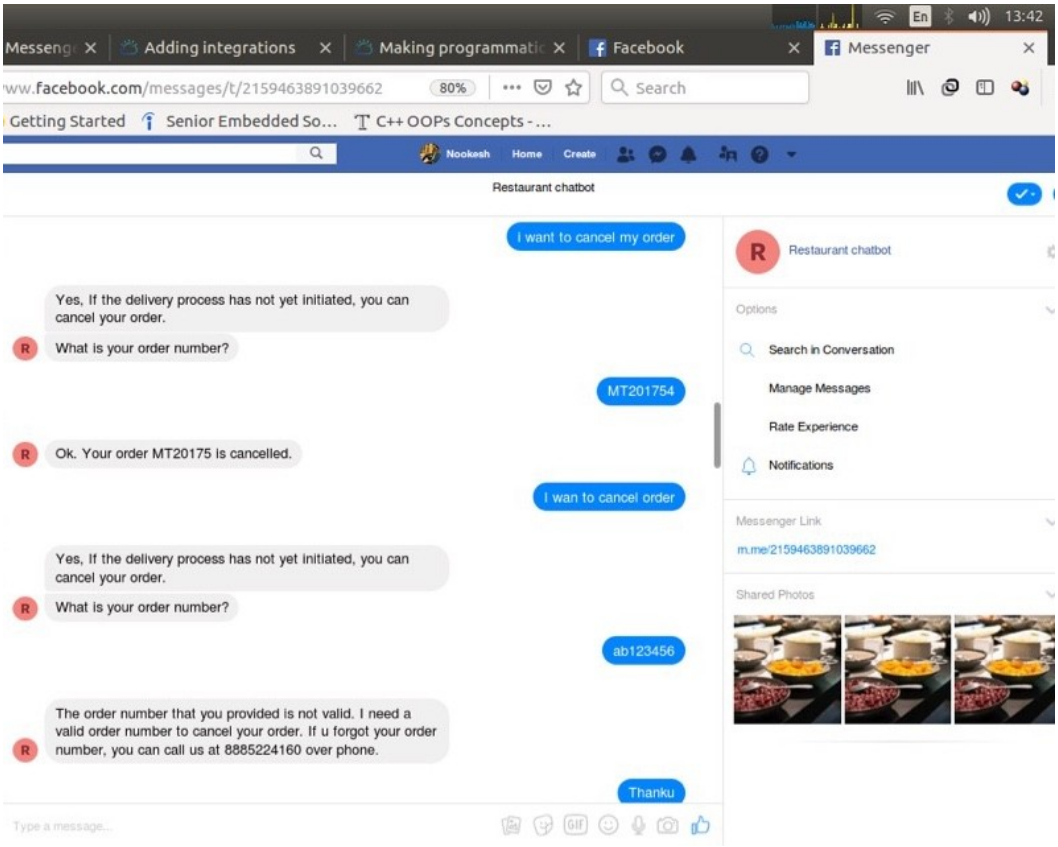
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Search
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C++ OOPs Concepts - ...
Nookesh
Home
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I want to cancel my order
Yes, If the delivery process has not yet initiated, you can cancel your order.
What is your order number?
MT201754
Ok. Your order MT20175 is cancelled.
I wan to cancel order
Yes, If the delivery process has not yet initiated, you can cancel your order.
What is your order number?
ab123456
The order number that you provided is not valid. I need a valid order number to cancel your order. If u forgot your order number, you can call us at 8885224160 over phone.
Thanku
Type a message...
Restaurant chatbot
Options
Search in Conversation
Manage Messages
Rate Experience
Notifications
Messenger Link
m.me/2159463891039662
Shared Photos

5. Challenges which are not solved

1.When I am sharing the webhook link(chatbot facebook messenger) to my friends, the bot is not responding to other facebook users, but it is responding only to my facebook messenger(i.e admin).

2. I Could not implement programmatic calls (making calls to external applications or services and get back a result as part of the processing that occurs within a dialog turn) when I was implementing weather forecasting chatbot.

6. Conclusion

The progressive advance of technology has seen an increase in businesses moving from traditional to digital platforms to transact with consumers. Convenience through technology is being carried out by businesses by implementing AI techniques on their digital platforms. One AI technique that is growing in its application and use is chatbots. Some examples of chatbot technology are virtual assistants like Amazon's Alexa and Google Assistant, and messaging apps, such as WeChat and Facebook messenger.

7. References

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https://console.bluemix.net/docs/services/assistant/dialog-runtime.html#dialog-runtime

https://console.bluemix.net/docs/services/assistant/dialog-actions.html#dialog-actions

https://developer.ibm.com/code/topics/chatbot/