

A Project Report

On

Chatbot To Shop For Essentials During Pandemic Using Watson Assistant

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Smartinternz - Gurucool Program

Chatbot To Shop For Essentials During Pandemic Using Watson Assistant

Category: IBM Cloud Application

Skills Required: ChatBot
IBM Watson Assistant
IBM Nodered

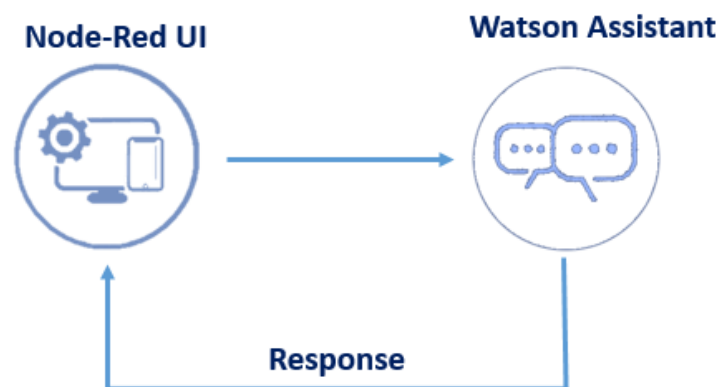
Project Description:

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 items.
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:



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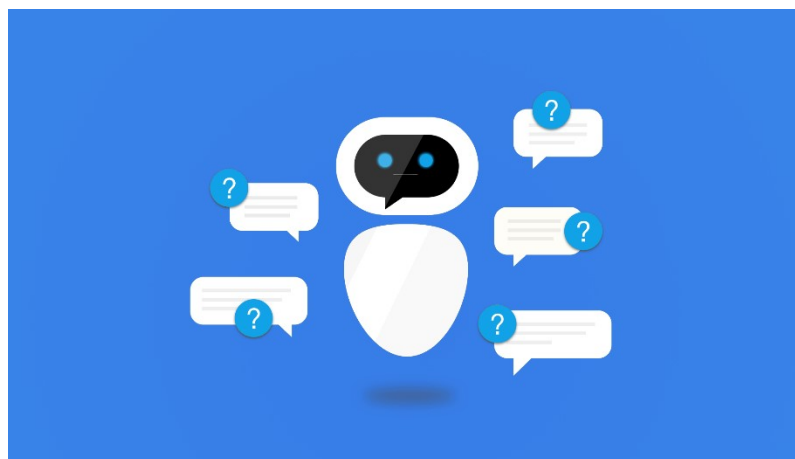
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1. Introduction

1.1 CHATBOT

Instead of having direct communication with a live human agent, a chatbot is a software program used to perform an online chat conversation through text or text-to-speech. Designed to convincingly mimic how a human being might behave as a conversational partner, chatbot systems usually require continuous tuning and testing, and many in development are unable to converse or pass adequately.

For different purposes, including customer support, request routing, or for information collection, chatbots are used in dialog systems. While some chatbot implementations use comprehensive word classification processes, natural language processors, and advanced AI, others simply use common phrases obtained from a related library or database to search for general keywords and produce responses.



Through website popups or via virtual assistants, most chatbots are accessed online. They can be grouped into categories of use that include trade, education, entertainment, finance, health, news, and productivity (e-commerce via chat).

2. Need of Chatbot for shopping

2.1 Need of Chatbot for shopping

Is there anything you can do to keep the coronavirus from coming in? Other than the fact that it is a highly infectious respiratory virus and is readily transmitted from person to person, by air, saliva, sneezing and so on, there is much that is unknown about the pathogen. We also know that the medical community is racing to create a vaccine and to find treatments that could better cure COVID-19, the coronavirus-induced pneumonia-like disease.

Recommendations by the Centers for Disease Control and Prevention are better practices than silver bullets in terms of protecting yourself and those around you, especially people with weakened immune systems and the elderly. There is no pill or shot you can take at this time to prevent you from catching the coronavirus or spreading it if you are asymptomatic.

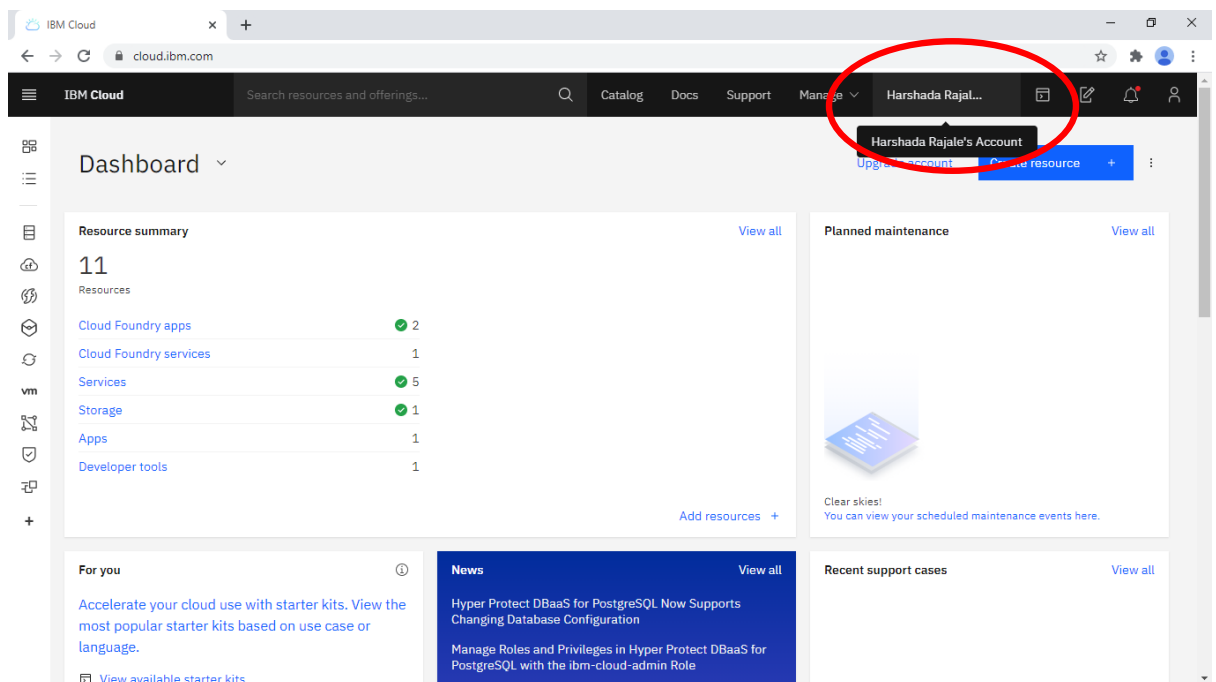
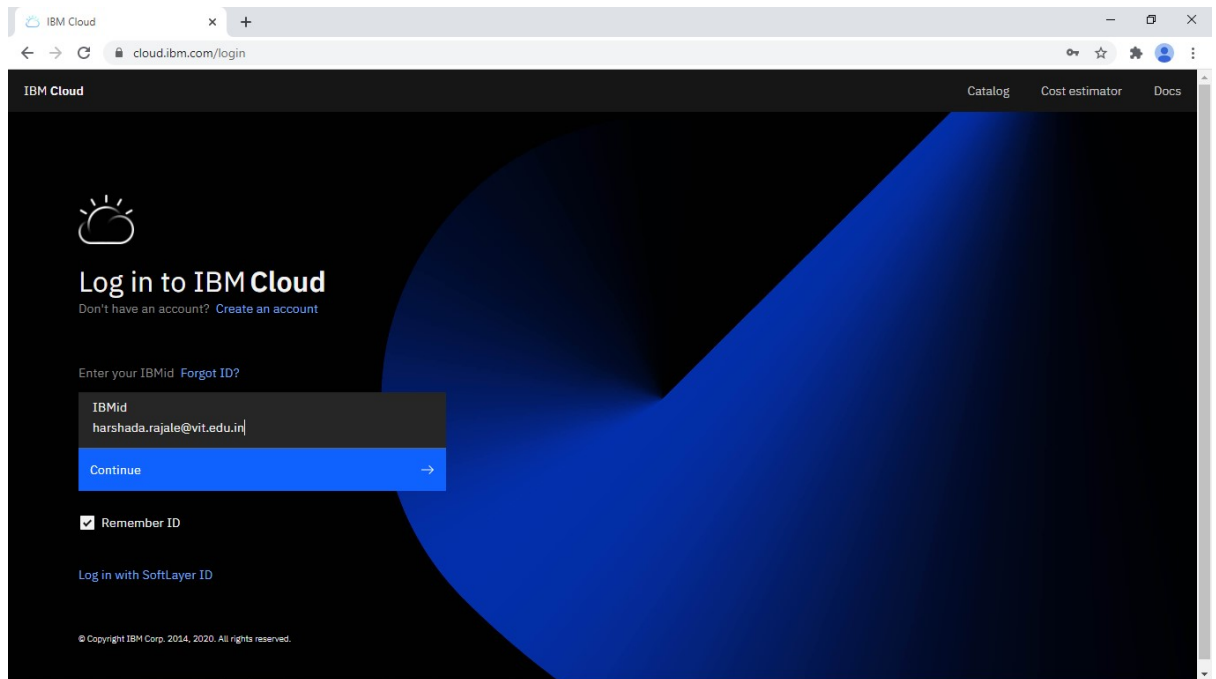


The best methods for controlling the disease right now are the ones you already know, stay away as far as possible from others. This can be best done by staying at our home and avoiding visiting crowded places like markets, malls, etc. for shopping. Shopping of all the essential products can be done online with the help of Chatbot applications.

In this project, I have designed a “Chatbot To Shop For Essentials During Pandemic Using Watson Assistant” that is extremely useful for shopping vegetables just at a click from your home.

3. Building Chatbot

3.1 Login into IBM Account



3.2 Create Watson Assistant service

The screenshot shows the IBM Cloud Resource list page. The table lists various services, and the 'Watson Assistant-1g' instance is highlighted with a red circle. The table has columns for Name, Group, Location, Status, and Tags.

Name	Group	Location	Status	Tags
Cloud Foundry services (1)				
Services (5)				
Continuous Delivery	Default	Dallas	Active	—
Internet of Things Platform	Default	London	Active	—
Watson Assistant-1g	Default	London	Active	—
Watson Assistant-1g	Default	Dallas	Active	—
node-red-harshada-ec2-cloudant-1603914...	Default	Sydney	Active	—
Storage (1)				
Network (0)				
Cloud Foundry enterprise environments (0)				
Functions namespaces (0)				

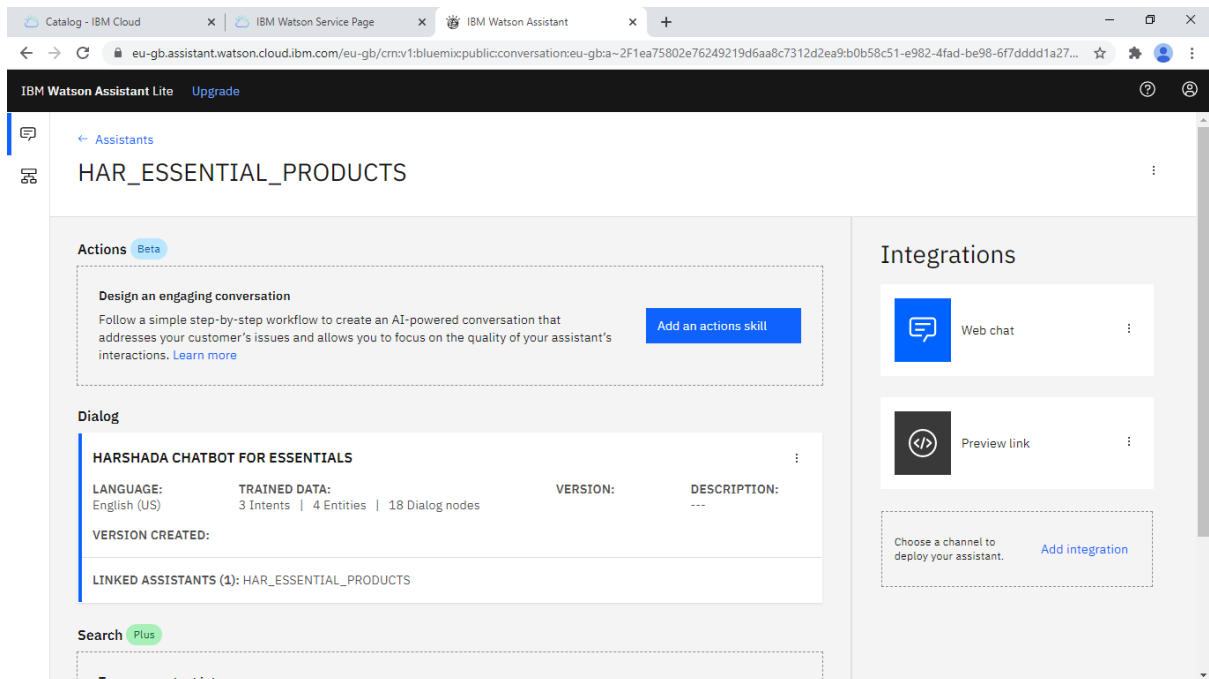
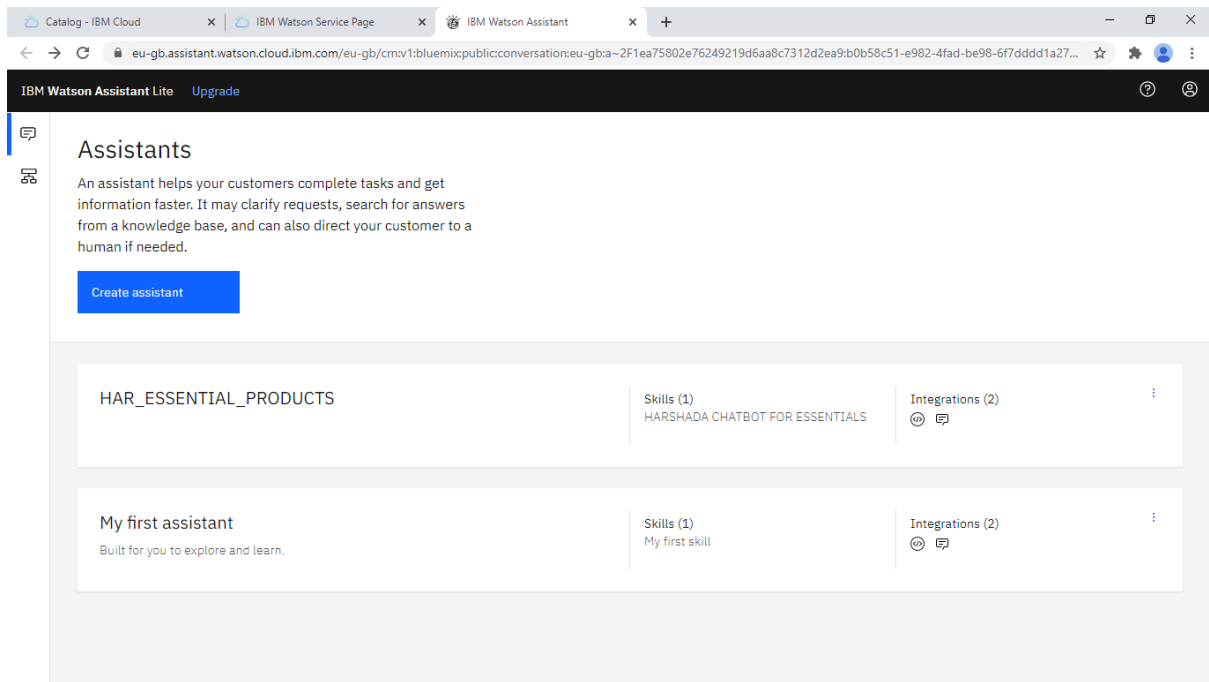
The screenshot shows the IBM Watson Assistant service page. The 'Launch Watson Assistant' button is highlighted. The 'Credentials' section shows the API key and URL.

Launch Watson Assistant | [Getting started tutorial](#) | [API reference](#) | **Upgrade**

Credentials

API key: [Download](#) [Show credentials](#)

URL:



3.3 Create Intents

The screenshot shows the IBM Watson Assistant interface for a chatbot named 'HARSHADA CHATBOT FOR ESSENTIALS'. The left sidebar contains a menu with options: Intents, Entities, Dialog, Options, Analytics, Versions, and Content Catalog. The main area displays a table of intents. At the top right, there are icons for undo, redo, and delete, along with a 'Create intent' button. The table has columns for 'Intents (3) ↑', 'Description', 'Modified ↑↓', and 'Examples ↑↓'. The listed intents are #Enquiry, #Greetings, and #Order. At the bottom, it indicates 'Showing 1-3 of 3 intents' and '1 of 1 pages'.

Intents (3) ↑	Description	Modified ↑↓	Examples ↑↓
<input type="checkbox"/> #Enquiry		4 hours ago	6
<input type="checkbox"/> #Greetings		5 hours ago	6
<input type="checkbox"/> #Order		4 hours ago	3

The screenshot shows the 'Examples' section for the '#Greetings' intent. The top bar indicates 'Last updated: 5 hours ago' and includes a 'Try it' button. Below the header, there is a text input field for 'User example' with a placeholder 'Type a user example here' and a note: 'Add unique examples of what the user might say. (Pro tip: Add at least 5 unique examples to help Watson understand)'. An 'Add example' button is located below the input field. To the right, there is a 'Show recommendations' button. The main area displays a list of examples with checkboxes and timestamps. At the bottom, it indicates 'Showing 1-6 of 6 examples' and '1 of 1 pages'.

Annotations:

- ☐ good afternoon (8 hours ago)
- ☐ good evening (5 hours ago)
- ☐ good morning (8 hours ago)
- ☐ hello (8 hours ago)
- ☐ hey (8 hours ago)
- ☐ Hi (8 hours ago)

3.4 Create Entities

IBM Watson Assistant Lite Upgrade

HARSHADA CHATBOT FOR ESSENTIALS

Intents

Entities

My entities

System entities

Dialog

Options

Analytics

Versions

Content Catalog

<input type="checkbox"/>	Entity (3) ↑	Values	Modified ↑↓
<input type="checkbox"/>	@Enquiry	Products, Offers	4 hours ago
<input type="checkbox"/>	@Greetings	Good evening, Good morning, Good afternoon	4 hours ago
<input type="checkbox"/>	@Product_name	75GSM and 95 GSM PPE Kit, Faceshield, Foot Operated Sanitizer Dispenser, Hand G...	4 hours ago

Showing 1–3 of 3 entities

1 1 of 1 pages

Create entity +

IBM Watson Assistant Lite Upgrade

@Greetings

Last updated: a few seconds ago

Name your entity to match the category of values that it will detect.

Value

Type a value

Synonyms

Type a synonym

Add value

Recommend synonyms

Dictionary (3)

Annotation (0) Beta

<input type="checkbox"/>	Values (3) ↑	Type
<input type="checkbox"/>	Good afternoon	Synonyms gud aftrn, ga, gd afternoon, gud afternoon
<input type="checkbox"/>	Good evening	Synonyms ge, gud evng, gd evng, gud evening
<input type="checkbox"/>	Good morning	Synonyms gm, gud mrng, morning, gd mrng

Showing 1–3 of 3 values

1 1 of 1 pages

3.5 Use System Entity

Catalog - IBM Cloud

IBM Watson Service Page

IBM Watson Assistant

+

eu-gb.assistant.watson.cloud.ibm.com/eu-gb/crnv1:bluemixpublic:conversation:eu-gb:a-2F1ea75802e76249219d6aa8c7312d2ea9:b0b58c51-e982-4fad-be98-6f7ddd1a27...

IBM Watson Assistant Lite Upgrade

?

?

Try it

Intents

Entities

My entities

System entities

Dialog

Options

Analytics

Versions

Content Catalog

Intents

Entities

My entities

System entities

Dialog

Options

Analytics

Versions

Content Catalog

The following entities are prebuilt by IBM to recognize references to things like numbers and dates in user input. Turn on a system entity to start using it. You cannot edit system entities. [Learn more](#)

New system entities are available that are even better at detecting dates, times, and numbers. Go to [Options>System entities](#) to enable them.

Name (5)	Description	Status
▼ @sys-number	Extracts numbers mentioned from user examples as digits or written as numbers. (21)	<input checked="" type="checkbox"/> On
▼ @sys-percentage	Extracts amounts from user examples including the number and the % sign. (15%)	<input type="checkbox"/> Off
▼ @sys-currency	Extracts currency values from user examples including the amount and the unit. (20 cents)	<input type="checkbox"/> Off
▼ @sys-date	Extracts date mentions (Friday)	<input type="checkbox"/> Off
▼ @sys-time	Extracts time mentions (at 10)	<input type="checkbox"/> Off

3.6 Create Dialog

The screenshot shows the IBM Watson Assistant interface for a chatbot named 'HARSHADA CHATBOT FOR ESSENTIALS'. The 'Dialog' tab is selected in the left sidebar. The main area displays a list of dialog nodes:

- Welcome**: welcome, 1 Responses / 0 Context Set / Does not return
- Greetings Node**: #Greetings || @Greetings, 4 Responses / 0 Context Set / Does not return
- Enquiry Node**: #Enquiry, 2 Responses / 0 Context Set / Does not return
- Order Product**: #Order, 1 Responses / 2 Context Set / 2 Slots / Skip user input / Does...
- Anything else**: anything_else, 1 Responses / 0 Context Set / Does not return

Buttons at the top include 'Add node', 'Add child node', and 'Add folder'. A 'Try it' button is in the top right.

The screenshot shows the configuration for the 'Order Product' dialog node. The node name is 'Order Product'. Below it, the configuration is divided into two sections:

If assistant recognizes

#Order

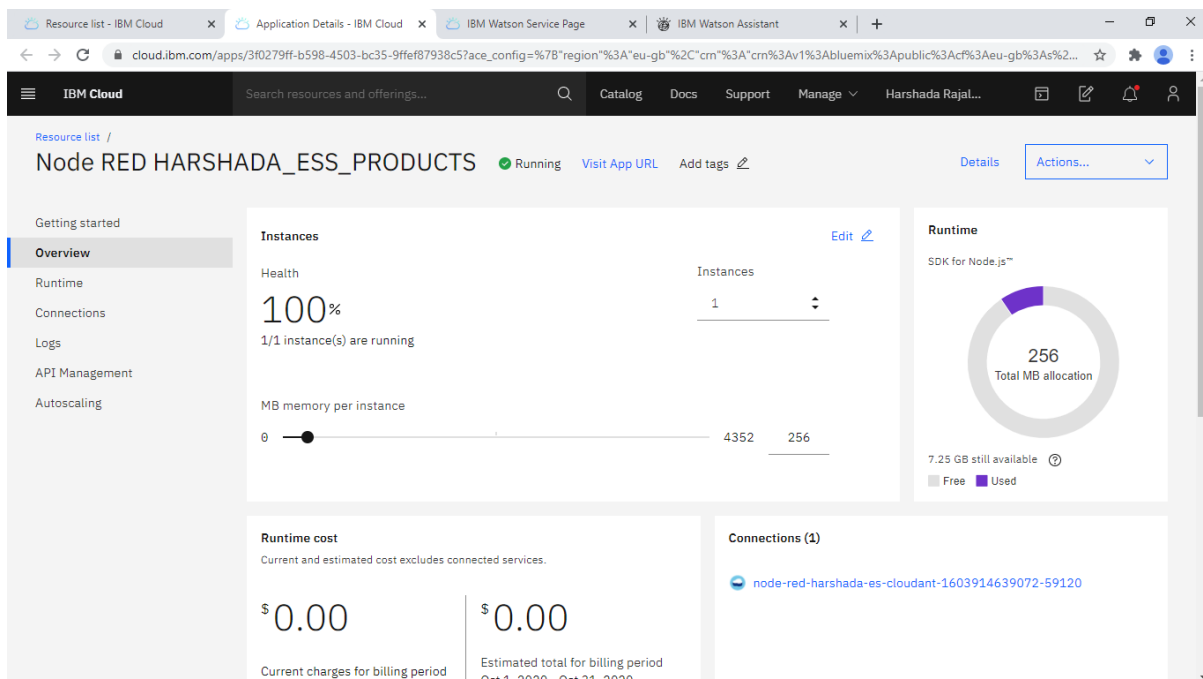
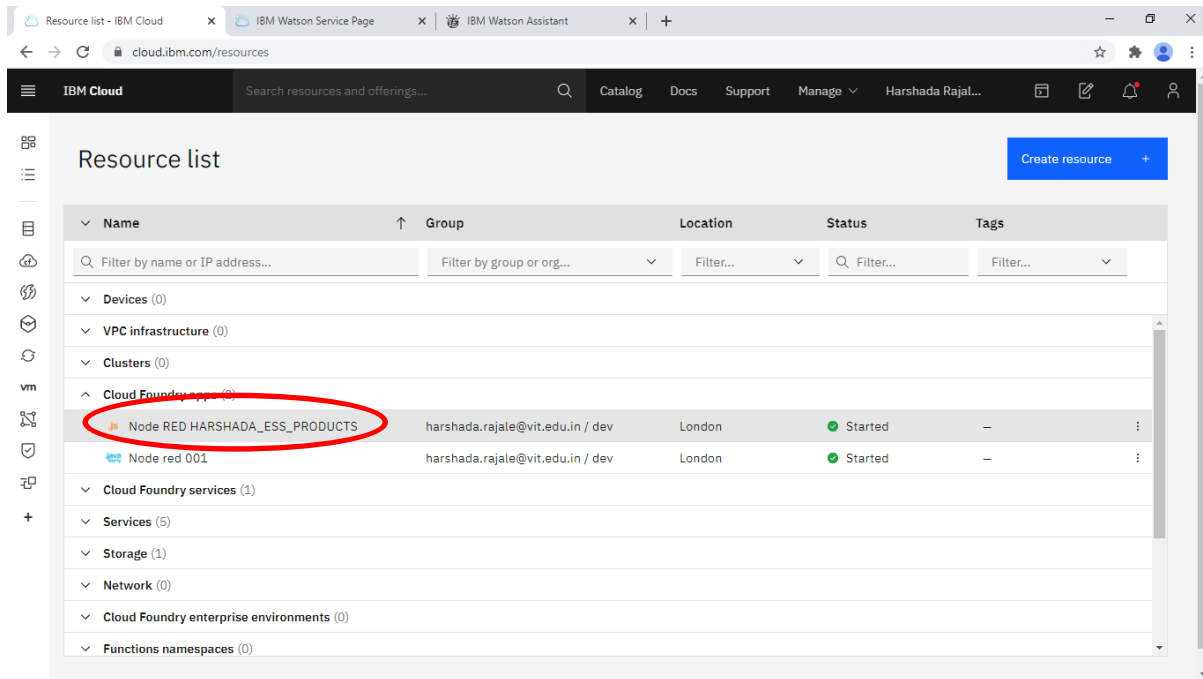
Then check for

	Check for	Save it as	If not present, ask	Type
1	@Product_na	\$Product_nar	Enter the Proc	Required
2	@sys-number	\$number	Enter the qua	Required

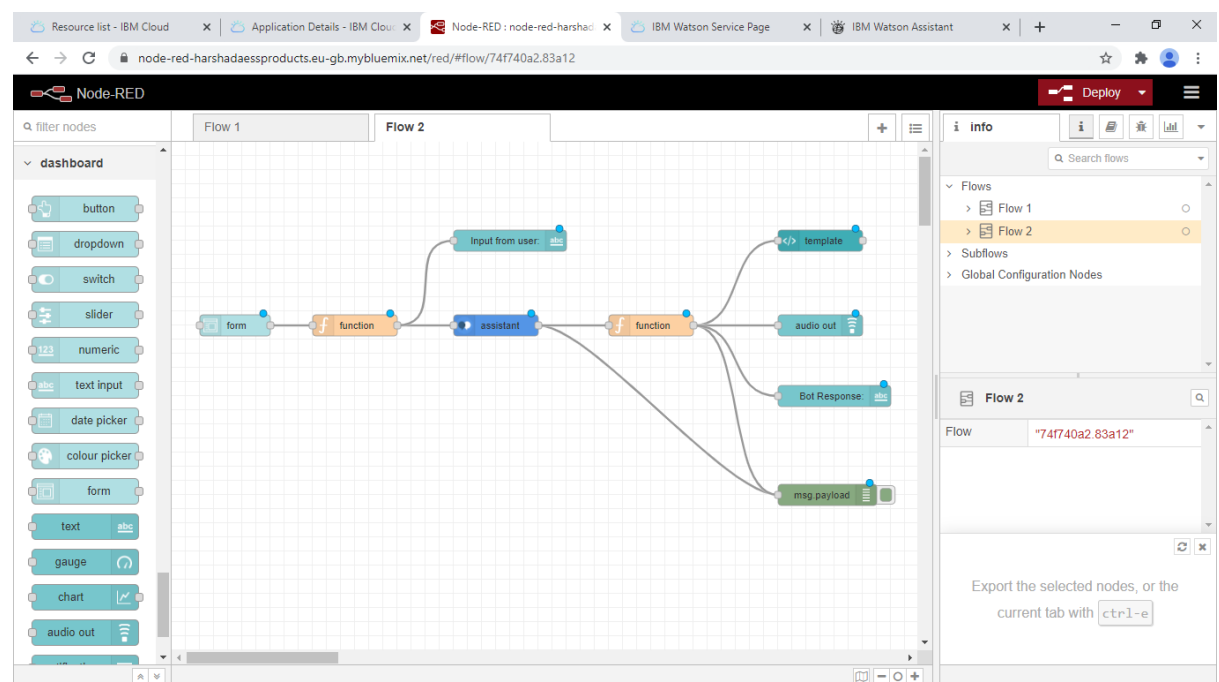
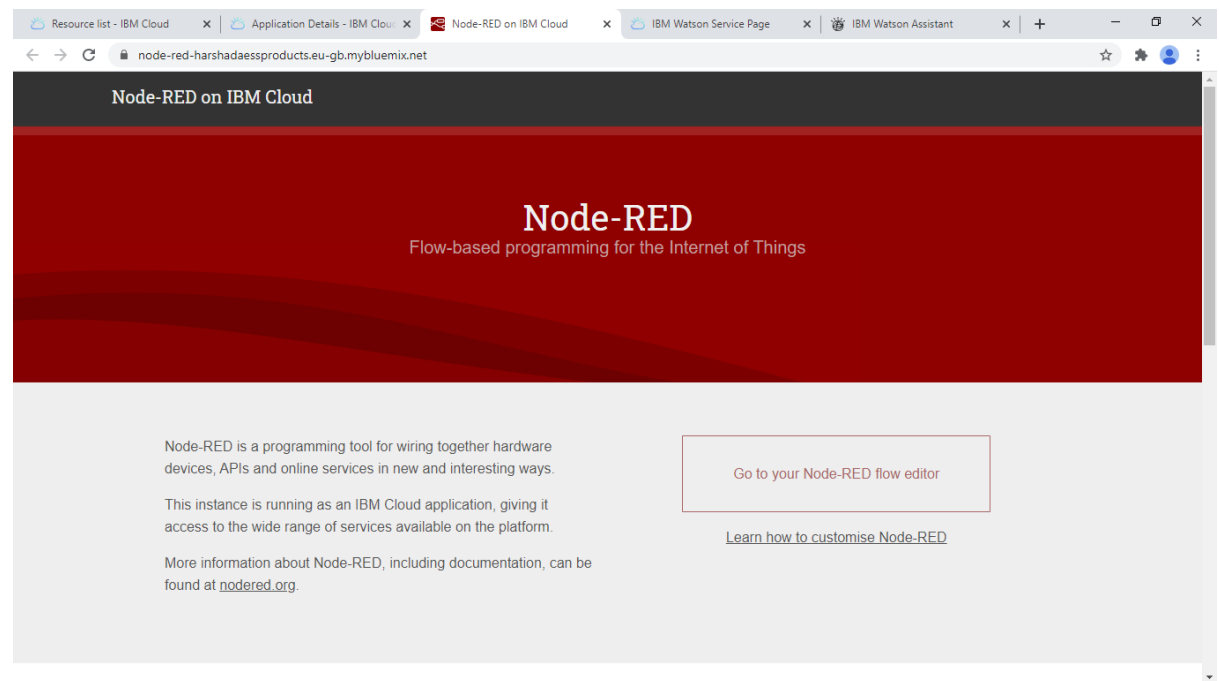
Buttons for 'Customize' and 'Settings' are visible. A 'Manage handlers' link is also present.

4. Building Node-Red Application

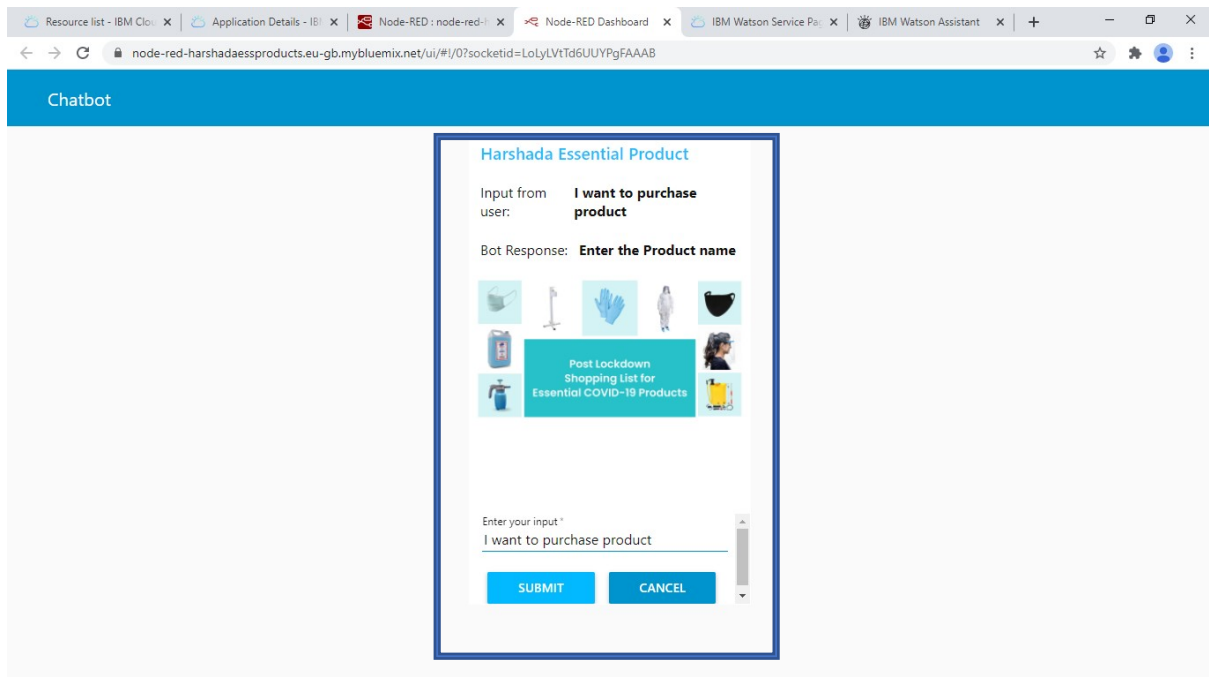
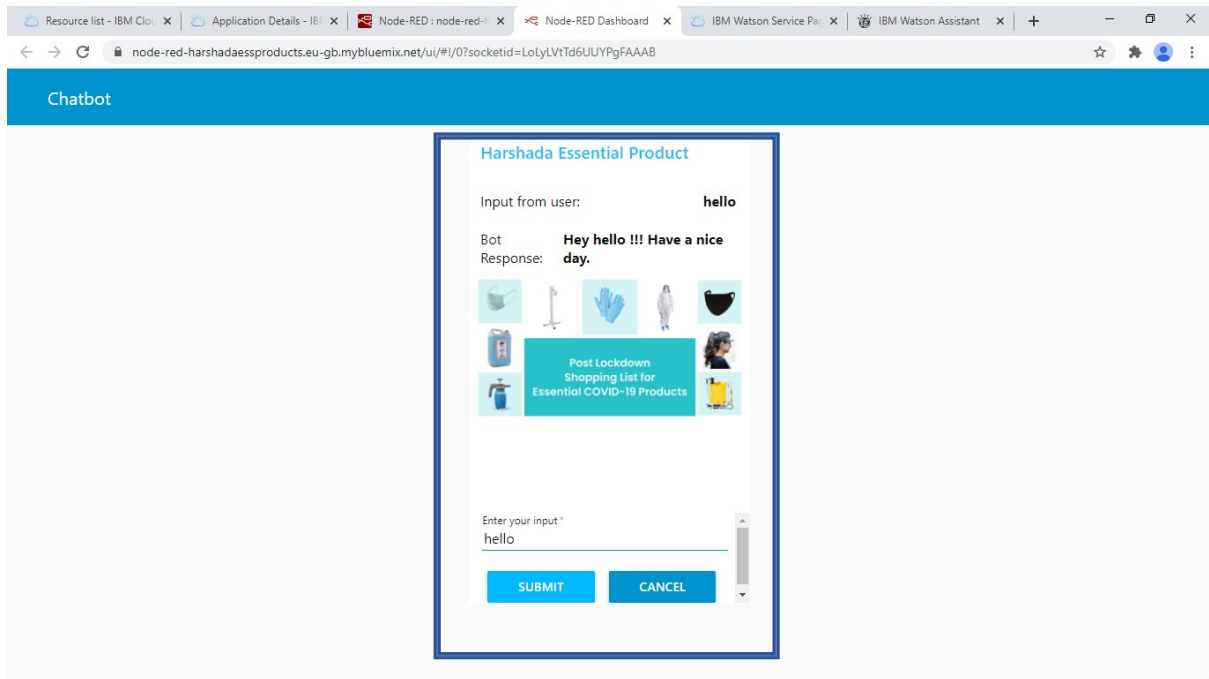
4.1 Create Node-Red Service

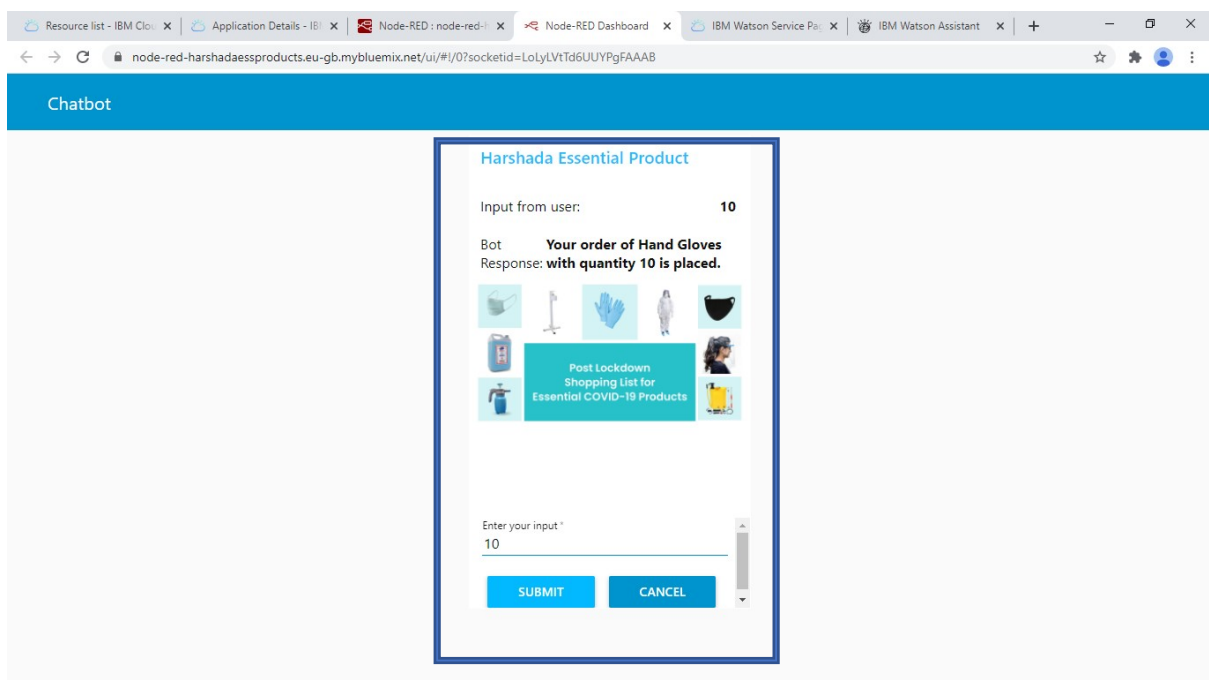
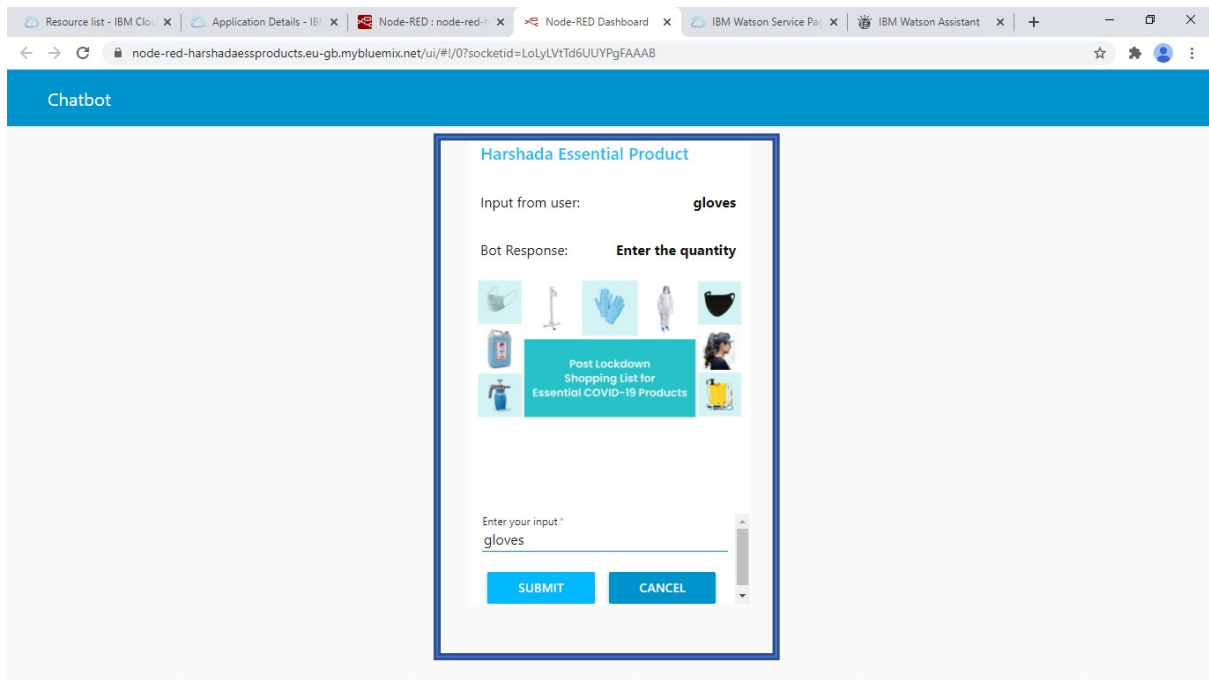


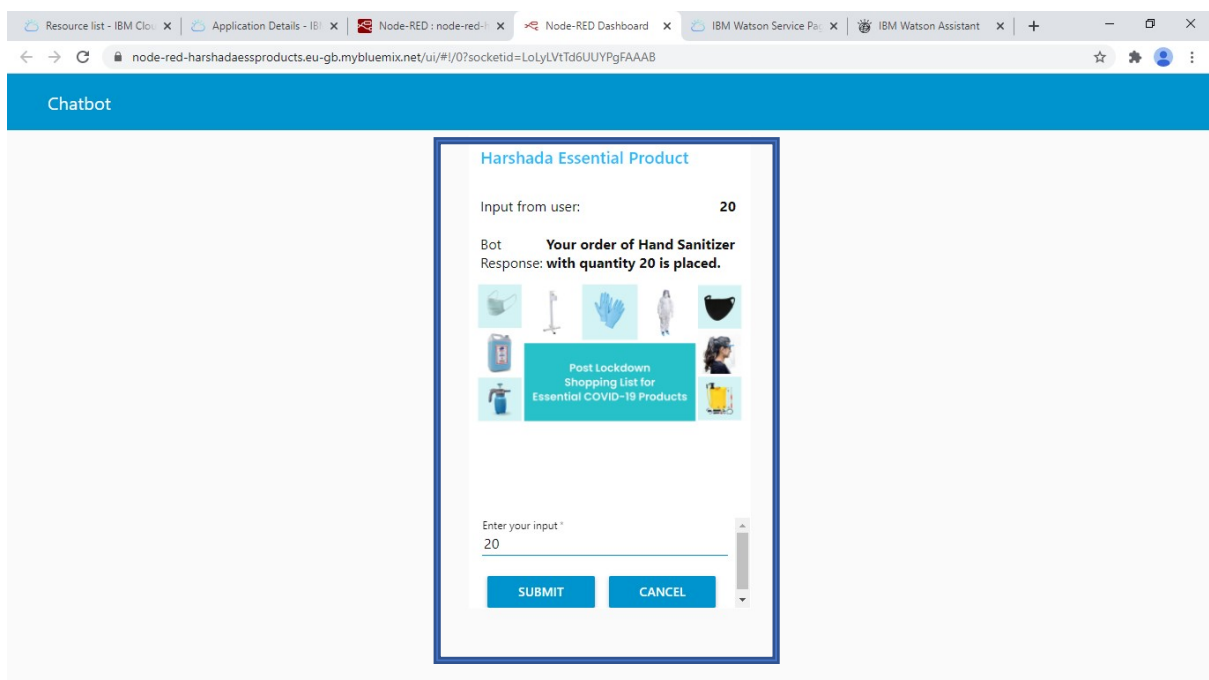
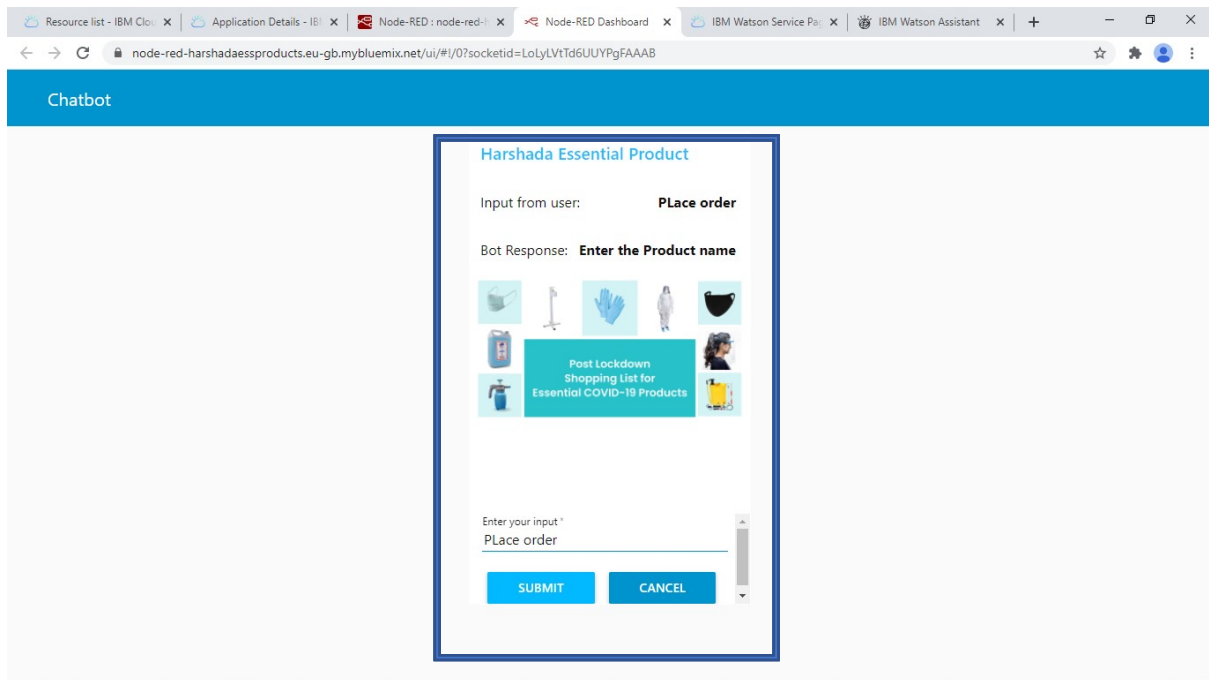
4.2 Integrate Node-RED to Watson Assistant



5. Final Output







6. Conclusion

With the help of this chatbot, shopping of essential products will be very much easy, convenient, and SAFE especially during this pandemic when it is very risky to step outside your house. One can very easily view the list of items in the Store and observe the prices of various items. The users would also get to know if there are any offers or discounts available. And with the help of the details like name, contact number, address, and the items to place the order taken by the bot, the ordered items shall deliver to the doorstep without many efforts.

7. Future Scope

Even though with the help of this chatbot, shopping of essential products will be very much easy, convenient, and SAFE especially during this pandemic when it is very risky to step outside your house. There can be some features added to this project that would certainly make this chatbot better. Some of those features are like, apart from vegetables, other essential items like fruits, milk, dairy product, medicines could be added. Similar items can be compared between two or more stores. Online bill payment immediately after the order is placed. Also, live video of the items can be made available to the user so that they can choose between the items.

8. References

1. <https://en.wikipedia.org/wiki/Chatbot>
2. <https://www.cnet.com/health/can-you-avoid-coronavirus-when-going-out-in-public-these-16-practical-tips-could-help/>
3. <https://youtu.be/6t8C0YRUGec>
4. https://youtu.be/iEadmCNb_hE