# PROJECT TITLE

**“Chatbot To Shop For Essentials During Pandemic Using Watson Assistant”**

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# 1. INTRODUCTION

## a. Overview

The Covid -19 pandemic has put the world to a standstill by providing hindrances to the supply of essential services to the larger population in a hassle free manner. To understand the needs of the daily users, there needs to a chat bot based assistant that can help users in guiding them in choosing essential daily services and products.

## b. Purpose

The purpose is to create an Artificial Intelligent chat bot that can serve the purpose of understanding the user needs through a human like dialog flow that identifies each word the user types by keeping track of keyword and responding in a very human like manner and placing orders. The main purpose is to bridge the gap between technology and real life services.

# 2. LITERATURE SURVEY

## 2.1 Existing Problem

Some of the challenges of exiting chatbots are understanding:

- Users way of texting.
- User language
- Limitations of NLP
- Randomness of being a human
- Limited attention span
- Recognising user intents is what is needed.

### 2.2 Proposed Solution

Today, because of social distancing and other issues it can be risky for some people to shop for essential items in person. The proposed 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:

Give the list of items in the Store

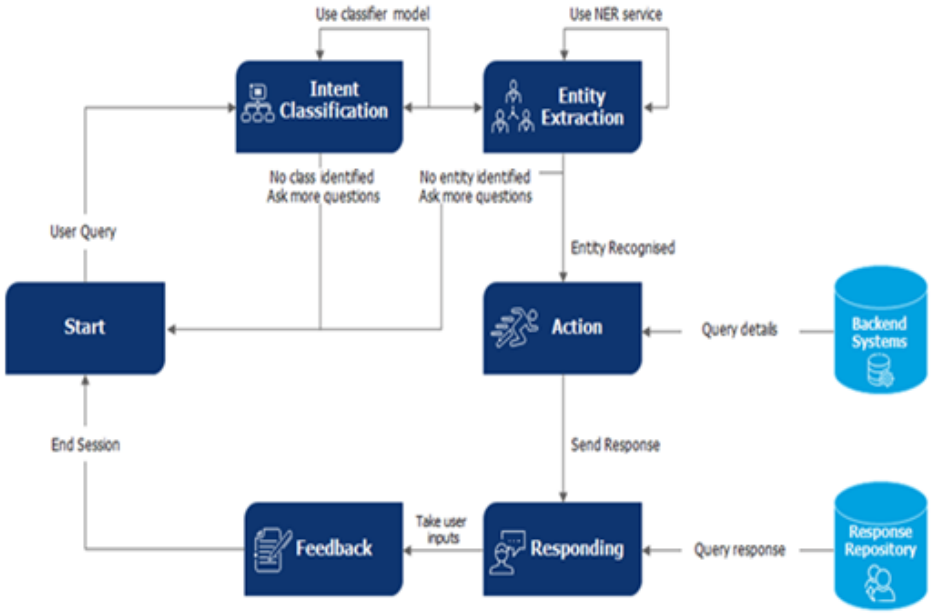
Should show the  prices of vegetables

Display if there are any offers or discounts

The bot should be able to take details like name, contact number, address, and the items to place the order.

## 3. THEORITICAL ANALYSIS

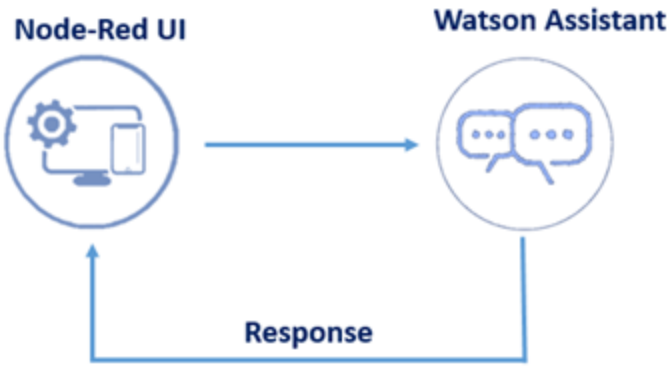
### 3.1 Block Diagram



### 3.2 Hardware/Software Designing

Requirements : ChatBot, IBM Watson Assistant, IBM Nodered

Uses: IBM Cloud Application

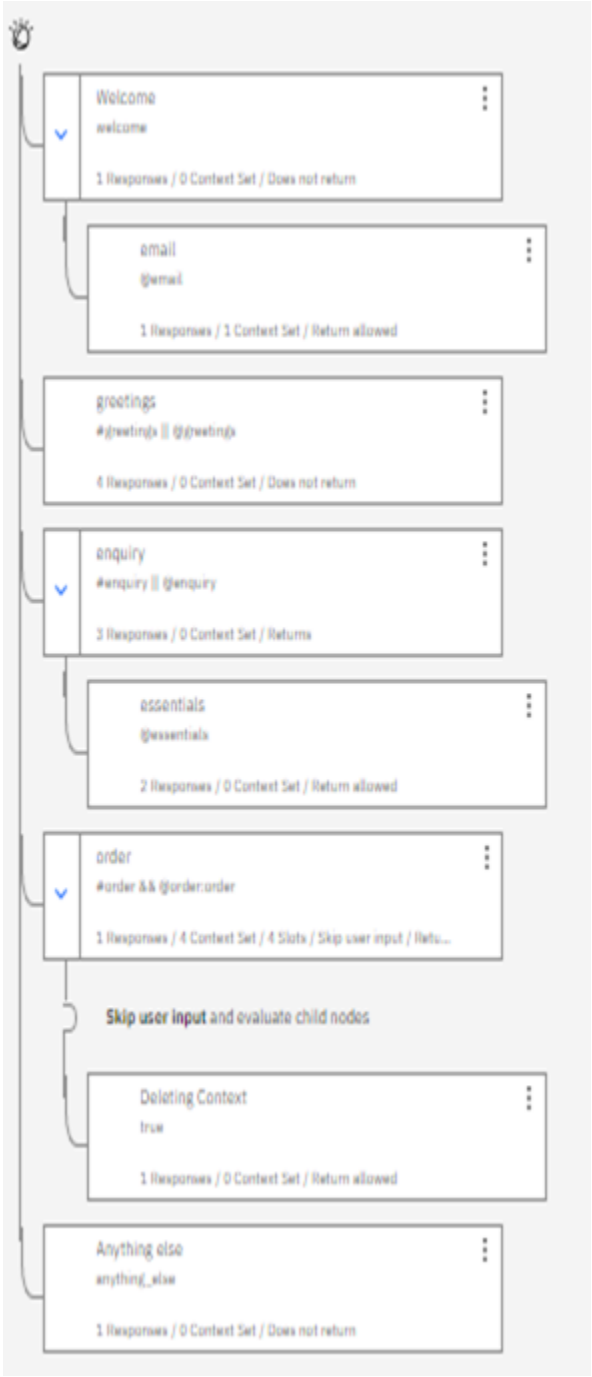



## 4. EXPERIMENTAL INVESTIGATIONS

Communicating with customers through live chat interfaces has become an increasingly popular means to provide real-time customer service in many e-commerce settings. Today, human chat service agents are frequently replaced by conversational software agents or chatbots, which are systems designed to communicate with human users by means of natural language often based on artificial intelligence (AI). Though cost- and time-saving opportunities triggered a widespread implementation of AI-based chatbots, they still frequently fail to meet customer expectations, potentially resulting in users being less inclined to comply with requests made by the chatbot.

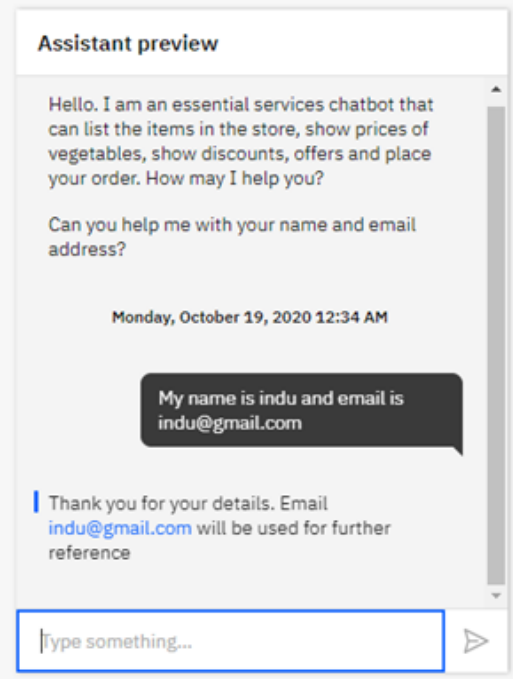
However, IBM Watson Assistant proved to provide a very seamless integration with Node Red providing a custom based workflow for a UI integration. The build up of the project is very systematic with step wise workflow. The use of IBM Cloud enables the developer to select regions of the project deployment. The observations of the deployment of chatbot is live chat services continue to be effective and provide very useful textual/voice/image-based interactions.

5. **FLOWCHART**

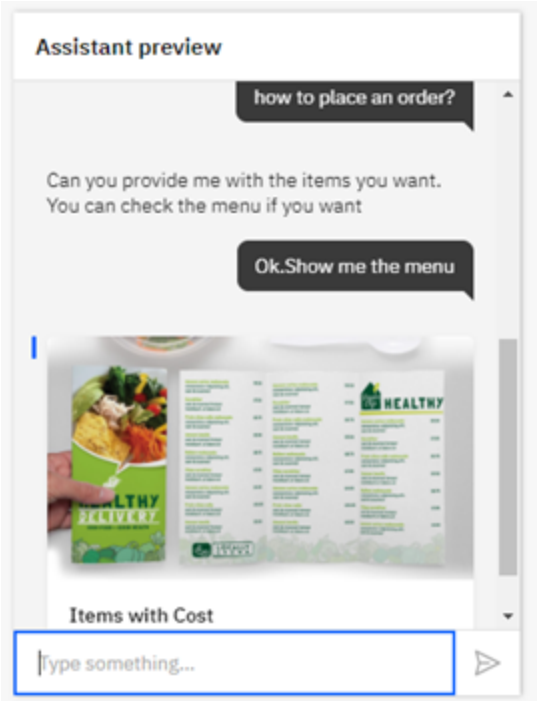

Welcome
welcome
1 Responses / 0 Context Set / Does not return
email
@email
1 Responses / 1 Context Set / Return allowed
greetings
#greeting.k || @greeting.k
4 Responses / 0 Context Set / Does not return
enquiry
#enquiry || @enquiry
3 Responses / 0 Context Set / Returns
essentials
@essentials
2 Responses / 0 Context Set / Return allowed
order
#order && @order:order
1 Responses / 4 Context Set / 4 Slots / Skip user input / Retu...
Skip user input and evaluate child nodes
Deleting Context
true
1 Responses / 0 Context Set / Return allowed
Anything else
anything_else
1 Responses / 0 Context Set / Does not return

6. **RESULT**

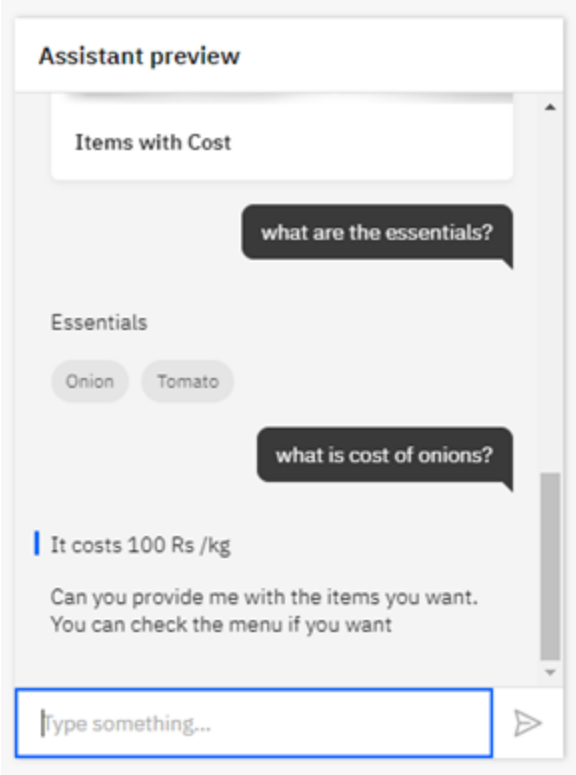
**Welcome message and Contact details captured**



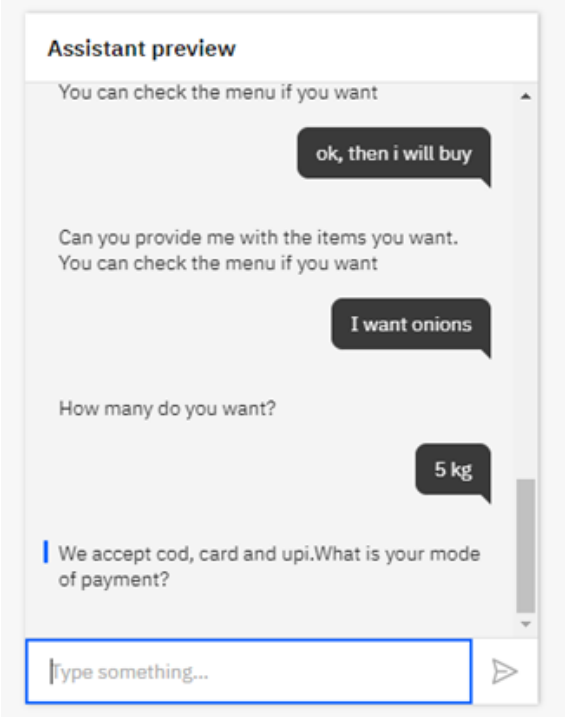

**List of essentials shown in picture form**



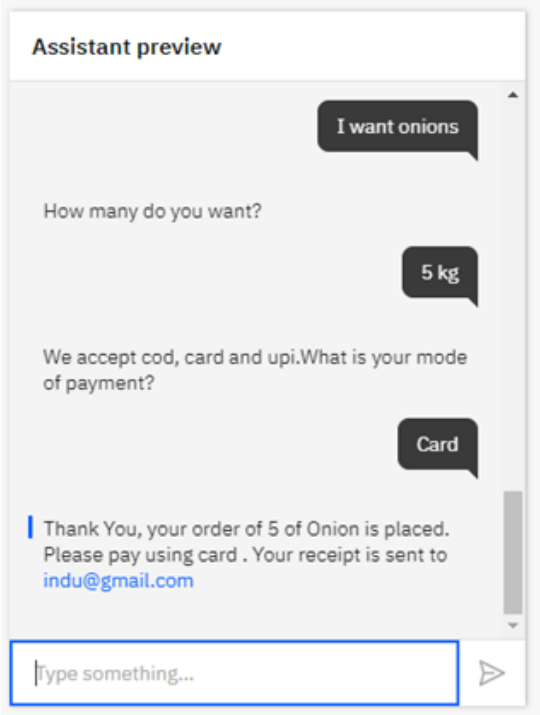
## Cost and prices shown of essentials



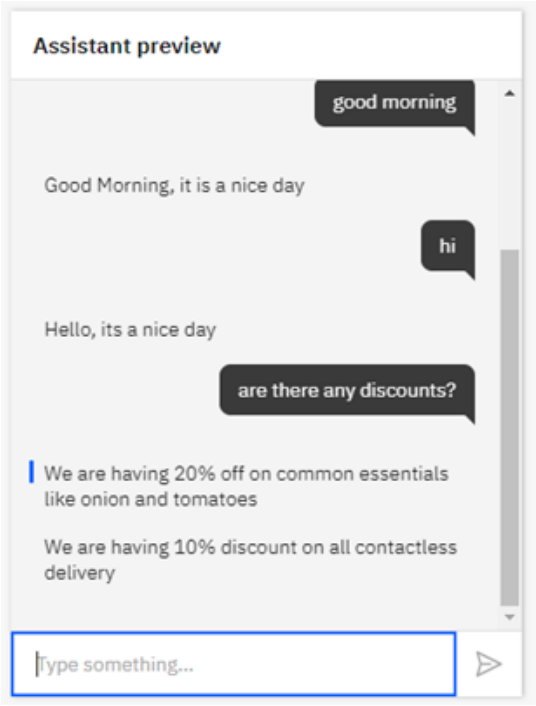

## Purchase option with payment options and quantity captured by bot



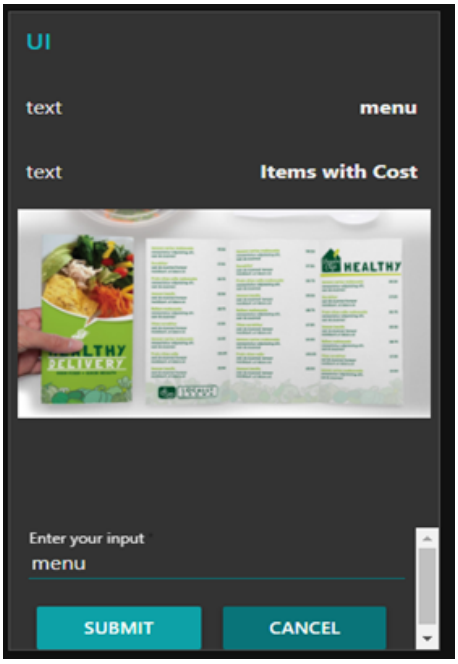
## Payment mode chosen and receipt sent to user’s email id

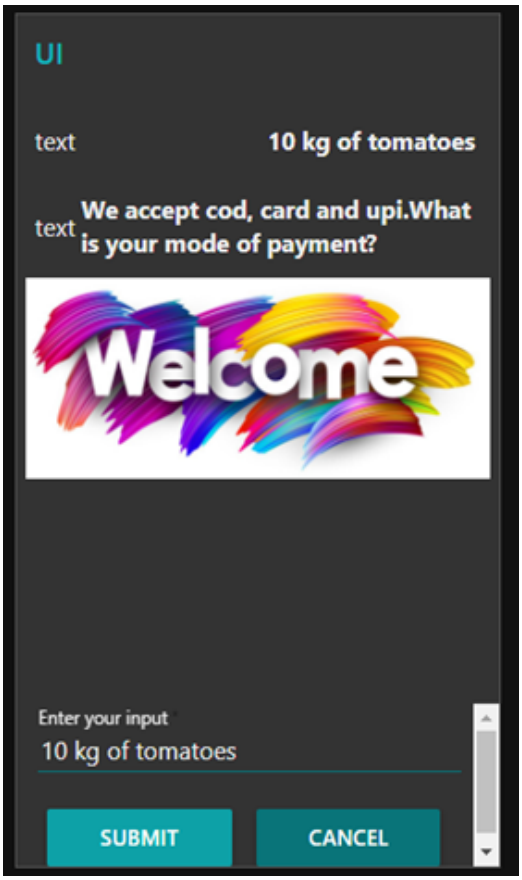



## Greetings done and discounts/offers shown

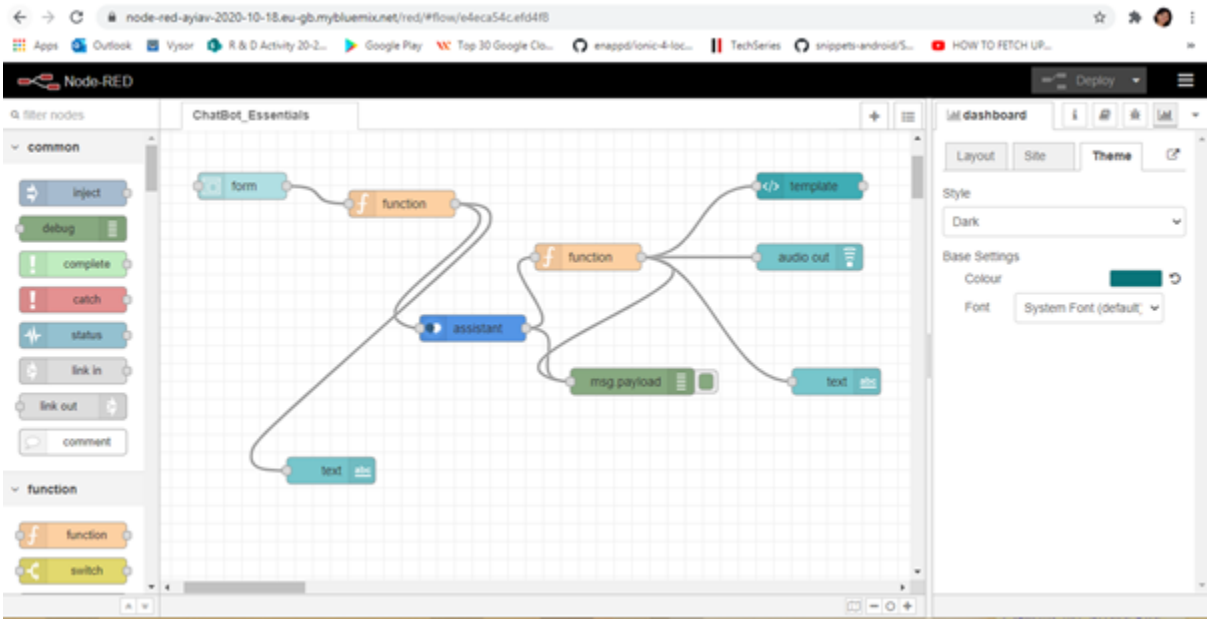


**SCREENSHOT OF INTEGRATION WITH NODE_RED (Successful Integration)**



**NODE red FLOW**




## 7. ADVANTAGES & DISADVANTAGES

Advantages:

The dialog workflow makes it easy to understand

The AI Bot is very user friendly

24/7 availability due to lBM cloud platform

Coding is less and more of click through approach

Easy customization as per developer needs

Disadvantages

The integration with node red UI is difficult to understand for beginners

There may be need for a long dialog flow to ensure no ambiguity in the chat

## 8. APPLICATIONS

In real world websites like

For Retails Services

For Customer Care Services

For Banking Applications

For Any Assistive Services

## 9. CONCLUSION

AI base chat bot was successfully implemented using IBM Watson Assistant and Node Red to create a chatbot for essential services during the pandemic situation. All results as per requirement were obtained and the project was deployed on IBM cloud through a DevOps integrated pipeline.

## 10. FUTURE SCOPE

The chatbot can be further expanded to include more cloud functions and also integrate with data from cloud storage. Also the dialog flow can be expanded to include more variations of dialog between user and chatbot.

## 11. BIBILIOGRAPHY


https://cloud.ibm.com/

https://smartinternz.com

www.github.com

https://link.springer.com/article/10.1007/s12525-020-00414-7

## A. SOURCE CODE

Node red APP URL:
https://node-red-ayiav-2020-10-18.eu-gb.mybluemix.net/red/#flow/e4eca54c.efd4f8

The code and video demonstration is available in the following repository.

Git Repository:
https://github.com/SmartPracticeschool/SPS-6340-chatbot-to-shop-for-essentials-during-pandemic-using-Watson-Assistant.git