Contents

1. INTRODUCTION

The present work is intended to provide a solution through the development of a chatbot using the Watson assistant and Node-RED UI for booking the movie tickets. It ensures error free booking of tickets without human agent intervention smoothly even during the peak hours. Saves time and makes the process much more easier on customer as well as service provider end by eliminating the elongated process starting from waiting in the queue of booking counter to getting the answers of repetitive queries. A web based conversational flow is generated by only clicking on an URL from any electronic gadget with internet access.

1.1 Overview

The Movie ticketing bot is nothing but a simple chatbot which has all the information related to the name or list of movies, their show timings, seat availability details, prices etc. It can be trained with all the necessary details for booking a movie ticket to select the seat category, select different add ons to choose payment modes while paying for the tickets. It is a kind of question answer session initiation between the trained chatbot and the customer.

1.2 Purpose

The purpose of designing this movie ticketing bot is mainly to save the time from the customer point of view as well as the service provider end. Even during the peak hours of day, weekends ,holidays this movie ticketing bot can work effortlessly without any exhaustion. It reduces the chance of confusion while placing the order and customers can repetitively check the desired query responses. Even it can handle more number of customers within a time span. The cost of the service provider end can be reduced by reducing the number of human agents. Moreover it provides easy access as it can be used from any electronic gadgets mobile phones, tabs, laptops , desktops with internet connectivity.

2. Literature Survey

Several chatbots are available. Among them Companion for Dementia Patients

introduced by RussianTechnology company Endurance. Casper introduced chatbots for the Insomniac people to get through the night. The chatbot is named Insomnobot 3000 . The non profit organization UNICEF uses chatbots for helping people living in developing nations raise their voice regarding their most urgent. The bot called U-Report emphasizes on largescale data gathering via polls . a chatbot called Med What is used to make the medical diagnoses faster.

2.1 Existing Problem

Ticket booking system for the cinema halls still uses human agents for answering the repetitive queries of the customers and guide them to book their tickets. In this system the customer has to
wait in a queue for indefinite time based on the number of customers already present in the queue before him/her. Even per customer time requirement is also not fixed that's why the delay during the peak hours is unpredictable and even in busy schedule it depends upon the efficiency of the agents. Moreover it has a fixed operation time and customer has to be physically present.

2.2 Proposed solution

The proposed system with a movie ticketing bot eliminates the problems associated to onsite movie ticket booking. They can book their movie ticket from anywhere using internet enabled devices. It is easy to access, easy to get the information related to the show timing, movie list, seat categories, seat availability etc. Moreover in this system different add-on order facility has been also incorporated along with the movie ticket booking. They can even choose the mode of payment.

3. Theoretical Analysis

A movie ticketing chatbot using the Watson assistant is designed in this work. The designed chatbot is capable of showing the list of different movies in the multiplex. Here three categories of movies mainly-Hindi movies, English movies and the regional movies. Under the Hindi movies category three movies are enlisted such as Three idiots, Border, Swades. Similarly for English movies ET and Step Up two movies are included in the list. Among the regional type Bengali ,Tamil and Gujrati option is there. After viewing the list of the movies with categories customer can select a specific movie to know the details such as show timing, price during the weekdays as well as during

weekends. Three seat categories are included such as silver class, gold class and the platinum class. While checking the details of a specific movie by clicking on it the customer can get the idea of the price on weekdays and weekends as per the seat category as well. The availability of the total number of the seats as per category can be also viewed while clicking on the specific movie. There is another option for the customer to choose different add ons such as pop corn, ice cream and cold drinks. By clicking on the specific add on they can also check the price details. Finally the chatbot is capable of booking the ticket for the specific movie and timing with preferred seat category along with the add ons. Different payment options are also included as a part of the chatbot functionality, so that customer can choose among the different payment modes.

3.1 Block diagram

The overall architecture of the Movie ticketing chatbot development is shown in the block diagram below (figure 1). Mainly the Watson Assistant is required to develop the functionalities of the chatbot using different entities, intents and dialog. Watson Assistant is a conversation AI platform. It provides customers fast, straightforward and accurate answers to their questions, across any application, device or channel. It reduces the burden on the customer care executives or agents and handles the customer traffic in a smooth way without any disruption even during the peak times. The exhaustion due to repetitive queries can be handled and provides customer support 24x7. Watson Assistant is smarter than a conventional chatbot , where human emotion mimicking creates misunderstanding, as it is capable searching an answer from a knowledge base. It knows when to ask for clarity and when to forward the query of users to a human. It is possible to deploy it in any cloud or on-premises environment .

Node-RED is a flow-based programming tool developed by IBM's Emerging Technology Services team and now a part of the JS Foundation. The flow-based programming is a way of describing an application's behavior as a network of black-boxes, or "nodes". Each node has a well-defined purpose; it is given some data, it does something with that data and then it passes that data on. The network is responsible for the flow of data between the nodes. Node-RED consists of a Node.js based runtime that you point a web browser at to access the flow editor. Within the browser you create your application by dragging nodes from your palette into a workspace and start to wire them together. With a single click, the application is deployed back to the runtime where it is run. Final

integration of Watson assistant has been done with the
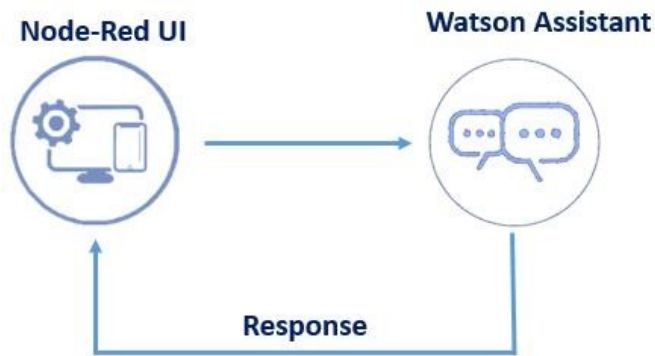Node Red UI for generating the url.

Fig.1

3.2 Software designing

The core part of this work is to build the chatbot for booking movie ticket. The software part is mainly designed with the Watson Assistant. The intents and then the entities are created for the chatbot. Figure 2 shows the created intents #booking, #enquiry, #greetings.
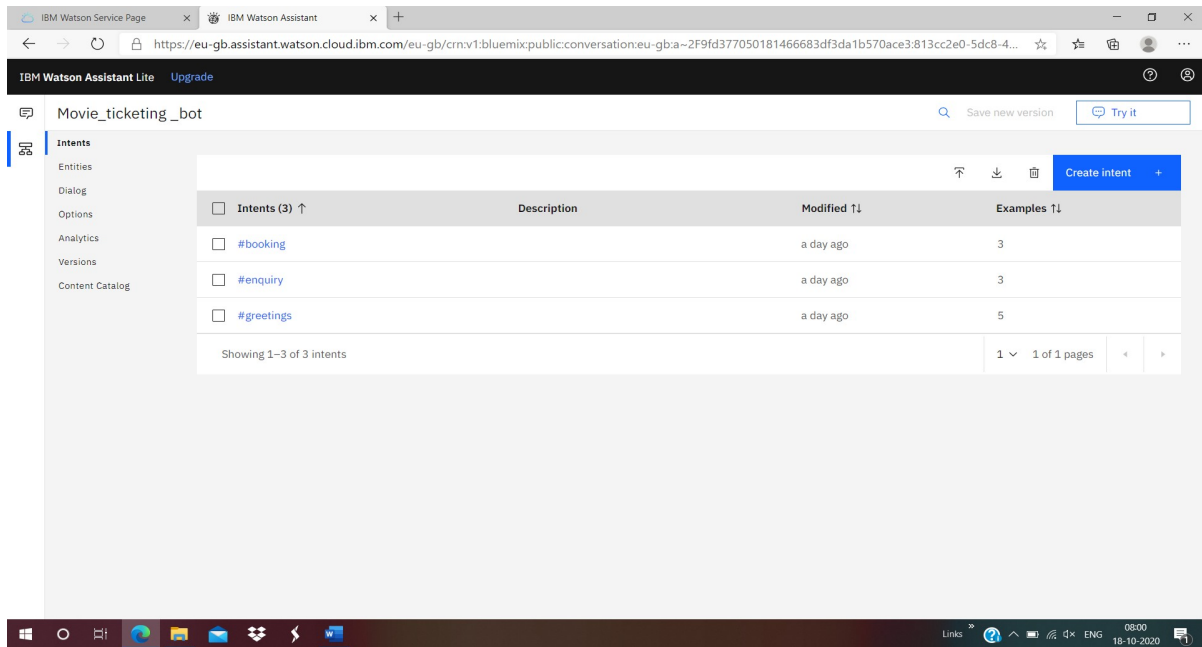
Fig.2

In figure 3 the generated entities are shown in the screenshot such as @add_on, @booking,@email,@enquiry,@movies,@payment,@seat_availability,@seat_category,@ show_time.The associated dialog is created and in each step the outputs are checked. The dialog part is shown in figure 4.
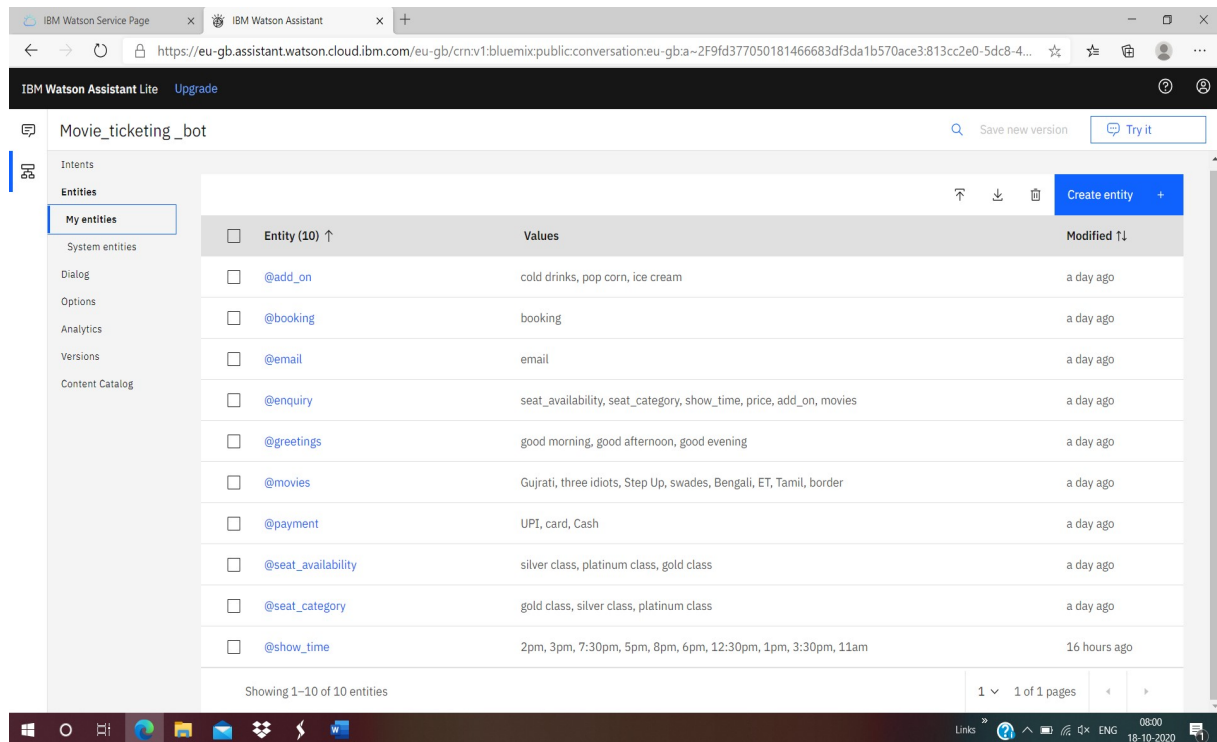
Fig.3

The nodes generated in the dialog part are welcome, greetings, enquiry, booking, anything_else. The child nodes created under node welcome is mail id, under enquiry is movies. The individual responses and configured as per the requirements. After successful completion of dialog generation part Node -Red instance is created. The Node-Red instance is then integrated with the Watson assistant in this case the Movie_ticketing_bot. The successful integration generates the preview link which can be accessed from any internet enabled device for booking tickets shown in figure 5.
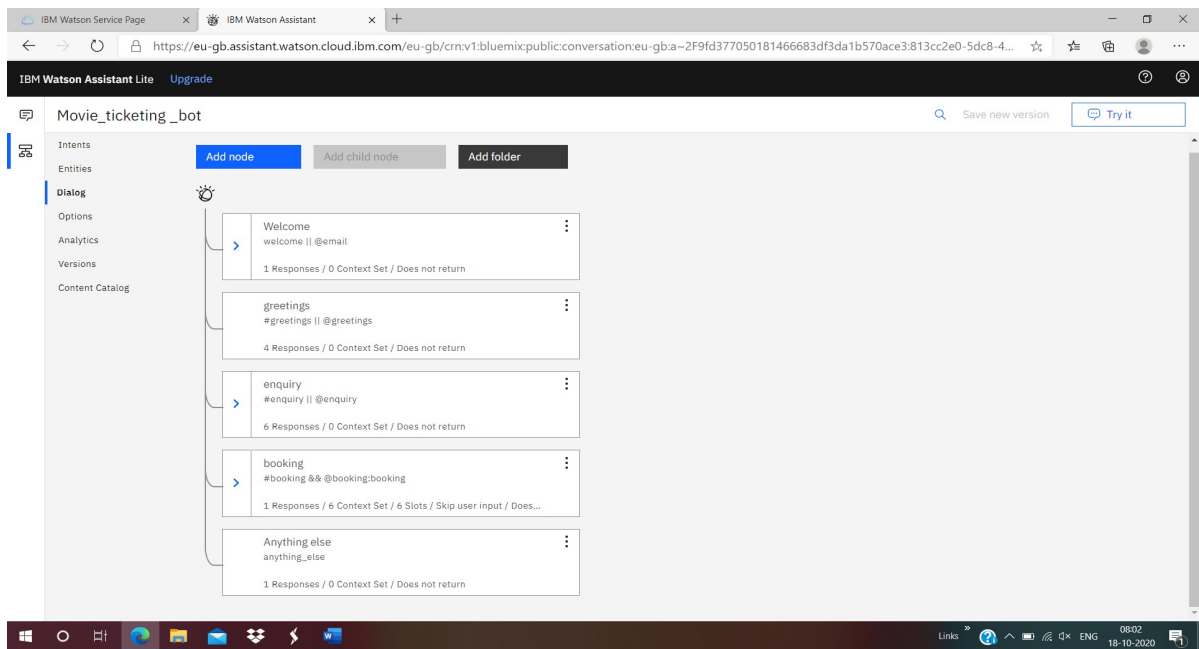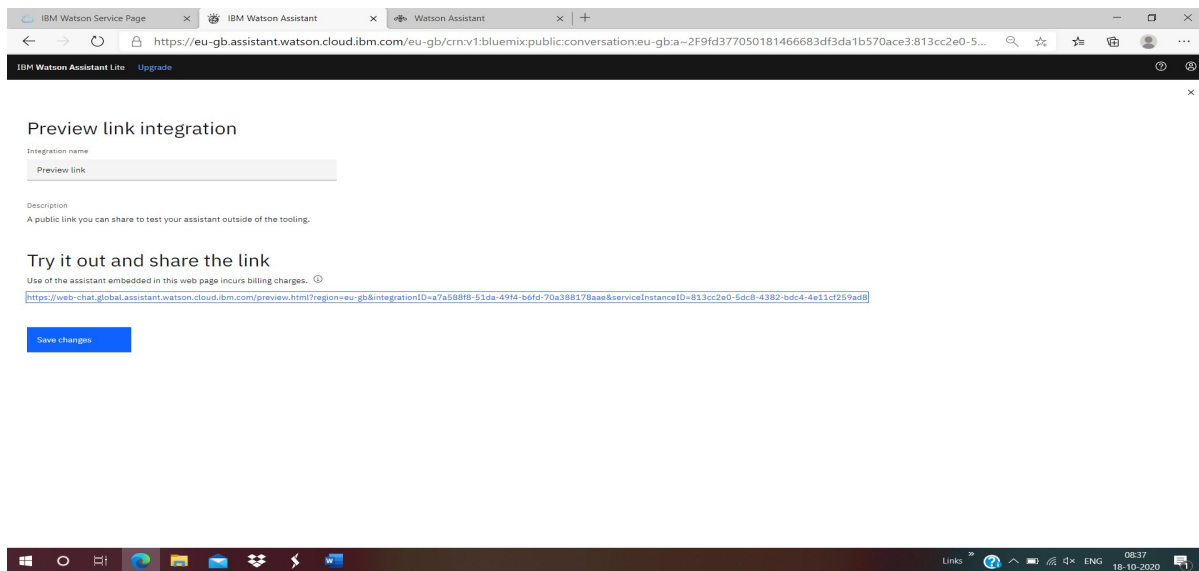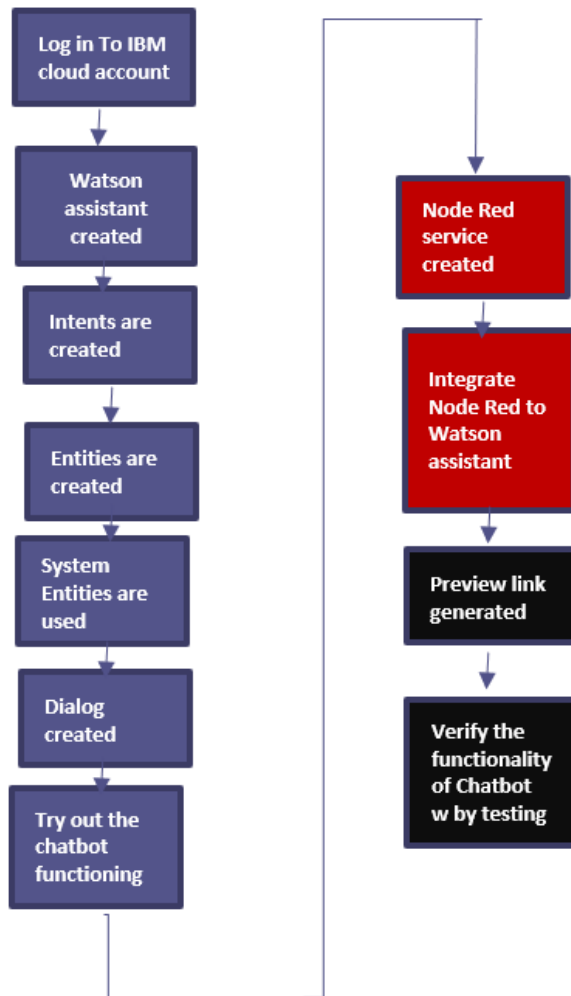
Fig.4

Fig.5

5. Flow chart

The flow chart of the complete process of developing the movie ticketing chatbot is shown in the flow chart below.

```
Log in To IBM
cloud account
      |
      v
  Watson
  assistant                    Node Red
  created                      service
      |                        created
      v                            |
  Intents are                      v
  created                      Integrate
      |                        Node Red to
      v                        Watson
  Entities are                 assistant
  created                          |
      |                            v
      v                        Preview link
  System                       generated
  Entities are                     |
  used                             v
      |                        Verify the
      v                        functionality
  Dialog                       of Chatbot
  created                      w by testing
      |
      v
  Try out the
  chatbot
  functioning
```

6. Results

The screenshot of results of the proposed movie ticketing bot design with the preview link is shown in the figures below.
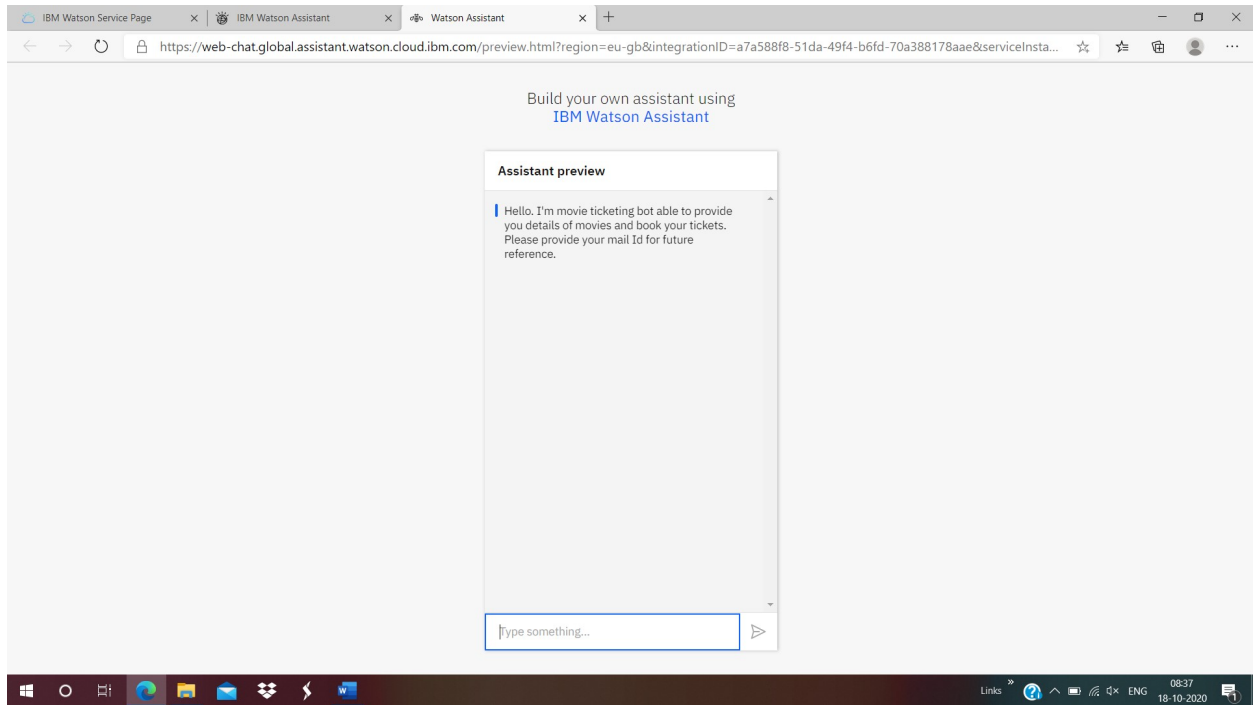
Fig.6

Figure 6 shows the welcome message displayed by the movie ticketing bot while the preview link is clicked on. It asks for the input (email id) of the customer to initiate the conversation flow.
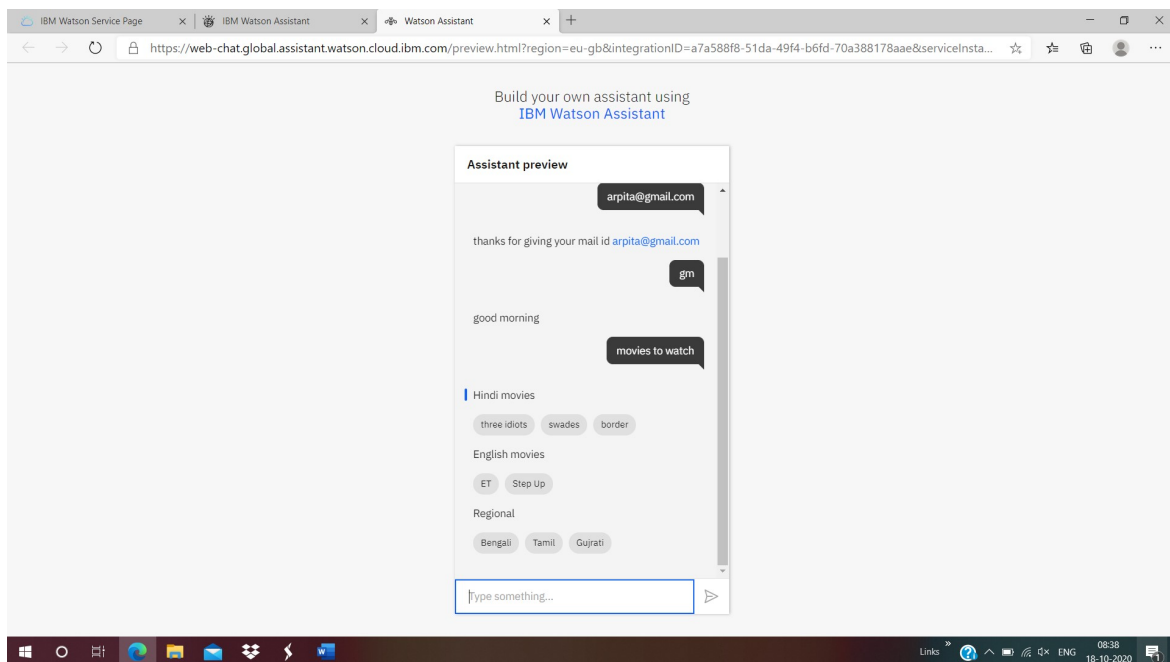
Fig.7

As a response whenever the customer enter the email id it shows the next message. Figure 7 also shows the continuous flow of queries and responses between customer and the chatbot as a response chatbot greets the customer and shows the list of movies. Whenever the customer clicks on the specific movie seat price, timing and availability is displayed by the bot (shown in figure 8).
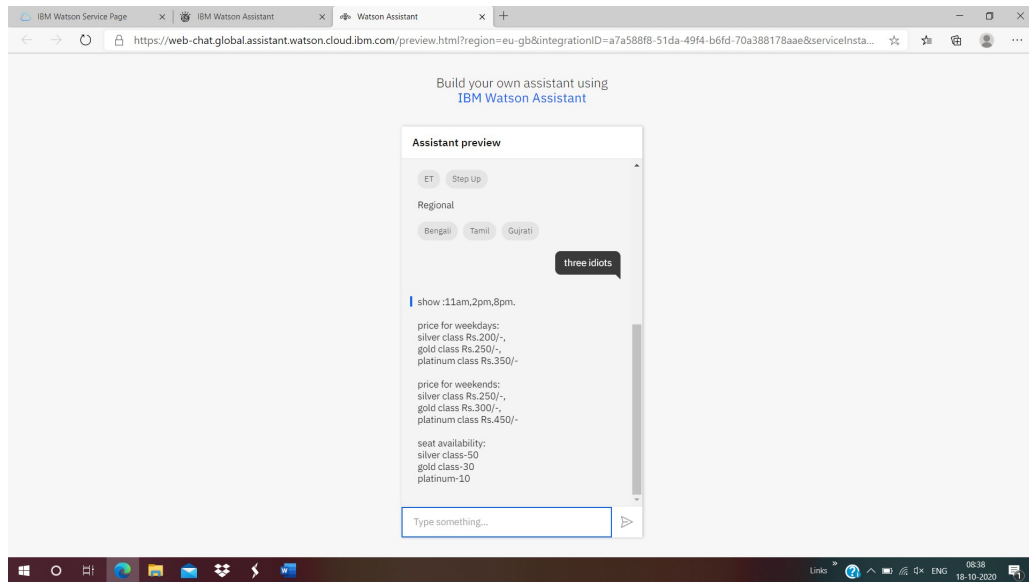

Fig.8

Finally the order or booking of the tickets with movie name, timing, number of tickets, seat category, add on, payment mode is stored by the bot and ticket is booked (shown in figure 9).
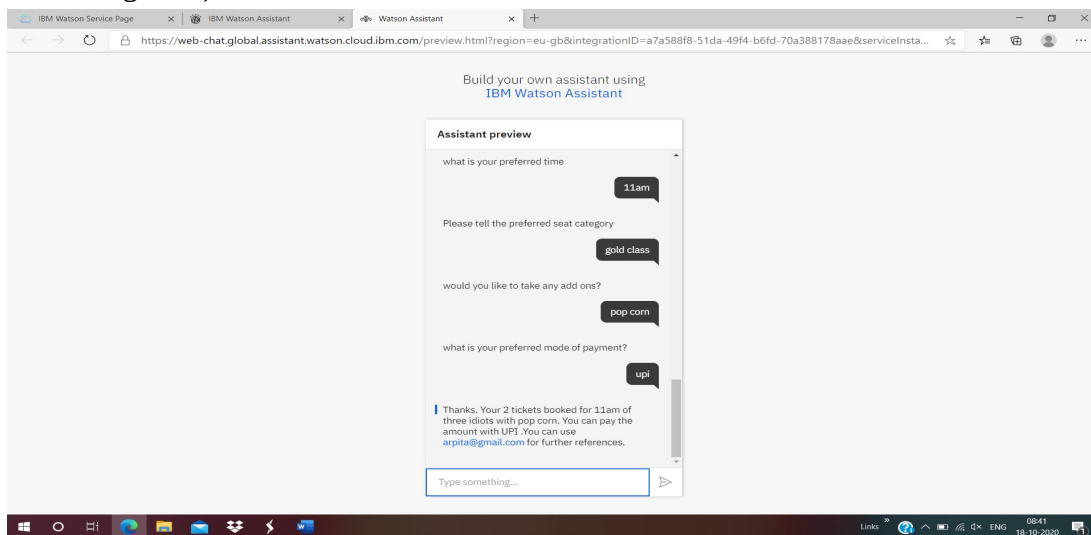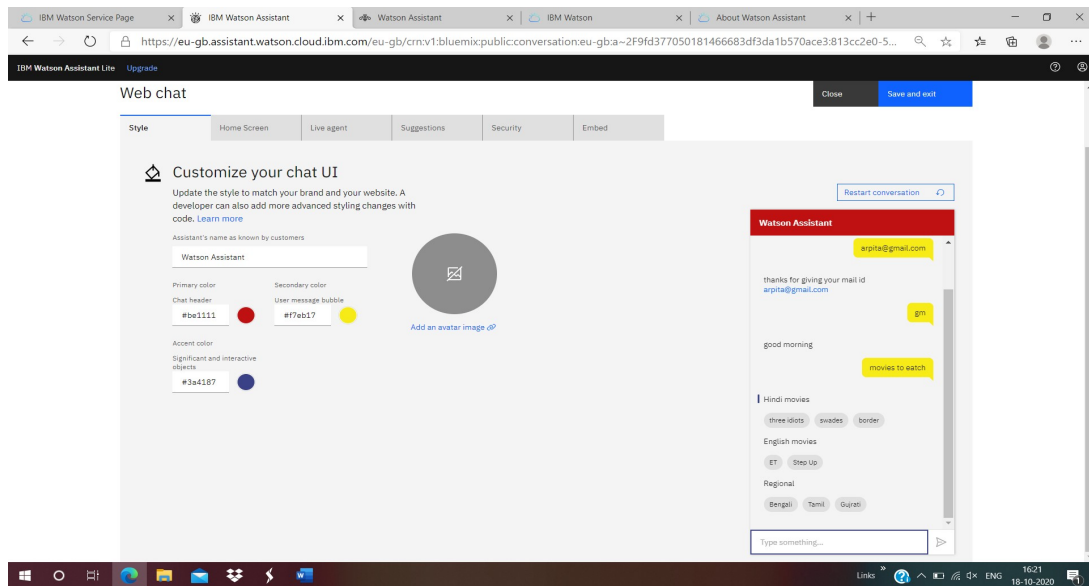

Fig.9

Result of customized web chat is shown in figure 10.

Fig.10

7. Advantage and Disadvantage

The advantages of the designed chatbot is it reduces human effort . It reduces the time constraint from service provider point of view. It can handle the customer traffic

smoothly during peak hour as well. Easy to use and customer can decide by viewing the list of movies, their show timings, seat category, seat availability. They can even add some add-ons to their ticket booking as per their choice by checking the list of available add-ons and their respective prices. The provision of payment options selection is also available to the customer.

For the designed chatbot though different booking options are available but cancellation option or booking modification facility has not been incorporated as the feature of the movie ticketing bot. But it can be easily included into the system in future modifications.

9.Conclusion

The presented work describes to steps to develop the Movie ticketing bot system with IBM Watson assistant and Node Red UI service. The screenshots of the steps involving the stage by stage development of the chatbot. The Node Red service has been created and finally the integration of the skill (movie_ticketing_bot) is successfully done to get the preview link. The successful execution of the complete procedure can be verified by the screen shots of the ultimate movie ticketing bot , responding to the customer in a proper manner , provided in the result section .

10. Future Scope

As a future scope to this work many features can be added to make the movie ticketing bot more convenient to use. The cancellation of ticket option can be added to make it more user friendly. The genre or overview of the movie can be added in the future to help the customer decide which movie to see. Voice integration of the chatbot would have been another milestone to achieve by using the text to voice converter. Auto updatation facility of the tickets on seating class basis as per the customer request can be added as another feature. Reminder facility with SMS and the email id can be also integrated to the system.

11. BIBILOGRAPHY

1.https://www.ibm.com/cloud/watson-assistant

2.https://nodered.org