

INDIAN RAILWAY RESERVATION CHATBOT

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Abstract

Chat Bot is used in most of the applications to understand and guide the user according to their requirements. Railways are the preferred mode of transport and are used by most of the people in cities. Coming to railway reservation, it is a many step process that needs to be done to reserve the seats. Most of the foreigners visiting country prefer railway transport. When they login into the railway reservation website, they do not know what's the actual process is to be done in reserving seats. As a foreigner what are the things that needed to be taken while traveling, they do not know about respective country rules while traveling. To guide any sort of people we need a chatbot in that type of application. The Bot should be able to maintain a conversation with users about their railway reservation process. When the user needed to book tickets, it needs to ask further details about their source and destination. It also has to suggest the available trains during the period of time given by the user. It should reply to the user when they ask general FAQ. When any user is typing like city name, train name, train number or anything related to railways, the bot should show the necessary data. In case of data not available it should redirect the user to the browser with appropriate search value.

Keywords: Chatbot, railway, web application, Web crawling

1. Introduction

Chatbot helps the user to know about the trains between their source and destination. Over two millions of users are checking their ticket status.

Travel booking companies are mainly preferring IRCTC as the main application. Chatbot is the best source in giving detailed information about the keyword given by the user and also it suggests links and questions related to the query.

The main advantage of the chatbot is, it browses the questions and link in the web browser. And gives the result to the user. Because of this option, users may not need to search separately on the web.



Figure 1: Railway chatbot

The data's need for the chatbot to reply is railways data. The data's collected should be cleaned without noise and made to be in excel format according to their type. That excel data needed to be loaded to the database.

The data's to be collected are the number of trains availability, complete information about every single train with train number, the map data of the train traveling cities and extra

datalike destination rooms and hotel data. The search key entered by the user in chatbot needed to be mapped with data in the database and resultant message should be displayed.

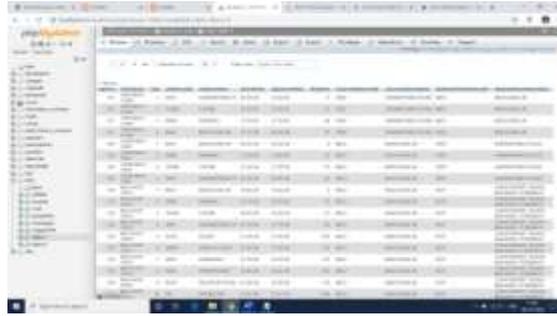


Figure 2: MYSQL Database

All the messages asked by user and their respective reply needed to be loaded in the database with the separate session id. The chatbot must have the ability to pass data to another page like a search engine and booking form page.

Chatbot Front End is developed as a web page using HTML, CSS. Data is loaded into the SQL database. Session and cookies are going to be handled by PHP. Chatbot will maintain session data as cookies.

2. LITERATURE SURVEY:

2.1 Ask DISHA

[1] AskDISHA is an AI-powered chatbot launched by Indian railways in <https://www.irctc.co.in/>. It offers customer support services by answering customer queries.

It actually replies with suggestion link and predefined messages. It has predefined questions with their answers. It is a next generation e-ticketing website[5-6].

It has automated question suggestions. When the user starts typing their questions, the chatbot automatically give suggestion according to the phrases.

The main advantages of Ask Disha is ability to answer customer queries, ability to multitasking and customer satisfaction.

2.1.1 AUTO SUGGESTION OF QUERIES

[2] When we message as “PNR status”. It will give the result with message description and the link to reach the “PNR status checking” web page.

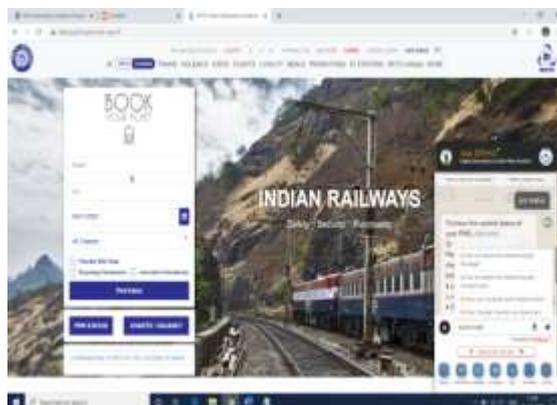


Figure 3: Ask Disha

The inbuilt feature of JavaScript API and data transfer with JavaScript made the application more consistent and reliable. The division refreshment option in chatbot helps in achieving the fastest application.

2.1.2 CHECKING PNR STATUS

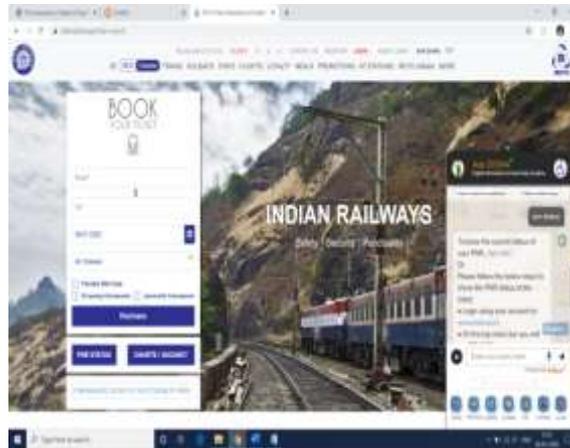


Figure 4: PNR checking in Ask Disha

It may not suggest anything about the term which is not preloaded as a query in their system. It needs constant internet connection to display the data to the user



Figure 5: Message for PNR request

AskDISHA is found in the bottom right side of the IRCTC web page. It actually contains message window and query typing input box. Below the input box it has many links that will help the user in navigating between the different application of the IRCTC.

2.2 RAILBOT (A RAILWAY CHATBOT)

[3-4]RAILBOT is the application which is used to check the PNR status of the train. It uses Heroku server and client. It fetches railway PNR status using railway API. It is simple like other railway applications. It is fast and concise. It actually converts the user query and process it in backend to produce the result.

The interface of a chatbot is used for the purpose of fetching the information of the Indian Railways. It saves device memory space, time and internet data usage. The chatbot will also enable the user to get the response of small talks.

2.2.1 REQUIREMENTS

The requirement for this project are: -

1. Heroku server

It is an open server which is used to create the link between the chatbot and railway API.

2. Heroku CLI

It is a command to deploy the local repository to the Heroku server.

3. Python IDE

The backend is programmed in Python, therefore this IDE helps to script and debug the test2.py file.

4. Dialog Flow

It is an online service allows us to design an Artificial Intelligence Chatbot.

5. Facebook Developer Page

To enable this chatbot to be used by the passengers, the administrator has to get access to Facebook.

6. Facebook messenger / Telegram

Enables the user to give input message through keyboard and get input in variety of formats.



Figure 6: RailBot

The Chatbot is integrated in Telegram and reply with data from different sources. It will save time, memory and internet usage.

Since, the application is in telegram app we can easily distribute between the clients by using the telegram facilities.

2.2.2 INTEGRATION OF RAILBOT

Integrating the Facebook Messenger or Telegram or any other applications

1. Create Facebook account and developer account

First login to create an app. Then integrate it to Dialog flow using a generated token. In the webhook section enable message and message post back.

2. Telegram

Create a chatbot user using BOTFATHER and get the token which is used to integrate it to the Dialog flow.

2.2.3 SYSTEM ARCHITECTURE OF RailBot

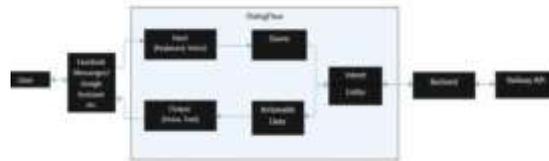
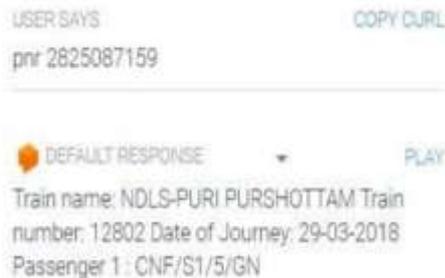


Figure 7: Architecture of RailBot

2.2.4 IMPLEMENTATION OF RailBot

1. First step is to create an account on Dialog Flow and Heroku
2. Create an app using Dialog Flow and use version as APIV1



3. Install Git and Heroku CLI
4. Using Python, create webhook to connect with the Heroku CLI

3. CONCLUSION:

Both the Ask Disha and RAILBOT has some common option like Checking the PNR status and some basic messages reply. Ask Disha has extra features like predefined message reply for faster response to the user.

The chat bot which we develop contain all of the options like suggesting most commonly and largely searched link in the web. The payment page is integrated with the chatbot. The user information stored as cookies may reflect in payment form page and it may reduce the workload of the user. The chatbot will help in achieving and making complete payment.

The integration of chat application for customer support is the added advantage to this chatbot. It also offers all formats of customer support services by answering and giving suggestion to customer queries. Since all the data's are stored in structured format, the retrieval of data is very faster compare to other forms of chatbot applications.

Addition to the above system, it also contains Customer data's as JSON format which can be used to share data's between any applications easily.

4. REFERENCES:

1. <https://www.irctc.co.in/>
2. [http://ijesc.org/upload/ee3033107b924daf82075ac810113340.RAILBOT%20A%20Railway%20\(IRCTC\)%20Chatbot.pdf](http://ijesc.org/upload/ee3033107b924daf82075ac810113340.RAILBOT%20A%20Railway%20(IRCTC)%20Chatbot.pdf)
3. <https://www.railwaybuddy.site/>
4. Android Based Educational Chatbot-Naveen Kumar M, Linga Chandar P C, Venkatesh Prasad A, Sumangali K for Visually Impaired People, Issue, 2016.

5. S. Saravanan, T. Abirami, P. Pandiaraja, "Improve Efficient Keywords Searching Data Retrieval Process in Cloud Server", 2018 International Conference on Intelligent Computing and Communication for Smart World (I2C2SW), IEEE Explorer, PP 219-223.
6. P.Rajesh Kanna, P.Pandiaraja "An Efficient Sentiment Analysis Approach for Product Review using Turney Algorithm", Journal of Procedia Computer Science Elsevier, Volume 165, Issue 2019, PP 356-362