Chatbot enabled college management system

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ABSTRACT

In a world of growing technology, to know more details about the college, either visiting the campus or checking out the college websites that provide information about the college seems to be time consuming and boring. This traditional way can be eradicated by introducing a college chatbot for efficiently answering any queries of the user. It also provides a more comfortable interface as though the user is talking to a real human. In this paper we have come up with an idea to build a chatbot using Google Dialog flow to answer any queries related to college.

Keywords— Chatbot, Dialog flow, Firebase, Web app, repl.it

1. INTRODUCTION

Since messaging has become so trending in today's world, people tend to interact through many messaging apps and converse through text messages a lot in their daily lifestyles. This fashion has become so popular that it leads to the implementation of chatbots in many businesses.

Every person likes the idea of getting instantly replied to the query asked for. This has directed to the introduction of chatbots. A chatbot is a software program that is used for creating a model of human interaction through voice inputs or text messages or even both. Chatbot can replace a human answering the queries frequently asked.

One of the main objectives of chatbot is to resemble a smart human so that the user asking queries cannot interpret the actual working of it. Chatbot interacts using a natural language and replies instantly to the queries asked for.

The main objective of this work is to:
- Develop a chatbot for college which answers the queries related to college.

- Chatbot is built using Google Dialogflow formerly called as api.ai, a google platform to build conversational agents.
- A firebase database is used to store the real time data.
- REPL.it, free IDE (integrated development environment) is used for running the web app.

2. RELATED WORK

There are some previous works related to building of chatbots. Chatbots have been built using various NLP techniques, chatbots for exploring library resources and for college management.

Hexabot [1] is a work related to building a text based assistive chatbot for exploring library resources. It includes agent and intent creation, training the bot and database creation, integration to facebook messenger using fulfillment and deployment through heroku server.

PCE college enquiry bot [2] is a work dealing with building chatbot for enquiries about college using Unity 5.6.3p2 for application building and Dialogflow agent for taking queries from the user.

Chatbot for college enquiry [3] is a work related to development of chatbot using dialogflow, android studio and otp system for authentication.

3. DESIGN

3.1 System Architecture

The proposed system is divided into three parts:
- Dialogflow agent
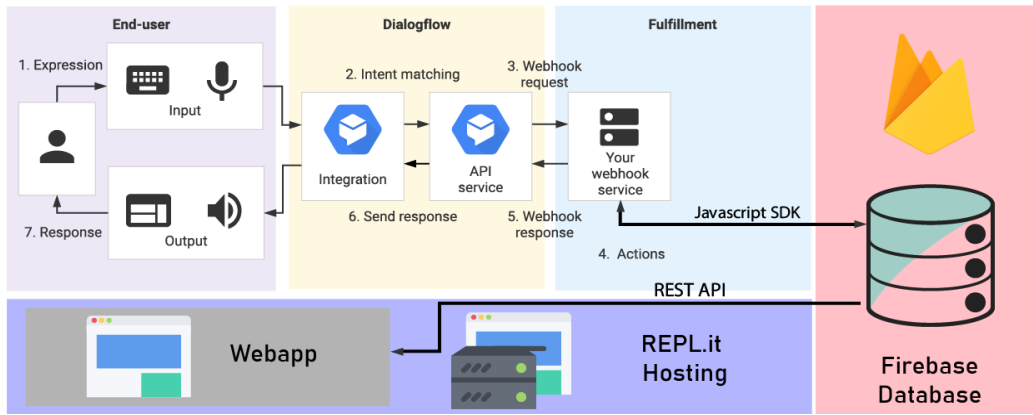- Firebase
- Web App

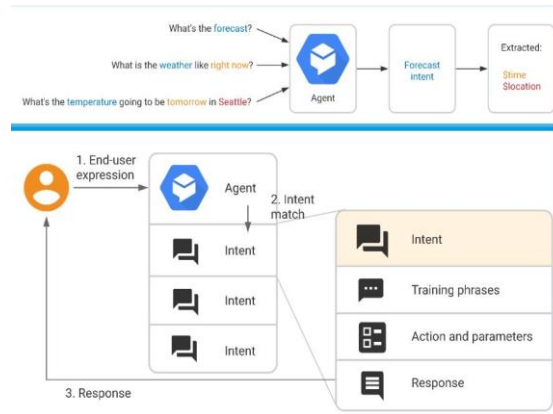These are the three main components.

Fig. 1: System Design
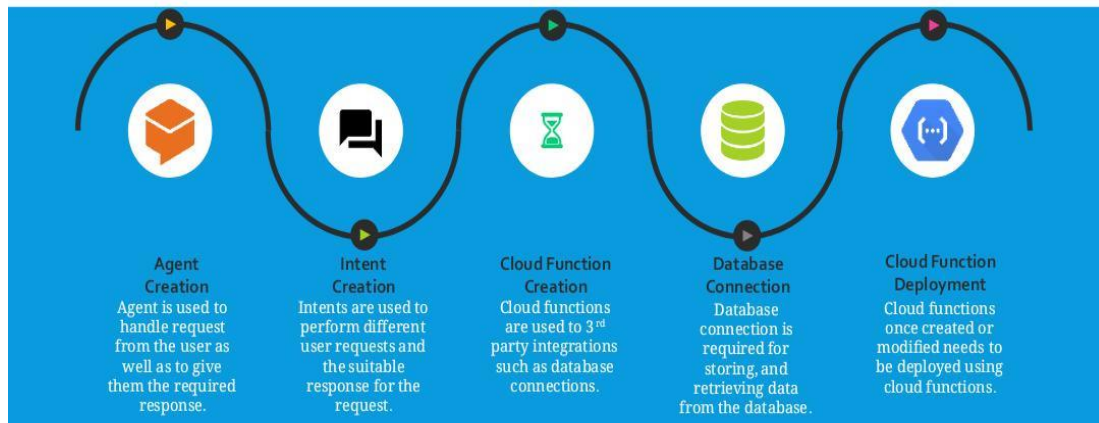

Fig. 2: Dialogflow working

Fig. 3: Dialogflow

3.2 Proposed System

3.2.1 Dialog Flow: Dialogflow is a natural language understanding platform provided by google that is used to design a conversational interface. It is used to train the agents according to the requirements.

- Agent creation: Agent needs to be created to develop a chatbot and we should train the agent to give responses according to our requirements.
- Intent creation: Intents are those words which are recognized by the agent from the user speech or text.
- Cloud function creation: When the webhook call is enabled for particular intent then the functions written in the inline editor for that particular intent fetches the data from the database and prints the response.
- Database Connection using JavaScript SDK: The database will be connected to the dialogflow through JavaScript SDK.
- Cloud function deployment: The functions written in the inline editor can be modified but after modification it must be deployed.

3.2.2 Firebase

- Database Creation: Database is created in Firebase. We can modify the database in the Firebase.
- Real time database: Database is stored in the Real time database and we can fetch the data from the firebase by connecting the firebase with the dialogflow and the web app.

3.2.3 Web App:

- Front End Design: HTML and CSS are used to design the frontend.
- Back End Design: JavaScript is used to design the backend.
- Database connection using REST API- Database is connected to the webapp using the REST APIs. REST APIs uses the http methods like get post etc. To display the response of the chatbot on the webpage, REST APIs are used and the response will be in the JSON format. Then the JSON format need to be parsed and then should be printed on the webpage.
- Web App Hosting: Hosting is done on REPL.it IDE.

4. IMPLEMENTATION
4.1 Dialogflow
Dialogflow is used to create chatbot agent, which will take users requests and give them required response. It will also save the data to the database using cloud functions if required.

4.2 Firebase
Firebase database is used to store data from user such as appointments, feedbacks. As well as it is used to show data to users such as alumni, events, etc. Firebase also allows us to use real-time database and provides different ways of communication including JavaScript SDK and REST API. Firebase database involves:

- Database creation- which includes creation of database on firebase.
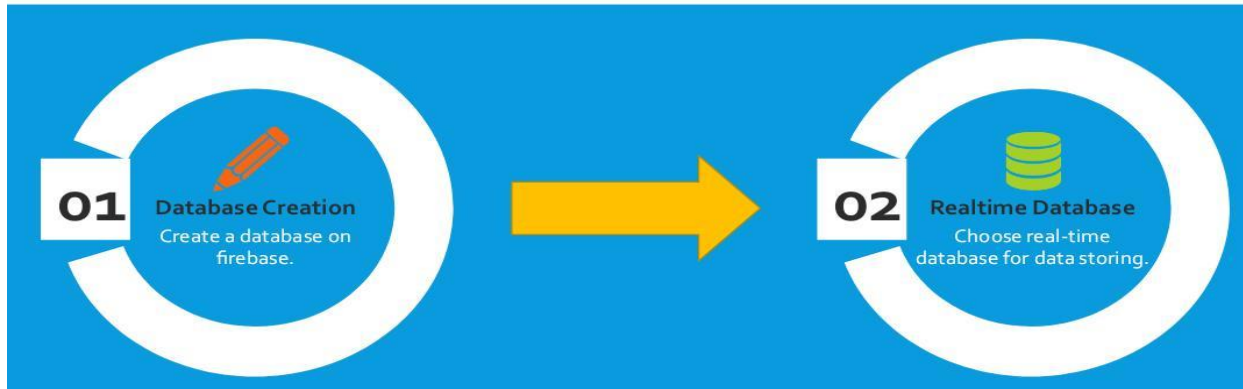- Real time database.

Fig. 4: Firebase Database

4.3 Web App

Fig 5: Web app is used to display information to respective users obtained from database

5. RESULT
This chatbot allows us to get information about the college. It is very easy to use and provides the information about whatever the user asks. It provides the information about the college like about college, departments in it, companies that visit the college, toppers list, alumni list, etc. It also schedules the appointment for a user if the user is asking for an appointment. And also, users can give the suggestions and review the chatbot.

6. CONCLUSION
Chatbot provides the efficient way of getting information about the college. The user can ask any questions regarding college and get the response. Dialogflow is an efficient platform for building chatbots. Any number of users can access the chatbot at the same time. The chatbot provides the fast and efficient response to the users. It is easy for users to ask the queries through speech and get efficient answers.

7. REFRENCES
[1] Sorna Shanthi.D, Keerthana.S, Nandha Kumar.PK, Nithya.D,' Hexabot: A Text-Based Assistive Chatbot To Explore Library Resources', International Journal of Engineering and Advanced Technology (IJEAT), ISSN: 2249 – 8958, Volume-8, Issue-3S, February 2019.

[2] Kanchan Chopde, Sanket Mondhe, Nikita Sahu, Shuklesh Deshbhratar, Ms. Priyanka B. Dongre 'PCE College Enquiry Bot', Priyadarshini College of Engineering, Nagpur, India, International Journal of Innovations in Engineering and Science, Vol. 3, No.3, 2018 www.ijies.net, e-ISSN: 2456-3463

[3] S.Y. Raut, Ashwini Sham Misal, Shivani Ram Misal, Pravara Rural Engineering College, 'Chatbot For College Enquiry: Using Dialogflow ', IJICS, ISSN NO: 0972-1347.