PROJECT
PROJECT TITLE: CHAT BOT FOR LIBRARY FAQs
Reg no.: 21MBMB23

INTRODUCTION:

The way we communicate is changing as a result of technological advancements. Students nowadays thrive on social networking sites such as Twitter, Facebook, and Foursquare. Chatbots are not typically included in this category, but they engage users through a playful interface that is familiar to a generation raised on online games. Libraries looking for new ways to engage this generation should consider using a chatbot as another tool to reach out to users who expect more than a static website.

The advancements in artificial intelligence (AI) combined with the availability of online resources make it appropriate to consider AI as a library tool.

Chatbots (also known as conversational agents, artificial conversation entities, or chatterboxes) are computer applications that imitate human personality. A chatbot is interactive, responding in sentences that track the conversation in a way that is meaningful to humans. This characteristic of mimicking discourse appeals to library users who want a more interactive library experience, something livelier than a search engine, and fits well with the socially directed students we are seeing on our campuses.

Chatbots are classified into two types. The first type follows predetermined rules and can only respond to very specific commands that do not fall outside of specified parameters. The second type is based on machine learning algorithms and employs AI and NLP to understand the text as a whole, rather than just specific commands

OBJECTIVES:

As we know that now a days in many sectors chatbot are being used, like in many apps, online shopping, education like university websites, banking services and many more.

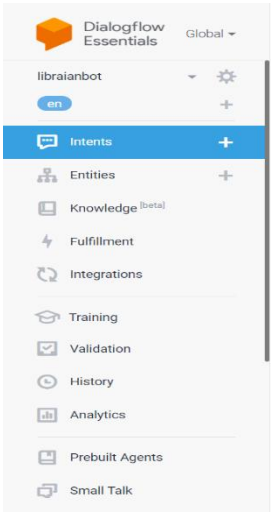
Library-oriented AI applications strive to improve the quality of library performance and services.

When we want to know something about our requirement in a reading library then we can use a chatbot. So, here my objective is to build chatbot for students where chatbot can answer the basic frequently asked questions at the library.

So, my objective is to build a chatbot for my university library where students can clear their doubts like how can they get library cards, how can they access internet services and many more like this.

METHODOLOGY:

For creating a chatbot for library I have used google dialogflow. Dialogflow is one of the best tool out there for building chatbots. Dialogflow translates end-user text or audio during a conversation to structured data that your apps and services can understand. Dialogflow is really easy to use well and similar to a human call centre agent. The below picture is how google dialog flow looks like.



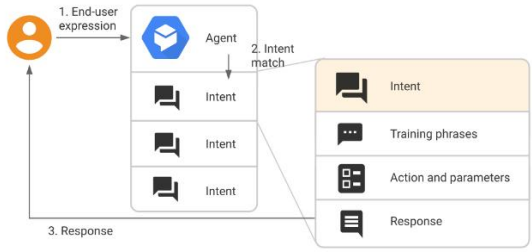
There are many things like intents, entities, knowledge, fulfilment, integrations, prebuilt agents and some more.

Here first we have to give an agent name my agent's name for library is libraianbot, that is my chatbot name.

Next, we have intent

INTENT:

Intent refers to the customer or end-user's intention behind each message. Through a process called intent matching, dialogflow tries to match the information gathered from the user message to one of the intents classified by the developer in order to find the most suitable response. Each intent is defined by a training phrase, an action, parameters and responses.



ENTITY

The information (intent) gathered from a user, associated with a specific keyword is automatically mapped to an entity. Developers can also create entities themselves which the agent can use to better understand the context of the conversation.

CONTEXT:

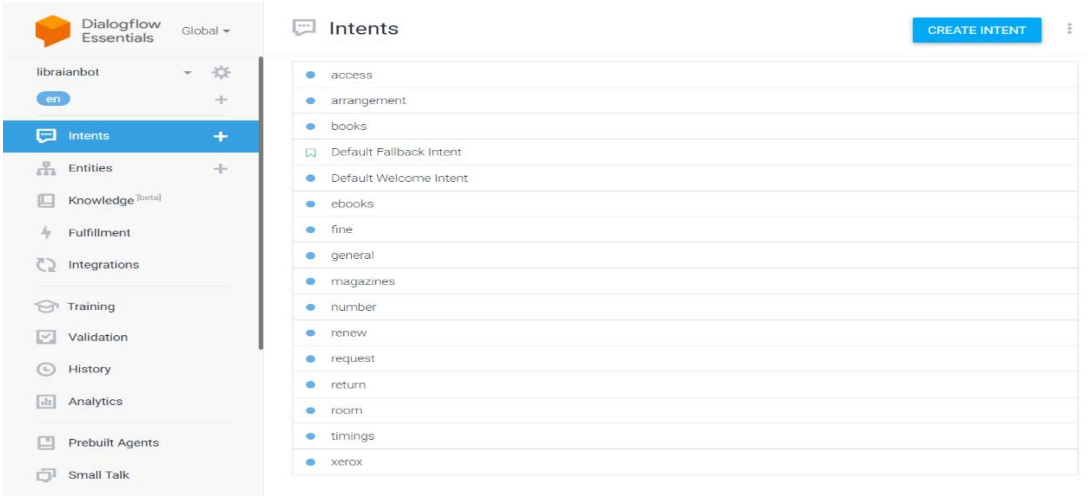
For Dialogflow to handle an end-user expression, it needs to be provided with context in order to correctly match an intent. Using contexts, you can control the flow of a conversation. You can configure contexts for an intent by setting input and output contexts, which are identified by string names.

FULFILMENT AND INTEGRATIONS:

By default, your agent responds to a matched intent with a static response. If you're using one of the integration options, you can provide a more dynamic response by

using fulfilment. When you enable fulfilment for an intent, Dialogflow responds to that intent by calling a service that you define.

When an intent with fulfilment enabled is matched, Dialogflow sends a request to your webhook service with information about the matched intent. Your system can perform any required actions and respond to Dialogflow with information for how to proceed. When fulfilment is enabled, the static response you defined for the intent is only used if your webhook service fails.



The above are the some of the intents that I have created in my agent. Each of the intent is having a specific.

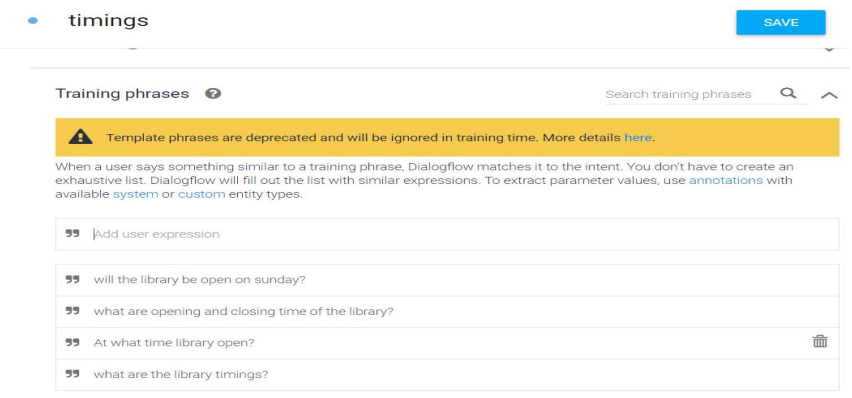
the access intent talks about the library access FAQs that are asked by a student.

The arrangement intent talks about the book's arrangement FAQ.

So, like this all the above intent I have created are having specific kind of FAQs that a student asks.

In the same default welcome intent talks about welcome message or starting message of a bot, when a student opens the libraian bot. Default fallback intent reply the questions if the agent doesn't understand, all the question and response that were not understood by bot that were in default fallback intent.

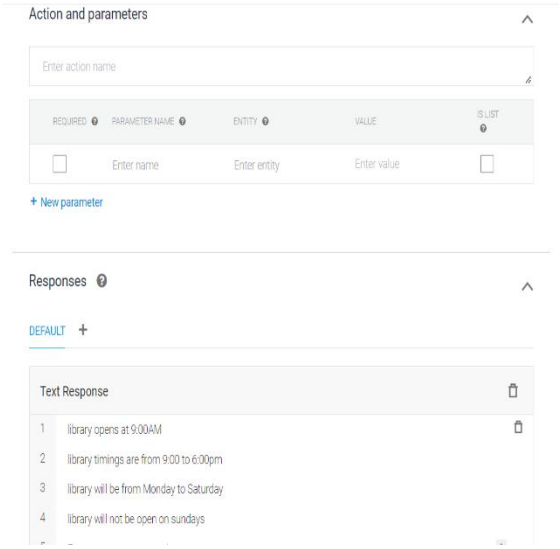
For example, if student wants to know the library timings, for that I have created an intent named timings.



You can see the basic training phrases of the library timings which I have given. So, based on these question or training phrases, when a

student asks a question.

These training phrases are also like training the bot with same question but in multiple ways.



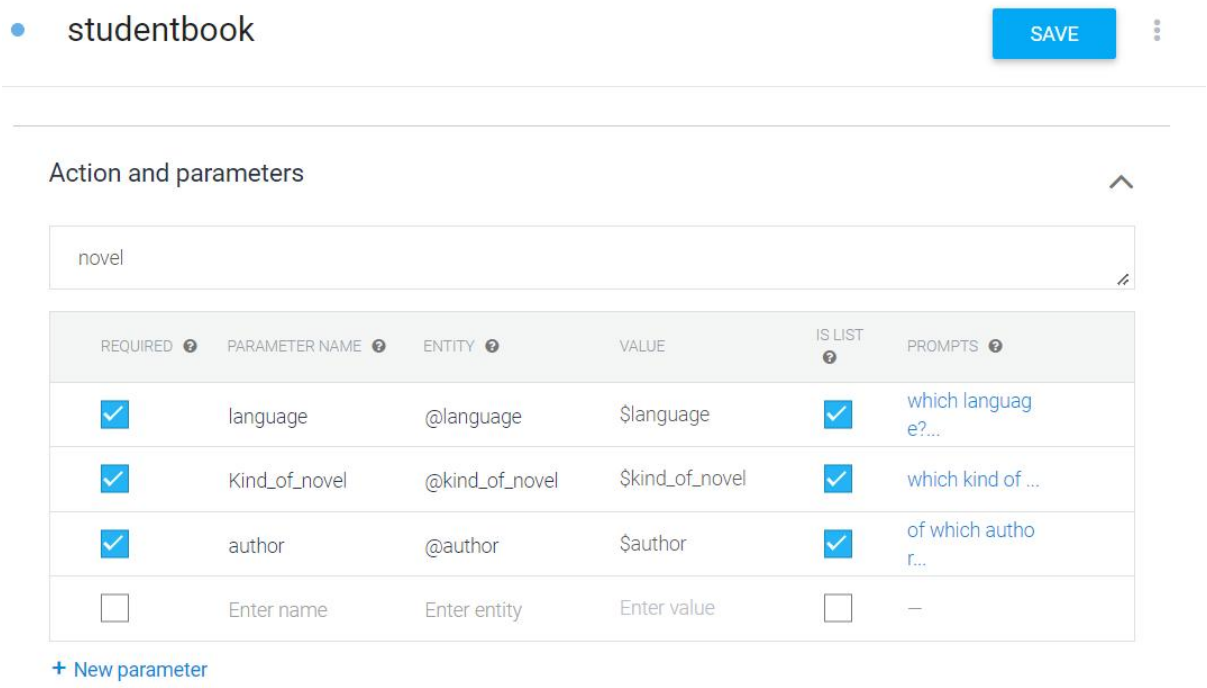
After training the bot with some questions we have to give responses for the training questions. Even here we give all the possible responses that are needed. So, as you can see the response answer that I gave to the agent in the picture to the left.

In the same way, we create all the different intents needed with training phrases, action & parameters and responses.

After creating every intent, you have to save every intent.

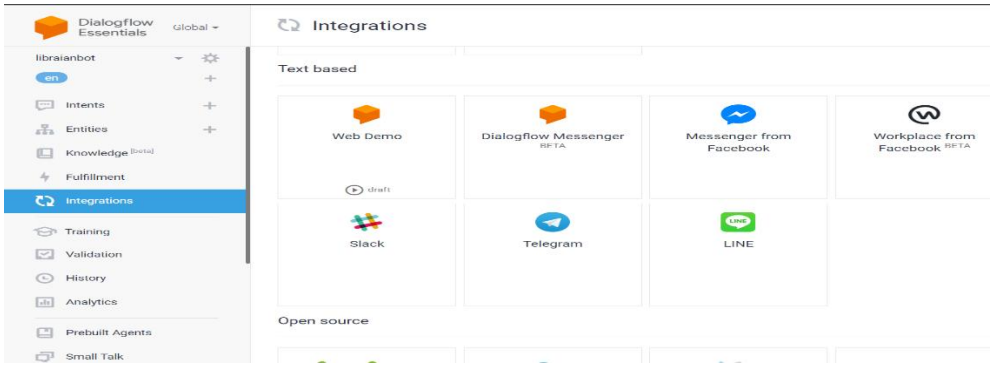
For example , if a student wants to read a novel then he/she asks chat bot “I want to read a novel where can I find?” then chatbot answers it taking action and parameters into consideration.generally the questions it can ask are “of which language”,”which kind of novel”,and “of which author”.these we have to give in action and parameters.for every parameter we have to create entity and in entities we have to give synonyms related to it .

In the entities ,I have created three entities they are language,author,kind of novel.

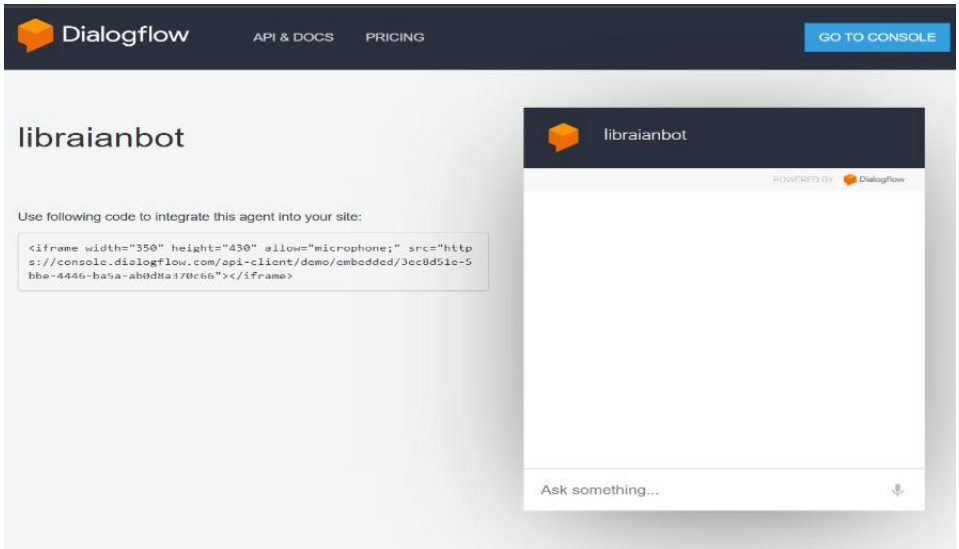


The above picture shows the parameters that I have give and prompts for which chatbot asks us after every question related to it.The response is that we give needs to have parameters with $ symbol in the response.

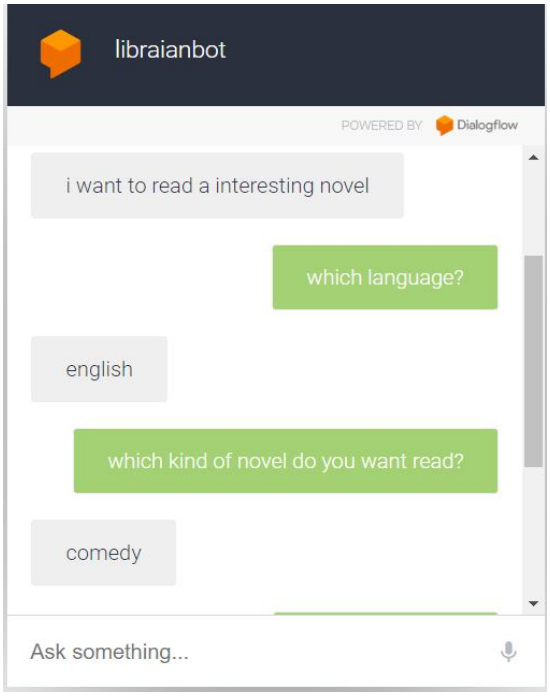
After saving every intent you can try it on the bar that is right in the dialogflow. Then now the main part is to integrate the agent as chatbot. For that you need to go for integrations there when you scroll down you will find web demo under text-based integrations.

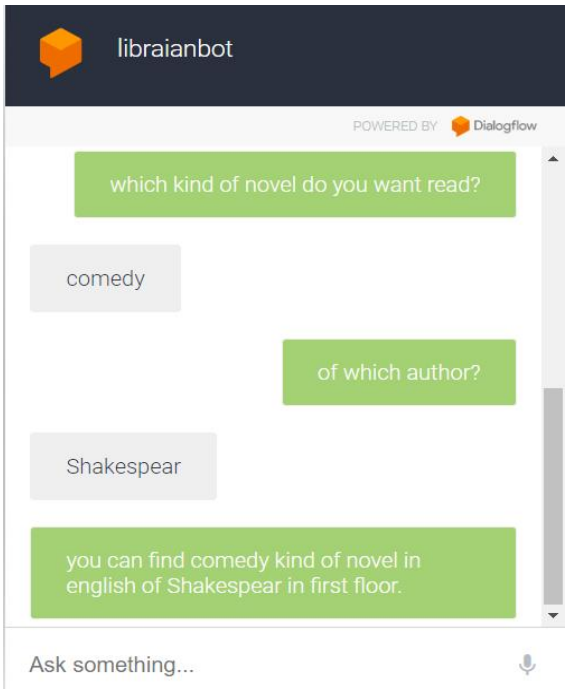


When you click on the web demo, you will find a URL quoted in blue you have to enable that then comes the chatbot on the screen. beside the chat bot you can find a link, using that link one can integrate the chatbot in respective website that we are building chatbot for.



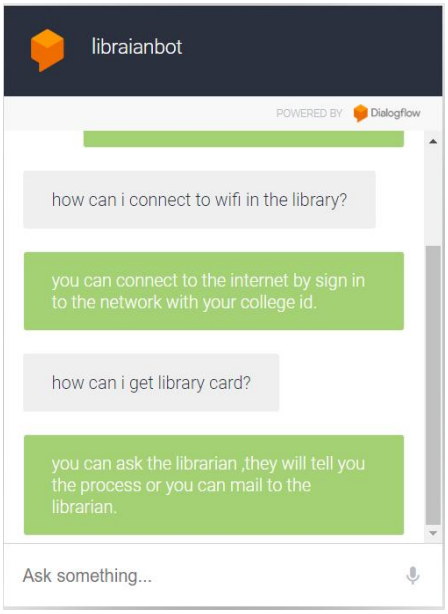
for the above example how my chatbot give responses is like..

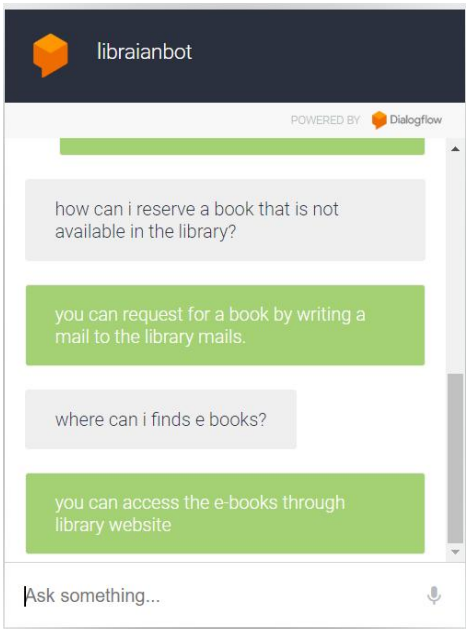




(a) (b)

The above a and b pictures shows the responses related to the queries related to novel queries .





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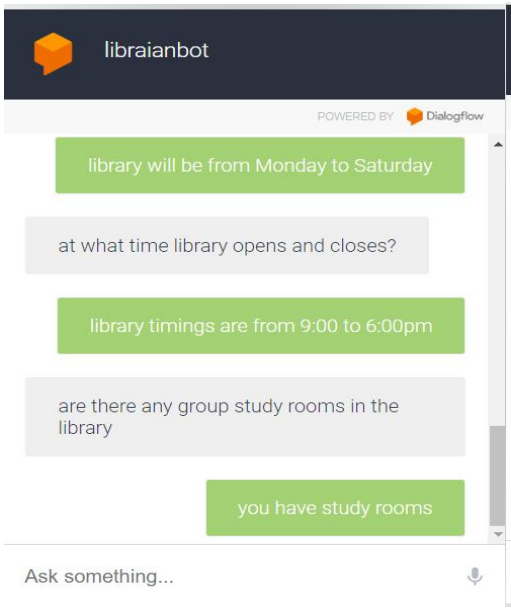

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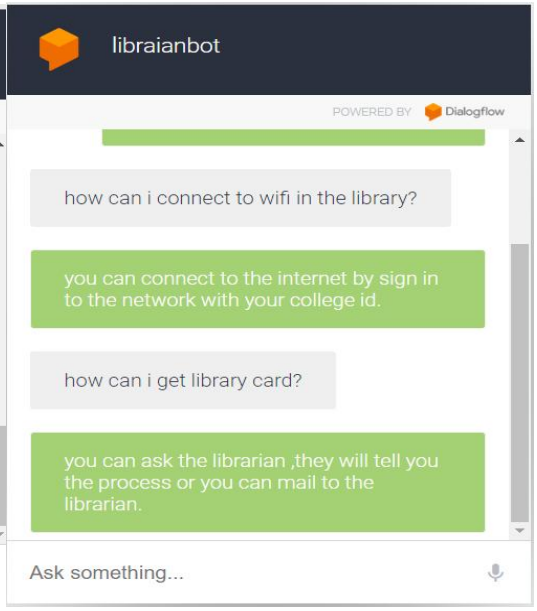

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the above 1-5 pictures shows some of the FAQs that were answered by the chatbot that I created.

CONCLUSION:

In general, it can be argued that chatbots and other AI technologies will be present in libraries and information hubs. Librarians must get ready for this transformation and seize the opportunity it presents. The function of library managers is equally crucial in the interim. They need to set the stage for the introduction of these new technologies and ensure that librarians have the training they need to be ready to use them.

The creation of chatbots for libraries may enhance their functionality and increase customer happiness. Collaboration between librarians and chatbot designers can also help to clarify what users and libraries might expect from this technology and ease many of their fears. The long-term perspective of library authorities and administrators is another issue

that may result in improved implementation of new technology in libraries. Considering these technologies in libraries' medium- and long-term goals can help them pinpoint their planning horizon for the future.

PROS OF CHATBOTS:

- Saves time
- Constantly available
- Promotes conversational marketing.
- Helps manage user request.

CONS OF CHATBOTS:

- Sometimes doesn’t understand natural language.
- Not personalized or emotive.
- Higher capable for wrong responses.
- Need to be maintained properly.
- Limited functionable.

Adoption of changes in technology and living in the world of technology is important in this generation.

These chatbot are now-a-days are mostly used by conversational AI companies where it provides services to their clients with the help of chatbot.

Some of the conversational AI companies are Aavamo, Kore.ai, AIVO, yellow.ai, openstream.ai.

I conclude this by saying follow the flow of technology.