

## GLOBAL JOURNAL OF ENGINEERING SCIENCE AND RESEARCHES

### LIBRARY ENQUIRY CHATBOT

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#### ABSTRACT

Our chatbot platform provides you with a lot of information regarding books in the library. Chatbot is a new information, communication and transactions to their target channel enable business. Now a days many of are using and catching speed as an application of computer communication .Like humans, some programs respond intelligently. This supports our customer while travelling and provides instant answers for having genres of books, journals and magazines and many more. It connects to our student or users with this bot 24/7 from their desktop and mobile. Through some of the apps like face book, whatsapp or we chat business target is increased .This paper addresses about the implementation and design ,of a chatbot system .In this we are using variety of analytics conversion reporting and chat intelligence to boost observations and achieve augumentations. Data collections one to one marketing, support costs and sales, reduce services, improve in convinence are enabled by chatbots .this technology quickly adapts the new mobile services and an investigated prototypes remarkbly. We will also study another application where chatbots could be useful and techniques used while designing a chatbot.

*Keywords: Chatbot, Deep-learning, Tech savvy, Customer Relationship Management, FAQ,Node Red ,dialog.*

#### I. INTRODUCTION

Technology is changing the way we communicate. Today’s students thrive on social networking tools like Twitter, Facebook and Foursquare. Chatbots are not usually included in this grouping however they have interaction users with a mocking interface that’s acquainted to a generation that grew up with online games. Libraries that are seeking ways to engage this generation ought to contemplate the chatbot as another tool for reaching users United Nations agency expect additional than a flat website. We always knew that 21st century universities would go the digital route. What we might not have predicted, though, was the extent to which technology would define how modern universities function

##### 1.1 About the project:

The library enquiry bot is built using artificial algorithms that analyzes the queries of users and understands the users message. This system is a web application which provides answer to the query of a student. Students just have to query through the bot which is used for chatting .Students can chat using any format .There is no specific format that the users has to follow. The system uses built in artificial intelligence to answer the queries. the user can query any library related questions like the availability of books and journals etc.,.The users does not personally go the library for the enquiry of availability of books. He or she can check from the home or classroom without wasting time to come to college whether the needed book is available or not .If it is available we can then go to library and collect the book. The system analyzes the queries and then answers to the students, as if it is answered by a person. The system replies using an effective graphical user interface which implies that as if real person is talking to the user. The user just has to register himself to the system. after login user can access to the several helping pages .various helping pages has the bot through which the user can ask the queries. The user can query about the library related activities through the online with the help of this web application. The conception of chatbots has not been a brand new during this technological growing society. Our project acutely deals with a very important section of this growing entity, focusing the usage of the chatbots within the field of education, particularly higher education. The current chatbot handles the input queries by users as well as the greetings. The larva presently restricted to a selected institute i.e,it will handle queries associated with one institute library. Later it will incorporate the reviews of varied users and also the feedback by totally different students, alumni and the other connected member of a selected institute. The chat larva application helps the schlors to access the university connected data from any place with

web affiliation. This automatic respondent system reduces burden on university officers providing data to students and additionally reduces the dependency on humans to answer the queries. The system additionally has common asked queries which is able to be other by admin for users convenience. Admin will read the user speech communication on his home screen and add commonly asked inquiries to users home page for direct access to users

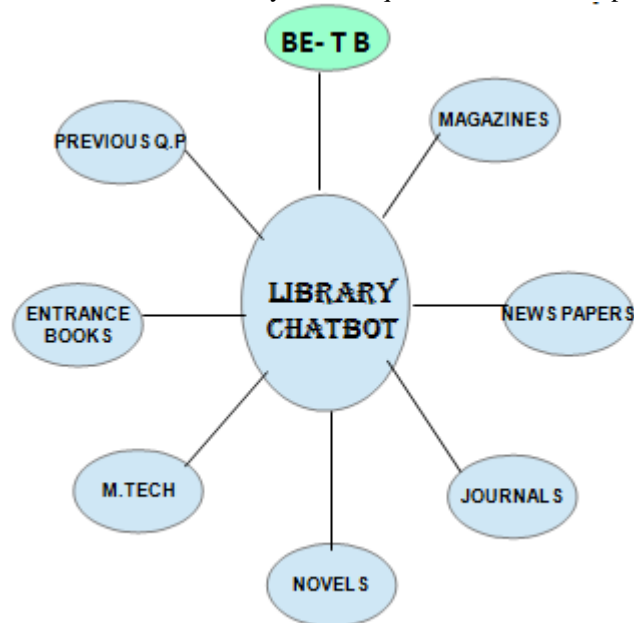


FIG 1.21: Schematic Presentation Of Library Chatbot

A conversation larva (also called a chatalarva, Bot, chatterbox, Artificial colloquial entity) may be a Trojan horse that conducts a speech communication via modality or matter ways. Library enquiry chatbot guides students to proper sources of data. Universities that make a chatbot to reply to student queries mechanically produce an additional efficient data exchange system. Students each new and existing ones don't thought to pay time working out world health organizations to direct their custom queries too. As several libraries still see reductions in funding, we tend to square measures more and more seeing technology as the simplest way to create up for budget short falls within the circulation context. Online patron account management, self-registration and self service checkout stations square measures samples of this trend. Since requests for basic library data (including locations, hours, and policies). And for specific materials or resources predominate among chat and IM enquiries of libraries "chatbots" or "virtual agents". It Provides a self service possibility for our online customers within the context of the services. Chatbots can also ease the burden of fundamental or regular queries so that the library staff can centre their attention on more challenging inquiries and responsibilities. In our library enquiry chatbot students can enquiry about the educational (coarse subjects, journals, newspapers etc.) and entertainment (magazines, novels, news papers) and also previous years question papers availability.

## 1.2 Objectives

**1.** Our objective is to offer a variety of Books that are sure to match all priorities which are given by the user. **2.** It is to organise, standardise towards perfection and also to make strong relationship with users or students so that they can happily choose books of their choice. **3.** Unlike the Librarian or an incharge, This chatbot don't need any breaks/holidays, they happily work 24 hours a day and also they have a Robust Cloud Architecture. **4.** It provides educational purpose books, journals, magazines, Novels and weekly books, previous year question papers etc as per the guidances of the Users. **5.** It also provides the challenges to solve common problems in the decision making process for a student **6.** Our objective of this project is just an initiative, it will be made to more further and developed work of art.

### 1.3 Scope:

The significance of chatbots in the library has completely transformed the face of communication interface. It is an application that can be used by any one in the college especially students, faculty, management. The application mainly focus only on “Stanley College of Engineering and Technology for Women”. Its a new way to solve the queries . The chatbot helps the students to access the information about the availability of books in the from anywhere with the internet connection. It saves the time of students. This web application makes the students to feel that they are speaking to other person. Thus, chatbots are a thing of the future which is yet to uncover its potential but with its rising popularity and craze among companies, they are bound to stay here for long. Machine learning has changed the way companies were communicating with their customers. With new platforms to build various types of chatbots being introduced, it is of great excitement to witness the growth of a new domain in technology while surpassing the previous threshold.

### 1.4 Advantages

1.)Reduced prices : chatbots eliminate the necessity of any hands throughout on-line interaction and are therefore seen as a giant advantage by firms receiving multiple queries quickly. This conjointly presents firms with the chance to avoid wasting on prices whereas positioning chatbots with their goals and therefore presenting customers with a selected kind of interaction resulting in conversion. 2.)24-7 availableness : In contrast to humans, chatbots once put in will attend queries at any time of the day. Thus, the client doesn't go to expect the corporate govt to assist them. This conjointly lets firms keep an eye fixed on the traffic throughout the non-working hours and reach bent on them later. On the opposite hand, whereas hiring individuals, there would be no access to those potential customers and will result in loss of business. 3.)Learning and change : AI-based chatbots are capable of learning from interactions and change themselves on their own. this is often a giant profit once it involves finance time in educating the executives regarding an equivalent. thanks to machine learning and algorithms capable of change themselves, the necessity for same is eliminated whereas employing a Chatbot. 4.)Multiple client Handling : Humans have a limit to the quantity of shoppers they'll handle quickly. However, with chatbots, there's no such constraint and that they will handle as several queries PRN quickly. this is often a serious advantage of victimization chatbots as no client stays unattended and everyone's downside is being resolved. Developers are attempting to return up with new options which might work on voice power-assisted services and facilitate in target-hunting sales. However, this is often still expected to require your time, however are going to be a serious breakthrough within the Chatbot and AI trade. 5.)Saved user history : Chatbot make it easy to get back to the existed deliberated history, because the conversation history stays available to customers. 6)Skipping app development : Chatbot provide immediate and systematic conversation that is so usual of the mobile experience .Apart from that mostly people depends on smartphones during vacations by installing many apps to plan for a perfect trip.Instead here we can do in a single bot .

### 1.5 Disadvantages

1).Complex Interface: Chatbots are often seen to be complicated and require a lot of time to understand user's requirement. It is also the poor processing which is not able to filter results in time that can annoy people. 2).Inability to Understand: Due to fixed programs, chatbots can be stuck if an unsaved query is presented in front of them. This can lead to customer dissatisfaction and result in loss. It is also the numerous messaging that can be taxing for users and deteriorate the overall experience on the website. 3).Increased Installation Cost : Chatbots are useful programs that help you save a lot of manpower by ensuring the all-time availability and serving to several clients at once. But dissimilar humans, every chatbot needs to be programme differently for a new business which increases the initial installation cost. This also increases the time needed to prepare for the program and plan everything effectively. 4).Zero decision-making : Chatbots are known for being infamous because of their inability to make decisions. A similar situation has landed big companies like Microsoft etc. in trouble when their chatbot went on making a racist rant. Therefore, it is critical to ensure proper programing of your chatbot to prevent any such incident which can hamper your brand.5).Poor Memory : Chatbots are not able to memorize the past conversation which forces the user to type the same thing again & again. This can be cumbersome for the customer and annoy them because of the effort required. Thus, it is important to be careful while designing chatbots and make sure that the program is able to comprehend user queries and respond accordingly.

### 1.6 Applications

1.This chatbot is useful to every student ,faculty and management in the college (stanley college of engineering). 2. This chatbot can be implemented in every college or universities. 3.The chat bot application helps the students to access the information related to library like books ,journals, newspapers ,novels availability from anywhere with internet connection.

### 1.7 Software requirements:

IBM WATSON and NODE RED

## II. LITERATURE SURVEY

Mj Pazzani,d Billusus(2007) “the adaptive web” ,faced one of the challenges that individuals face once losing a honey is that the loss they feel. Mournersare typically left with very little reminding them of the human on the far side a few photographs, possessions, or recollections of the deceased. While this stuff is valuable to people who have lost somebody shut, they may not desire enough. This is wherever Eternimeis hoping to help. If the chatbots emulate the deceased persons as well as some expect, these conversations might feel as authentic as chat conversations with the real person. Some evenargue that the artificial intelligence powered chatbot may provide a more truth full representation of a person’s life that the person him- or herself.[1] Som Naidu “a guidebook of principles ,procedures and practices”,CEMCA (2006) has introduced to The developer has to handle coordination between cognitive service such as chatbot interface, integrate chatbotwith third-party services, and also considering extensibility, scalability, and maintenance . Server less becomes a solution that let developer build function into the shared platform. Serverless build in a standard language with stateless technology. Stateless technology doesn’t store session information. Serverless programming model, deploy function that can be reach or executed from the cloud. Functions are stateless because of independence from previous runs. The function can invoke directly or triggered by some events. Chatbot application will utilize some function that can be arranged in conversational context [2].Addison Wesley” ECMA Script language specifications” (2011) has proposed that the Machine learning is more desirable when the problem is defined by the training dataset. Training a chatbot intent witha lot of examples can make chatbot leveraging more knowledge. Business logic can form several complexities a though it has much knowledge. Complexity happens because the conversation situation can’t be modeled exactly.Rules are kind of the opposite from purely machine learning. The good thing about rules is with a few rules, chatbot can working and involving the user. If there is a discovery of a new topic in the conversation, some new rule must be added. Wit.AI is trained with understanding. Understanding is a combination of entity and intent recognition. Wit.AI trainetheir own language to communicate with each other, earlier in June 2017, which led to a great controversy and kept the employees baffled. [3] Harris Derricck, “Cusp of Deep learning “a tutor at Grok Learning an online platform for learning programming languages showcases the development of ELIZA (featured in the TV series, Young Sheldon).It was the first chatbot developed by Joseph Weizenbaum at university in 1964, United Nations agency used a series of pre-recorded patterns and substitution of these patterns in response to the question provided by patients with psychological disorders. Initially, he needed to contradict the illusion of selflearning machines currently referred to as AI.He was affected with the response and quite afraid with the harmful implications it may wear humans within theclose to future. [4] Springer 2004 , In the paper, the team developed three personalities for the bot two being friendly and helping with recommendations, and the other being empathetic. Now, to feed the information to these bots, they brought a person who had great expertise on communications and the English language. They labelled the person “The Wizard” for this experiment. Once the bots were ready, a total of 14 participants ranging from students, researchers and college professors mainly from the field of Computer Sciences were brought in. The researchers felt the the results from the experiment were quite satisfactory as a result of the recommendations created by the bots was nearly in line with the user’s expectations.[5] Hussian.

Shareef,” Applications of AI Techniques in design “ (1997)This paper presents the stages, from conception to the publication, of a text based chatbot that is able to provide instant replies to users questions from an engagement program of a Brazilian company. Even though there's no accord concerning the simplest development practices of such solutions, since every application domain brings on its own characteristics and needs, this paper lists the activities, challenges round-faced and selections created to create a chatbot answer performances and interaction

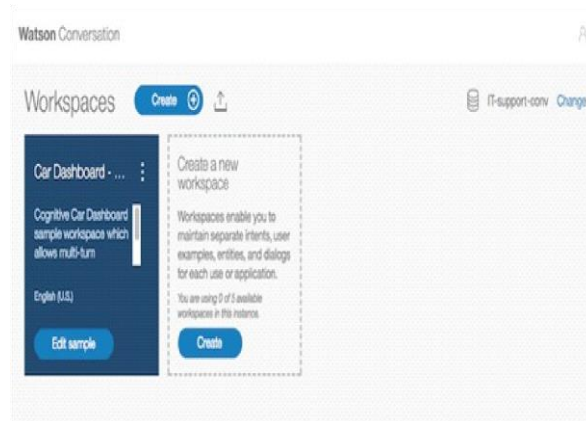
styles. The results also provide nuanced understanding on the underlying functions of conversational behaviors with QA agents and their deviations from human conversations. [6] J.H.k.cho et.al”development of a chatbot-based social service frame work”(2017) has proposed that A group of employees from the on how a chatbot would be more than beneficial in the e-commerce sector. They proposed a novel integrated approach of two methods Information Retrieval (IR) and Sequence to Sequence (Seq2Seq) models for the chatbot. They developed a Q&A query-base from the client log obtainable in their company’s info that served because the input for the chatbot engine. The procedure began with pairing the queries and responses more or less an index of ten million question base, with a threshold for those queries. If the responses fell below the edge then IR technique was used, otherwise the sequence model was followed. [7] Mikolov,Tomas;Kai Corrado,greg.disributed” representation in neural information processing systems” (2013) By studying log data from a field deployment of a questionand-answer conversational agent, we characterize the rich forms of conversational interactions users had with the agent. The main areas of conversations include feedback-giving, playful chit-chat, system inquiry, and habitual communicative utterances. Through the lens of applied math modeling, we highlight the rich signals in conversational interactions for inferring user satisfaction, which can be utilized to develop agents that can adapt algorithmic performances and interaction styles. [8] Millington ,I.,Funge.j,”Artificial intelligcene for games” (2009) .The purpose of this analysis is to look at the past analysis on chatbots exploitation the quantitative bibliometric analysis. The contribution of this research is to help researchers to identify research gaps for the future research agenda in chatbots. The results of the analysis found a potential research opportunity in chatbots due to the emergence of the deep learning technology.(International conference on Industrial and enggineering management 2017) This new technology might amendment the direction of future analysis in chatbots. Several recommendations for future research are provided based on the results obtained from our analysis.[22] Washington post”lifestyles-travel industry chatbot”(2004) presents that A group of employees from the on how a chatbot would be more than beneficial in the e-commerce sector. They proposed a novel integrated approach of two methods Information Retrieval (IR) and Sequence to Sequence models for the chatbot. They developed a Q&A query-base from the client log obtainable in their company’s info that served because theinput for the chatbot engine. The procedure began with pairing the queries and responses more or less an index of ten million question base, with a threshold for those queries. If the responses fell below the edge then IR technique was used, otherwise the sequence model was followed.[9] Picton.p., neural network, grass roots (2000) Indeed, even though users can potentially issue many different tickets varying in problem types, writing style and vocabulary, most of these tickets only refer to a small subset of problems that can be answered in a systematic fashion. Much like in the famous Pareto principle, only a limited part of users’ problems is responsible for most of the workload. Unfortunately, most help desk software do not offer satisfying fully automated solutions to this. Partly because it heavily depends on the type of users contacting the business and because these solutions are generally not built from scratch for the specific target-audience in question. They also tend to be proprietary and difficult to customize. Therefore, a tailored solution for automation is a more suitable approach.[10] Reza Khodaie Mahmoodi “Development of skilled system and computing capabilities”(2014). A recent publication by them microsoft analysis team explored the thought of making a chatbot catered to the Indian youth. The team a foresaid that the chatbot was designed to be additional of a “friend” instead of a typical machine interface. They additionally claimed that a smartphone and a electronic messaging application was comfortable to move with the chatbot. The study is termed the Wizard-of-Oz since it involves interaction between humans and computers. The term was coined by Dr Jeff Kelly at John Hopkins University in his thesis.[11] Turning,a “ A computing machinery and intelligence” (2004) Even though most of the data is accessible on the net, students often like to have personal interaction with the advisor. In such surroundings, a chat robot could be designed for providing academic advice. Even though there is no consensus about the best development practices of such solutions, since each application domain brings along its own characteristics and requirements, this paper lists the activities, challenges faced and decisions made to build a chatbot solution. The main goal of such a system is to handily retrieve info while not having to appear or browse many websites to fetch answers to commonly asked queries. [28] M.Bruno manetto,R.Aguiar.el.at,”Artificial intelligence markup language,(2013),This paper illustrates a storytelling-based application for Associate in Nursing human guide to a historical website, presented through a mobile device. We discuss the wants expose by the communication context and therefore the plan of approaching the matter through storytelling. Then we have a tendency to describe the appliance that merges the essential structure of storytelling with the wants returning from the communication of the particular information regarding the historical website, the user interaction problems regarding the target market and therefore the technological problems expose

by the mobile device. Finally, we have a tendency to address the analysis problems and that we discuss the results with relevancy storytelling[12] Batacharia,B, D.Levyet,al”converse:A conversational companion”(1999),T his paper aims to describe a pilot at the University of Nebraska-Lincoln for a chatbot that answers questions about the library and library resources. The chatbot answers queries from a spread of users from round the world. It has attracted associate degree surprising range of social chatters, which required some additional metadata to accommodate personal chatting and to guide questions back to the intent of the project. The majority of queries area unit directional or factual queries that constituent will handle. The info well-tried to be sensible to create and revise as library resources and personnel modified. The chatbot provides a 24 hour, seven day a week service that is consistent, can be increased as resources, services, or staff change, and provides a playful interface that engages users. It replaces difficult navigation systems and scrolling through search results with a lot of targeted answers, and has the flexibility to refer inquiries to librarians. Although chatbots have been around for several decades, there is a scarcity of reports in published library literature about their use in libraries[13] Shawar,Bayan abu and atwell”chatbots are they really useful”(2007), There has been a steady increase in the popularization of chatbots solutions in recent years, in different areas, where the interface with users area unit replaced by package trained to answer sort of a human. This paper presents the stages, from conception to the publication, of a text primarily based chatbot that's able to offer instant replies to users queries from Associate in Nursing engagement program of a Brazilian company. Even though there's no accord concerning the simplest development practices of such solutions, since every application domain brings on its own characteristics and needs, this paper lists the activities, challenges faced and decisions made to build a chatbot solution.[14] Williams.j,Raux.A”the dialog state tracking challenge”(2013), The majority of queries square measure directional or factual queries that component will handle. The info tested to be sensible to make and revise as library resources and personnel modified. The chatbot provides a 24 hour, seven day a week service that is consistent, can be increased as resources, services, or staff change, and provides a playful interface that engages users.It replaces sophisticated navigation systems and scrolling through search results with additional targeted answers, and has the ability to refer questions to librarians. Although chatbots are around for many decades, there's a inadequacy of reports in revealed library literature concerning their use in libraries.[15] Stockwell and Hubbard(2013) additionally provided such activities could faster learner autonomy particularly when the tasks were conducted via mobile devices (e.g.Reinder 2011;Sato Murase, & Burden ,2015).this stems from their nature, which enables prompt access to resources and feedback outside the classroom and consequently facilitates out-of-class learning ,which can supplemnt in class activities(KukulskaHulme,2015).However, some challenges are left for mobile based collaborations showed that reading and writing texts in particular, would be bothersome for learners who have not often typed the alphabet with their mobiles devices. Learners anxiety for the accuracy of their output can also be another interference[16]

### III. PROPOSED CHATBOT

1: Create the Assistant service

The first task is to create an instance of Watson Assistant on IBM Cloud.Make sure that you are logged in to your IBM Cloud account. Click Catalog and then click Services > Watson > Assistant. For the service name, type library St Click Create.Now Click Launchtool to open the Watson Assistant workspace.



The Car Dashboard sample is a predefined conversation. You can use it to get a few implementation examples.

## 2: Create a workspace

You must use workspaces to maintain separate intents, user examples, entities, and dialog flows. Watson Assistant uses a step-by-step approach to guide you to create workspace, intents, and so forth. In the Workspaces section, click Create. Type a name for the workspace. In the examples throughout this tutorial, the workspace name is Support Helpdesk 3:Create intents Add intents. An intent is a group of examples of things that a user might say to communicate a specific goal or idea. To identify intents, start with something that a user might want and then list the ways that the user might describe it. For each intent, think of the various ways that a user might express his or her desire those are the examples. Examples can be developed by using a crowd sourcing approach. For example, in a discussion with the support team, you might gather this set of standard questions that support received from users:

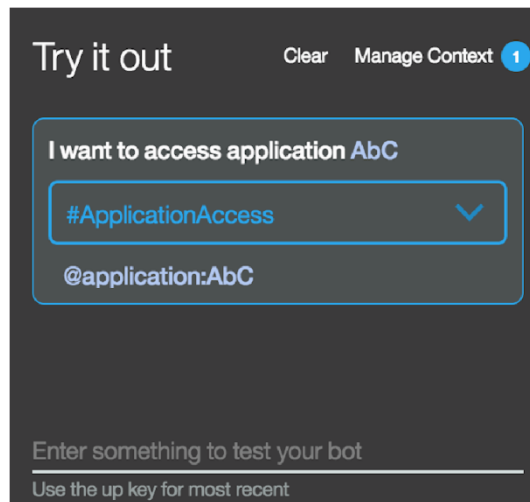
1. what are timings of library?
2. information about library services?
3. What books are available?
4. what are the different journals present.?
5. previous years question papers available or not? Each of those questions is documented as a frequently asked question in the support team's document repository. Some solutions persist in a relational database in the form of application > problem > solution. Add those intents to the workspace: From the Build page, click Intents and click Create new. For the intent name, type application Access after the number sign (#). For each intent, add examples to train the conversation for intent recognition. You can enter the same examples as above. Create the Goodbyes intent and add examples for it. Because many intents can be reused from conversation to conversation implementations, you can define .csv files and import them in the Conversation Tool Intents. The .csv format is shown in this example with one intent per line: To get the IT support demonstration intents, click the Import link on the Intents page to import the wcsvworkspace/ITSupport-Intents.csv file from the GitHub repository. As soon as you create intent, you can test it by clicking Ask Watson icon in the top, right-hand side of the conversation editor.

```
hello,greeting
hi,greeting
how are you,greeting
bonjour,greeting
howdy,greeting
what's up,greeting
good morning,greeting
```

Enter one of the examples. You should get the #greetings intent identified by Watson. Enter other greetings to test the #greetings intent.

#### 4: Add entities

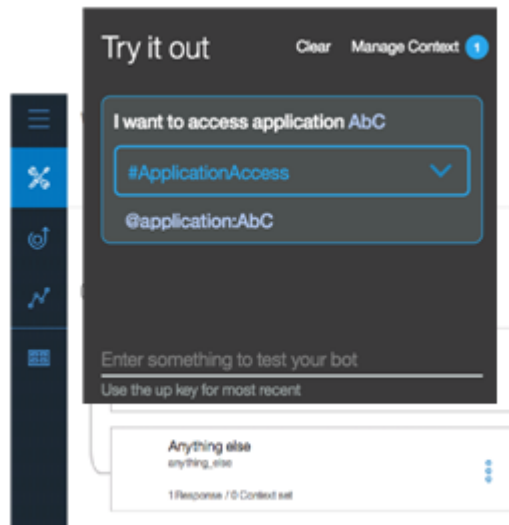
An entity is a portion of the user's input that you can use to provide a different response to a particular intent. Click Entities. On the Entities page, click Create new. Adding values and synonyms to entities helps your chatbot learn important details that your users might mention. Each entity definition includes a set of specific entity values that can be used to trigger different responses. Each value can have multiple synonyms that define different ways that the same value can be specified in user input. Create entities to represent to the application what the user wants to access. Fuzzy logic is a feature that allows Watson Assistant to accept misspelled words. You can enable this feature at the entity level.



As you did for intents, you can reuse entities' definitions through the export and import capabilities. Import the `wcworkspace/ITSupport Entities .csv` file. 1.If you click the Ask Watson icon immediately after you import the entities, the Watson is training message is displayed. Watson Assistant classifies the. You can unit-test the entities by entering `I want to access application AbC`. The following figure shows both the intent and entity (`@application:AbC`) extracted by Watson Assistant: You are now ready to create the dialog flow. Task 6: Build the dialog

After you specify your intents and entities, you can construct the dialog flow. A dialog is made up of nodes that define steps in the conversation. In the previous image, two dialog nodes are shown. The first node is the standard welcome message. The other node is a catch-all node named "Anything else." Dialog nodes are chained in a tree structure to create an interactive conversation with the user. The evaluation starts at the top, so the welcome node is assessed before the "Anything else" node. If you click the welcome node, the standard Watson response is "Hello. How can I help you?" To validate how the flow works, you can click the Ask Watson icon Define the greetings node The first node addresses greetings in a response to a query

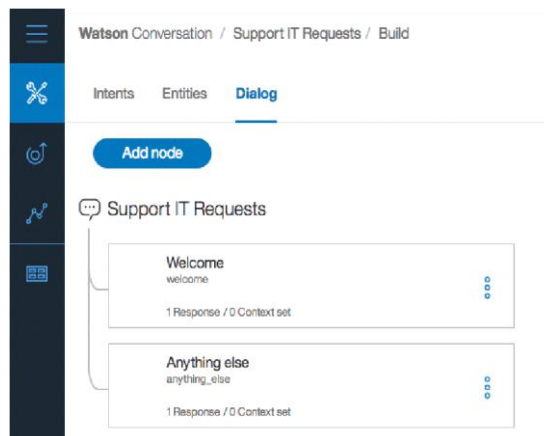




such as "hello." Click the welcome node and click Add node below 1. A new node is added between the welcome and "Anything else" nodes. At each node level, you can expand the conversation by adding nodes. If you add nodes at the same level, the flows are parallel. Adding a child node creates a dependent track of conversation, and the conversation branches out into a tree structure

1. A new node is added between the welcome and "Anything else" nodes.

At each node level, you can expand the conversation by



adding nodes. If you add nodes at the same level, the flows are parallel. Adding a child node creates a dependent track of conversation, and the conversation branches out into a tree structure

2. Name the new node Handle Greetings. In the If bot recognizes field, change the value to #Greetings. The number sign (#) represents a prefix for intent. The condition is triggered when the Watson natural language classifier classifies the query as a greeting intent.

3. Add these responses: application.

Fuzzy logic is a feature that allows Watson Assistant to accept misspelled words. You can enable this feature at the entity level.

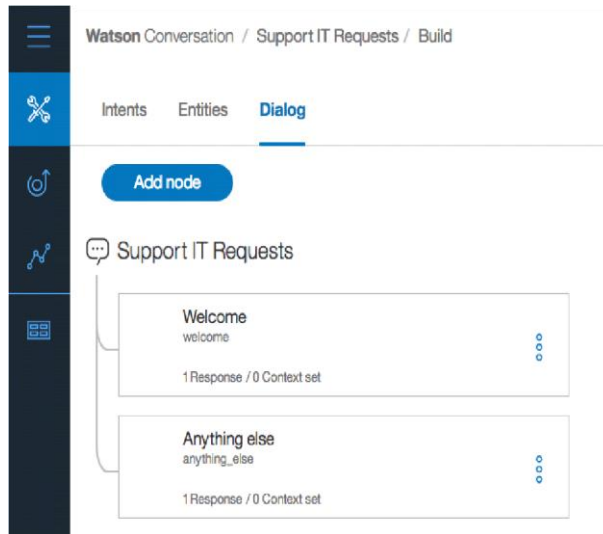
As you did for intents, you can reuse entities' definitions through the export and import capabilities. Import the `wcworkspace/ITSupport-Entities.csv` file.

1.If you click the Ask Watson icon immediately after you import the entities, the Watson is training message is displayed. Watson Assistant classifies the entities. You can unit-test the entities by entering I want to access application AbC. The following figure shows both the intent and entity (`@application:AbC`) extracted by Watson

Assistant:

After you specify your intents and entities, you can construct the dialog flow.

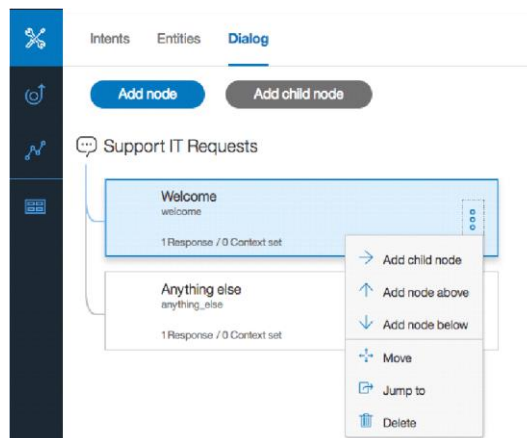
A dialog is made up of nodes that define steps in the conversation.



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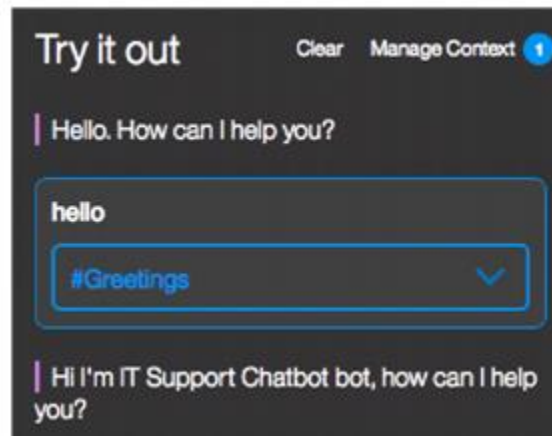
Define the greetings node

The first node addresses greetings in a response to a query such as "hello." Click the welcome node and click Add node below.



A new node is added between the welcome and "Anything else" nodes.

At each node level, you can expand the conversation by adding nodes. If you add nodes at the same level, the flows are parallel. Adding a child node creates a dependent track of conversation, and the conversation branches out into a tree structure.



1. Name the new node Handle Greetings. In the If bot recognizes field, change the value to #Greetings . The number sign (#) represents a prefix for intent. The condition is triggered when the Watson natural language classifier classifies the query as a greeting intent.

2.Add these responses:

The previous image also illustrates how to use the multiple responses pattern to avoid being repetitive. The bot can present different answers to the same query. You can allow the system to randomly select an answer from the list of potential responses.

1.Unit-test your dialog by clicking the **Ask Watson** icon:At the beginning of each conversation, the evaluation starts at the top level of dialog nodes. Manage the "Anything else" use case

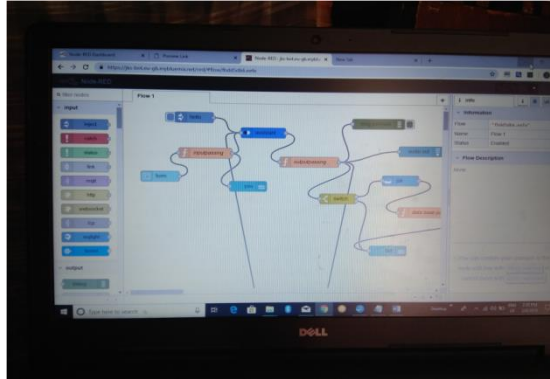
The bottom node is used when none of the defined intents are matched. It can provide a default message

1.From the menu on the right side of the response area, you can open the JSON editor and assess the data that is returned as part of the conversation interaction. The JSON document includes an output JSON object with text with different values. To the output, add an attribute, name it Missing case, and set it to true. When you persist the conversation flow into a document oriented database , you can search the queries that were not addressed by the dialog nodes so that you can add more cases later, if needed. Click the "Handle Greetings" node and then click Add node. Name the new node Handle application access. In the If bot recognizes field, type #ApplicationAccess When users enter queries about application access, they will most likely specify one of the supported applications; for example, I want to access application abc. Therefore, in the Application Access node, you need to add multiple conditions by looking at the different possible entities. As illustrated in the previous image, the first condition tests on the presence of the @application: AbCentity. When it matches, the response returns a static URL. Later, you will learn how to make the URL clickable from Watson

Assistant in the chatbot application. To add more conditions in the same node, click Add another response. Test the sentence I want to access application AbC. You should get the Application Access intent and the application AbC entity. Verify that the node match gives the expected response: The evaluation round works in two stages. In the first stage, the dialog tries to find an answer in the child nodes of the contextual node. That is, the dialog tries to match all the conditions of the child nodes of the contextual node. If the final child node has a condition of "true," meaning that it is to be used if none of its siblings are matched, that node's response is processed. If no match is found, the dialog continues to a second stage where it tries to find an answer to an input by matching the top level of dialog nodes.

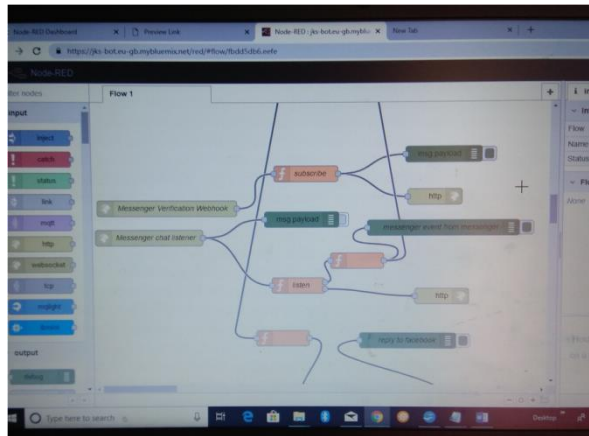
The top level of dialog nodes should contain an anything\_else node as the last node, which is reached when no match occurs in the conditions of the top-level nodes. Typically, if an anything else node is defined, the dialog returns an answer to every user input.

At this stage, you can build a static flow. Next, you get user input and do something with it.



**NODE RED ARCHITECTURE:**

In the node-red first select the input node inject and give the name as hello, Now from the output node select the debug node and give the name as msg.payload. Connect the output of hello to input of msg.payload. The msg called successfully injected will appear on the screen now deploy. Now again successfully inject "hi". In the IBM cloud ,go to resource list and create resource. Now drag the assistant from IBM Watson through search filter. Edit the injected node hello as "hi" and click on done. Now, connect the assistant node to msg.payload and hello. hello input to input of assistant and output of assistant to input of msg.payload by changing the username as apikey and giving password. Assistant an dinput of the msg.payload. Now, go to deploy and that go to manage palette. After completing the above process go to user settings nodes and select the palette. Now install the node red dash-board and click on install. In the node properties give group as home size as auto and example as text and click on done. Now, drag the form from search filters and click the assistant input to form output. Create a new function and connect the new function to form output to input of assistant. Now, again select the msg.payload=msg.payload.text ; from the functions. Now, the two text blocks onto the screen and connect the text blocks with the name you to the output of input parsing and other one with the name bot to the output of output parsing



Now, go to debug and give label as bot and you. Value format as {{msg.payload}} and click on done. After the above process is done create a new block and give it as form. On the right side of the screen click on dashboard and go to layout and click on home. Now, deploy the total block. Now, drag the audio out by searching it in the search

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filter and connect its input to output of output parsing. Now the again deploy the total block. Dash board is on the right side of the screen and go to edit audio out node. Give TTS voice as shown in the figure and click on done. After the audio out is connected drag a switch .Edit switch node by giving data base as marriage events. Now, connect the one output of switch to marriage events and other to bot. Now again connect the output of marriage event to input of bot. Debug the above function and edit the function node which is dragged on to the screen by giving the name as database parsing .After the name is given as database parsing then select the function `msg.payload=msg.payload events`; In the node properties give the name as subscribe and click on done .Connect the database parsing to events clock output and output of database parsing to bot input. Now, again deploy the function .Now dialogic box default occurs click on submit.

#### IV. RESULT & DISCUSSION

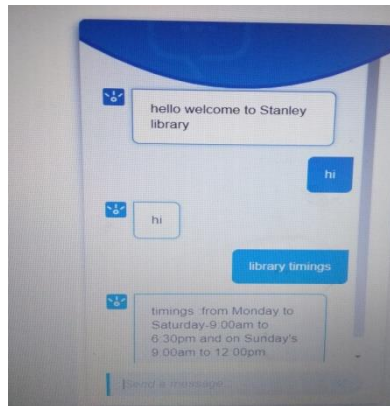


fig:4.1 Welcome Note

In the IBM Watson assistant we can create our own assistant .The assistant responds in the following manner. Firstly the greetings are given to the assistant bot when we open the preview link it directly gives that hello welcome to awesome weddings we can help you to organize weddings. Then we need to give the input as I would like to plan a wedding .Then bot asks to give the location which we are willing to. It gives some locations in your city .And we have to select one among them. After selecting the location the bot gives the function halls available in that location in that we have to select one function hall which we preferable. Then the bot gives the all information about the function hall which we selected before like cost, capacity and also google location link.

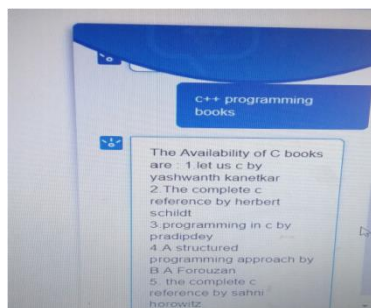
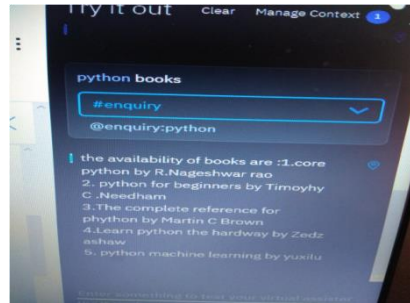


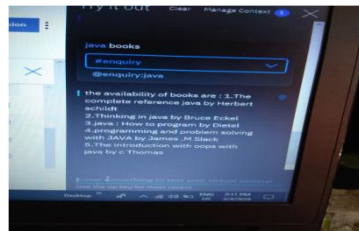
Fig:Displaying of c++ books

After that when user gives or asks the question about like I the user is asking about c++ programming books,Then it dispalys the availability of books in the library.in the given figure it displays the top 5 books which are available in the library right now.



*Fig 4.3:displaying the python books*

In the above two figures the user asked about the java books and python books. It represents the java books which are present or available in the library and also displays the availability of python books in the library.



*fig 4.4:displaying the java books*

## V. CONCLUSION

A chatbot is one of the simple ways to transport data from computer without having to think for proper keywords to look up in a search or browse several web pages to collect information; users can easily type their query in natural language and retrieve information. In this paper, information about the design, implementation of the chatbot has been presented. From the survey above, it can be said that the development and improvement of chatbot design grow at an unpredictable rate due to variety of methods and approaches used to design a chatbot. Chatbot is a great tool for quick interaction with the user. They help us by providing entertainment, saving time and answering the questions that are hard to find. The Chatbot must be simple and conversational. Since there are many designs and approaches for creating a chatbot, it can be at odds with commercial considerations. Researchers need to interact and must agree on a common approach for designing a Chatbot. In this project, we looked into how Chatbots are developed and the applications of Chatbots in various fields. In addition comparison has been made with other Chatbots. General purpose Chatbot must be simple, user friendly, must be easily understood and the knowledge base must be compact. Although some of the commercial products have recently emerged, improvements must be made to find a common approach for designing a Chatbot.

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