UNIVERSITY INSTITUTE OF COMPUTING

DIVISION- MCA/BCA/BSc(CS)

A Project Report

On

COLLEGE ENQUIRY CHATBOT

Submitted in partial fulfillment of the requirements for the

award of the degree of

Bachelor of Computer Applications (BCA)

in

Session: 2019-22

By

STUDENT1, REG ID: RITIKA RANA, 19BCA1126

STUDENT 2, REG ID: ATHARV SINGH, 19BCA1132

STUDENT 3, REG ID: PRABHAT Kr. CHAUDHARY, 19BCA1172

Supervised By

Ms. Nidhika Chauhan

Assistant Professor

University Institute of Computing

CHANDIGARH UNIVERSITY, GHARUAN, MOHALI,

PUNJAB,140413

Project Coordinator **Head-UIC**

UNIVERSITY INSTITUTE OF COMPUTING

DIVISION- MCA/BCA/BSc(CS)

Second Project Report

Submitted By: -

Name:- Ritika Rana **UID: - 19BCA1126**

Table Of Index

1. Introduction to Project

Conversational bots have a wide range of applications, and in recent years they have been developed for use in education. The ability to handle tens of thousands of questions and answers at the same time provides an alternative to teachers and lecturers who are facing a shortage of time and expertise.

Catbots have become more prevalent in recent years, and different types have emerged for different purposes. Non-deterministic or evolving (dynamic) chatbots have a learning component that allows them to take past interactions and outcomes and alter their behavior when they meet the same situation.

Dialogflow may be a tongue understanding platform that creates it easy to style and integrate a conversational interface into your mobile app, web application, device, bot, interactive voice response system, and so on. Using Dialogflow, you'll provide new and interesting ways for users to interact together with your product. Dialogflow can analyze multiple sorts of input from your customers, including text or audio inputs (like from a phone or voice recording). It also can answer your customers during a few ways, either through text or with synthetic speech.

2. Objectives of the Project

Objective is to facilitate the student and the upcoming generation knowing about the best college or the university without going through many different websites getting everything on one platform.

Looking onto the today's framework and the confusion raised in the mind of students regarding the best colleges or universities for their respective courses this chat-bot come website has been designed to overcome this problem or the confusion from the mind of the upcoming engineers, CA, and many more.

Another important objective to develop the College Enquiry Chat-bot is to avoid going through many websites this will take the user directly to the right page or official website of the college or university.

3. Scope of the Project

The college enquiry chat-bot project is developed exploitation algorithms that analyse user queries and perceive user message.

The program responds to the student's question with the assistance of algorithms.

To facilitate the student and the upcoming generation knowing about the best college or the university without going through many different websites getting everything on one platform.

Looking onto the today's framework and the confusion raised in the mind of students regarding the best colleges or universities for their respective courses this chat-bot come website has been designed to overcome this problem or the confusion from the mind of the upcoming engineers, CA, and many more.

Another important objective to develop the College Enquiry Chat bot is to avoid going through many websites this will take the user directly to the right page or official website of the college or university.

4. Proposed Methodology

The **Waterfall method** may be a traditional approach to project management. In it, tasks and phases are completed during a linear, sequential manner, and every stage of the project must be completed before subsequent begins.

The stages of Waterfall project management generally follow this sequence:

- Requirements
- Analysis
- Design
- Construction
- Testing

- Deployment & maintenance

In order to create responses, we separate methodology into two parts: knowledge abstraction and response generation. Knowledge abstraction occurs through the analysis of course material (which we call data). Earlier in this chapter, I wrote about the relationship between the development of a response and the characteristics of the knowledge generated during the process of knowledge abstraction. I also explained the relationship between the features of the tools available for Dialogflow and its various integrations.

Knowledge abstraction of a chatbot happens in three stages, gathering, manipulating, and augmenting. Most of the work happens ahead of the content of the chatbot.

Response generation is precise to explain how the existing functionality in this platform can benefit the proposed methodology. Di-outflow describes how entities and intents work, but it should also elaborate on how the existing implementation offers benefits.

5. Tools, Hardware & Software Specification

Languages:

- Python
- Java
- CSS
- HTML
- JAVASCRIPT

Modules:

- Dialogflow
- Google cloud console API
- Action SDK
- Firebase

Software:

- Google chrome

6. Planning and Requirement Gathering

In 21st century as we can see the competition has increased in all the sectors – private or public sector as many students gets confused for the best choice of colleges and universities. This project will resolve issues they face and give better solution.

- It includes – campus, placements, fees etc.
- The chat bot will include top –best colleges and universities in India.
- We have built a website which will support this chat bot.
- Saves time – search for the college and get all the information you need at one place
- Easy to operate – Chat bot is there for you for any queries.
- Minor details about the colleges are included
- If someone asks for some detailed info about any colleges they are provided by the official links of particular colleges.

7. Software Requirement Specification

Introduction & Purpose:-

This document will provide all of the wants for the project Drexel Chabot.

It will function a reference for developers and customers during the event of the

final version of the system.

Overall Description:-

Most of the search engines today, like Google, use a system (The PageRank

Algorithm) to rank different sites. When a user enters a question, the query is interpreted as keywords and therefore the system returns an inventory of highest ranked sites which may have the solution to the query. Then the user must undergo the list of webpages to find the solution they're trying to find. Drexel Chabot, however, will attempt to understand the query and supply a definitive answer.

There will be four main units to the system working together to know the

question and return an appropriate answer:

● Generic question construction - capable of taking a tongue question and making it more generic.

● Generic answer construction - capable of taking a generic question template and providing a generic answer template.

● Generic answer population - capable of taking a generic answer template and populating it with information from the database to make a solution.

● Information extraction - capable of finding information through structured or unstructured websites and storing that information during a database.

User Needs: -

The two classes of users for this technique are described below:

a) **API users**
API users contains application developers who want to include Drexel Chabot API into other software applications.

b) **Mobile app/Web app/SMS users**
These users contains non-technical users who want to urge answers for their questions. These users ask questions and obtain answers with mobile, web, or text messaging interfaces. This class of users include Drexel's current and prospective students, teaching faculty, and staff.

Assumptions & Dependencies: -

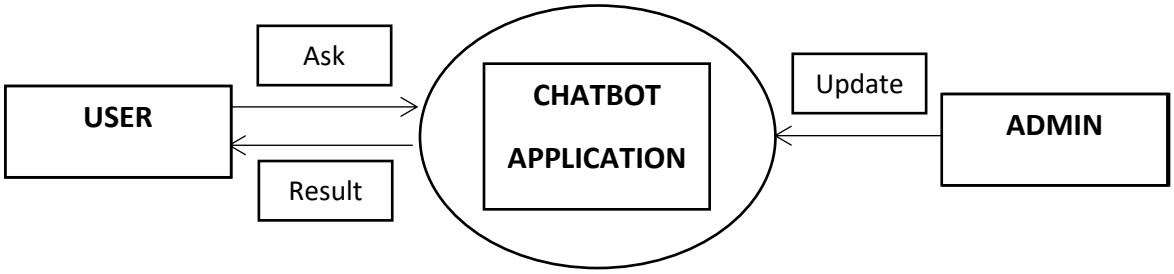
Keras may be a library for creating and using neural networks. It should provide us with all the functionality we'd like, however if it's in some way deficient, then it'll get replaced with a special library. Beautiful Soup may be a library for parsing HTML documents. It should be all we'd like to extract text from a webpage, but could also be replaced if necessary. We'll develop the project using Python and MySQL database.

8. Feasibility Study

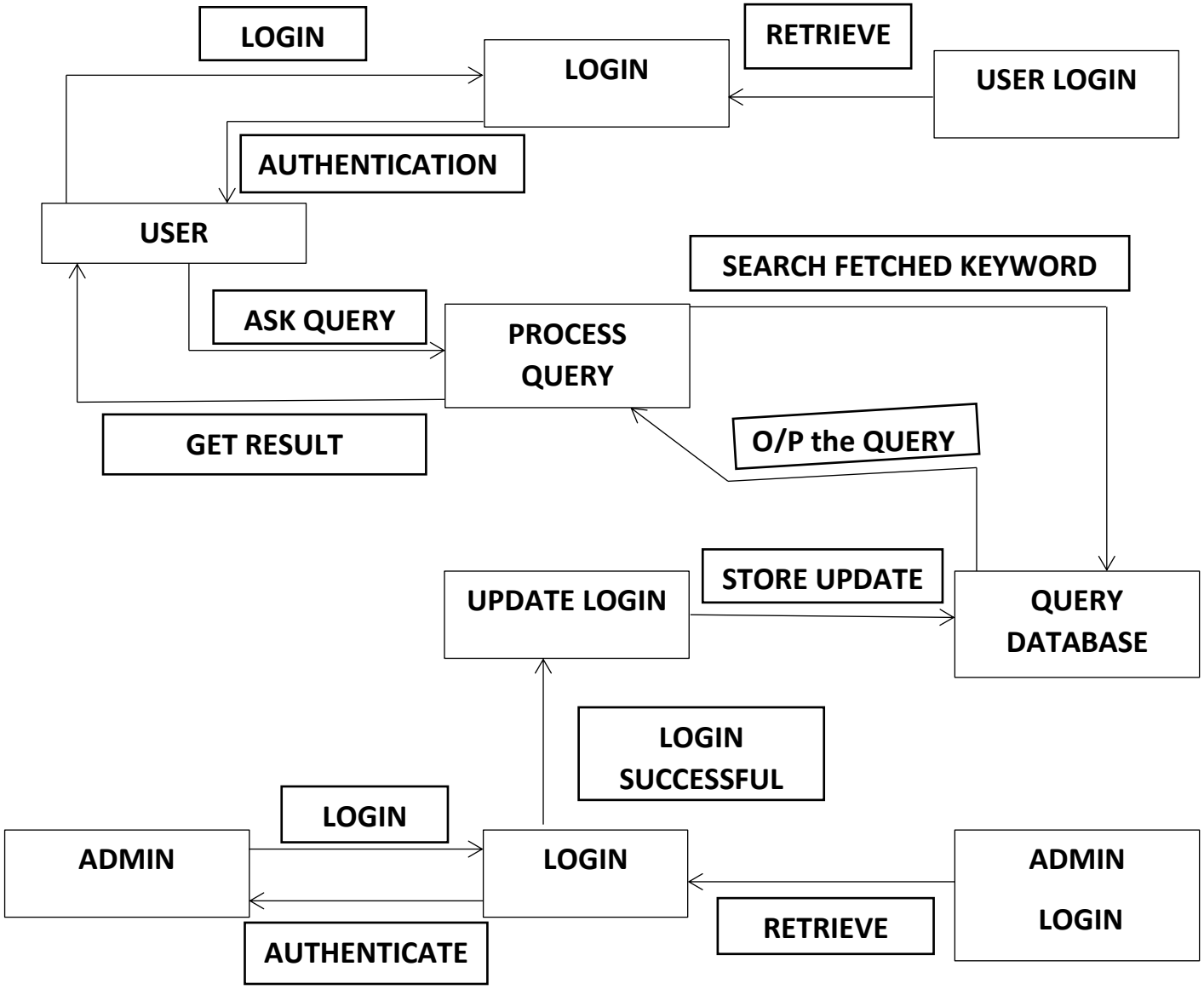
- In order to eliminate this problem of confusion in the minds of upcoming engineers, CAs, and many more, this website has been designed to act like a chat-bot.
- By getting everything on one website, you won't need to visit many different websites.
- The user will be taken directly to the university or college's official website so that they won't have to navigate through several different websites.

9. Data Flow Diagram (Level-0, Level-1, Level-2)

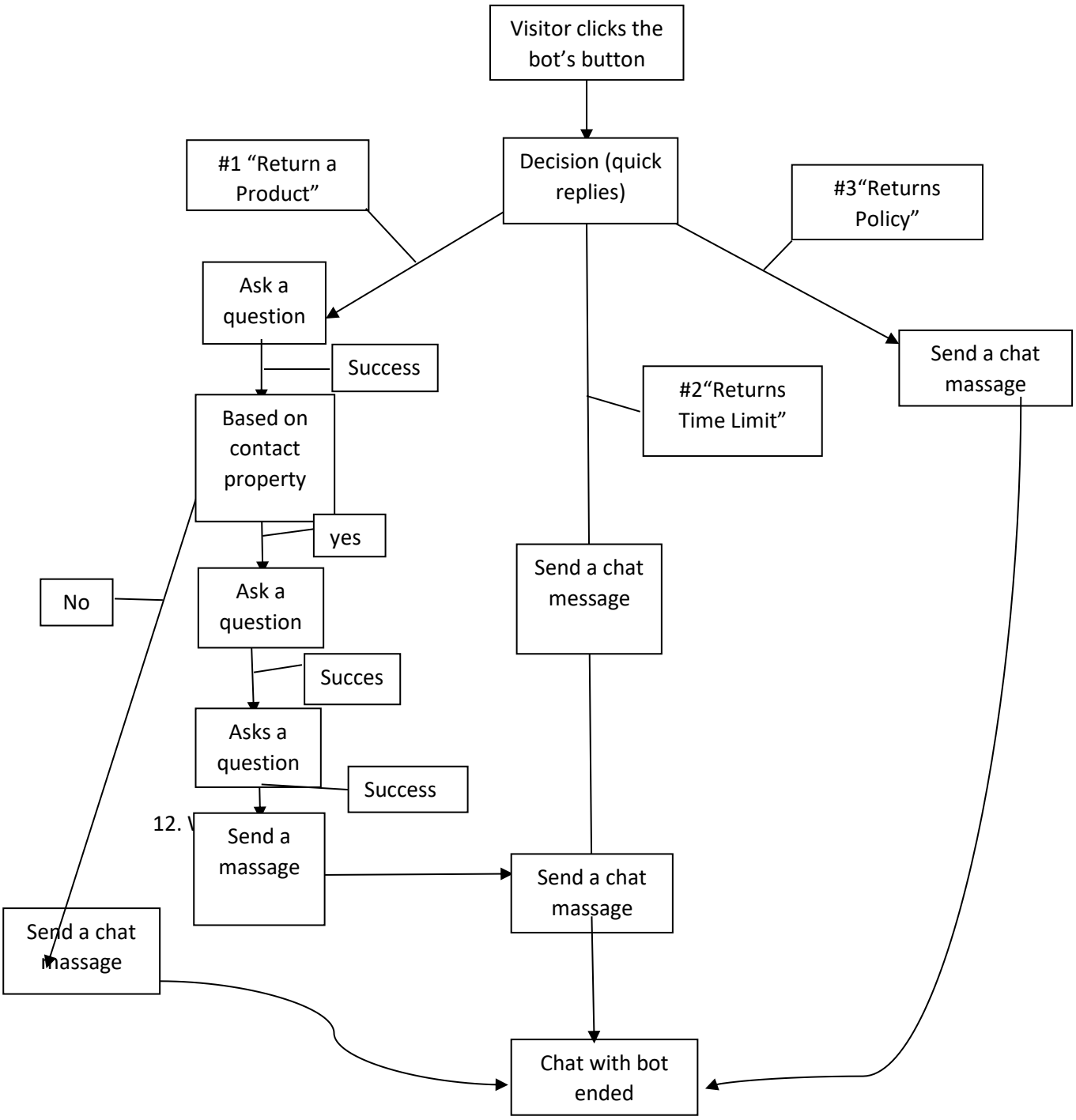
Level 0 DFD



Level 1 DFD



Level 2 DFD


Visitor clicks the bot's button
Decision (quick replies)
#1 "Return a Product"
#3"Returns Policy"
#2"Returns Time Limit"
Ask a question
Success
Send a chat massage
Based on contact property
yes
No
Ask a question
Succes
Asks a question
Success
Send a massage
Send a chat message
Send a chat massage
Send a chat massage
Chat with bot ended

10.Work Progress as per timeline

OBJECTIVE	Days Required (maximum)	Work Report
Strategy	7 days	7 days
Analysis and planning	7 days	7 days
UI/UX design	15 days	15 days
Information Architecture and Workflow	7 days	7 days
Software development (coding, designing)	40 days	25 days
Testing (website and chat bot combined working)	7 days	NIL
Modifications (if needed)	4 days	NIL
Deployment and finalizing	4 days	NIL
TOTAL DAYS	91 Days	61 Days

11.Number of Objectives Achieved

To design and create an online talking system based on a well-informed database and interpreter that will be used for pattern matching.

- **Goals and Objectives**:

• Minimize the amount of time it takes to answer the questions.

• Provide an answer to the user in response to their requests.

• To make communication between the user and the machine easier.

Now let us look into the detailed objectives that have been achieved:

UNIVERSITY INSTITUTE OF COMPUTING

DIVISION- MCA/BCA/BSc(CS)

S. No.	Topic	Objective	Status	
			YES	NO
1.	Main Menu	Contains the main headings like Introduction, About, Contact etc.	✔	
2.	Background theme Image and Website Name (College 360°)	College 360° signifies that what the website is all about.	✔	
3.	Portfolio	This section contains the blogs and the basic necessary information of colleges	✔	
4.	Contact (Get in touch with us)	This section contains the name, email, messages (Comment) that will help us to get the information and any required update in the post or website required.	✔	
5.	Chatbot	This is the section where the user can ask for the information or any query that user have and want to enquire can ask the BOT. If the enquiry asked by the user matches to the database, then the Bot will confirm the query and information will be provided to the user. If the query asked by the user does not matches the database, the BOT will ask for the information of the user tat	✔	

		will help the admin to get the information for the user.		

12.Modules Developed and their description

1. **Chat User (Client-Server)**:
   The suggested system is built on a client-server model. On the central server, all the data will be stored in an efficient database. Users can obtain this information using an Android application loaded on their cellphones (client machines). The user interface on each client PC will be upgraded.
2. **Chatbot**:

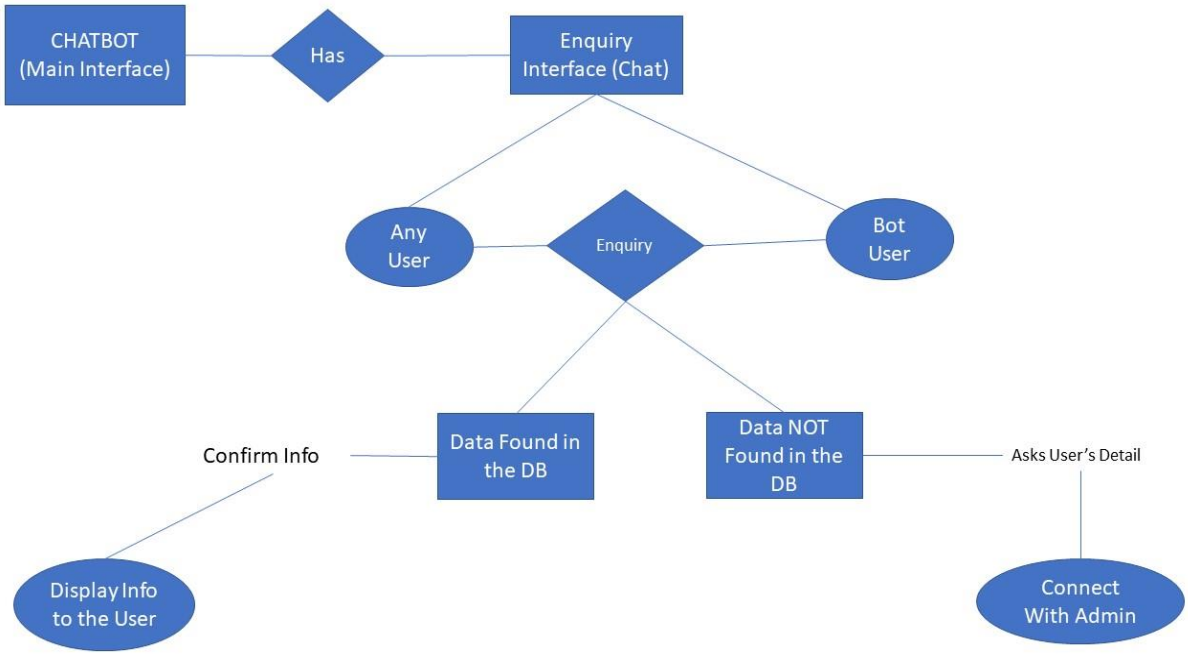
   A chatbot is a piece of software that allows users to access material and services through natural conversations. Chatbots are often in the form of a chat client that uses natural language processing to engage the user in a conversation. Chatbots direct conversation flow depending on the context of the user's request and respond with natural language words to deliver direct responses, request additional information, or suggest other actions.
3. **Pattern matching**:

   A bot sends a comparison query to a machine. When a query matches a database, it is sent to data services.
4. **Data Services**:

   A machine receives a comparison question from a bot. A query is delivered to data services when it matches a database. As a result, all the modules stated above are completed in polynomial time sec t, making this a P issue.
5. **UI:**

   The process of designing user interfaces in software or digital devices with a focus on appearance or style is known as user interface (UI) design. Designers strive to design user interfaces that are simple to use and enjoyable to use. UI design encompasses both graphical and non-graphical user interfaces, such as voice-controlled interfaces.

13.ER Diagrams of tables created



The Chatbot is that system that guides you to the right path with the basic information as per the user requirement. The ER diagram represent its working algorithm of Chatbot.

Chatbot is the main Interface that carries the Enquiry Interface (Chat) from the user and checks weather the enquiry asked by the user matches to the database or not. If the information is true and matches to the database then the bot will display the information to the user else the bot asks the user data which includes name, contact, email, etc., so that the admin can get in touch with the user over the platforms to clear the doubt and also to give the information regarding the Enquiry asked.

14.Testing Strategy used & description of test cases and use cases

- **Functionality Testing**

  VERIFIED THAT there is no dead page or invalid redirects.

  VERIFIED the WORKING of the system.

  VERIFIED the data SAFETY.

- **Interface testing**

  Performed to verify the interface and the dataflow from one system to other LIKE DIFFERENT WINDOWS AND PHONES.

- **Performance testing**

  LOAD TESTING- CHECKED BY OPENING ALL THE POST AT THE SAME TIME AND IT IS WORKING

  STRESS TESTING- CHECKED THE LIMITS OF THE WEBSITE TILL WHICH IT CAN HANDLE STRESS

15.References (APA format)

Google. (n.d.-a). *Google Cloud Platform Terms Of Service*. Google Cloud. Retrieved September 1, 2021, from https://cloud.google.com/terms

Google. (n.d.-b). *Release Notes | Dialogflow Documentation |*. Google Cloud. Retrieved September 1, 2021, from https://cloud.google.com/dialogflow/docs/release-notes

Rajesh, R. [Raji Rajesh]. (2021, April 7). *Creating Entities and Updating Avatar | Chatbot 2 | Google Dialogflow* [Video]. YouTube. https://www.youtube.com/watch?v=yupkCZTp4Ms&feature=youtu.be

Load, E. (2020, May 5). *Creating ChatBot || Dialogflow || Just in 30 Minutes*. YouTube.https://www.youtube.com/watch?v=0SDfi3JvacE&feature=youtu.be

Learners, W. (2021, July 22). *How to Add A Chatbot to Your Website*. YouTube. https://www.youtube.com/watch?v=y0CRhaWNpto&feature=youtu.be