COLLEGE CHATBOT

A MINI PROJECT REPORT

Submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology

in

COMPUTER SCIENCE AND ENGINEERING

BY

SHAIK GULSHAN NOORIE
(19331A05F7)

YELLETI HEMA SATYA
(19331A05J3)

SENAPATHI CHANDINI
(19331A05F5)

VETCHA VENKATA NITISH
(19331A05I7)

Under the Supervision of
Dr. G. SUVARNA KUMAR
Associate Professor

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
MVGR COLLEGE OF ENGINEERING (Autonomous)
VIZIANAGARAM-535005, AP (INDIA)
(Accredited by NBA, NAAC, and Permanently Affiliated to Jawaharlal Nehru Technological University Kakinada)

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Maharaj Vijayaram Gajapathi Raj (MVGR) College of Engineering
(Autonomous)
Vizianagaram

CERTIFICATE

This is to certify that the project report entitled "**COLLEGE CHATBOT**" being submitted by **Shaik Gulshan Noorie, Yelleti Hema Satya, Senapathi Chandini, Vetcha Venkata Nitish** bearing registered numbers **19331A05F7, 19331A05J3, 19331A05F5, 19331A05I7** respectively, in partial fulfillment for the award of the degree of "**Bachelor of Technology" in Computer Science and Engineering** is a record of bonafide work done by them under my supervision during the academic year 2021-2022.

Mr. G. SUVARNA KUMAR
Associate Professor,
Department of CSE,
MVGR College of Engineering,
Vizianagaram.

Dr. P. RAVI KIRAN VARMA
Head of the Department,
Department of CSE,
MVGR College of Engineering,
Vizianagaram.

DECLARATION

We hereby declare that the work done on the dissertation entitled "**COLLEGE CHATBOT**" has been carried out by us and submitted in partial fulfillment for the award of credits in Bachelor of Technology in Computer Science and Engineering of MVGR College of Engineering (Autonomous) and affiliated to Jawaharlal Nehru Technological University (Kakinada). The various contents incorporated in the dissertation have not been submitted for the award of any degree of any other institution or university.

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Shaik Gulshan Noorie (**19331A05F7)**
Yelleti Hema Satya (**19331A05J3)**
Senapathi Chandini (**19331A05F5)**
Vetcha Venkata Nitish (**19331A05I7)**

ABSTRACT

A college is a big organization involving thousands of students, some faculty, administration people, assistants and associates etc. Visitors who visit the college and newly joined students must explore the college completely so that they can habituate to that place which is a convenient manner to make them choose that college for further steps. This task will be easy if we have a chatbot with us, which can be able to process all our queries regarding the information related to the college campus and provide a satisfactory response. The college chatbot uses advanced search algorithms for natural language matching with user input which can guide and give information to the visitors of that college. Building this type of chatbot can make the work of visitors easier and there is chance of getting positive feedback from those visitors who have explored the college environment using this chatbot.

CONTENTS

List of Abbreviations

AI	–	Artificial Intelligence
SQL	–	Structured Query Language
NLP	–	Natural Language Processing
API	–	Application programming interface
NLU	–	Natural Language Understanding
WpBot	–	WordPress Chat Bot

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CHAPTER 1
INTRODUCTION

1.1. Identification of seriousness of the problem

When we want to know about a college we have to manually go to college and enquire about every detail we want know and spending our money to visit the college. If we want to go any place in the college, we don't know the exact location even though every college has the block to give those details, so we must ask everyone who passes by which is a difficult process.

As students, we tend to gain more of knowledge concerning our school, college and university throughout our course. Generally obtaining these details is very cumbersome and drawn-out. Like obtaining facts concerning our fee's structure or the due fees remaining may be a terribly drawn-out method that we have to travel to administration building and notice the right window so explore for a no dues form then fill it with correct information so submit it to the acceptable person so that person can tell us our due fees. So why have this long and worthless process to get this minor information.

1.2. Problem definition

When we enter a big college campus, it is important for us to know the information about that college such as number of courses available, fee structure, ways to library, canteen, details of faculty etc. The actual problem is, we can't find anyone who can guide us and give us the information we need. Although we can find some administration people who can give us information, but it is difficult to enquire about every detail as they can't be always with us and help us.

In this project, our goal is to find the alternative to solve this problem using chatbot to get immediate relevant response for the user queries.

1.3. Objectives

- To minimize the time required to solve the queries.
- To give response to the user based on queries.
- To simplify communication between user and machine.

1.4. Outcomes

Save timing of students and teachers and save extra manpower. Student can see all document related college like, notice, study material, question papers etc. on time to time and from any place whether student is present in college or not. And reduce the work of staff. It is proper communication in between staff and students.

1.5. Existing models

In the earlier days students had to visit the college to enquire about details like courses, fee structure, admission process and other information's about the college, which is a tiresome process as well as long process for both parents as well as students. Now a days there are many changes occurred in the Education system with help of advanced technology. Everything is happening over the internet without any trouble. In those days for enquiring about courses we must visit the college, but as the days are passing away its completing changing. Collecting the course details, fee structure manually will be hectic procedure and it also needs a manpower. For reducing that manpower and avoid such difficulties and time consuming many devices or systems were emerged day by day.

CHAPTER 2

LITERATURE SURVEY

Prof. Ram Manoj Sharma [1] proposed a college enquiry chatbot system which has been built by using Artificial Intelligence algorithms. The bot analyses user's query and understands user messages. The system has modules like Online chatbot, Online Noticeboards etc[1].

P.Nikhila, G.Jyothi, K.Mounika, Mr. C Kishor Kumar Reddy and Dr. B V Ramana Murthy [2], they have designed using AIML (Artificial Intelligence Mark-up Language) to make response to queries. AIML is employed to make or customize alicebot that could be a chat-bot application supported ALICE free code [2].

Harsh Pawar, Pranav Prabhu, Ajay Yadav, Vincent Mendonca, Joyce Lemos [3], a chatbot is designed by them using knowledge in database. The proposed system has Online Enquiry and Online Chatbot System. The development is done using various programming languages by creating a user-friendly graphical interface to send and receive response. The main purpose is it uses SQL (Structured Query Language) for pattern matching which is been stored in program [3].

Nitesh Thakur, Akshay Hiwrale, Sourabh Selote, Abhijeet Shinde and Prof. Namrata Mahakalkar [4], proposed an artificial chatbot using NLP (Natural Language Processing) which can be done in two ways the first via written text and the second is via verbal or voice communication. Written communication is much easier than the verbal communication. This paper introduces an interest in some emerging capabilities for evolving speed understanding and processing in virtual human dialogue system [4].

CHAPTER 3

SYSTEM REQUIREMENT

3.1. Software Requirements

1. WordPress
2. Microsoft Azure

3.2. Hardware Requirements

1. Disk Space: 1GB+
2. Web Server: Apache or Nginx
3. Database: MySQL version 5.0.15 or greater or any version of MariaDB.
4. RAM: 512MB+
5. PHP: Version 7.3 or greater.
6. Processor: 1.0GHz+

CHAPTER 4
THEORETICAL BACKGROUND

The chatbot has been designed to make students feel like talking to the staff from college and their queries are addressed through the conversational text. Responses can be provided to the user in text format, pictures and with many more features provided by the chat fuel. This requires chatbot which is build some advanced algorithms which makes the bot smart and answers the queries of users.

4.1 Chatbot

A chatbot is a software application used to conduct an online chat conversation via text, in lieu of providing direct contact with a live human agent. Bots can be created by using advanced search algorithms for natural language matching with user input. These chatbots are generally converse through auditory or textual methods, and they can effortlessly mimic human languages to communicate with human beings in a human-like way. A chatbot is considered one of the best applications of natural languages processing.

We can categorize the Chatbots into two primary variants:

i. Rule-Based Chatbots

ii. Self-Learning Chatbots.

Figure 4.1: Chatbot

4.1.1 Rule-based Chatbots

The Rule-based approach trains a chatbot to answer questions based on a list of pre-determined rules on which it was primarily trained. These set rules can either be simple or quite complex, and we can use these rule-based chatbots to handle simple queries but not process more complicated requests or queries.

4.1.2 Self-learning Chatbots

Self-learning chatbots are chatbots that can learn on their own. These leverage advanced technologies such as Artificial Intelligence (AI) and Machine Learning (ML) to train themselves from behaviours and instances. Generally, these chatbots are quite smarter than rule-based bots. We can classify the Self-learning chatbots furtherly into two categories - **Retrieval-based Chatbots** and **Generative Chatbots**.

i. Retrieval-based Chatbots: A retrieval-based chatbot works on pre-defined input patterns and sets responses. Once the question or pattern is inserted, the chatbot utilizes a heuristic approach to deliver the relevant response. The model based on retrieval is extensively utilized to design and develop goal-oriented chatbots using customized features such as the flow and tone of the bot in order to enhance the experience of the customer.

ii. Generative Chatbots: Unlike retrieval-based chatbots, generative chatbots are not based on pre-defined responses - they leverage seq2seq neural networks. This is constructed on the concept of machine translation, where the source code is converted from one language to another language. In the seq2seq approach, the input is changed into an output.

The first chatbot named **ELIZA** was designed and developed by Joseph Weizenbaum in 1966 that could imitate the language of a psychotherapist in only 200 lines of code. But as the technology gets more advance, we have come a long way from scripted chatbots to chatbots in Python today.

4.1.3 Chatbot Workflow

Conversations through chatbots use a specific logic path. A chatbot workflow starts with a welcome message, progresses to an initial question, provides specific answers, allows the user to respond, collects any necessary information, and then displays a message that ends the conversation. This logic path best emulates person-to-person communication. Though chatbots have a certain amount of customizability available to them, their general structure cannot be changed, and few parts of the workflow can be deleted outright. These limitations are in place to prevent chatbots from suffering from logic breaks in the workflow.

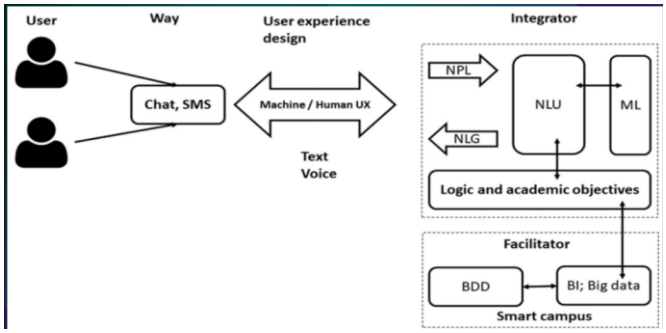

Figure 4.2 : Chatbot Workflow

4.2 WordPress

At its core, **WordPress is the simplest, most popular way to create your own website or blog.** In fact, WordPress powers over 43.3% of all the websites on the Internet. Yes – more than one in four websites that you visit are likely powered by WordPress. n a slightly more technical level, WordPress is an open-source content management system licensed under GPLv2, which means that anyone can use or modify the WordPress software for free. A content management system is basically a tool that makes it easy to manage important aspects of your website – like content – without needing to know anything about programming.The result is that WordPress makes building a website accessible to anyone – even people who aren't developers.

4.2.1 Features of WordPress

So over 43.3% of all the websites on the Internet are using WordPress, including well-known entities like the White House and Microsoft.

Well, no matter what type of website you want to create, there are plenty of reasons to use WordPress.

Here are some of the biggest:

- WordPress is Free and Open Source
- WordPress is Extensible
- WordPress is Easy to Install
- WordPress is Flexible

- It’s Easy to Find WordPress Help

To build a chatbot in WordPress we need a plugin called “WPBot Wordpress Chat Bot”.

4.3 Plugin

In WordPress, a plugin is a small software application that extends the features and functions of a WordPress website. Plugins play a major role in building great websites using WordPress. They make it easier for users to add features to their website without knowing a single line of code.

Plugins examples: Adobe Flash Player, a Java virtual machine (for Java applets), QuickTime, Microsoft Silverlight and the Unity Web Player.

4.3.1 WordPress Plugins

WordPress plugins are apps that allow you to add new features and functionality to your WordPress website, like the way mobile apps do for your smartphone. There is a popular saying in the WordPress community, ‘There’s a plugin for that’. WordPress is designed so that other developers can add their own code to it. The WordPress plugin API offers a robust set of hooks and filters which allow developers to modify existing WordPress functionality or add new functionality.

4.3.2 WPBot Wordpress Chat Bot

WPBot is a Plug n’ Play, Intelligent ChatBot for Wordpress that can Increase the value of your website. This WordPress ChatBot plugin can converse fluidly with the user – thanks to the Integration with Google ‘s Natural Language Processing (NLP) & Artificial Intelligence and provide the help and support they need.
WPBot works based on two types of user intents as user inputs.

Predefined intents (Site Search, Faq, Send Us Email, Call Me). These intents can work without integration to DialogFlow API and AI.

Custom intents give you the option to build a truly human like, intelligent and comprehensive chatbot. Build any type of Intents and Responses (including rich text responses) directly in DialogFlow and train the bot accordingly. When you create custom intents and responses in

DialogFlow, WPBot will display them when user inputs match with the Custom Intents along with the responses you created. You can also build Rich responses by enabling Facebook messenger Response option.

4.3.3 Working of this ChatBot

WPBot is a Plug n' play, Stand Alone Wordpress Chat Bot that can help Increase support for your website user. Users can converse fluidly with the Bot – thanks to the Integration with Google 's Natural Language Processing (AI and NLP). The Onsite Retargeting helps your Conversion rate optimization by showing special offers and coupons on Exit Intent, time interval or page scroll-down inside the ChatBot window. Get more happy customers!

Figure 4.3: WpBot Plugin

4.4 NLU (NATURAL LANGUAGE UNDERSTANDING)

NLU helps the chatbot understand the query by breaking it down. It has three specific concepts:

i. Entities: An entity represents keywords from the user's query picked up by the chatbot to understand what the user wants. It is a concept in your chatbot. E.g., 'What is my outstanding bill?' has the word 'bill' as an entity.

ii. **Intents**: It helps identify the action the chatbot needs to perform on the user's input. For instance, the intent of "I want to order a t-shirt" and "Do you have a t-shirt? I want to order one" and "Show me some t-shirts" is the same. All these user's texts trigger a single command giving users options for t-shirts.

iii. Context: It isn't easy to gauge the context of the dialogue for an NLU algorithm because it does not have the user conversation history. It means that it will not remember the question if it receives the answer to a question, it has just asked. For differentiating the phases during the chat conversation, its state should be stored. It can either flag phrases like "Ordering Pizza" or

parameters like “Restaurant: ‘Dominos'”. With context, you can easily relate intents without any need to know what the previous question was.

CHAPTER 5

APPROACH DESCRIPTION

5.1. Approach Flow

1. We have installed wordpress.org.
2. We have bought WpBot plugin from envatomarket.
3. We have installed the plugin in WordPress and activated it.
4. We have changed the general settings as required to our project.
5. We uploaded the custom icon for the chatbot.
6. We uploaded the custom agent for the chatbot.
7. Assigned a name to the chatbot.
8. Changed the background and text color and text background of bot and user messages.
9. Trained the model using the simple text response with simple queries.
10. Changed the messages in the Language Centre according to the project.
11. Created menu options required in the chatbot and assign them in a order.
12. A message was to get back to the options in message box.
13. Test the changes of the chatbot.
14. Check the working of chatbot in the admin’s blog.
15. The chatbot has to be deployed in the college website.

CHAPTER 6
DATA EXPLORATION

6.1. The Flow of the chatbot

The flow of the chatbot is when the starts the chat it greets the user and displays the menu options. When the user entered the message, it gives the response and when the user clicks the required option it redirects to the requires website.

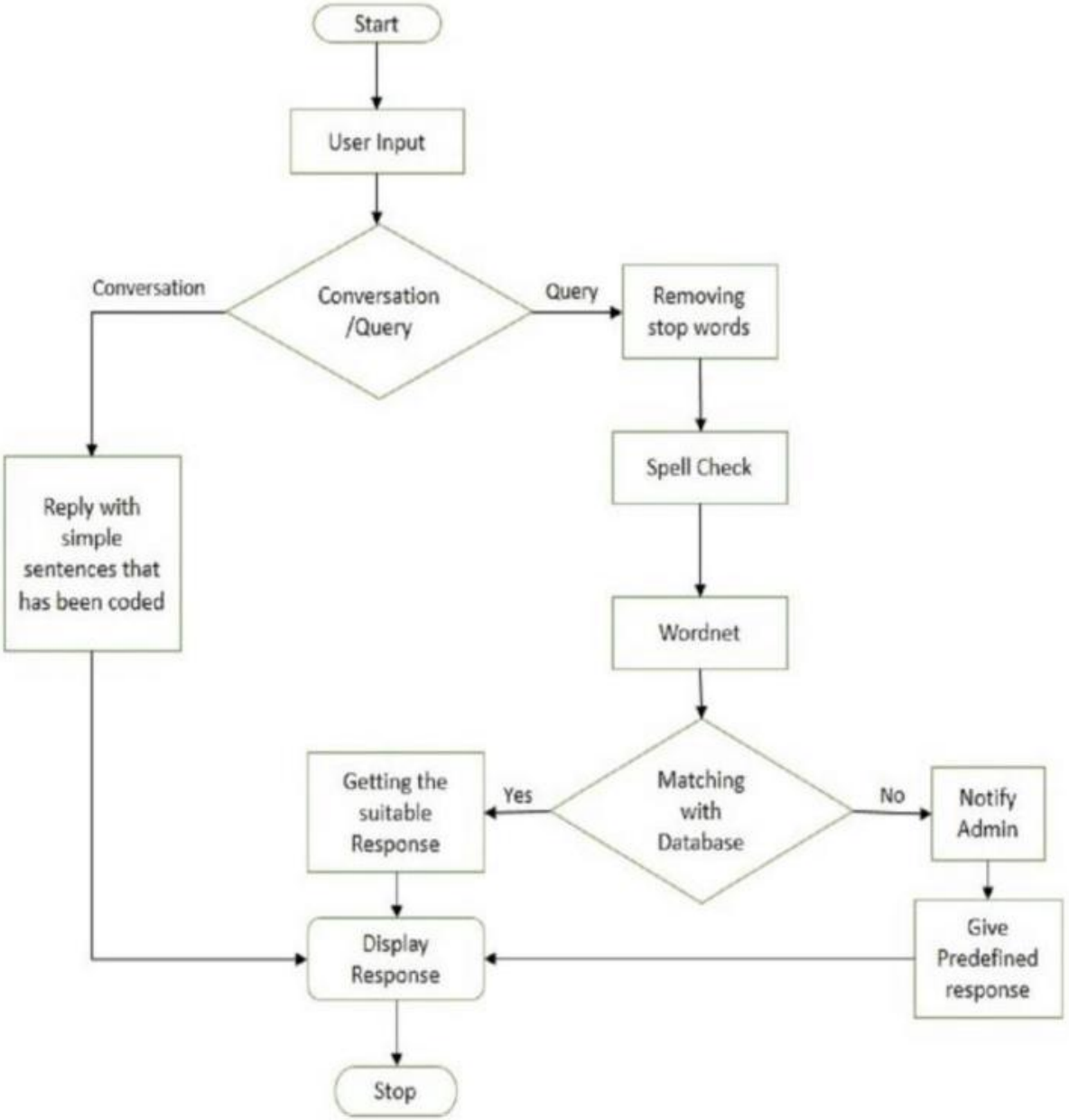

Figure 6.1 : Flowchart of Chatbot

6.2 Menu options and responses

The menu options and their responses are stored in a table in a document.

MVGR College of Engineering	https://www.mvgrce.com/
Images	
Faculty	https://www.mvgrce.com/faculty-of-mvgr
CSE	https://www.mvgrce.com/departments/cse
ECE	https://www.mvgrce.com/departments/ece
EEE	https://www.mvgrce.com/departments/eee
MECHANICL	https://www.mvgrce.com/departments/mechanical-engineering
IT	https://www.mvgrce.com/departments/it
civil	https://www.mvgrce.com/departments/civil
CHEMICAL	https://www.mvgrce.com/departments/chemical
MBA	https://www.mvgrce.com/departments/mba
SCIENCE AND HUMANITIES	https://www.mvgrce.com/departments/science-humanities
about mvgr	https://www.mvgrce.com/about/about
Transport	https://www.mvgrce.com/infrastructure/transport
Library	https://www.mvgrce.com/infrastructure/library
Sports	https://www.mvgrce.com/infrastructure/sports
Research	https://www.mvgrce.com/research
Placements	https://www.mvgrce.com/placements
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Exam-Cell	https://www.mvgrce.com/exam-cell
Hostel	https://www.mvgrce.com/hostel

Figure 6.2: Menu options and Responses

CHAPTER 7

RESULTS AND CONCLUSIONS

A College Chabot project could be a retrieval-based chatbot that uses advanced algorithms to possess conversations with humans. Once ever a user asks any question, the bot can first analyze the request, builds a response and send it back to the utilization. The chatbot can break down the user sentence into 2 things: intent and an entity. A retrieval-based chatbot is one that functions are predefined input patterns and set responses. Once the question is entered, the chatbot use a heuristic approach to deliver the suitable response. The retrieval-based model is extensively used to design goal destined chatbots with bespoken options just like the flow and tone of the bot to reinforce the client expertise. Chatbot uses pattern matching to classify the text and produce a suitable or best response for the clients. The planned System could be a net application that has answers to the queries provided by the scholar or the user. Users can just question through the chatbot that is used for chatting. Students can chat by any format there isn't any specific format the user must follow. The answers are applicable what the user queries. If the answers are found to be invalid or not accessible, then it will give a sorry not found message. The User can raise any college connected activities through the system. The System analyzes the question then answers to the user. The system answers to the query as if it's answered by the real person. The system replies with the assistance of a decent Graphical interface that suggests that as if a real person is rebuke the user. The user can question concerning the college connected activities through on-line with the help of this net application. This technique helps the scholar to be updated concerning the faculty related information.

The proposed system was successfully tested to check its effectiveness and achievability. Chatbot reduces the paperwork, manpower and time for any individual. In this project we had developed a chatbot which will interact with users by means of reducing the time for visiting the college to enquire about the details or information regarding admissions, college activities etc. The user can chat with the chatbot by format. The user or the student and the Administrator are interacted through a chatbot.

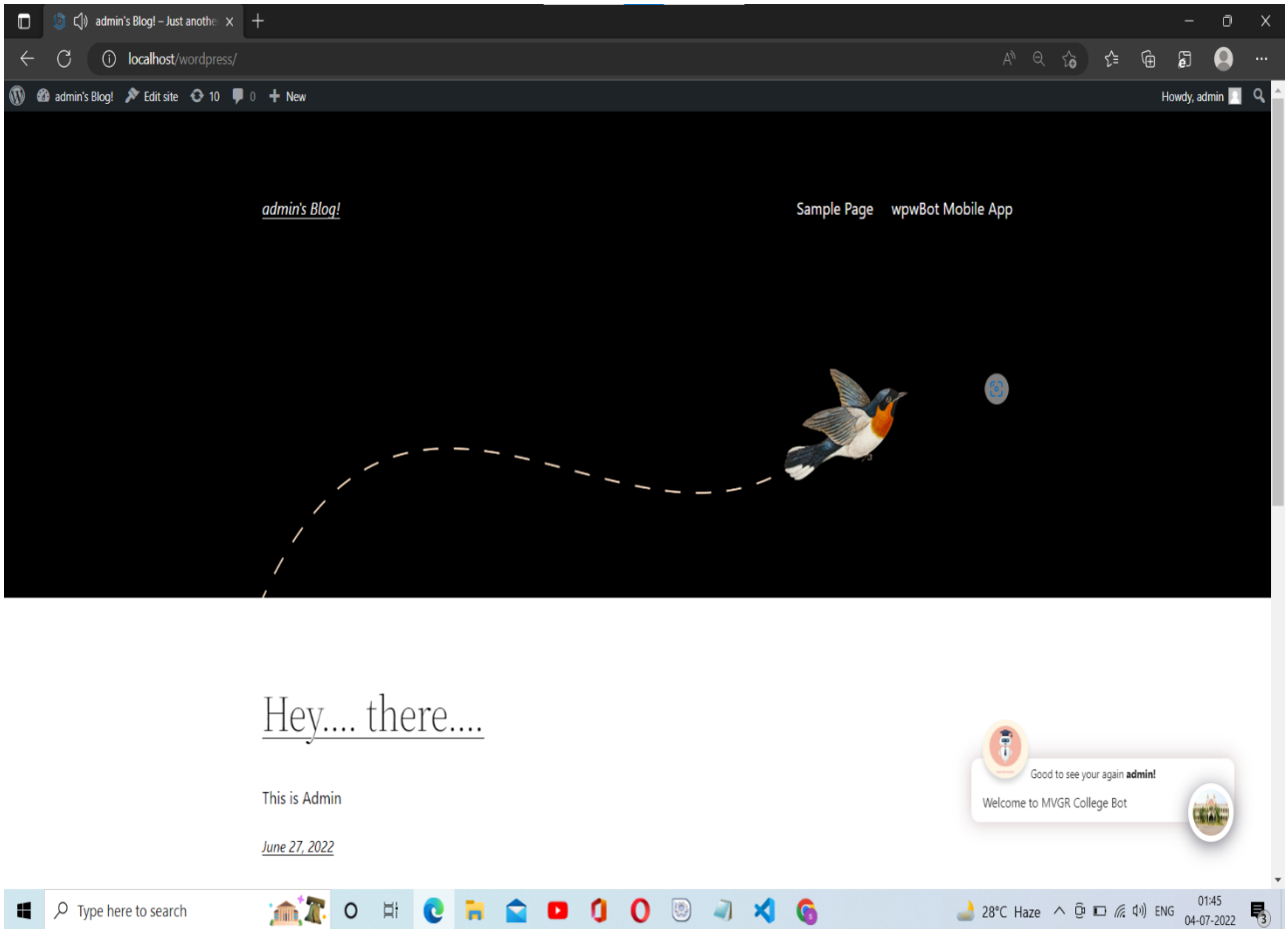

Figure7.1: Output of chatbot

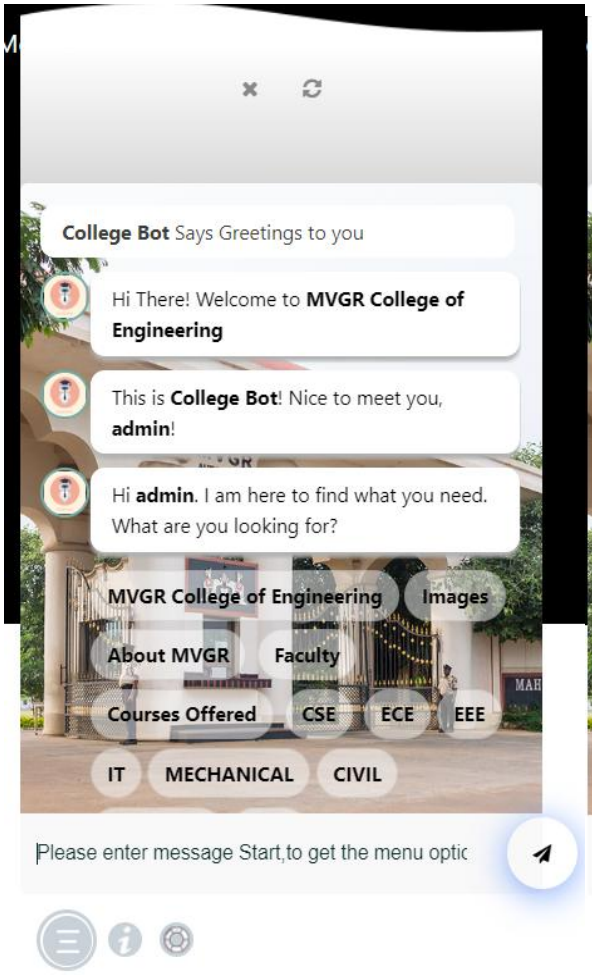

Figure7.2: Greetings and menu of chatbot

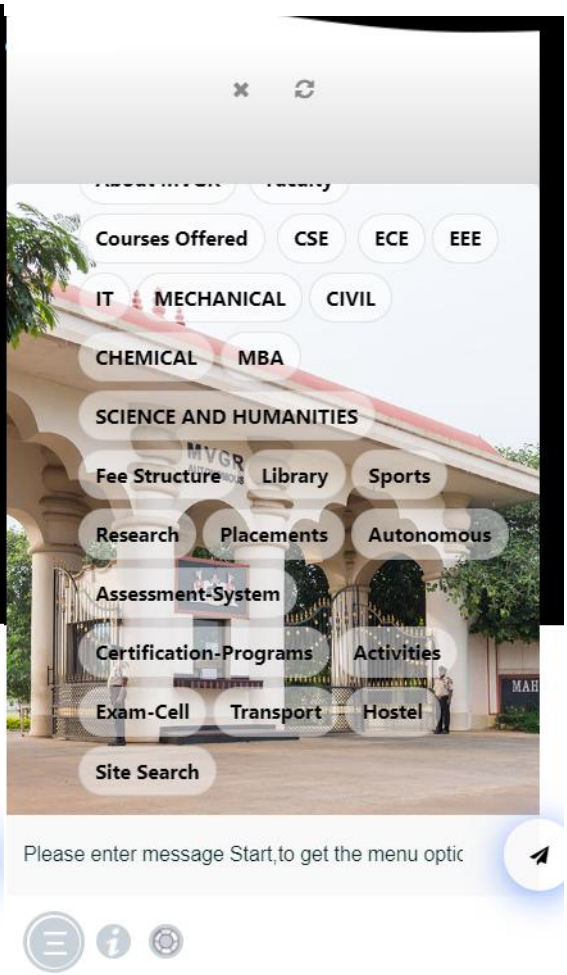

Figure7.3: Menu of chatbot

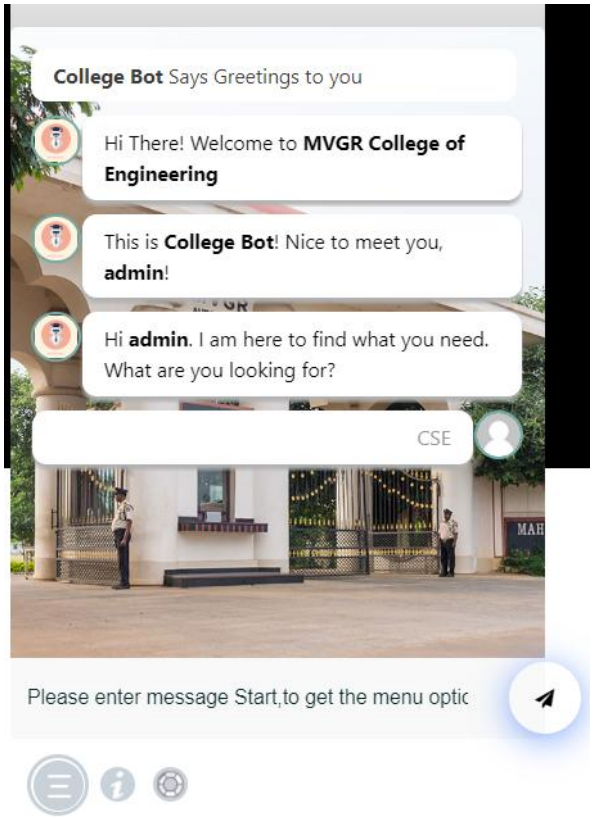

Figure 7.4 : Enters a Query

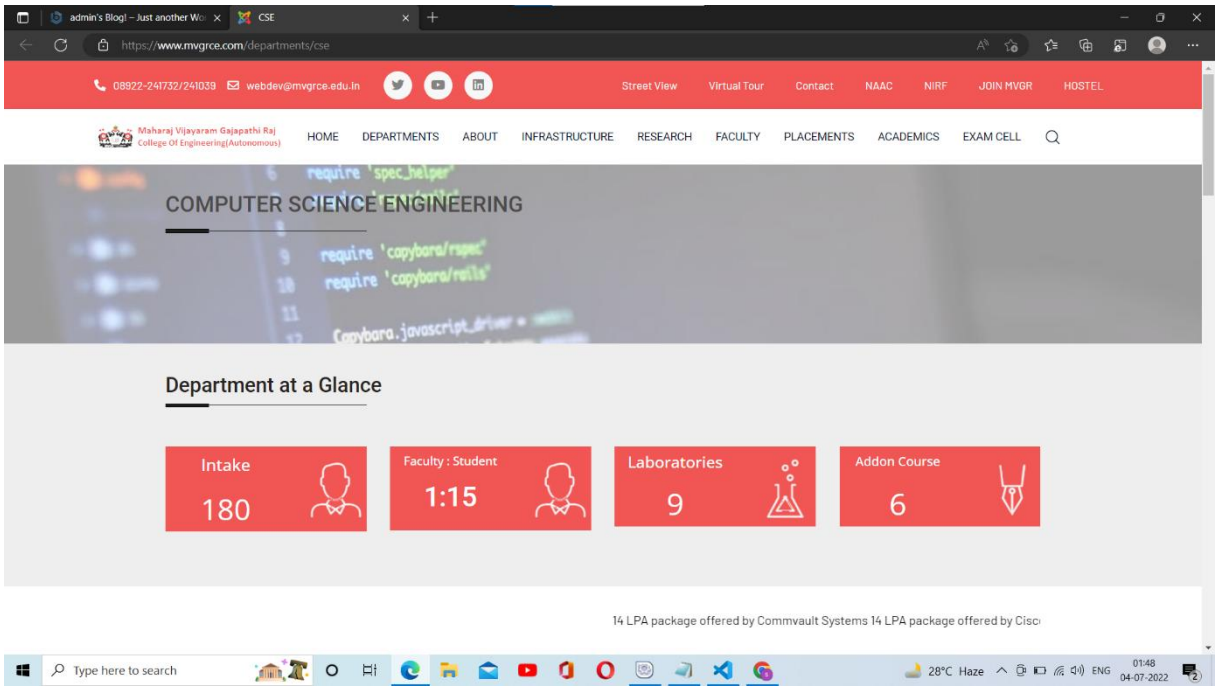

Figure 7.5 : Response to Query

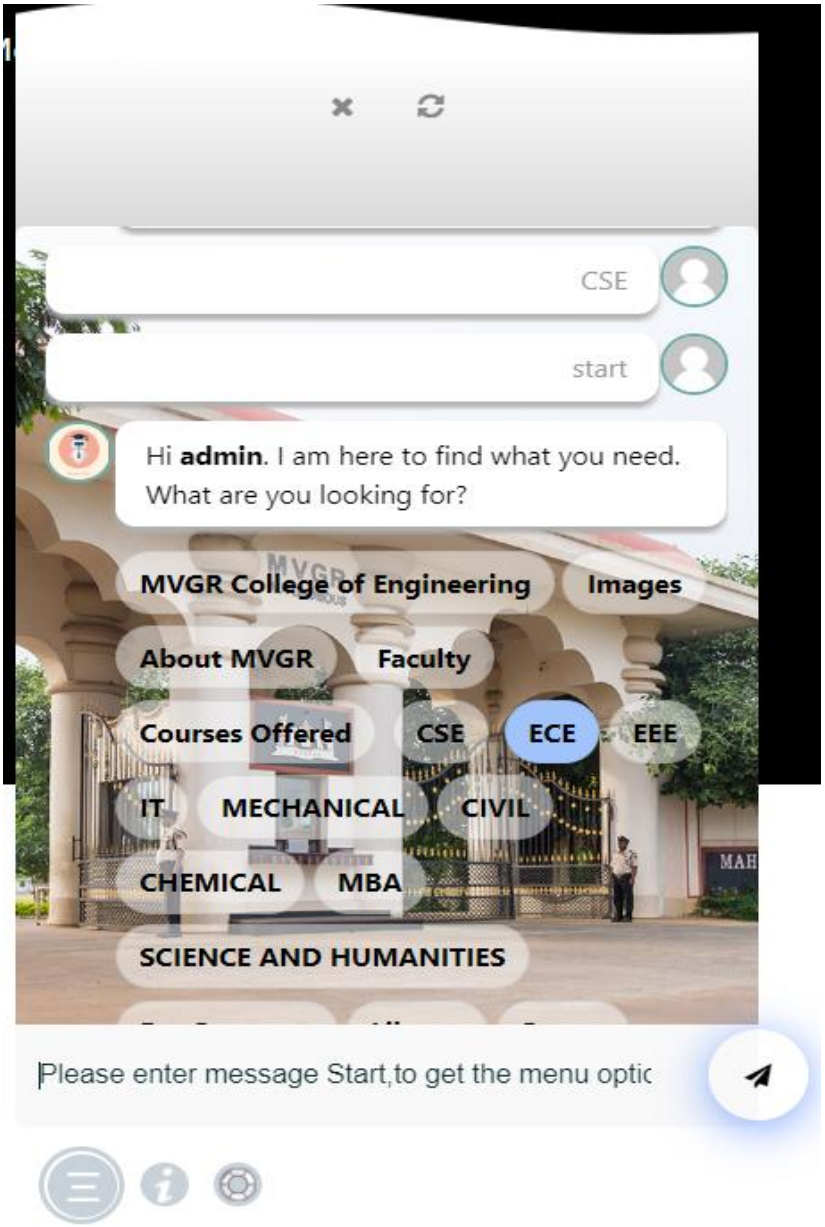

Figure 7.6: Start message

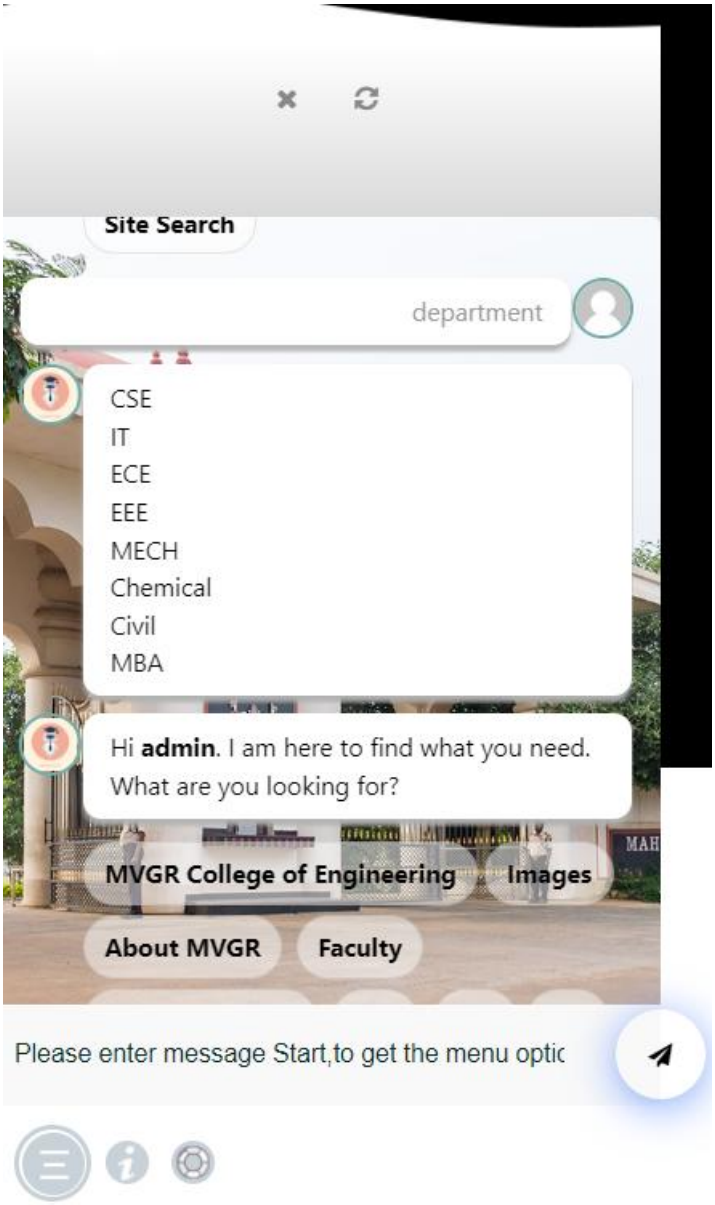

Figure 7.7 : A simple query and response

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