COLLEGE ENQUIRY CHATBOT

Submitted in partial fulfillment of the requirements

for the degree of

Bachelor of Engineering

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KONKAN GYANPEETH COLLEGE OF ENGINEERING

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Certificate

This is to certify that the project entitled **College Enquiry Chatbot Using Artificial Intelligence** is a bonafide work of **Sanjana T. Aniwar (Roll No.02), Veena R. Badgujar (Roll No.03), Shivani R. Dugade (Roll No.10)** submitted to the University of Mumbai in partial fulfilment of the requirement for the award of the degree of Undergraduate in **DEPARTMENT OF INFORMATION TECHNOLOGY.**

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Project Report Approval

This project report entitled analysing performance of **College Enquiry Chatbot Using Artificial Intelligence by Sanjana T. Aniwar(Roll No.02), Veena R. Badgujar (Roll No.03), Shivani R. Dugade (Roll No.10)** is approved for the degree of **DEPARTMENT OF INFORMATION TECHNOLOGY.**

Examiners

1……..

2……..

Date:

Place:

Declaration

I declare that this written submission represents my ideas in my own words and where other ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Signature

(Sanjana Tipanna Aniwar)

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(Veena Rajesh Badgujar)

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Signature

(Shivani Rajendra Dugade)

(Roll No.10)

Date.

Abstract

A chatterbot or chatbot aims to make a conversation between both human and machine. The machine has been embedded knowledge to identify the sentences and making a decision itself as response to answer a question. The need for college inquiry system arises due to various reasons which include: the slow nature of college website, an outsider would not know where to search for a particular piece of information, difficult for the person outside college's domain to extract information. The smart solution for all the drawbacks lends to the need of the system. The college enquiry system will provide the response by summarizing the query and then output answers, it also provides selective information what the user wants. A college system will dispense all answers relating to domains such as admission, examination cell, notice board, attendance, placement cell.

A chatbot is a conversational agent where a computer program is designed to simulate an intelligent conversation. It can take user input in many formats like text, voice, sentiments, etc. For this purpose, many open source platforms are available. Artificial Intelligence Markup Language (AIML) is derived from Extensible Markup Language (XML) which is used to build up a conversational agent (chatbot) artificially.

Acknowledgements

We wish to express our profound and sincere gratitude to Prof. **V.M.Kharche**, Department Information Technology, KGCE, Karjat, who is guided us into the intricacies of this project with matchless magnanimity. We thank Prof, Head of the Dept. of Information Technology, KGCE karjat and **Dr. M. J. LENGARE**, Principal, KGCE karjat for extending their support during the course of this investigation. We would be failing in our duty if we don't acknowledge the co-operation Rendered during various stages of image interpretation by. We are highly graceful to who evinced keep interest and invaluable support in the progress and successful completion of our project work. We are indebted to for their constant encouragement, co-operation and help. Words of gratitude are not enough to describe the accommodation and fortitude which they have shown throughout my endeavor.

Contents

List of Figures

Chapter 1

INTRODUCTION

1.1 Introduction

Nowadays, we see the chat bots everywhere Chat bots are the source of answers to the users questions in any particular domain where it is operating. Chat bots are the source of answers to the users questions in any particular.

The need for college inquiry system arises due to various reasons which include: the slow nature of college website, an outsider would not know where to search for a particular piece of information, difficult for the person outside college's domain to extract information. The smart solution for all the drawbacks lends to the need of the system. The college inquiry system will provide the response by summarizing the query and then output answers, it also provides selective information what the user wants. A college system will dispense all answers relating to domains such as admission, examination cell, notice board, attendance, placement cell and other miscellaneous domains. College enquiry system will act as a fast, standard and informative widget to enhance college website's user experience and best users with righteous information. The bot will analyze user's queries and understand user's message and then reply accordingly. It uses AI & NLP . This way user's time and efforts will be saved and she will be equipped with effective answers.

Chatbot was a computer application which may speak to human beings naturally, the way we interact with one another. It can replace a person's for several tasks of answering queries. A chatbot is an agent that interacts with users using simple language. it had been built as an effort to fool humans. These chatbots can prove sufficient to fool the user into believing they're "talking" to a person's being, but are very limited in improving their knowledge domain at runtime, and usually have a very little to no means of keeping track of all the conversational data. Chatbots makes use of machine learning to succeed in AI helping them to know the user query and supply an appropriate response. The chatbots are developed using the synthetic Intelligence terminology for communicating or interacting with the user.

1.2 Objectives

- Chatbot is used to be an information and advising system.
- To identify the user queries.
- Chatbot web widget integration on your websites.
- College related quires could be answered through it.
- College students can fetch particulars about placement activities.

1.3 Purpose, Scope and Applicability

1.1.1 Purpose

The purpose of the chatbot is to provide quick and meaningful answers to the user queries. This System provides answers to the queries of the Users. User just have to enter his query and the system analyzes the key words and answers the query. System allows admin to manage all the users and questions. College related quires could be answered through it.

1.1.2 Scope

- ✓ The chatbot can be increased by inserting data for all the departments, training, the bot with varied data.
- ✓ Speech recognition feature through which students can ask their queries verbally and get the answers from the bot.
- ✓ This system will be web application which will provide answers to the quires of the users.

1.1.3 Applicability

- It enables the students to be updated with college activities.
- It saves time for the students as well as teaching and non-teaching staff.
- It is proving us a readily available information source without taking any physical efforts.
- It is easily accessible and saving time and money also.

1.4 Organisation of Report

The paper is organized as follows:
Chapter1: Includes introduction, Objectives, Purpose, Scope, Applicability, Achievements and Organization of Project.
Chapter2: Focuses on the previous work done in the field of study and gives a brief comparison of the papers referred.
Chapter3: Illustrates the methodologies that are to be used.
Chapter4: Defines the problem statement and system requirements of our project. **Chapter5**: Gives general ideas of system's work flow and design.
Chapter6: Concludes the future scope of the project.

Chapter 2

LITERATURE SURVEY

2.1 Research Papers

Title :- Chatbot based College Information System
Author :- Ram Manoj Sharma
Publication year :- 2019

Description :- A college enquiry chatbot has been proposed. The college enquiry chatbot is built using artificial algorithms. The bot analyses user queries and understand user message. The proposed System is a web application and has two types of user- admin user and normal user. The system will use the artificial intelligence algorithms to give appropriate answers to the user. Invalid answers can be modified and deleted by the admin. Student can use the chat bot to get the answers of their queries and at any time. This system has various modules like Online Notice Board, Online Chatbot and user modules.

Chatbot can play a role of the helpdesk. It can provide the information on the timetable of subjects. The bot can also answer the queries on results dates, faculty information required by student and holiday information and many more.

The admission process is sometimes complicated for admission staff, parents and students. Students usually collect information through the college website, Phone call and by personal visit. Chatbots can assist students and parents to get information on admission dates, course cut-offs and eligibility for the course. Bots can send them a notification about the deadlines. Chatbot conversations are designed with a human touch and the users feel satisfied by the answers given by the bot. A chatbot can also help admission staff to reduce their work load of queries during admission session.

Title :- A Review on College Enquiry Chatbot
Author :- Jayesh Gangrade, Surinder Singh Surme, Sumant Somu, Shubham Raskonda , Poonam Gup
Publication year :- 2019

Description :- The paper presents a technology demonstrator to verify a proposed framework required to support such a bot (Android Application). Chabot can be described as software that can chat with people using artificial intelligence. These software are used to perform tasks such as quickly responding to users, informing them and helping them solving there Queries. In this paper, we present the general working principle and the basic concepts of artificial intelligence based Chatbot to ease our College Information Retrieval System. Our Chat-bot could effectively answers College related queries with an added advantage that it also provides personal info like grades, etc.

The system replies to the user with the help of effective graphical user interface. The user can query about the college related activities through the application. The user can query college related activities such as date and timing of annual day, sports day, and other cultural activities. This system helps the student to be updated about the college activities. The proposed system will also have an online notice board. On this notice board, any Text notices or PDF documents can be displayed. This will help the user to be updated with the important notices. The user to search for the important notices will waste not much time. The answer to the query will be answered on the basis of the user's queries and the knowledge base.

Title :- Smart College Chatbot Using Ml And Python
Author :- Ashok Kumar K
Publication year :-2020

Description :- This College Chatbot System is a web based application which gives responses to the user queries. Then the user finds the buttons in the UI which corresponds to the different categories of the college. After going through the buttons the chatbot system asks the user, is it helpful in giving the response. If the user is not able to find the required response he/she can continue the chat with the college chatbot system by briefly elaborating their queries. Then chatbot system applies Machine Learning algorithms.

The Multi Logic Adapter is used to choose a single response from the responses returned by all of the logic adapters that the chat bot has been configured to use. Preprocessing of information is done by word embedding. Here each word is mapped to a vector and the vector structure is spoken to in one-hot encoded structure [8] which implies 1 represents the presence of word and 0 for everything else. Natural Language ToolKit (NLTK) is a python library which offers assistance for Natural Language Processing (NLP). NLTK [9] has inbuilt tokenizers. The NLTK incorporates a wide scope of tokenizers which are as per the following norm, letters, path, words, keywords, class, N-gram, pattern and so on. The most usually utilized tokenizer is the word-punkt tokenizer [10] which parts the sentences at the blank spaces. The precision, speed and effectiveness of the NLTK tokenizers is exemplary. Administrator signs in to the portal and can perform activities like erase invalid answer or to include explicit answer of a specific inquiry. With the assistance of computerized reasoning, the chatbot application.

Chapter 3

SURVEY OF TECHNOLOGIES

Python :-

Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. We will use this programming languages with some of its libraries like Gensim, Numpy, and Scipy to train the RNN and N-Gran Language Models. In which we will be using scipy for scientific and technical computing and on the other hand we will be using Gensim to automatically extract semantic topics and we will also be using Numpy as an adding support to handle large and multi-dimensional arrays.

AIML :-

To create our knowledge base for normal conversation, we have used AIML files to store the question and answers pair. When user converses with our chat bot, the input is matched to patterns listed in AIML files and corresponding answer is returned as response.

XML :-

XML stands for **E**xtensible **M**arkup **L**anguage. It is a text-based markup language derived from Standard Generalized Markup Language (SGML).XML tags identify the data and are used to store and organize the data, rather than specifying how to display it like HTML tags, which are used to display the data. XML is not going to replace HTML in the near future, but it introduces new possibilities by adopting many successful features of HTML. XML can work behind the scene to simplify the creation of HTML documents for large web sites.XML can be used to exchange the information between organizations and systems.XML can be used for offloading and reloading of databases.

Chapter 4

REQUIREMENTS AND ANALYSIS

4.1 Problem Definition

The goal is to use a model based approach for answering the user's query in fastest way. This application saves time for the users to get all answer at one place. The college enquiry chatbot project is developed exploitation algorithms that analyze user queries and perceive user message. This technique may be a internet application that gives answers to the student's question. Students would like solely question through the bot want to chat.

4.2 Software and Hardware Requirements

➢ Hardware Requirement

• i3 Processor Based Computer
• 1GB-RAM
• 80 GB Hard Disk
• Monitor
• Internet Connection
• Android Device

➢ Software Requirements

• Windows 7 or higher
• Android Studio
• SQL Server 2008

4.3 Planning and scheduling

In Planning we did the Requirement Analysis of Project from last week of July to mid September After that we referred many of the papers related to sentence completion task and Design our project from mid September to last week of October and we will start the implementation of our project in the

month of December and complete it by second week of March and with implementation will also will start the documents from mid feb and complete it by the April month. The detailed information of our planning and scheduling is shown below.

Chapter 5

SYSTEM DESIGN

5.1 System Architecture :

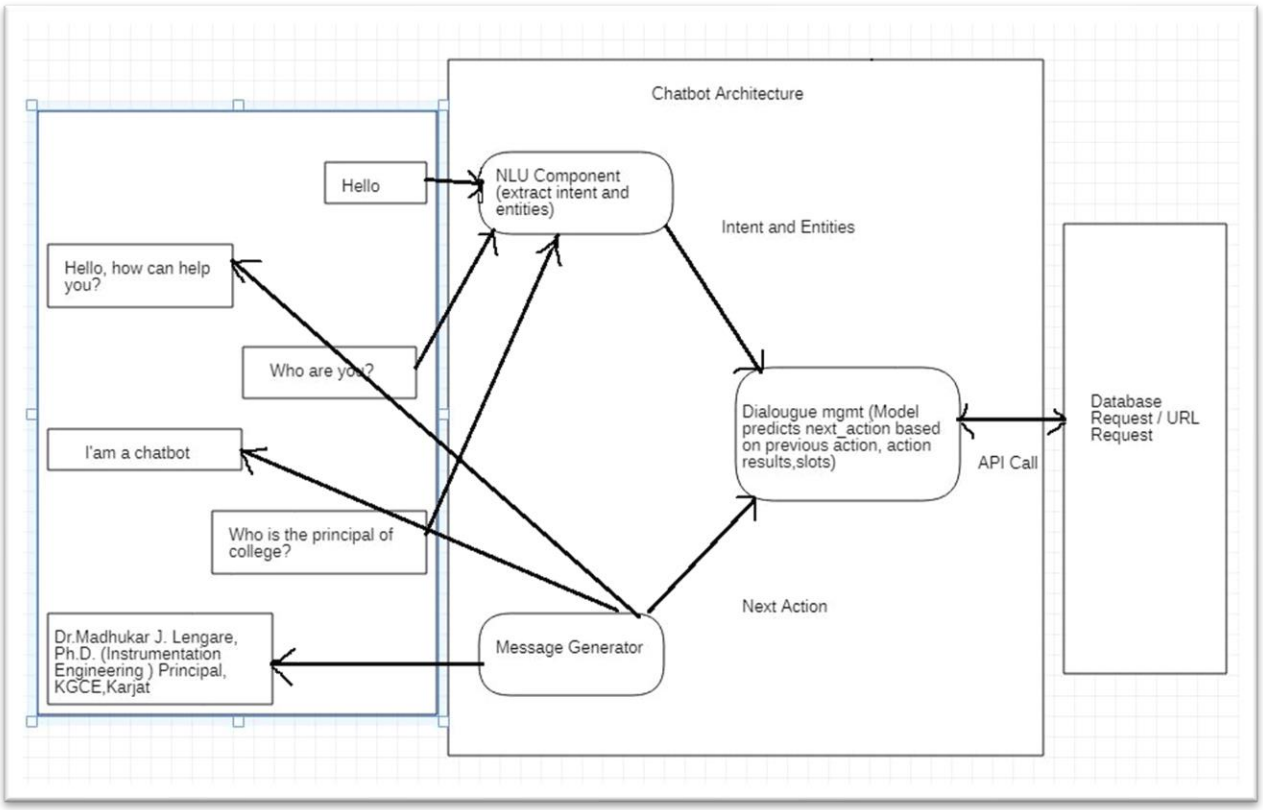


Figure 5.1 System Architecture

5.2 Chatbot Working :-

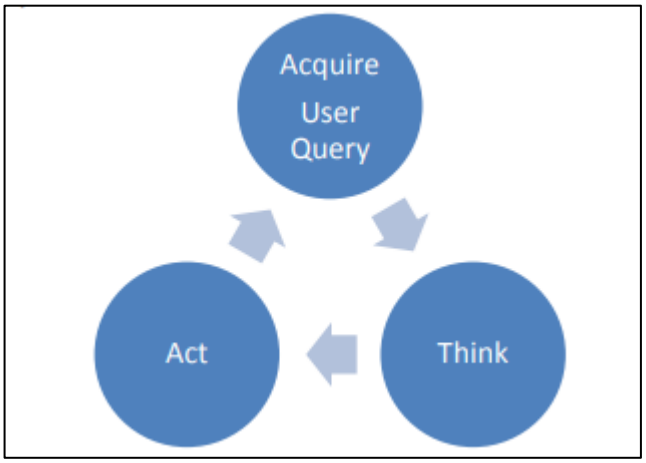


Figure 5.2 Chatbot Working

5.3 User and Admin roles :-

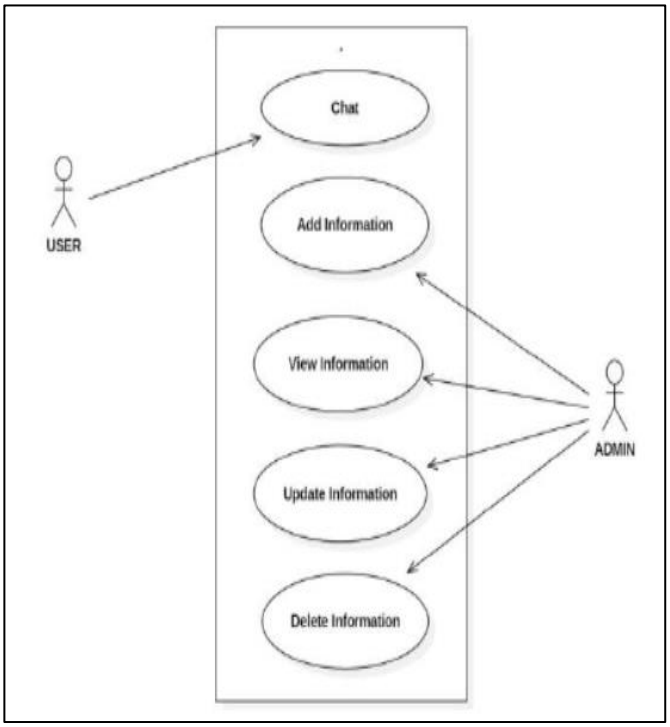
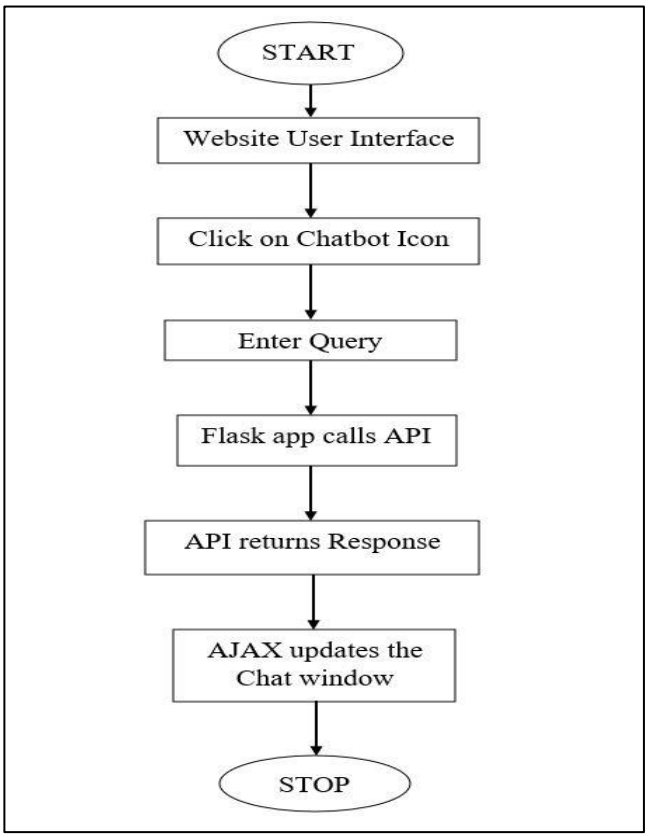


Figure 5.3 User and Admin role

5.4 Overview of The System :



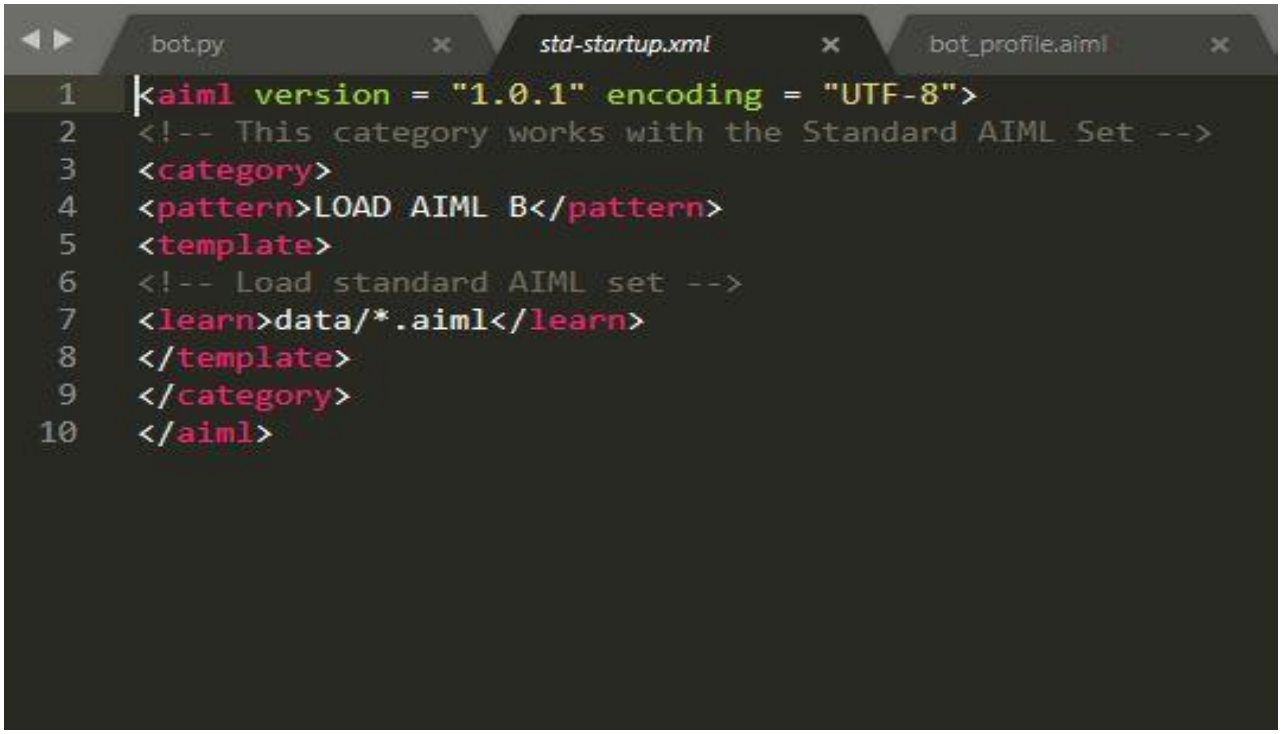
Flowchart

Chapter 6

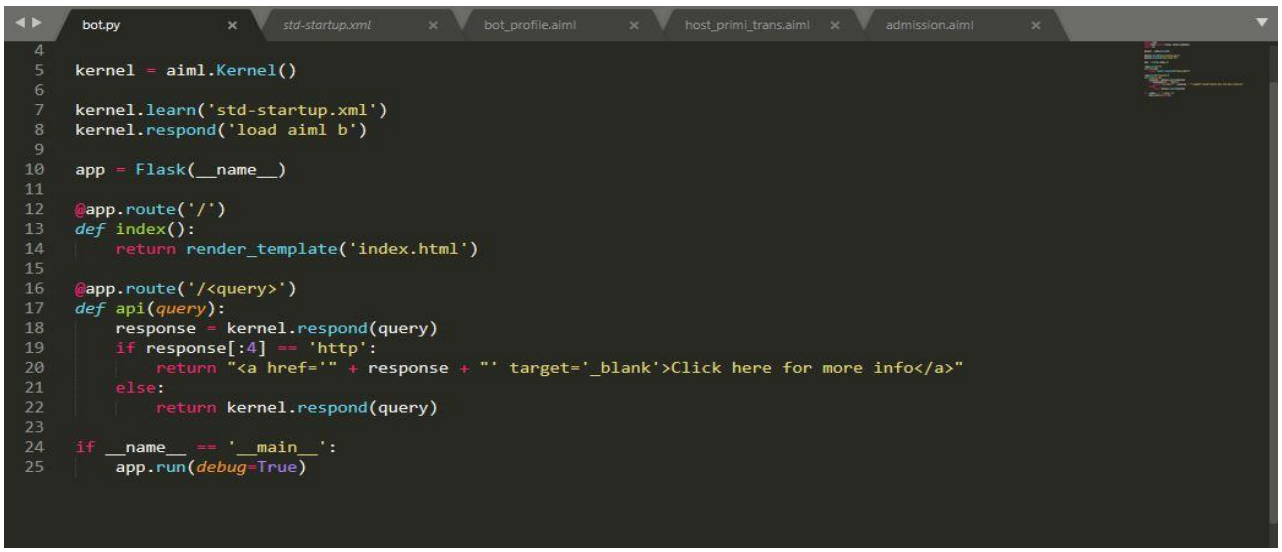
IMPLEMENTATION

6.1 CODE

6.1.1 Startup xml :



6.1.2 bot (python) :



6.1.3 AIML Code :

- **About College:**

bot.py | aboutcollege.aiml | bot_profile.aiml | host_primi_trans.aiml | admission.aiml

```
<?xml version="1.0" encoding="UTF-8"?>
<aiml>
<category>
  <pattern>* INSTITUTE *</pattern>
  <template >https://kgce.edu.in/about-institute/</template>
</category>
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```
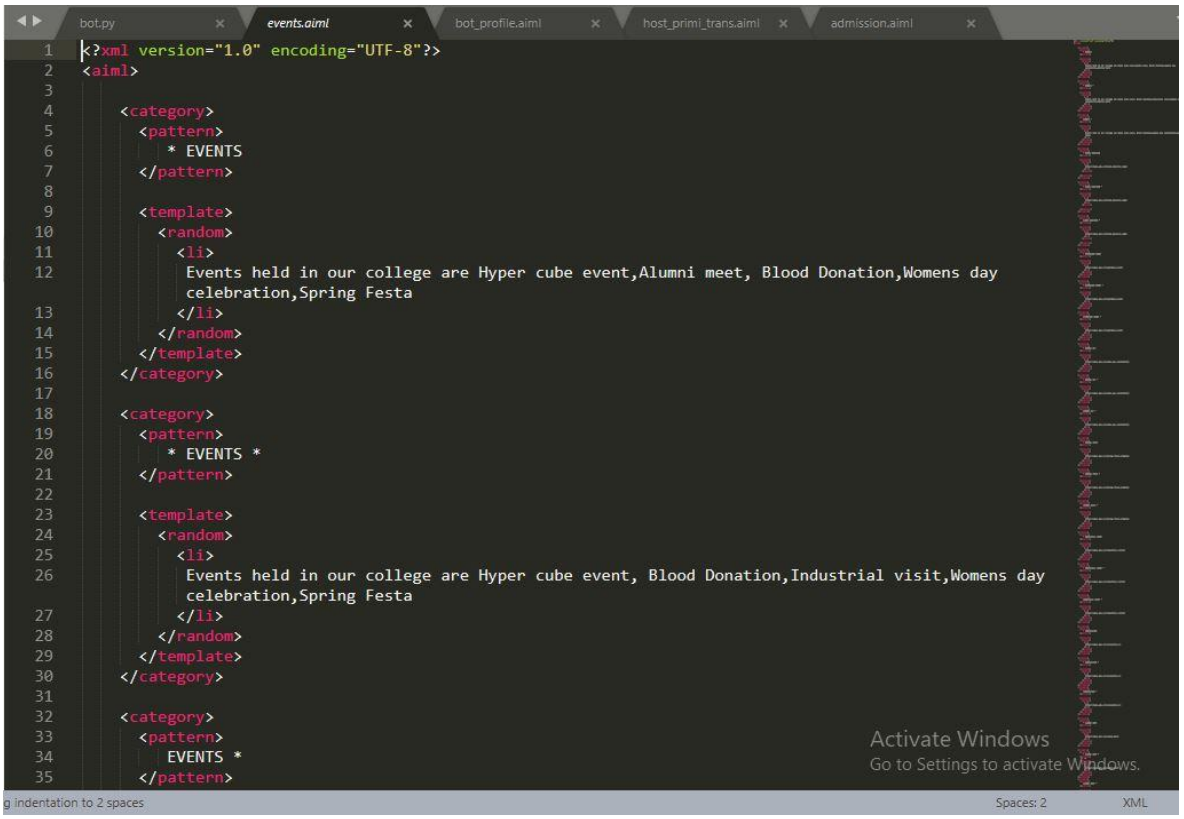
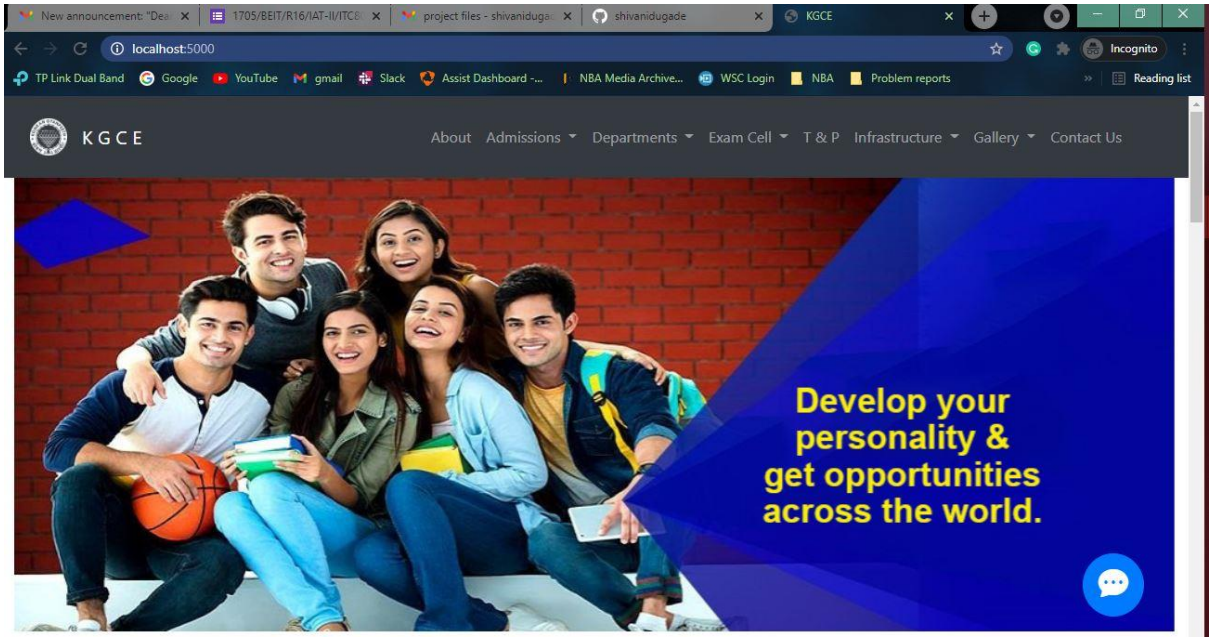

- **College Event :**



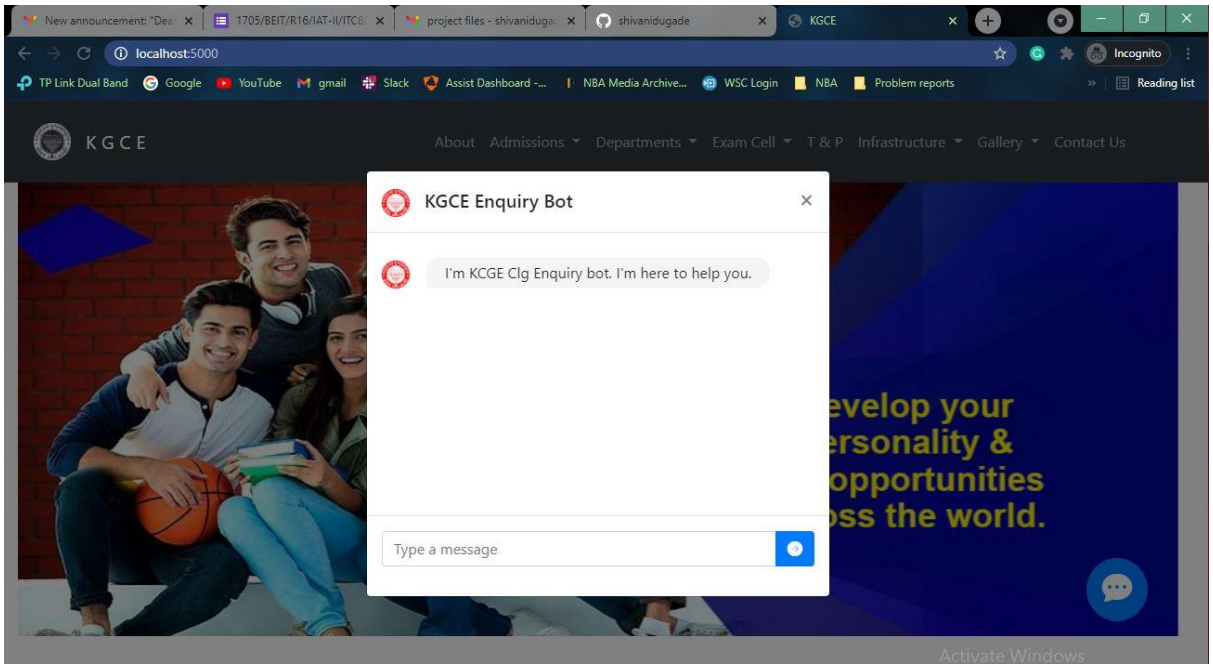
6.2 RESULT

6.2.1 College Enquiry chatbot website :



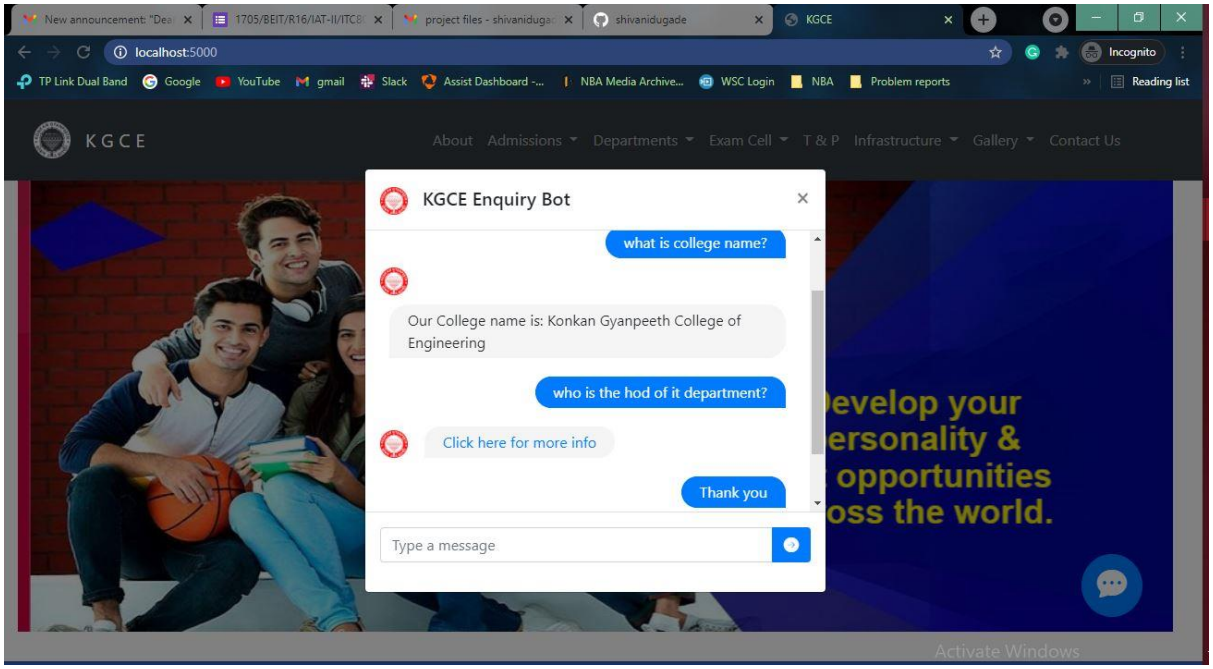
6.2.1 College Enquiry chatbot website

6.2.2 Chatbot :



6.2.2 Chatbot

6.2.3 Chat Window :



6.2.3 Chat Window

Chapter 7

CONCLUSIONS

7.1 Conclusion

In this project, we have introduced a chatbot application in android which is able to interact with users. The college student and employees can freely upload their queries. The chatbot provides fast and efficient search for answers to the queries and gets the relevant links to their question. A background research took place, which included an overview of the conversation procedure and tries to find out the relevant keywords related to that query to provide the proper link. The database storage includes information about questions, answers, keywords, and logs.

7.2 Limitations of the System

1. It is require internet connection every time the user can't access the system without internet.
2. If many user use the system at the same time the response may be slow or even may crash due to server down.
3. Complex Interface.
4. Increased Installation Cost.

7.3 Future Scope of the Project

- To improve the current functionalities of College Enquiry Chatbot, in the future, the scope of the chatbot .
- Some of the new features which can be added to the bot are Speech recognition feature through which students can ask their queries verbally and get the answers from the bot, integration with multiple channels such as phone call, SMS, and various social media platforms like Skype, Facebook and Twitter, handling context aware and interactive queries in which bot will be aware of the context of an ongoing conversation with a student.

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