**COLLEGE ENQUIRY CHATBOT**

**A MINI-PROJECT REPORT**

by

**VIVEK RAJ (VJC21AD054)**

**AADITYA KRISHNA (VJC21AD001)**

**ANIRUDH P SUDHY (VJC21AD012)**

**BASTIN GEORGE (VJC21AD021)**

in partial fulfillment for the award of the degree

of

**BACHELOR OF TECHNOLOGY**

in

**ARTIFICIAL INTELLIGENCE AND DATA SCIENCE**

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**



**DEPARTMENT OF ARTIFICIAL INTELLIGENCE & DATA SCIENCE**

**VISWAJYOTHI COLLEGE OF ENGINEERING AND TECHNOLOGY,**

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Under the guidance

of

### **MR. SIVADAS T NAIR ASSISTANT PROFESSOR DEPT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE, VJCET**



**DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE**

**VISWAJYOTHI COLLEGE OF ENGINEERING & TECHNOLOGY, VAZHAKULAM**

MAY 2024

**VISWAJYOTHI COLLEGE OF ENGINEERING AND TECHNOLOGY, VAZHAKULAM**

### **DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE**

**Vision**

Moulding professionals catering to research, innovation, and entrepreneurial developments for global digitalization.

**Mission**

1. To inculcate research culture for design and innovative development towards a better world.
2. 2. To guide and mould the students to become globally competent professionals with ethical values.
3. To generate innovative ideas, and disseminate it through quality publications.

**Program Educational Objectives**

**Our Graduates**

1. Shall apply their skill-based knowledge attained during undergraduate education to adapt with the recent technological advancements and acquire a promising career.
2. Shall possess critical thinking, professional skills and strong work ethics, to solve real world problems required to cater the needs of industry and to serve the society.
3. Shall learn, apply and adapt to grow with the industrial needs thereby becoming a successful innovator in the challenging technological world.
4. Shall have the competency to seek higher professional degrees, certifications and to do quality research work as an individual or as a team.

**Program Outcomes**

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design / development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**Program Specific Outcomes**

1. Able to apply the computational knowledge of data science, machine learning and deep learning to analyse, design and model novel applications.
2. Ability to become an entrepreneur which provides engineering solutions for industrial and societal problems.
3. Up-skilling in advanced data science, machine learning and deep learning technologies.

**VISWAJYOTHI COLLEGE OF ENGINEERING AND TECHNOLOGY, VAZHAKULAM**

### **DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE**



**BONAFIDE CERTIFICATE**

This is to certify that the mini project report entitled “**COLLEGE ENQUIRY CHATBOT**” is a bonafide record of the project presented by **AADITYA KRISHNA (VJC21AD001), ANIRUDH P SUDHY (VJC21AD012), BASTIN GEORGE (VJC21AD021), VIVEK RAJ (VJC21AD054)** in partial fulfillment of the requirements for the award of the **Degree of Bachelor of Technology** in **Artificial Intelligence and Data Science** of APJ Abdul Kalam Technological University.

Internal Supervisor External Supervisor

Project Co-Ordinator Head of the Department

**ACKNOWLEDGEMENT**

First and foremost, we thank God Almighty for His divine grace and

blessings in making all this possible. It is our privilege to render our heart-felt

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help and encouragement.

**DECLARATION**

We undersigned hereby declare that the project report **college enquiry chatbot**, submitted for partial fulfillment of the requirements for the award of the Degree of Bachelor of Technology of the APJ Abdul Kalam Technological University is a bonafide work done by us under the supervision of **Mr. Sivadas T Nair**. This submission represents ideas in our own words and where ideas or words of others have been included, we have adequately and accurately cited and referenced the original sources. We also declare that we have adhered to the ethics of academic honesty and integrity and have not misrepresented or fabricated any data or idea or fact or source in our submission. We understand that any violation of the above will be a cause for disciplinary action by the institute and/or the University and can also evoke penal action from the sources which have thus not been properly cited or formed the basis for the award of any degree, diploma, or similar title of any other University.

**Place:** Vazhakulam **Aaditya Krishna**

**Date:** **Bastin George**

**Anirudh P Sudhy**

**Vivek Raj**

**ABSTRACT**

Our solution for enhancing accessibility to college-related information integrates front-end technologies like HTML/CSS for a visually engaging user interface, ensuring effortless navigation. On the back-end, powered by Python and Flask, we manage user requests efficiently. Utilizing Python libraries, Redirect enables smooth URL management, MySQL Connector ensures seamless database integration, and ChatterBot facilitates a sophisticated chatbot interface, enhancing user interaction through natural language processing. This comprehensive approach creates an accessible, user-friendly platform for delivering college-related information, revolutionizing user experiences. By leveraging both front-end and back-end technologies, we aim to streamline information access, making it more convenient and efficient for users.

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## I

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## List of Abbreviations

HTML Hyper Text Markup Language

CSS Cascading Style Sheet

NLU Natural Language Understanding

NLP Natural Language Processing

OS Operating System

SSL Secure Socket Layer

SQL Structured Query Language

**Chapter 1**

**INTRODUCTION**

In the ever-evolving landscape of higher education, accessing and navigating vast amounts of data from college websites can often be a daunting task. Recognizing this challenge, our team embarked on a mission to develop Amanda, a sophisticated college inquiry chatbot designed to simplify the process of accessing website data with ease and efficiency.Amanda serves as a valuable tool for students, parents, and educators seeking to gather comprehensive information about colleges and universities. Much like Alzheimer's disease demands early detection for effective intervention, Amanda enables early access to critical data, empowering users to make informed decisions about their educational journey.Amanda is built upon a robust technological foundation, utilizing HTML for seamless web page structuring, Flask for dynamic web application development, Jinja2 for flexible template rendering, and SSL encryption for secure data transmission. This powerful combination of technologies ensures a user-friendly interface while prioritizing the privacy and security of user data.

## 1.1 PROBLEM STATEMENT

In today's digital age, navigating the complex landscape of college admissions and academic exploration poses a significant challenge for students, parents, and educators alike. With an abundance of information scattered across various college websites, accessing and synthesizing relevant data efficiently becomes a cumbersome task. This inefficiency often leads to confusion, frustration, and suboptimal decision-making among stakeholders in the higher education ecosystem.To address this pressing issue, our project aims to develop an efficient college enquiry chatbot named Amanda. Amanda will serve as a user-friendly interface, allowing individuals to access comprehensive information about colleges, majors, admission requirements, and more, seamlessly and effortlessly.

## 1.2 OBJECTIVE

Amanda aims to streamline accessing college information for students, parents, and educators. Leveraging HTML, Flask, SSL, Jinja2, ChatterBot, and MySQL, it ensures efficient data retrieval and offers personalized recommendations. Data security is paramount, with SSL encryption and encrypted database storage. With a seamless user experience, Amanda continuously improves through natural language processing enhancements and user feedback incorporation. Ultimately, Amanda seeks to empower users in their college exploration journey by providing reliable, efficient, and user-centric access to comprehensive college-related information.

## 1.3 SCOPE

Amanda, the college enquiry chatbot, aims to seamlessly connect to college websites, retrieving comprehensive information about colleges, majors, admission criteria, and more. Users will interact with Amanda through a user-friendly interface, engaging in natural language conversations to seek information and receive personalized recommendations. Leveraging advanced natural language processing (NLP) capabilities, Amanda will understand user queries and provide relevant responses. Data security is paramount, with SSL encryption ensuring secure communication between the chatbot and connected websites. Continuous improvement is integral to Amanda's scope, with ongoing enhancements to NLP capabilities, database expansion, and user feedback incorporation, all aimed at optimizing the user experience.

**Chapter 2**

**LITERATURE SURVEY**

|  |  |  |  |
| --- | --- | --- | --- |
| **TITLE** | **METHODOLGY** | **ADVANTAGES** | **DISADVANTAGES** |
| A Review on College Enquiry Chatbot  By [Gaurav Sambhe](https://ieeexplore.ieee.org/author/37089764093); [Shanal Awaze](https://ieeexplore.ieee.org/author/37089765199); [Shraddha Bobade](https://ieeexplore.ieee.org/author/37089769755). | Python libraries and modules, including Flask, Redirect, MySQL Connector, and ChatterBot, to facilitate seamless communication and information retrieval. | User friendly interface so makes it easy even for new users to interact with the chatbot and creates a pleasant atmosphere altogether. | Backend work using html has to be continuously monitored in order to change and insert new queries. |
| Literature Survey on College Information Chatbot  By Siddhant Meshram,Namit Naik,Megha VR. | The methodology involves natural language understanding and conversation management methodologies, utilizing Rasa NLU to identify intent and extract entities and Rasa core for conversation management. | Rasa is helpful when machine learning capabilities are used thoroughly throughout the project | Rasa requires a good understanding of natural language processing (NLP) concepts, machine learning, and the Rasa framework itself which requires deep knowledge. |

|  |  |  |  |
| --- | --- | --- | --- |
| An Intelligent College Enquiry Bot Using NLP and Deep Learning Techniques **By VijayaSaraswathi R ,L Goutham Reddy, MD Abdul Rab.** | **Natural Language Processing (NLP):**  Utilized NLP techniques to preprocess and understand user queries. This involved tokenization, parsing, and semantic analysis to extract meaningful information from natural language input.  **Long Short Term Memory (LSTM) Networks:**  Implemented LSTM networks, a type of recurrent Deep Neural Network (DNN), to handle the sequential nature of conversational data. LSTMs were chosen for their ability to capture long-term dependencies in user queries and responses.  **Chatbot Architecture:**  Designed a web-based application architecture that integrates the NLP and LSTM components seamlessly. The architecture supports real-time query resolution and scalability to handle concurrent users efficiently. | **Enhanced User Experience:**  Provides instant and accurate responses to user queries, improving overall user satisfaction and engagement with the college website.  **24/7 Availability:**  Enables round-the-clock availability for resolving queries, reducing dependency on human resources and response time.  **Scalability:**  Scalable architecture allows the chatbot to handle a large volume of queries simultaneously without compromising performance.  **Cost-Effective:**  Reduces operational costs associated with manual query handling and support services.  **Data-Driven Insights:**  Generates valuable insights into user behavior and common queries, which can inform future improvements in services and content. | **Initial Setup Complexity:**  Developing and fine-tuning NLP and LSTM models require expertise and computational resources, which may pose challenges during the initial setup phase.  **Limitations in Understanding Complex Queries:**  While capable of handling basic to moderately complex queries, the chatbot may struggle with highly nuanced or domain-specific questions that require human intervention.  **Dependency on Training Data Quality:**  Performance heavily relies on the quality and diversity of the training dataset. Inadequate or biased data may lead to inaccuracies in responses.   **Privacy and Security Concerns:**Handling sensitive information such as personal details or academic records requires robust measures to ensure data privacy and protection. |

**Chapter 3**

**PROPOSED WORK**

## 3.1 Process Overview

All the users are first introduced into a login interface where they have to provide an email ID and password. This provided email ID and password is checked whether it matches with any record stored in the database and granted access accordingly to chatbot interface. Once authenticated, users can interact with chatbot by submitting statement as simple text. The chatbot which is preprocessed and trained using CHATTERBOT.TRAINER and LIST tokenizes the user statement and map it to response statement using tags.

Typically this process can be divided into **five stages**,

**1.user interface**: This part involves creating HTML templates (e.g., login.html) to present a user-friendly platform where users can interact with software.

Here's a brief explanation of the four HTML files used in the user interface:

* login.html: This page provides a form for user login, capturing email and password details for authentication.
* register.html: It offers a form for user registration, gathering name, email, and password details.
* forgot.html: This page presents a form for users who forgot their password, allowing them to reset it.
* index.html: The main dashboard after login, displaying relevant information and functionalities based on user roles or actions.

**2.validation check**: authorized access is ensured by this module by following these steps

1. Once users submit their credentials through the login form, Python verifies the entered information by querying the database.
2. It checks if the provided email and password match any records stored in the database.
3. This step ensures that only authorized users can access the system.
4. It confirms that the user is authenticated and can proceed further.
5. If not, it indicates that the provided credentials are invalid, and the user may be denied access or prompted to retry with correct credentials.
6. MySQL is used here as Database

**3.user input**: user inputs are an essential which is required in almost every module in this software

* Once authenticated, users can provide input through various forms or interfaces, such as submitting registration details, suggestions, or chatbot queries.
* New users can create / register new account
* User clients can gave their suggestions through suggestion box feature
* User input refers to the data provided by users through various interfaces, such as forms, text fields, buttons, or other interactive elements in an application.
* Users can pass queries in 2 ways:

Either by passing predefined commonly asked question

Or by free chat

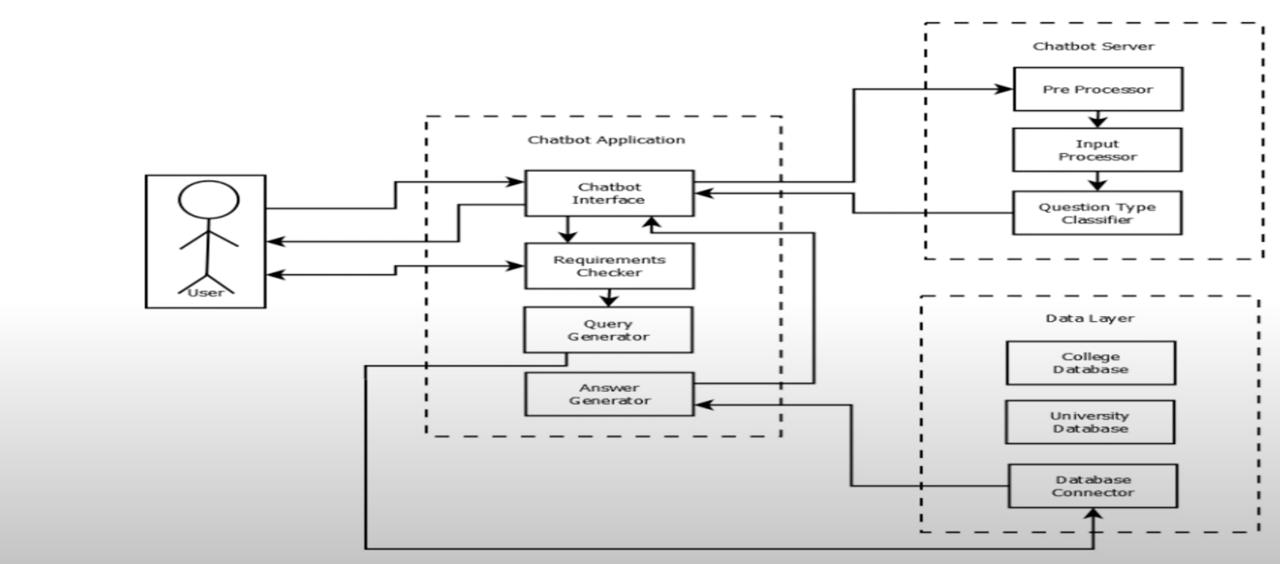
**4.preprocessing and query handling**: The chatbot is trained and processed in the following ways

* Chatbot is preprocessed and trained using CHATTERBOT.TRAINER and LISTT
* Chatbot Training: Training data (conversations) is typically provided to the Chatbot to teach it how to respond to different user inputs effectively.
* User Interaction Training: The responses generated by the Chatbot are based on the user's input and the logic defined within the code. Over time, as the Chatbot interacts with users and receives feedback, it can continuously learn and improve its responses through a process similar to training.
* User Interface Experience: The user interface elements, such as login, registration, and chat interaction, making it easier for users to navigate and interact with the application effectively.
* Feedback Mechanism: This feature can get through suggestion box and feedback can be used to identify areas for improvement and refinement, contributing to the ongoing training and enhancement of the system.

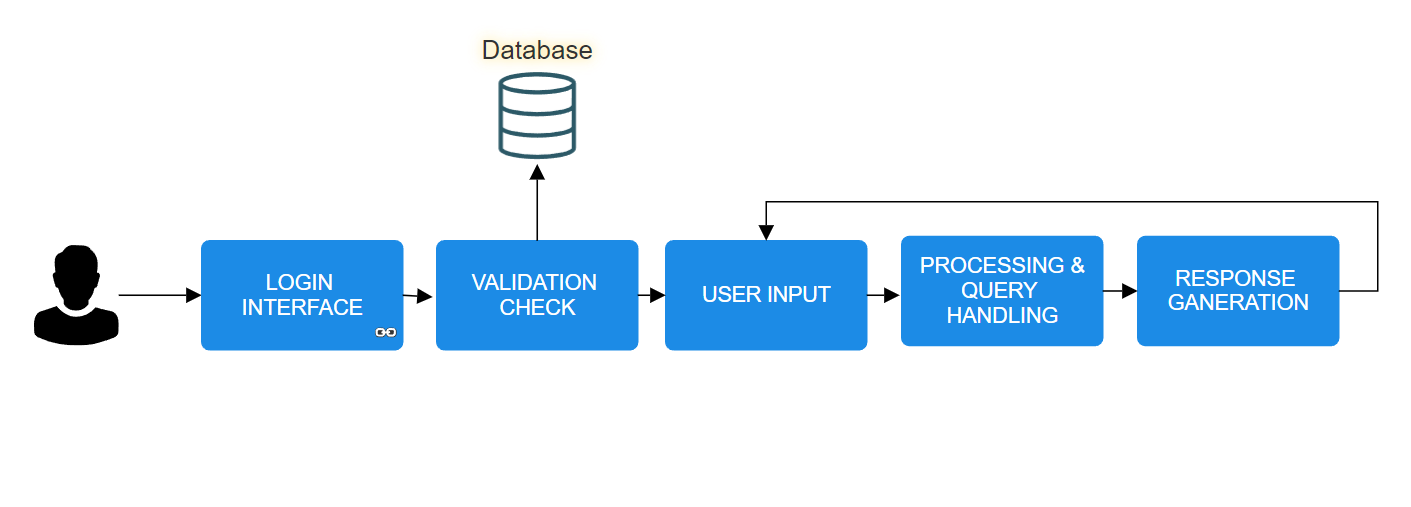
## 5.Response generation: the responses are generated by the chatbot in the following way

* Receive queries from user
* Tokenize the words
* Chat bot logic
* Pattern Matching
* Check the words using TAG
* Get Response to chatbot object
* Transfer Response to HTML by html request

## 3.1.1: SYSTEM ARCHITECTURE



**3.1.2.FLOW CHART**



# 3.1.3. FLOW OF CODE

# 

**Chapter 4**

**RESULT AND DISCUSSION**

The aim of this project is to develop a web-based application that integrates a chatbot to

assist with college-related enquiries. The application is designed to improve user

interaction and streamline the process of obtaining information about the college, its

courses, and various sections (students, faculty, parents, visitors).

### **Results**

#### **1. ChatBot Functionality**

The chatbot, implemented using the ChatterBot library, successfully responds to user queries about various sections of the college (students, faculty, parents, visitors). The predefined responses guide users to select from the available options and provide information accordingly.

* **Initialization**: The chatbot was initialized with a set of predefined responses and trained using a basic set of conversations. This ensures that the chatbot can handle common queries effectively.
* **Response Handling**: The chatbot effectively distinguishes between different types of queries and responds with appropriate information about courses, sections, and general inquiries.

#### **2. User Authentication and Management**

The application includes functionality for user registration, login, and session management.

* **User Registration**: New users can register using their name, email, and password. The registration process includes ReCaptcha verification to enhance security.
* **Login Validation**: Users can log in using their registered email and password. The login validation checks the credentials against the database and establishes a session for the authenticated user.
* **Session Management**: Once logged in, users can navigate the site, and their session information is maintained. Users can also log out, which terminates their session.

#### **3. Database Integration**

The application interacts with a MySQL database to store and retrieve user information and suggestions.

* **User Data Storage**: User details (name, email, password) are stored in the database upon registration.
* **Suggestions Storage**: User suggestions are stored in the database, allowing the application to collect and manage user feedback effectively.

#### **4. Web Interface**

The Flask framework is used to create a web interface for interacting with the chatbot and managing user authentication.

* **Home Page**: Displays the main interface with the chatbot and options for navigation.
* **Login Page**: Provides a form for users to log in.
* **Registration Page**: Provides a form for new users to register.

### **Discussion**

#### Achievements

* **Integration of Multiple Technologies**: The project successfully integrates multiple technologies, including Flask for the web framework, ChatterBot for the chatbot, and MySQL for database management. This demonstrates the capability to combine different tools to create a functional and interactive web application.
* **User Interaction and Assistance**: The chatbot effectively enhances user interaction by providing instant responses to queries. This is particularly useful for guiding new students, parents, and visitors who need information about the college.
* **Security Measures**: The inclusion of ReCaptcha for user registration adds a layer of security, preventing automated bots from creating fake accounts. This is crucial for maintaining the integrity of the user database.

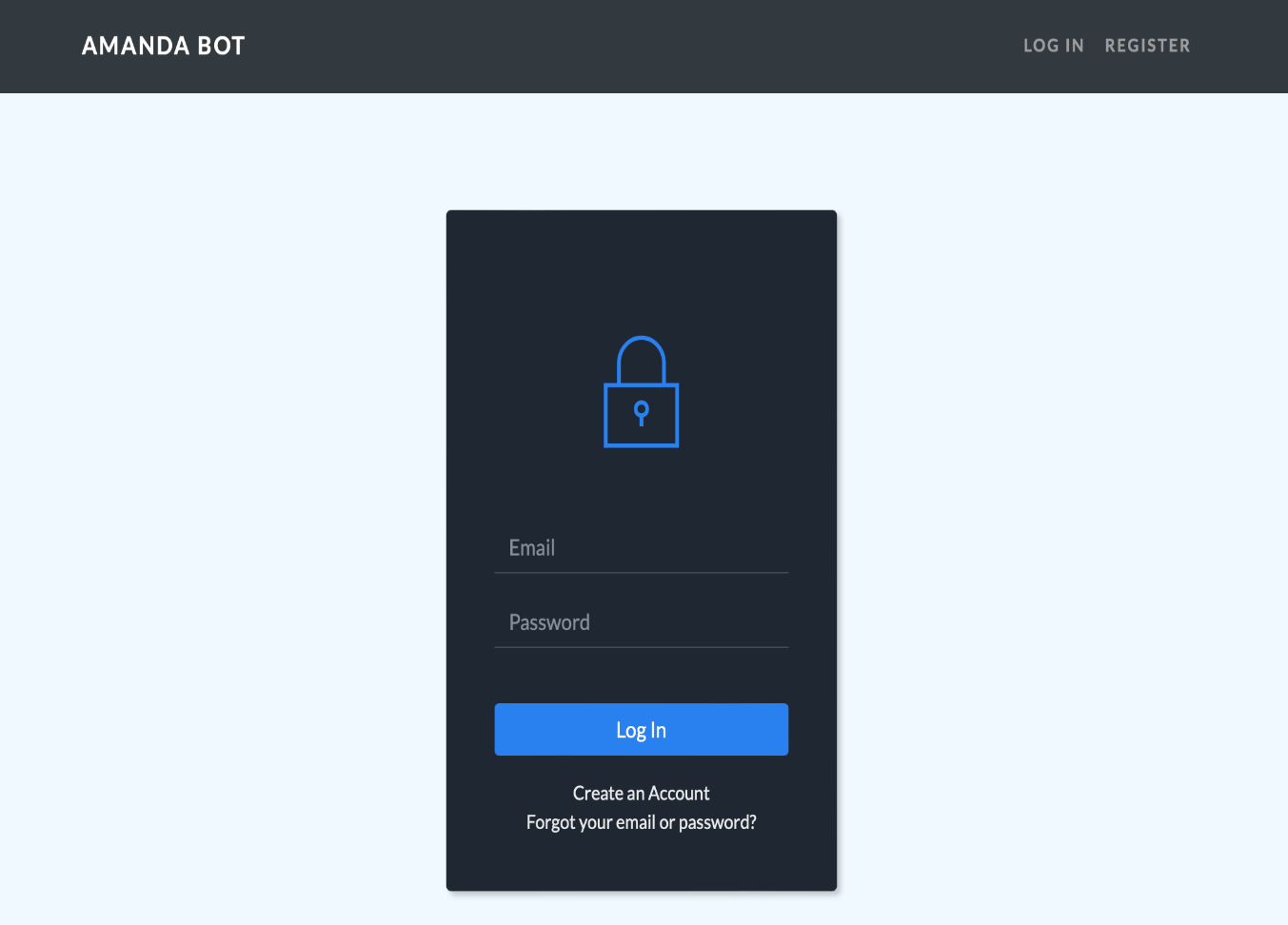
#### Challenges

* **Training the ChatBot**: One of the main challenges was training the chatbot to handle a wide range of queries. While the initial set of conversations provides a good starting point, expanding the chatbot's knowledge base to cover more topics and respond accurately to varied questions would require continuous training and updates.
* **Database Security**: Ensuring the security of user data stored in the database is critical. Although the current implementation uses basic SQL queries, more robust methods such as prepared statements should be used to prevent SQL injection attacks.
* **Scalability**: As the number of users and the amount of data grows, the application needs to be scalable. This includes optimizing database queries, handling more simultaneous users, and potentially distributing the workload across multiple servers.

This is the interface opened when the program runs.Here we can register a new

student,sign up with existing account and recover user account if forgot email

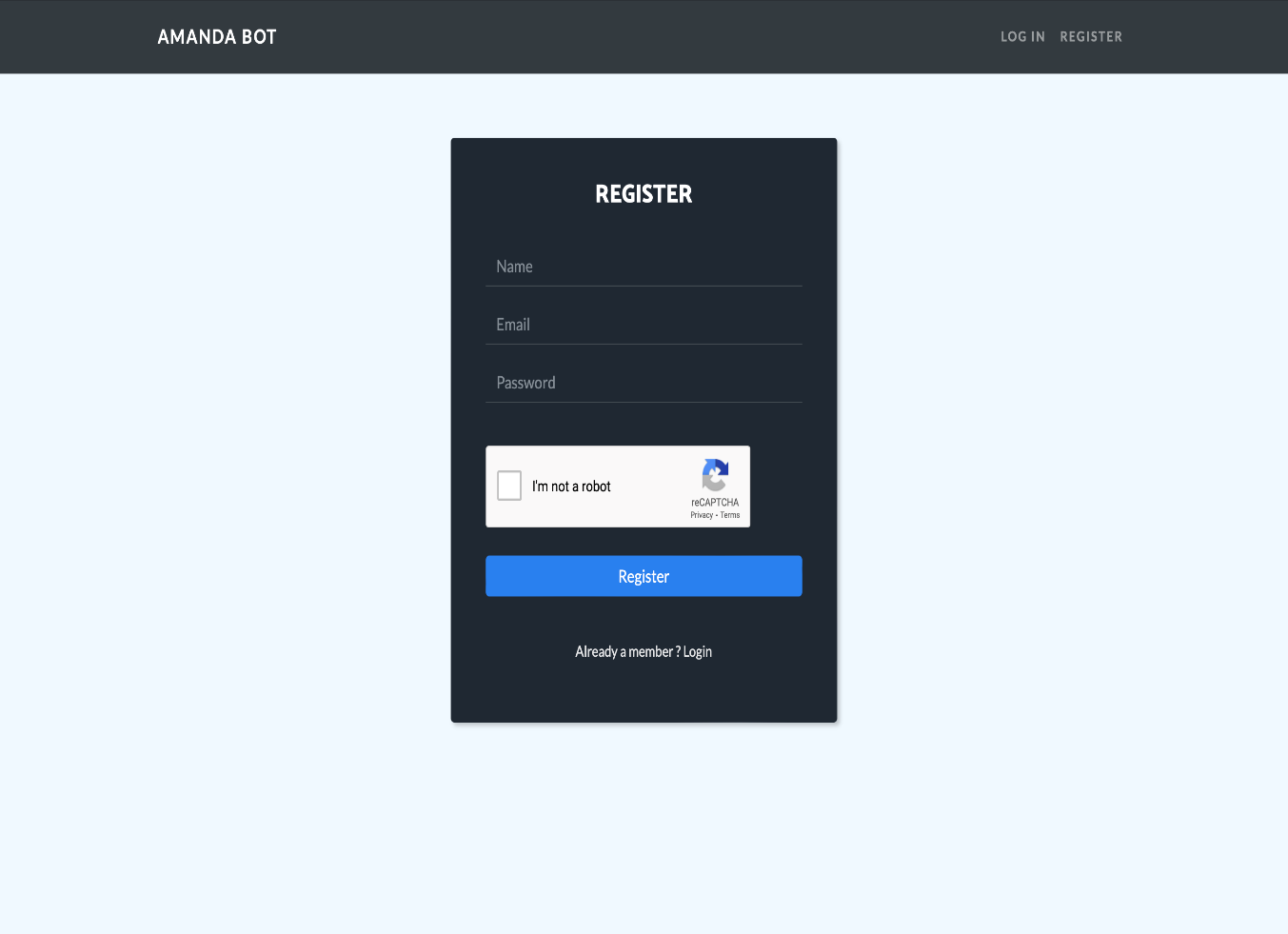
id or password



This is the register interface for registering new users. Registration page with

fields for name, email, and password, featuring reCAPTCHA verification for

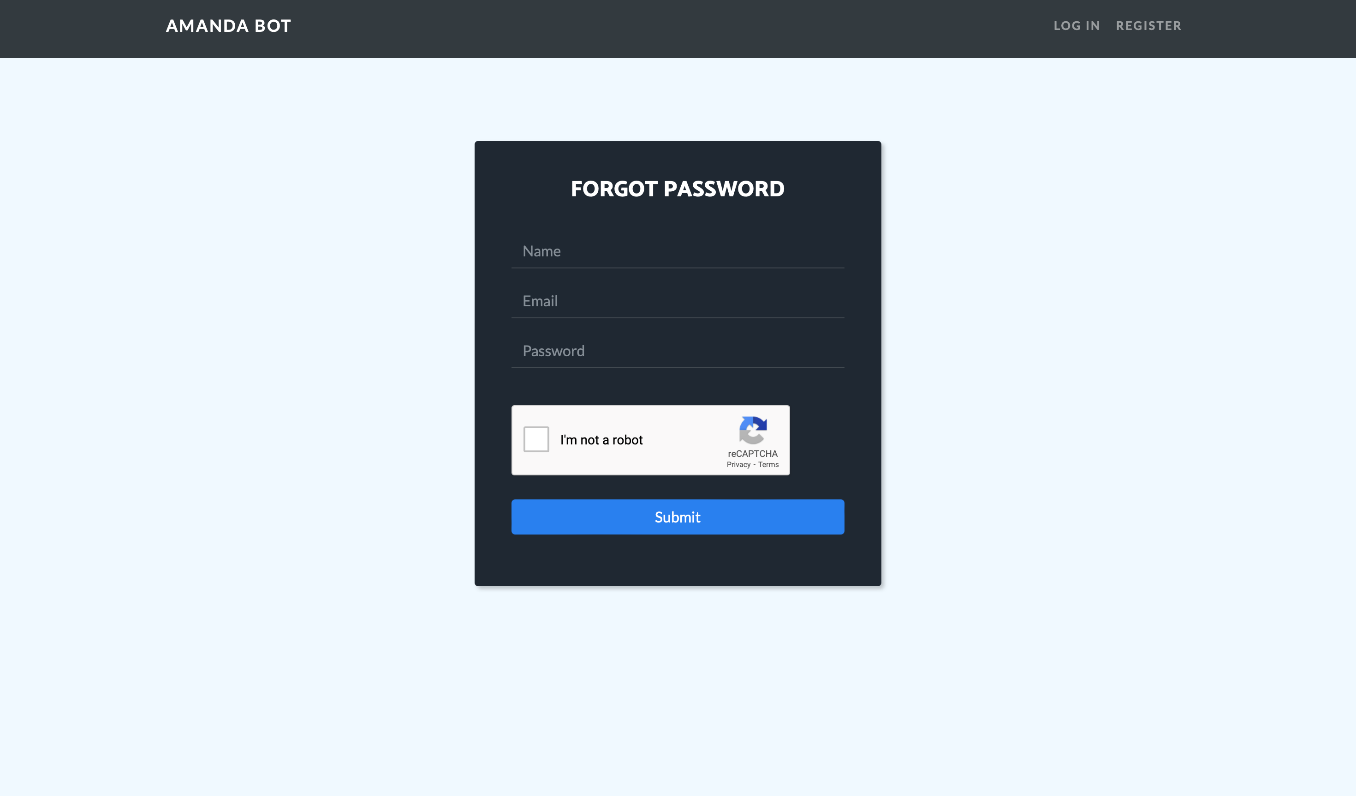
security, and a prominent "Register" button for account creation.

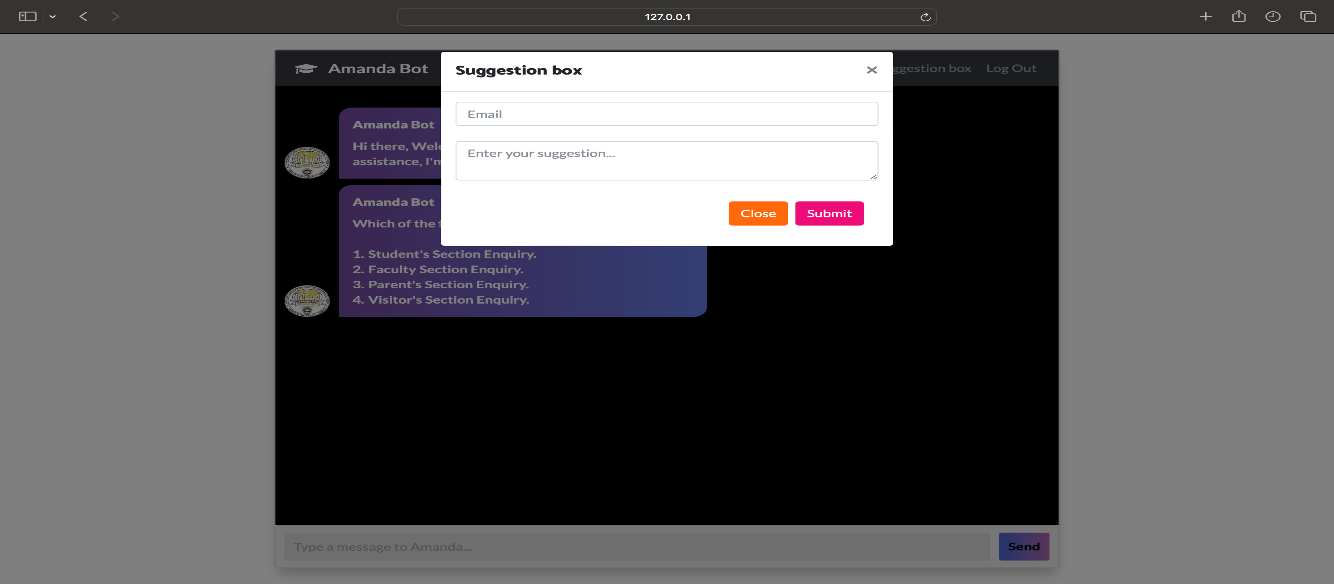


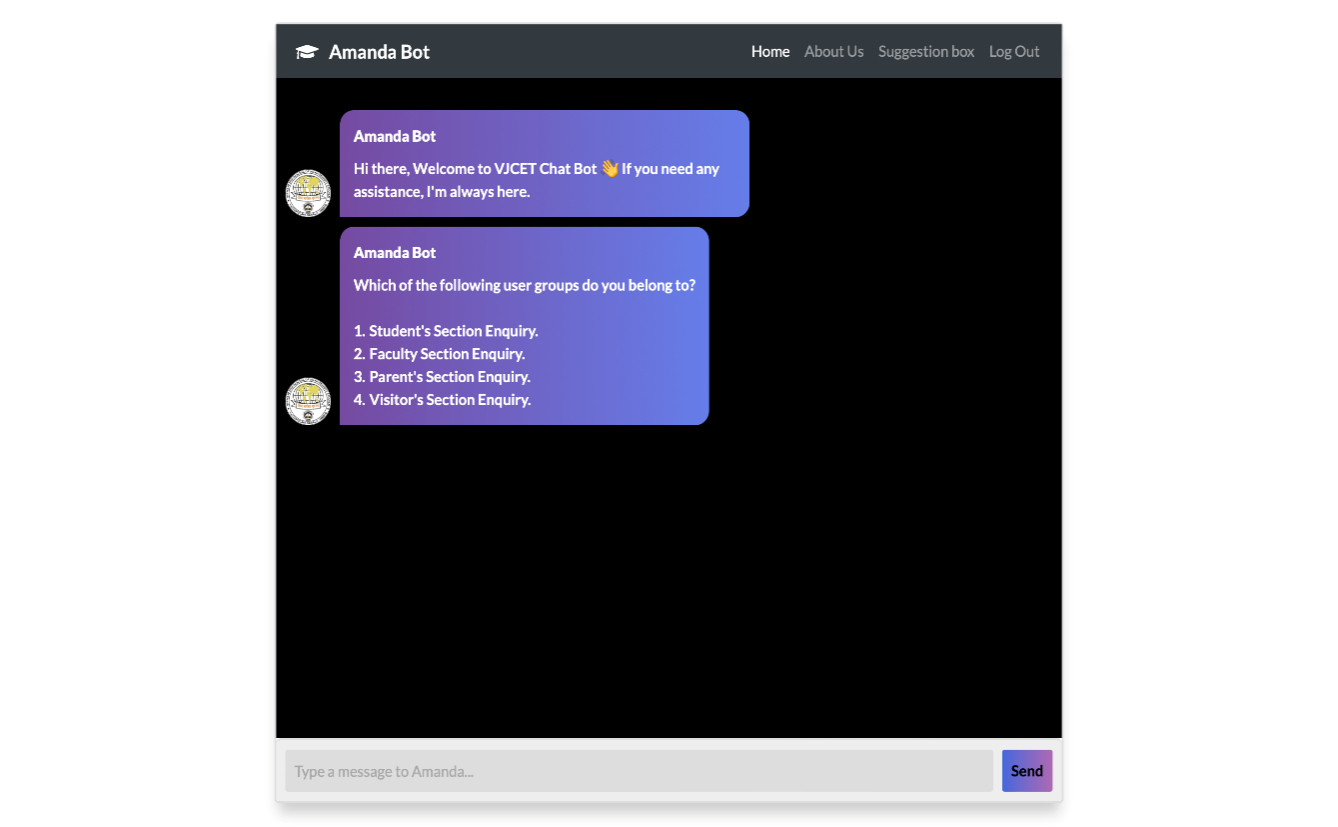
This is forgot password interface which helps users to recover thier password

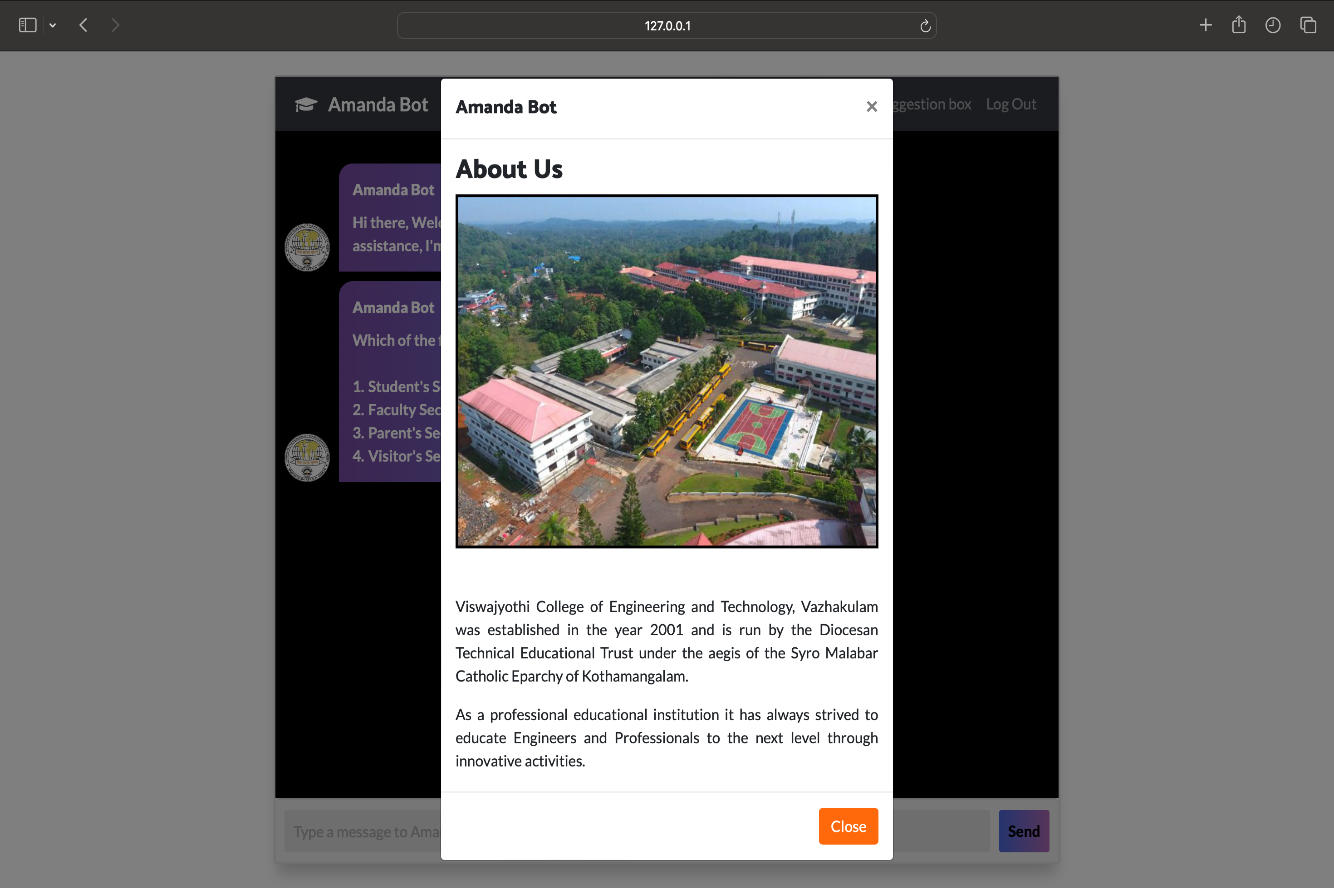
if it forggoten and featuring reCAPTCHA verification for security and a submit

button









**Chapter 5**

**CONCLUSION AND FUTURE WORK**

**Conclusion:**

In conclusion, the development and implementation of the College Enquiry Chatbot have demonstrated significant advancements in managing and responding to student inquiries. Through rigorous testing and evaluation, we have observed the chatbot's ability to efficiently provide accurate information, assist prospective students, and streamline administrative processes. The system has shown promising results in terms of efficiency, reliability, and user-friendliness.

By leveraging artificial intelligence, our chatbot offers a convenient and accessible method for obtaining information about the college, eliminating the need for manual responses and reducing the risk of misinformation. The integration of natural language processing ensures that users receive clear and relevant answers to their queries, enhancing their overall experience.

Furthermore, the scalability and adaptability of the chatbot make it suitable for deployment in various educational institutions. Its potential applications extend beyond answering general inquiries to include personalized guidance, virtual campus tours, and support for current students.

Overall, the College Enquiry Chatbot marks a significant step toward modernizing student services and optimizing administrative efficiency. It sets a precedent for future innovations in educational institutions, ultimately contributing to a more connected and informed student community.

**Future work:**

While our College Enquiry Chatbot has achieved commendable results, there are several avenues for future research and improvement:

**1. Enhanced Accuracy**: Continuously refine the natural language processing algorithms to improve accuracy, especially in understanding complex queries and providing contextually relevant responses.

**2. Privacy and Ethics:** Address concerns related to user privacy and data security by implementing robust encryption methods and adhering to ethical guidelines for the collection and usage of user data.

**3. Integration with IoT Devices:** Explore integration possibilities with Internet of Things (IoT) devices to enable seamless connectivity and automation, such as providing real-time information updates based on data from campus sensors.

**4. Machine Learning Optimization:** Investigate advanced machine learning techniques, such as deep learning, to further enhance the chatbot's performance and adaptability to diverse user interactions.

**5.User Interface Enhancements:** Focus on improving the user interface to ensure intuitive navigation and accessibility for prospective students, current students, and administrators.

**6. Long-term Deployment Studies:** Conduct long-term deployment studies to assess the chatbot's effectiveness and identify areas for optimization and refinement based on real-world usage scenarios.

In conclusion, the College Enquiry Chatbot represents a significant technological innovation with promising implications for student services and beyond. Through ongoing research and development efforts, we aim to continue advancing the capabilities of the system to meet the evolving needs of modern educational institutions and society at large.

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45.98, SJ Impact Factor: 6.887, Volume 6, Issue IV, April 2018, pp

iii

**Appendix A: SAMPLE CODE**

from flask import Flask, render\_template, request, session, redirect, flash  
from flask\_recaptcha import ReCaptcha  
import mysql.connector  
import os  
from chatterbot import ChatBot  
from jinja2 import Markup  
from chatterbot.trainers import ListTrainer  
import ssl  
  
try:  
\_create\_unverified\_https\_context = ssl.\_create\_unverified\_context  
except AttributeError:  
pass  
else:  
ssl.\_create\_default\_https\_context = \_create\_unverified\_https\_context  
  
# nltk.download('stopwords')  
  
bot = ChatBot('<b>Amanda Bot</b>')  
bot = ChatBot(  
'ChatBot for College Enquiry',  
storage\_adapter='chatterbot.storage.SQLStorageAdapter',  
logic\_adapters=[  
{  
'import\_path': 'chatterbot.logic.BestMatch',  
'default\_response': "Hi there, Welcome to VJCET Chat Bot   
'maximum\_similarity\_threshold': 0.90  
}  
],  
database\_uri='sqlite:///database.sqlite3'  
)  
  
trainer = ListTrainer(bot)  
  
conversation = [  
"Hi",  
"Helloo!",  
  
"hey",  
"im here.",  
  
"what courses are available",  
"computer engineering, electronics and computer science, Mechanical Engineering, Science and Humanities, AI & Data Science",  
  
  
"how are you?",  
"I'm good.</br> <br>Go ahead and write the number of any query.   
  
"great",  
"Go ahead and write the number of any query.   
  
"good",  
"Go ahead and write the number of any query.   
  
"fine",  
"Go ahead and write the number of any query.   
  
"thank You",  
"Your Welcome   
  
"thanks",  
"Your Welcome   
  
"bye",  
"Thank You for visiting!..",  
  
"what do you do",  
"I am made to give Information about Viswajothi College Of Engineering Vazhakulam.",  
  
"what else can you do",  
"I can help you know more about VJCET",  
  
"how long will be B-tech course",  
"Our college offers 4 year long B-tech course",  
  
"location",  
"vazhakulam,ernakulam,kerala,india",  
  
"course duration",  
"Our college offers 4 year long B-tech course",  
  
"semesters",  
"There are two semesters in a year.",  
  
"sem duration",  
"The single semester will be around 4 months",  
  
"admission requirements",  
"Candidates those who score an aggregate of at least 45% marks in Mathematics, Physics and Chemistry in plus two examination are eligible",  
  
"classes",  
"There may be six classes per day. Each class will be of 55 minutes.",  
  
"teaching style",  
"Our college has different teaching patterns than other colleges of kerala. We following the LTW techniques which stands for Lecture, Tutorial and Workshop.\nYou can provide us with your contact details and our counselors shall reach out to you and provide you with further details.",  
  
"exams",  
"The model involves both internal assessment as well as written exam. The internal assignment will include projects, practical, assignments etc, Normally 30% is allocated to this section and the rest will be for the written exam.",  
  
"hours",  
"You can message us here at any hours. But our college premises will be open from 8:00 am to 5:00 pm only",  
  
"fun activites",  
"Yes, Of course. Our college not only provides excellent education but also encourage students to take part in different curriculum activities. The college conducts yearly programs like Sports meet, Carnival, Holi festival, and Christmas. \n Also our college has basketball court, badminton court, table tennis, chess, carrom board and many more refreshment zones.",  
  
"facilities",  
"With excellent education facilities, Our College provides various other facilities like 24 hours internet, library, canteen, parking space, and student service for any students queries.",  
  
"fee",  
"The fees for the college is INR 73500 in the first year of education. So, for 4 years of education, the amount in around INR 294000. The amount can be feasible for some but can also be expensive for other students.",  
  
"",  
"Sorry, can't understand you",  
  
"invalid",  
"Please give me more info",  
  
"1",  
"<b>STUDENT <br>The following are frequently searched terms related to student . Please select one from the options below : <br> <br> 1.1 Departments <br>1.2 Curriculars<br>1.3 Administrative<br>1.4 Extra-Curriculars</b>",  
  
"1.1",  
"<b> DEPARTMENTS <br> These are the top results: <br> <br> 1.1.1 ARTIFICIAL INTELLIGENCE AND DATA SCIENCE <br> 1.1.2 CIVIL ENGINEERING <br> 1.1.3 COMPUTER SCIENCE & DESIGN <br> 1.1.4 COMPUTER SCIENCE & ENGINEERING<br> 1.1.5 ELECTRONICS & COMMUNICATION ENGINEERING<br> 1.1.6 ELECTRICAL & ELECTRONICS ENGINEERING<br> 1.1.7 INFORMATION TECHNOLOGY<br> 1.1.8 MECHANICAL ENGINEERING<br> 1.1.9 HOTEL MANAGEMENT & CATERING TECHNOLOGY<br> 1.1.10 MANAGEMENT STUDIES<br> 1.1.11 SCIENCE & HUMANITIES</b>",  
"1.1.1",  
"<b> 1.1.1 ARTIFICIAL INTELLIGENCE AND DATA SCIENCE <br>The link <https://vjcet.org/departments/artificial-intelligence-and-data-science'> ">Click Here</a> </b>",  
"1.1.2",  
"<b > 1.1.2 CIVIL ENGINEERING <br>The link <https://vjcet.org/departments/civil-engineering'> ">Click Here</a> </b>",  
"1.1.3",  
"<b> 1.1.3 COMPUTER SCIENCE & DESIGN <br>The link <https://vjcet.org/departments/computer-science-and-design'> ">Click Here</a> </b>",  
"1.1.4",  
"<b> 1.1.4 COMPUTER SCIENCE & ENGINEERING <br>The link <https://vjcet.org/departments/computer-science-and-engineering'> ">Click Here</a> </b>",  
"1.1.5",  
"<b> 1.1.5 ELECTRONICS & COMMUNICATION ENGINEERING <br>The link to <https://vjcet.org/departments/electronics-and-communication-engineering'> ">Click Here</a> </b>",  
"1.1.6",  
"<b> 1.1.6 ELECTRICAL & ELECTRONICS ENGINEERING <br>The link <https://vjcet.org/departments/electrical-and-electronics-engineering'> ">Click Here</a> </b>",  
"1.1.7",  
"<b> 1.1.7 INFORMATION TECHNOLOGY <br>The link <https://vjcet.org/departments/information-technology'> ">Click Here</a> </b>",  
"1.1.8",  
"<b> 1.1.8 MECHANICAL ENGINEERING <br>The link <https://vjcet.org/departments/mechanical-engineering'> ">Click Here</a> </b>",  
"1.1.9",  
"<b> 1.1.9 HOTEL MANAGEMENT & CATERING TECHNOLOGY <br>The link <https://vjcet.org/departments/hotel-management-and-catering-technology'> ">Click Here</a> </b>",  
"1.1.10",  
"<b> 1.1.10 MANAGEMENT STUDIES <br>The link <https://vjcet.org/departments/Management%20Studies'> ">Click Here</a> </b>",  
"1.1.11",  
"<b> 1.1.11 SCIENCE & HUMANITIES <br>The link <https://vjcet.org/departments/science-and-humanities'> ">Click Here</a> </b>",  
  
"1.2",  
"<b>CURRICULARS<br>These are the top results: <br> <br> 1.2.1 ACADEMIC CALENDAR<br> 1.2.2 SYLLABUS AND CURRICULUM <br> 1.2.3 RULES & REGULATIONS <br> 1.2.4 ROLL OF HONOURS <br> 1.2.5 LIBRARY</b>",  
"1.2.1",  
"<b > 1.2.1 ACADEMIC CALENDAR<br>The link <https://vjcet.org/academic-calendar'> ">Click Here</a></b>",  
"1.2.2",  
"<b > 1.2.2 SYLLABUS AND CURRICULUM<br>The link <https://vjcet.org/syllabus-and-curriculum'> ">Click Here</a> </b>",  
"1.2.3",  
"<b > 1.2.3 RULES & REGULATIONS<br>The link <https://vjcet.org/rules-and-regulations'> ">Click Here</a> </b>",  
"1.2.4",  
"<b > 1.2.4 ROLL OF HONOURS<br>The link <https://vjcet.org/roll-of-honours'> ">Click Here</a> </b>",  
"1.2.5",  
"<b > 1.2.5 LIBRARY<br>The link <https://vjcet.org/facilities/the-central-library'> ">Click Here</a> </b>",  
  
"1.3",  
"<b>1.3 ADMINISTRATIVE<br>These are the top results: <br> <br> 1.3.1 STUDENTS PORTAL<br> 1.3.2 FEE PAYMENT<br> 1.3.3 AICTE Feedback </b>",  
"1.3.1",  
"<b> 1.3.1 STUDENTS PORTAL<br>The link <https://vjcet.etlab.in/user/login'> ">Click Here</a> </b>",  
"1.3.2",  
"<b> 1.3.2 FEE PAYMENT<br>The link <https://vjcet.org/fee-payment'> ">Click Here</a> </b>",  
"1.3.3",  
"<b> 1.3.3 AICTE Feedback FOR STUDENTS<br>The link <https://aicte-india.org/feedback/students.php'> ">Click Here</a> </b>",  
  
"1.4",  
"<b > EXTRA-CURRICULARS <br>These are the top results:<br> 1.4.1 STUDENT COUNCIL<br> 1.4.2 DRISHYA <br> 1.4.3 DRONA<br> 1.4.4 BODHI<br> 1.4.5 PROFESSIONAL BODIES<br> 1.4.6 NATIONAL SERVICE SCHEME </b>",  
"1.4.1",  
"<b > 1.4.1 STUDENT COUNCIL<br>The link <https://vjcet.org/student-council'> ">Click Here</a> </b>",  
"1.4.2",  
"<b > 1.4.2 DRISHYA<br>The link <https://vjcet.org/drishya'> ">Click Here</a> </b>",  
"1.4.3",  
"<b > 1.4.3 DRONA<br>The link <https://vjcet.org/drona'> ">Click Here</a> </b>",  
"1.4.4",  
"<b > 1.4.4 BODHI<br>The link <https://vjcet.org/bodhi'> ">Click Here</a> </b>",  
"1.4.5",  
"<b > 1.4.5 PROFESSIONAL BODIES<br>The link <https://vjcet.org/professional-bodies'> ">Click Here</a> </b>",  
"1.4.6",  
"<b > 1.4.6 NATIONAL SERVICE SCHEME<br>The link <https://vjcet.org/national-service-scheme'> ">Click Here</a> </b>",  
  
  
"2",  
"<b >FACULTY<br>The following are frequently searched terms related to faculty. Please select one from the options below :</br></br>2.1 VJCET FACULTY PORTAL<br>2.2 UNIVERSITY EXAMINATION SEAT ARRAGEMENT<br>2.3 LIBRARY<br>2.4 PTA </b>",  
  
"2.1",  
"<b> 2.1 VJCET FACULTY PORTAL<br>The link <https://vjcet.etlab.in/user/login'> ">Click Here</a> </b>",  
"2.2",  
"<b> 2.2 UNIVERSITY EXAMINATION SEAT ARRAGEMENT<br>The link   
"2.3",  
"<b> 2.3 LIBRARY<br>The link <https://vjcet.org/facilities/the-central-library'> ">Click Here</a> </b>",  
"2.4",  
"<b> 2.4 P.T.A<br>The link <https://vjcet.org/parent-teacher-association-pta'> ">Click Here</a> </b>",  
  
"3",  
"<b >PARENTS<br>The following are frequently searched terms related to parents. Please select one from the options below :</br></br>3.1 PTA<br>3.2 CAMPUS MAP<br>3.3 FACILITIES<br>3.4 ACADEMIC PERFORMANCE<br>3.5 FEE PAYMENT </b>",  
  
"3.1",  
"<b> 3.1 PTA<br>The link <https://vjcet.org/parent-teacher-association-pta'> ">Click Here</a> </b>",  
"3.2",  
"<b> 3.2 CAMPUS MAP<br>The link <https://vjcet.org/campus-map'> ">Click Here</a> </b>",  
"3.3",  
"<b> 3.3 FACILITIES<br>The link <https://vjcet.org/facilities'> ">Click Here</a> </b>",  
"3.4",  
"<b> 3.4 ACADEMIC PERFORMANCE<br>The link <https://vjcet.org/academic-performance'> ">Click Here</a> </b>",  
"3.5",  
"<b> 3.5 FEE PAYMENT<br>The link <https://vjcet.org/fee-payment'> ">Click Here</a> </b>",  
  
"4",  
"<b >VISITORS<br>The following are frequently searched terms related to visitors. Please select one from the options below :</br></br>4.1 ABOUT VISWAJYOTHI<br>4.2 FOUNDERS<br>4.3 AFFILIATIONS & ACCREDITATIONS<br>4.4 FACILITIES<br>4.5 CONTACT US<br>4.6 COURSES OFFERED<br>4.7 PLACEMENT AND TRAINING<br>4.8 RESEARCH & DEVELOPMENT </b>",  
  
"4.1",  
"<b> 4.1 ABOUT VISWAJYOTHI<br>The link <https://vjcet.org/about'> ">Click Here</a> </b>",  
"4.2",  
"<b> 4.2 FOUNDERS<br>The link <https://vjcet.org/founders'> ">Click Here</a> </b>",  
"4.3",  
"<b> 4.3 AFFILIATIONS & ACCREDITATIONS<br>The link <https://vjcet.org/affiliations-and-accreditations'> ">Click Here</a> </b>",  
"4.4",  
"<b> 4.4 FACILITIES<br>The link <https://vjcet.org/facilities'> ">Click Here</a> </b>",  
"4.5",  
"<b> 4.5 CONTACT US<br>The link <https://vjcet.org/contact'> ">Click Here</a> </b>",  
"4.6",  
"<b> 4.6 COURSES OFFERED<br>The link <https://vjcet.org/courses-offered'> ">Click Here</a> </b>",  
"4.7",  
"<b> 4.7 PLACEMENT AND TRAINING<br>The link <https://vjcet.org/certification-and-placements'> ">Click Here</a> </b>",  
"4.8",  
"<b> 4.8 RESEARCH & DEVELOPMENT<br>The link <https://vjcet.org/research-and-development'> ">Click Here</a> </b>",  
  
  
]  
  
trainer.train(conversation)  
  
app = Flask(\_\_name\_\_)  
recaptcha = ReCaptcha(app)  
app.secret\_key=os.urandom(24)  
app.static\_folder = 'static'  
  
app.config.update(dict(  
RECAPTCHA\_ENABLED = True,  
RECAPTCHA\_SITE\_KEY = "6LdbAx0aAAAAAANl04WHtDbraFMufACHccHbn09L",  
RECAPTCHA\_SECRET\_KEY = "6LdbAx0aAAAAAMmkgBKJ2Z9xsQjMD5YutoXC6Wee"  
))  
  
recaptcha=ReCaptcha()  
recaptcha.init\_app(app)  
  
app.config['SECRET\_KEY'] = 'cairocoders-ednalan'  
  
conn=mysql.connector.connect(host='localhost',port='3306',user='root',password='root',database='register',auth\_plugin='mysql\_native\_password')  
cur=conn.cursor()  
  
@app.route("/index")  
def home():  
if 'id' in session:  
return render\_template('index.html')  
else:  
return redirect('/')  
  
@app.route('/')  
def login():  
return render\_template("login.html")  
  
@app.route('/register')  
def about():  
return render\_template('register.html')  
  
@app.route('/forgot')  
def forgot():  
return render\_template('forgot.html')  
  
@app.route('/login\_validation',methods=['POST'])  
def login\_validation():  
email=request.form.get('email')  
password=request.form.get('password')  
  
cur.execute("""SELECT \* FROM `users` WHERE `email` LIKE '{}' AND `password` LIKE '{}'""".format(email,password))  
users = cur.fetchall()  
if len(users)>0:  
session['id']=users[0][0]  
flash('You were successfully logged in')  
return redirect('/index')  
else:  
flash('Invalid credentials !!!')  
return redirect('/')  
  
@app.route('/add\_user',methods=['POST'])  
def add\_user():  
name=request.form.get('name')   
email=request.form.get('uemail')  
password=request.form.get('upassword')  
cur.execute("""INSERT INTO users(name,email,password) VALUES('{}','{}','{}')""".format(name,email,password))  
conn.commit()  
cur.execute("""SELECT \* FROM `users` WHERE `email` LIKE '{}'""".format(email))  
myuser=cur.fetchall()  
flash('You have successfully registered!')  
session['id']=myuser[0][0]  
return redirect('/index')  
  
@app.route('/suggestion',methods=['POST'])  
def suggestion():  
email=request.form.get('uemail')  
suggesMess=request.form.get('message')  
cur.execute("""INSERT INTO suggestion(email,message) VALUES('{}','{}')""".format(email,suggesMess))  
conn.commit()  
flash('You suggestion is succesfully sent!')  
return redirect('/index')  
  
@app.route('/add\_user',methods=['POST'])  
def register():  
if recaptcha.verify():  
flash('New User Added Successfully')  
return redirect('/register')  
else:  
flash('Error Recaptcha')   
return redirect('/register')  
  
@app.route('/logout')  
def logout():  
session.pop('id')  
return redirect('/')  
  
@app.route("/get")  
def get\_bot\_response():  
userText = request.args.get('msg')   
reply = bot.get\_response(userText)  
print(reply)  
return str(reply)  
  
if \_\_name\_\_ == "\_\_main\_\_":  
app.run()

**Appendix B : SCREENSHOTS**

