Walchand College Of Engineering, Sangli

(An Autonomous Institute)

Department
of
Computer Science and Engineering

Title of the Project

Hindi Voice based chatbot for scholarship section

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Academic Year: 2022-23

Under the Guidance of

Aprupa Pawar

Department of Computer Science and Engineering
Walchand College of Engineering, Sangli

Walchand College Of Engineering, Sangli
(An Autonomous Institute)

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Of
Computer Science and Engineering

CERTIFICATE

This is to certify that the Project Report entitled, "**Hindi Voice based chatbot for scholarship section**" submitted by Ms. Priyanka Devendra Sadalage, Mr. Pratik Sandip Upare, Mr. Sagar Nameshwar Rahandale, Ms. Sharvari Yashwant Patil to Walchand College of Engineering,Sangli, India, is a record of bonafide Project work of course *" 5CS348" " Mini-Project-4"* carried out by him/her under my/our supervision and guidance and is worthy of consideration for the award of the degree of Bachelor of Technology in Computer Science & Engineering of the Institute.

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Acknowledgement

The acknowledgement page depicts the gratitude, respect and thankfulness of the student towards the people who helped him in pursuing the project successfully and ensured successful completion and implementation of the project. In this page, the author expresses his gratitude and concern by using praising and thanks giving words.

Acknowledgement Project Coordinator, Ass.Prof. Pawar A.S. for guidance.

Declaration

I hereby declare that work presented in this project report titled "**HINDI VOICE BASED CHATBOT FOR SCHOLARSHIP SECTION**" submitted by Priyanka Sadalage, Pratik Sandip Upare, Sagar Nameshwar Rahandale, Sharvari Yashwant Patil in the partial fulfillment of the requirementof the award of the degree of **Bachelor of Technology (B.Tech)** Submitted in the **Department of Computer Science & Engineering, Walchand College of Engineering,** Sangli, is an au- thentic record of my project work carried out under the guidance of Asst. Prof. Miss. Aprupa Pawar

Date:
Place: Sangli

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Project title and Domain

Our project name is "**Hindi Voice based chatbot for scholarship section".** Domain of our project is machine learning. Machine learning is a field of artificial intelligence (AI) that focuses on developing algorithms and models that enable computers to learn and make predictions or decisions without being explicitly programmed. It is a subset of AI that involves the use of statistical techniques to enable computers to learn from and analyze large amounts of data, identify patterns, and make predictions or take actions based on the learned patterns. In this we basically use the supervised learning.

Abstract

The Chat bot who helps the end user to communicate with their device with voice as well as with text command and it also gives the response in voice or text format. This Proposed System is android based chat bot system in Hindi which is specially builds for the student scholarship section in which it gives the information about every need of student regarding to scholarship. This proposed system is able to take the input in Hindi and give the output in Hindi in voice as well as in text format. It is developed by using Python with rasa. It uses the Speech Recognition Intelligence which uses the Natural Language Processing algorithm to process the language spoken by the human and understand the query to give the appropriate result. Plus it uses the Rasa it is a tool to build custom AI chatbots using Python and natural language understanding (NLU). Rasa provides a framework for developing AI chatbots that uses natural language understanding (NLU). It also allows the user to train the model and add custom actions.

KEYWORDS- Chat bot, Speech Recognition, NLP, Rasa

Introduction

A chatbot is a computer program designed to simulate conversation with human users, especially over the internet. It uses natural language processing (NLP) and artificial intelligence (AI) techniques to understand and interpret user input and provide appropriate responses. Chatbots can be built to automate a variety of tasks, such as customer service inquiries, scheduling appointments, providing information, and even entertainment. They can be integrated into messaging platforms, websites, mobile applications, and other digital channels. Chatbots have become increasingly popular in recent years due to their ability to provide quick and efficient support to users, improve customer service experience, and reduce operational costs for businesses.

In this report, we will discuss a chatbot that is developed specifically for a student section in which it gives the information about every need of student regarding to scholarship forms, hostel admission, etc. This chatbot is designed to provide assistance to students in Hindi language, which is the most widely spoken language in India. The chatbot has been developed using Rasa NLP and Speech Recognition Intelligence which are powerful tools for building chatbots that can understand natural language and carry out conversations with users.

Rasa is an open-source framework that provides tools to build chatbots that can understand natural language and carry out conversations with users. NLP is a subfield of AI that deals with the interaction between human language and computers. As we are going to take the input through the voice Speech Recognition plays very important role here. speech recognition techniques to identifies this keyword and begins the conversation. It uses natural language processing (NLP) algorithm. NLP algorithms are typically based on machine learning algorithm. Natural language processing (NLP) is a algorithm in which computers analyse, understand, and derive meaning from human language in a smart and useful way

The development of a Hindi language chatbot for a student section can be a game-changer for educational institutions. By enabling students to access information and support in Hindi, educational institutions can improve the accessibility and quality of their services, and provide a better student experience.

Problem Statement

"To design and develop web based chatbot that support Hindi language for student scholarship section in walchand college of engineering"

Many times it is seen that people did not understand the English instructions more quickly as compared to hindi so builting the chatbot who response in Hindi language is very beneficial. And there may be one another scenario that if the employee in student sections are not available still student can get the information regarding to any doubt related to scholarship through this chatbot.

Literature Survey

1. Rakesh Kumar Sharma, Manoj Joshi [2020] “An Analytical Study and Review of open Source Chatbot framework, RASA” they study, various features of rasa core are studied and upto much extent it can perform complex tasks. Implementation details are studied like interaction with database, API.

2. Nguyen Thi Mai Trang, Maxim Shcherbakov [2021] “Enhancing Rasa NLU model for Vietnamese chatbot” they used Rasa platform for building chatbot and proposed an approach using custom pipeline for NLU model. In there work, they applied the pre-trained models FastText and multilingual BERT and two custom components for the pipelines.

3. Mrs. Rashmi Dharwadkar , Dr.Mrs. Neeta A. Deshpande [2018] “A Medical ChatBot” In there proposed system they use Google API for voice-text and textvoice conversion. Query is sent to ChatBot and gets related answer and display answer on android app. The System’s major concern behind developing this web based platform is analysing customer’s sentiments.

Novelty

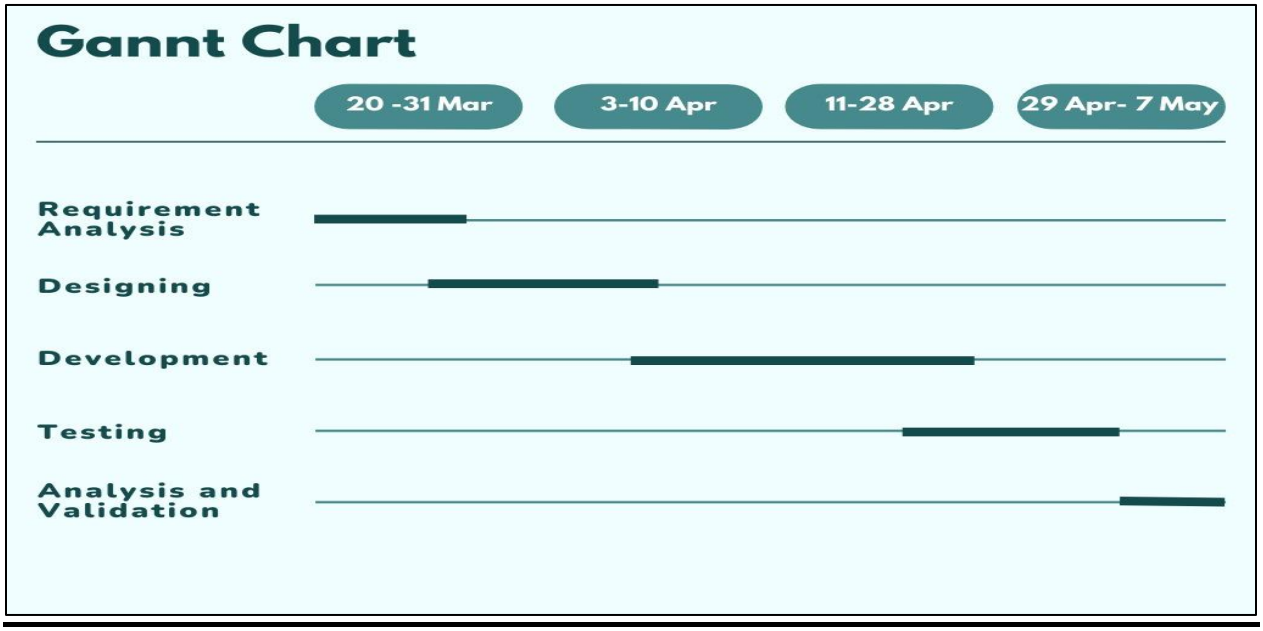
1. There are many chatbot are present that work in hindi but the new thing of our chatbot is it is a cahtbot specially design for student scholarship section who work in Hindi language.

Objectives

Following are the few objectives that we are going to achieve-

1. To Study the required algorithms as per problem statement
2. To design the flow of system
3. To build the separate parts of system
4. To integrate all the parts together to form entire system
5. To analyze the accuracy and operational features of the system.
6. To validate the achieved data with real-time aspects.

Project Plan



Project Architecture

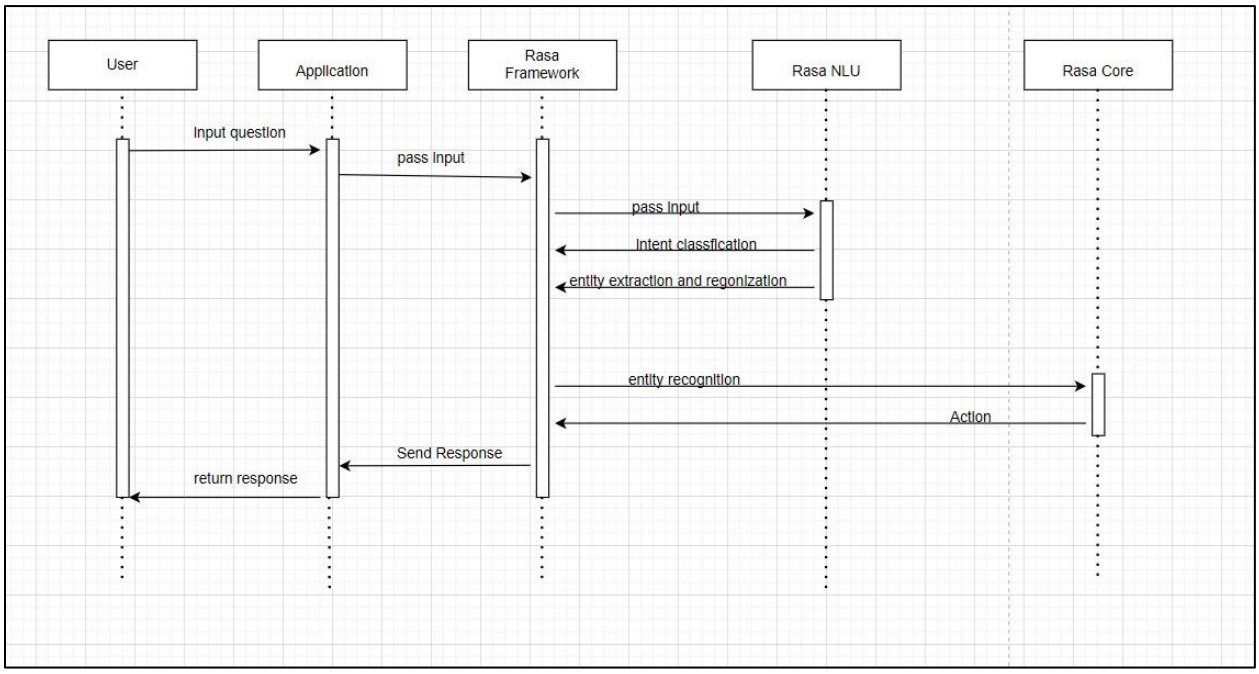


Fig. Sequence Diagram of Chatbot

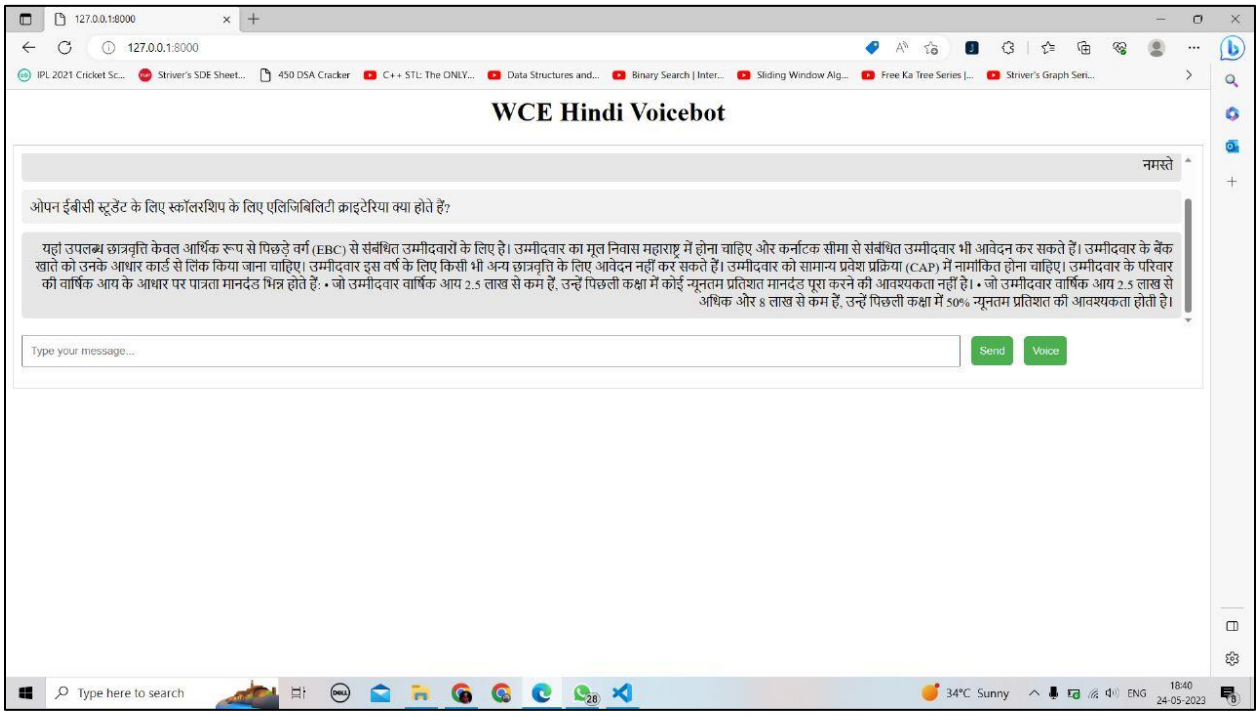
Here is the overview of the components typically involved in architecture of our chatbot

1. **User:** The person or program that is interacting with the Application.
2. **Application:** The interaction between the user and the Rasa model will the done with the help of application.
3. **Rasa Framework:** It consists of two main components: Rasa NLU (Natural Language Understanding) component and Rasa Core.
4. **Rasa NLU (Natural Language Understanding) component:** This component processes the user's message and extracts important information such as intents and entities.
5. **Rasa Core:** This component uses the extracted information from the NLU component to decide which actions should be taken in response to the user's message. It performs the actual actions that are determined by the dialogue management component, such as sending a message to the user or querying a database.

Project Potentials

- Chatbot is user friendly and responds in Hindi language.
- Provides easier access to scholarship related information.
- To Create Human Computer Interaction Interface for student section.

Result


127.0.0.1:8000
WCE Hindi Voicebot
नमस्ते
ओपन ईबीसी स्टूडेंट के लिए स्कॉलरशिप के लिए एलिजिबिलिटी क्राइटेरिया क्या होते हैं?
यहां उपलब्ध छात्रवृत्ति केवल आर्थिक रूप से पिछड़े वर्ग (EBC) से संबंधित उम्मीदवारों के लिए है। उम्मीदवार का मूल निवास महाराष्ट्र में होना चाहिए और कर्नाटक सीमा से संबंधित उम्मीदवार भी आवेदन कर सकते हैं। उम्मीदवार के बैंक खाते को उनके आधार कार्ड से लिंक किया जाना चाहिए। उम्मीदवार इस वर्ष के लिए किसी भी अन्य छात्रवृत्ति के लिए आवेदन नहीं कर सकते हैं। उम्मीदवार को सामान्य प्रवेश प्रक्रिया (CAP) में नामांकित होना चाहिए। उम्मीदवार के परिवार की वार्षिक आय के आधार पर पात्रता मानदंड भिन्न होते हैं: • जो उम्मीदवार वार्षिक आय 2.5 लाख से कम हैं, उन्हें पिछली कक्षा में कोई न्यूनतम प्रतिशत मानदंड पूरा करने की आवश्यकता नहीं है। • जो उम्मीदवार वार्षिक आय 2.5 लाख से अधिक और 8 लाख से कम हैं, उन्हें पिछली कक्षा में 50% न्यूनतम प्रतिशत की आवश्यकता होती है।
Type your message...
Send
Voice
Type here to search
34°C Sunny
ENG
18:40
24-05-2023

Conclusion and Future Scope

The proposed system is capable to answer the scholarship related question in Hindi language but it can be enhanced if we add the more features in it like integrating the chatbot with various other sections, such as hostel section, and admission section so that it can solve all the queries related to these sections. Also, its efficiency can be increase if we increase number of intent.

References

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