RICA The Bot – Six Sense

Ajanta Palit[1], Siddhant Sharma[2], Disha Makal[3], Anirvan Mukhopadhyay[4]

[1]Assistant Professor of ECE Department, Bengal Institute of Technology, Kolkata 700150
[2]IT 2nd Year, Bengal Institute of Technology, Kolkata 700150
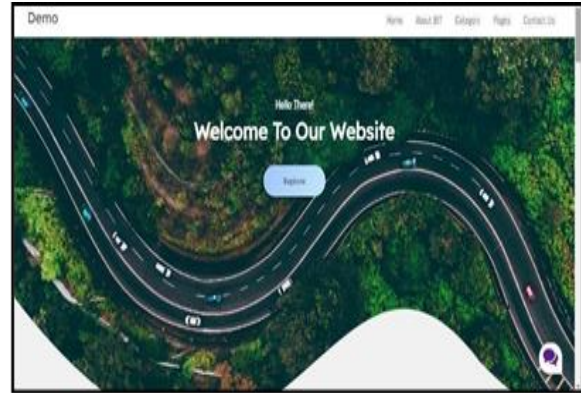[3]CSE 2nd Year, Bengal Institute of Technology, Kolkata 700150
[4]IT 2nd Year, Bengal Institute of Technology, Kolkata 700150

Abstract - **Generally peoples have queries regarding various topics to which answers are provided manually by the people. This takes a lot of time. In order to make it fast this process we introduce our chat-bot "RICA". It can answer various types of questions asked by the users. We programmed it using Python language and regularly we are updating our chat-bot to make it more interactive with the users. To complement our project, we made a smart education website using HTML, CSS, Java Script. From our website users can directly access the academic syllabus, subject related videos and many more things we put on the website. Recently we added the NOTICE section in thee website where user get updated with the notices published by the University.**
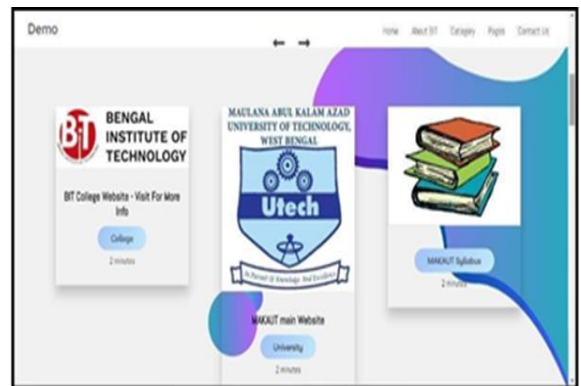
DESCRIBING OUR IDEA & SOLUTION

There always have been queries of people regarding various topics to which answers are provided manually by people. In order to make this process fast the FAQs can be answer using the technologies where answers can be automatically generated according to the questions. This process can reduce lot of work pressure for both the user and the government. Also providing quick responses and suggestions that can help in the better economical market growth. In our busy day to day life, it is very difficult to chat or conversate with the costumer care executive, by using this chat – bot this problem will solve easily because all answers will generate automatically without any delay.

Chat – bot is available all the time. It supports your costumers even in weekends and late at night. It is also not impressed by a high number of requests. A bot can easily process themselves at the same time without ever being over overworked. Using our chat – bot not only students, parents also can clear their doubt. There have always been queries of people regarding various topics to which answers are provided manually by

people so, we develop a chat – bot using Python language. Our chat – bot not only can answer different questions regarding education related but it can answer wide range of questions. We have attached links in our bot as well as in website so, that it will be easier to the user to access it. We add voice recognition so that we make more easier for the user to use it.

"Six Sense" designed a website where students can access all the academic related stuffs.

And if students face any problem, then for that we put chat – bot so, that no doubts will be there in the mind of students. Our chat – bot has features mentioned below :

- Students can access study materials, syllabus and updates regarding their academics.

- Using our website students as well as parents can directly access College website, University website.
- If user (parents as well as students) want to get the information about the college they can also get that by just one click.
- The best thing is that we added an instant feature in which user can open website (College, University, Google).
- We added a fluent conversation feature in which chat – bot can talk also with the user like other assistant apps introduced in the market that all these things can access by asking questions to the chat – bot.
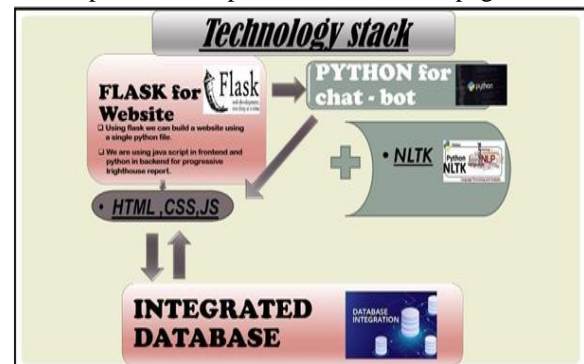

By making this chat – bot and website we won the "Genz Teckathon" organise by "BENGAL INSTITUTE OF TECHNOLOGY". Now we are preparing for the Smart India Hackathon 2022. Our chat – bot is always ready to answer your FAQs. It is available 24/7 never shuts down. Not require any human executive to answer the questions asked by the user. Our system is completely automatic and serves services without any delay. In this pandemic situation everything turns offline to online. That's why we worked and made this system. Our chat – bot is made using Python language. Different modules are their so, that many other works done by our chat – bot. Our chat – bot is very lite and easily accessible.

TECHNOLOGY STACK

- We have chosen python language for making our chatbot, As python offers concise and readable code. While complex algorithms and versatile workflows stand behind machine learning and AI, Python's simplicity allows developers to write reliable systems. Developers get to put all their effort into solving a problem instead of focusing on the technical nuances of the language.
- Flask is a small and lightweight Python web framework that provides useful tools and features that make creating web applications in Python easier.
- NLTK is a suite of libraries and programs for symbolic and statistical natural language processing for English written in the Python programming language.
- We have combined all of the above technologies in a particular or precise way and put into a HTML file, JavaScript is a scripting or programming language that allows you to implement complex features on web pages

Finally, we have made the connection between our system and our customize own database .

RICA (CHATBOT)

Rica is voice-based AI-powered digital assistant that powers an entire smart device ecosystem . Rica can reply to simple queries and perform various tasks or commands that one gives. Rica is built based on natural language processing (NLP), a procedure of converting speech into words, sounds. Rica records the frequencies and sound waves from your voice and translates them into a code. Rica then breaks down the code to identify particular patterns, phrases, and keywords. Rica can do lot more things Like opening website, playing random music, it is also capable of taking attendance of students.

WORK FLOW

- It starts with signal processing, which gives Rica as many chances as possible to make sense of the audio by cleaning the signal.
- Rica breaks down your voice into individual sounds. It then consults a database containing various words pronunciations to find which words most closely correspond to the combination of individual sounds. then identifies important words to make sense of the tasks and carry out corresponding functions.
- The next task is "Wake Word Detection". It determines whether the user says one of the words the device is programmed to need to turn on.
- If the wake word is detected, the signal is then sent to the speech recognition software in the database, which takes the audio and converts it to text format. A decoder will determine what the most likely sequence of words is given the input features.
- When users say Open a particular website which wakes up the device The wake word put the Rica

into the listening mode and ready to take instructions from users.

- Rica Voice Service process the response and identify the user's intent, then it makes the web service , play songs , open third-party software, and other service request.

As per the entire prospectus of our chat bot goes it has a wide range of reach for being an initiation product. Our chat bot is a menu based come friendly bot having a user-friendly interface and an over environment which is very suitable for user of any age group may it be. We sustain a potential of making the limitations and negative aspects of the bot into future optimizations. Till now our chat bot can answer a scope of query given to it and also can access various module as per given data in for hyperlink. This feature would be optimized and worked on to change it in near future. The optimizations made in the chat bot would be entirely done with the help of Artificial Intelligence and deep essence of power of doing wide range of review filtering and display matching data or filter data according to the users concern and vice versa.
In the near future the bot would be made accountable to age group filtration of data with wide scope of intelligence and match for the later. This feature of the bot would be used Machine Learning.

Artificial Intelligence through Machine Mechanics
Having the power of self- learning our chat bot will have the and hence would be very user friendly for the children use and various other different use of people with concern.

Effective data for age group of any type

In the coming future Rica would have the ability to maintain a self-sufficient Data Base as a whole which would really help in easy access of huge amount of data. The future aspects would be helpful in various matter like the use in college for attendance and other various record keeping aspects as per required.

Programmatic Instalments:

- Other instalments in Rica would made technically with help of Heroku which would serve in the Backend of the System.
- The bot in the near future would be deployed in the System or website with the help of Flask and Java Script respectively. Some normal conversation features would also be installed.

CONCLUSION

Our team including Srestha Shaw and S.K Abir Ahmed, the most challenging part was the development of the chat – bot and the website. Finally, the goal was achieved – create an AI Chat- Bot who can answer FAQs very easily including with a smart education website which corresponds to modern design trends and satisfies user needs.

REFRENCES

During Development of the project we take some help from the websites given below

[1] W3Schools.
[2] Github.