"DESIGN ANALYSIS AND IMPLEMENTATION OF EDUCATIONAL – DOMAIN CHATBOT SYSTEM"

A Major Project Synopsis Submitted to

Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal
Towards Partial Fulfillment for the Award of

Bachelor of Technology
(Computer Science and Engineering)

Under the Guidance of

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1. Abstract

Chatbot is an automation system and different formats of chat bots are text based, graphical, web application, and voice based. Chatbots typically provide a text-based user interface, allowing the user to type commands and receive text as well as text to speech response. The functionality of a Chat bot works only on the existing commands. Chatbots usually remember previous commands in order to provide functionality. The term "ChatterBot" was originally coined by Michael Mauldin (creator of the first Verbot) in 1994 to describe these conversational programs. Chatbots are used in dialog systems for various purposes including customer service, request routing, or information gathering. While some chatbot applications use extensive word-classification processes, natural language processors, and sophisticated AI, others simply scan for general keywords and generate responses using common phrases obtained from an associated library or database. A chatbot is often described as one of the most advanced and promising expressions of interaction between humans and machines. However, from a technological point of view, a chatbot only represents the natural evolution of a Question Answering system leveraging Natural Language Processing (NLP). Formulating responses to questions in natural language is one of the most typical Examples of Natural Language Processing applied in various enterprises' end-use applications. This is the first task that a chatbot performs. It analyzes the user's request to identify the user intent and to extract relevant entities**.** The ability to identify the user's intent and extract data and relevant entities contained in the user's request is the first condition and the most relevant step at the core of a chatbot: If you are not able to correctly understand the user's request, you won't be able to provide the correct answer. Once the user's intent has been identified, the chatbot must provide the most appropriate response for the user's request. Chatbot applications streamline interactions between people and services, enhancing customer experience. At the same time, they offer companies new opportunities to improve the customers engagement process and operational efficiency by reducing the typical cost of customer service. To be successful, a chatbot solution should be able to effectively perform both of these tasks. Human support plays a key role here: Regardless of the kind of approach and the platform, human intervention is crucial in configuring, training and optimizing the chatbot system.

2. Introduction of the Project

J.A.V.I.I.S. is a Chabot in educational domain.

The purpose is focused on the design of the specific architecture and model to manage communication and furnish the right answers to the students.

This system detects the questions and answers users using natural language processing techniques.

J.A.V.I.I.S. is a chat bot which helps the colleges to have 24*7 automated query resolution.

This helps the students to have the right information from the trusted source.

This made administration of information easy.

Automation has helped IT keep pace with demand.

We're now taking the next step—Cognitive Service Management—to ensure the quality experience students expect in the digital economy.

We're embracing cognitive technologies in a big way.

J.A.V.I.I.S. is available 24/7 to help students connect to GW's wireless network, register devices, and get assistance with other requests.

Students interact with J.A.V.I.I.S. via text or web browser using everyday natural language.

3. Objective

Our objectives are -:

- To fulfil the purpose that is focused on the design of the specific architecture and model to manage communication and furnish the right answers to the students.
- To provide a chatbot that can make the communication easy.
- To helps the students to have the right information from the trusted source.
- To make administration of information easy.
- To help the administration and students in communicating effectively.
- To alway try our best to improve the environment for students to help them in every way possible and our chatbot does that.
- To give right answers to questions and help students understand the learning environment.
- To be 24/7 available to help students connect to GW's wireless network, register devices, and get assistance with other requests.

4. Scope

This chatbot is for students who are eager to get right answers to their questions.

Chatbots are fully functioning, semi-autonomous systems that can assist customer service experiences and response time.

If the future demands advanced chatbots that do more than use scripted, single-turn exchanges, then their method of interface will also have to advance.

A voice interface can assist users with disabilities or those who are skeptical of technology, but it also requires another layer of NLP development.

While voice interface may be optional, chatbots have been in the enterprise long enough for developers and experts to begin identifying what elements of chatbots are mainstay requirements.

NLP development, human-like conversational flexibility and 24/7 service are crucial to maintaining chatbots' longevity in enterprise settings.

Chatbots are AI devices and, looking ahead, they need to keep up with AI trends, such as automated machine learning, easy system integration and developing intelligence.

As people research, they want the information they need as quickly as possible and are increasingly turning to voice search as the technology advances.

Email inboxes have become more and more cluttered, so buyers have moved to social media to follow the brands they really care about.

Ultimately, they now have the control — the ability to opt out, block, and unfollow any brand that betrays their trust.

5. Study of Existing System

MARTHA is a chat bot which is created and being used at George Washington University.

This chat bot has the functionalities of answering the queries of students but this system do not have any access privileges. Later it was updated and used for teaching and displaying academic results.

Limitations-:

1. Existing Chatbots don’t understand human context.
2. If Query is not related to inbuilt query they can’t provide related query suggestions.
3. Existing Chatbots are not able to generate graphical reports.

Reference Link - https://www.bmc.com/blogs/introducing-martha-leveraging-cognitive-automation-to-create-an-exceptional-student-experience/

6. Project Description / Proposed System

The main aim is to reduce the manual work in generating the reports either student wise or batch wise based on the inbuilt queries which are embedded using Chabot and also to generating the comparative graphical chart reports.

Proposed chat bot system will provide additional features like flexibility, and also friendly environment.

The flexibility features are used to retrieve the information like related query suggestion, entire information display of a particular candidate and additional query submission to the admin, computed data display.

Friendly environment is provided by an interface that is easy for user to enter the queries in natural language with out any particular format.

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7. Methodology and Design of the Project

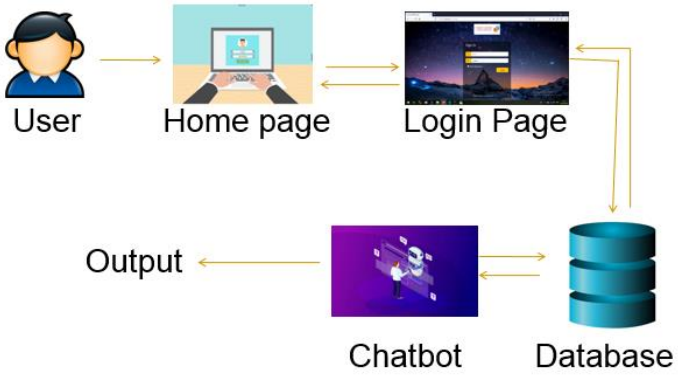

Fig 1 – Design of the chatbot system

8. Resources

Software Requirements-:

1. Python Artificial Intelligence Mark-up Language
2. Natural language processing tool kit
3. Python –flask
4. SQL alchemy

Hardware Requirements-:

1. Intel Core i3 processor
2. RAM: 4GB
3. Operating System: Windows 10
4. Hard Disk: 1TB

9. Updations

The updates made in the software are as follows:-

- **UI Updation** – We introduced a theme system to make the interface more user friendly. It has Violet and Brown Themes. We have made our software more easy, better and efficient and have added creative automation to the interface.
- **J.A.V.I.I.S. OFFICE** – We have created a space for students to write the data and save it with any extension (.txt, .xls, .ods, .zip etc). It is open-source and doesn't require license to work on. Its very user-convenient and very easy to learn and work on. You can also upload files into it.
- **Feedback** – We have introduced a feedback system to improve our software. Students can give feedbacks to admins and we can see your views.
- **J.A.V.I.I.S. Website for Students** – It has Speech Trainer and Graphs/Charts for students to practice and learn.

10. Conclusion

- All this difficulties can be minimised, computation time and effort are reduced by automating the entire process by using student informative Chatbot J.A.V.I.I.S.

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