

Xotira: Formulas Teaching Chatbot

*T.ANITA KUMARI, SAI BHAVANI KUMAR.S**

J.N.S.NIKHITA, ASHWITHA.D*

V.VARSHA*****

* Assistant professor HITAM, Hyderabad, India, anithakumarit.cse@hitam.org

**Computer science and engineering, HITAM, Hyderabad, India, sai.bhavanikumar6393@gmail.com

***Computer science and engineering, HITAM, Hyderabad, India, nikhithajasti@gmail.com

****Computer science and engineering, HITAM, Hyderabad, India, reddyashwita@gmail.com

*****Computer Science and engineering, HITAM, Hyderabad, India, varsharao9999@gmail.com

Abstract

In this paper, we are proposing a chatbot as an application which helps the students to remember and apply the formulas in an effective way. In particular, this work explains the implementation of the chatbot system as an application which is named as Xotira. A keywords-based human-computer dialogue system makes this possible that the students can chat with the artificial assistant in English language.

Keywords—take test, Practice, chatbot, dialogue system, artificial assistant.

Introduction

Xotira is an Artificial intelligence chatbot which is developed using Dialogue flow as a front end and Mean stack as a back end.

Conversation between the user and Xotira will be like conversation between the humans but you are chatting with the machine. Xotira uses Dialogue flow to form the responses in the conversation with the user. As like the other chatbots some of them costs more, but the cost of this Chatbot will be Zero because it is integrated with the social media application which are free of cost and the software which is used to develop the Chabot are also freely available.

1. Why Dialogue flow and NodeJS

Dialog flow is an open source framework developed by Google to train the chatbot as per the user requirements. NodeJs is the best way to develop the middle ware for the chatbot which makes the storing the user details and the exam details of the users easily. In this paper we will further give you the overview on Dialog flow and NodeJs. We will also look at some related work with Nodejs and learn how to keep the system focused on a specific domain.

A.What is Dialog flow?

Dialog flow is a Google-owned developer of Human- Machine interaction technologies based on Natural language processing .Dialog flow is best known for creating the Assistants for Android, iOS and Windows smart phones that answers user questions in natural language. The conversational and Voice interfaces developed using Dialog flow can be integrated with various devices including mobiles, cars, speakers and other smart devices. It supports many languages including Brazilian Portuguese, Chinese, English, Dutch, French, German, Italian, Japanese, Korean, Portuguese, Russian, Spanish and Ukrainian.

B. What is NodeJs ?

Node.js is an open-source, cross-platform JavaScript run-time environment for executing JavaScript code server-side. Nodejs was used for Client-side scripting in which JavaScript's are embedded into Websites HTML.to be run client-side by a JavaScript engine in the user's web browser. Node.js has become one of the foundational elements of the "JavaScript everywhere" paradigm, allowing web application development to unify around a single programming language, instead of relying on a different language for writing server side scripts.

II. COMPARISON

- A. Xotira uses simple conversation to interact with the user whereas Khan Academy uses only video lectures.
- B. As Xotira is integrated to social media applications like Facebook messenger, it can be used by anyone with their social media credentials.
- C. As Xotira was integrated into Social media applications, it can be accessed even with the low Internet connection.
- D. All the other educational sites provides the static content, whereas Xotira provides the content as per the requirements of the students.
- E. If the same input was given multiple times for xotira, it may give you the same answer or different answer based on the conversation.
- F. Khan Academy provides the video lectures whereas the Xotira provides Tests and Textual content.

PROPOSED SYSYEM:

Every student believes in remembering the formulas instead of understanding the root cause of the formulas and often end up burning the oil at midnights (mugging up).We are trying to help the students to remember and apply the formulas in an effective way. This project aims at providing an application with the simplest interface and finest content with enormously vast amount of formulas. The student can use this application to browse through different categories of formula and understand every formula by watching interactive videos, animations, games and can understand their progress through the assessments .After conducting pre-test and post-test, should check In the application, there should be pre-test and post-tests whether they are improving their score in post-test when compared to pre-test. If they are taking pre-test and post-test user can easily determine their improvement by using the application

Fig 1: Component Diagram

The user is connected to the admin to take tests and practice tests for learning the formulas effectively. The admin and the user are connected to the system and the system is connected to the database for the required information. The database is connected to the system to give the outputs to the user.

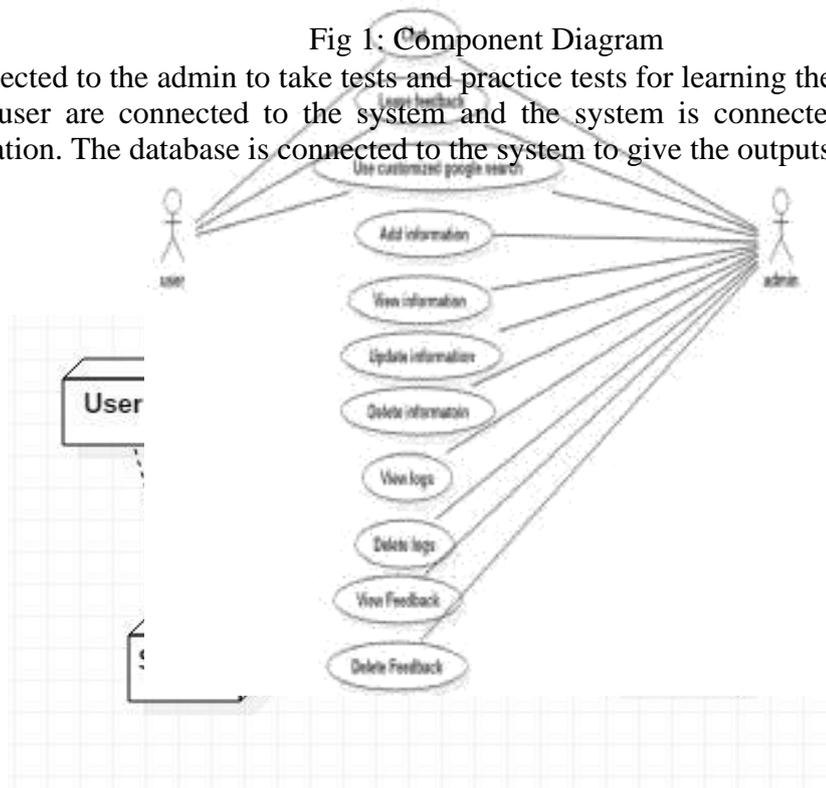


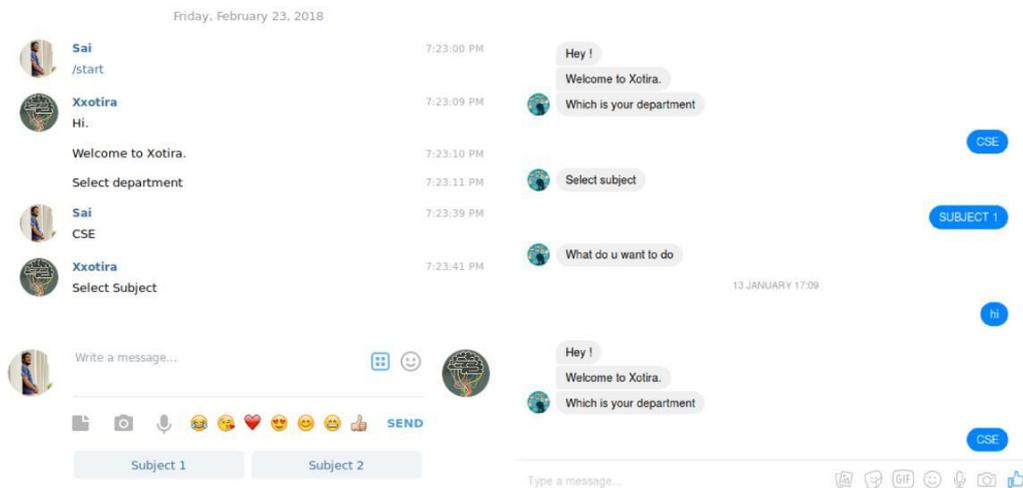
Fig 2: Deployment Diagram

The user is connected to the admin to practice questions. The admin is connected to the system and the system is internally connected to the database to acquire the required data for the student to access.

Fig 3: Usecase Diagram

The two actors are the users and the admin who can work together and improve their memorizing skills. The user can interact with the admin with the help of bot, they can leave feedback to the admin for their services and can ask for customized questions according to their requirements. The admin can add information, view the information, update the information and delete the information if the data is not in use.

Result and Discussion:



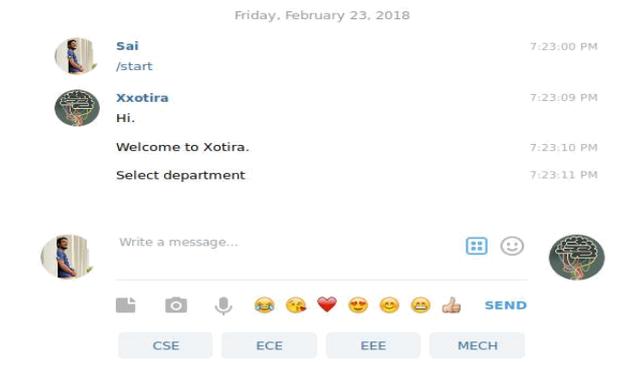


Fig 4: Test Results

This is the chat interface where user and students interact with the Artificial assistant. Users can interact with Xotira as they are interacting with humans.

CONCLUSION

Xotira is an Artificial assistant which allows students to take test and practice the mathematical formulas, remember and apply them in an effective way, whereas Khan Academy is the website which provides the video lectures. As Xotira is integrated into social media applications, it can be accessed even with the low Internet connection (2G, 3G). It is very user friendly as everyone uses the social media applications.

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