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Chatbot For Children Assistance

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Abstract: ***Children of age 3 to 7 are unaware of language and they face trouble while learning new things so this chatbot application is designed for them to make their start towards learning easy and in interactive way. This application will help them to learn basic things required in daily life and also will entertain them. This application is helpful to enhance their skills. This is designed to provide an interactive learning medium which results in fast progress of child.***

A chatbot is artificial intelligence (AI) software that can simulate a conversation (or a chat) with a user in natural language through messaging applications, websites, and mobile apps or through the telephone. A chatbot is often described as one of the most advanced and promising expressions of interaction between humans and machines. Machine Learning and artificial intelligence are fast growing technologies and are used in any area to make human activities easy and fast. Chatbots are way more than simple conversational agents. They can be connected to various APIs which will for example enable them to deal with a wider range of children requests.

Multifunctional chatbot assistance built using this technology will help children in day to day activity. During 19 pandemic some issues are raised as big concern one of them is children health and growth. Parents are unable to give their proper attention to their child due to work pressure, work from home.

Chatbot assistance will help them out in daily activities and give guidelines which will beneficial to their health and growth. Chatbot will work as their study partner.

Keywords: Python, Artificial Intelligence

I. INTRODUCTION

During Covid 19 Pandemic for online study of primary school students Government of Maharashtra developed a whatsapp chat assistance called “Convegenius”. It was beneficial for student during weekly test as it was interactive. Students got familiar with it easily. There is no any other such application available for students below age of seven which help them in study and their daily activity. So we propose making of a voice chatbot for children of age group 3 to 7 to assist them in their activity and bind them to study with entertainment. And the main motivation we found that the majority of a chatbot users it gives a motivation for using a chatbot. It was very effective and efficient to use. Machine Learning and artificial intelligence are fast growing technologies and are used in any area to make human activities easy and fast. Multifunctional chatbot assistance built using this technology will help children in day to day activity.

Children assistant is very useful for children and it is very innovative for them. It facilitates help to do daily work of children and their studies also. This is

Help children to solve their different questions and also solve health issues between them .It is also helpful for their parents to overcome the care for their children. At present, children are also familiar with the every technology so, our project is very helpful for them to make their entertainment medium helpful.

II. LITERATURE REVIEW

Today virtual assistance are boosting technology and are used in various field. They are easy to install and access so used widely due to their flexibility. While studying Chatbot system we found that it would be beneficial for children as they love interactive sessions. So we studied different research paper on various chatbot applications to understand basic concepts and terms related to chatbot. As per [1] Author has developed smart college chatbot using machine learning and python as a channel for information distribution. This project will investigate how advancements in Artificial Intelligence and Machine Learning technology are being used to improve many services. For human language processing they used Natural Language Processing (NLP) (“NLP: ability of computer to understand, analyse, manipulate, and potentially generate human language.”). For some features they have also focused on Artificial Intelligence Mark-up Language (AIML) (“AIML: AIML is an XML dialect for creating natural language software agents”).

As per [2] author has focused on design and development of an intelligent voice recognition chatbot. The paper presents a technology demonstrator to verify a proposed framework required to support web based bots. This online chat system follows client server approach. Voice recognition process has two parts capturing and analysis of input signal which allows the server to generate response faster. When comes to health generating response is more crucial and needs the high accuracy in

As per [3] we studied the chatbot system for conversational healthcare service. In project the way they have distributed tasks and deep analysing of data was quite impressive. They have made the module to understand user which is beneficial in response generation.

As per [4] author has focused on dialog management approaches and tools with respect to the different aspects like capability of creating natural, robust and complex dialogs, convenience for developers, scalability, reusability. On analysing these goals they had proposed the dimensions of analysis such as dialog structure, learning, error handling, dependencies, control, domain independence, and tool availability.

As per [5] author has outlined interpersonal assistants as a promising model that conversational agents may evolve. They also mentioned some elicited key functional elements for always-on services running on resource-scare devices. This helped to understand how to keep our assistant always active in proper manner.

As per [6] - this paper illustrate a web based infrastructure of architecture for conversational agents equipped with a modular knowledge base. It focuses on the enhancement of the agent interaction capabilities. From paper we study about web based chatbot and their infrastructure.

As per [7] author G. Pilato, A. Augello and S. Gaglio, in paper "A Modular Architecture for Adaptive ChatBots," has illustrated architecture for a conversational agent based on a modular knowledge representation. This paper focus on accurate response for query in effective manner to make conversation more attractive.

As per [8] automatic chatbot knowledge acquisition method from online forums is presented in this paper. It includes a classification model based on rough set and the theory of ensemble learning is combined to make decision.

As per [9] this paper presents a survey on similarities, differences, and limitations of the existing chatbots, it also presents a survey on existing chatbots and techniques applied on it. This gives the clear idea of continuous evolution of chatbot assistant. This paper helps us to understand current limitations of chatbot system. Also we got the knowledge various technology used in different types of chatbots.

This paper [10] "Review on Implementation Techniques of Chatbot," provides a critical review of chatbots and the current strategies are executively explored and talked discussed. This paper is also based on comparison of different chatbots implementation techniques. From paper we get idea for better implementation of chatbot.

III. METHODOLOGY

A. System Overview

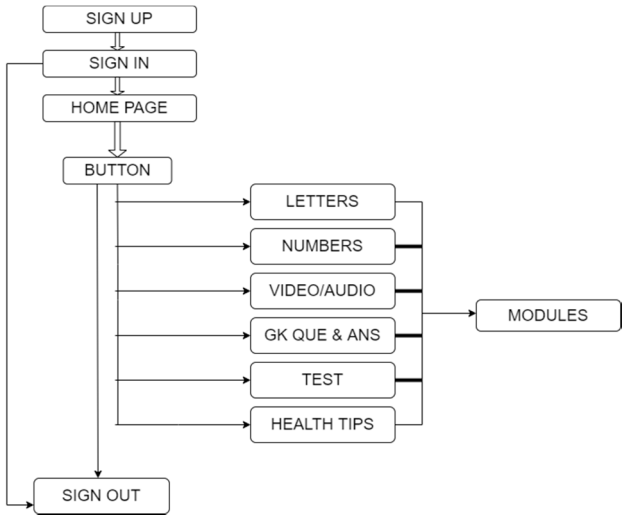


Fig.1 Data Flow Chart

Above mentioned figure explain about data flow in system. This data flow diagram shows the actual working of system.

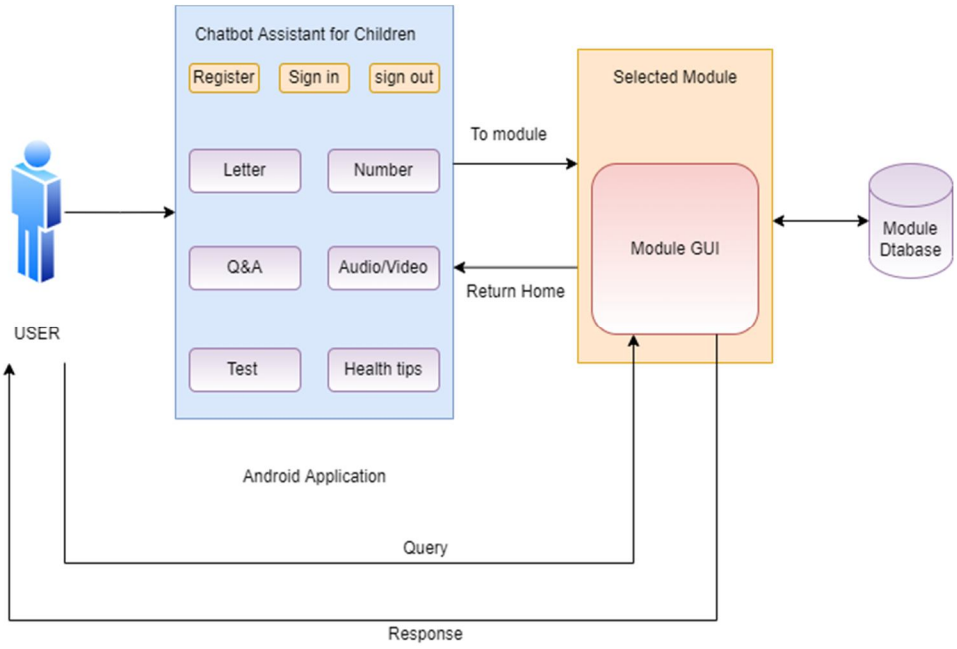


Fig.2System Architecture of Application

This is our overall system design. We build a refined chatbot system which will assist children of age group 3 to 7 in their daily activity. This system work as their guide, and motivator which will solve their doubt. This chatbot application will be their study partner and help them out in interactive way. It will be their entertainment medium, which entertain children by playing poems and stories.

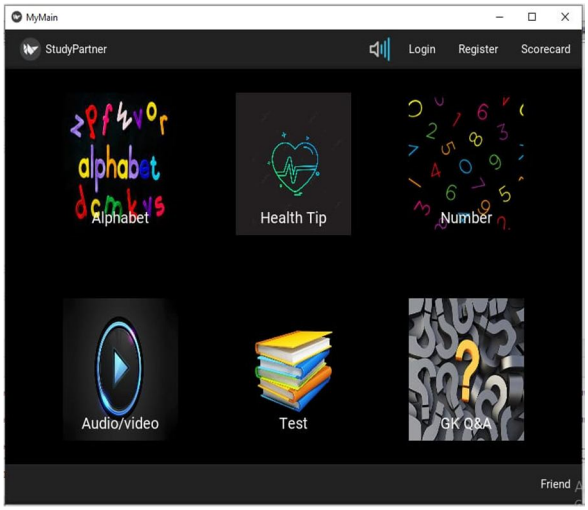
B. Software Modules

1) *Alphabet:* When user click on alphabet button this module will provide capital and small letters. In alphabet module there are 26 alphabets A-Z which are in two cases that are capital and small. Each alphabet having with the picture of the object which initials from that letters. As we click on any of alphabet then it speaks the pronunciation of alphabet. For example “A for Apple”. So, it become easy to understand the children.
2) *Numbers:* When clicking on number button this module will run and provide particular range of numbers. When click on any of the number then it display on the screen and speak the pronunciation of that number. So it helps children to pronounce numbers correctly.
3) *GK Question & Answer:* This module is based on Wikipedia and will provide the answers of asked question from internet and help them solve their doubts. When clicking on question and answer button this module open the one GUI. In this user can ask any question like a “What is a fish?”, “Who is a Narendra Modi?” then bot speak the answer and also display it on screen. This module will provide how much information available on Wikipedia only those information display on the screen.
4) *Video/Audio:* Video is the best medium of entertainment but watching video on different media site has no restriction so we created a media player which will provide only relevant content like poem video story which are best for children. On clicking video/audio button this module is invoked and will provide the video which is stored in database. Those videos are poems, stories, and children songs.
5) *Test:* When user invoke the test module we give a four types of tests that are Alphabet Test, Number Test, Maths Test, Google Test. Alphabet Test and Number Test both are like fill in the blanks. In Maths Test we will provide two type of test, first is addition of numbers and second is subtraction of numbers. And last is Google Test when clicking on this button the test is open in a Google form.
6) *Health Tips:* Living healthy lifestyle can prevent chronic diseases and long term illnesses being healthy should be the part of our lifestyle. So to make children health conscious we provide some Health Tips to them which are related to their hygiene, diet and habits.

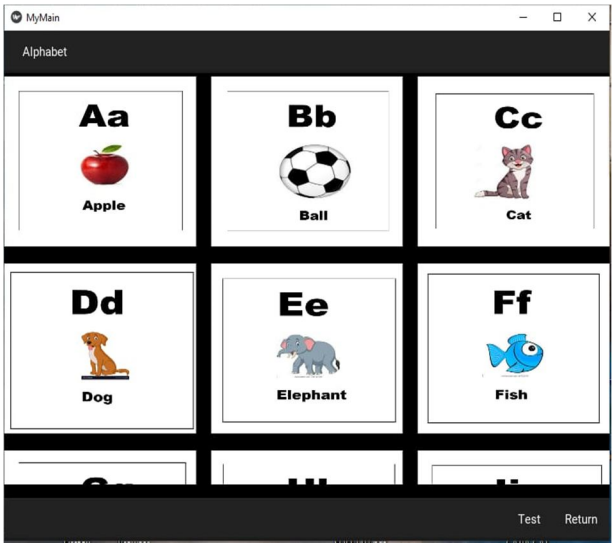
As we click on health tips module then it displays the health tips with picture randomly. And also pronounce the health tips.

IV. RESULTS AND DISCUSSION

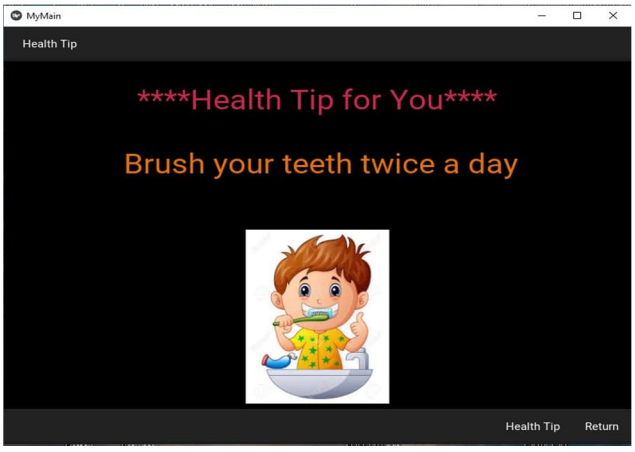
A. *Software Results*



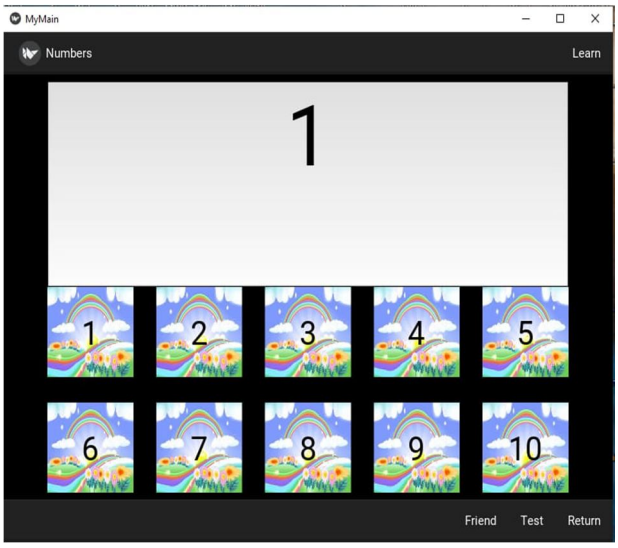
Main Screen



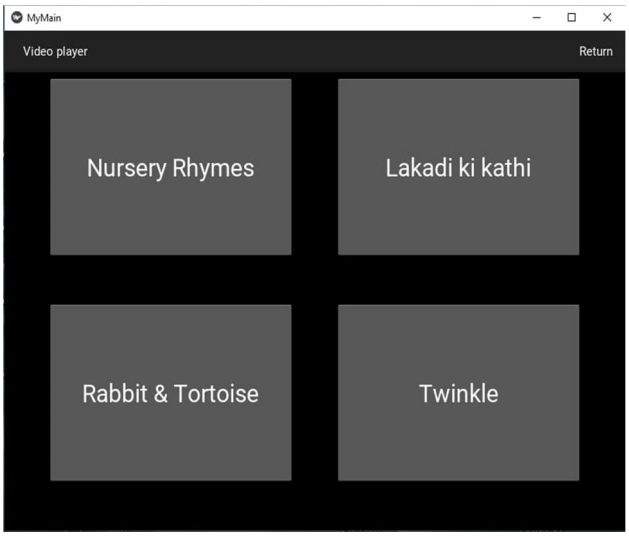
Alphabet Module



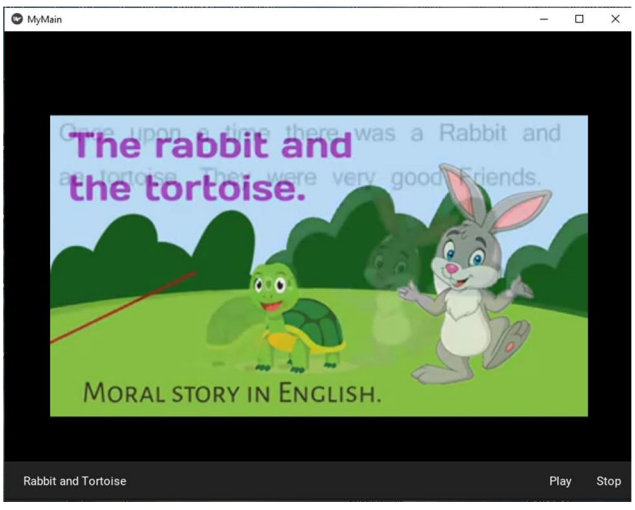
Health Tips Module



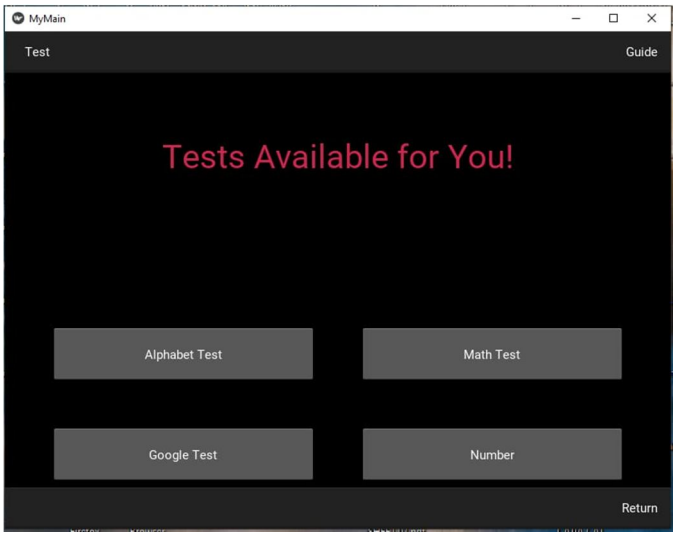
Number Module



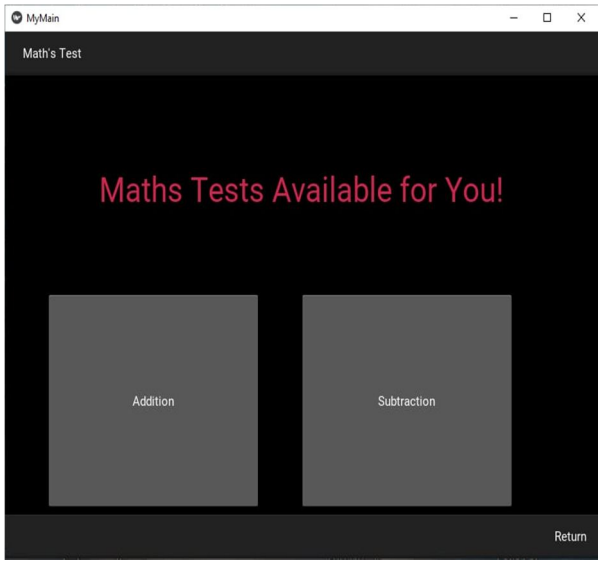
Video and Audio Module



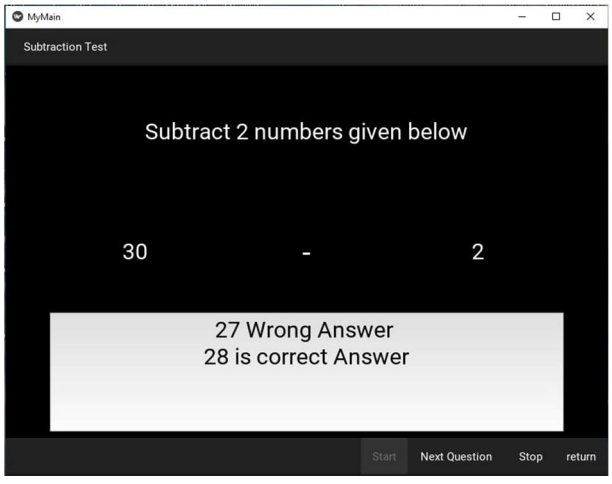
Video Player



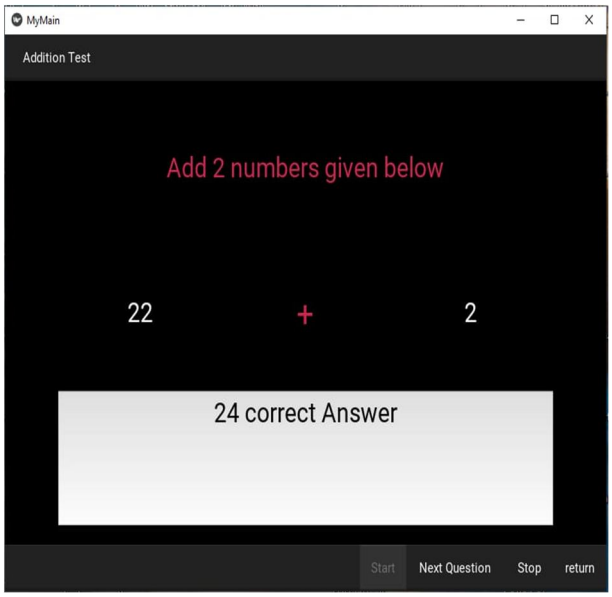
Test Module



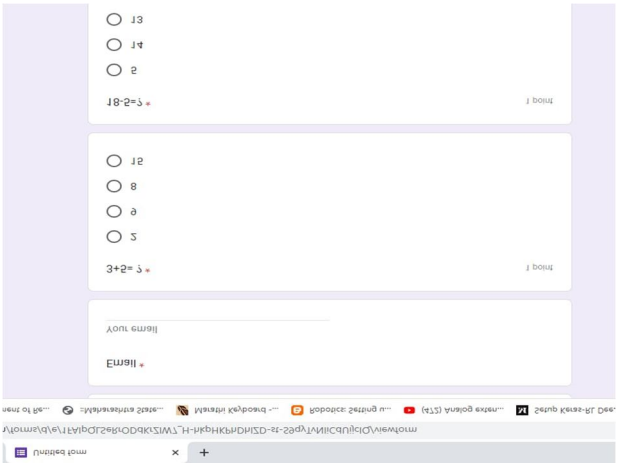
Maths Test



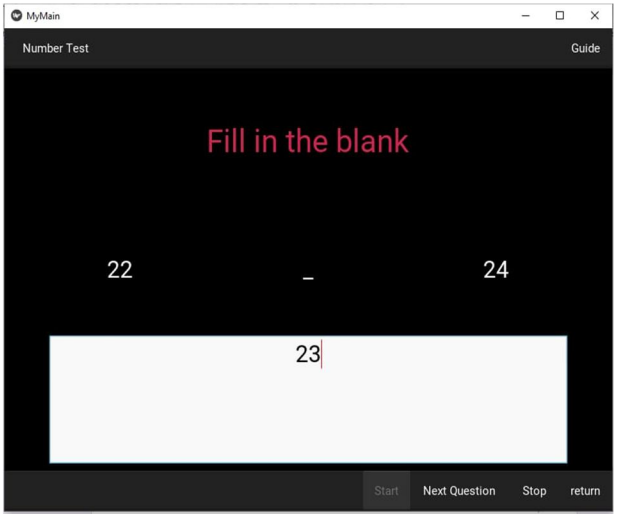
Subtraction Test



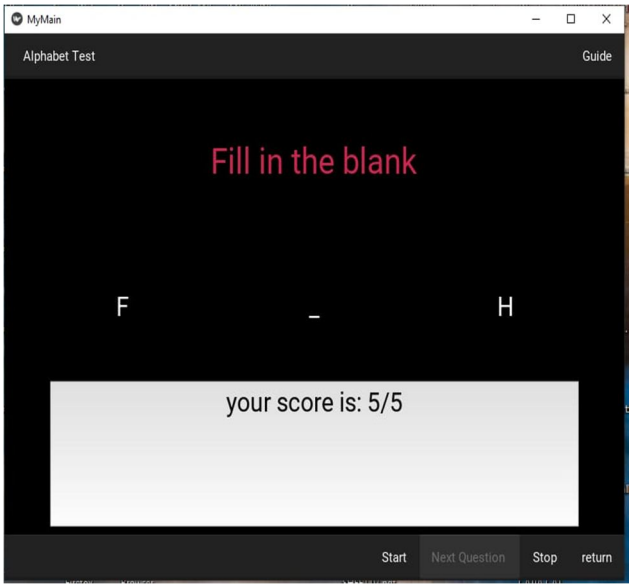
Addition Test



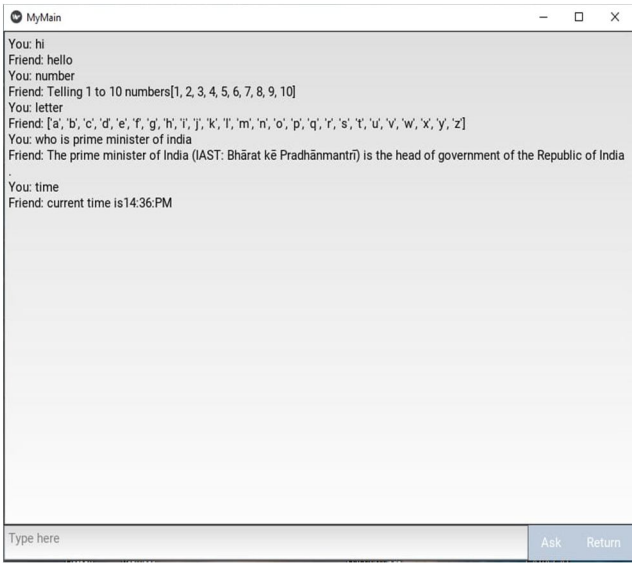
Google Test



Number Test



Alphabet Test



Friend

V. CONCLUSION

Chatbot assistant or virtual assistant are fast growing technologies having large impact on different industries. We have variety of virtual assistant available in market which helps to reduce the human efforts as they are self-learners from conversation and automated. There is no need to invest our time in their tasks as once it started learning it start becoming better and better.

While building a chatbot first we have to create proper sequence of conversation as it is the heart of system. With proper flow of dialog system becomes more attractive. Choosing correct technology is crucial part of building a chatbot. We have make our system with respect to current technology used in industry and update its functionality to make it compatible with respect to time. Also the starting and ending of conversation is important to make impression on user. We have to focus on requirement of end user and try to fulfill them. Adding feelings and improve relevant answers is must to make chatbot appear as real person.

We created a chatbot which focus on interaction with children in both way voice and written on different topics. It is helpful in doubt solving which they face in daily activity. We build a chatbot application with various tests such as alphabet, number, Google and also math's test on addition and subtraction.

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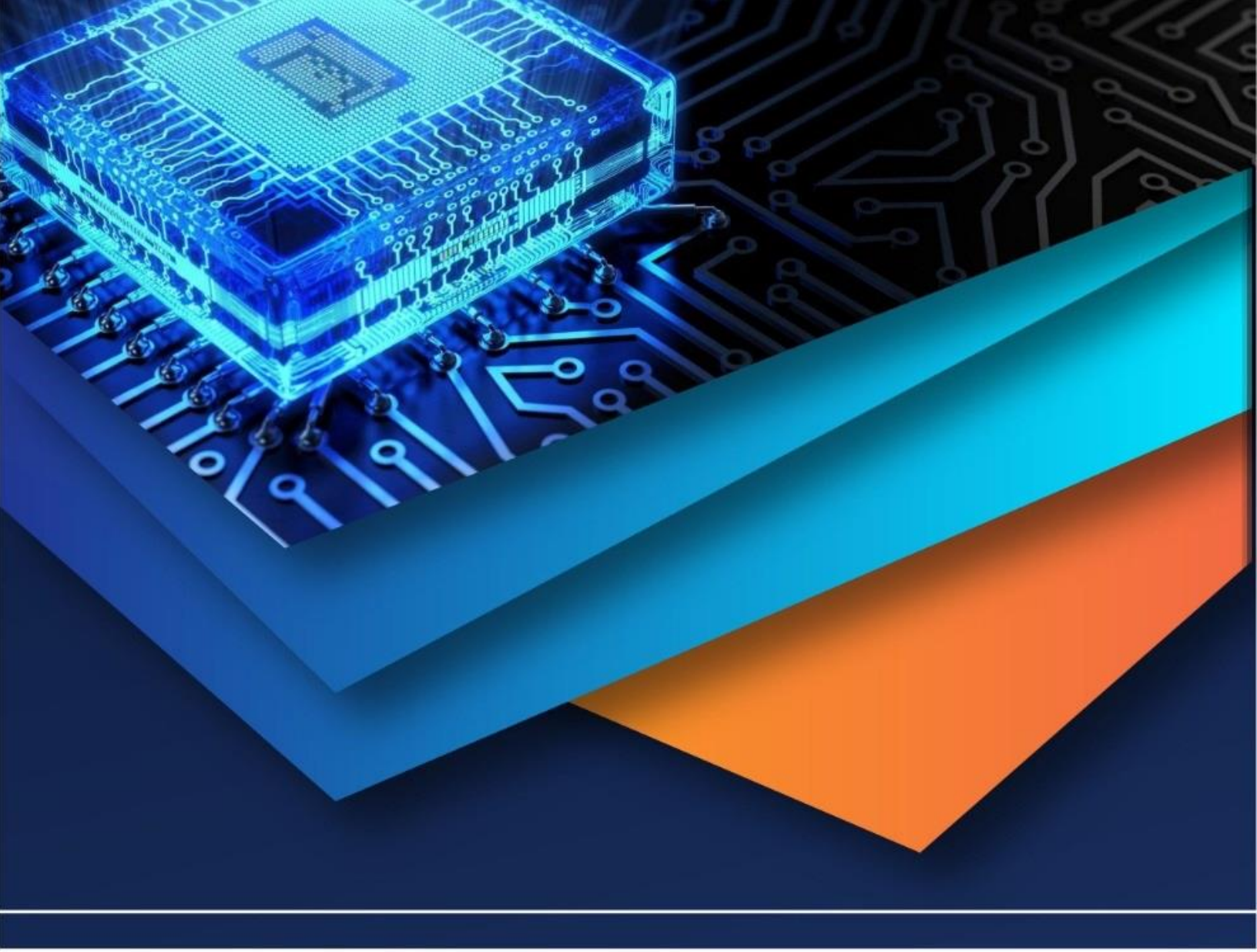

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