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Virtual Assistant using Java

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ABSTRACT : As we are moving into a modern era, technology has made great progress. Our daily tasks are made easier. Some infamous voice assistants already exist. For eg. Alexa, siri, cortana, etc. Our voice assistant can work as a simple calculator, notepad, messaging, music player, etc .Our aim for creating this voice assistant is to complete small tasks for humans and save time. It takes input from the microphone and changes into machine language.

KEYWORDS : Virtual; Assistant;

I. INTRODUCTION

Virtual assistants are basically software programs that helps to ease our day to day tasks like making calls, creating reminders, showing weather reports, making shopping lists and many more. Virtual assistants can take commands either by text or voice. Assistants that take input by voice use command interpreter to convert our voice into computer language.

Why are virtual assistants popular? Let's examine just one industry that frequently uses virtual assistants – the customer service industry. Customer service industry spends almost $5000 per agent. This leads to an annaul loss in billions in the US alone . Because of that virtual assistants were used to solve such problems.

You might have already interacted with virtual assistants while surfing on some websites. This is because virtual assistants are gaining popularity among the businesses. The chatbots interact with the customer and provide desired service or product making the process time saving and less complex.

II. METHODOLOGY

Working:-We divide methodology in two parts: knowledge abstraction and response generation. Knowledge abstraction involves three phases: gathering, manipulation and augmentation. These phases are mostly independent from the content of the chatbot.The first step is to generate a knowledge base. This step involves finding key concepts of the course and gathering information about them.Virtual Assistants for Education .The second step is to store this information in a database. This will enable developers to manipulate data. For instance, developers can cre-ate two spreadsheets, one with the syllabus of the course ordered by topics andaccompanied by the most relevant concepts of each topic, and another spreadsheet with the set of questions found in a discussion forum together with their answers. Then, they can classify each question with its corresponding topic by looking for the keywords aka the concepts contained in the first spreadsheet within the question or the answer strings. This consists technically in the implementation of a classification algorithm that labels each question-answer pair.Data manipulation can be taken to another level by introducing data augmentation. This can increase the number of training examples available for the natural language processing model within Dialog flow. Using the intents, one can lookup for correlations between questions and answers that be-long to the same intent.These correlations can be pictured as keywords (also called entities) in common,and they can be extracted to be later used to produce more training examples.In other words, sometimes answers themselves can be used to produce questions,and these questions should belong to the same intent.

Hardware requirements:-

Laptop Windows10

Software requirements:- Eclipse Jdk

Use of the website:- www.java.com

Need of the website:-www.youtube .com

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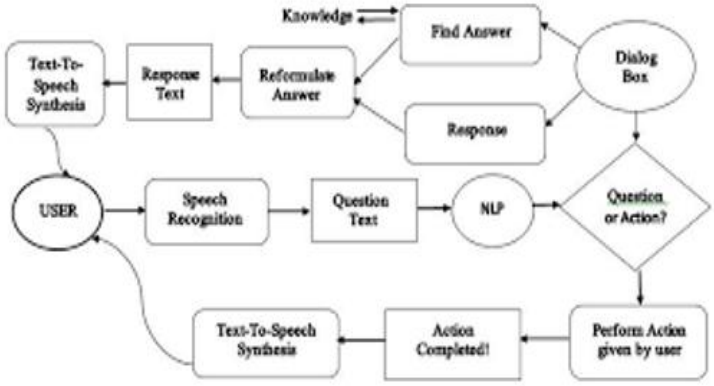
III. MODELING AND ANALYSIS

DATA FLOW DIAGRAM-



The above fig. shows the workflow of the basic process of voice assistant. Speech recognition is used to convert the speech input to text. This text is then fed to the central processor which determines the nature of the command and calls the relevant script for execution.

At the beginning the system is at rest. It requires a wake up word to start execution. After , it interprets the command and gives desired output.

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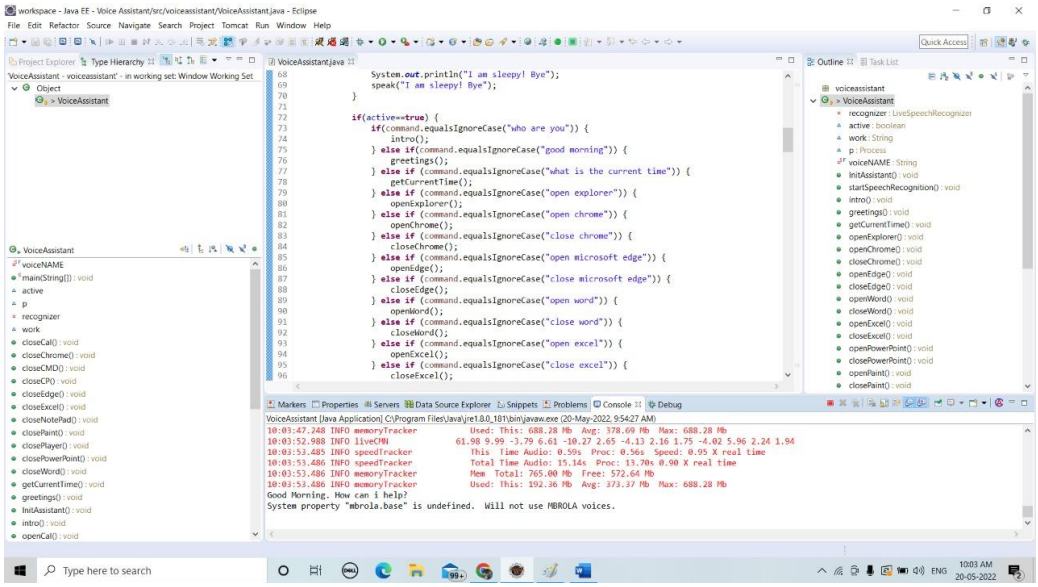
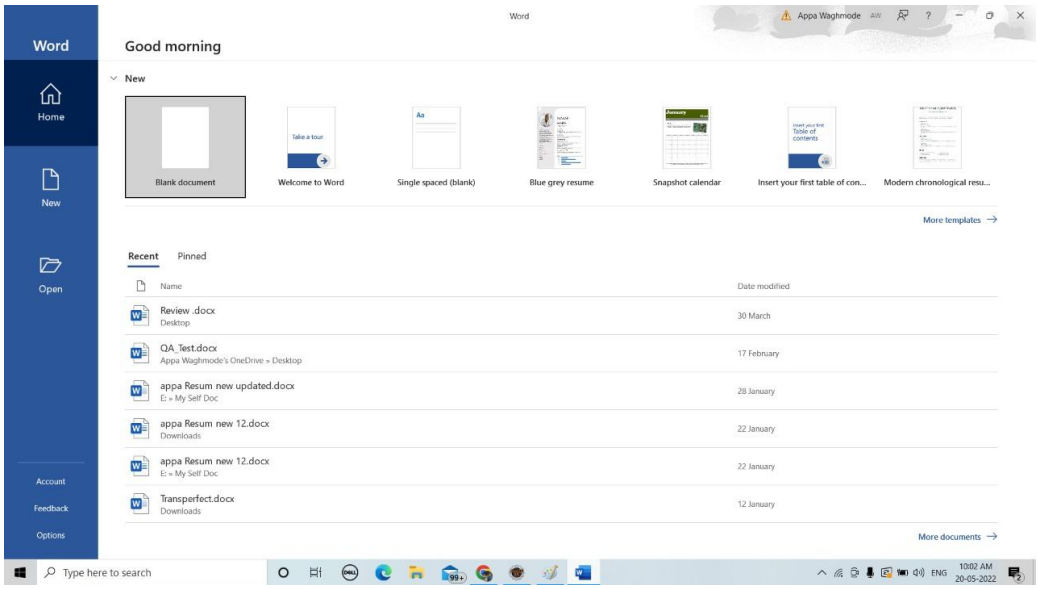
IV. RESULT





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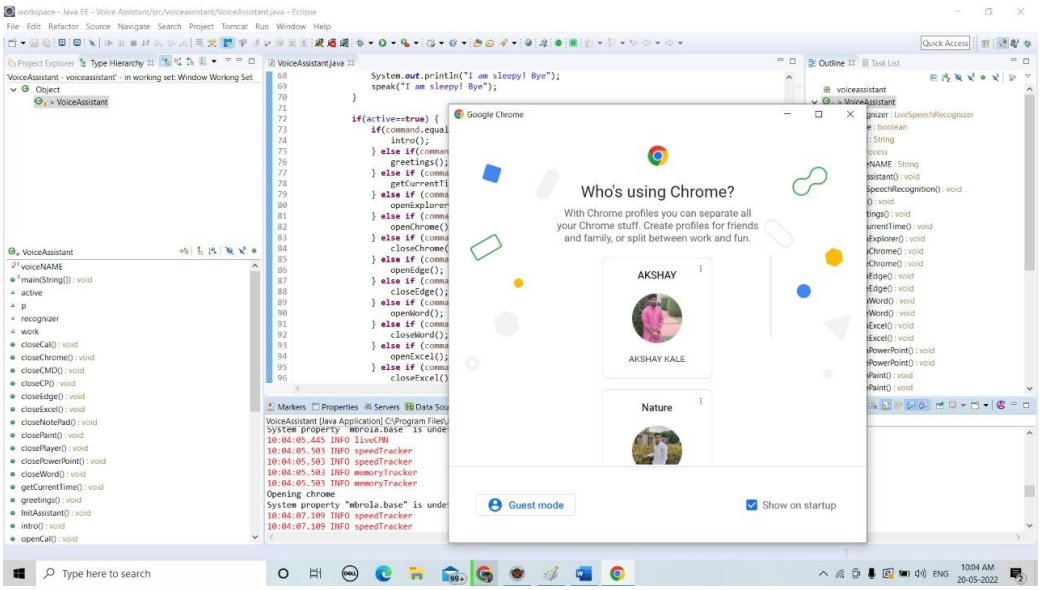

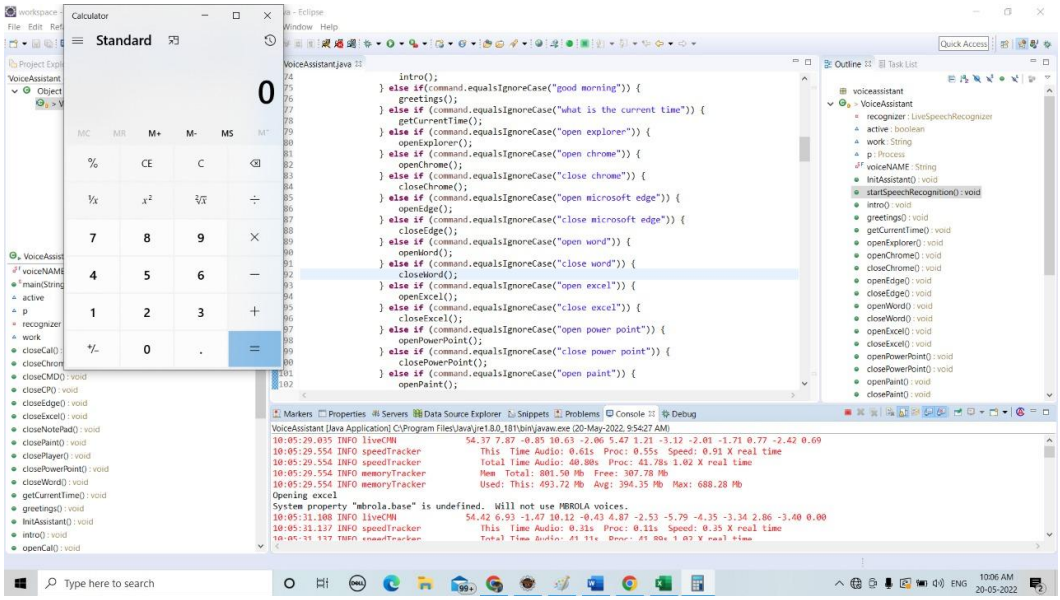

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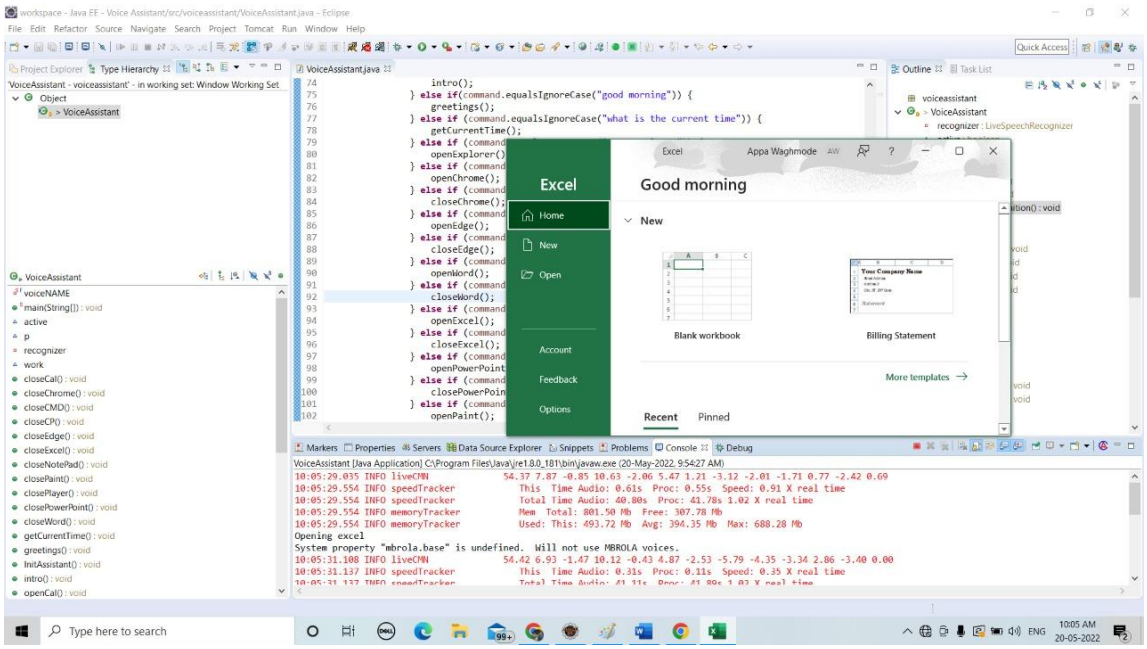

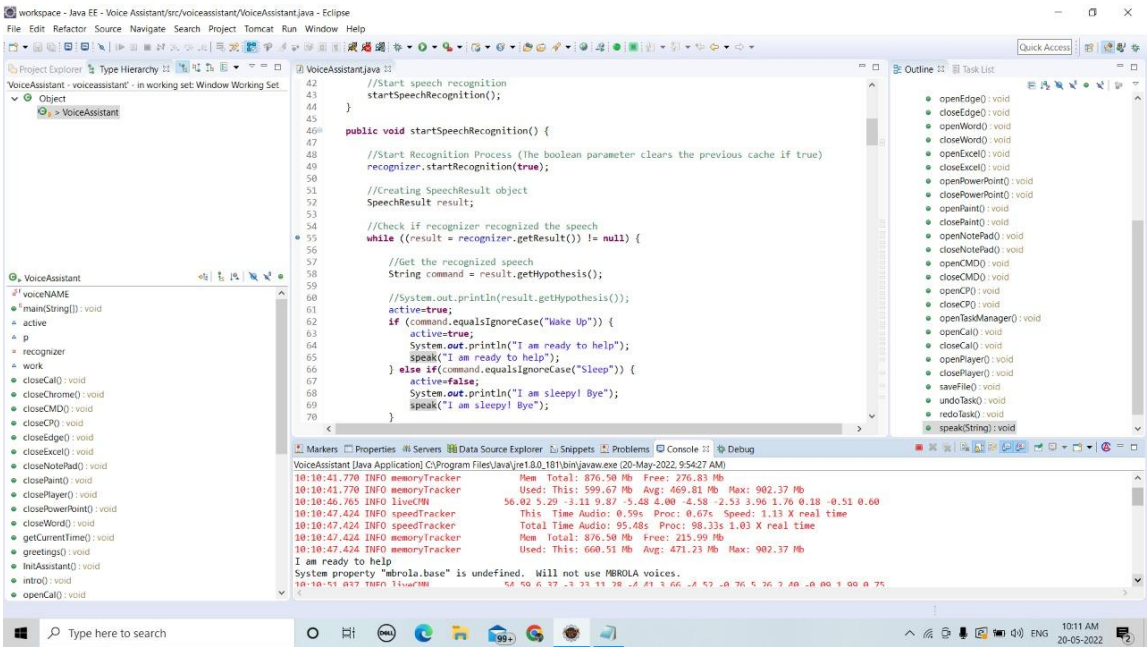

V. CONCLUSION

Voice based assistants uses Natural Language Processing to process the language spoken by the human and understand the query and process the query and respond to the human with the result. The understanding of the device means Artificial Intelligence needs to be integrated with the device so that the device can work in a smart way and can also control IoT applications and devices and can also respond to query which will search the web for results and process it.Through this voice assistant, we have automated various services using a single line command. It eases most of the tasks of the user like searching the web,retrieving weather forecast details, vocabulary help and medical related queries.The devices can also be designed to accept commands in bilingual language and respond back in the same language queried by the user.The device can also be designed to help visually impaired people.

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