EVA-PERSONAL VOICE ASSISTANT

A Project Work

Submitted in the partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

IN

CSE-BIG DATA

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APRIL, 2021

DECLARATION

I, **Vikas Kumar Nehra**, student of **Bachelor of Engineering in CSE-Big Data**, **session: 2019/2023**, Department of Computer Science and Engineering, Apex Institute of Technology, Chandigarh University, Punjab, hereby declare that the work presented in this Project Work entitled **EVA-PERSONAL VOICE ASSISTANT** is the outcome of our own bona fide work and is correct to the best of our knowledge and this work has been undertaken taking care of Engineering Ethics. It contains no material previously published or written by another person nor material which has been accepted for the award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgment has been made in the text.

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ACKNOWLEGDEMENT

I take this opportunity to express my profound gratitude and deep regards to my teacher **Dr.Rajiv Kumar** for their exemplary guidance, monitoring and constant encouragement throughout the course of this project. The blessing, help and guidance given by them time to time shall carry me a long way in the journey of life on which I am about to embark.

Abstract

Voice assistants are programs on digital devices that listen and respond to verbal commands. A user can say, "What's the weather?" and the voice assistant will answer with the weather report for that day and location. They could say, "Tell me a story," and the assistant will jump into a tale. The user could even say, "Order my favourite pizza," and dinner will be on its way! Voice assistants are so easy to use that many people forget to stop and WONDER how they work. How do voice assistants understand us? Is it magic? A complex system of codes? An actual person listening on the other end? The answer is less complicated than you might think. The application works like Siri, Google Assistant etc. The U.I of the application is self-explainable and very minimum. It takes voice as input. The system is being designed in such a way that all the services provided by the mobile devices are accessible by the end user on the user's voice commands.

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INTRODUCTION

1. Problem Definition

We are all well aware about Cortana, Siri, Google Assistant and many other virtual assistants which are designed to aid the tasks of users in Windows, Android and iOS platforms. But to our surprise, there's no such virtual assistant available for the paradise of Developers i.e. Linux platform. And it Works on Windows too

As a personal assistant, EVA assists the end-user with day-to-day activities like general human conversation, searching queries in various search engines like Google, Bing or Yahoo, searching for videos, retrieving images, live weather conditions, word meanings, searching for medicine details, health recommendations based on symptoms and reminding the user about the scheduled events and tasks. The user statements/commands are analysed to give an optimal solution.

2. Project Overview and Specifications

As technology evolves, the ways people interact with it also changes. Think about how internet searches have become easier. It wasn't long ago that an internet search had to be very specific and would often yield strange and unrelated results. Now, it seems like search engines, such as Google, can almost read your mind and know exactly what you are looking for. Engines understand context and the intent of your search.

Artificial intelligence assistants have also evolved. Early on, text was the only way to interact with an assistant app (typing in a phrase triggered a response). Now, voice has taken over.

Voice assistants don't really "understand" what you're saying — they just listen for their wake word and then begin communicating with a server to complete a task. NLP is a form of artificial intelligence that helps technology interpret human language.

As a personal assistant, EVA assists the end-user with day-to-day activities like general human conversation, searching queries in various search engines like Google, Bing or Yahoo, searching for videos, retrieving images, live weather conditions, word meanings, searching for medicine details, health recommendations based on symptoms and reminding the user about the scheduled events and tasks. The user statements/commands are analysed to give an optimal solution.

SYSTEM ANALYSIS

Problem Statement

The voice assistant is design to make the work easier of the user. As user can give command to them without making visual access to the screen. The biggest disadvantage of this system is that confidential data can be accessed by unauthorised user so the privacy can be breached. Due to this, the confidentiality, integrity and availability (CIA) of user data is affected. Looking to this problem We made a voice assistant Which do not Store users personal Data .

Proposed System Feature

1.Python provides a large standard library which includes areas like internet protocols, string operations, web services tools and operating system interfaces. Many high use programming tasks have already been scripted into the standard library which reduces the length of code to be written significantly.

2. Python has clean object-oriented design, provides enhanced process control capabilities, and possesses strong integration and text processing capabilities and its own unit testing framework, all of which contribute to the increase in its speed and productivity. Python is considered a viable option for building complex multiprotocol network applications.

3. A text-to-speech (TTS) system converts normal language text into speech. Synthesized speech can be created by concatenating pieces of recorded speech that are stored in a database. The output is given in the form of speech.

4. This Voice Assistant can benefit large number of users with universal eyes free and hands free voice control of their mobile devices. Its framework may help to shape future voice control devices.

Hardware Specifications:

1.A Computer

2.A Mic

3.A Speaker

Software Specifications:

1. A graphical OS.

2. Python With Modules

TECHNOLOGIES USED

The basic requirement for this project. You'll need Python 3.6. We'll be using the pyttsx3 package which is a text-to-speech library for Python. The basic reason why we use this is because it works offline. Another basic requirement of this project will be Python's Speech Recognition library

FRONTEND FRAMEWORK

- **Tkinter**
Tkinter is the standard GUI library for Python. Python when combined with Tkinter provides a fast and easy way to create GUI applications. Tkinter provides a powerful object-oriented interface to the Tk GUI toolkit.

BACKEND STACK

- **Python**

Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. Its high-level built in data structures, combined with dynamic typing and dynamic binding, make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together. Python's simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse. The Python

interpreter and the extensive standard library are available in source or binary form without charge for all major platforms, and can be freely distributed.

METHODOLOGY

The overall system design consists of following phases:

(a) Data collection in the form of user's voice
(b) Voice analysis and conversion to text
(c) Data processing

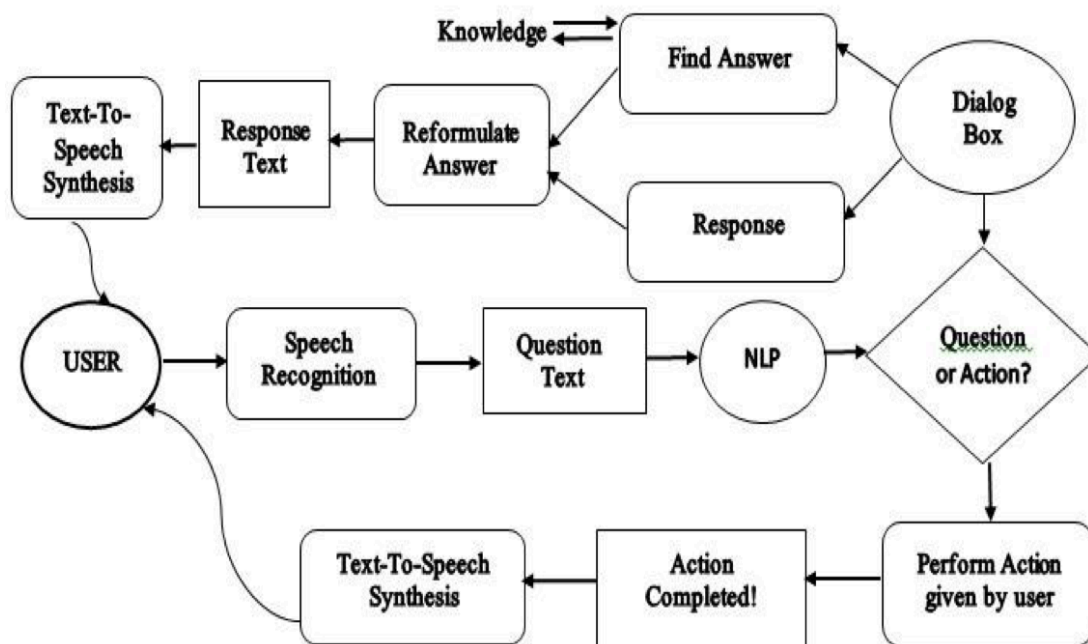(d) Generating the task to be done from the processed text output


Fig -1: Proposed Model of Eva Voice Assistant

Desktop assistant name is EVA it will have interface in which there will be two button start and exit. As soon as we start the application are application will tell us to wait till it is open and we have to click start to run the application after running the application are assistant EVA will ask that "how can I help you?". Then the user has to give the voice command to the assistant.
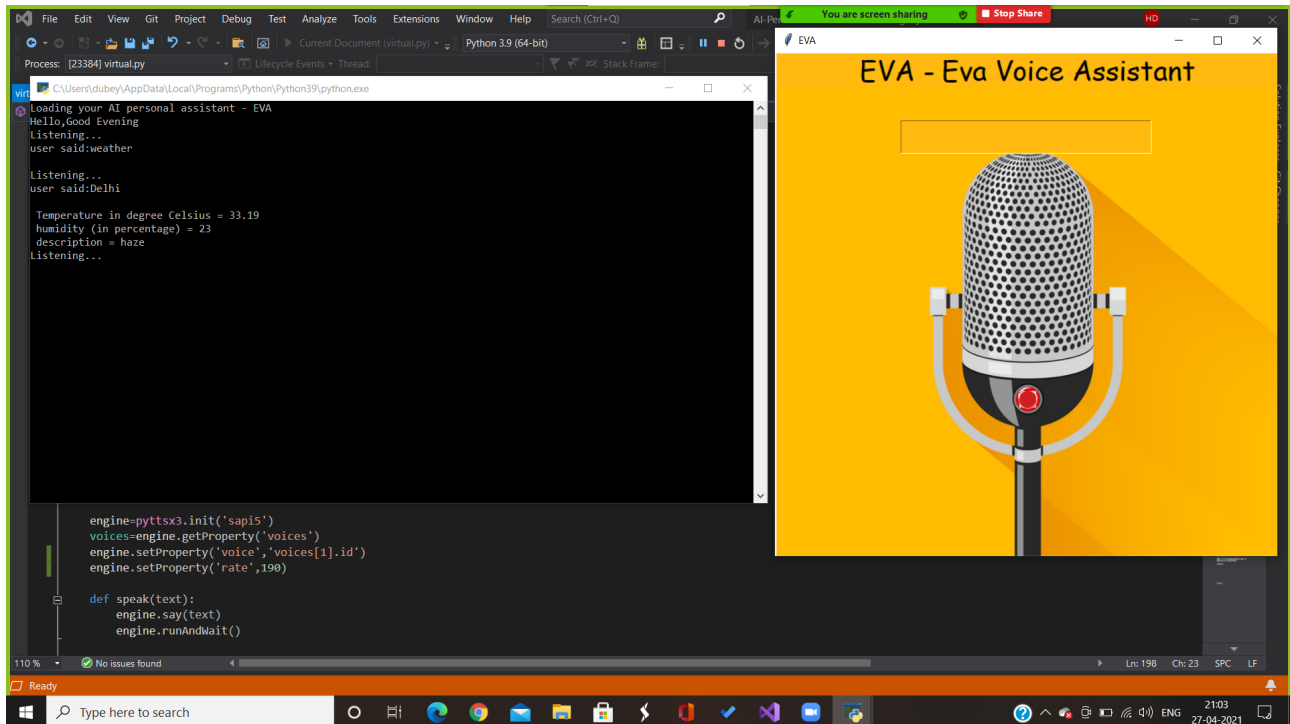
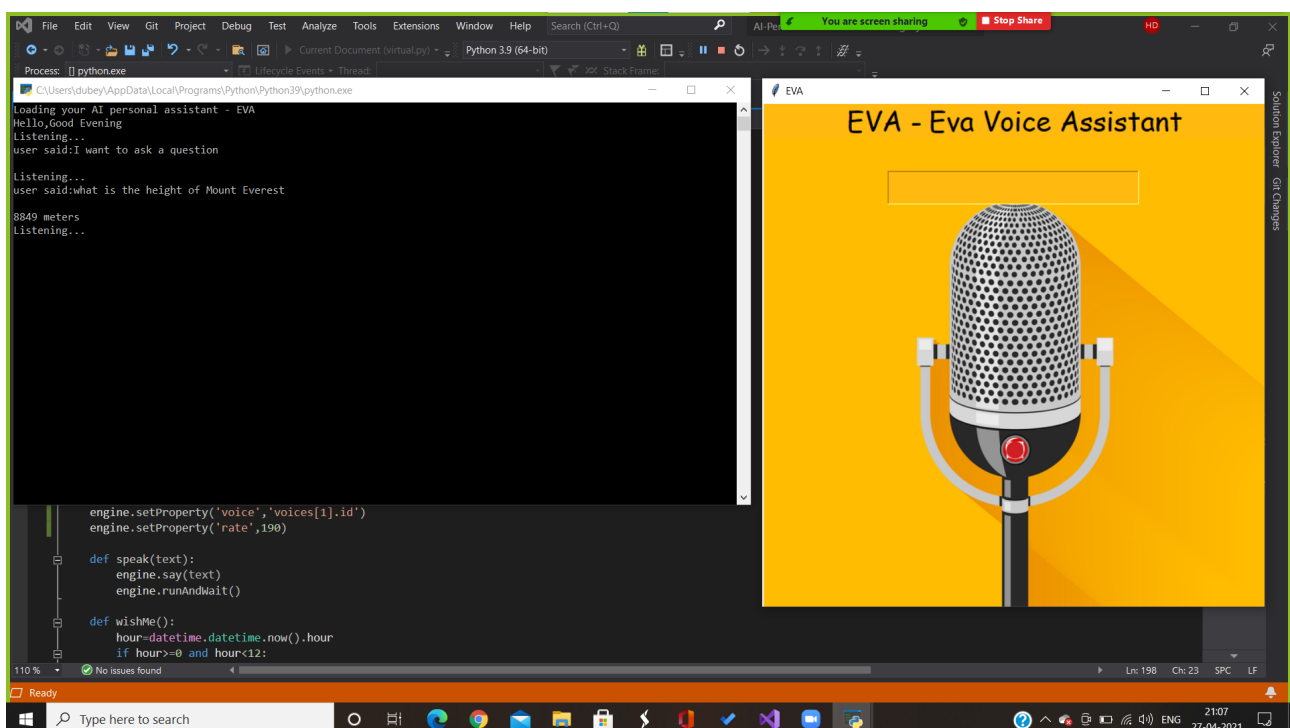If the user gives voice command "IPL Score", the EVA results with
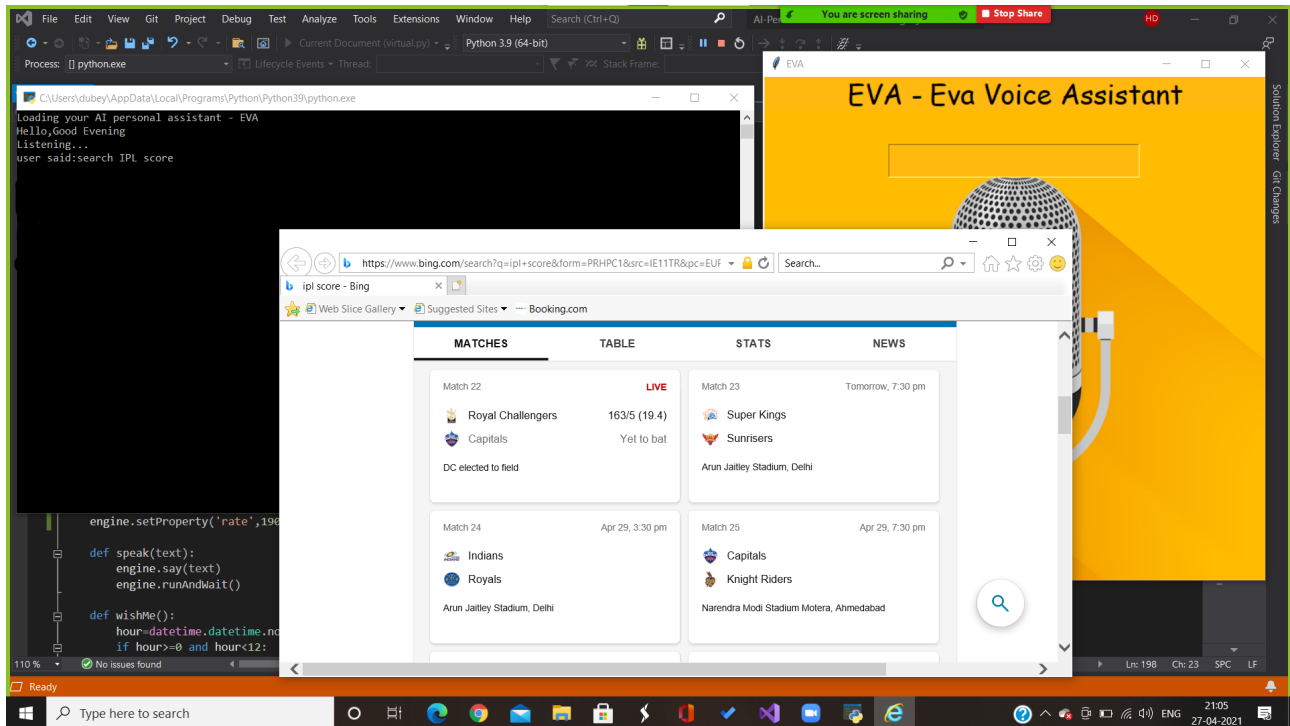
If the user gives voice command "open Netflix", the EVA results with
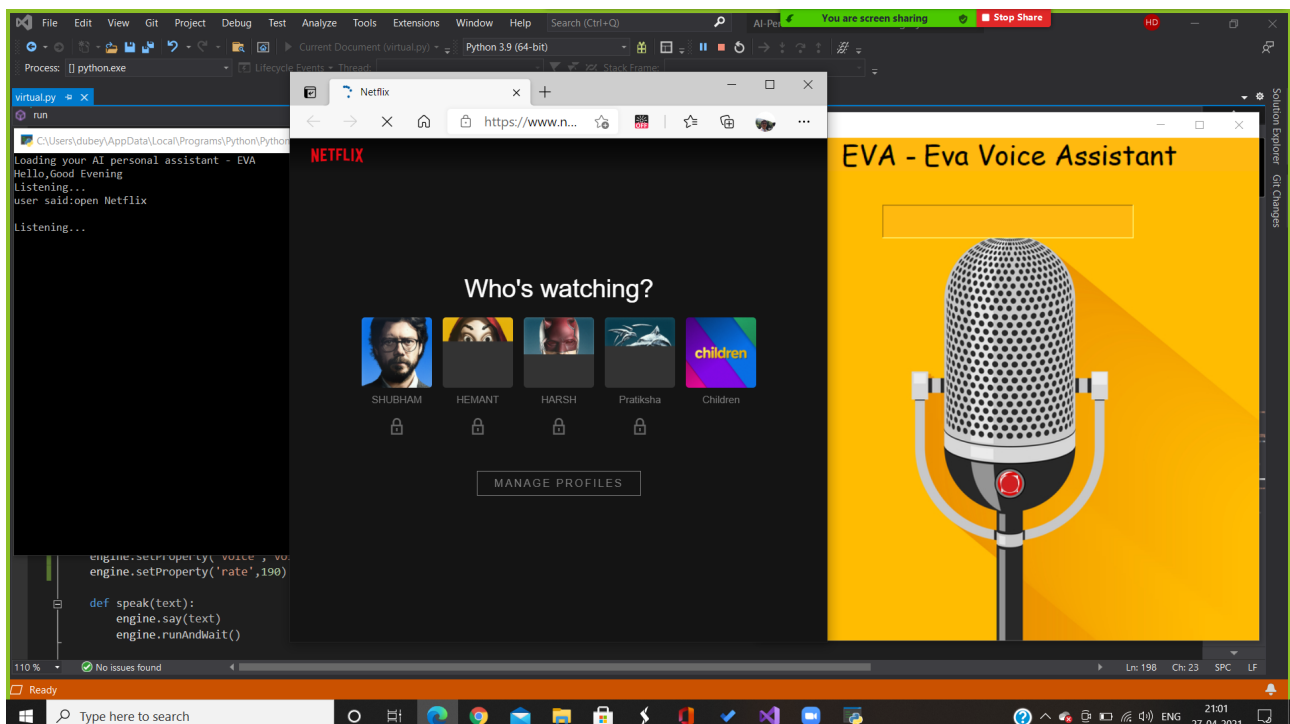
If the user gives voice command "Weather", the EVA results with

If the user gives voice command "What is the Height of Mount Everest", the EVA results with

Similarly, the assistant EVA is able to do the following tasks:

1. Open any website in the browser.

2. Send an email to your contacts.

3. Launch any system application.

4. Tells you present time.

5. Play you a song.

6. Stream Youtube

7. Tells you latest news.

8. Tells you Weather Report

9. Many More

FUTURE SCOPE

Presently, EVA is being developed as an automation tool and virtual assistant. Among the Various roles played by Jarvis are:

1.   Search Engine with voice interactions

2.   Medical diagnosis with Medicine aid

3.   Reminder and To-Do application.

4.   Vocabulary App to show meanings and correct spelling errors.

5.   Weather Forecasting Application.

There shall be proper Documentation available on its Official Github repository for making further development easy and we aim to release our virtual assistant as an Open Source Software where modifications and contributions by the community are warmly welcomed.

RESULTS AND DISCUSSION

This system is designed in such a method wherein the user can accommodate to it effortlessly. Our proposed system EVA – The A.I. a personal voice assistant can be implemented using speech recognition module that makes the system more secure and robust. It is the voice control application that provides enhancements to all applications running on a system by synthesising commands set from on- screen context. EVA can benefit large number of users with universal eyes free and hands free voice control of their system. Speech recognition technology is a key technology which will provide a new way of human interaction with machine or tools. The advantage of voice commands over multi-touch when interacting with a screen non-visually is that it does not require targets to be located and thus avoids the problems with pointing, it saves time. The sending of E- mail, and reading of News can be possible by the blind people also. This can do variety of tasks like tell you the time, open application, organised files, can gives updates of matches, play game, tell you the location, tell some jokes, open hackathon, do calculation, updates about the stock and the-endless tasks for the user. Thus making one's life comfortable and at the same time remotely accessible via voice commands.Due to support of NLP user can ask queries in very formal way. No need ask queries in very strict and specific way. The user should aware of general rules of English Language. The goal is to provide people a quick and easy way to have their questions answered.

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