

A Project Report
on
“STUDENT BUDDY”

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

B. Tech in Computer Science Engineering



(Established under Galgotias University Uttar Pradesh Act No. 14 of 2011)

Under The Supervision of -
Ms. Pragya Tiwari
Assistant Professor

Submitted By -

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SCHOOL OF COMPUTING SCIENCE AND ENGINEERING

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
GALGOTIAS UNIVERSITY, GREATER NOIDA
INDIA**

DECEMBER, 2021



**SCHOOL OF COMPUTING SCIENCE AND
ENGINEERING
GALGOTIAS UNIVERSITY, GREATER NOIDA**

CANDIDATE'S DECLARATION

We hereby certify that the work which is being presented in the project, entitled “**Student Buddy**” in partial fulfillment of the requirements for the award of the B.Tech in Computer Science and Engineering submitted in the School of Computing Science and Engineering of Galgotias University, Greater Noida, is an original work carried out during the period of month, Year to Month and Year, under the supervision of Ms Pragya Tewari, Assistant Professor, Department of Computer Science and Engineering, of School of Computing Science and Engineering , Galgotias University, Greater Noida

The matter presented in the project has not been submitted by us for the award of any other degree of this or any other places.

Manish Kumar, 20SCSE1290075
Shruti Kapoor, 20SCSE1290083

This is to certify that the above statement made by the candidates is correct to the best of my knowledge.

Pragya Tiwari
(Assistant Professor)

CERTIFICATE

The Final Project Viva-Voce examination of **Manish Kumar, 20SCSE1290076 and Shruti Kapoor, 20SCSE1290083** has been held on _____ and his/her work is recommended for the award of **B.Tech in Computer Science and Engineering**.

Signature of Examiner(s)

Signature of Supervisor(s)

Signature of Project Coordinator

Signature of Dean

Date: December, 2021
Place: Greater Noida

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Abstract

Technology is having ability to change the world in a new way as we see in our daily lives, doing tasks, managing things, etc. It has been proven in making things trouble-free for students. With emerging of applications and their growing perforation rate among the student, it is possible to take advantage of various apps to design multiple techniques and tools that assist student's in doing their work conveniently. Our application will make the job easier for students as well as working-class people. In this application we have used various programs and GUIs, combining them all to form a multipurpose app. This will lend a helping hand for students having problems and less time available for doing tasks like converting images to pdf, taking screenshots, writing assignments, etc. in manag - ing things conveniently. We will add more features to it like games for entertainment, voice assistant providing services like opening different apps, texting on WhatsApp, listening to jokes and songs, etc.

List of tables

1. Table for Student data

<u>NAME</u>	<u>ADMISSION NO.</u>	<u>SECTION</u>	<u>PROJECT ID</u>
Shruti Kapoor	20SCSE1290083	1	BT2022
Manish Kumar	20SCSE1290075	1	BT2022

2. Table for Faculty data

<u>NAME</u>	<u>DESIGNATION</u>
MS. Pragya Tiwari	Assistant Professor

Chapter: 1

Introduction

1. 1 Introduction

We would like to introduce various modules that we have used in our software. Let's first talk about our voice assistant (*Serena*), we have used python library modules such as pyttsx3, Wikipedia, date and time module, OS, web browser, speech recognition, smtplib, Tkinter for main GUI purposes, etc. This is the first approach we will modify these things in the future like adding various advanced modules for voice assistant stuff.

In our paper, we have emphasized education and entertainment purposes. Using the features that we have concatenate in our application, we can easily perform some tasks. For Example, One can convert any image file in the form of pdf, use the scientific calculator, convert digital text to hand-writing, enjoy the voice assistant feature, now for all these features we have to download different applications from the play store or google online sites, therefore we can have access to all these features in just a click to download instead of multiple clicks. We have added our next feature which is text to handwriting featuring using

python libraries later we will modify these in the form of GUI but now it's just a code. And we will provide a separate button for the different applications now we have just decided to use the scientific calculator for students which is one way means it can solve equations in a single row by using various functions like logarithmic, sine, co-sine, powers, etc.

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1.1 Formulation of Problem

In our project, we have emphasized education and entertainment purposes. Using the features that we have concatenate in our application , we can easily perform some tasks. For Example, One can convert any image file in the form of pdf, use the scientific calculator , convert digital text to handwriting , enjoy the voice assistant feature, now for all these features we have to download different applications from the play store or google online sites, therefore we can have access to all these features in just a click to download instead of multiple clicks.

Serena , my voice assistant can do many things for you like opening any apps , sending WhatsApp messages to someone or automate WhatsApp, getting info about anything from Wikipedia and just reading it for you, playing music for you so that your mood gets calm and stress-free , opening any social sites like Facebook , Instagram by saying a single word, wishing you a pleasant day with date and time, opening your photos of the day and many more things which can be easier perform with the help of voice assistant.

It's like Alexa and googles assistant but the main difference is that it provides you with several modules and functions like converting your digital texts to handwritten text images and also it makes pdf of your image documents . If you are facing network issues then you can play some games with Serena , these games are completely offline and won't cause your device to heat up or anything



Fig 1 : Logo for the app

1.2 Tools and Technology used

In this section, we have included the most important modules that a student is required to do in his/her project like converting various image documents in the form of pdfs making it easier for the reader to place it in a sequential order like we can say someone makes notes of any subject and now he/she wants it to read whenever he wants then he just has to make pdfs in sequential order so that he can read from these notes and easily understand about the topic. Apart from that students can make the digital texts like we can say computerized words into a handwritten format. This will be very useful when a student has very little time to submit the assignment and he/she can easily use it. We have used the module *Pywhatkit* from python libraries. We also have provided some buttons. In this button, we mainly have included the coding for various games like snakes and cannon so that nobody gets bored later we will include more interesting games. We created GUI for games using *pygame* libraries of python and she has also used *cv* and *Tkinter* module of python library.

Apart from these things it can open various applications whichever you want it can send text to anyone as well as convert any image to ascii format, also you have access to download youtube videos within the application

just copy your link and paste it and then you can download those videos. we will improve this application further and add some new extra features so that student feels relax. In this modal firstly our voice assistant listens all commands which user gives using microphone as shown in fig. 2.1.

Now we have declared various functions for calling different commands just like first we have gave command for scientific calculator then it opens the calculator and whichever voice command you will give it runs on same way and do various addition, subtraction, multiplication, division as well as various trigonometric functions.

As we all know python has a large amount of libraries which includes various amazing things

And take advantage of that thanks to his easy to use features. Python is used in almost every field all web development are easily coded by this after javascript.

Chapter:2

Literature Survey

Image to PDF converter is like a file converter that converts image file format (JPG) into PDF. We have used the Python library module (*img2pdf*) for converting images to pdf. One of the leading applications that people are using for converting images to pdf *Adobe Scan*.

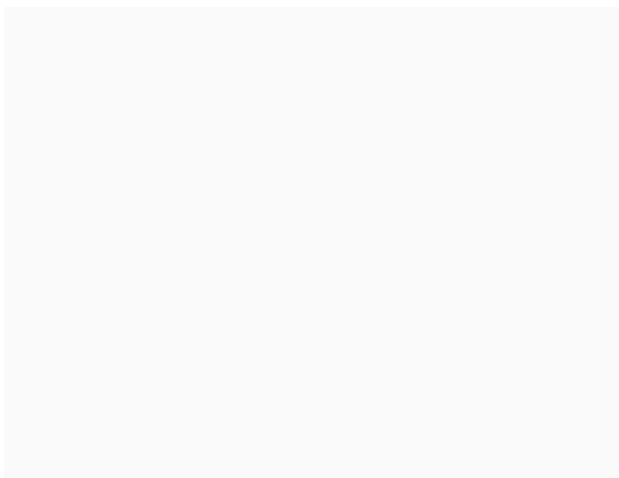
Scientific Calculator is a multipurpose calculator that has many functions that can be used from mathematical to chemical equations and is used in various fields. Every smartphone nowadays has a cheap knockoff of a scientific calculator which lets you calculate logarithms and trigonometric functions. The issues arise when someone needs to calculate a complex equation which a normal calculator can not solve.

In our paper we have described about our serena voice assistant which uses voice synthesis and speech recognition and for any voice commands it return relevant information or perform specific functions as called by the user. sometimes our assistant cannot respond to our commands Provided by the user at that time you just have to write commands not found and any other pieces of stuff related to those commands.

We have Text to Handwriting using python language. As Python is nowadays becoming most popular and open-source programming language, due to its easy to use features and modules it provides libraries for almost any task you can think of. For converting digital text to handwriting, there is a library module known as *PyWhatKit* in Python. It provides a lot of useful features, but the feature which is most interesting is converting the text of a user's input to handwritten text. In my application code , I first imported the *pywhatkit as well as OpenCV* library modules in Python. Here pywhatkit module is used to convert text to handwritten English language we will add support for more languages later and OpenCV is used to visualize the image in which we are writing handwritten text. Having various applications in your smartphone takes a toll on your RAM which can cause heating issues and storage issues as well. This can cause the longevity of the device to decrease which increases e-waste.

As you can see in this fig.4 , there is demonstration in the serena application which we have made later we include multi-features in this app now What our Student Buddy app does is that it brings all of these things in one application which reduces the stress load of the processor and takes less RAM space when compared to multiple applications. We aim to make the Student Buddy app easily accessible to all the students and keep making upgrades to the app to make it more versatile and user-friendly for the user.

Alexa is the voice service that powers Echo device, or skills, that enable customers to interact with devices in a more intuitive way using voice. Such as using AWS skills includes various number of these skills include the ability to play music, provide information, deliver news and sports scores, tell you the weather information It is built in cloud so it always gets smarter day by day. Our amazon echo also comes with alexa features which is like a human control on your hands and it can do various tasks like google assistant nowadays can do. Due to increasing technologies alexa is using artificial intelligence and machine learning so that everyone can interact with the device and do tasks with the help of speakers and microphone. This thing is highly advantageous to the disabled person who wants to get around with some music. Basically it uses lambda function for the output. We can create alexa skills on their own using Alexa skill set (ASK). It works on the speech synthesis thing when it recognizes alexa word it wakes and ready to take input commands. [1] Siri is an intelligent personal assistant and knowledge navigator which is personally used in the IOS devices because it provides understandable voice command feature • This Application uses natural language • This app answer questions, make recommendations according our needs and perform actions desired by the user. The idea of Siri started as a project of the USA army but it was developed by SRI International • Siri was created in December of 2007 by Dag Kittlaus, Adam Cheyer, Tom Gruber and Norman Winarsky • in this process our speech is interpreted in your phone and in a server at the same time • When it understood a series of vowels and consonants it create a candidate list of interpretations of your speech might mean • Siri communicates with servers in the cloud to interpret your requests and retrieve the information you need Maybe Siri can perform your request in the phone so stop the communication with the server • If Siri doesn't understand you, she can give you a list of choices or just indicate that she didn't understand • People have created a Siri Proxy that allow you to build and run plug-ins to add custom features to Siri Siri needs a good connection to internet to perform the requests • You must speak clearly to Siri in order she can understand you • Siri can mis interpret you • Siri doesn't understand all spelling variations (i.e. Jeff or Geoff)



variable wakeup and set the default value as StandBy 2. We then capture the voice input from the microphone. Here we did a little tweaking to make the script more responsive: the `timeout=3` option in the `listen()` method tells the script to time out every three seconds and analyze the voice input 3, meaning it checks for a voice command every three seconds. Without this option, the script may wait too

long to respond, and When a voice command is captured, the script checks whether hello as well as Python are in the voice input. If yes, the variable wakes up and changes its value to Activated 4. Similarly, if you say, "Stop listening" or "Stop the script," the variable wakeup changes to ToQuit 5. When the function is called, it will return whatever value is stored in the variable wakeup [3] I have been working on this calculator since last seven days. Worked whenever I got the time and finished it to the current shape, as shown below. This calculator is also carrying a converter within it. Please note that initially when you run the program, only main window that carries all the characters will get open, while the Converter window gets opened only when you click the Converter button that is present within the main window. This program uses few Python Packages, namely Tkinter, re (Regular Expressions) and math. If you know the coding, you definitely can change the code given below, but do remember to share it with me, I definitely would love to see. And if you are not a coder, but still want to use it, you need to do few things before using the code[5] There are many scenarios where we wish to imitate a specific author's pen-on-paper handwriting style. Rendering new text in someone's handwriting is difficult because natural handwriting varies greatly, yet follows both the intended and unintelligible text that make a person's style consistent. Diversity means that naive-based texture synthesis can be significantly replicated.

We suggest an algorithm that provides the input unit you want in the author's handwriting. Sample representation of author manuscript is required; the system is flexible enough that historical documents can usually be used with just a little extra effort. Experiments show that our glyph-centric method, with learned space parameters, line thickness, and compression, produces handwritten novel images that look hand-crafted on regular servers, even if they are printed on paper. [6] His ability to produce written text requires the implementation of a complex list of cognitive and metacognitive skills. Due to the complex needs of this complex, successful writers should be able to spell letters and words automatically. This article reports on 2 studies that examined the relationship between orthographic-motor integration related to handwriting and the ability to produce artistic and well-structured text. Participants in the first study were 114 Grade 1 learners. When the impact of reading was controlled, orthographic-motor integration accounted for 67% of the ten written speech variations. The intervention study with 19 students with a handwriting problem and 19

students associated with gender and reading had the effect of improving students' automatic writing skills. The intervention eliminated the negative impacts on the lack of automation in orthographic-motor integration. (APA PsycInfo Database Record (c) 2016 APA, all rights reserved) [7]

To support multiple writing styles and a seamless integration script, the Tablet PC installation panel uses a neural delay network that works with the lexicon. Advanced versions of Microsoft's Vista now include tablet PC software, with an advanced sensor that supports both personalization and bug reporting. Active recognition of handwriting is not easy, however. Not only should handwriting recognition systems deal with the many different styles and styles of each letter, but people also rarely write technically appropriate character shapes. Clean and accurate handwriting takes time. Many people reduce their adherence to the defined characters in order to speed up their writing, producing sloppy text. Often, writers increase their writing speed by reducing their level of reading to a limited number, which is adjusted periodically due to poor feedback. [8]

The purpose of this study was to investigate how different ways of producing text affect the writing processes and products of LD students. LD fifth- and sixth-grade LD students, selected for their knowledge of word processing, composed and updated stories using handwriting, pronunciation, and word processing. The stories told were very long, of high quality, and had fewer systemic errors than the manuscripts or word-for-word. Handwritten and word-of-mouth content did not differ from any product ratings, including length, quality, story structure, machine or language errors, vocabulary, or T unit length. However, the difference between handwriting and word processing is found in the steps of the design process and reviews. The implications of writing instructions for LD students are discussed. [9] This paper prepares a diagnostic method based on analyzing the text of the Arabic manuscript. The method involves three steps. In the first case, the text image is processed to obtain a standard text with a frame. This is done by finding and adjusting the slope angle, adjusting the space between lines and words, and filling in the gaps. In the second step, the text image is analyzed with a set of 16 Gabor filters. A 32-component signature vector is available. In the third step, the signature vectors are compared to each other to measure text similarity. The method is tested on two databases. The first contains printed texts using 20 different fonts and the second contains samples of 22 manuscripts. The results obtained show that the method can detect printed text or handwriting. [10]

Portable text-to-speech converter is designed to help the visually impaired to listen to audio readings of any scanned text. The app contains a hand-held page scanner, an android phone where the scanned image is sent with Blue-tooth, an application to extract text from a scanned image and convert the extracted text into speech. An added benefit of this system is that it uses a page scanner that scans the entire page containing the text. Therefore, visually impaired people do not have to take pictures that focus on the text area to be read, and then cut to remove background images, which is true for existing systems. The scanned image may contain text with background images that is simply ignored and only the text on the image scanned by the character recognition app. The text may also contain special letters and equations. [11] Maya Python Games and Film is the first book that focuses exclusively on the use of Python by Maya. Written by trusted authorities in this field, this in-depth guide will help you get to know Maya Python, whether you are a veteran artist who wants to make a transition from MEL to Python or a budding artist who does not want to fight [12]] Metchley, explains the game of tic tac toe in python which is the best game if I am bored and in our project we have developed that AI-based game so that one player can play and more players. Following the fig tree. 3shows flowchart of Tic-Tac-Toe game.[13]

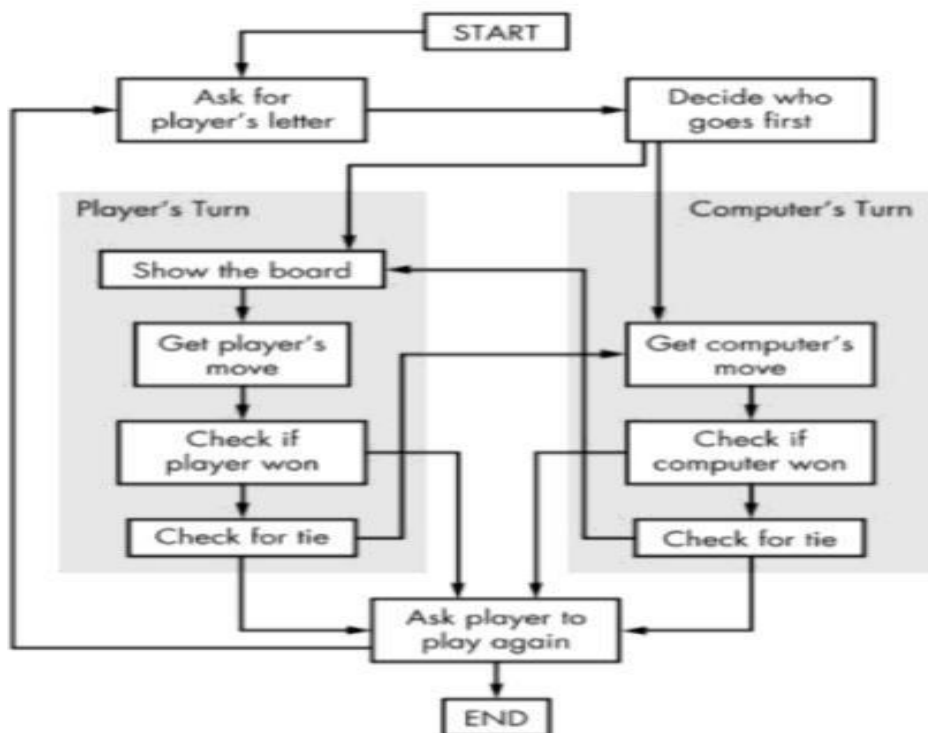


fig : 3 system flow for TIC-TAC-TOE 1

This paper is an introduction to the agent-based simulation using Python editing language. The main purpose of the paper is to empower students, teachers, and researchers to quickly embark on social science simulation projects with the common goal of grammar. This purpose is simplified by the design features of the Python programming language, which we discuss briefly. The paper has an educational component, because it focuses on empowerment and is therefore very focused on the app. As our illustration, we choose a simulation model based on an old agent: a recurring prisoner problem. We show you how to emulate a replica prisoner problem with simple and readable yet flexible and easy-to-stretch code. In addition to the simplicity of the code, it includes a handy and easy-to-use simulation toolkit. We give three examples of this extension: we examine the ancient effect that topology is important on the evolutionary process, show how the evolution of a player type is affected by the main payoff, and show that strategic evaluation processes can affect strategic persistence. Social science students and educators should find that this paper provides sufficient background for quickly starting their simulation projects. Social science re-researchers will also be able to compare the simplicity, readability, and expansion of Python code with comparable simulations in other languages. [14]

How to keep students interested in the CS1 course is nothing new to those who teach this course. This activity explains our experience in using Python and Turtle Graphic Library in a game-focused way that seeks to increase students' interest and motivation. We present branch assignment, loops and functions: a simulation of a basic game with a spacecraft that can shoot bullets into an enemy. Our experience has shown us that students engage and inspire themselves with part of the picture. We have found improvements in student grades. [15] As the pygame and SDL library are portable across all platforms and devices, both need to define and work with quotes from various computer updates. Understanding those concepts and abbreviations will help you to design and improve your own games. [16] The pygame library is made up of a number of Python composites, which include several different modules. These modules provide seamless hardware access to your system, as well as similar operating systems. For example, the display allows the same access to your video display, while the playback allows invisible control of your playground. After importing the pygame library from the example above, the first thing you did was to launch PyGame using `pygame.init()`. This function calls for different `init` functions for all installed pygame modules. Since these modules are specific hardware shortcuts, this initial step is required to run the same code on Linux, Windows, and Mac. [17] Python is an advanced programming language and often compared to languages such as Java, JavaScript, PERL. Some of the benefits of programming in python include, open source, productivity and speed. Python is widely used in high-level programming and has a design

philosophy for learning code. Also a syntax that allows programmers to express ideas in a few lines of code as much as possible in languages such as C++ or Java. It has a large and complete general library. Other GUI models are pyfltk, pygame etc.

[18] This poster describes the work that the author will do in the CS1 / CS2 course. Assignment requires students to build a visual GUI interface to play a memory match game. The game is played with a deck of cards containing the same pairs. Cards are dealt with on a two-dimensional board with the number of rows and columns specified by the user. Initially, all the cards are shown face up and the user tries to remember the cards again their locations on the board. Then, the user clicks a button to turn all the cards face down. After that, the user uses the mouse to click on a pair of cards turning them upside down. When two cards are matched, they are left facing upwards. If not, the user can click one or both cards to bring them down. The object of the game is to guess all the same pairs of cards in as few tests as possible. [19]

In the era of rapid internet development, network media has become a new window for people to understand the outside world because of its fast speed and wide distribution. News is a channel for people to know about the Surrounding Information, but thousands of stories are produced daily online. These issues are needed or not internally. How to access the content of the website effectively and accurately on a website is a major need in people's lives. This program aims to collect news from specific websites and return it to users through short and clear pages. Users can search for specific keywords to select their favorite stories to see personalization for users. This program crawls and analyzes the content of local financial news, which is ideal for people to process information. To avoid duplication of information, the system has also adopted a self-defined repetition code. In a particular implementation, the system is written using Python in conjunction with the Scrapy framework and Django framework, which

can simplify the system code to some degree. The real benefit of this program lies in the timely, effective and harmonious access to local financial matters that people care about, need, and enjoy [20].

3. Project Design

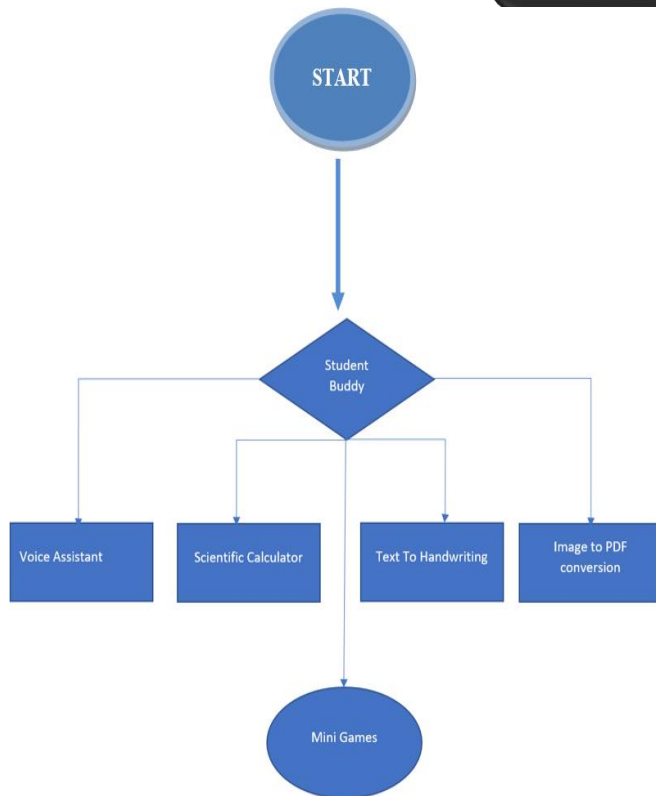
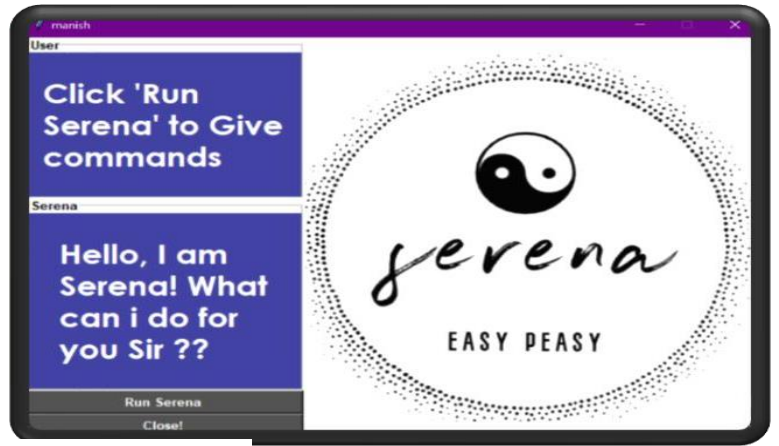


Fig 2.1 : flow chart of application

Conclusion

Now a big part of this program is to make a lot of programs for students who use different techniques to do different scholarships, while using this they will not have to worry because there is a new friend who will help them when teaching them. in a good way. The student can save time by using the program. As I have already shown the display image (fig.4) our app is ready to run but added new features that are not available in other apps.

Later it works in offline mode now it works online and offline because as you can see today there is no shortage of internet, everyone has their own internet..

The result

Students after experiencing those features can enjoy and have fun with that student friend. They have a great advantage of different apps with speech access and the translator will also be added so that everyone can learn English all in one learning and fun app.

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