HEISENBERG
DESKTOP VOICE ASSISTANT

MAJOR PROJECT REPORT

Submitted by

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2019-310-111

in partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

Under the supervision of

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DECLARATION

Mr. Mohd Suhail a student of **bachelor of technology (BTECH) (Enrollment No: 2019-310-111)** hereby declare that the dissertation entitled "**DESKTOP VOICE ASSISTANT"** which is being submitted by me to the Department of Computer Science, Jamia Hamdard , New Delhi in partial fulfillment of the requirement for the award of the degree of **bachelor of technology (BTECH),** is my original work and has not been submitted anywhere else for the award of any Degree, Diploma, Associate ship, fellowship or other similar title or recognition.

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ENROLLMENT NO:2019-310-111

DATE:9/12/2022

ACKNOWLEDGEMENT

It gives me a great sense of pleasure to present the report of the **bachelor of technology (BTECH)** Project undertaken during the final Year. I owe special debt of gratitude to **Assistant Professor Dr. Imran Hussain**, Department of Computer Science, Jamia Hamdard University, New Delhi for his constant support and guidance throughout the course of my work. Last but not the least, I acknowledge my friends for their contribution in the completion of the project.

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Chapter 1

HEISENBERG

THE DESKTOP VOICE ASSISTANT

Chapter 2

Objective

The main purpose of building personal support software (Virtual Assistant) is to provide knowledge from user-generated content and knowledge databases using semantic data sources available on the web. The main purpose of the Intelligent Virtual Assistant is to answer questions that users have. This can be done in a business environment, for example, on a business website, with a chat interface. In the machine, the Intelligent Virtual Assistant is available as a powerful speaking function, where a voice asks the user "How can I help you?" And then responds to the noise input.

Virtual assistants can save you tremendous time. We spend hours researching online and generating reports according to our understanding. Heisenberg can do that for you. Provide an item for research while HEISENBERG is doing research and continue your work. Another difficult task is to search and play music from any website, Wikipedia, daily from Good Morning, Good Afternoon, Good Evening, Open Google, YouTube and user's voice, and send email directly by voice.

Chapter 3

Introduction

How cool is it to make your own personal assistants like Alexa or Siri? It is not terribly difficult and may be simply achieved in Python. Personal digital assistants square measure capturing heaps of attention latterly. Chatbots square measure common in most industrial websites. With growing advancements in AI, coaching the machines to tackle daily tasks is the custom.

Voice based mostly personal assistants have gained heaps of recognition during this era of good homes and good devices. These personal assistants are simply designed to perform several of your regular tasks by merely giving voice commands. Google has popularized voice-based search that's a boon for several like senior voters WHO don't seem to be comfy victimizing the keypad/keyboard.

This article can walk you through the steps to quickly develop a voice based mostly desktop assistant, Heisenberg that you just will deploy on any device. The requirement for developing this application is information about Python.

For building any voice based mostly assistant you would like 2 main functions. One for taking note of your commands and another to reply to your commands. alongside these 2 core functions, you would like the tailor-made directions that you just can feed your assistant.

HEISENBERG THE DESKTOP VOICE ASSISTANT

Heisenberg is a desktop assistant that runs on the Windows operating system. It helps the user to remember the tasks that indicate space and time as well as notes. It records user inputs and converts them into commands and monitors the current stock of user actions to consider any changes in the environment. It provides information based on the user’s context, as well as filters information to the user based on the learned perception of the importance of that information.

Supported Tasks

- **DAILY WISHES**
- **OPEN CAMERA BY VOICE AND TAKE A PHOTO**
- **NEWS**
- **EMAIL**
- **WIKIPEDIA**
- **GOOGLE**
- **OPEN CUSTOM WEBSITE BY VOICE**
- **PLAY MUSIC**

Drawback

Will take some time to put all of the to-do items in – you could spend more time putting the entries in than actually doing the revision.

3.1 Background

Many desktops virtual assistants already exist. Some examples of current virtual assistants available in the market are discussed in this section along with the functions they can provide and their shortcomings.

SIRI FROM APPLE

SIRI is a personal assistant software that interfaces with the user via a voice interface, recognizes commands, and acts on them. It learns to adapt to user speech, thereby improving voice recognition over time. It also tries to communicate with the user without recognizing the user request.

It integrates with the device's calendar, contacts, and music library apps, as well as the device's GPS and camera. It uses location, temporal, social and work-based contexts to personalize agent behavior for the user at a given time.

Supported functions

- Call someone from my contacts list
- Launch an application on my iPhone
- Send a text message to someone
- Set up a meeting on my calendar for 9am tomorrow
- Set an alarm for 5am tomorrow morning
- Play a specific song in my iTunes library
- Enter a new note

Drawback

SIRI does not maintain its own knowledge database and its understanding comes from the information captured in the domain model and data model.

3.2 Technology behind Voice Assistants

Voice recognition works by taking an analog signal from the user's voice and converting it to a digital signal. After doing so, the computer takes the digital signal and tries to compare it with words and phrases to determine the user's intent. To do this, the computer needs a database of pre-existing words and letters in each language to closely match the digital signal. Checking input signals with this database is called sample recognition and is the primary force behind voice recognition.

Artificial intelligence is a way of creating a computer, robot or product that thinks how smart a human being is. AI is the study of how the human brain thinks, learns, makes decisions, and works when trying to solve problems. Finally, this study provides an intelligent software system. AI aims to improve computer functions related to human cognition, for example, logic, learning, and problem solving.

Machine learning refers to a subset of artificial intelligence where programs are created manually without the use of human coders. Instead of writing complete programs on their own, programmers are given an AI "pattern" to identify and learn, and then given large amounts of data to AI to filter and study.

3.2 PURPOSE, SCOPE AND APPLICABILITY

PURPOSE

The purpose of the Virtual Assistant is to enable voice interaction, music playback tasks such as Daily Wish, Good Morning, Good Afternoon, Good Evening, Open Google, YouTube and Search from any website, Wikipedia by user voice, Virtual Assistant allows users to speak. Is. Natural language voice commands to operate the device and its applications. There is an overall understanding and a high level of convenience, especially demonstrated by millennial users. In this ever-evolving digital world where speed, efficiency and convenience are constantly being optimized, we are moving towards lower screen interactions.

SCOPE

Voice assistants continue to provide a more personalized experience as they enhance the contrast between tones. However, developers need not simply address the complexity of development for voice, because brands need to understand the capabilities of each device and integration and it makes sense for their specific brand. They should also focus on maintaining a consistent customer experience for years to come as complexity becomes a concern. This is because there is no visual interface with the voice assistant. Users can not only see or touch the voice interface.

APPLICABILITY

The massive adoption of artificial intelligence in the daily lives of consumers is also leading to a shift towards voice. Many IoT devices, such as smart thermostats and speakers, offer more benefits to voice assistants in connected user life. Smart speakers are the first way we look at using voice. Many industry experts predict that over the next 5 years almost every application will integrate voice technology in one way or another. IoT (Internet of Things) systems can also be improved with the use of virtual assistants. Twenty years from now, Microsoft and its competitors have been providing personalized digital assistants who provide the services of a full-time employee dedicated exclusively to the rich and famous.

3.3 SURVEY OF TECHNOLOGY

3.3.1 Python

Python is an OOP (Object Oriented Programming) based, advanced, descriptive programming language. It is a strong, well-used language focused on Rapid Application Development (RAD).

Python code makes it easy to write and run. Python can implement the same logic with the 1/5th code compared to other OOP languages.

Python offers a huge list of benefits for everyone. Python usage is not limited to just one function. Its growing popularity has allowed it to enter the most popular and complex processes such as Artificial Intelligence (AI), Machine Learning (ML), Natural Language Processing, and Data Science. Python has tons of libraries for every need of the project. As of Heisenberg, the libraries used were Speech Recognition for Speech Recognition, PittsX for Text to Speech, Selenium for Web Automation, and more.

Python works reasonably efficiently. Efficiency for small examples is usually not an issue. If your Python code is not efficient enough, a simple process to improve it is to find out what is taking longer and execute that part more efficiently in some lower-level language. This results in much less programming and efficient code (because you have more time to optimize) than writing everything in a low-level language.

3.3.2 History of Python

Guido van Rossum developed Python in the late eighties and early nineties at the National Research Institute for Mathematics and Computer Science in the Netherlands.

Python is derived from many other languages, including ABC, Modula-3, C, C ++, Algol-68, SmallTalk and Unix shell and other scripting languages.

Python is copyrighted. Like Pearl, the Python source code is now available under the GNU General Public License (GPL).

Although Guido van Rossum still plays a key role in directing its progress, Python is now managed by a major development team at the Institute.

3.3.3 Python Features

Features of Python

Easy to learn - Python has some keywords, simple structure, and clearly defined syntax. This allows the student to learn the language quickly.

Easy to read - Python code is more clearly defined and visible.

Easy to maintain - Python's source code is very easy to maintain.

Extensive Standard Library - Most of Python's library is highly portable and compatible with Unix, Windows, and Macintosh.

Interactive Mode - Python supports interactive mode, which allows interactive testing and debugging of code snippets.

Portable - Python can run on a variety of hardware platforms and has the same interface on all platforms.

Expandable - You can add low-level modules to Python commentators. These modules allow programmers to add or customize their tools more efficiently.

Database - Python provides interfaces to all major commercial databases.

GUI Programming - Python supports GUI applications, which can be built and ported to many system calls, libraries, and Windows systems, such as Windows MFC, Macintosh, and Unix's X Window System.

Scalable - Python shell provides better structure and support for larger programs than scripting.

Chapter 4

4. Problem Statements

In these days there are many artificial intelligence and co voice assistant available like Alexa, siri cortana, google assistant but we have to buy very expensive machines to run them all and this software is very high and advanced So that we have to spend a lot of money and if we want to take any machine, then we have to give the machines only after seeing its system requirement, which is very expensive for us. To use all of these, many things are required like IDs and many requirements which many people are not able to afford.

For example, for example, we buy an Alexa machine because it does the same thing that customized data is put in it, for this we have to spend a lot of money and its programming and its requirements are very high because only on one hardware. moves

We have made this software keeping in mind the people so that people can use it easily and make their work easier in this, you can do any work by giving your voice to the machine, such as running any software, playing music, sending an email or running a program, there are many things that you can do in it. It is not very expensive, you can create and use your own program on a very low system requirement, you do not need to buy any expensive machine, you will be able to use it only on the basic machine you have. Not much machine requirement is needed, only internet you need python support system need internet browser and voice to text system.

In the coming days it will be available on mobile as well as on your Android iOS and Windows and Linux

Chapter 5

5.1 UML USE CASE DIAGRAM

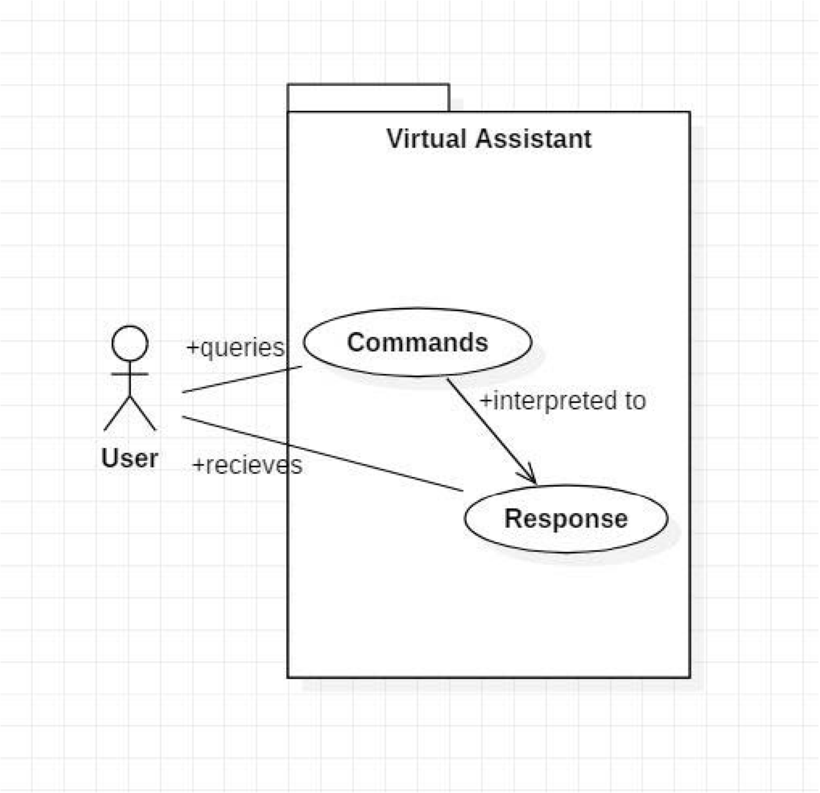


Figure 5.1

In this project there is only one user. The user queries command to the system. System then interprets it and fetches an answer. The response is sent back to the user.

5.2 Hardware & Software Requirement

The software is designed to be light-weighted so that it does not be a burden on the machine running it. This system is being built keeping in mind the generally available hardware and software compatibility. Here are the minimum hardware and software requirements for virtual assistants.

Hardware:

Pentium-pro processor or later.

RAM 2GB or more.

Software:

Windows 7(32-bit) or above.

python 39 or later

internet explorer

PyCharm community

Chapter 6

6.Cost & Effort Estimation

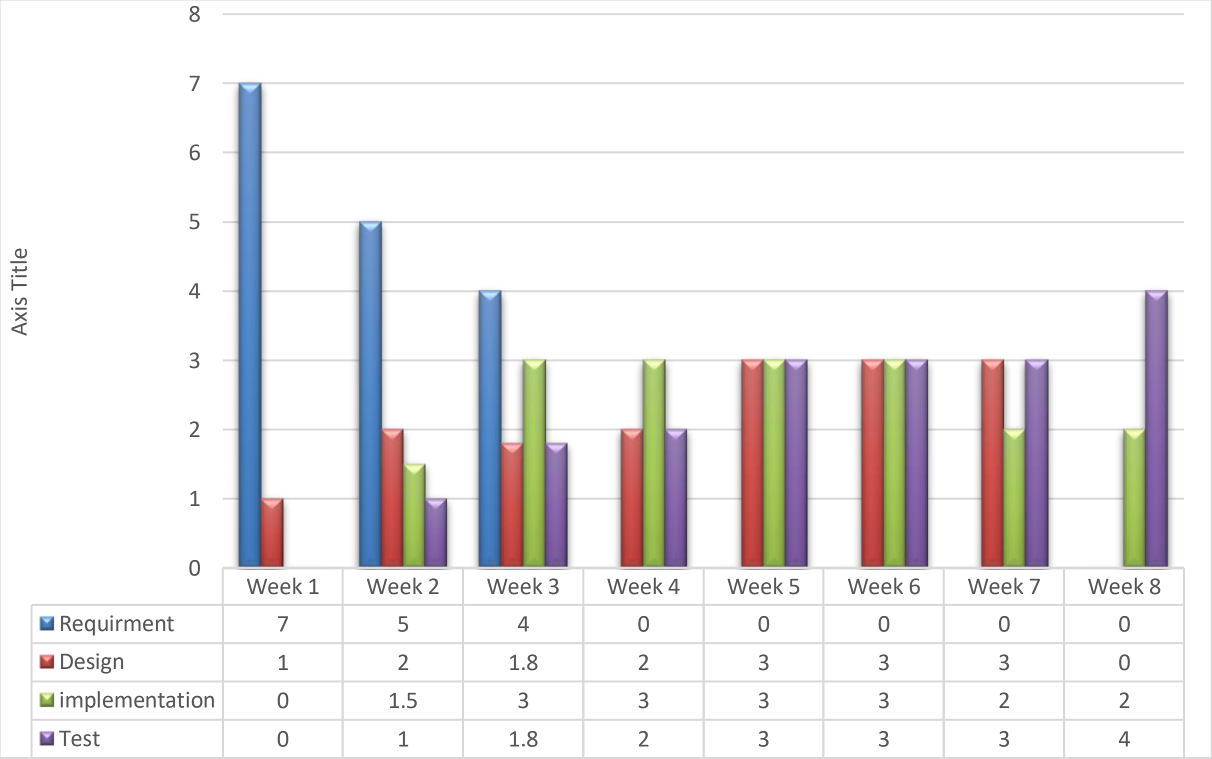
6.1 Gantt Chart of the Activity
6.2 Install Python Software

6.3 Open IDLE
6.4 PyCharm - Installation

6.1 GANTT CHART OF THE ACTIVITY

A Gantt chart is a type of bar chart, developed by Henry Gantt, that illustrates a project schedule. Gantt charts illustrate the start and finish dates of the terminal elements and summary elements of a project. Terminal elements, summary elements comprise the work breakdown, structure of the project. Some Gantt charts also show the dependency (i.e., precedence network) relationships between activities.

- Gantt charts are useful tools for planning and scheduling projects.
- Gantt charts allow you to assess how long a project should take.
- Gantt charts help manage the dependencies between tasks.
- Gantt charts determine the resources needed.
- Gantt charts are useful tools when a project is underway.
- Gantt charts monitor progress. You can immediately see what should have been achieved at a point in time.
- Gantt charts allow you to see how remedial action may bring the project back on course



	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
🟦 Requirment	7	5	4	0	0	0	0	0
🟥 Design	1	2	1.8	2	3	3	3	0
🟩 implementation	0	1.5	3	3	3	3	2	2
🟪 Test	0	1	1.8	2	3	3	3	4

Figure 6.1

6.2 Install Python

Windows usually does not come with the Python system. Fortunately, the installation is a bit more than just downloading and running the Python installer from the Python.org website.

Step 1: Download Python 3

Open the installer web browser and navigate to the following URL:

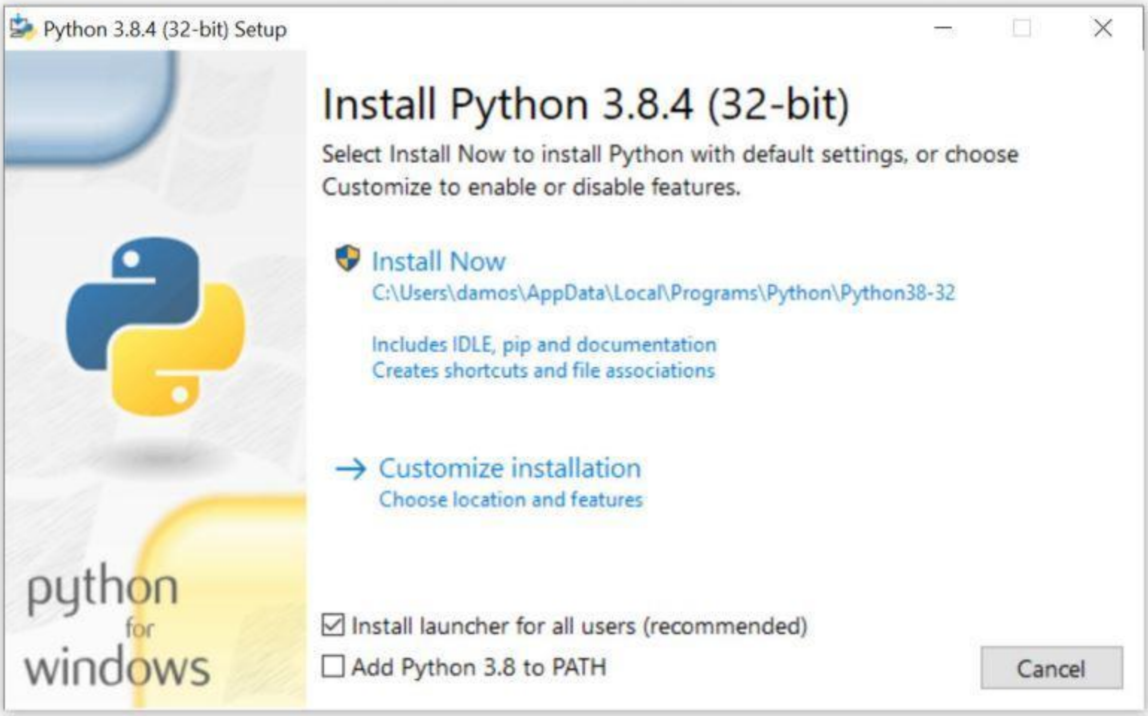
https://www.python.org/downloads/windows/

Click Python 3 Release - Python 3.x.x under "Python Release for Windows" at the top of the page. At the time of writing, the latest version is Python 3.11.1

Scroll down to start the download and click on Windows x86-64 Executable Installer.

Step 2: Run the installer

Open your downloads folder in Windows Explorer and double-click the file to run the installer. A dialog like the one below appears:



Python 3.8.4 (32-bit) Setup

Install Python 3.8.4 (32-bit)

Select Install Now to install Python with default settings, or choose Customize to enable or disable features.

Install Now
C:\Users\damos\AppData\Local\Programs\Python\Python38-32

Includes IDLE, pip and documentation
Creates shortcuts and file associations

→ Customize installation
Choose location and features

☑ Install launcher for all users (recommended)
☐ Add Python 3.8 to PATH

If the Python version you see is higher than version 3.9.0, it is better if it is not less than version 3.

Click Install Now to install Python 3. Wait for the installation to complete, then continue to open the IDLE.

6.3 Open IDLE

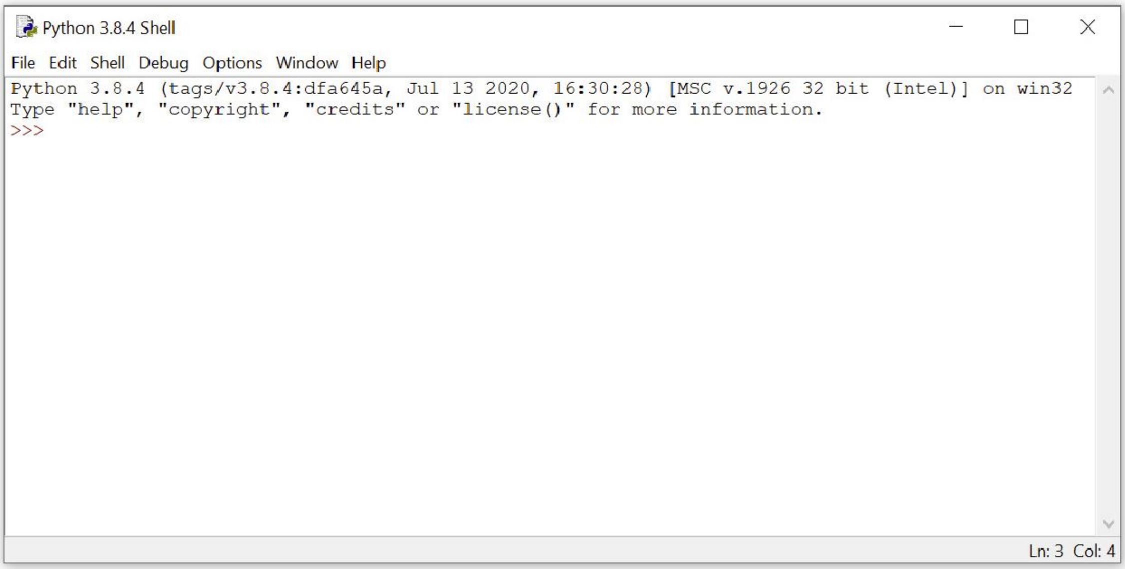
You can open IDLE in two steps:

1. Click on the Start menu and search for the Python 3.9 folder.

2. Open the folder and select IDLE (Python 3.9).

The Python shell opens in a new IDLE window. Python Shell is an interactive environment that allows you to type Python code and execute it immediately. This is a great way to get started with Python!

The Python shell window looks like this:



```
Python 3.8.4 (tags/v3.8.4:dfa645a, Jul 13 2020, 16:30:28) [MSC v.1926 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
```

At the top of the window, you can see some information about the version of Python running and the operating system. If you see a version less than 3.9, you may need to revisit the installation instructions in the previous section.

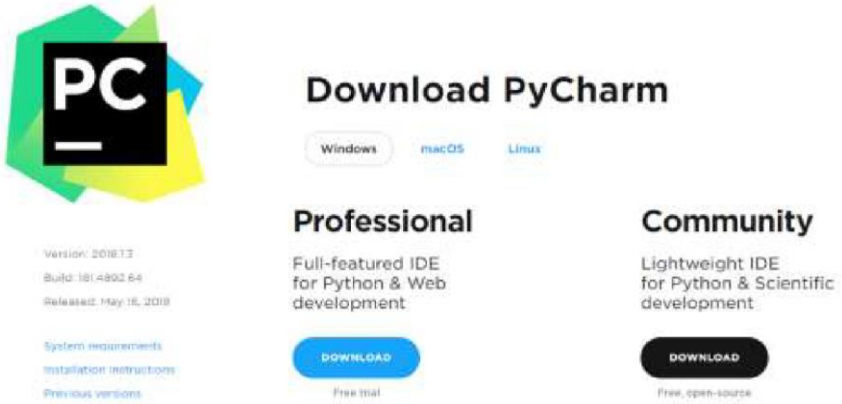
>>> The icon you see in the IDLE window is called the prompt. Whenever you see this, it means that Python is waiting to give you some hints.

6.4 Pycharm - Installation

Step 1

Download the required package or run it from Pycharm official website https://www.jetbrains.com/pycharm/download/#section=windows

Here you will see two versions of the package for Windows as shown in the screenshot below:



Version: 2018.1.3
Build: 181.4892.64
Released: May 16, 2018

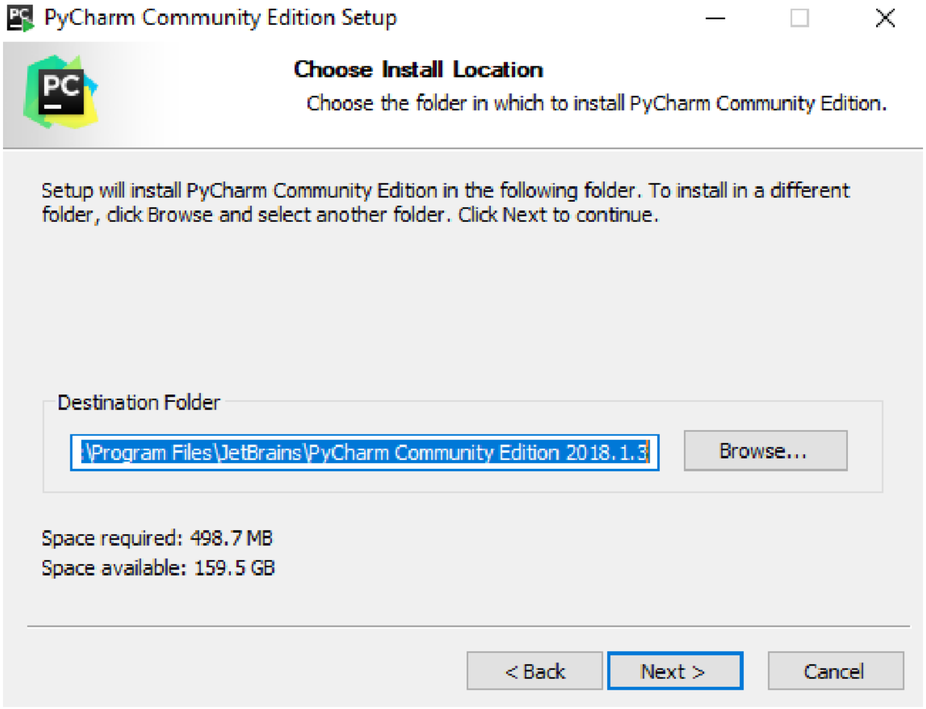
Full-featured IDE for Python & Web development

Lightweight IDE for Python & Scientific development

Figure 6.4.1

<u>Step 2</u>

Download the community package (executable file) onto your system and mention a destination file as shown below:



PyCharm Community Edition Setup

Choose Install Location

Choose the folder in which to install PyCharm Community Edition.

Setup will install PyCharm Community Edition in the following folder. To install in a different folder, click Browse and select another folder. Click Next to continue.

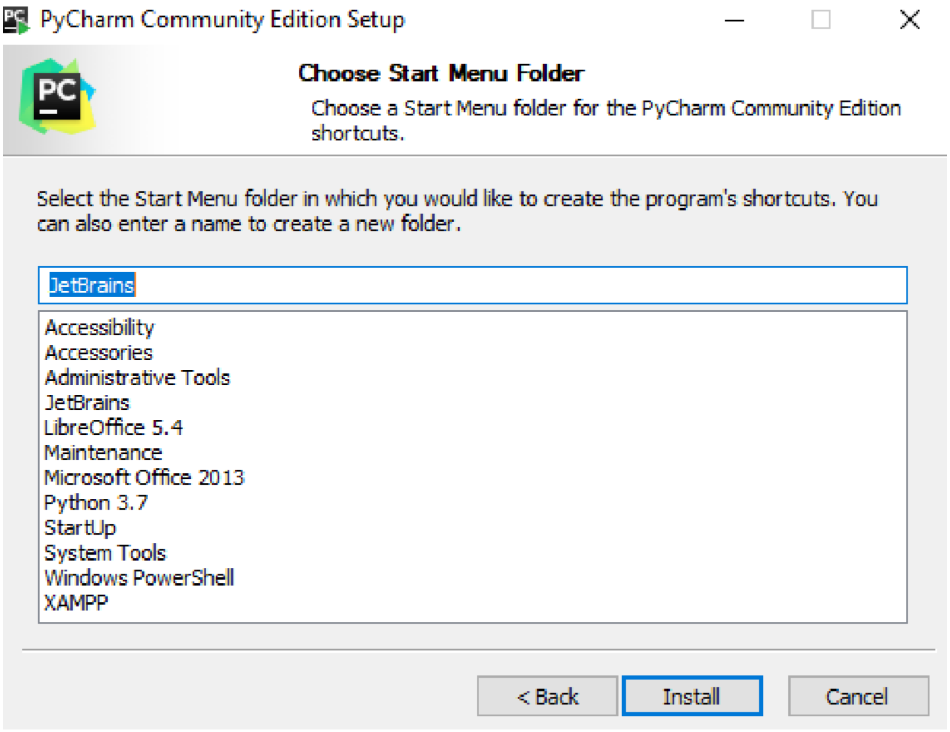
Destination Folder

:\Program Files\JetBrains\PyCharm Community Edition 2018.1.3

Space required: 498.7 MB
Space available: 159.5 GB

Figure 6.4.2

Step 3



PyCharm Community Edition Setup

Choose Start Menu Folder

Choose a Start Menu folder for the PyCharm Community Edition shortcuts.

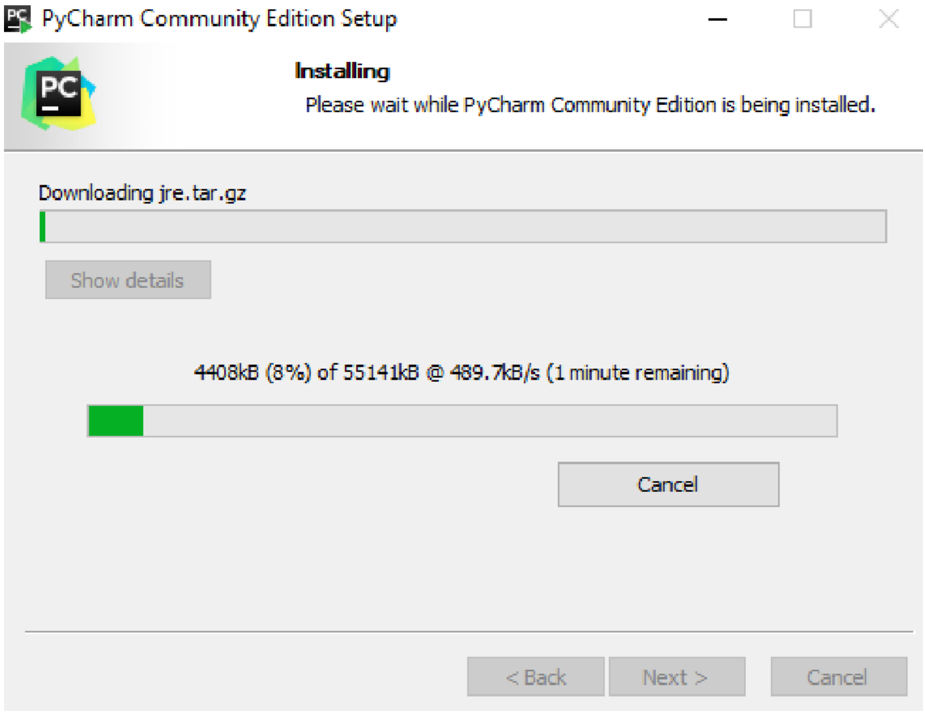
Select the Start Menu folder in which you would like to create the program's shortcuts. You can also enter a name to create a new folder.

JetBrains

Accessibility
Accessories
Administrative Tools
JetBrains
LibreOffice 5.4
Maintenance
Microsoft Office 2013
Python 3.7
StartUp
System Tools
Windows PowerShell
XAMPP

Step 3 figure 1

Now, begin the installation procedure like any other software package.



PyCharm Community Edition Setup

Installing

Please wait while PyCharm Community Edition is being installed.

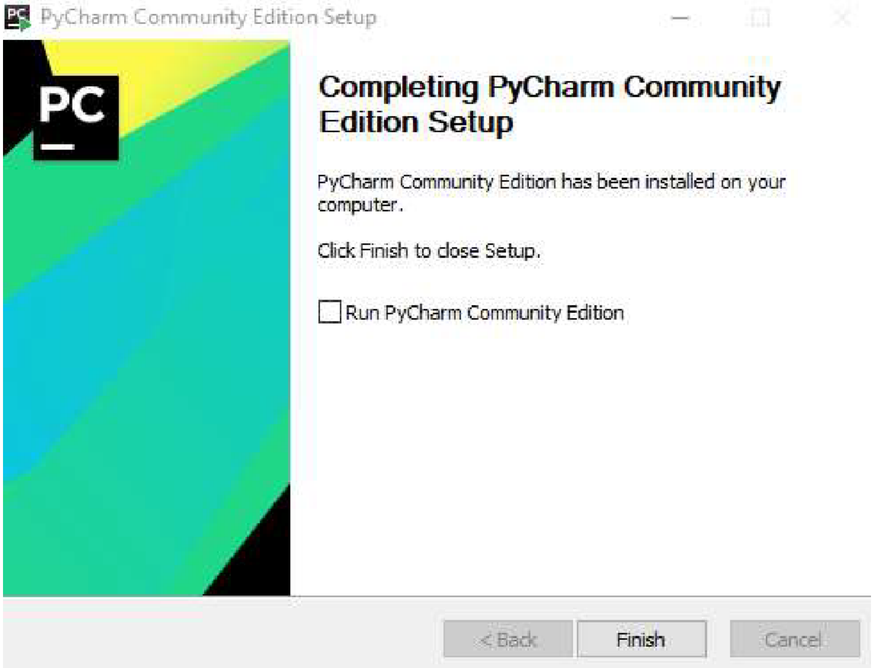
Downloading jre.tar.gz

4408kB (8%) of 55141kB @ 489.7kB/s (1 minute remaining)

Step 3 figure 2

Step 4

Once the installation is successful, PyCharm asks you to import settings of the existing package if any.



PyCharm Community Edition Setup

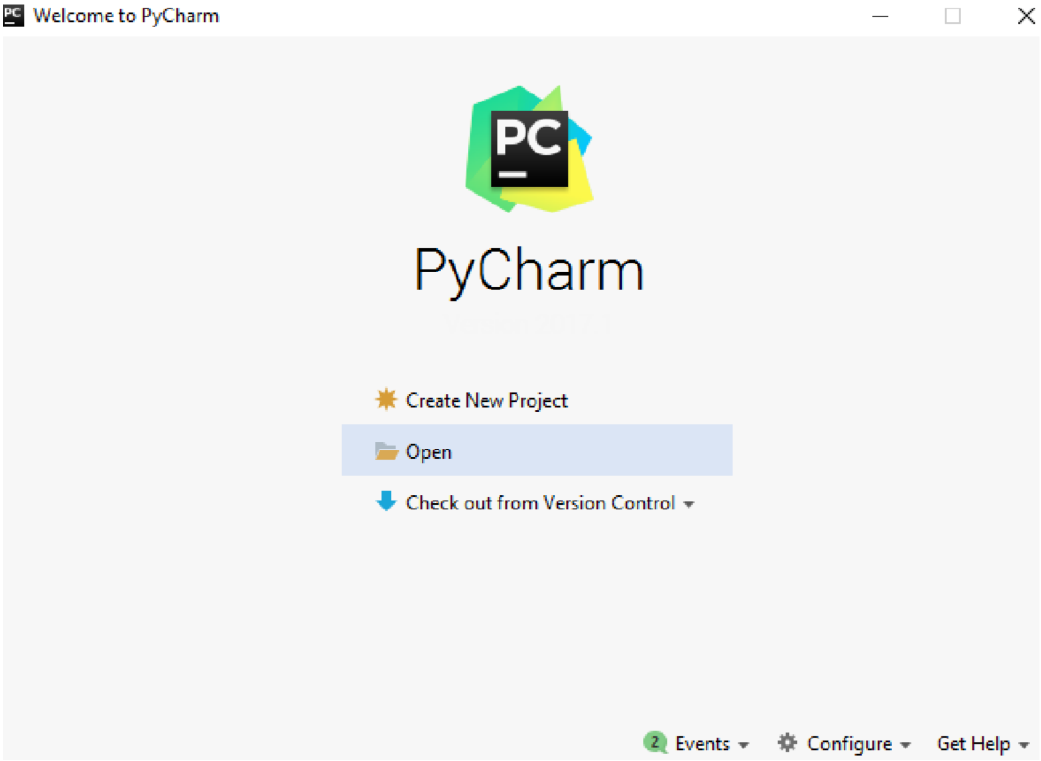
Completing PyCharm Community Edition Setup

PyCharm Community Edition has been installed on your computer.

Click Finish to close Setup.

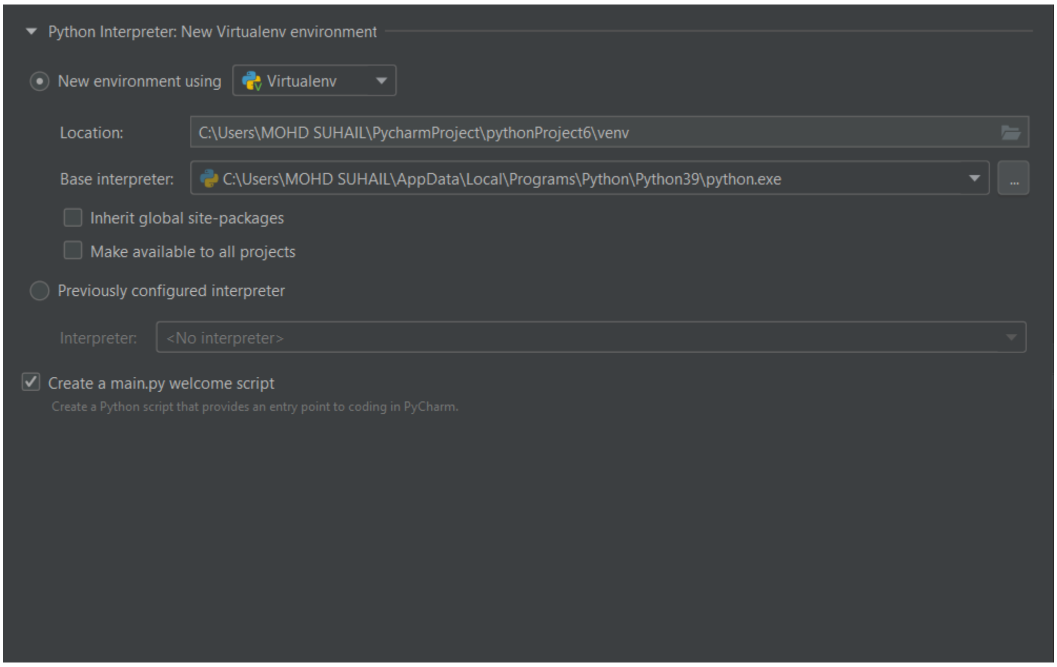
□ Run PyCharm Community Edition

Step 4 figure 1



Welcome to PyCharm

Step 4 figure 2



Python Interpreter: New Virtualenv environment

● New environment using Virtualenv

Location: C:\Users\MOHD SUHAIL\PycharmProject\pythonProject6\venv

Base interpreter: C:\Users\MOHD SUHAIL\AppData\Local\Programs\Python\Python39\python.exe

□ Inherit global site-packages

□ Make available to all projects

○ Previously configured interpreter

Interpreter: <No interpreter>

☑ Create a main.py welcome script

Create a Python script that provides an entry point to coding in PyCharm.

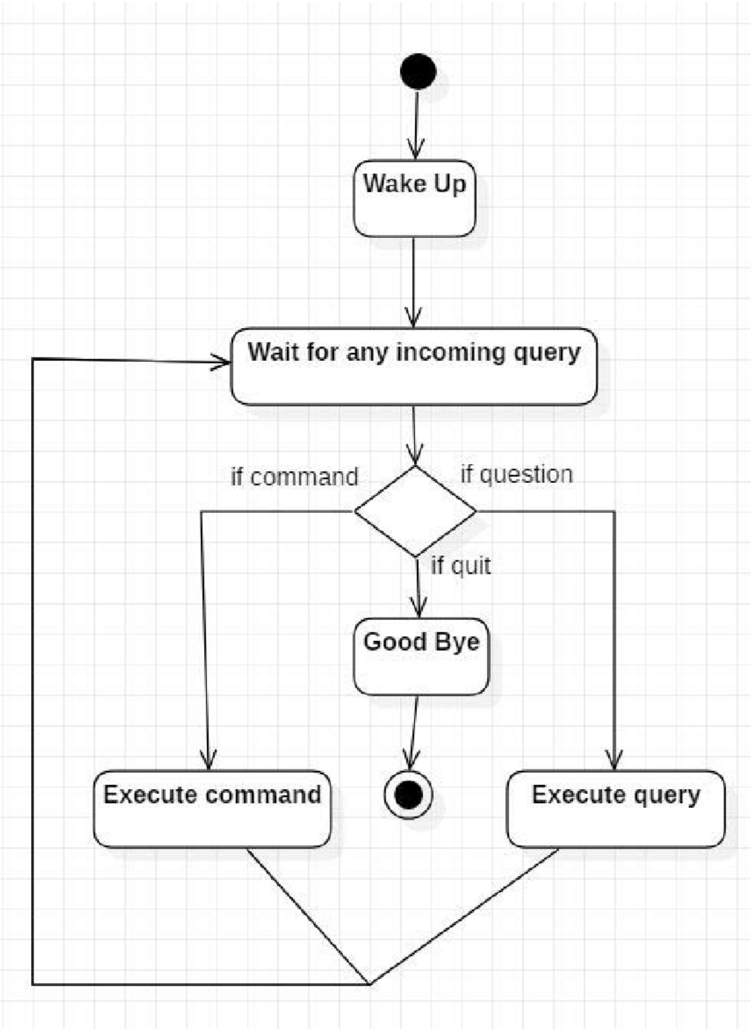
Step 4 figure 3

This benefits in creating a new project of Python where you can work from the scratch. Note that unlike other IDEs, PyCharm only focuses on working with projects of Python scripting language

Chapter 7

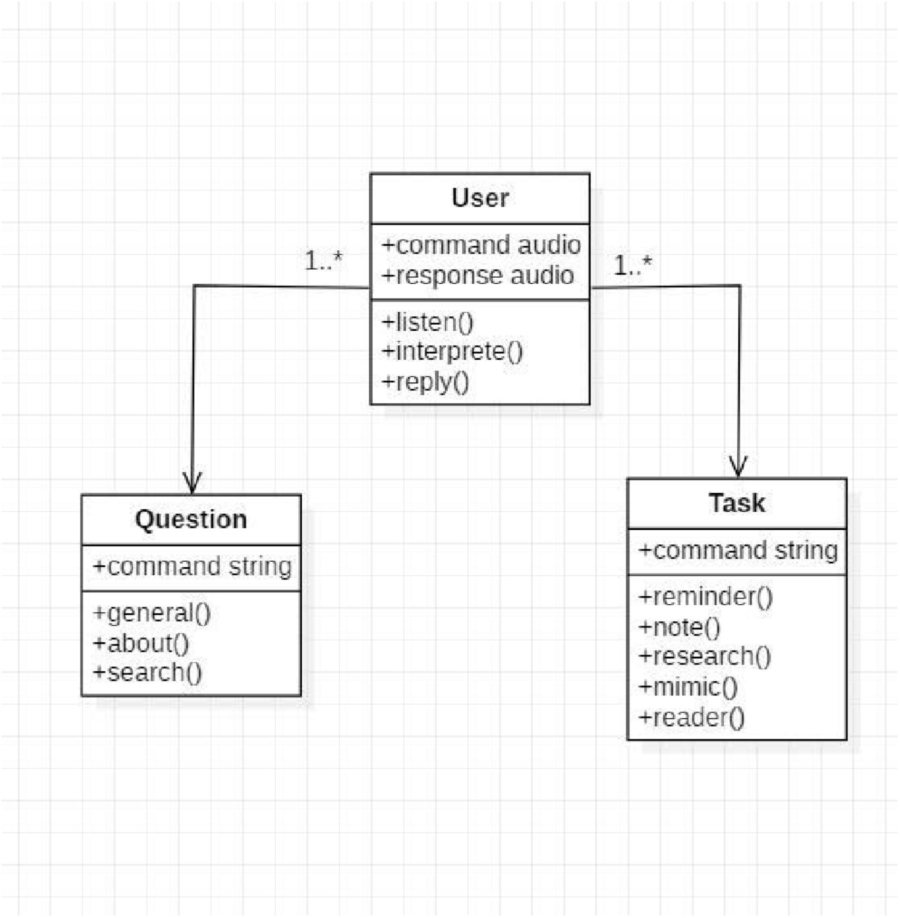
7. Diagrams

7.1 ACTIVITY DIAGRAM



Initially, the system is in idle mode. As soon as any wake-up call comes in, it starts to run. The order received determines whether it is a questionnaire or a task to be done. Special measures will be taken accordingly. After the query is answered or the work is done, the system waits for another command.

7.2 CLASS DIAGRAM



The class has 2 attribute commands that the user sends in audio and the response he receives is also audio. It works to listen to user commands. Explain it, and then reply or send feedback accordingly. The question class consists of a command in the form of a string as described by the Interpretation class. It sends to the general or about or search function depending on its identity.

7.3 DATA FLOW DIAGRAM

7.3.1 DFD Level 0 (Context Level Diagram)

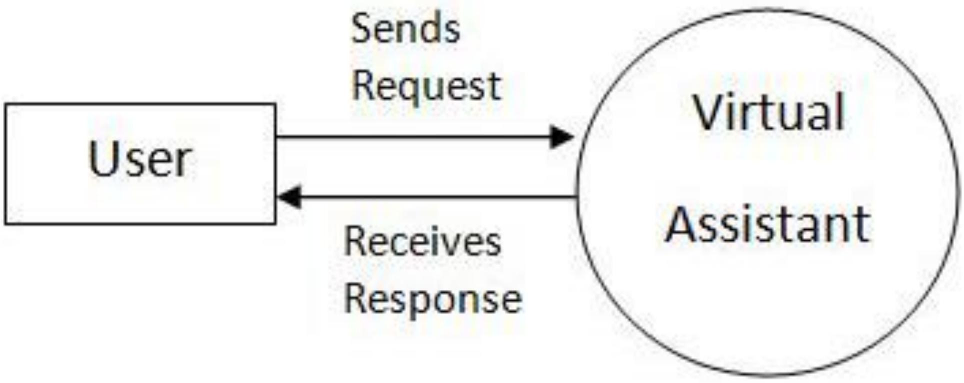


Figure 7.3.1

7.3.2 DFD Level 1

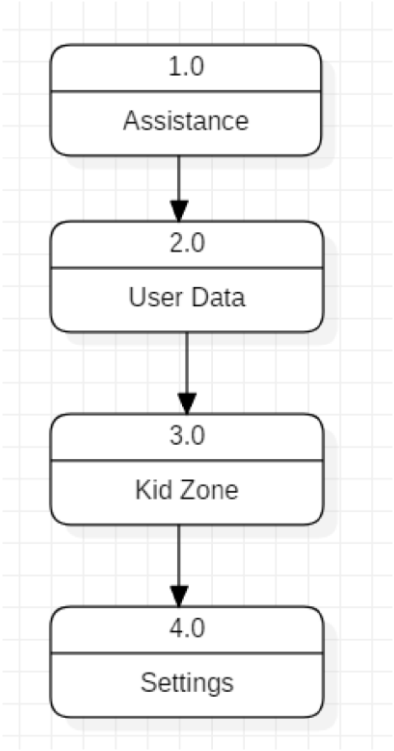


Figure 7.3.2

7.4 COMPONENT DIAGRAM

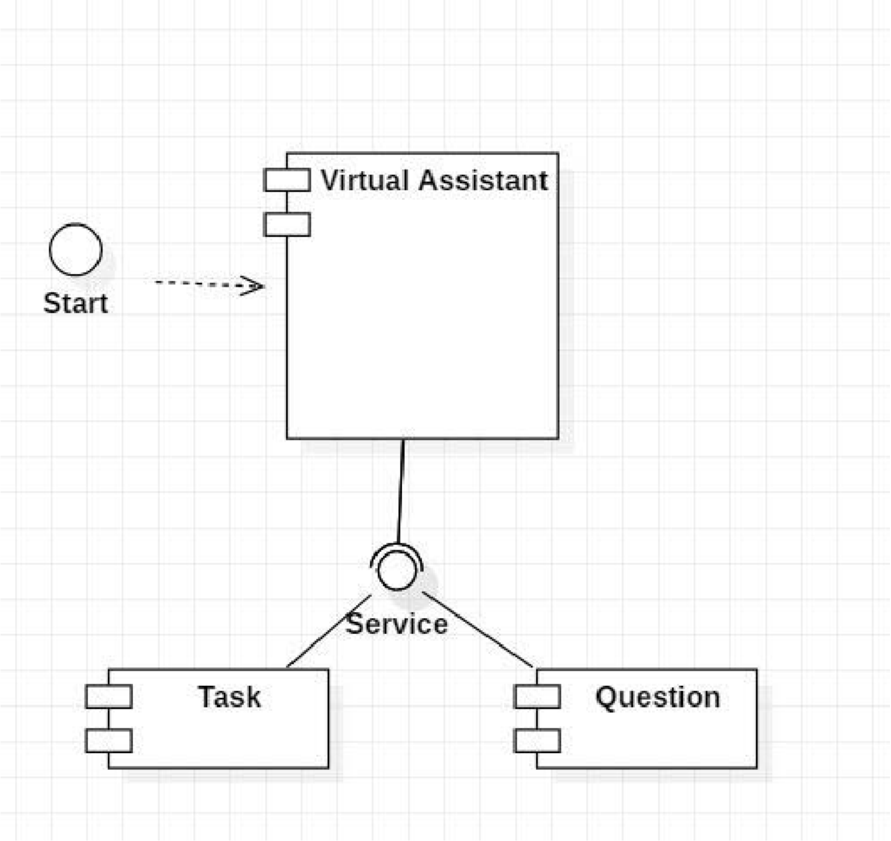


Figure 7.4

The main component here is the Virtual Assistant. It provides two specific services, executing Task or Answering your question.

Chapter 8

8. Entity Relationship (ER) diagram

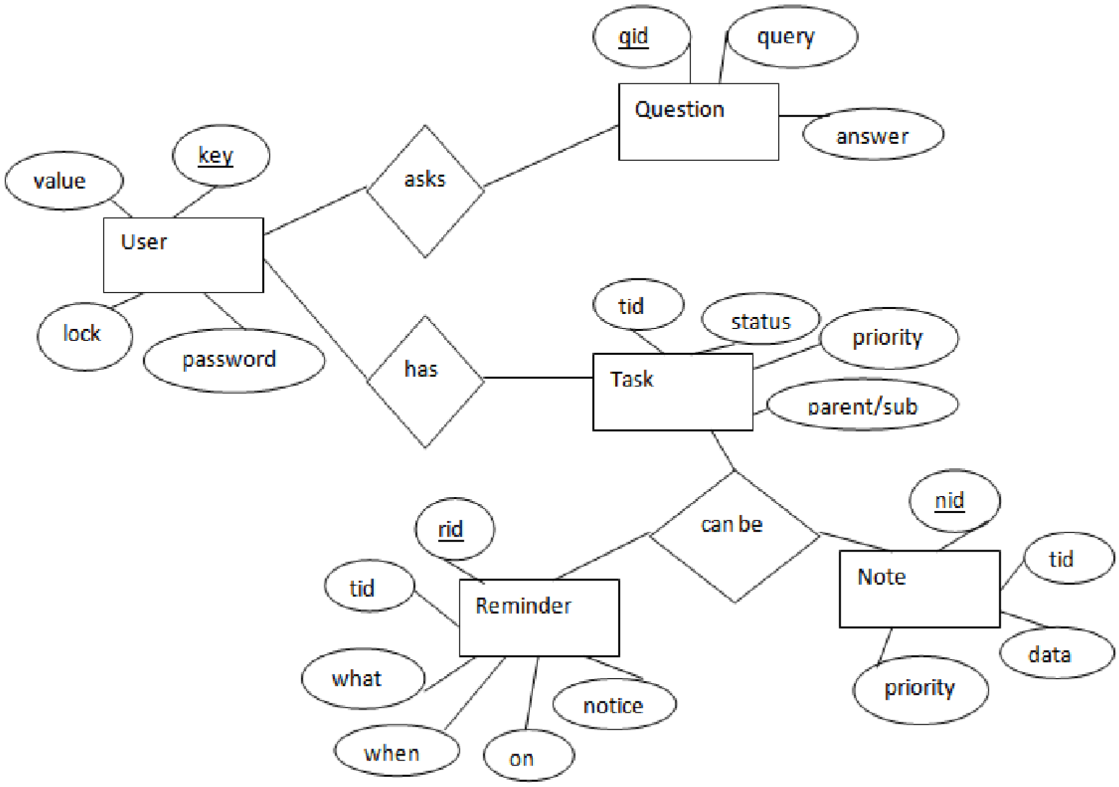


Figure 8.1

9. SEQUENCE DIAGRAM

9.1 Sequence diagram for Query-Response

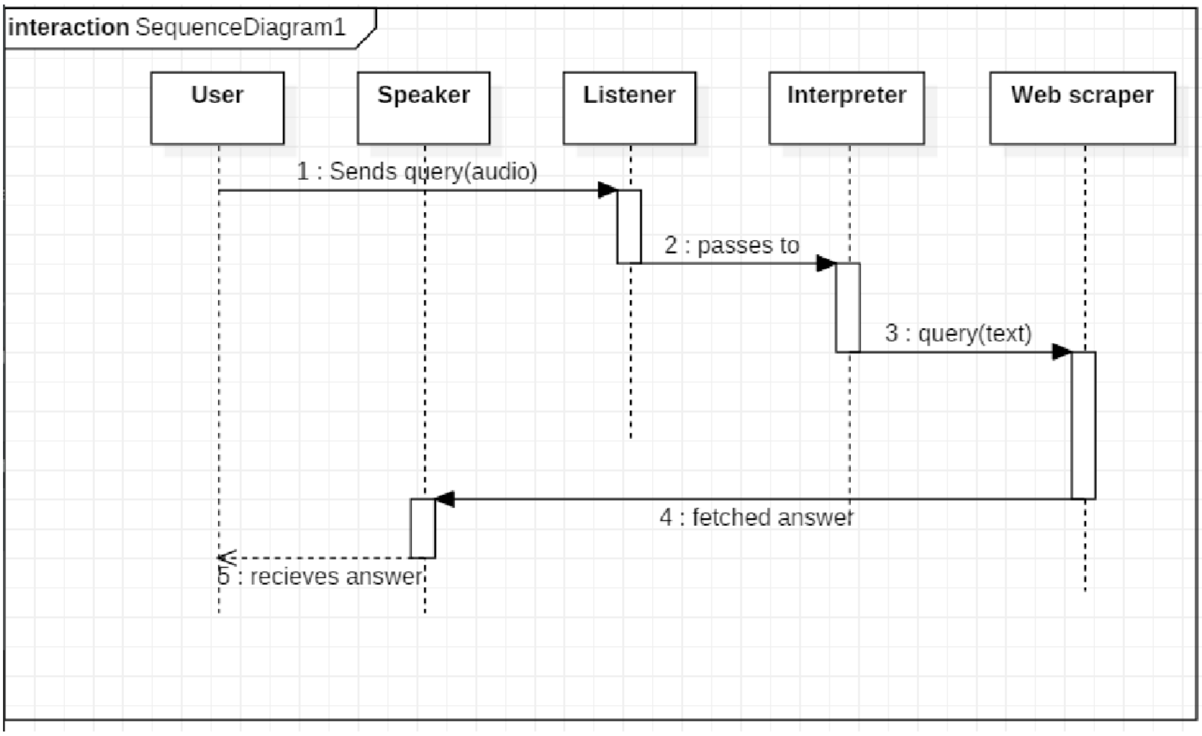


Figure 9.1

The above sequence diagram shows how the answer asked by the user is obtained from the Internet. The audio query is understood and sent to the web scraper. The web scraper searches and finds the answer. It is sent back to the speaker, where it speaks the answer to the user.

9.2 Sequence diagram for Task Execution

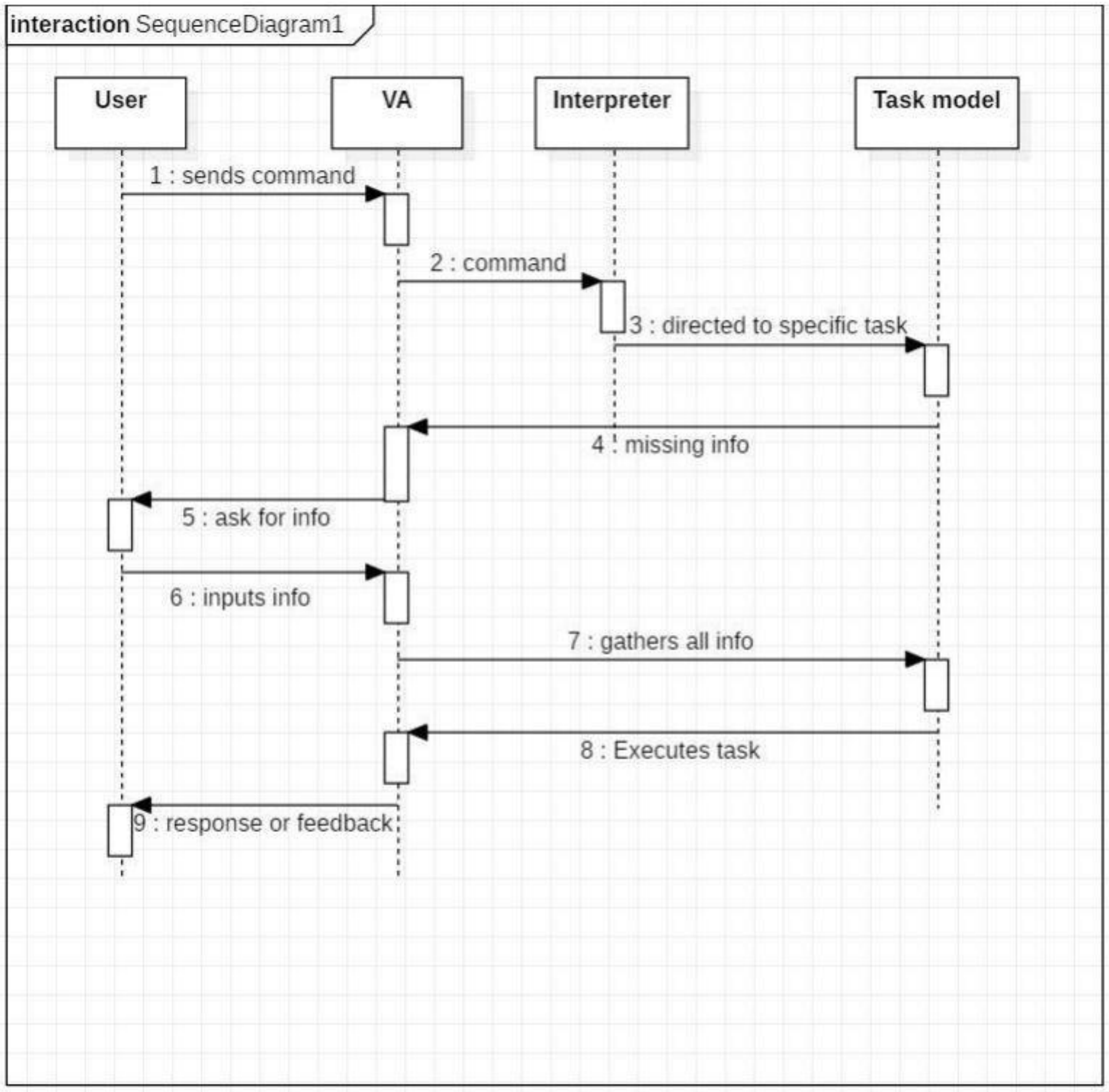


Figure 9.2

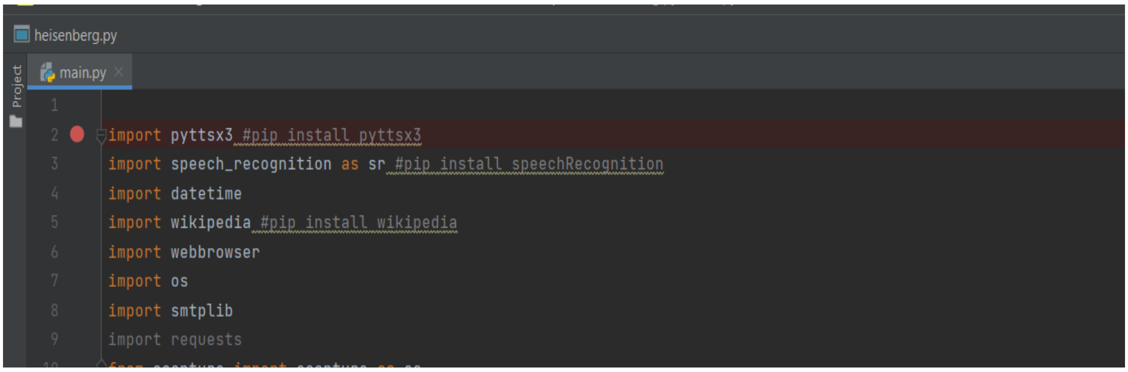
The user sends commands in audio form to the virtual assistant. Order approved

Narrator. It identifies what the user wants and directs the task executor. If work

When some information is missing, the virtual assistant asks the user about it. Information received

Sent back to work and done. The response will be sent back to the user after execution.

9.3 Using libraries in this program



```
import pyttsx3 #pip install pyttsx3
import speech_recognition as sr #pip install speechRecognition
import datetime
import wikipedia #pip install wikipedia
import webbrowser
import os
import smtplib
import requests
```

Pyttsx3

- pyttsx3 Text-to-speech conversion library in Python. Unlike alternative libraries, it works offline and is compatible with both Python 2 and 3. An application to get a reference to pyttsx3 enables the pyttsx3Init () factory function. Engine example. It is very easy to use the tool to convert the recorded text into speech.

Speech Recognition

- It is a library for online and offline speech recognition with support for multiple engines and APIs. It supports APIs such as Google Cloud Speech API, IBM Speech to Text, Microsoft Bing Voice Recognition.

PyAudio

- PyAudio is a set of Python bindings for port audio, interfacing with cross-platform C ++ library audio drivers.

Web Browser

- It is useful for automation testing in web development. Using this code, you can open and test the web development website URL in the browser. Clicking on the buttons, filling out the form automatically, logging into the website, etc. are just some of the test scenarios you can explore with it. Selenium is a test automation tool that has all these features. And you can use it for web scraping.

Smtp LIb

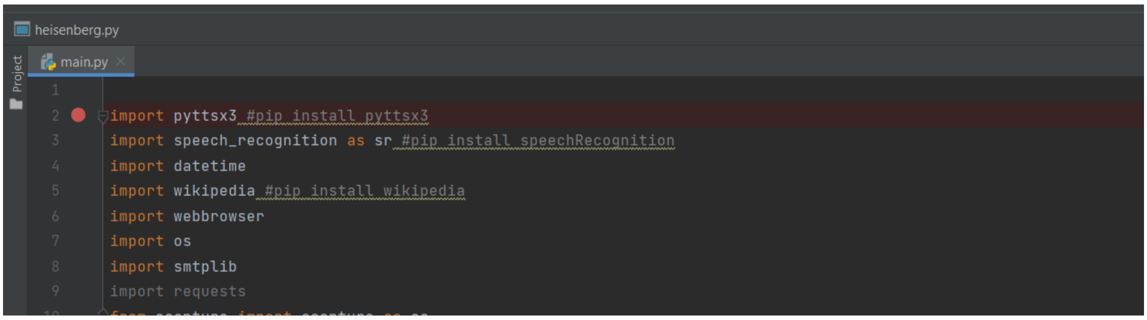
- Simple Mail Transfer Protocol (SMTP) is a protocol used to send and guide e-mails between mail servers.
- Python provides a smtplib module that defines an SMTP client session object that can be used to send mail to any Internet machine with an SMTP or ESMTP listener daemon.

Wikipedia - API

- We use Wikipedia. API to retrieve data from Wikipedia. Data scraping has grown rapidly due to the increasing use of data analytics and machine learning tools. The

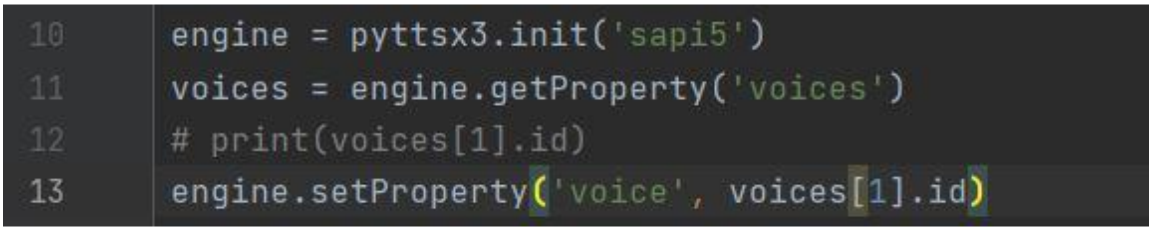
Internet is the largest source of information, so it is important to know how to access data from a variety of sources. And since Wikipedia is one of the largest and most popular sources of information on the Internet, this is a natural place to start.

9.4 Program Step by Step



```python

import pyttsx3 #pip install pyttsx3
import speech_recognition as sr #pip install speechRecognition
import datetime
import wikipedia #pip install wikipedia
import webbrowser
import os
import smtplib
import requests
```

Step 1 :-



```python
engine = pyttsx3.init('sapi5')
voices = engine.getProperty('voices')
# print(voices[1].id)
engine.setProperty('voice', voices[1].id)
```

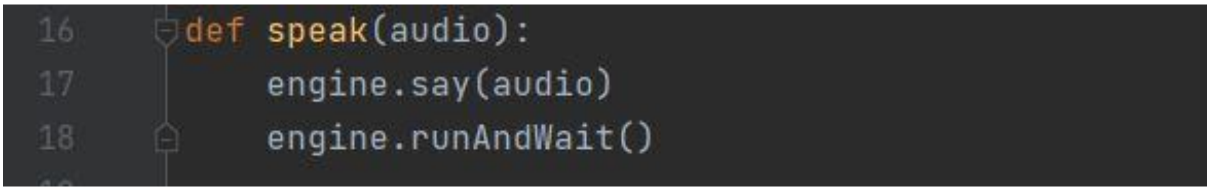
engine = pyttsx3.init('sapi5') - it is a Microsoft speech API for use inbuilt voice.

voices = engine.getProperty('voices') - for using internal voices.

# print(voices[1].id)

engine.setProperty('voice', voices[1].id) – set voice Male(0) and Female (1).

Step 2 :-



```python
def speak(audio):
    engine.say(audio)
    engine.runAndWait()
```

For audio function

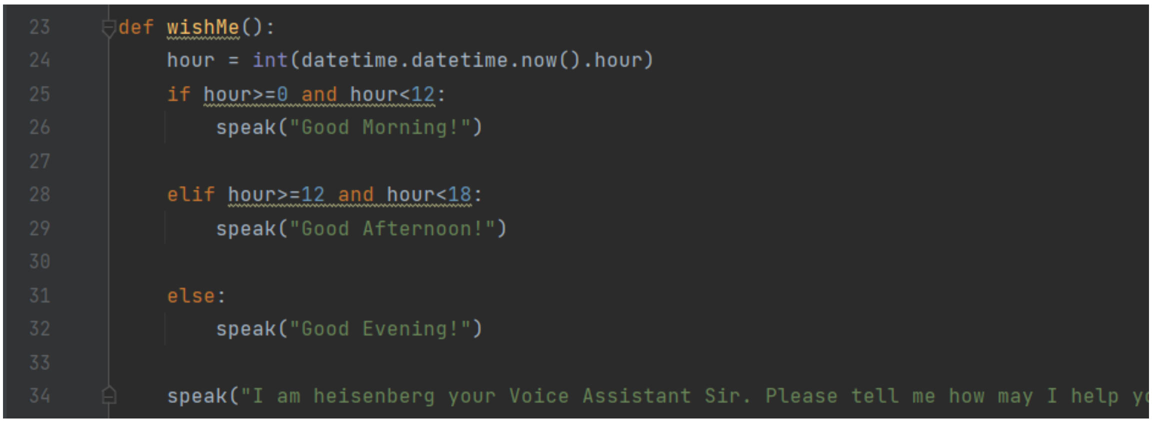
For example -

If __name__== "__main__";

Speak("you are a good boy/girl")

.

Step 3 :-



```
def wishMe():
    hour = int(datetime.datetime.now().hour)
    if hour>=0 and hour<12:
        speak("Good Morning!")

    elif hour>=12 and hour<18:
        speak("Good Afternoon!")

    else:
        speak("Good Evening!")

    speak("I am heisenberg your Voice Assistant Sir. Please tell me how may I help y
```

Wishme Function

```
def wishMe():
    hour = int(datetime.datetime.now().hour)
    if hour>=0 and hour<12:
        speak("Good Morning!")
```

when time 0 to 12 pm , Speaks Good Morning

```
elif hour>=12 and hour<18:
        speak("Good Afternoon!")
```

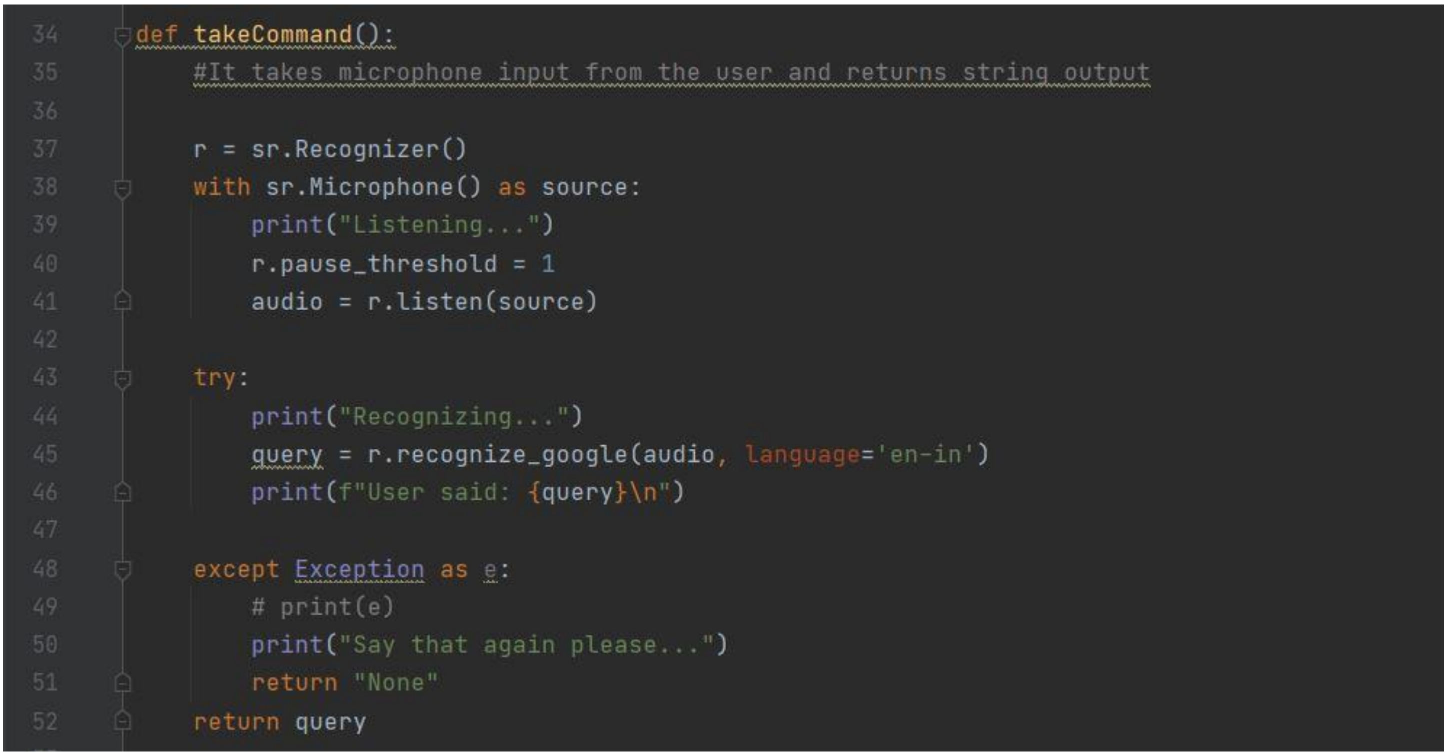
when time is 12 pm to 18 pm , Speaks Good Afternoon.

```
else:
        speak("Good Evening!")
```

when time is 18 pm to 12 am, Speaks Good Evening

speak("I am Heisenberg, your voice assistant Sir. Please tell me how may I help you")

Step 4 :-

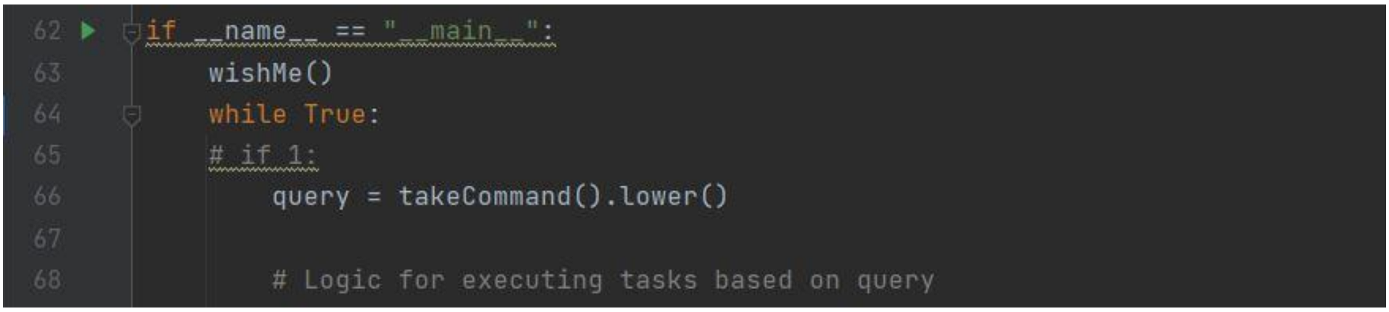


```python
def takeCommand():
    #It takes microphone input from the user and returns string output

    r = sr.Recognizer()
    with sr.Microphone() as source:
        print("Listening...")
        r.pause_threshold = 1
        audio = r.listen(source)

    try:
        print("Recognizing...")
        query = r.recognize_google(audio, language='en-in')
        print(f"User said: {query}\n")

    except Exception as e:
        # print(e)
        print("Say that again please...")
        return "None"
    return query
```

for listening the user command

and Recognizing

Step 5 :-



```python
if __name__ == "__main__":
    wishMe()
    while True:
    # if 1:
        query = takeCommand().lower()

        # Logic for executing tasks based on query
```

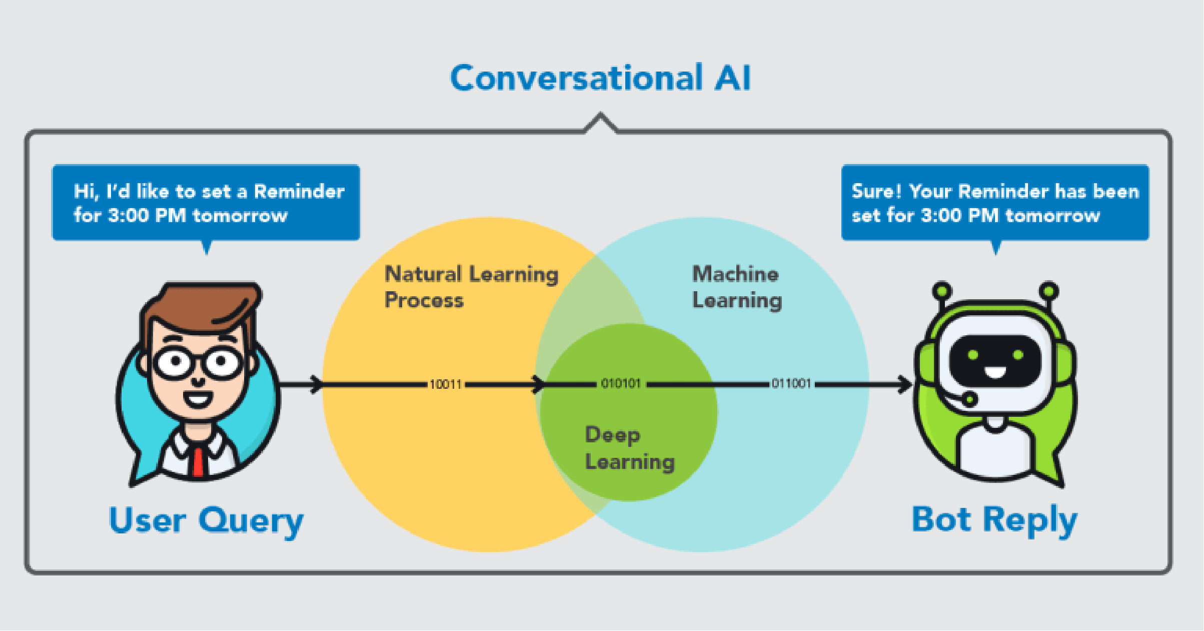
10.1 Descriptions of different input validations and checks

Chatbot Module

A chatbot also known as a chatterbot, bot, artificial agent, etc is basically software program driven by artificial intelligence which serves the purpose of making a conversation with the user by texts or by speech. Famous examples include Siri, Alexa, etc.

These chatbots are inclined towards performance a specific task for the user. Chatbots often perform tasks like making a transaction, booking a hotel, form submissions, etc. The possibilities with a chatbot are endless with the high-tech advancements in the domain of artificial intelligence.

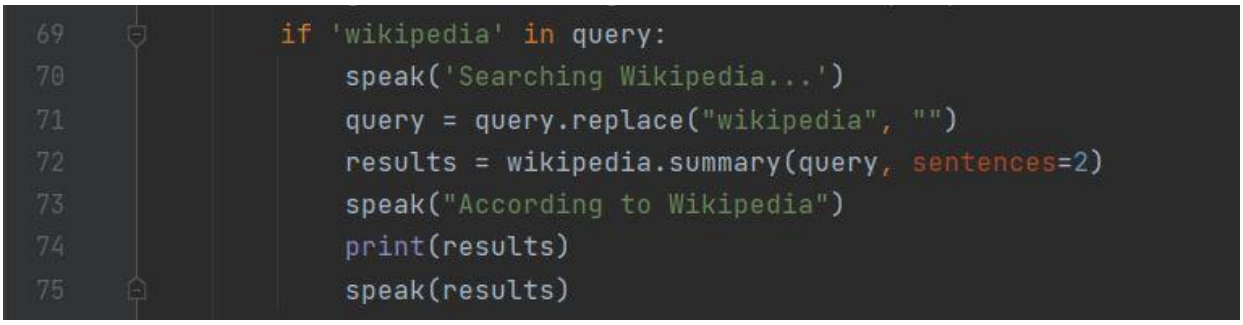
Almost 30 percent of the tasks are performed by the chatbots in any company. Companies employ these chatbots for facilities like customer support, to deliver information, etc. Although the chatbots have come so far down the line, the journey started from a very basic performance. Let's take a look at the evolution of chatbots over the last few decades.



Chapter 12

12.1 Snapshots of the different input and output screens

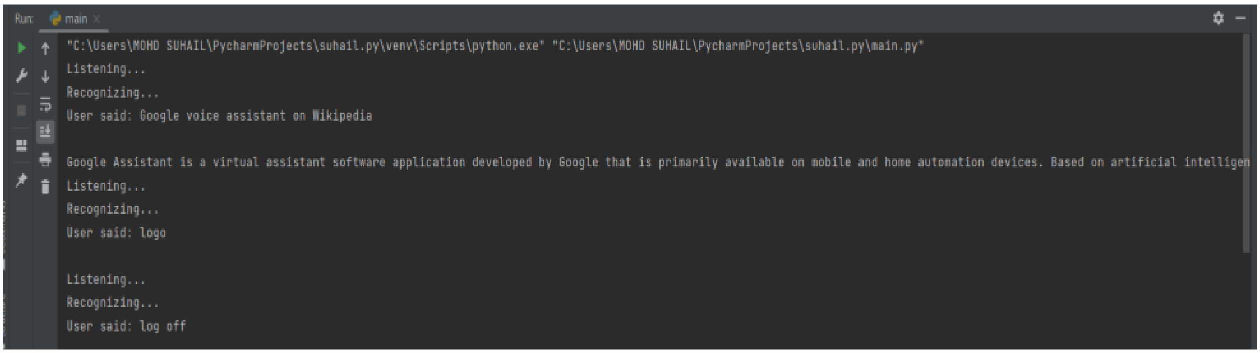
Query for Wikipedia



```
        if 'wikipedia' in query:
            speak('Searching Wikipedia...')
            query = query.replace("wikipedia", "")
            results = wikipedia.summary(query, sentences=2)
            speak("According to Wikipedia")
            print(results)
            speak(results)
```

just speak anything search on Wikipedia

The program says according to Wikipedia

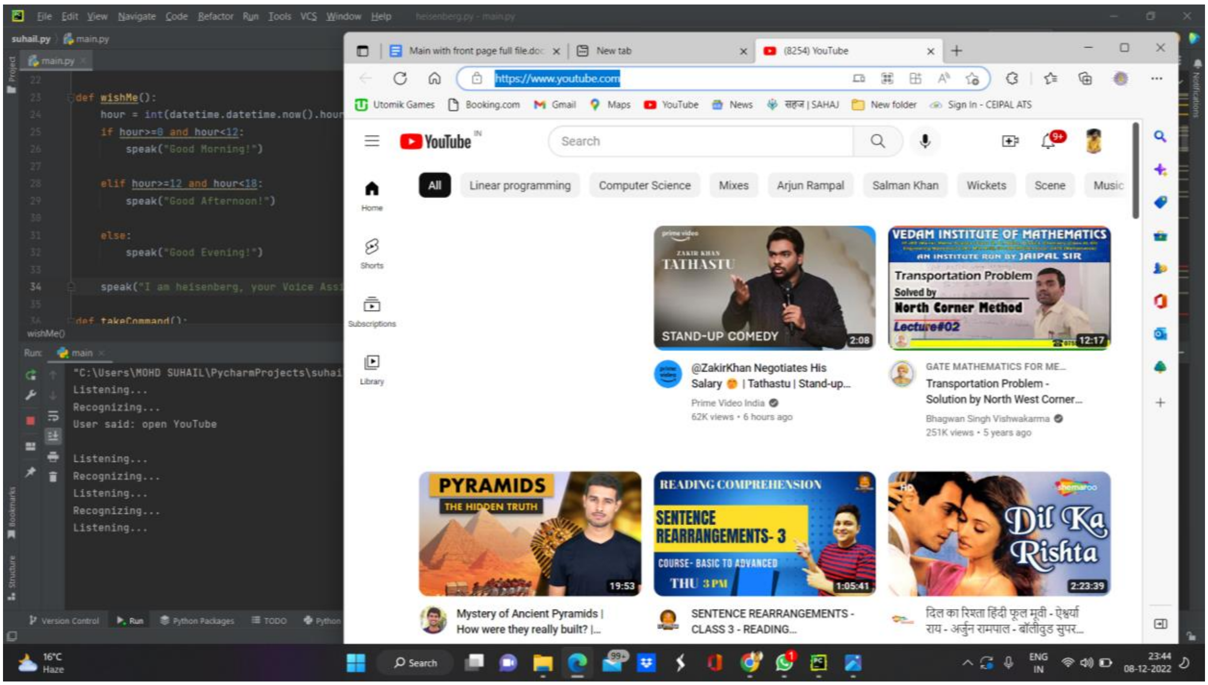


```
"C:\Users\MOHD SUHAIL\PycharmProjects\suhail.py\venv\Scripts\python.exe" "C:\Users\MOHD SUHAIL\PycharmProjects\suhail.py\main.py"
Listening...
Recognizing...
User said: Google voice assistant on Wikipedia

Google Assistant is a virtual assistant software application developed by Google that is primarily available on mobile and home automation devices. Based on artificial intelligen
Listening...
Recognizing...
User said: logo

Listening...
Recognizing...
User said: log off
```

12.2 Query for open Youtube

elif 'open youtube' in query:

webbrowser.open("youtube.com")



```
def wishMe():
    hour = int(datetime.datetime.now().hour
    if hour>=8 and hour<12:
        speak("Good Morning!")

    elif hour>=12 and hour<18:
        speak("Good Afternoon!")

    else:
        speak("Good Evening!")

    speak("I am heisenberg, your Voice Assi

def takeCommand():
```

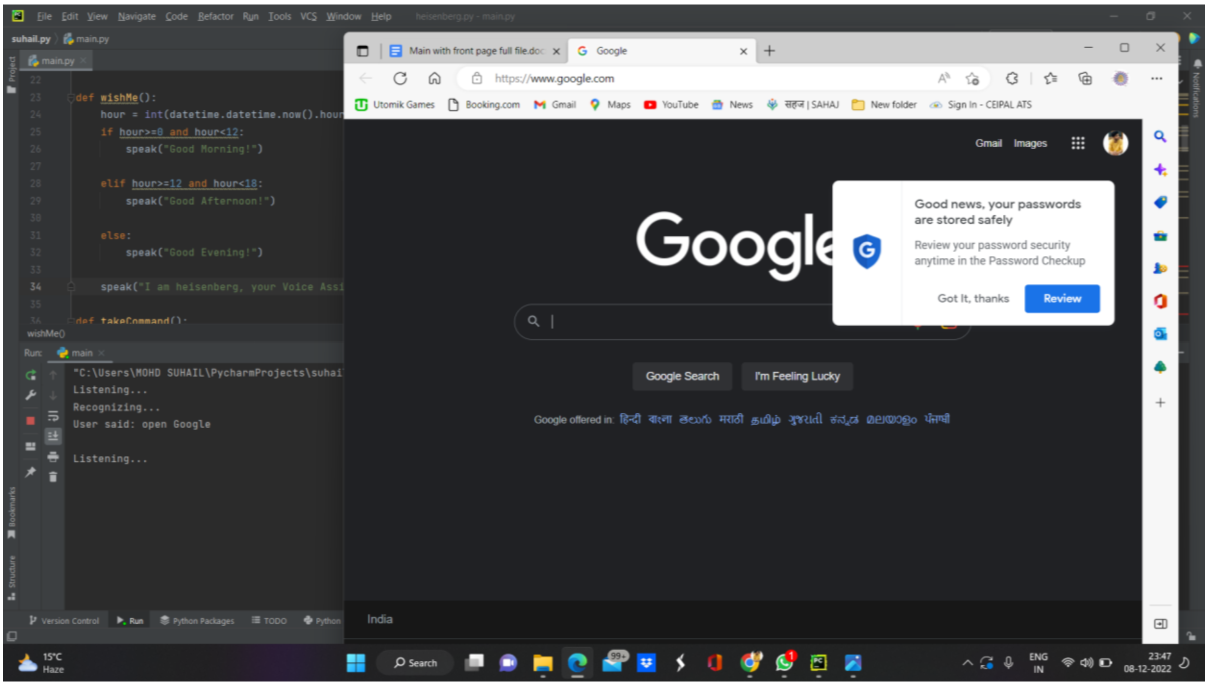
```
"C:\Users\MOHD SUHAIL\PycharmProjects\suhai
Listening...
Recognizing...
User said: open YouTube

Listening...
Recognizing...
Listening...
Recognizing...
Listening...
```

Figure 12.2

12.3 Query for open Google

elif 'open google' in query:

webbrowser.open("google.com")



```
def wishMe():
    hour = int(datetime.datetime.now().hour
    if hour>=0 and hour<12:
        speak("Good Morning!")

    elif hour>=12 and hour<18:
        speak("Good Afternoon!")

    else:
        speak("Good Evening!")

    speak("I am heisenberg, your Voice Assi

def takeCommand():
```

```
"C:\Users\MOHD SUHAIL\PycharmProjects\suhai
Listening...
Recognizing...
User said: open Google

Listening...
```

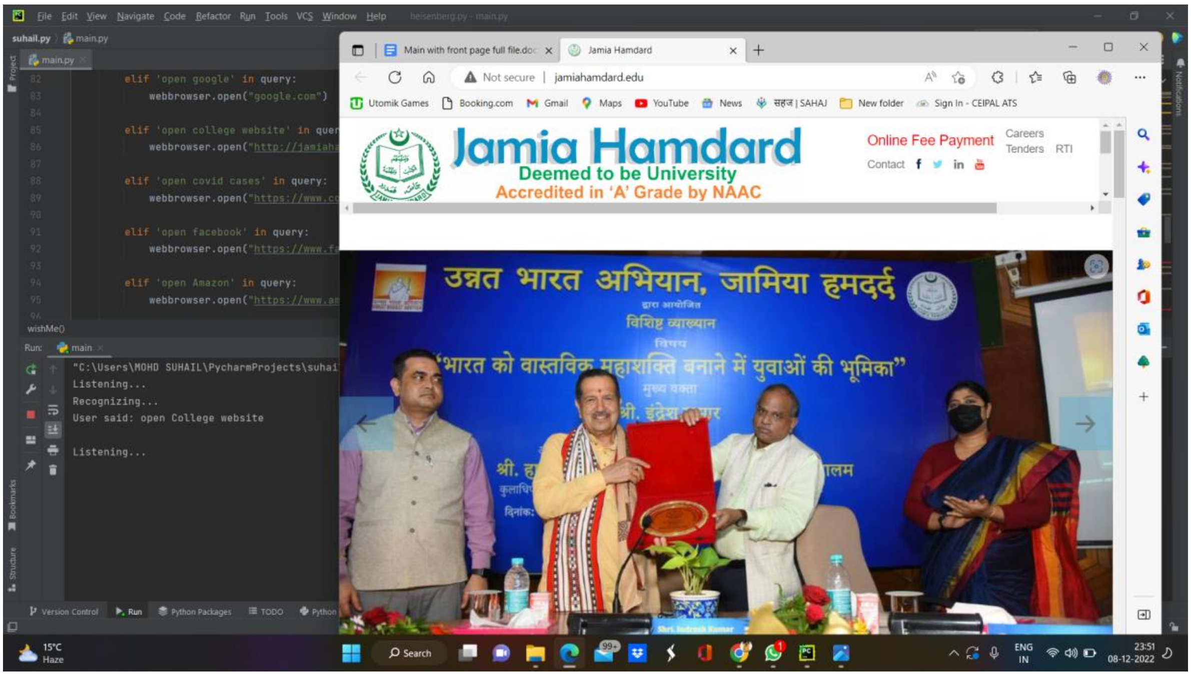
https://www.google.com
Google
Gmail Images
Good news, your passwords are stored safely
Review your password security anytime in the Password Checkup
Got it, thanks
Review
Google Search
I'm Feeling Lucky
India

Figure 12.3

12.4 Query for open Jamia Hamdard Website

elif 'open college website' in query:

webbrowser.open("http://jamiahamdard.edu/")



```
            elif 'open google' in query:
                webbrowser.open("google.com")

            elif 'open college website' in quer
                webbrowser.open("http://jamiaha

            elif 'open covid cases' in query:
                webbrowser.open("https://www.co

            elif 'open facebook' in query:
                webbrowser.open("https://www.fa

            elif 'open Amazon' in query:
                webbrowser.open("https://www.am
```

```
"C:\Users\MOHD SUHAIL\PycharmProjects\suhai
Listening...
Recognizing...
User said: open College website

Listening...
```

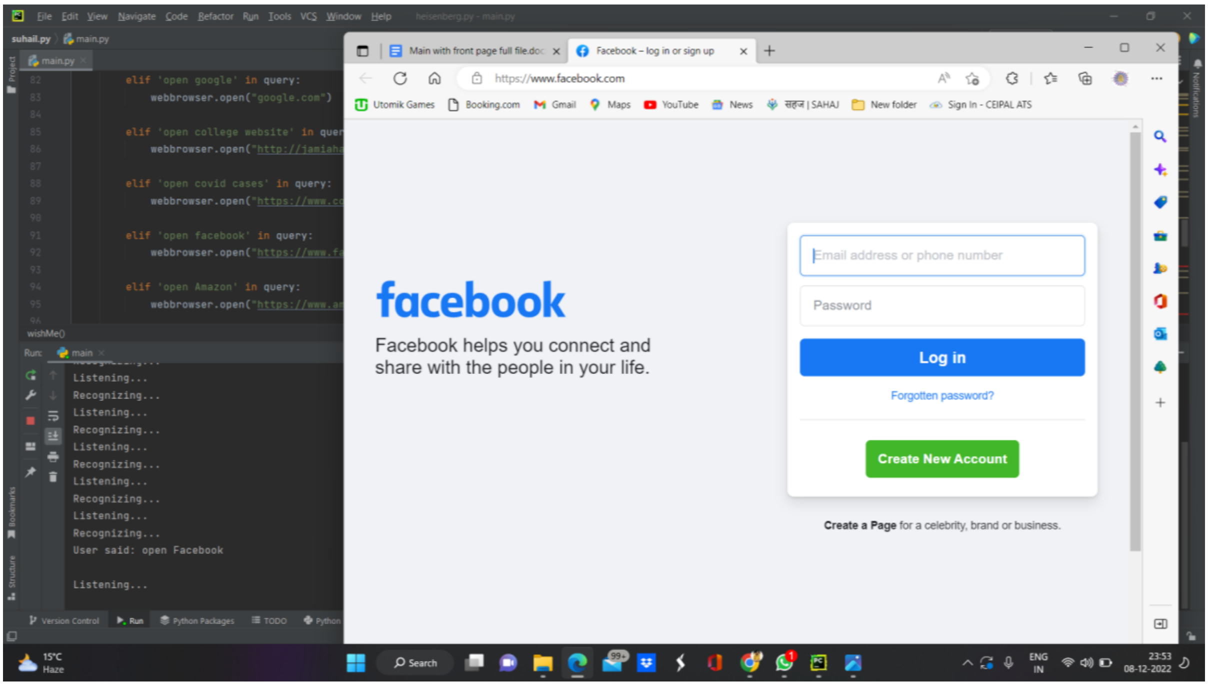
Not secure | jamiahamdard.edu
Jamia Hamdard
Deemed to be University
Accredited in 'A' Grade by NAAC
Online Fee Payment
Careers
Tenders
RTI
Contact
उन्नत भारत अभियान, जामिया हमदर्द
विशिष्ट व्याख्यान
"भारत को वास्तविक महाशक्ति बनाने में युवाओं की भूमिका"

Figure 12.4

12.4 Query for open facebook

elif 'open facebook' in query:

webbrowser.open("https://www.facebook.com/")



```
        elif 'open google' in query:
            webbrowser.open("google.com")

        elif 'open college website' in quer
            webbrowser.open("http://jamiaha

        elif 'open covid cases' in query:
            webbrowser.open("https://www.co

        elif 'open facebook' in query:
            webbrowser.open("https://www.fa

        elif 'open Amazon' in query:
            webbrowser.open("https://www.am
```

```
Listening...
Recognizing...
Listening...
Recognizing...
Listening...
Recognizing...
Listening...
Recognizing...
Listening...
Recognizing...
User said: open Facebook

Listening...
```

https://www.facebook.com

facebook

Facebook helps you connect and share with the people in your life.

Email address or phone number

Password

Log in

Forgotten password?

Create New Account

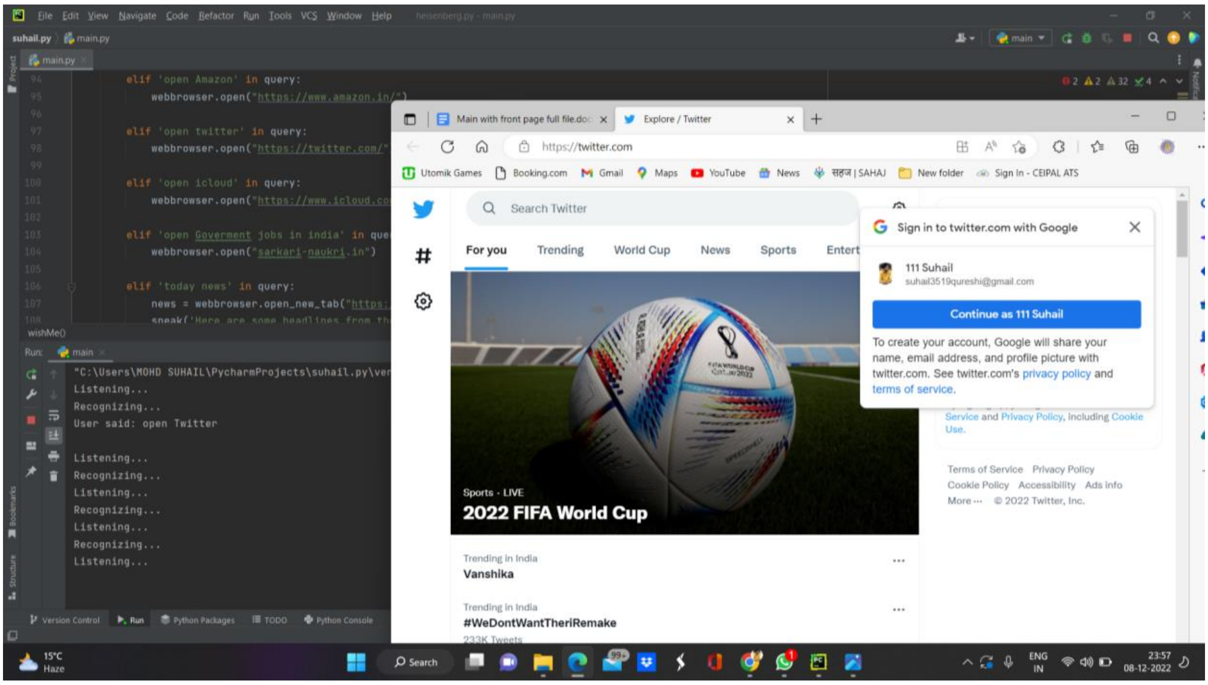
Create a Page for a celebrity, brand or business.

Figure 12.4

12.5 Query for open Twitter

elif 'open twitter' in query:

webbrowser.open("https://twitter.com/")



```
        elif 'open Amazon' in query:
            webbrowser.open("https://www.amazon.in/")

        elif 'open twitter' in query:
            webbrowser.open("https://twitter.com/"

        elif 'open icloud' in query:
            webbrowser.open("https://www.icloud.co

        elif 'open Goverment jobs in india' in que
            webbrowser.open("sarkari-naukri.in")

        elif 'today news' in query:
            news = webbrowser.open_new_tab("https:
            speak('Here are some headlines from th
```

```
"C:\Users\MOHD SUHAIL\PycharmProjects\suhail.py\ver
Listening...
Recognizing...
User said: open Twitter

Listening...
Recognizing...
Listening...
Recognizing...
Listening...
Recognizing...
Listening...
```

https://twitter.com

Sign in to twitter.com with Google

111 Suhail
suhail3519qureshi@gmail.com

Continue as 111 Suhail

To create your account, Google will share your name, email address, and profile picture with twitter.com. See twitter.com's privacy policy and terms of service.

Sports · LIVE
2022 FIFA World Cup

Trending in India
Vanshika

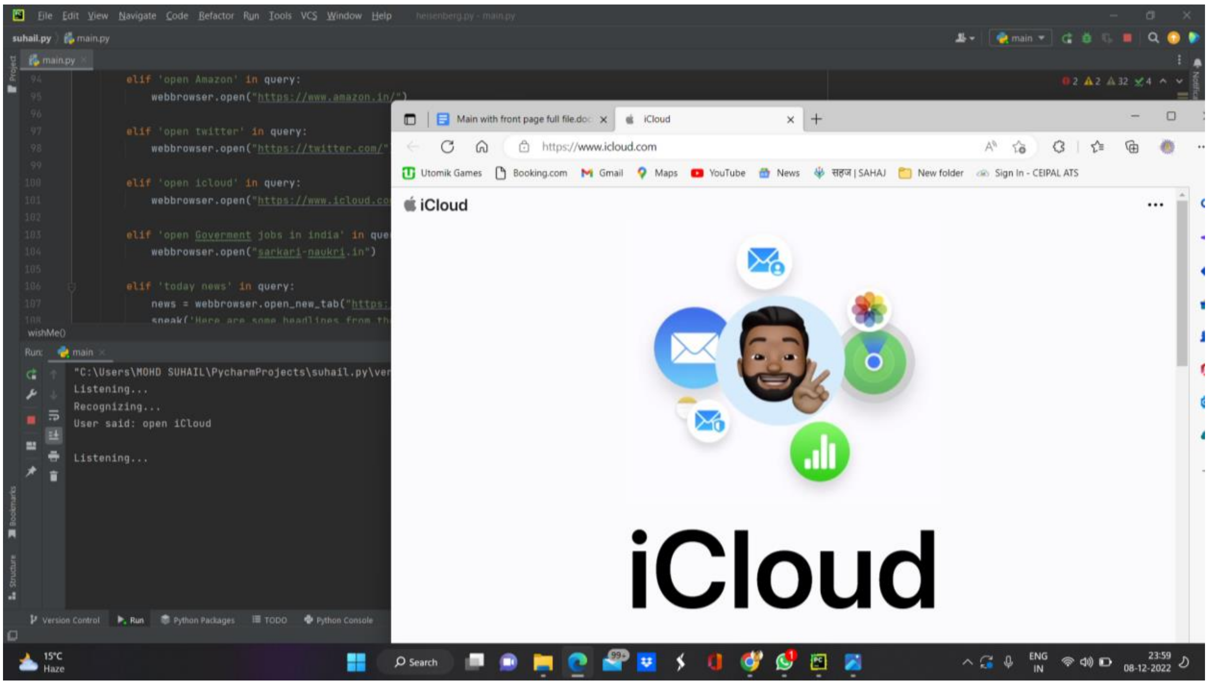
Trending in India
#WeDontWantTheriRemake

Figure 12.5

12.6 Query for icloud

elif 'open icloud' in query:

webbrowser.open("https://www.icloud.com/")



```
        elif 'open Amazon' in query:
            webbrowser.open("https://www.amazon.in/")

        elif 'open twitter' in query:
            webbrowser.open("https://twitter.com/"

        elif 'open icloud' in query:
            webbrowser.open("https://www.icloud.co

        elif 'open Goverment jobs in india' in que
            webbrowser.open("sarkari-naukri.in")

        elif 'today news' in query:
            news = webbrowser.open_new_tab("https:
            speak('Here are some headlines from th
```

```
"C:\Users\MOHD SUHAIL\PycharmProjects\suhail.py\ver
Listening...
Recognizing...
User said: open iCloud

Listening...
```

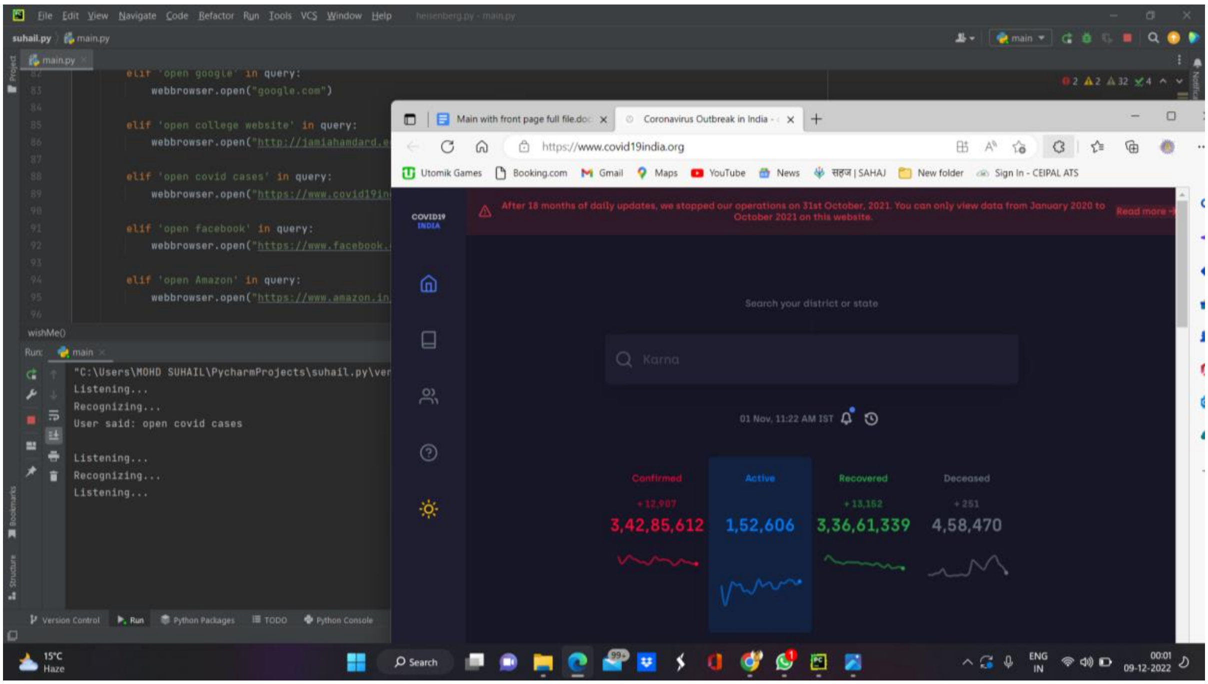
File Edit View Navigate Code Refactor Run Tools VCS Window Help
suhail.py main.py
main.py
wishMe()
Run: main
Main with front page full file.doc
iCloud
https://www.icloud.com
Utomik Games Booking.com Gmail Maps YouTube News सहज | SAHAJ New folder Sign In - CEIPAL ATS
iCloud
iCloud
Version Control Run Python Packages TODO Python Console
15°C Haze
Search
ENG IN
23:59 08-12-2022

Figure 12.6

12.7 Query for Covid -19 live Update

elif 'open covid cases' in query:

webbrowser.open("https://www.covid19india.org/")



```
        elif 'open google' in query:
            webbrowser.open("google.com")

        elif 'open college website' in query:
            webbrowser.open("http://jamiahamdard.e

        elif 'open covid cases' in query:
            webbrowser.open("https://www.covid19in

        elif 'open facebook' in query:
            webbrowser.open("https://www.facebook.

        elif 'open Amazon' in query:
            webbrowser.open("https://www.amazon.in
```

```
"C:\Users\MOHD SUHAIL\PycharmProjects\suhail.py\ver
Listening...
Recognizing...
User said: open covid cases

Listening...
Recognizing...
Listening...
```

After 18 months of daily updates, we stopped our operations on 31st October, 2021. You can only view data from January 2020 to October 2021 on this website.

Search your district or state

01 Nov, 11:22 AM IST

Confirmed	Active	Recovered	Deceased
+ 12,907		+ 13,152	+ 251
3,42,85,612	1,52,606	3,36,61,339	4,58,470

File Edit View Navigate Code Refactor Run Tools VCS Window Help
suhail.py main.py
main.py
wishMe()
Run: main
Main with front page full file.doc
Coronavirus Outbreak in India
https://www.covid19india.org
Utomik Games Booking.com Gmail Maps YouTube News सहज | SAHAJ New folder Sign In - CEIPAL ATS
COVID19 INDIA
Read more
Karna
Version Control Run Python Packages TODO Python Console
15°C Haze
Search
ENG IN
00:01 09-12-2022

Figure 12.7

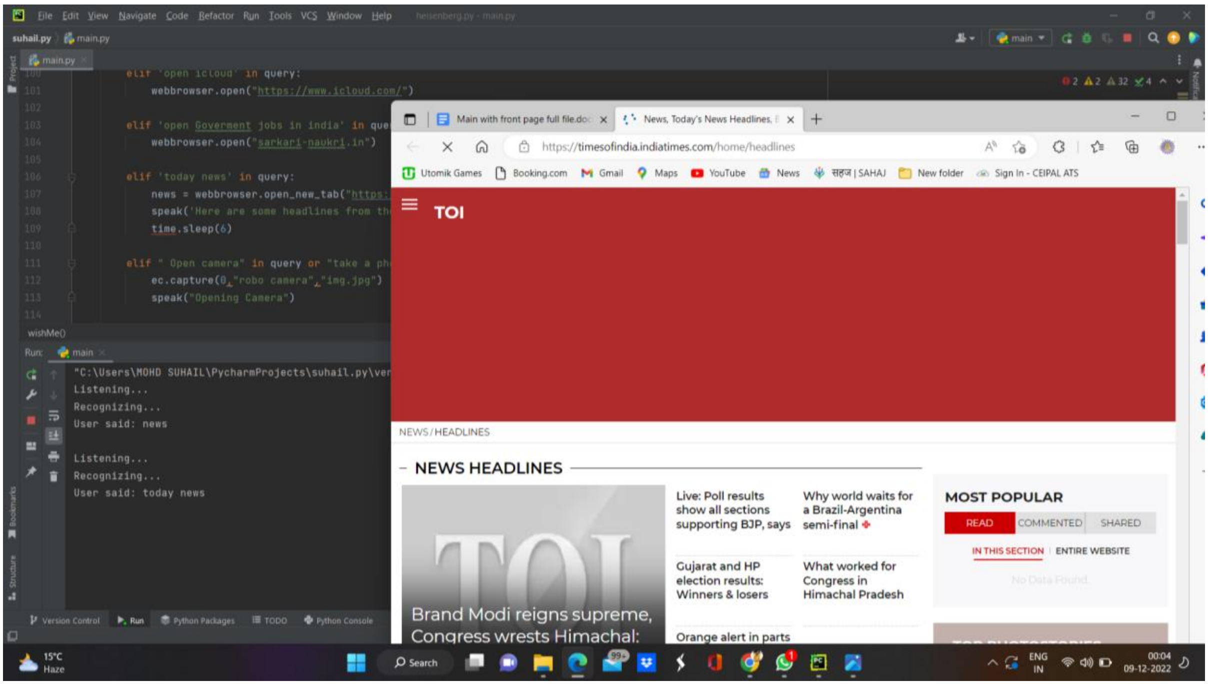
12.8 Query for Today news

elif 'today news' in query:

news = webbrowser.open_new_tab("https://timesofindia.indiatimes.com/home/headlines")

speak('Here are some headlines from the Times of India')

time.sleep(6)



```
        elif 'open icloud' in query:
            webbrowser.open("https://www.icloud.com/")

        elif 'open Goverment jobs in india' in que
            webbrowser.open("sarkari-naukri.in")

        elif 'today news' in query:
            news = webbrowser.open_new_tab("https:
            speak('Here are some headlines from th
            time.sleep(6)

        elif " Open camera" in query or "take a ph
            ec.capture(0,"robo camera","img.jpg")
            speak("Opening Camera")
```

```
"C:\Users\MOHD SUHAIL\PycharmProjects\suhail.py\ver
Listening...
Recognizing...
User said: news

Listening...
Recognizing...
User said: today news
```

https://timesofindia.indiatimes.com/home/headlines

NEWS / HEADLINES

NEWS HEADLINES

Brand Modi reigns supreme, Congress wrests Himachal:

Live: Poll results show all sections supporting BJP, says

Why world waits for a Brazil-Argentina semi-final

Gujarat and HP election results: Winners & losers

What worked for Congress in Himachal Pradesh

Orange alert in parts

MOST POPULAR

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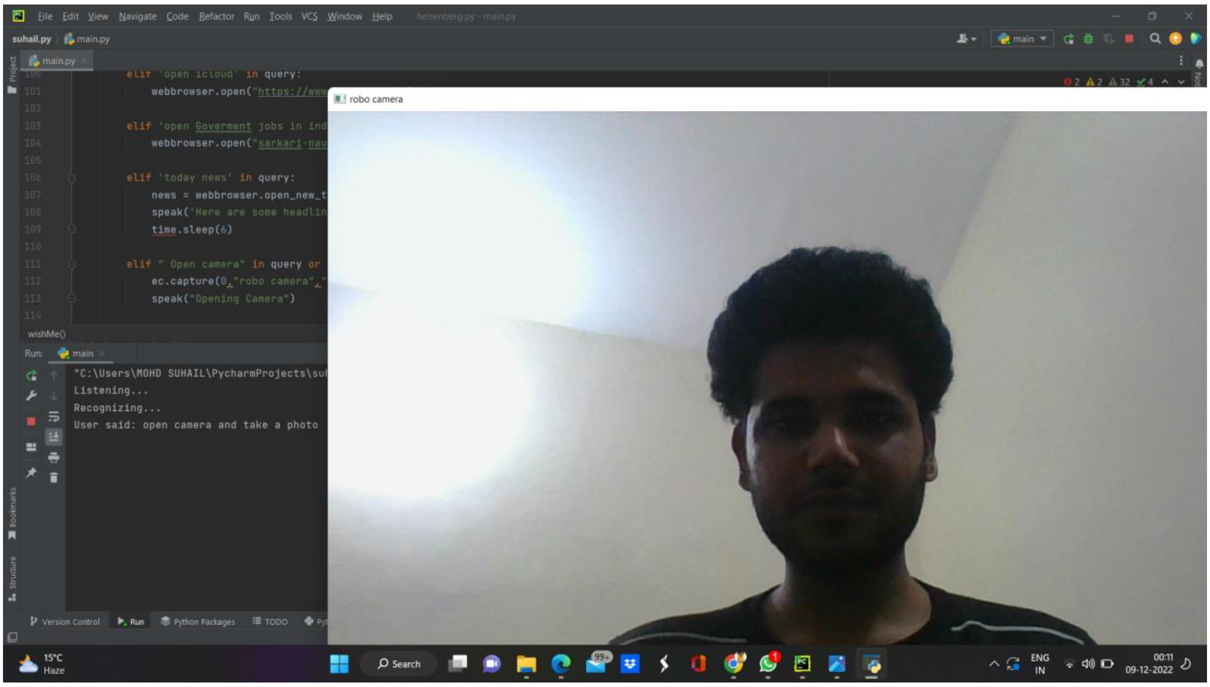
IN THIS SECTION | ENTIRE WEBSITE

No Data Found

Figure 12.8

12.9 Query for Open Camera or Take a picture

elif “ Open camera” in query or “take a photo” in query:
    ec.capture(0,”robo camera”,”img.jpg”)



```
        elif 'open icloud' in query:
            webbrowser.open("https://www

        elif 'open Goverment jobs in ind
            webbrowser.open("sarkari-nau

        elif 'today news' in query:
            news = webbrowser.open_new_t
            speak('Here are some headlin
            time.sleep(6)

        elif " Open camera" in query or
            ec.capture(0,"robo camera","
            speak("Opening Camera")
```

```
"C:\Users\MOHD SUHAIL\PycharmProjects\su
Listening...
Recognizing...
User said: open camera and take a photo
```

Figure 12.9

Chapter 13

13. Conclusion

In the history of computing, the use of user interfaces has become natural. The screen and keyboard are a step in this direction. The mouse and graphical user interface are another. Recent development of touch screens. The next step is mostly a combination of reality, gestures and voice commands. After all, it is much easier to ask a question or conduct a conversation than to type anything or enter too many details in an online form.

The more a person interacts with sound-activated devices, the more tendencies and patterns the system will detect based on the information it receives. Then, this data can be used to determine customer preferences and interests, which is the long-term selling point to make a home smarter. Google and Amazon are looking to integrate voice-enabled Artificial Intelligence with the ability to analyze and respond to human emotions.

Chapter 14

14. Limitation

14.1 Limitations of virtual assistants

The Virtual Assistant app can do many things, but there are limitations to their capabilities, or. And you need to know in advance what difficulties you may face in the development process, these are facts that can help you better understand your voice strategy.

14.2 UI/UX & API limitations.

If you have used the services of third parties, then in order to create a voice application, you need to accept the fact that this is an effective solution to these restrictions. For example, you can hardly change the user interface (at least to a large extent) or add controls and widgets to it in the way you want. There is no other choice but to work with what is provided. Of course, you can always create your own voice, your own assistant from the very beginning, but this road is more than labor, which requires and, therefore, requires additional financial investments.

14.3 User training.

You need to create a meaningful discovery stage and explain to the user the easiest way to work with your personal helper program. It needs to learn what words and commands to use the program to perform any action.

14.4 Poor understanding of the context.

Well-designed, smart assistants can keep the conversation going, but they don't always need to be properly understood in context, which can irritate users and sometimes even lead to negative consequences. A prime example is that if a woman lives in Nashville, Tennessee, which happened in 2018 at the beginning of the year. Youth and, after a conversation with a Siri person that he really liked. "Oh, Godfrey reacted in a strange way, and it sent an undefined message to an object. The boy could not understand the meaning of the joke, and the girl appeared on the social network. As you can see, even Siri with one of the most famous virtual assistants can be an annoying accident, never thinking of harm!

14.5 Imperfect multi language support.

By far the most popular language, virtual assistants, recognize and use English. In order to get multilingual support, this is not an easy question, because, in addition to a new language, a lot of work experience, however, requires sufficient technical, time or financial resources to implement it.

14.6 Possible cause of additional annoyance to the user.

The voice of a program that recognizes speech quite well, but in 3% of cases, the user will have to repeat the request several times. Yes, it is annoying and frustrating.

But technology does not stand still, all these problems are gradually becoming history. According to statistics, artificial intelligence and IQ are doubled approximately every two years, which means that the digital assistant develops in the same way.

Chapter 15

Future Scope

No one has predicted the future accurately, but technology experts are sure to predict that AI Assistant Apps are going to rule most of the technology advancements in future because of their efficiency and effectiveness. The future option of voice assistants is bright and holds wonderful applicability in solving real-world problems.

Chapter 16

Reference & Bibliography

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- www.youtube.com

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• YouTube Channels referred

- techwithtim
- edureka

• Documents referred

- Designing Personal Assistant Software for Task Management using Semantic Web Technologies and Knowledge Databases - Purushotham Botla

- Python code for Artificial Intelligence: Foundations of Computational Agents - David L. Poole and Alan K. Mackworth