MICRO PROJECT

Academic year

2021-22

Voice Assistant

Program: Computer Engineering **Program code:CO6I-B**

Course: Programming with Python **Course code: 22616**

MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION

Certificate

This is to certify that Mr. /Ms. **Chirag Mangtani, Hiten Dusseja, Sanika Thakur** Roll No. **07-09 of Sixth** Semester of Diploma in **Computer Engineering** of Institute**, VES POLYTECHNIC (Code: 0004)** has completed the **Micro Project** satisfactorily in Subject –**-Programming with Python (22616)** for the academic year **2021- 2022**. as prescribed in the curriculum.

Place: Mumbai Enrollment No: 1900040145,46,47

Date: Exam Seat No: …….

Subject Teacher **Head of the Department** **Principal**

Seal of Institution

INDEX

Academic year: 2021-22 **Name of the faculty: Mrs.ShubhangiChintawar**

Program code: CO6I **Course & course code: PWP (22616)**

Name of the candidate: Chirag Mangtani, Hiten Dusseja, Sanika Thakur

Roll No. 07 – 09 **Enrollment No. 1900040145,146,147**

Annexure – I

Micro-Project Proposal

Voice Assistant

1.0 Aim/Benefits of the Micro-Project

This Micro-Project aims at

- To create a program that takes input from the user's mic and outputs via user's mic
- To build a voice assistant that opens app and websites according to user's demand
- To build a voice assistant that sends emails and messages according to user's demand

2.0 Course Outcomes Addressed

- Display message on screen using python script on IDE [✓]
- Develop python program to demonstrate use of Operators. [✓]
- Perform operations on data structure in Python [✓]
- Develop function for given problem [✓]
- Design classes for given problem [ ]
- Handle exception [✓]

3.0 Proposed Methodology

- Discussion about topic with guide and among group members
- Literature Survey
- Submission of project proposal
- Information collection
- Analysis of Data
- Compilation of the content
- Discussion about the code
- Representation
- Implementing the code
- Editing and revising the content

4.0 Action Plan

SR. No.	Details of activity	Planned Start date	Planned Finish date	Name of Responsible Team Members
1	Finalization of project Title and Scope	**15/02/22**	**22/02/22**	**All**
2	Project Definition	**22/02/22**	**2/03/22**	**All**
3	Information Collection and Analysis of Data	**2/03/22**	**15/03/22**	**All**
4	Algorithm and Flowchart	**15/03/22**	**23/03/22**	**All**
5	Coding	**23/03/22**	**20/04/22**	**All**
6	Output	**20/04/22**	**26/04/22**	**All**
7	Report writing	**26/04/22**	**10/05/22**	**All**
8	Demonstration of project & final submission	**10/5/22**	**18/05/22**	**All**

5.0 Resources Required

Sr.No.	Equipment Name with Broad Specification	Remark if any
1	Desktop pc – Windows 7	
2	Editor used – Python IDLE, Software – Python 3.4.2	

Name of Team Members with Roll Nos.

1. Chirag Mangtani - 07
2. Hiten Dusseja - 08
3. Sanika Thakur - 09

Mrs.ShubhangiChintawar
Name and Signature of Course Teacher

Micro-Project Report

Voice Assitant

1.0 Rationale

A voice assistant that uses user's voice to take commands and then processes and gives output according to that in audio as well as text. The main focus of the voice assistant is to perform basic functions like searching and playing videos that the user wants, open softwares, websites, etc. It also has functionalities like sending a whatsapp message using whatsapp web and sending gmails. It can search about people and stuff from the Wikipedia api and provide a summary of the person/place/thing to the user. In short, it is a text to speech and speech to text program that performs basic tasks.

2.0 Aim/Benefits of the Micro-Project

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- To build a voice assistant that sends emails and messages according to user's demand

3.0 Course Outcomes Addressed

- Display message on screen using python script on IDE [✓]
- Develop python program to demonstrate use of Operators. [✓]
- Perform operations on data structure in Python [✓]
- Develop function for given problem [✓]
- Design classes for given problem [ ]
- Handle exception [✓]

4.0 Literature Review

About python:

Python is a high-level, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation. Its language constructs and object-oriented approach aim to help programmers write clear, logical code for small- and large-scale projects

About pyttsx3 module:

pyttsx3 is a text-to-speech conversion library in Python. Unlike alternative libraries, it works offline, and is compatible with both Python 2 and 3.

We have used this to make our program speak whatever we provide via the user's speaker.

About speech_recognition module:

Library for performing speech recognition, with support for several engines and APIs, online and offline.

It supports multiple apis like Google Speech Recognition, Google cloud speech API, Wit.ai, Microsoft Bing Voice Recognition, etc. The one we have used for our project is Google speech recognition.

We have used this module to recognize user's commands.

About pywhatkit module:

pywhatkit is a Python library for sending WhatsApp messages at a certain time, it has several other features too.

Following are some features of pywhatkit module:

- Send WhatsApp messages.
- Play a YouTube video.
- Perform a Google Search.
- Get information on a particular topic.

We have used this module to send whatsapp messages and play youtube videos.

About smtplib module:

The smtplib module defines an SMTP client session object that can be used to send mail to any internet machine with an SMTP or ESMTP listener daemon.

We have used this module to send emails

About pyautogui module:

PyAutoGUI is essentially a Python package that works across Windows, MacOS X and Linux which provides the ability to simulate mouse cursor moves and clicks as well as keyboard button presses.

We have used this module to send whatsapp messages typed by pywhatkit

About API:

API stands for "application programming interface." An API is essentially a set of rules that dictate how two machines talk to each other. Some examples of API-based interactions include a cloud application communicating with a server, servers pinging each other, or applications interacting with an operating system.

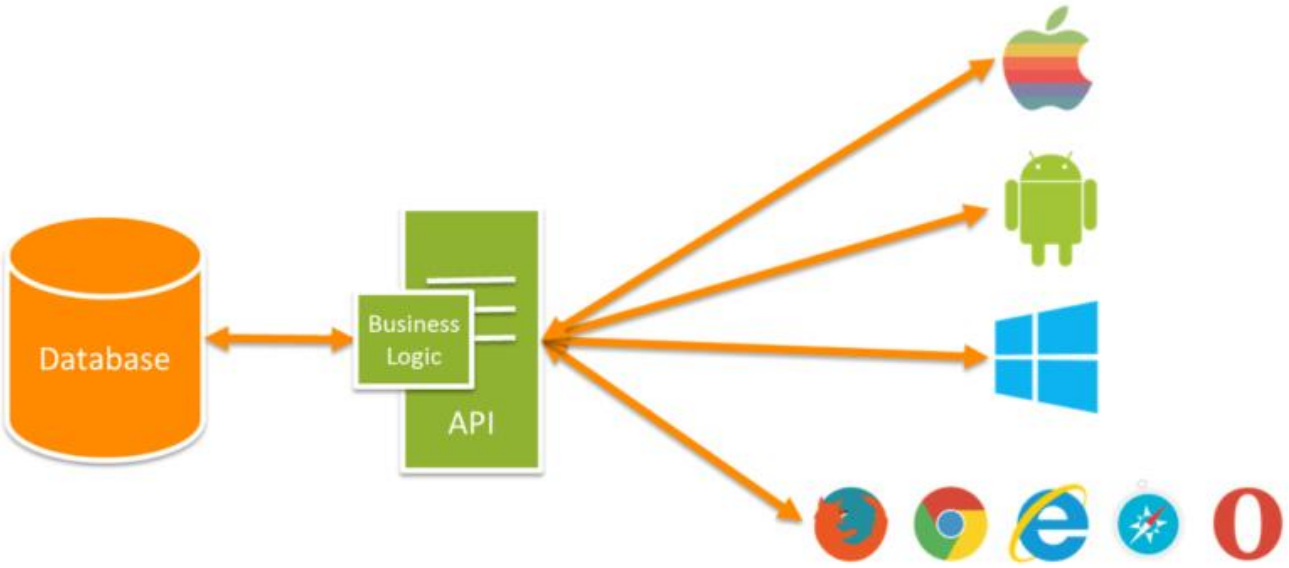


Fig 4.1: Working of an API

About modules in python:

In Python, Modules are simply files with the ". py" extension containing Python code that can be imported inside another Python Program. In simple terms, we can consider a module to be the same as a code library or a file that contains a set of functions that you want to include in your application

About functions in python:

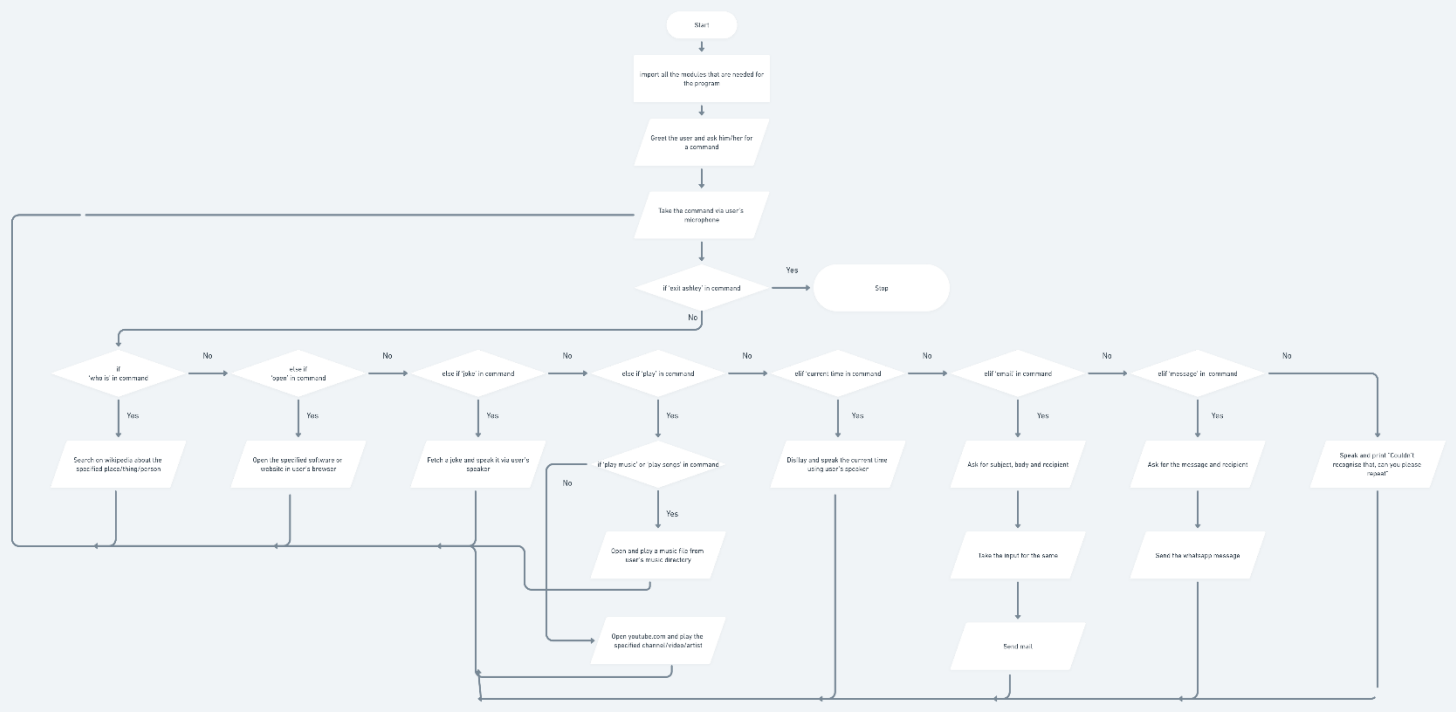
A function is a block of reusable code that is used to perform a specific action. The advantages of using functions are: Reducing duplication of code. Decomposing complex problems into simpler pieces. Improving clarity of the code.

5.0 Actual Procedure Followed.

Algorithm:

Step 1: Start
Step 2: Import all the modules that are needed
Step 3: Greet the user
Step 4: Take the command from the user
Step 5: Check what does the command have and do the following accordingly:
Step 5.1: if command has 'who is' then search on wikipedia and return the summary
Step 5.2: else if command has 'open' in it, then open the specified software or website
Step 5.3: else if command has 'joke' in it, then fetch a joke and play it on user's speaker
Step 5.4: else if command has 'play' in it, then check from the following
Step 5.4 a: if command has 'play music' or 'play songs' in it then play a random song from the user's directory
Step 5.4 b: else open youtube and play the specified video/channel/artist

Step 5.5: elseif command has 'current time' in it, then tell the current time
Step 5.6: else if command has 'email' in it, then ask for subject,body and recipient of the mail and send the mail accordingly
Step 5.7: else if command has 'message' in it, then ask for the body and recipient of the message and send a whatapp message
Step 5.8: else if not even single condition of the above are true, speak "Couldn't recognise that, can you please repeat"
Step 6: Stop if the user says exit ashley
Flowchart:



Code:

```
import pyttsx3
import speech_recognition as sr
import wikipedia
import webbrowser
import os
import random
import datetime
import smtplib
import pyjokes
import pywhatkit
from email.message import EmailMessage
import time
```

```
import pyautogui
import keyboard as k
from datetime import datetime


mymail = "ankitdsouza15@gmail.com"
mypassword = "13318990@Hiten"
engine = pyttsx3.init('sapi5')
voices = engine.getProperty('voices')
engine.setProperty('voice', voices[1].id)
emaillist = {'personal': "ankitdsouza15@gmail.com",
             'college': "co2019.hiten.dusseja@ves.ac.in",
             'alternate': "xyzabc13318990@gmail.com",
             'prank': "prenkmaster1331@gmail.com"}
message_recipient_dict = {'hello': "+919881010419"}


def speak(sentence):
    engine.say(sentence)
    engine.runAndWait()


def sendemail(to, content):
    server = smtplib.SMTP('smtp.gmail.com', 590)
    server.ehlo()
    server.starttls()
    # file = open("password.txt", 'r')

    server.login(mymail, mypassword)
    # server.sendmail('ankitdsouza15@gmail.com', to, content)
    server.send_message(content)
    server.close()
    speak(f"Sent an email to {to} ")


def sendmesage(phnnumber, message_sent):
    now = datetime.now()

    current_time = now.strftime("%H:%M")
    hour = int(current_time[:2])
```

```
    minu = int(current_time[3:5])
    print("Current Time =", hour, " ", minu)
    if(minu == 59 or minu == 60):
        minu = 0
        hour = hour + 1
    else:
        minu = minu+1
    print("Time after 1 min =", hour, " ", minu)
    pywhatkit.sendwhatmsg(phnnumber, message_sent, hour, minu)
    pyautogui.click(1050, 950)
    time.sleep(1)
    k.press_and_release('enter')


def greetme():
    speak("Hello there This is Ashley,how can I help you?")


def takeCommand():
    r = sr.Recognizer()

    with sr.Microphone() as source:
        print("Listening..")
        r.pause_threshold = 0.9
        r.phrase_threshold = 0.4
        # r.adjust_for_ambient_noise(source, duration=1)
        audio = r.listen(source)
    try:
        print("Recognizing")
        query = r.recognize_google(audio)
        print(f"You said: {query}")
        query = query.lower()
        if 'exit ashley' in query:
            speak("Exiting Ashley")
            exit()
        else:
            query = query.replace("ashley", "")

    except Exception as e:
        print("Couldn't recognize that, can you please repeat")
```

```
        speak("Couldn't recognize that, can you please repeat")
        return "none"
    return query


if __name__ == "__main__":
    greetme()
    while True:
        query = takeCommand().lower()

        if 'who is' in query:
            try:
                print("Searching....wait")
                query = query.replace("wikipedia", "")
                query = query.replace("according to", "")
                query = query.replace("who is", "")
                query = query.replace("what is", "")
                results = wikipedia.summary(query, sentences=1)
                speak("So wikipedia says  ")
                print(results)
                speak(results)
            except Exception as e:
                speak("Couldn't find that, sorry!")
                print("Couldn't find that")

        elif 'open browser' in query:
            browserpath = "C:\\Program Files (x86)\\Google\\Chrome\\Application\\chrome.exe"
            speak("opening chrome")
            print("Opening chrome..")
            os.startfile(browserpath)

        elif 'open instagram' in query:
            speak("opening instagram")
            print("Opening instagram...")
            webbrowser.open('instagram.com')

        elif 'open youtube' in query:
            speak("starting youtube")
            print("Opening youtube...")
            webbrowser.open('youtube.com')
```

```
elif 'open github' in query:
    speak("opening github")
    print("Opening github..")
    webbrowser.open('github.com')

elif 'open google' in query:
    speak("opening google")
    print("Opening google...")
    webbrowser.open('google.com')

elif 'joke' in query:
    joke = pyjokes.get_joke()
    speak(joke)
    print(joke)
elif 'play' in query:
    if 'play music' in query:
        print("Playing music...")
        speak("Playing music")
        music_dir = "D:\\College docs\\SEM 6\\python\\Microproject\\music"
        songslist = os.listdir(music_dir)
        songlistlen = len(songslist) - 1
        r = random.randint(0, songlistlen)
        os.startfile(os.path.join(music_dir, songslist[r]))

    elif 'play songs' in query:
        print("Playing music...")
        speak("playing music")
        music_dir = "D:\\College docs\\SEM 6\\python\\Microproject\\music"
        songslist = os.listdir(music_dir)
        songlistlen = len(songslist) - 1
        r = random.randint(0, songlistlen)
        os.startfile(os.path.join(music_dir, songslist[r]))

    else:
        query = query.replace("play", "")
        speak(f"Playing {query}")
        print(f"Playing {query}")
        pywhatkit.playonyt(query)
```

```
elif 'current time' in query:
    crnttime = datetime.datetime.now().strftime("%I:%M %p")
    speak(f"The current time is {crnttime}")
    print(f"The current time is {crnttime}")

elif 'open torrent' in query:
    tpath = "C:\\Users\\Komal\\AppData\\Roaming\\uTorrent\\uTorrent.exe"
    speak("Opening torrent")
    os.startfile(tpath)

elif 'hello' in query:
    try:
        speak("What should I put in the body of the mail?")
        content = takeCommand()
        to = "xyzabc13318990@gmail.com"
        sendemail(to, content)
    except Exception as e:
        print(e)

elif 'send a mail' in query:
    try:
        content = EmailMessage()
        # speak("What should be the subject of the mail?")
        # to set the subject
        query = 'none'
        while query == 'none':
            speak("What should I put in the subject of the mail?")
            query = takeCommand()
            content['Subject'] = query

        # to set the body
        query = 'none'
        while query == 'none':
            speak("What should I put in the body of the mail?")
            query = takeCommand()
            content.set_content(query)

        # to set the recipient
        query = 'none'
        content['From'] = "ankitdsouza15@gmail.com"
```

```
        while query == 'none':
            speak("Who should be the recipient?")
            rec = takeCommand().lower()
            query = rec
            try:
                to = emaillist[rec]
            except Exception as e:
                print(e)
                query = 'none'
        content['To'] = to

        # to send the actual email
        sendemail(to, content)

    except Exception as e:
        print(e)

elif 'search' in query:
    query = query.replace("search", "")
    query = query.replace("about", "")
    query = query.replace("for", "")
    speak(f"searching {query}")
    pywhatkit.search(query)

elif 'message' in query:
    message_tobe_sent = 'none'
    recipient = 'none'
    while(message_tobe_sent == 'none'):
        speak("What should be the message?")
        message_tobe_sent = takeCommand()
    while(recipient == 'none'):

        speak("Who should I send the message to?")
        recipient_key = takeCommand()
        try:
            recipient = message_recipient_dict[recipient_key]
        except Exception as e:
            print(e)
            recipient = 'none'
        if(recipient == 'none'):
```

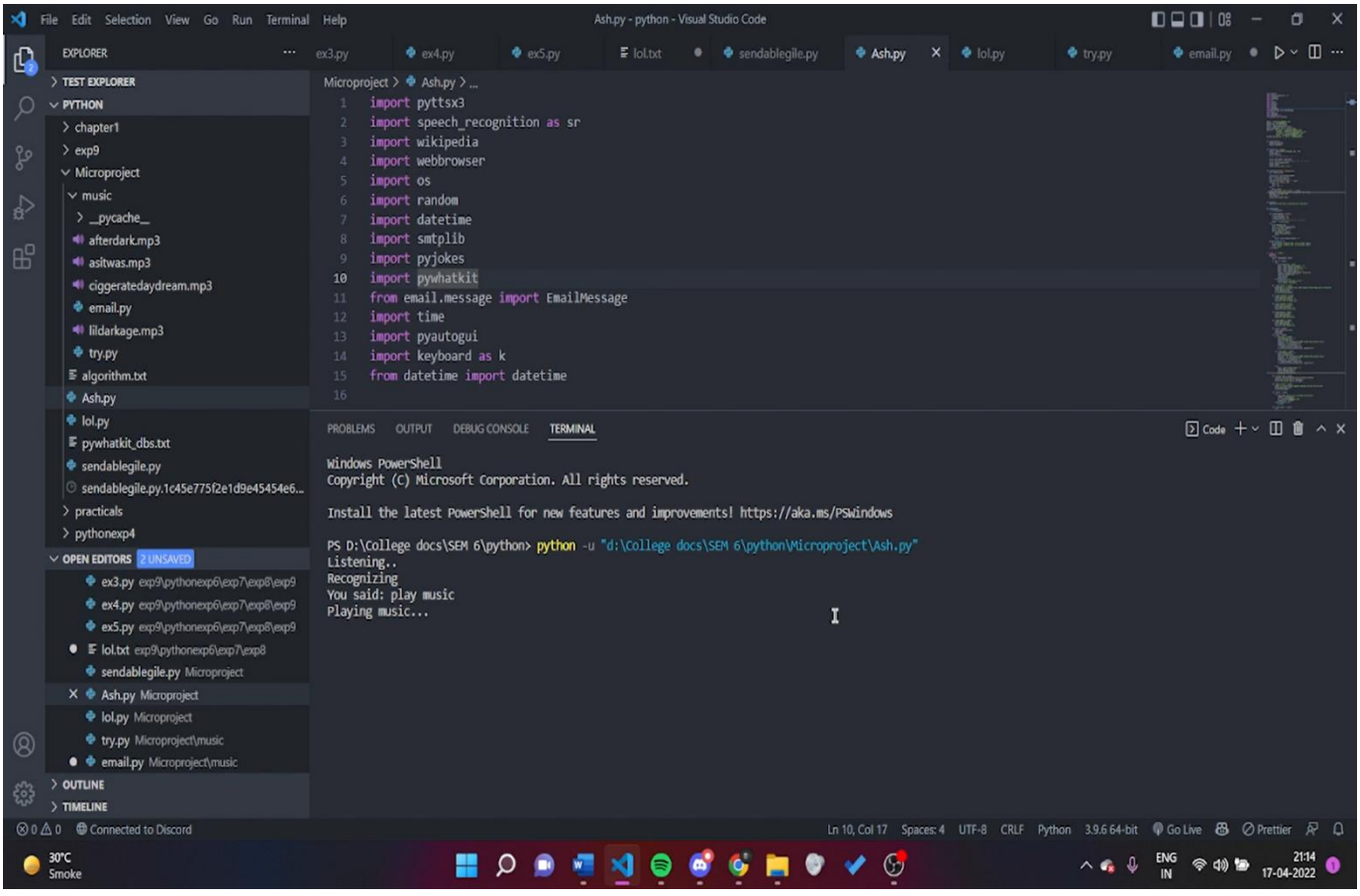
```
            print("Can't find that person, please try again")
        try:
            sendmesage(recipient, message_tobe_sent)
        except Exception as e:
            print(e)

    elif 'send an email' in query:
        try:
            content = EmailMessage()
            # speak("What should be the subject of the mail?")
            # to set the subject
            query = 'none'
            while query == 'none':
                speak("What should I put in the subject of the mail?")
                query = takeCommand()
                content['Subject'] = query

            # to set the body
            query = 'none'
            while query == 'none':
                speak("What should I put in the body of the mail?")
                query = takeCommand()
                content.set_content(query)

            # to set the recipient
            query = 'none'
            content['From'] = "ankitdsouza15@gmail.com"
            while query == 'none':
                speak("Who should be the recipient?")
                rec = takeCommand().lower()
                query = rec
                try:
                    to = emaillist[rec]
                except Exception as e:
                    print(e)
                    query = 'none'
            content['To'] = to

            # to send the actual email
            sendemail(to, content)
```

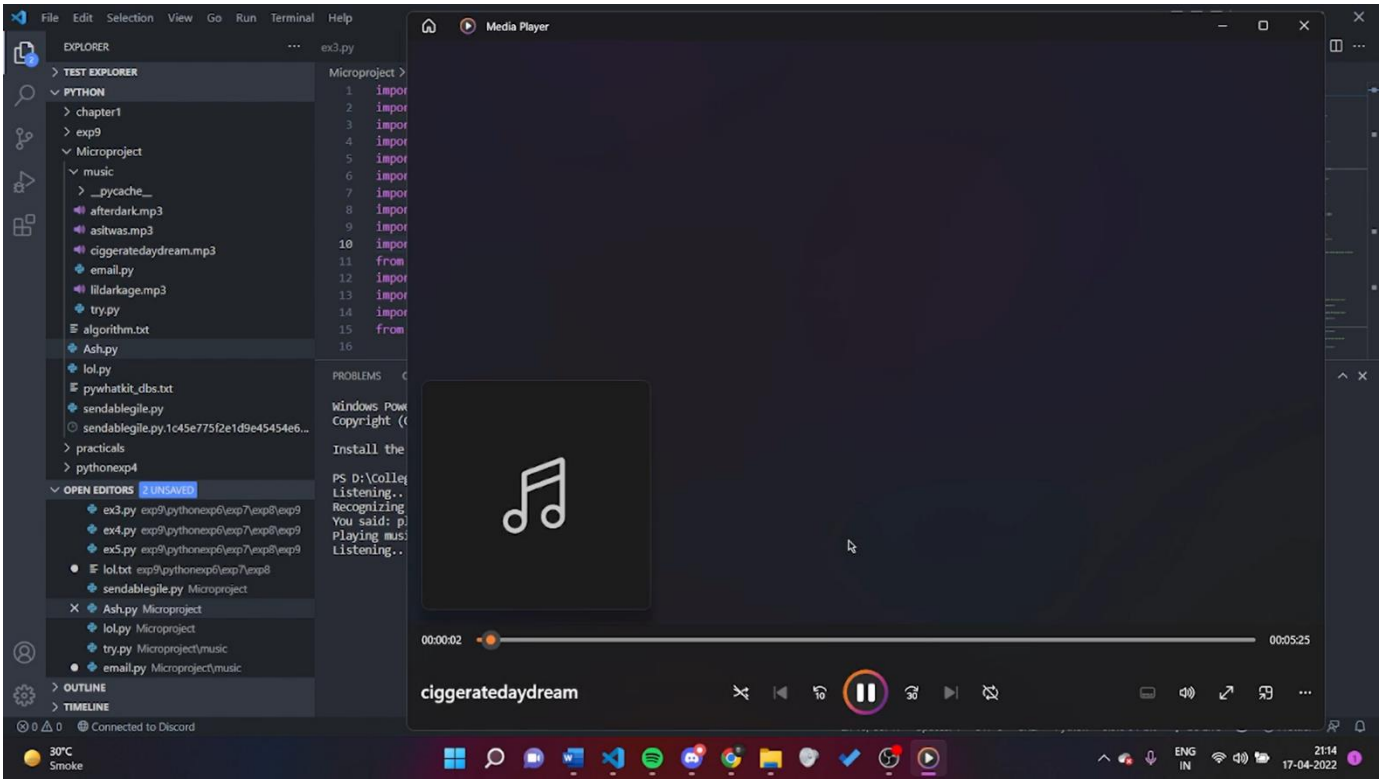
```
except Exception as e:
    print(e)

else:
    if query != 'none':
        speak("I am not able to do that, sorry!")
```

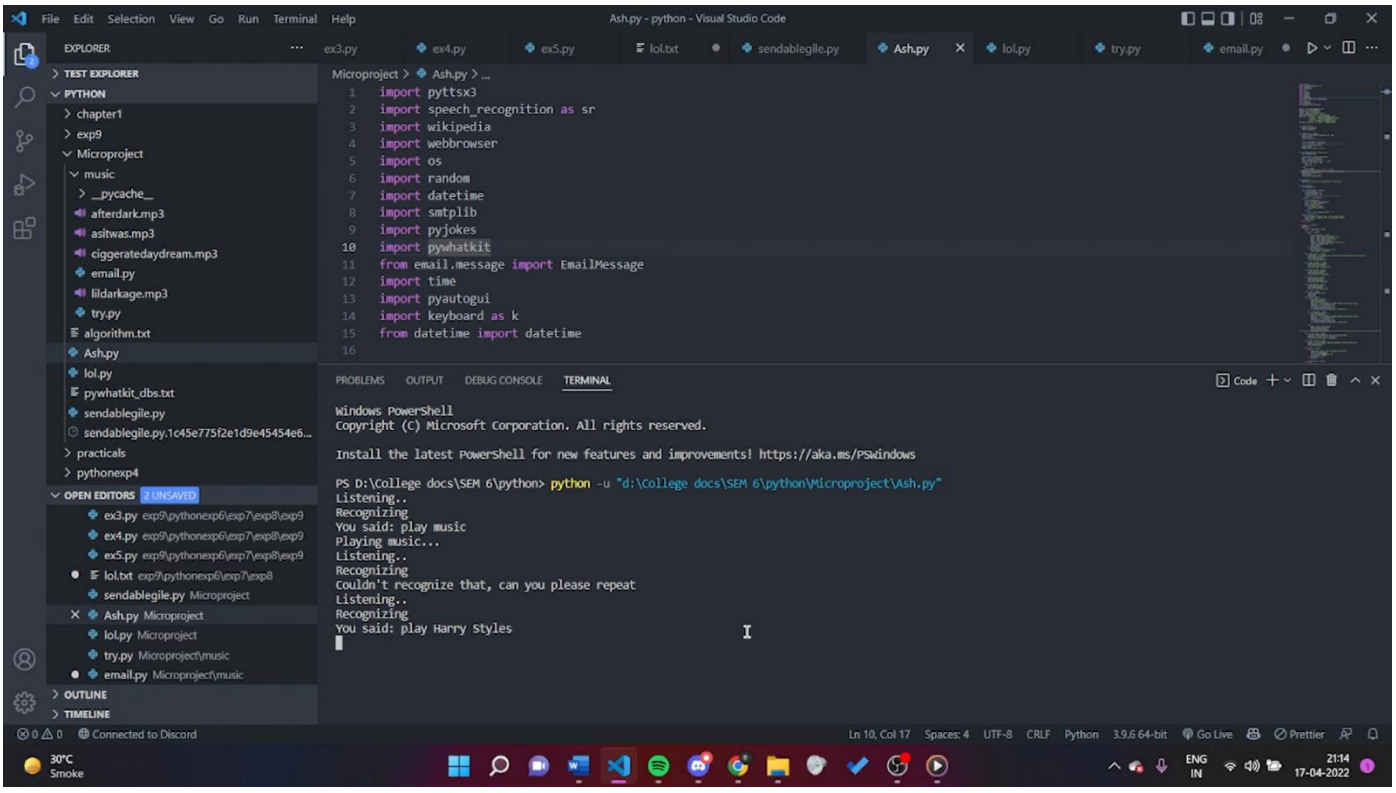
6.0 Actual Resources Used

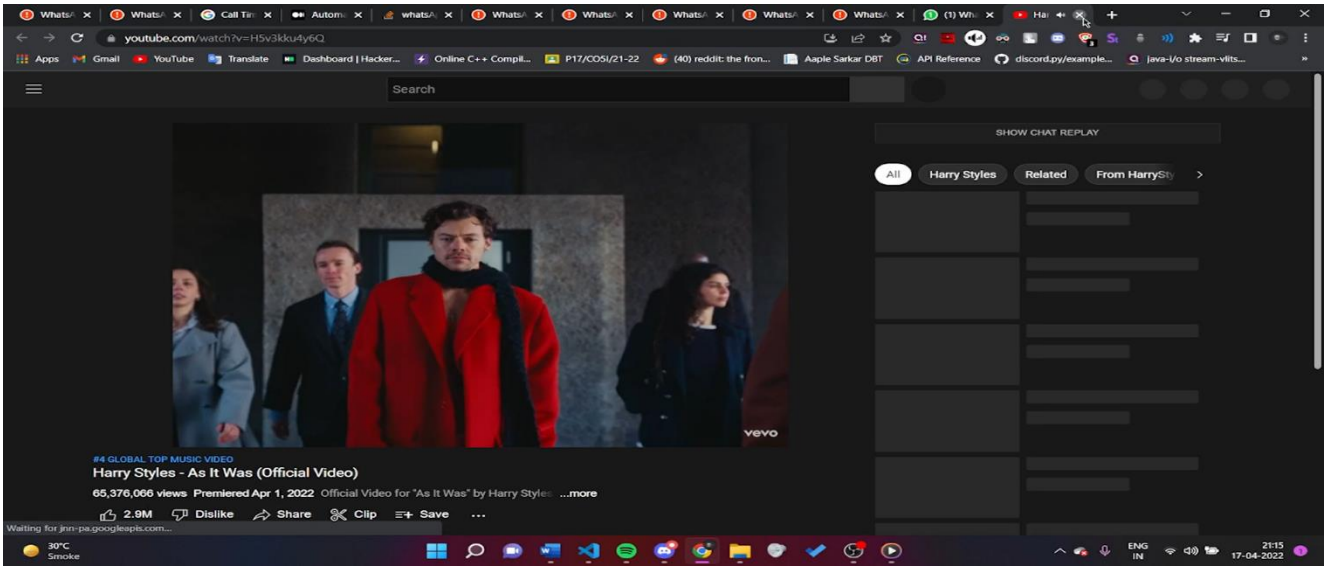
Sr.No.	Equipment Name with Broad Specification	Remark if any
1	Desktop pc – Windows 7	
2	Editor used – Python IDLE, Software – Python 3.4.2	

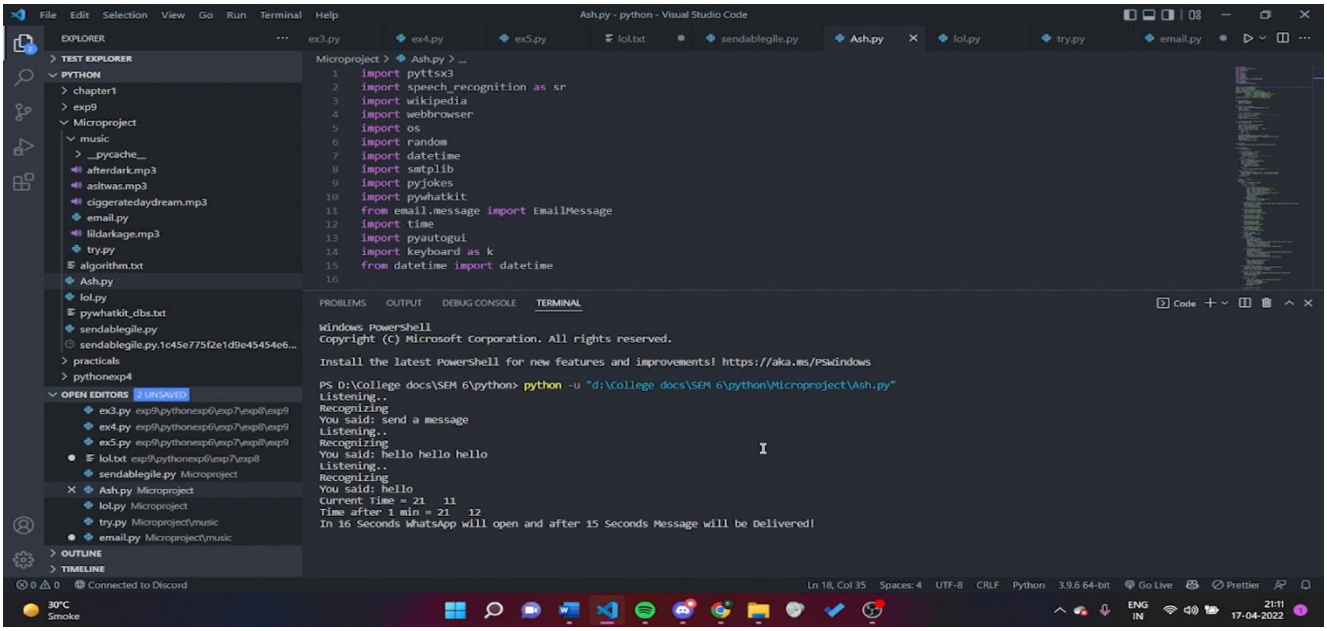
7.0 Outputs of the Micro-Projects

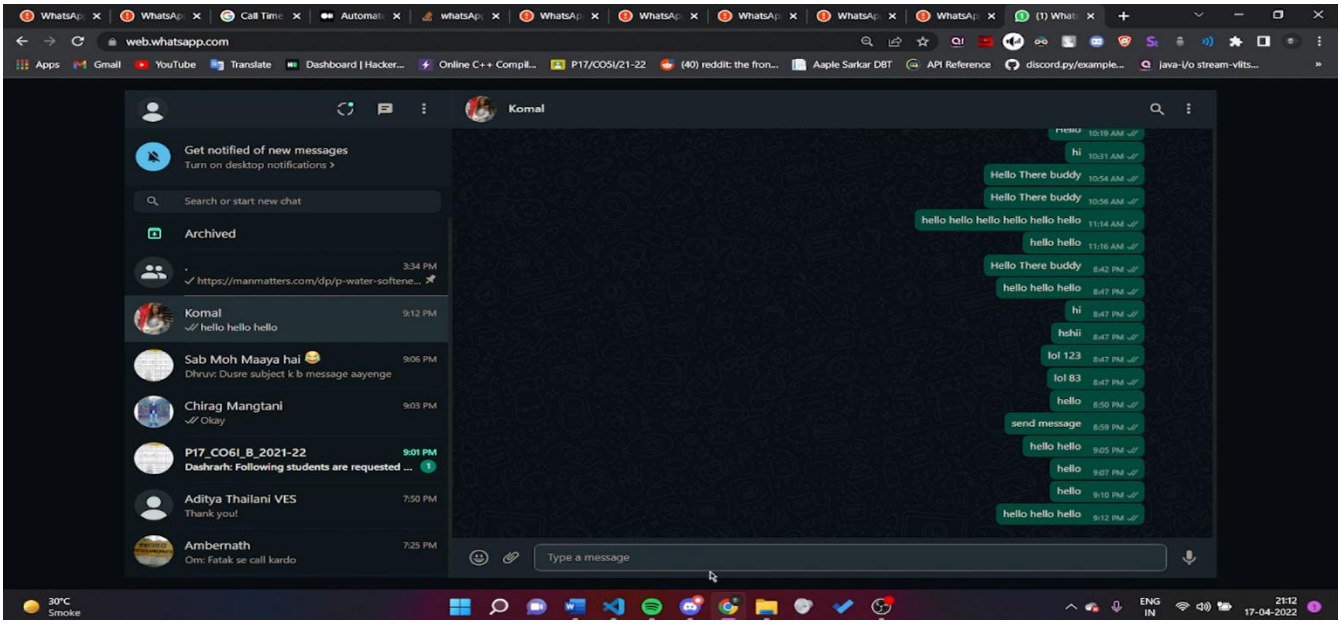



Media Player
ciggeratedaydream
00:00:02
00:05:25


Ash.py - python - Visual Studio Code
import pyttsx3
import speech_recognition as sr
import wikipedia
import webbrowser
import os
import random
import datetime
import smtplib
import pyjokes
import pywhatkit
from email.message import EmailMessage
import time
import pyautogui
import keyboard as k
from datetime import datetime
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
PS D:\College docs\SEM 6\python> python -u "d:\College docs\SEM 6\python\Microproject\Ash.py"
Listening..
Recognizing
You said: play music
Playing music...
Listening..
Recognizing
Couldn't recognize that, can you please repeat
Listening..
Recognizing
You said: play Harry Styles


youtube.com/watch?v=H5v3kku4y6Q
Search
SHOW CHAT REPLAY
All
Harry Styles
Related
#4 GLOBAL TOP MUSIC VIDEO
Harry Styles - As It Was (Official Video)
65,376,066 views Premiered Apr 1, 2022 Official Video for "As It Was" by Harry Styles ...more
2.9M Dislike Share Clip Save
vevo


Ash.py - python - Visual Studio Code
import pyttsx3
import speech_recognition as sr
import wikipedia
import webbrowser
import os
import random
import datetime
import smtplib
import pyjokes
import pywhatkit
from email.message import EmailMessage
import time
import pyautogui
import keyboard as k
from datetime import datetime
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
PS D:\College docs\SEM 6\python> python -u "d:\College docs\SEM 6\python\Microproject\Ash.py"
Listening..
Recognizing
You said: send a message
Listening..
Recognizing
You said: hello hello hello
Listening..
Recognizing
You said: hello
Current Time = 21 11
Time after 1 min = 21 12
In 16 Seconds WhatsApp will open and after 15 Seconds Message will be Delivered!


web.whatsapp.com
Komal
Get notified of new messages
Turn on desktop notifications
Search or start new chat
Archived
Komal
hello hello hello
Sab Moh Maaya hai
Dhruv: Dusre subject k b message aayenge
Chirag Mangtani
Okay
P17_CO6I_B_2021-22
Dashrath: Following students are requested ...
Aditya Thailani VES
Thank you!
Ambernath
Om: Fatak se call kardo
Hello There buddy
hello hello hello hello hello hello
hello hello
Hello There buddy
hello hello hello
hi
hshii
lol 123
lol 83
hello
send message
hello hello
hello
hello
hello hello hello
Type a message

8.0 Skill Developed / learning out of this Micro-Project

1. We learnt how to use python for solving real world problems.
2. We learnt how to use functions in python.
3. We learnt how to use loops for practical usage in python.
4. We learnt how to handle exceptions and errors in python.
5. We understood and implemented various modules and libraries that are available in python.
6. We understood how to use text to speech and speech to text modules in python.
7. We understood the importance of working in team and listening to each other's ideas and views to further improve our project and our knowledge.
8. We have also learnt to coordinate with the team members and support each other for successful completion of the project.
9. We learnt to follow the deadlines and complete our work within specified time frame.

9.0 Application of this Micro-Project

- The developed micro-project can be used to make stuff easier while using computer.
- It can be used to send automated whatsapp messages without typing.
- It can be used to play desired music with just a single voice command via microphone.
- It can be used to open various applications and website easily with just a single voice command via microphone.
- In short, the major application is to get user’s command via microphone instead of a keyboard or a mouse which makes it easier for the user to use a lot of things on the computer.

Annexure – III

Suggested Rubric for Assessment of Micro-Project

S. No.	Characteristic to be assessed	Poor (Marks 1 - 3)	Average (Marks 4 - 5)	Good (Marks 6 - 8)	Excellent (Marks 9- 10)
1	Relevance to the course	Relate to very few LOs	Related to some LOs	Take care of at-least one CO	Take care of more than one CO
2	Literature review /information collection	Not more than two sources very old reference	At-least 5 relevant sources, at least 2 latest	At –least 7 relevant sources, most latest	About 10 relevant sources, most latest
3	Completion of the Target as per project proposal	Completed less than 50%	Completed 50 to 60%	Completed 60 to 80%	Completed more than 80 %
4	Analysis of Data and representation	Data neither organized nor presented well	Sufficient and appropriate enough data generated but not organized and not presented well.	Sufficient and appropriate enough data generated which is organized and but not used.	Enough data collected and sufficient and presenting data.
5	Quality of Prototype/Model	Incomplete Programming code	Just assembled and some codeis not functioning well.	Well assembled and functioning parts. But no creativity in design and use of graphics function	Well assembled with proper functioning parts.. Creativity in design and use of graphics function
6	Report Preparation	Very short, Details about methods, and conclusions omitted, some details are wrong	Nearly sufficient and correct details about methods, and conclusion. but clarity is not there in presentation.	Detailed, correct and clear description of methods and Conclusions. Sufficient Graphic Description.	Very detailed, correct, clear description of methods, and conclusions.
7	**Presentation of the micro project**	Major information is not included, information is not well organized.	Includes major information but not well organized and not presented well	Includes major information and well organized but not presented well	Well organized, includes major information ,well presented
8	**Defense**	Could not reply to considerable number of question.	Replied to considerable number of questions but not very properly	Replied properly to considerable number of question.	Replied most of the questions properly

Annexure – IV

Micro Project Evaluation Sheet

Name of Student: Chirag Mangtani, Hiten Dusseja, Sanika Thakur
Enrollment No: 1900040145,146,147
Name of Program: Computer Engineering **Semester:** Sixth
Course Title: Programming with Python **Course Code:**22616
Title of the Micro-Project: Voice Assitant
Cos addressed by Micro Project: (Tick appropriate COs)

- Display message on screen using python script on IDE [✓]
- Develop python program to demonstrate use of Operators. [✓]
- Perform operations on data structure in Python [✓]
- Develop function for given problem [✓]
- Design classes for given problem [ ]
- Handle exception [✓]

Sr. No	Characteristic to be assessed	Poor (Marks1-3)	Average (Marks 4-5)	Good (Marks 6-8)	Excellent (Marks9-10)	Sub Total
(A) Process and Product Assessment (Convert Above Total marks out of 6 Marks)						
1	Relevance to the course					
2	Literature review/ Information Collection					
3	Completion of the Target as per project proposal					
4	Analysis of Data and representation					
5	Quality of Prototype/Model					
6	Report Preparation					
(B) Individual Presentation / Viva (Convert above total marks out of 4 marks)						
7	Presentation					
8	Defense/Viva					

Roll No.	Process and Product Assessment (6 Marks)	Individual Presentation / Viva (4 Marks)	Total Marks 10
07			
08			
09			

Name and designation of the Teacher: Mrs.ShubhangiChintawar (Lecturer)
Dated Signature: