Introduction :

Speech recognition is the process of converting audio into text. This is commonly used in voice assistants like Alexa, Siri, etc. Python provides an API called SpeechRecognition to allow us to convert audio into text for further processing. In this project we made voice assistant using this speech recognition API.

Code :

```python
import pyttsx3
import datetime
import speech_recognition as sr
import wikipedia
import webbrowser
import os

engine = pyttsx3.init('sapi5')#to take voice api
voice = engine.getProperty('voices')
engine.setProperty('voice', voice[0].id)

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

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("Hello Sir i am jarvis ! Please ptell me how may I help you")

def takeCommand():

    r = sr.Recognizer()
```

```python
    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("Say that again please...")
        return "None"
    return query

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

        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)

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

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

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

        elif 'play music' in query:
            music_dir = 'D:\mymusic'
            songs = os.listdir(music_dir)
            print(songs)
            os.startfile(os.path.join(music_dir, songs[0]))
```

```python
        elif'the time'in query:
            strTime=datetime.datetime.now().strftime("%H:%M:%S")
            speak(f"Sir, the time is {strTime}")

        elif'open code'in query:
            codePath=r"C:\Users\LEGION\AppData\Local\Programs\Microsoft VS
Code\Code.exe"
            os.startfile(codePath)

        elif"who made you"in query or"who created you"in query:
            speak("I have been created by bhavdip.")

        elif'how are you'in query:
            speak("I am fine, Thank you")
            speak("How are you, Sir")

        elif'fine'in query or"good"in query:
            speak("It's good to know that your fine")

        elif"who i am"in query:
            speak("If you talk then definitely your human.")

        elif"why you came to world"in query:
            speak("Thanks to bhavdip and jainam. further It's a secret")

        elif"who are you"in query:
            speak("I am your virtual assistant created by bhavdip and jainam")

        elif'reason for you'in query:
            speak("I was created as a innovative project by bhavdip and jainam")

        elif'exit'in query:
            speak("Thanks for giving me your time")
            exit()
```

Output:

```
Listening...
Recognizing...
User said: Wikipedia Ahmedabad

Ahmedabad (; Gujarati: Amdavad [ˈəmdɑːʋɑːd] (listen)) is the most populous
city in the Indian state of Gujarat. It is the administrative headquarters
of the Ahmedabad district and the seat of the Gujarat High Court.
Listening...
Recognizing...
Say that again please...
Listening...
Recognizing...
User said: open YouTube

Listening...
Recognizing...
Say that again please...
Listening...
Recognizing...
User said: open Google

Listening...
Recognizing...
Say that again please...
Listening...
Recognizing...
Say that again please...
Listening...
Recognizing...
User said: open code

Listening...
Recognizing...
Say that again please...
Listening...
Recognizing...
Say that again please...
Listening...
Recognizing...
User said: play music

['Alan Walker - Darkside (feat. AuRa and Tomine Harket).mp3',
'Alan_Walker_Fade_NCS_Release.mp3', 'Alexander Clark - Cadmium - Be With
You (feat. Grant Dawson).mp3', 'alive-intro-4646.mp3', 'Arijit Singh DESH
MERE Song Ajay D, Sanjay D, Ammy V Arko, Manoj M Bhuj The Pride Of
Ind.mp3',
'Azaadi_Ke_Liye_Lyrical_Video_Song_Pritam_Arijit_Singh_Tushar_Joshi_Amazon
_Prime_Video.mp3', 'bh.mp3', 'Channa_Mereya_-
_Remi__By_DJ_Chetas_Ae_Dil_Hai_Mushkil_Karan_Ranbir_Anushka_Pritam_Arijit.
mp3',
'DILJANIYA_Sonu_Nigam_Rohan_Rohan_Official_Music_Video_Wrong_Number_Apoorv
```

a_Ambrish_RVCJ.mp3', 'energy-motivation-3661.mp3', 'epic-cinematic-adventure-4346.mp3', 'EVER POSITIVEI SINGERJAYESH GANDHI.mp3', 'GAL_KARKE_Asees_Kaur_Siddharth_Nigam_Anushka_Sen_Gaana_Originals_Latest_Punjabi_Song_2019.mp3', 'geovane-bruno-inspiring-corporate-3682.mp3', 'Hamdard_Full_Video_Song_Ek_Villain_Arijit_Singh_Mithoon.mp3', 'Hawayein_Lyric_Video_Jab_Harry_Met_SejalShah_Rukh_Khan_AnushkaArijit_SinghPritam.mp3', 'house-fashion-5000.mp3', 'Humsafar Instrumental Shrikant Sonawane Badrinath Ki Dulhania.mp3', 'IkVaariAaNadaanParindeyTum Ho Toh Shirley Setia,JubinNautiyal Abhijit V Bhushan K Ahme.mp3', 'innovation-3794.mp3', 'Kate Linn - Your Love (by Monoir) [Official Video].mp3', 'Khairiyat_Remi__Sourav_Latest_Dj_Remi__Songs_2019_Indian_Trap.mp3', 'Lyrical_Chaand_Ne_Kaho_SachinJigar_Jigardan_Yash_S_Chaal_Jeevi_Laiye_Zen_Music_Gujarati.mp3', 'Lyrics_Tu_Chale_Full_Song_Arijit_Singh_Shreya_Ghoshal_A.R._Rahman_Irshad_Kamil.mp3', 'Main Rang Sharbaton Ka [Slowed+Reverb] - Arijit Singh _ Music lovers _ Textaudio.mp3', 'mixkit-cant-get-you-off-my-mind-1210.mp3', 'mixkit-dance-02-762.mp3', 'mixkit-epic-movie-impact-2901.wav', 'mixkit-motivating-mornings-33.mp3', 'mixkit-movie-impact-intro-presentation-2902.wav', 'mixkit-shot-light-energy-flowing-2589.wav', 'px-downloadaudio_1ecfa8439e.mp3', 'px-downloadaudio_fe4d3bcac9.mp3']
Listening...
Recognizing...
Say that again please...
Listening...
Recognizing...
Say that again please...
Listening...
Recognizing...
User said: the time

Listening...
Recognizing...
User said: how are you

Listening...
Recognizing...
Say that again please...
Listening...
Recognizing...
User said: good

Listening...
Recognizing...
User said: who are you

Listening...
Recognizing...
User said: for you

Listening...
Recognizing...
Say that again please...
Listening...
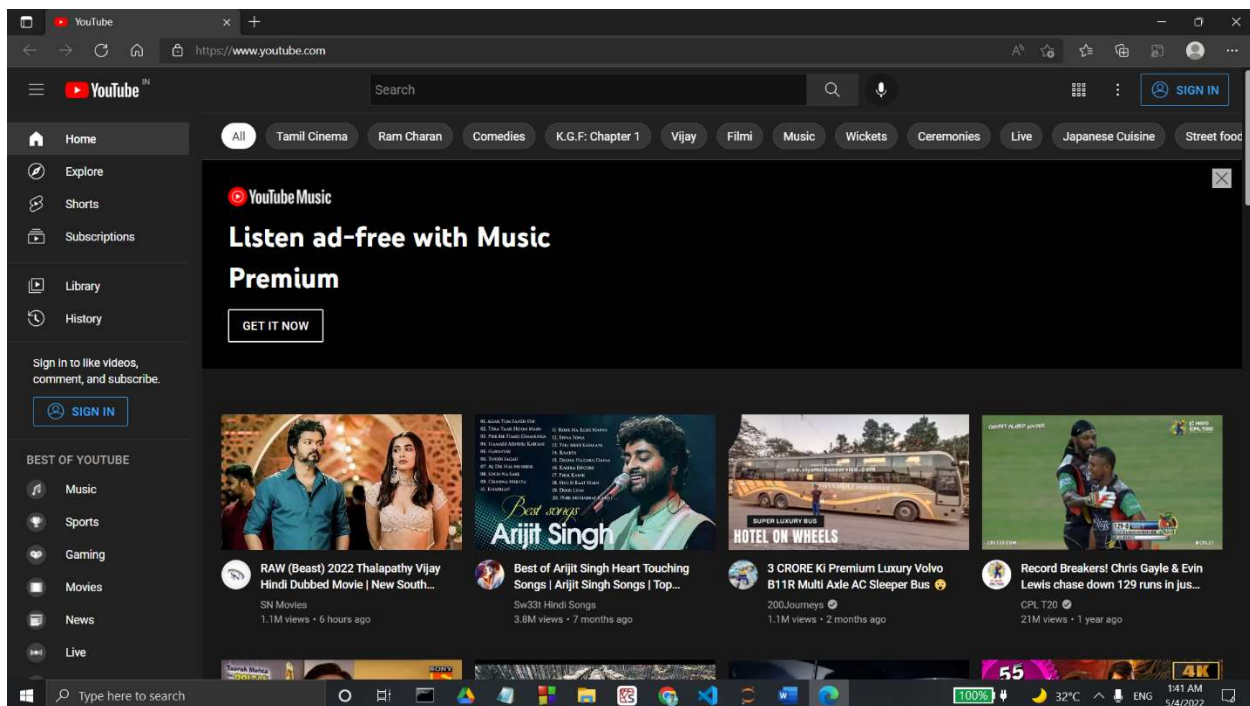Recognizing...

```
User said: reason for you

Listening...
Recognizing...
User said: exit
```
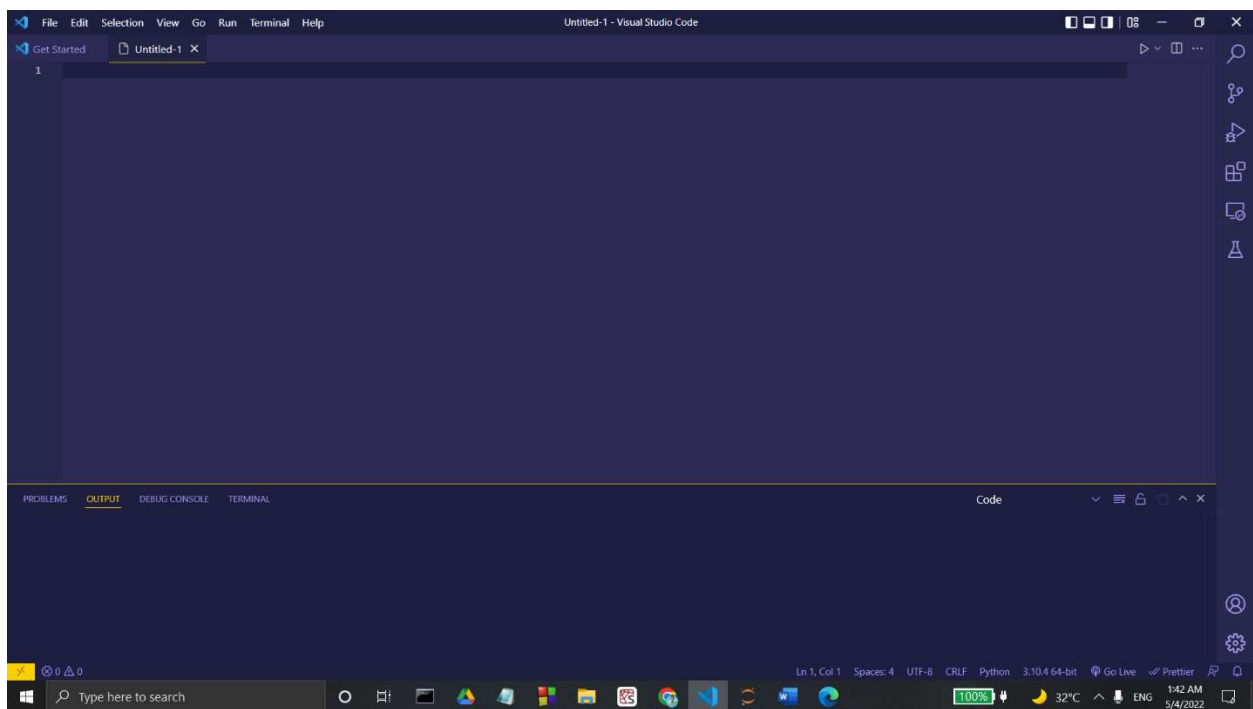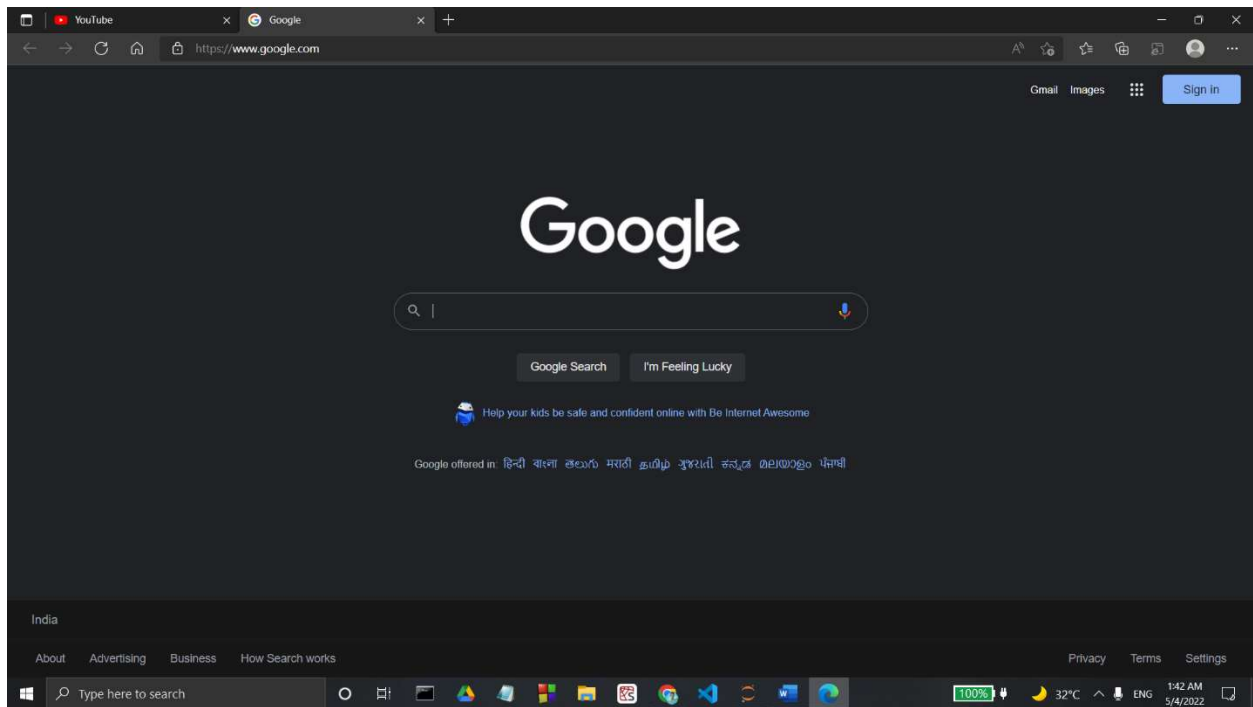
Picture of Output :

```
Listening...
Recognizing...
User said: Wikipedia Ahmedabad

Ahmedabad (; Gujarati: Amdavad [ˈəmdɑːʋɑːd] (listen)) is the most populous city in the Indian state of Gujarat. It is the admin
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Listening...
```

user said: open code

Listening...
Recognizing...
Say that again please...
Listening...
Recognizing...
Say that again please...
Listening...
Recognizing...
User said: play music

['Alan Walker - Darkside (feat. AuRa and Tomine Harket).mp3', 'Alan_Walker_Fade_NCS_Release.mp3', 'Alexander Clark - Cadmium - Be With You (feat. Grant Dawson).mp3', 'alive-intro-4646.mp3', 'Arijit Singh DESH MERE Song Ajay D, Sanjay D, Ammy V Arko, Manoj M Bhuj The Pride Of Ind.mp3', 'Azaadi_Ke_Liye_Lyrical_Video_Song_Pritam_Arijit_Singh_Tushar_Joshi_Amazon_Prime_Video.mp3', 'bh.mp3', 'Channa_Mereya_-_Remi__By_DJ_Chetas_Ae_Dil_Hai_Mushkil_Karan_Ranbir_Anushka_Pritam_Arijit.mp3', 'DILJANIYA_Sonu_Nigam_Rohan_Rohan_Official_Music_Video_Wrong_Number_Apoorva_Ambrish_RVCJ.mp3', 'energy-motivation-3661.mp3', 'epic-cinematic-adventure-4346.mp3', 'EVER POSITIVEI SINGERJAYESH GANDHI.mp3', 'GAL_KARKE_Asees_Kaur_Siddharth_Nigam_Anushka_Sen_Gaana_Originals_Latest_Punjabi_Song_2019.mp3', 'geovane-bruno-inspiring-corporate-3682.mp3', 'Hamdard_Full_Video_Song_Ek_Villain_Arijit_Singh_Mithoon.mp3', 'Hawayein_Lyric_Video_Jab_Harry_Met_SejalShah_Rukh_Khan_AnushkaArijit_SinghPritam.mp3', 'house-fashion-5000.mp3', 'Humsafar Instrumental Shrikant Sonawane Badrinath Ki Dulhania.mp3', 'Ik Vaari AaNadaan ParindeyTum Ho Toh Shirley Setia,Jubin Nautiyal Abhijit V Bhushan K Ahme.mp3', 'innovation-3794.mp3', 'Kate Linn - Your Love (by Monoir) [Official Video].mp3', 'Khairiyat_Remi__Sourav_Latest_Dj_Remi__Songs_2019_Indian_Trap.mp3', 'Lyrical_Chaand_Ne_Kaho_SachinJigar_Jigardan_Yash_S_Chaal_Jeevi_Laiye_Zen_Music_Gujarati.mp3', 'Lyrics_Tu_Chale_Full_Song_Arijit_Singh_Shreya_Ghoshal_A.R._Rahman_Irshad_Kamil.mp3', 'Main Rang Sharbaton Ka [Slowed+Reverb] - Arijit Singh _ Music lovers _ Textaudio.mp3', 'mixkit-cant-get-you-off-my-mind-1210.mp3', 'mixkit-dance-02-762.mp3', 'mixkit-epic-movie-impact-2901.wav', 'mixkit-motivating-mornings-33.mp3', 'mixkit-movie-impact-intro-presentation-2902.wav', 'mixkit-shot-light-energy-flowing-2589.wav', 'px-downloadaudio_1ecfa8439e.mp3', 'px-downloadaudio_fe4d3bcac9.mp3']
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Recognizing...