

# MINI PROJECT



## VOICE ASSISTANT USING PYTHON

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# **ABSTRACT**

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- Voice assistant are software agents that can interpret human speech and respond via synthesized voices. Apple's Siri, Amazon's Alexa and Google assistant are the most popular voice assistants which are embedded in smartphones or dedicated home speakers. Users can ask their voice assistant basic questions like( Time and Date etc.) , play music , open various applications installed in our system, open our favorite websites, send or receive E-mails, perform Wikipedia search , play videos on YouTube, opens Web browser just by using our verbal commands.

# INTRODUCTION

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- Voice assistant using python is inspired by Apple's Siri, Amazon's Alexa and Google assistant.
- It is made using python with the help of various python modules and libraries.
- It uses voice recognition library to take command from user and then executes it.
- It uses pyttsx3 library to convert text to speech.
- It also uses various other python libraries like datetime (To tell current time and date) , Wikipedia (To perform Wikipedia search) , Web browser (To open Google ,YouTube etc).

# FUNCTIONS

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- Answers basic informational queries (What time or date it is ?).
- Plays any video on YouTube by using our voice command.
- Opens our favorite website using our voice command.
- Opens various applications which are installed in our device.
- Plays music, opens web browser and searches Wikipedia.
- Sends and receives E-mails using our voice command.



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# WORKING PROTOTYPE

Visual Studio Code interface showing a Python script named `Voice_assistant.py` being edited. The script uses the `pyttsx3` library for text-to-speech and `speech_recognition` for voice input. The script includes imports for `pyttsx3`, `speech_recognition`, `datetime`, `wikipedia`, `webbrowser`, `os`, `smtplib`, `pyjokes`, and `pywhatkit`. It defines functions `speak(audio)`, `wishMe()`, and `takeCommand()`. The `wishMe()` function checks the current hour and speaks "Good Morning!", "Good Afternoon!", or "Good Evening!". The `takeCommand()` function takes microphone input and returns a string output.

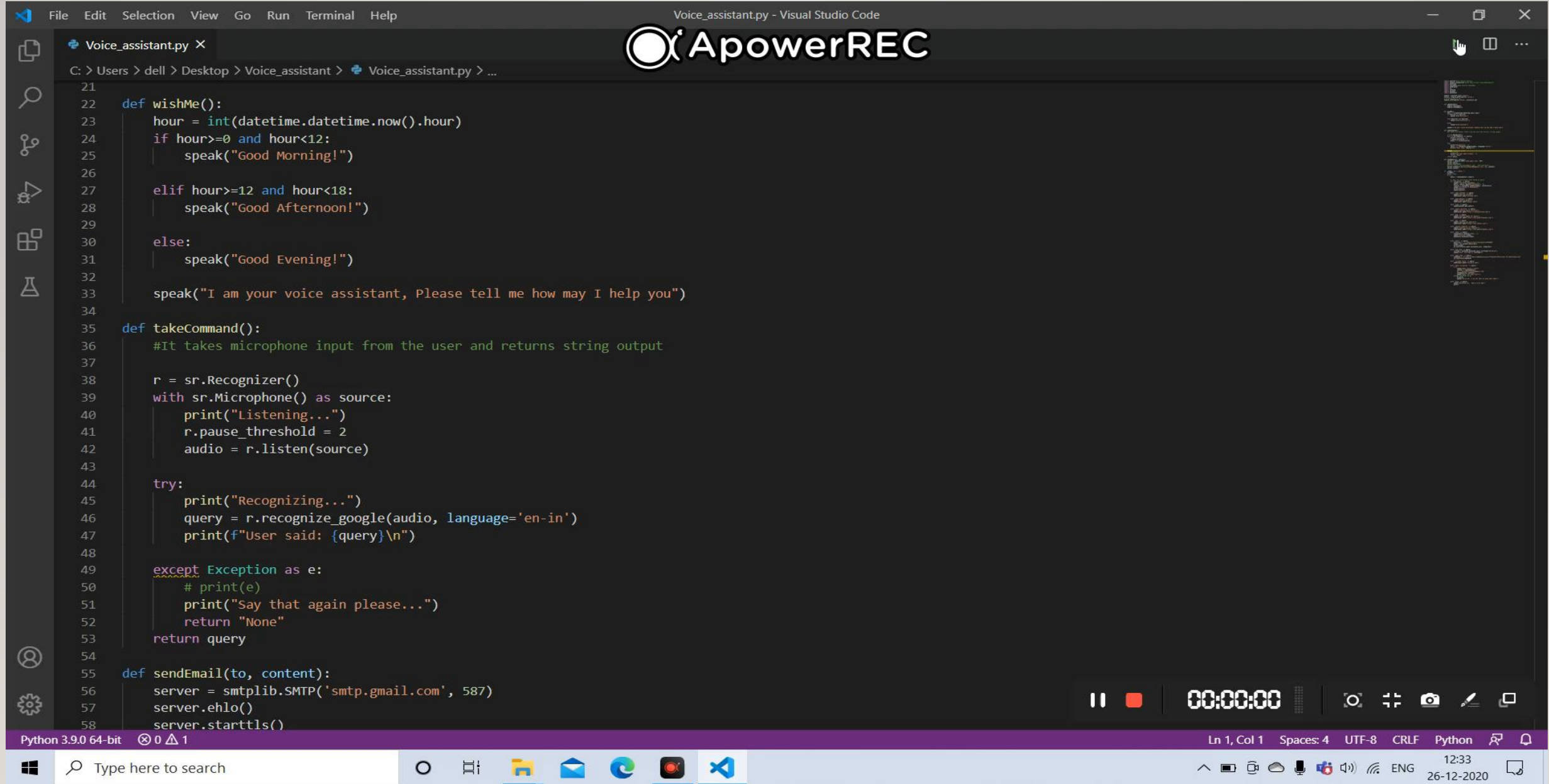
```
C:\> Users > dell > Desktop > Voice_assistant > Voice_assistant.py > ...
1  import pyttsx3 #pip install pyttsx3
2  import speech_recognition as sr #pip install speechRecognition
3  import datetime
4  import wikipedia #pip install wikipedia
5  import webbrowser
6  import os
7  import smtplib
8  import pyjokes
9  import pywhatkit
10
11 engine = pyttsx3.init('sapi5')
12 voices = engine.getProperty('voices')
13 # print(voices[1].id)
14 engine.setProperty('voice', voices[1].id)
15
16
17 def speak(audio):
18     engine.say(audio)
19     engine.runAndWait()
20
21
22 def wishMe():
23     hour = int(datetime.datetime.now().hour)
24     if hour>=0 and hour<12:
25         speak("Good Morning!")
26
27     elif hour>=12 and hour<18:
28         speak("Good Afternoon!")
29
30     else:
31         speak("Good Evening!")
32
33     speak("I am your voice assistant, Please tell me how may I help you")
34
35 def takeCommand():
36     #It takes microphone input from the user and returns string output
37
38     r = sr.Recognizer()
```

The interface also shows the Windows taskbar at the bottom with the search bar and system tray. The status bar at the bottom of VS Code indicates Python 3.9.0 64-bit, 0 errors/warnings, and the current file is at Line 1, Column 1.













# TECHNOLOGY USED:

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- **PYTHON**: This mini project on voice assistant is built using Python . Python is an interpreted , high level and general-purpose programming language. It has a rich support for various libraries and modules. Various python libraries and modules which are used in this mini project are as follows:
- **Pytsx3**
- **Speech Recognition**
- **Wikipedia ,Datetime ,Web browser , os , smtplib etc.**

## SOFTWARE USED:

Visual Studio Code



# **LIBRARIES AND MODULES USED:**

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**SpeechRecognition**: This library is used for performing speech recognition , with support for several engines and APIs , online and offline.

**Datetime**: Datetime module supplies classes to work with date and time. These classes provide a number of functions to deal with dates, times and time intervals.

# CONTINUE...

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- **Pyttsx3** :
  - A python library which will help us to convert text to speech. In short, it is a text-to-speech library.
  - It works offline, and it is compatible with Python 2 as well the Python 3.

# CONTINUE...

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- **Smtplib:**
- Simple Mail Transfer Protocol (SMTP) is a protocol that allows us to send emails and to route emails between mail servers. An instance method called **sendmail** is present in the SMTP module. This instance method allows us to send an email. It takes 3 parameters:
- **The sender:** Email address of the sender.
- **The receiver :** Email address of the receiver.
- **The *message*:** A string message which needs to be sent to one or more than one recipient.

# CONTINUE...

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- **Wikipedia:** Wikipedia is a Python library that makes it easy to access and parse data from Wikipedia.
- **os** The os module in python provides functions for interacting with the operating system. os comes under Python's standard utility modules. This module provides a portable way of using operating system dependent functionality.



# ADVANTAGES

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- **Convenience**: user have a wealth of knowledge at their finger tips and perform various time consuming activities in minutes.
- **Accessible and inclusive** :Voice assistance can breakdown barriers for people disabilities and especially for those with visual impairments.
- **Enjoyment**: People particularly younger people genuinely enjoy speaking to voice assistant showing that a human to machine bond can be created through voice.

# DISADVANTAGES

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- **Comprehension difficulties**: voice assistant are improving everyday but they struggle to understand questions where there is background noise, If it is a complicated query or when people have an unusual accent.
- **Ethical and privacy concern** : having always listening voice assistant embedded into your surrounding raises questions about privacy and ethical applications of these voice assistant.
- **Conversational Skills** :The human level conversational abilities are still some way off for voice assistant.

# REFERENCES

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THANK YOU

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