Virtual Assistant

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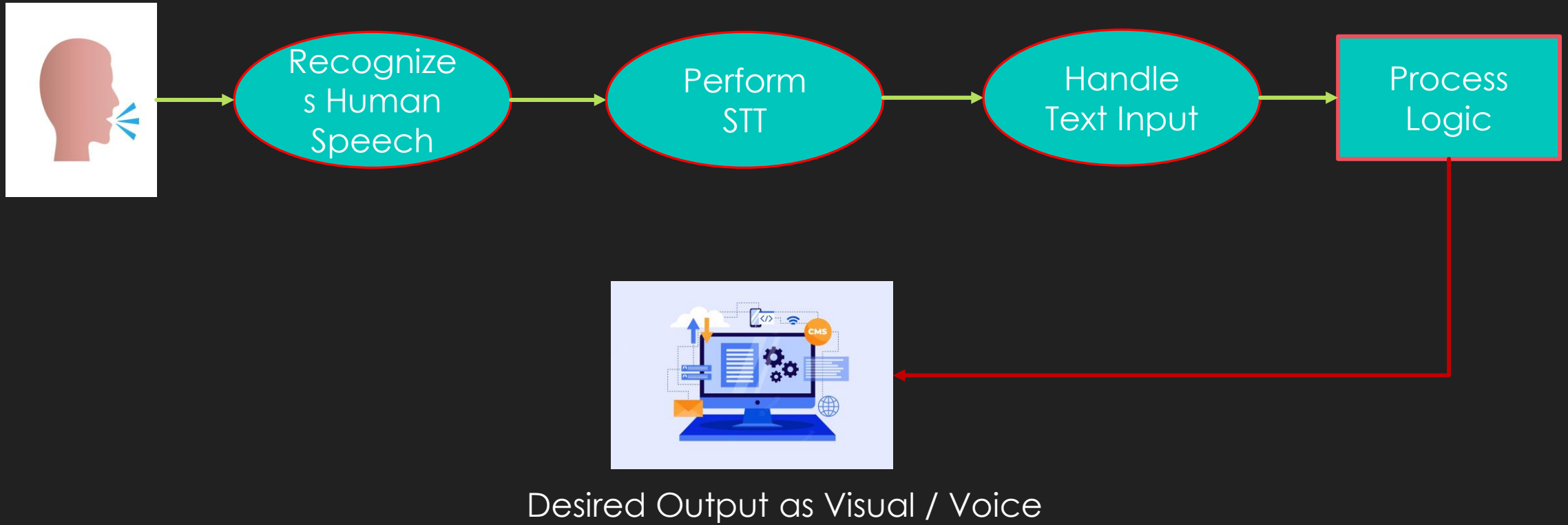
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SUMMARY

Virtual assistant uses voice recognition technology to perform certain general-purpose task like sending email, image to text converter, open website, play media, check weather forecast, google search, read .pdf, .doc or .txt file's content etc. Using user's voice. The purpose behind the virtual assistant is to provide user an easy way to perform certain general-purpose tasks while multi-tasking. Virtual Assistant perform task in the background and run as a service on end user's computer system. Virtual assistant can be very helpful to handicap people. Virtual assistant is made using Python.

Working

Recognizes Human Speech → Perform STT → Handle Text Input → Process Logic

Desired Output as Visual / Voice

Users of Project

- End User

Roles of users

○ To give voice commands

○ End user has to provide voice commands so that the system can process the command and provide output accordingly.
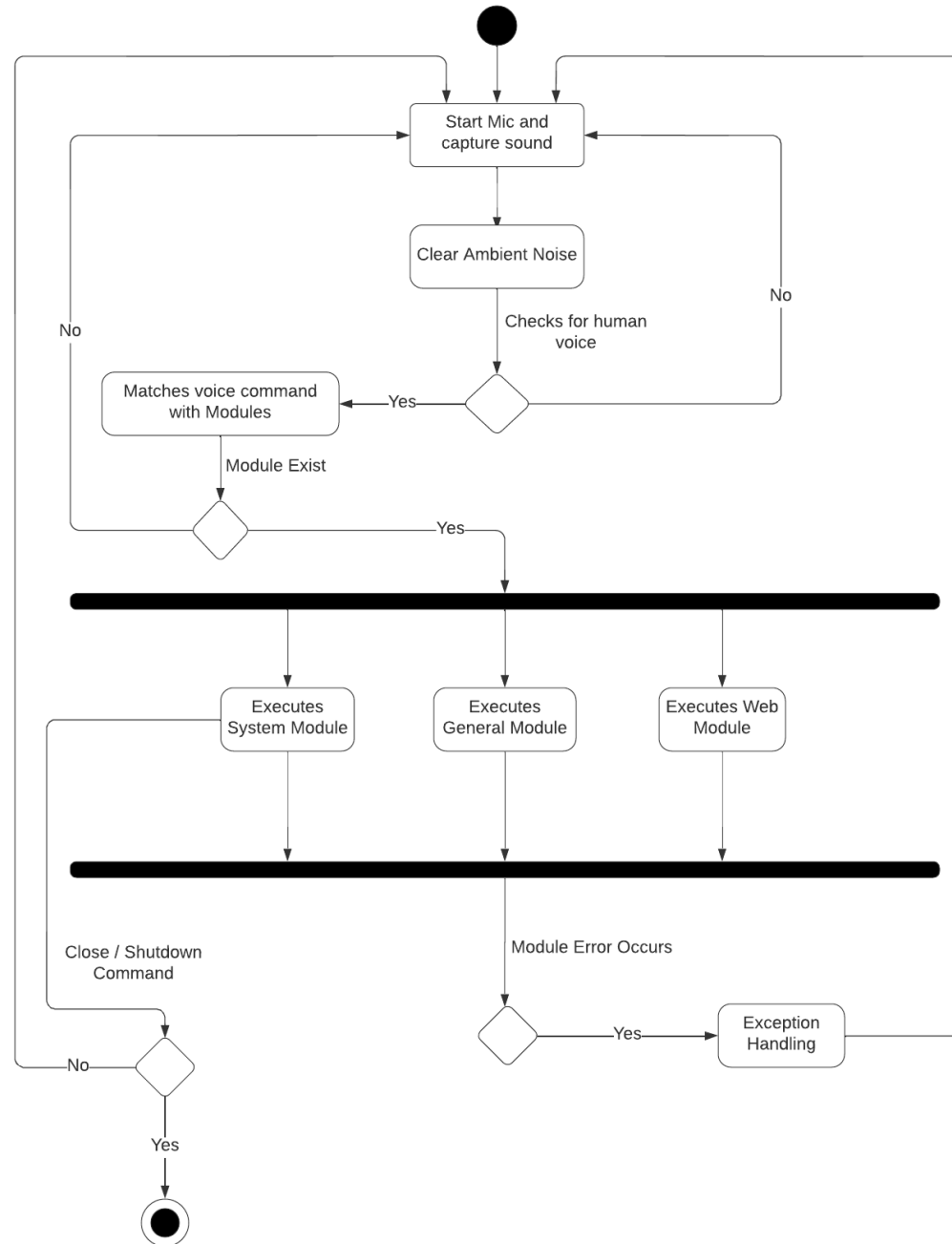
The Code

Voice Recognize & TTS

```python
import speech_recognition as sr
from gtts import gTTS
from pygame import mixer
import pyttsx3
import smtplib
from all_modules import *

CACHE_PATH = "S:\\Major Project\\Coding\\TTSCache"

start = gTTS(text="This is your assistant, How can i help you?", lang='en')
start.save(f'{CACHE_PATH}\\start.mp3')
mixer.init()
mixer.music.load(f'{CACHE_PATH}\\start.mp3')
mixer.music.play()

def takeCommand():
    r = sr.Recognizer()
    with sr.Microphone(device_index=1) as source:
        # print(sr.Microphone().list_microphone_names())
        r.adjust_for_ambient_noise(source, duration=2)
        # r.pause_threshold = 1
        r.energy_threshold = 300 #default (consider increasing if noisy environment)
        print('Speak Now O ')
        audio = r.listen(source)
```
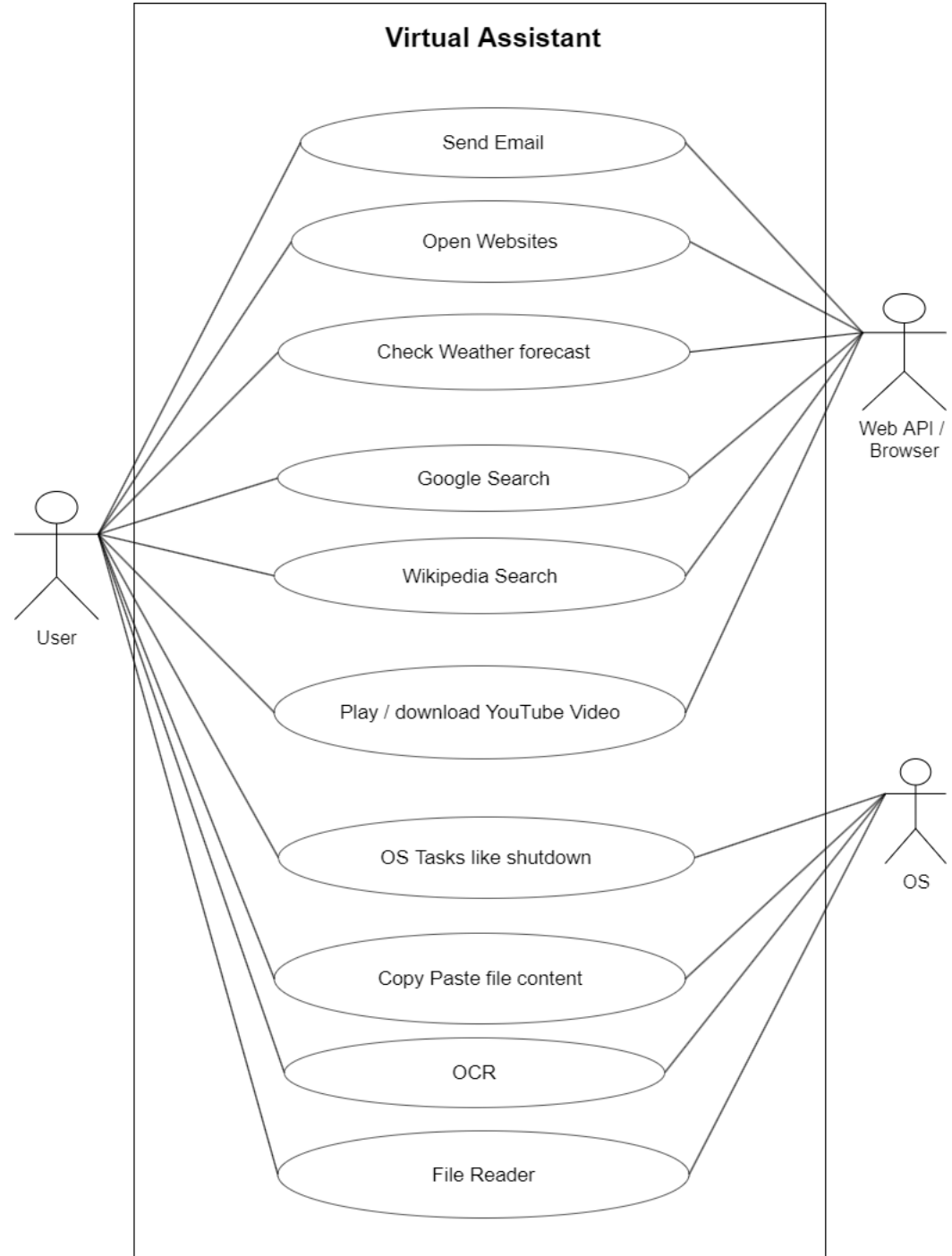
Send Email Module

```python
now = datetime.now()
current_time = now.strftime("%H:%M:%S")


def semsg(to, sub, body):
    email_sender = "manan.kateshiya111006@marwadiuniversity.ac.in"
    load_dotenv()
    email_password = os.getenv('EMAIL_KEY')

    email_rec = f"{to}"
    subject = f"{sub}"
    body = """
        {}
    """.format(body)

    em = EmailMessage()
    em['From'] = email_sender
    em['To'] = email_rec
    em['subject'] = subject
    em.set_content(body)

    context = ssl.create_default_context()

    with smtplib.SMTP_SSL('smtp.gmail.com', 465, context=context) as smtp:
        smtp.login(email_sender, email_password)
        smtp.sendmail(email_sender, email_rec, em.as_string())
```

Activity Diagram

Virtual Assistant Activity Digram

Use Case Diagram

Virtual Assistant

- Send Email
- Open Websites
- Check Weather forecast
- Google Search
- Wikipedia Search
- Play / download YouTube Video
- OS Tasks like shutdown
- Copy Paste file content
- OCR
- File Reader

User

Web API / Browser

OS

Advantages

- Easy to use

- User can perform general purpose tasks without physically accessing the computer

- Saves Time

- User don't have to worry about procedure of tasks

Requirements

○ Decent Mic Required

○ Clear Surrounding Required

THANK YOU