```
pip install SpeechRecognition
```

```
Collecting SpeechRecognition
  Downloading SpeechRecognition-3.10.4-py2.py3-none-any.whl.metadata (28 kB)
Requirement already satisfied: requests>=2.26.0 in /usr/local/lib/python3.10/dist-packages (from SpeechRecognition) (2.32.3)
Requirement already satisfied: typing-extensions in /usr/local/lib/python3.10/dist-packages (from SpeechRecognition) (4.12.2)
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.10/dist-packages (from requests>=2.26.0->SpeechRecogni
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-packages (from requests>=2.26.0->SpeechRecognition) (3.10)
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.10/dist-packages (from requests>=2.26.0->SpeechRecognition)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.10/dist-packages (from requests>=2.26.0->SpeechRecognition)
Downloading SpeechRecognition-3.10.4-py2.py3-none-any.whl (32.8 MB)
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Installing collected packages: SpeechRecognition
Successfully installed SpeechRecognition-3.10.4
```

```
!pip install pyaudio
```

```
Requirement already satisfied: pyaudio in /usr/local/lib/python3.10/dist-packages (0.2.14)
```

```
recognizer = sr.Recognizer()

# Function to process audio file
def process_audio_file(audio_file_path):
    try:
        # Open the audio file
        with sr.AudioFile(audio_file_path) as source:
            # Listen for the data (load audio to memory)
            audio_data = recognizer.record(source)
            # Recognize (convert from speech to text)
            text = recognizer.recognize_google(audio_data)
            print(f'Speech recognized')
            return text
    except:
        return "Speech Recognition could not understand audio"

# Replace 'audio_file.wav' with the actual path to your audio file
audio_file_path = '/content/16-122828-0002.wav'
text = process_audio_file(audio_file_path)
print(f'Text in audio file: "{text}"')
```

```
Speech recognized
Text in audio file: "I believe you are just talking nonsense"
```

The code snippet processes an audio file to convert speech to text. It first installs necessary libraries like SpeechRecognition and pyaudio. Then, it defines a function that opens the audio file, loads it into memory, and uses Google's speech recognition engine to transcribe the audio into text. Finally, it prints the recognized text from the specified audio file path. Essentially, the system takes an audio input, converts it into a digital representation, and then uses an API to analyze and interpret the speech, producing a text output.

SpeechRecogniton

SpeechRecognition is a Python library that provides various functionalities for speech recognition, allowing you to convert audio data into text.

PyAudio

PyAudio is a library used for working with audio input and output in Python. Together, they enable programs to capture audio from a microphone or file, process it using a speech recognition engine and convert it to text. This combination is essential for building applications that involve voice commands, transcription, or other speech-related tasks.

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