1. Using python language in IBM Watson convert speech to text.

By writing some commands on the terminal on Microsoft visual studio app, we applying conversion from speech to text.

Here are the commands we wrote in order step by step:

1- We install pip which is a package management system, mainly used to manage and install packages written in Python language.

Command: pip install pipwin.

```
PS C:\Users\zaina\Desktop\Training\RealTimeSpeechToText-main\watson-streaming-stt> pip install pipwin
Requirement already satisfied: pipwin in c:\users\zaina\appdata\local\programs\python\python39\lib\site-packages (0.5.1)
Requirement already satisfied: docopt in c:\users\zaina\appdata\local\programs\python\python39\lib\site-packages (from pipwin) (0.6.2)
Requirement already satisfied: requests in c:\users\zaina\appdata\local\programs\python\python39\lib\site-packages (from pipwin) (2.26.0)
Requirement already satisfied: pyprind in c:\users\zaina\appdata\local\programs\python\python39\lib\site-packages (from pipwin) (2.11.3)
Requirement already satisfied: six in c:\users\zaina\appdata\local\programs\python\python39\lib\site-packages (from pipwin) (1.16.0)
```

Figure 1: pip install pipwin

2- pipwin install pyaudio.

```
PS C:\Users\zaina\Desktop\Training\RealTimeSpeechToText-main\watson-streaming-stt> pipwin install pyaudio
Building cache. Hang on . . .
Done
Package `pyaudio` found in cache
Downloading package . . .
https://download.lfd.uci.edu/pythonlibs/r4tycu3t/PyAudio-0.2.11-cp39-cp39-win_amd64.whl
PyAudio-0.2.11-cp39-cp39-win_amd64.whl
 [*] 110 kB / 110 kB @ 21 kB/s [####################] [100%, 0s left]
Processing c:\users\zaina\pipwin\pyaudio-0.2.11-cp39-cp39-win_amd64.whl
Installing collected packages: PyAudio
Successfully installed PyAudio-0.2.11
PS C:\Users\zaina\Desktop\Training\RealTimeSpeechToText-main\watson-streaming-stt>
```

Figure 2: pipwin install pyaudio

3- pip install -r requirements.txt

```
PS C:\Users\zaina\Desktop\Training\RealTimeSpeechToText-main\watson-streaming-stt> pip install -r requirements.txt
Requirement already satisfied: pyaudio in c:\users\zaina\appdata\local\programs\python\python39\lib\site-packages (from -r requirements.txt (line
1)) (0.2.11)
Requirement already satisfied: websocket-client in c:\users\zaina\appdata\local\programs\python\python39\lib\site-packages (from -r requirements.t
xt (line 2)) (1.1.0)
```

Figure 3: pip install -r requirements.txt

4- the last command that we needed is [python transcribe.py -t 5] to complete speech-to-text conversion, for instance, if I said (good morning everyone) in the microphone on my laptop it will convert to text as shown in the picture below.

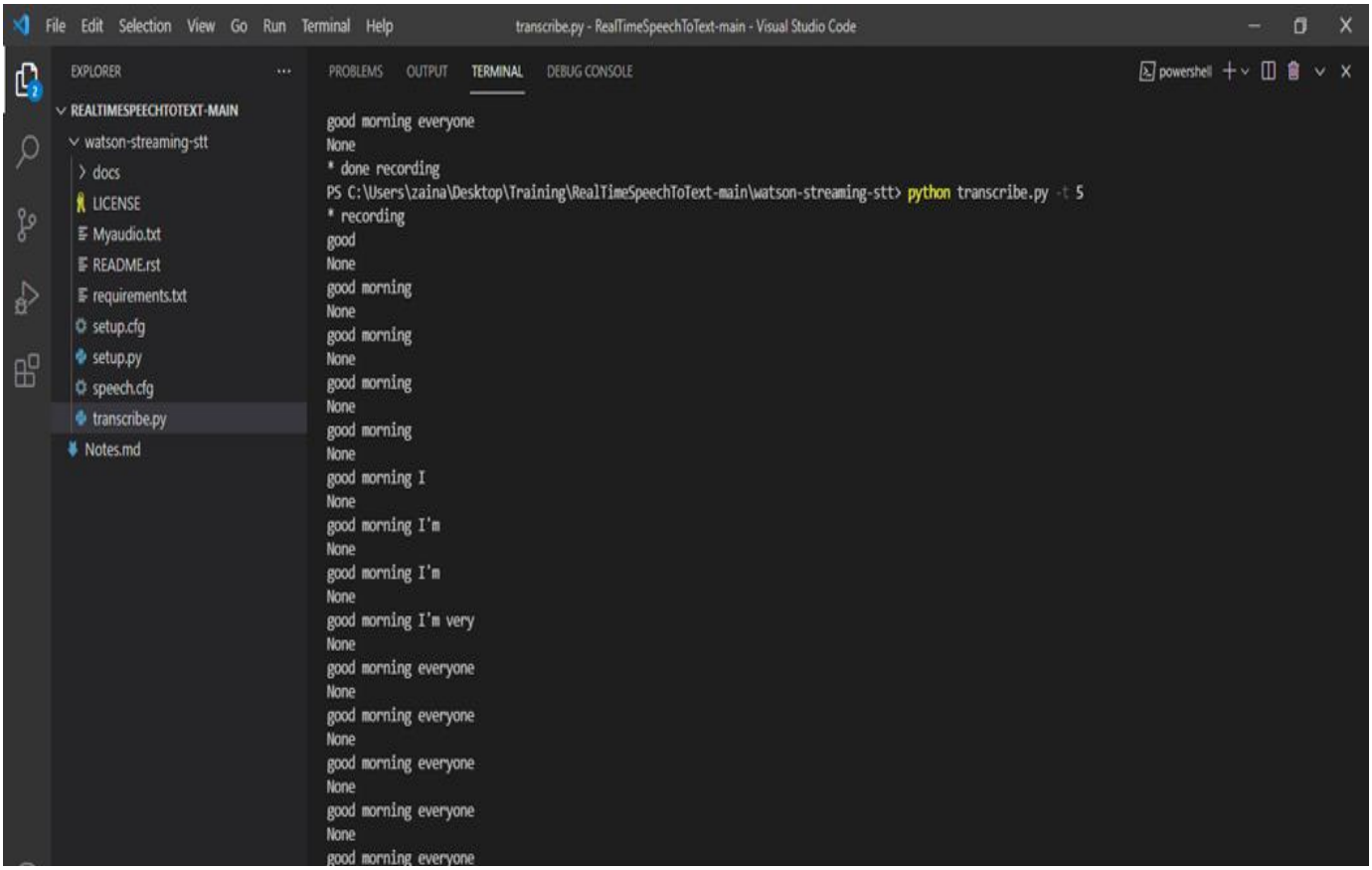

Figure 4: python transcribe.py -t 20