

```
#install required libraries
```

```
!pip install SpeechRecognition pydub
```

```
!pip install pydub
```

```
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/
Collecting SpeechRecognition
  Downloading SpeechRecognition-3.8.1-py2.py3-none-any.whl (32.8 MB)
    |████████████████████████████████████████| 32.8 MB 1.2 MB/s
Collecting pydub
  Downloading pydub-0.25.1-py2.py3-none-any.whl (32 kB)
Installing collected packages: SpeechRecognition, pydub
Successfully installed SpeechRecognition-3.8.1 pydub-0.25.1
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/
Requirement already satisfied: pydub in /usr/local/lib/python3.7/dist-packages (0.25
```

```
#convert mp3 to wav format
```

```
from os import path
```

```
from pydub import AudioSegment
```

```
input_file = "AI_Assignment.mp3"
```

```
output_file = "converted.wav"
```

```
sound = AudioSegment.from_mp3(input_file)
```

```
sound.export(output_file, format="wav")
```

```
<_io.BufferedRandom name='converted.wav'>
```

```
import speech_recognition as sr
```

```
r = sr.Recognizer()
```

```
audio_file='converted.wav'
```

```
with sr.AudioFile(audio_file) as source:
```

```
    audio_data = r.record(source)
```

```
    text = r.recognize_google(audio_data)
```

```
    print(text)
```

```
hi I have a flight at 7 a.m. from Delhi to Mumbai
```

```
! pip install spacy
```

```
! pip install nltk
```

```
! python -m spacy download en_core_web_sm
```

```
Requirement already satisfied: symmetrical in /usr/local/lib/python3.7/dist-packages (0.1.1)
Requirement already satisfied: wasabi<1.1.0,>=0.9.1 in /usr/local/lib/python3.7/dist-packages (0.10.0)
Requirement already satisfied: spacy-loggers<2.0.0,>=1.0.0 in /usr/local/lib/python3.7/dist-packages (1.0.0)
Requirement already satisfied: zipp>=0.5 in /usr/local/lib/python3.7/dist-packages (0.6.0)
Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in /usr/local/lib/python3.7/dist-packages (2.4.7)
Requirement already satisfied: smart-open<6.0.0,>=5.2.1 in /usr/local/lib/python3.7/dist-packages (5.2.1)
Requirement already satisfied: chardet<4,>=3.0.2 in /usr/local/lib/python3.7/dist-packages (3.7.4)
Requirement already satisfied: urllib3!=1.25.0,!1.25.1,<1.26,>=1.21.1 in /usr/local/lib/python3.7/dist-packages (1.25.11)
Requirement already satisfied: idna<3,>=2.5 in /usr/local/lib/python3.7/dist-packages (2.10)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.7/dist-packages (2022.9.24)
Requirement already satisfied: blis<0.8.0,>=0.7.8 in /usr/local/lib/python3.7/dist-packages (0.7.10)
```

```
Requirement already satisfied: click<9.0.0,>=7.1.1 in /usr/local/lib/python3.7/dist-packages (7.1.1)
Requirement already satisfied: MarkupSafe>=0.23 in /usr/local/lib/python3.7/dist-packages (2.0.1)
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/
Requirement already satisfied: nltk in /usr/local/lib/python3.7/dist-packages (3.6.5)
Requirement already satisfied: click in /usr/local/lib/python3.7/dist-packages (7.1.1)
Requirement already satisfied: regex>=2021.8.3 in /usr/local/lib/python3.7/dist-packages (2022.1.18)
Requirement already satisfied: tqdm in /usr/local/lib/python3.7/dist-packages (4.64.0)
Requirement already satisfied: joblib in /usr/local/lib/python3.7/dist-packages (1.1.0)
2022-08-30 17:15:18.196881: E tensorflow/stream_executor/cuda/cuda_driver.cc:271]
Looking in indexes: https://pypi.org/simple, https://us-python.pkg.dev/colab-wheels/public/simple/
Collecting en-core-web-sm==3.4.0
```

Downloading [https://github.com/explosion/spacy-models/releases/download/en\\_core](https://github.com/explosion/spacy-models/releases/download/en_core)

12.8 MB 8.6 MB/s

```
Requirement already satisfied: spacy<3.5.0,>=3.4.0 in /usr/local/lib/python3.7/dist-packages (3.4.0)
Requirement already satisfied: catalogue<2.1.0,>=2.0.6 in /usr/local/lib/python3.7/dist-packages (2.0.6)
Requirement already satisfied: typing-extensions<4.2.0,>=3.7.4 in /usr/local/lib/python3.7/dist-packages (3.7.4)
Requirement already satisfied: pathy>=0.3.5 in /usr/local/lib/python3.7/dist-packages (0.3.5)
Requirement already satisfied: wasabi<1.1.0,>=0.9.1 in /usr/local/lib/python3.7/dist-packages (0.9.1)
Requirement already satisfied: requests<3.0.0,>=2.13.0 in /usr/local/lib/python3.7/dist-packages (2.25.1)
Requirement already satisfied: murmurhash<1.1.0,>=0.28.0 in /usr/local/lib/python3.7/dist-packages (0.28.0)
Requirement already satisfied: preshed<3.1.0,>=3.0.2 in /usr/local/lib/python3.7/dist-packages (3.0.2)
Requirement already satisfied: setuptools in /usr/local/lib/python3.7/dist-packages (50.0.0)
Requirement already satisfied: numpy>=1.15.0 in /usr/local/lib/python3.7/dist-packages (1.19.5)
Requirement already satisfied: thinc<8.2.0,>=8.1.0 in /usr/local/lib/python3.7/dist-packages (8.1.0)
Requirement already satisfied: srsly<3.0.0,>=2.4.3 in /usr/local/lib/python3.7/dist-packages (2.4.3)
Requirement already satisfied: langcodes<4.0.0,>=3.2.0 in /usr/local/lib/python3.7/dist-packages (3.2.0)
Requirement already satisfied: spacy-legacy<3.1.0,>=3.0.9 in /usr/local/lib/python3.7/dist-packages (3.0.9)
Requirement already satisfied: typer<0.5.0,>=0.3.0 in /usr/local/lib/python3.7/dist-packages (0.3.0)
Requirement already satisfied: spacy-loggers<2.0.0,>=1.0.0 in /usr/local/lib/python3.7/dist-packages (1.0.0)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.7/dist-packages (20.9)
Requirement already satisfied: pydantic!=1.8,!=1.8.1,<1.10.0,>=1.7.4 in /usr/local/lib/python3.7/dist-packages (1.9.0)
Requirement already satisfied: cymem<2.1.0,>=2.0.2 in /usr/local/lib/python3.7/dist-packages (2.0.2)
Requirement already satisfied: tqdm<5.0.0,>=4.38.0 in /usr/local/lib/python3.7/dist-packages (4.38.0)
Requirement already satisfied: Jinja2 in /usr/local/lib/python3.7/dist-packages (2.11.3)
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Requirement already satisfied: chardet<4,>=3.0.2 in /usr/local/lib/python3.7/dist-packages (3.0.2)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.7/dist-packages (2020.6.20)
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Requirement already satisfied: MarkupSafe>=0.23 in /usr/local/lib/python3.7/dist-packages (0.23)
```

✓ Download and installation successful

You can now load the package via `spacy.load('en_core_web_sm')`

```
import spacy
from spacy import displacy
from spacy import tokenizer
nlp = spacy.load('en_core_web_sm')
```

```
doc = nlp(text)
```

```
sentences = list(doc.sents)
```

```
print(sentences)
```

```
[hi I have a flight at 7 a.m. from Delhi to Mumbai]
```

```
for token in doc:  
    print(token.text)
```

```
hi  
I  
have  
a  
flight  
at  
7  
a.m.  
from  
Delhi  
to  
Mumbai
```

```
ents = [(e.text, e.label_) for e in doc.ents]  
print(ents)
```

```
[('7 a.m.', 'TIME'), ('Delhi', 'GPE'), ('Mumbai', 'GPE')]
```

```
for e in doc.ents:  
    print(e.label_, '=', e.text)
```

```
TIME = 7 a.m.  
GPE = Delhi  
GPE = Mumbai
```

```
displacy.render(doc, style='ent', jupyter=True)
```

```
hi I have a flight at 7 a.m. TIME from Delhi GPE to Mumbai GPE
```

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✓ 0s completed at 22:46

