```
pip install librosa
```

```
Requirement already satisfied: librosa in /usr/local/lib/python3.10/dist-packages (0.10.1)
Requirement already satisfied: audioread>=2.1.9 in /usr/local/lib/python3.10/dist-packages (from librosa) (3.0.1)
Requirement already satisfied: numpy!=1.22.0,!=1.22.1,!=1.22.2,>=1.20.3 in /usr/local/lib/python3.10/dist-packages (from librosa) (1.23
Requirement already satisfied: scipy>=1.2.0 in /usr/local/lib/python3.10/dist-packages (from librosa) (1.11.4)
Requirement already satisfied: scikit-learn>=0.20.0 in /usr/local/lib/python3.10/dist-packages (from librosa) (1.2.2)
Requirement already satisfied: joblib>=0.14 in /usr/local/lib/python3.10/dist-packages (from librosa) (1.3.2)
Requirement already satisfied: decorator>=4.3.0 in /usr/local/lib/python3.10/dist-packages (from librosa) (4.4.2)
Requirement already satisfied: numba>=0.51.0 in /usr/local/lib/python3.10/dist-packages (from librosa) (0.58.1)
Requirement already satisfied: soundfile>=0.12.1 in /usr/local/lib/python3.10/dist-packages (from librosa) (0.12.1)
Requirement already satisfied: pooch>=1.0 in /usr/local/lib/python3.10/dist-packages (from librosa) (1.8.0)
Requirement already satisfied: soxr>=0.3.2 in /usr/local/lib/python3.10/dist-packages (from librosa) (0.3.7)
Requirement already satisfied: typing-extensions>=4.1.1 in /usr/local/lib/python3.10/dist-packages (from librosa) (4.5.0)
Requirement already satisfied: lazy-loader>=0.1 in /usr/local/lib/python3.10/dist-packages (from librosa) (0.3)
Requirement already satisfied: msgpack>=1.0 in /usr/local/lib/python3.10/dist-packages (from librosa) (1.0.7)
Requirement already satisfied: llvmlite<0.42,>=0.41.0dev0 in /usr/local/lib/python3.10/dist-packages (from numba>=0.51.0->librosa) (0.4
Requirement already satisfied: platformdirs>=2.5.0 in /usr/local/lib/python3.10/dist-packages (from pooch>=1.0->librosa) (4.2.0)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.10/dist-packages (from pooch>=1.0->librosa) (23.2)
Requirement already satisfied: requests>=2.19.0 in /usr/local/lib/python3.10/dist-packages (from pooch>=1.0->librosa) (2.31.0)
Requirement already satisfied: threadpoolctl>=2.0.0 in /usr/local/lib/python3.10/dist-packages (from scikit-learn>=0.20.0->librosa) (3.
Requirement already satisfied: cffi>=1.0 in /usr/local/lib/python3.10/dist-packages (from soundfile>=0.12.1->librosa) (1.16.0)
Requirement already satisfied: pycparser in /usr/local/lib/python3.10/dist-packages (from cffi>=1.0->soundfile>=0.12.1->librosa) (2.21)
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.10/dist-packages (from requests>=2.19.0->pooch>=1.0->
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-packages (from requests>=2.19.0->pooch>=1.0->librosa) (3.
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.10/dist-packages (from requests>=2.19.0->pooch>=1.0->libros
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.10/dist-packages (from requests>=2.19.0->pooch>=1.0->libros
```

```python
import librosa
import numpy as np
```

```python
y, sr = librosa.load("/content/WhatsApp Audio 2024-02-05 at 2.52.47 PM.wav")
librosa.display.waveshow(y)
```

```
<librosa.display.AdaptiveWaveplot at 0x7ee842dba3e0>
```
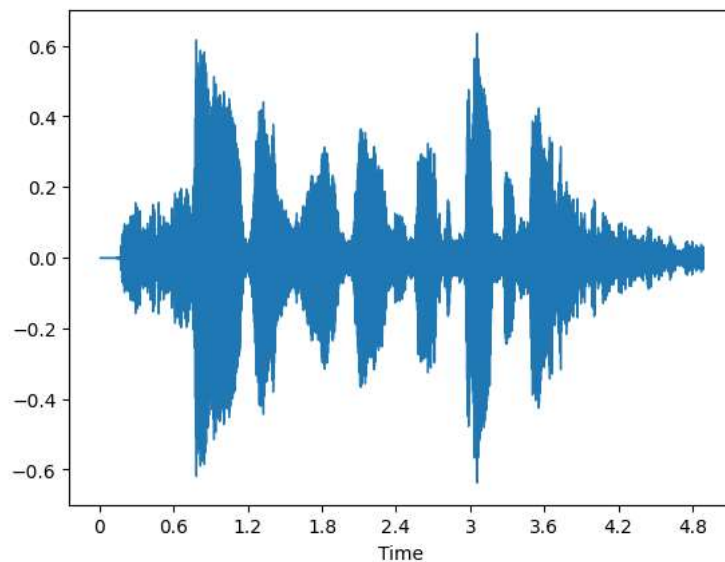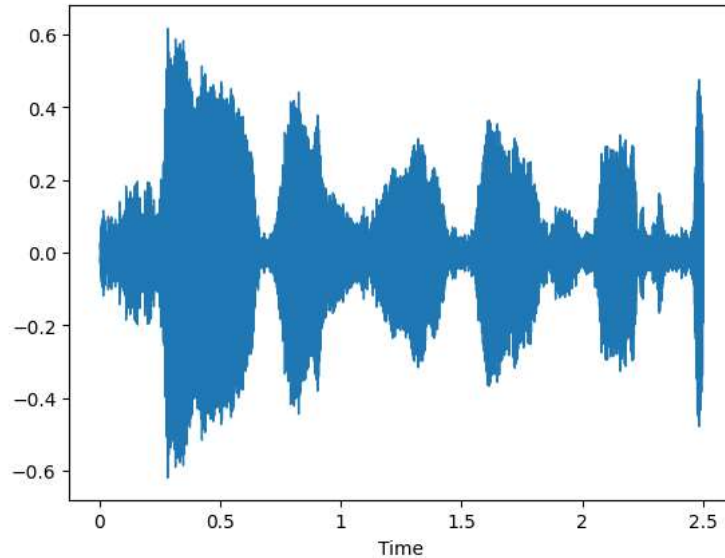


```python
print("Length of the signal:",len(y),"samples")
print("Magnitude range:",np.min(y),"to", np.max(y))
print("Sampling rate:",sr, "Hz")
```

```
Length of the signal: 107722 samples
Magnitude range: -0.5222813 to 0.63629436
Sampling rate: 22050 Hz
```

```python
import IPython.display as ipd

start = int(0.5 * sr)
end = int(3 * sr)
segment = y[start:end]
librosa.display.waveshow(segment)
ipd.Audio(segment, rate=sr)
```
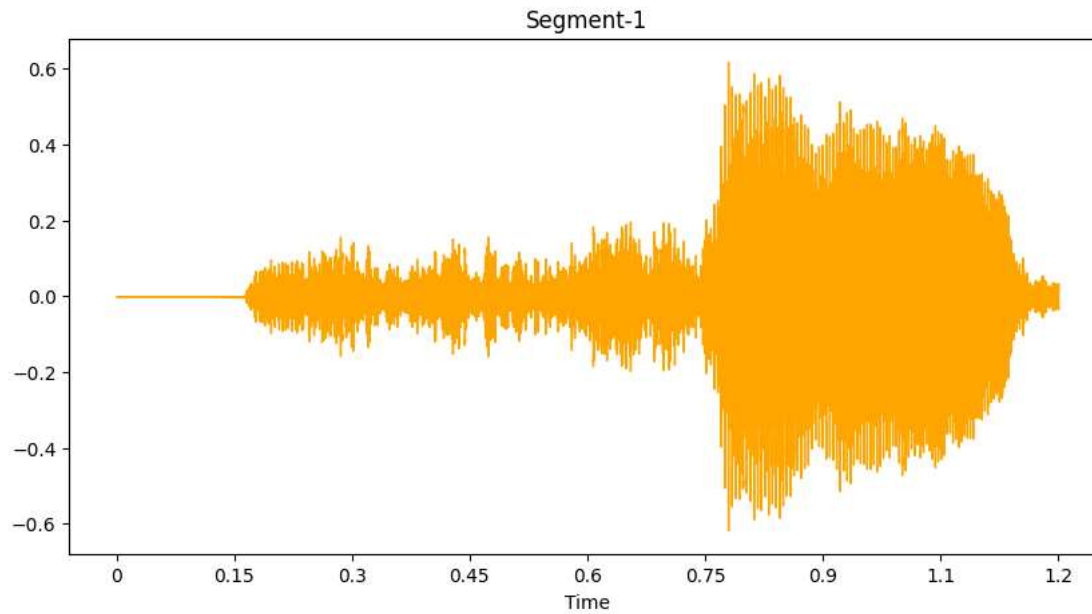
0:02 / 0:02


```python
import matplotlib.pyplot as plt
segment_1_start = int(0 * sr)
segment_1_end = int(1.2 * sr)
segment_2_start = int(1 * sr)
segment_2_end = int(2.2 * sr)
segment_1 = y[segment_1_start:segment_1_end]
segment_2 = y[segment_2_start:segment_2_end]
print("Playing Segment 1:")

plt.figure(figsize=(10, 5))
librosa.display.waveshow(segment_1, color = 'orange')
plt.title('Segment-1')
plt.show()
ipd.Audio(segment_1, rate=sr)
print("Playing Segment 2:")

plt.figure(figsize=(10, 5))
librosa.display.waveshow(segment_2, color = 'green')
plt.title('Segment-2')
plt.show()
ipd.Audio(segment_2, rate=sr)
```

Playing Segment 1:

Segment-1

Playing Segment 2:

Segment-2