In [1]:
```
import librosa
import librosa.display
import IPython.display as ipd
import matplotlib.pyplot as plt
```

Loading audio files with Librosa

In [2]:
```
scale_file = "audio/scale.wav"
```

In [3]:
```
ipd.Audio(scale_file)
```

Out[3]:

In [4]:
```
# load audio files with librosa
scale, sr = librosa.load(scale_file)
```

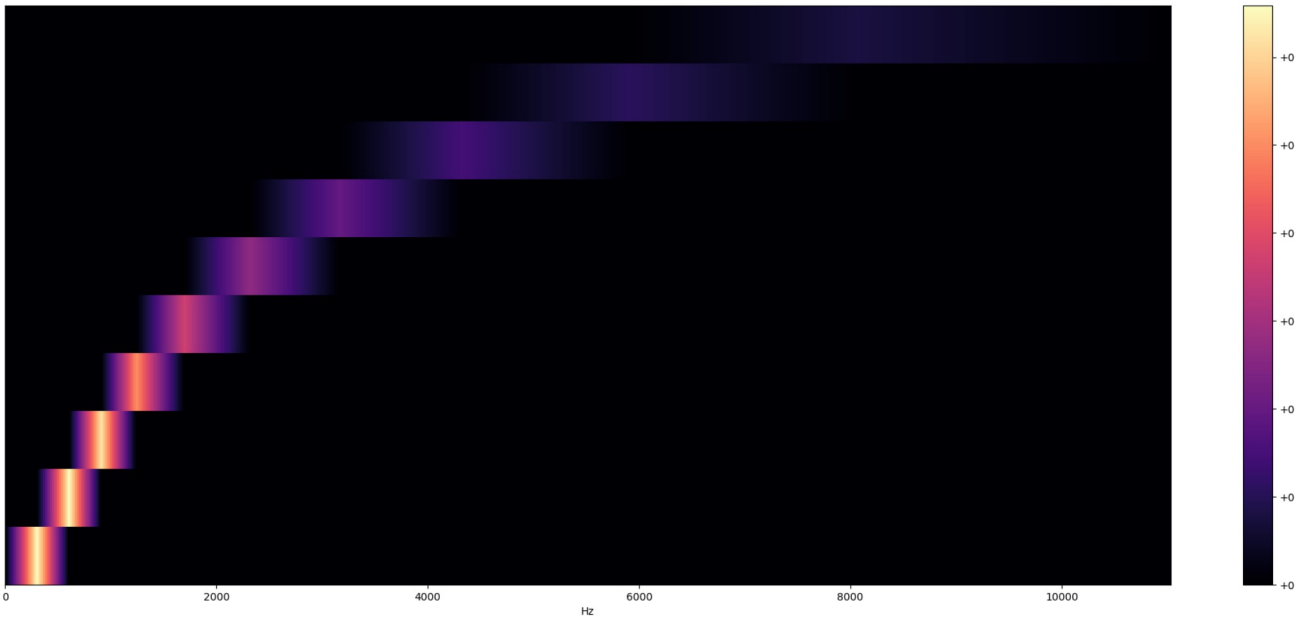
Mel filter banks

In [5]:
```
filter_banks = librosa.filters.mel(n_fft=2048, sr=22050, n_mels=10)
```

In [6]:
```
filter_banks.shape
```

Out[6]:
```
(10, 1025)
```

In [7]:
```
plt.figure(figsize=(25, 10))
librosa.display.specshow(filter_banks,
                         sr=sr,
                         x_axis="linear")
plt.colorbar(format="%+2.f")
plt.show()
```



Extracting Mel Spectrogram

In [9]:
```
mel_spectrogram = librosa.feature.melspectrogram(y=scale, sr=sr, n_fft=2048, hop_length=512, n_mels=10)
```

In [10]:
```
mel_spectrogram.shape
```

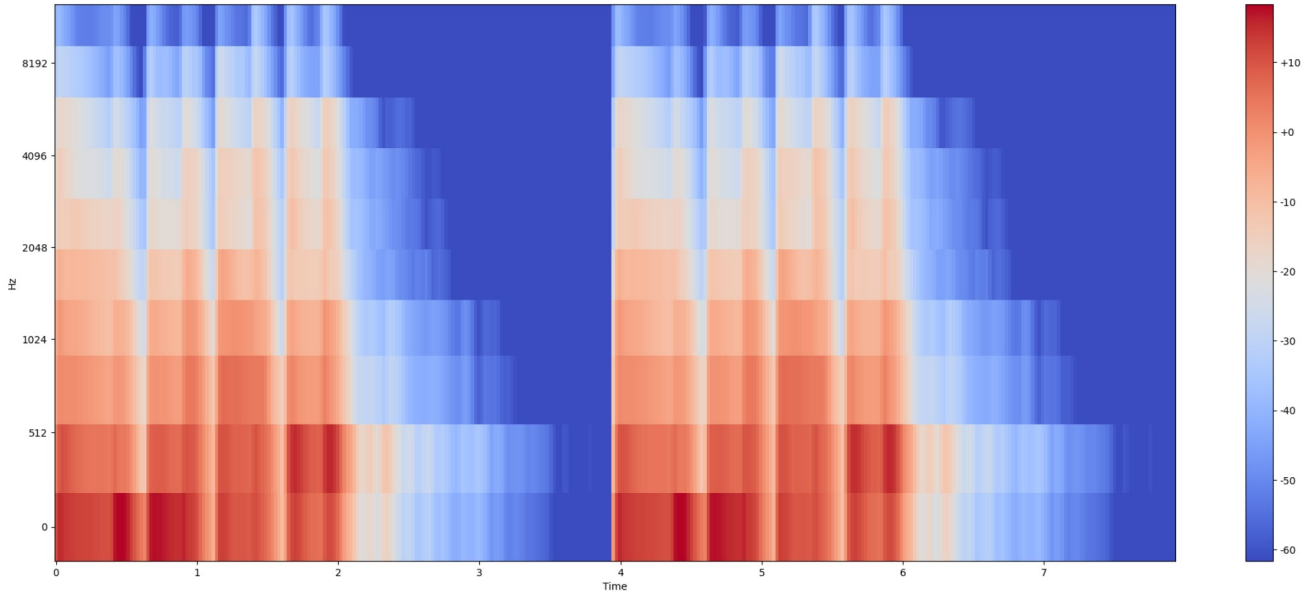
Out[10]:
```
(10, 342)
```

In [11]:
```
log_mel_spectrogram = librosa.power_to_db(mel_spectrogram)
```

In [12]:
```
log_mel_spectrogram.shape
```

Out[12]:
```
(10, 342)
```

In [13]:
```
plt.figure(figsize=(25, 10))
librosa.display.specshow(log_mel_spectrogram,
                         x_axis="time",
                         y_axis="mel",
                         sr=sr)
plt.colorbar(format="%+2.f")
plt.show()
```



In [ ]: