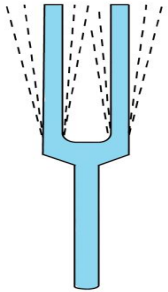
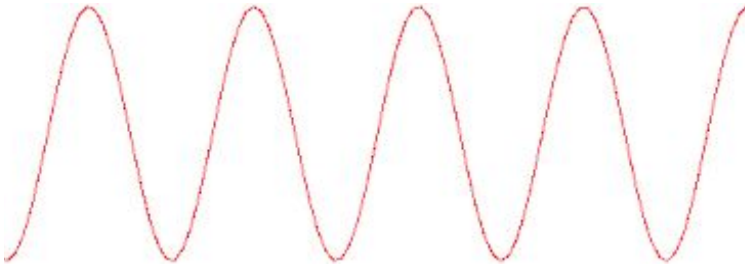
Introduction to Audio Data

What is an Audio Signal?

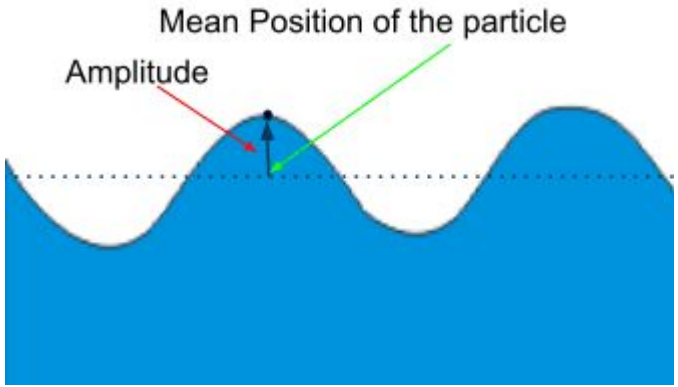
- Any vibrating body produces a sound wave





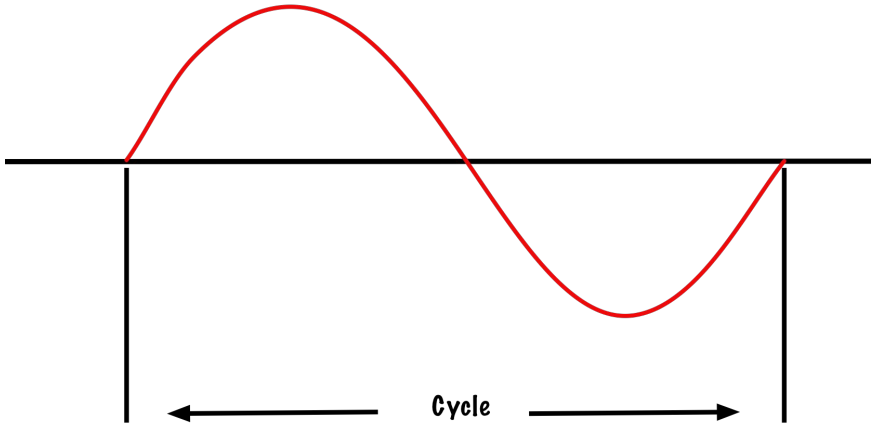
Parameters of Audio Signal

- **Amplitude**: Maximum Displacement of a particle from rest position



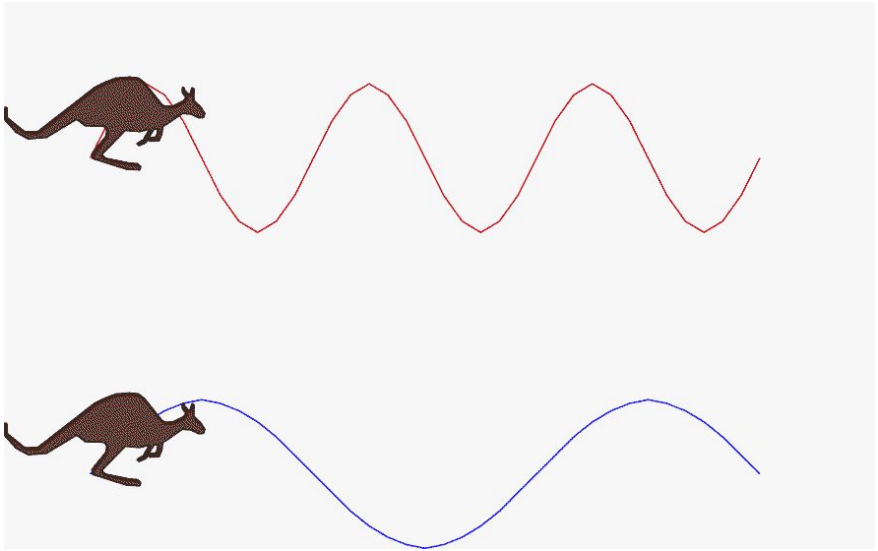
Parameters of Audio Signal

- **Cycle**: One Complete Upward and Downward movement



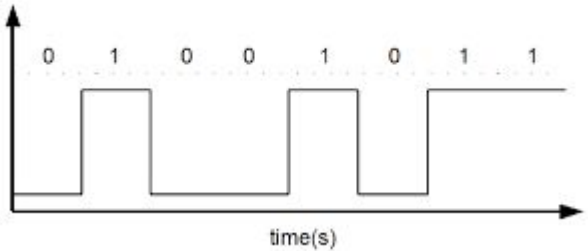
Parameters of Audio Signal

- **Frequency:** How fast a signal is changing over time?



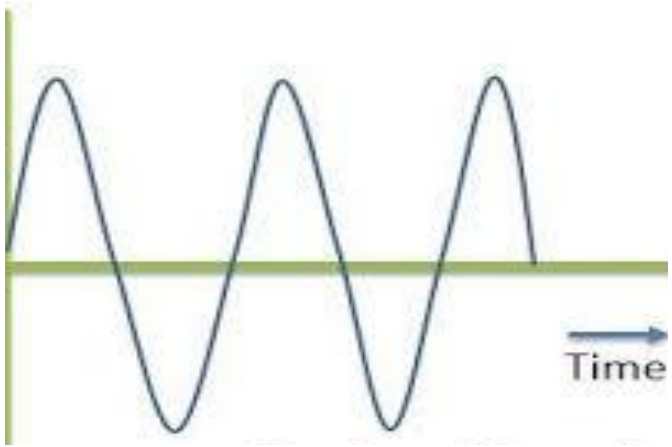
Different Types of Signals

- **Digital Signal**: Discrete and Finite



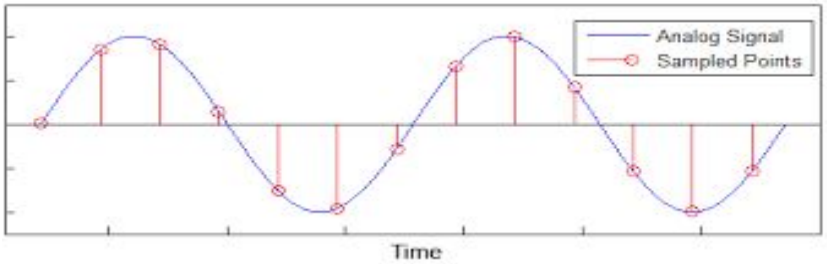
Different Types of Signals

- **Analog Signal**: Continuous and Infinite



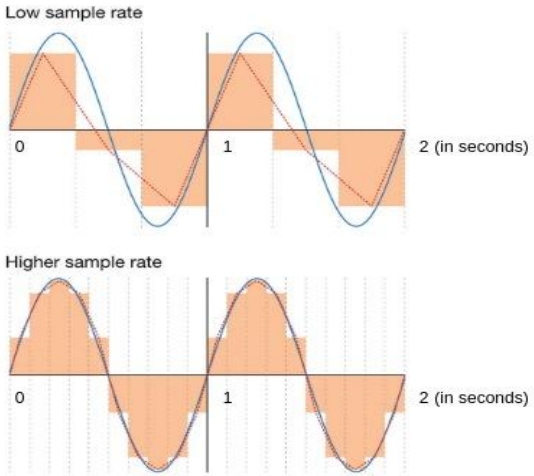
Converting Analog to Digital Signal

- **Sampling**: Conversion of Analog to Digital Signal



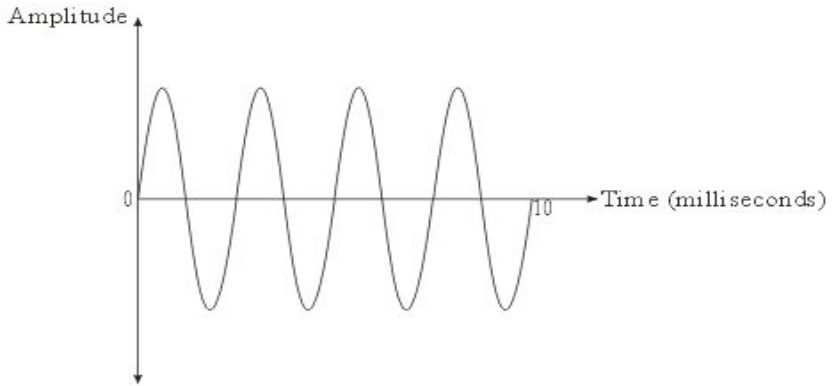
Converting Analog to Digital Signal

- **Sampling Rate**: Number of Samples per Second



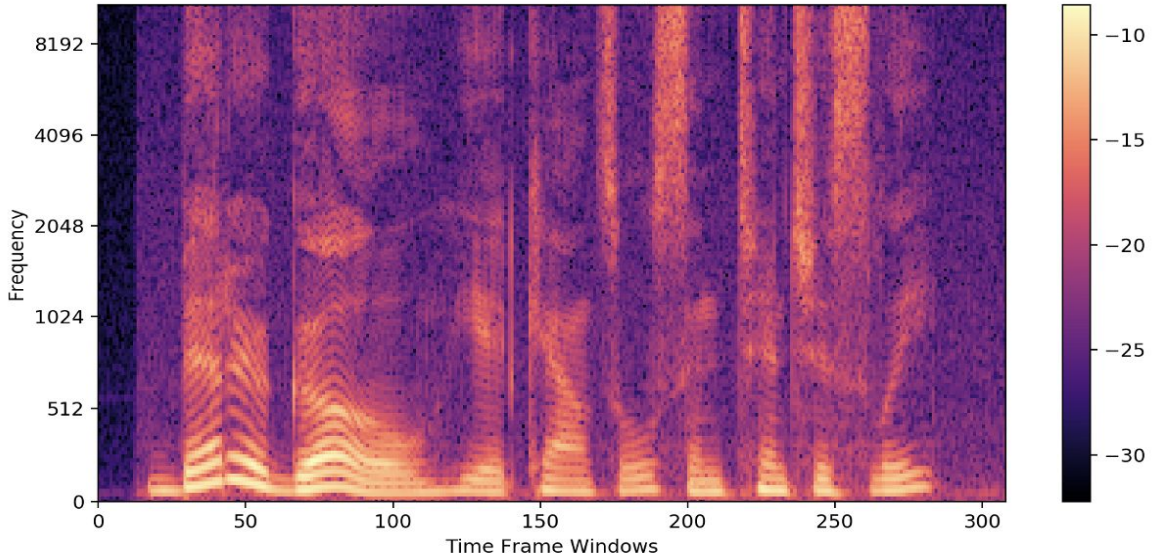
Audio Representation: Time Domain

- **Time Domain:** Amplitude vs Time

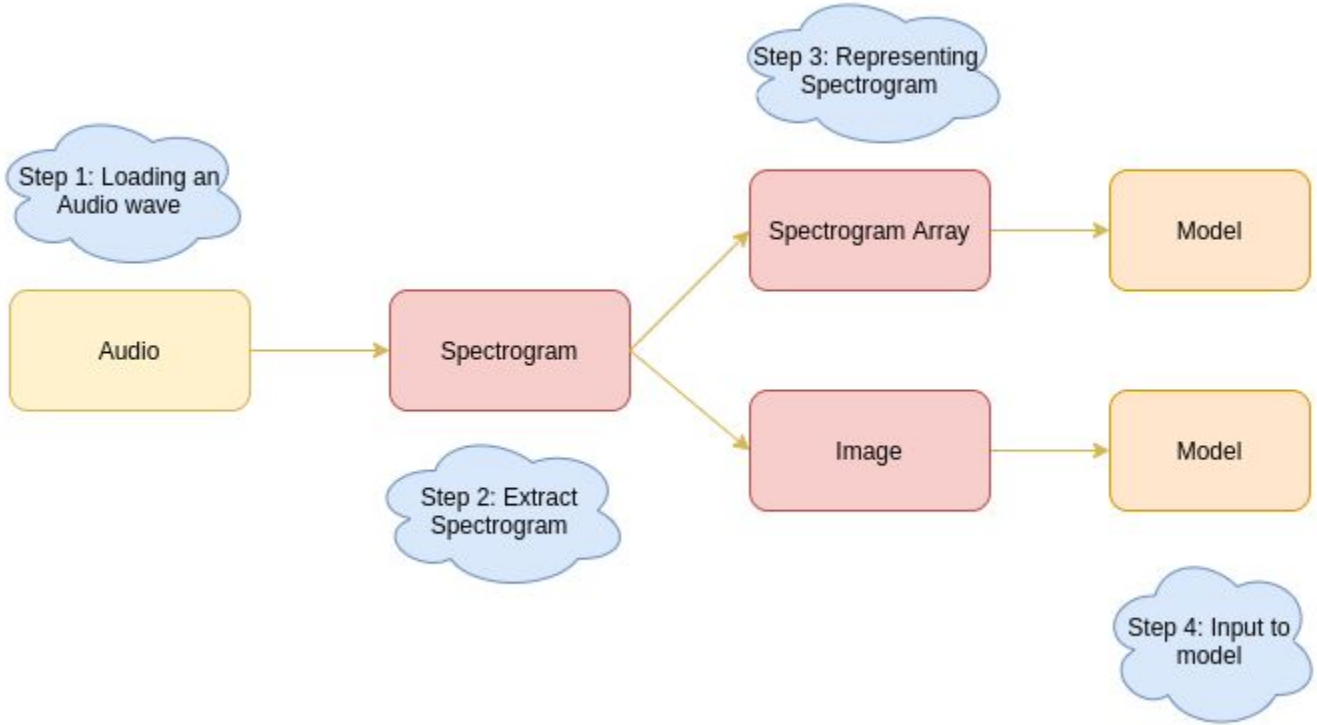


Audio Representation: Spectrogram

- **Spectrogram:** Every point represents an amplitude of a frequency at particular time



Formulating the Problem



Thank You