Machine Learning: Assignment I

# Problem Statement

Classification of Audio Signals into distinct pre-defined genres by using the concepts of Supervised Learning.

# Background

While music is a joy to listen to, the sheer amount of content available today on the World Wide Web make it’s classification an inevitable task. Music comes in infinite forms; alternatively known as *genres.* Though music spans such a wide array of categories, some features are common to all, regardless of rhythm, artist, score etc. Thus based on the feature extraction technique used music can be reduced to a set of data points.

# Dataset

A vast collection of music is easily available on the web these days. For the purpose of our problem, a dataset contain “short” clips/samples of music belonging to various genres would be ideal.

The following datasets are freely available on the web which will suit the needs of the problem.

1. **GTZAN Genre Collection**: This dataset contains 1000 *16-bit mono audio clips* each of which is 30 seconds long. These clips span 10 genres, each having a total of 100 tracks.
2. **The MagnaTagaTune Dataset**: This dataset consists of more than 25000 29 second long music clips. Further clip metadata is also available for all the clips.
3. **ISMIR 2004 Audio Description Contest Dataset**: This dataset comprises of music samples from six different genres, mostly in .wav and .mp3 format. The training and development set consists of:
4. Classical : 320 samples
5. Electronic : 115 samples
6. Metal : 45 samples
7. Pop : 101 samples

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