

e-Yantra Robotics Competition (eYRC 2016)

Task 1 – Bothoven

This task contains learning the following:

1. Musical notes and harmonics
2. Relationship between musical notes and frequencies
3. Software for generating Audio files

You may have heard the popular saying; music is made up of 7 basic notes or sounds: Sa Re Ga Ma Pa Dha and Ni in Indian Music, and, Do Re Mi Fa So La and Ti in Western Music. Together these seven notes form a scale. It is important to note that given these 7 notes on a musical instrument, it is possible to play most songs that have been composed.

In Western Music (especially on instruments like the Piano, Xylophone, Flute and Guitar), notes are given corresponding alphabets, A, B, C, D, E, F and G. Each note can be used to make a scale. We will only refer to the C Scale. This means that we will be playing a scale where Do, Re, Mi, Fa, So, La and Ti correspond to C, D, E, F, G, A and B.

1. Musical notes and harmonics:

This covers tutorials on basics of sounds and frequencies, harmonic content of sounds and harmonic distortion.

Channel: <https://www.youtube.com/playlist?list=PL86D5A3CA4C8BF2E8>

2. Relationship between musical notes and frequencies:

The table given in the link shows the musical notes and their corresponding frequencies.

URL: <http://www.phy.mtu.edu/~suits/notefreqs.html>

3. Software for generating Audio files:

There are different open source software available for generating the audio files. We recommend the use of Audacity software. The audio file given will be in .wav format. The software installation and tutorials for generating the audio file are available on the site.

URL: <http://www.audacityteam.org/>