Audio to MIDI Convertor

Team:

Umang Hirani-92200133025

Harshvardhan Soni-92200133028

Concepts of Graph Theory used in the project:

-Clustering

-YIN Algorithm

Resources used for the Project:

-PyGame , Pyaudio, Library in Python

-Aubio

-Ableton Live 11 Suite

-VCV rack 2 free

-Digital Piano

-MIDI Keyborad

-Microphone

Platform:

-Python

Purpose of the Project:

-MIDI basically means **Musical Instrument Digital Interface.**

-**MIDI does not send the sound wave made by an instrument** instead, it **sends information** about the music notes, and the receiving device uses its own virtual instrument to generate the sounds.

- It basically converts the incoming voice signal into MIDI signal that can be further used and processed later.

-**MIDI sends data** only about notes, **not the sound** of the notes. Basically a digital pitch signal in form of musical notes that are there on a keyboard.

Working of the Project:

-Receive audio through microphone.
-Detect the fundamental frequency of the incoming signal (YIN Algorithm).

-Use concepts like clustering to find the Musical note that corresponds to the fundamental frequency.
-Then convert that pitch signal into MIDI and then send it to other instruments to make use of it.