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Team Name: Moon-Star-Sound

Midterm Project Proposal

Project Description:

The project is a music game in which players compete against each to see who can correctly name the name and the artist of songs played. The game starts with players selecting the number of players, then they select the length of the game. There will be three different game lengths: Fast, Normal, and Slow. The Fast option means 2 rounds, the Normal option consists of 3 rounds, and the Slow option would consist of 5 rounds. After selecting the game's length, the players would select the game's difficultly. The game will have three difficultly: Easy, Normal, and Hard. The Easy difficultly would have the songs played unaltered; the Normal difficultly would feature some of the songs altered, and the Hard difficultly would feature all the song being altered. Altering the songs would involve changing the pitch, the speed of the songs or adding audio filters. Each round consists of players listening to a 1 minute clip that is made of 5 sections with each section being 20 seconds long. The sections are randomly selected snippets of songs. After the clip, finishes, players take turns trying to guess the name and artist of the songs. The goal of the game is highest amount of points at the end of the rounds. Points are given to players who answer correctly.

Features:

One Keypad for players to enter their answers and set up the game.

One OLED to display song information and display point totals between rounds and at the end of the game

One speaker to play music.

Project Plan:

My plan is to finish writing up FFMPEG audio sampling and filtering components. Then, I will complete the game's logic by adding players turns, game lengths, and game difficulties. Next, I will write the driver for the Pmod KYPD 16-button keypad, and write the Python component for this driver.

3. Progress:

So far, I have load my PYNQ board with the necessary python programs such as Mutagen, PyGame, and FFMPEG, and I have finished programming most of the music playing, selecting, moving, and sampling Python programs.

4. Sensors/Actuators:

I will be using the Pmod KYPD 16-button keypad from Digilent, and the Grove OLED Display "0.96"