Rhythm Master
Project Proposal

Kaixi Ji   UNI:kj2330

Modi Yan   UNI:my2408

Description

We intent to implement a game played by keyboard that makes the player hit on the notes of a playing song. The idea comes from the App "Rhythm Master". While music is being played on the FPGA board, notes extracted from the song would be sorted into 6 columns and displayed on the screen. Players are required to hit the notes on keyboard with the right key at the right time. Each hit would be evaluated as "Miss", "Great" or "Perfect" and score would be calculated based on that.

Design

- Notes of the song can be extracted using algorithm from labrosa. The algorithm could be modified to generate different sets of notes with different levels of difficulties.

- Music would be played by FPGA at the same time the notes are displayed (hardware).

- Notes would be hit by the player using the keyboard. Performance would be evaluated at the same time the music being played.

- We may want to adjust the speed of the notes falling into different levels, to make the game even more challenging.

Milestones

Milestone 1

- Extract the notes from the music using Matlab.

- Play the music successfully by FPGA.

- Synchronize the notes falling with music playing.

- Detect keyboard input correctly.

Milestone 2

- Match the keyboard input with notes displayed on screen and try to give the right evaluation.

- Generate note figures and display them on the screen.

Milestone 3

- Improve screen display of the game.

- Improve the evaluation system.

- Finalize the project.