Kanto Player
CSEE W4840 Final Report

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Abstract

This project presents an audio player with frequency visualization. The user is able to play audio files from an SD card and view a nice visualization on a VGA display. We use a field-programmable gate array (FPGA) for implementation, with software handling user interaction and song coordination and hardware handling actual audio output and FFT visualization.

1 Introduction

2 System Architecture

2.1 High-Level Overview

2.2 Low-Level Implementation Details

2.3 FFT Unit

2.4 Audio Buffer

2.5 Visualizer

2.6 SD Card Controller

2.7 Software User Interface

3 Timeline & Milestone Progress

Milestone	Date	Goal	Accomplished
Milestone 1	Apr 2	RTL design and block diagrams of all peripherals.	*Completed.*
Milestone 2	Apr 16	Individual peripherals written in VHDL and test benched.	*Completed.*
Milestone 3	Apr 30	Build interfaces between all peripherals and finish synchronization software.	*Completed*
Deadline	May 9	System complete and presentation finished.	*Completed.*

4 Contributions & Teamwork

- **Kavita Jain-Cocks**
  1. item
  2. item
- **Howard Mao**
  1. item
  2. item
- **Amrita Mazumdar**
  1. item
  2. item
- **Darien Nurse**
  1. item
  2. item
- **Jonathan Yu**
  1. item
  2. item