

Project Proposal

MP3 Player

2012/2/20

Project Abstract

MP3 player has been flourishing since its emergence. Today, they can be found on almost every cell phone and auto-mobile. Despite its fancy appearance, the realization process (especially the hardware part) under the surface is often ignored by many computer science students. For understanding the basics of how music comes from these boxes, I choose this project to make a MP3 player. based on Zilog Z16 microcontroller.

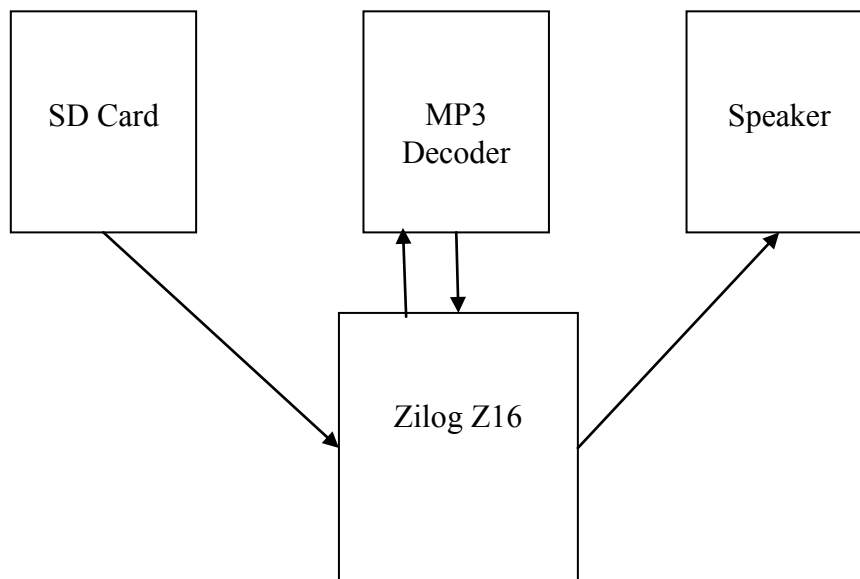
Strategy

Platform: Zilog Z16 series board with ZNEO microprocessor.

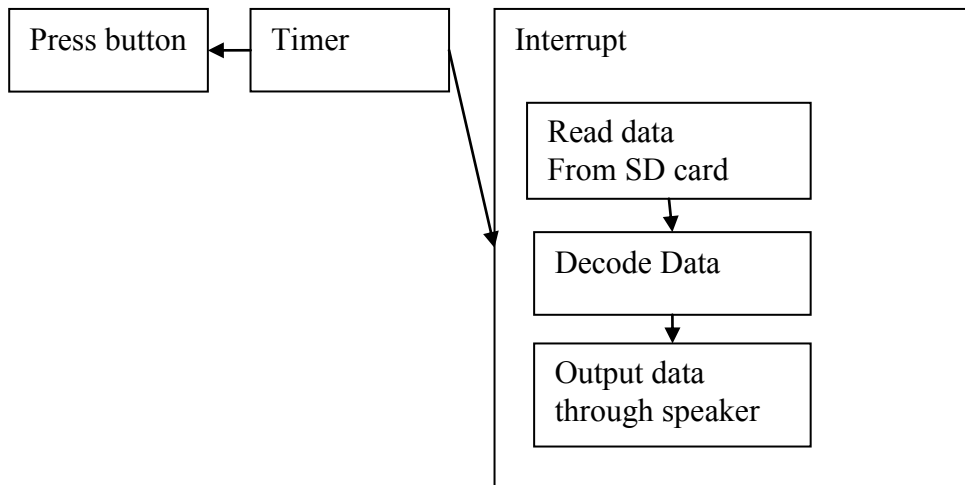
Capabilities: GPIO, timers, interrupts and etc.

External: MP3 decoder, model: Breakout Board for VS1011E-L MP3, SD card, Speaker

Software modules: Drivers for the MP3 decoder, ISR for buttons, SD card I/O, Speaker Driver



Hardware diagram



Software diagram

Unknowns

The exact ways to read data from SD card and sent it to MP3 decoder to decode are never studied by me before. Plus, I need more guides about breadboard and adding wires.

Implementation Plan

- Use Z16F2811FI contest board.
- Get the additional components.
- Study on how to read from SD card.
- Implement SD card read functionality.
- Study on how to use MP3 decoder with Z16 board.
- Implement MP3 decode functionality.
- Implement button control.
- Test.

Resources

- Z16 Contest Board: University loaned.
- Speaker: University loaned.
- Breakout Board for VS1011E-L MP3: will be purchased
- SD card: Owned.