Aaditya Channabasappa
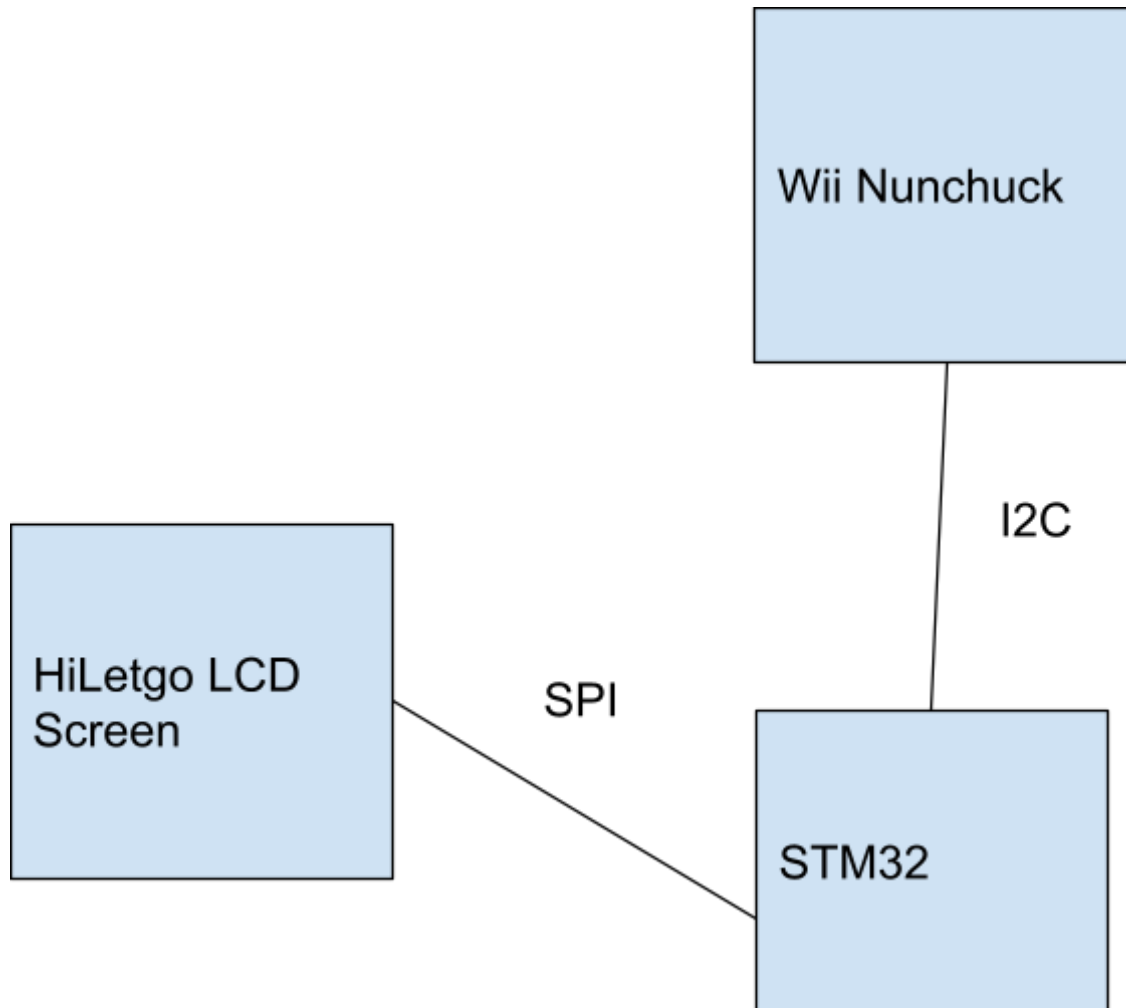Anuragh Sundar

153B Project Proposal - Bop It!

Overview:

The purpose of this project is to recreate the game "Bop It" with a nunchuck as the controller and a led screen to display the instructions. The main feature will be that an instruction will display on the led screen and the player will have a limited amount of time to complete that instruction. If the player does the task, then they get a point, otherwise it is game over.

Peripherals:
- Wii Nunchuck, I2C interface
- HiLetgo LCD screen, SPI interface

Block Diagram:

Responsibility List:

Aaditya Channabasappa - Responsible for peripherals and interfacing them to the software

Anuragh Sundar - Responsible for game state machine, timer interrupts for polling and timing

Software Structure:

Uses a state machine for the game state. There will be 3 states, one for home screen, one while playing, and one for game over. It will start out in the home screen state, if the user decides to play, then it will go to the play state. If the player loses then it will go to the game over state, but if the play succeeds, then it will stay in the play state. Each state will have send different displays to the LCD screen. We will make use of the timer interrupt to keep track of the time limit for each instruction. We will also use timer interrupts to poll the nunchuck and DMA to send the data from nunchuck to memory. The nunchuck uses I2C while the LCD screen uses SPI.

Link to Website:

https://sites.google.com/view/bop-it/home