

# PIANO TILES PLAYER

## ECE153B Final Project Proposal

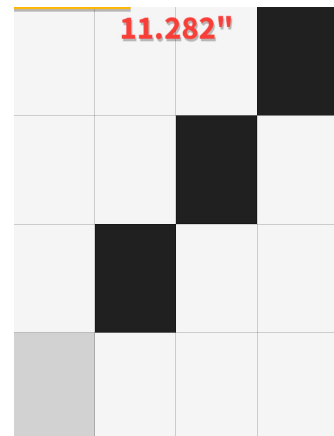
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### Overview

“Piano Tiles” is a music game that allows people to tap the black square to perform a piano piece. We propose an automatic of this game using microprocessor. When the game is displayed on the screen, we use a light sensor chip to detect the color of the block. If the upcoming block is black, the signal will be fed into LPC 4088 microcontroller and trigger the servo motor on the corresponding line through GPIO. The motor will push a piston and touch the screen.

### Peripherals

1. J-Deal 5x Pcs SG90 Micro Servo Motor 9G RC Robot controls\*4
2. ISL29125 RGB Light Sensor \*4
3. Pistons \*4
4. Wooden sticks \*4
5. Foils to wrap the sticks to hit the screen
6. Ipad \*1



### Software Design

- Read color on iPad screen change using the color sensor. Transmit data back to LPC4088 with I2C.
- When black block is detected, motors will be triggered to tap the screen and hit the corresponding block.

### Advance design:

- We can modified the machine to play the speed mode, so our machine can adjust the speed of the falling block.

## Goals

1. The motor will precisely push the piston and let it touch the screen.
2. Reach top 1000 of the game rank.

## Group Responsibilities

Wenxuan will be responsible for writing the basic framework of the algorithm. Xiyuan will be responsible for writing the code about sensor and motor' s peripheral interface. Shibo will be responsible for assembling the mechanical part and build the circuit.