Connect Four

Chitsanupong Voravijitchaikul 6010502543
Kittapon Junsupakul 6010504651

Equipment

Equipment

- WS2812B 30 LEDS (strip)

- TCRT5000

Equipment

- Switch

- Resistor
- Wires Jump

Coding

Code with Arduino & FastLED (Lib)

led.ino | led.1.ino | C/C++ Extension Release Notes | README.md

```ino
#include "FastLED.h"
#include <pt.h>

#define PT_DELAY(pt, ms, ts) \
    ts = millis(); \
    PT_WAIT_UNTIL(pt, millis()-ts < (ms));

#define BTN0 PIN_PB0
#define BTN1 PIN_PB1
#define BTN2 PIN_PB2
#define BTN3 PIN_PB3
#define BTN4 PIN_PB4
#define BTN5 PIN_PB5
#define VCC_COM 700
#define VCC_PB 600

#define RESET PIN_PD0

#define LDR0 PIN_PC0
#define LDR1 PIN_PC1
#define LDR2 PIN_PC2
#define LDR3 PIN_PC3
#define LDR4 PIN_PC4
#define LDR5 PIN_PC5

#define LED_PIN PIN_PD5

#define NUM_LEDS 30
#define COL 6
#define ROW 5
#define POOL_SIZE 20

CRGB leds[NUM_LEDS];
CRGB highlight = CRGB::White;
CRGB BG = CRGB::White; //change to white
CRGB OFF = CRGB::Black;
CRGB COLOR[6] = {CRGB::Blue, CRGB::Yellow, BG, OFF, CRG
CRGB POOL[20] = {
    CRGB::Red,
    CRGB::OrangeRed,
    CRGB::Goldenrod,
    CRGB::Crimson,

    CRGB::Blue,
    CRGB::Indigo,
    CRGB::Purple,
    CRGB::MidnightBlue,

    CRGB::Green,
```

led.1.ino

```ino
  FastLED.addLeds<WS2812B, LED_PIN>(leds, NUM_LEDS);
//      .setDither(brightness < 255);
  FastLED.setBrightness(brightness);

  pinMode(PIN_PD3, OUTPUT);
  pinMode(BTN0, INPUT_PULLUP);
  pinMode(BTN1, INPUT_PULLUP);
  pinMode(BTN2, INPUT_PULLUP);
  pinMode(BTN3, INPUT_PULLUP);
  pinMode(BTN4, INPUT_PULLUP);
  pinMode(BTN5, INPUT_PULLUP);
  pinMode(RESET, INPUT_PULLUP);
  pinMode(LDR0, INPUT);
  pinMode(LDR1, INPUT);
  pinMode(LDR2, INPUT);
  pinMode(LDR3, INPUT);
  pinMode(LDR4, INPUT);
  pinMode(LDR5, INPUT);

//  PT_INIT(&pt_marking);
  PT_INIT(&pt_switchInput);
}

void loop()
{
  if (reset)
  {
    fullDisplay(4);
    delay(500);
    fullDisplay(5);
    current_player = 0;
    selectColor();
    selectColor();
    count = 0;
    for(int i=0;i<NUM_LEDS;i++)
      point[i] = -1;
    point_p1 = 0;
    point_p2 = 0;
    reset = false;
  }
  initial();
  while (!endgame)
  {
    marking();
//    marking(&pt_marking);
//    switchInput();
    switchInput(&pt_switchInput);
    switchReset();
  }
```

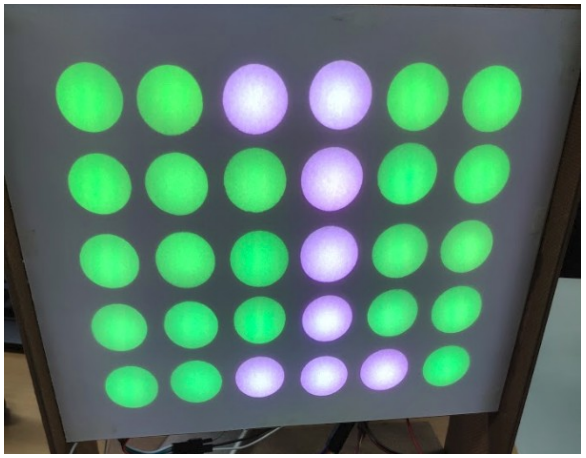
led.1.ino

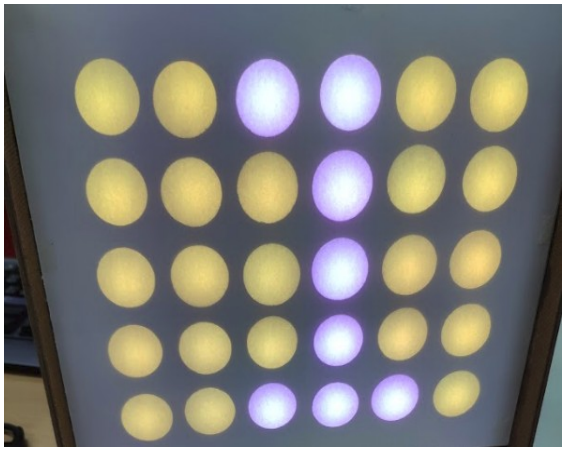
```ino
    markColome(mn);
}

void fullDisplay(int sel)
{

  //winner
  if (sel == 0 || sel == 1)
  {
    for (int c = 0; c < COL; c++)
      for (int r = 0; r < ROW; r++)
        leds[c*ROW+r]=COLOR[sel];
    FastLED.show();
    delay(500);
  }

  //draw
  else if (sel == 2)
  {
    for (int c = 0; c < COL / 2; c++)
      for (int r = 0; r < ROW; r++)
        leds[c*ROW+r]=COLOR[0];
    for (int c = COL / 2; c < COL; c++)
      for (int r = 0; r < ROW; r++)
        leds[c*ROW+r]=COLOR[1];
    FastLED.show();
    delay(500);
  }

  //select
  else if (sel == 3)
  {
    for (int i = 0; i < NUM_LEDS; i++)
      leds[i] = POOL[select];
    if (current_player == 0)
    {
      leds[2 * ROW] = BG;
      leds[2 * ROW + 4] = BG;
      for (int i = 0; i < ROW; i++)
        leds[3 * ROW + i] = BG;
      leds[4 * ROW] = BG;
    }
    else if (current_player == 1)
    {
      for (int i = 0; i < ROW; i++)
      {
        if (i == 3)
          continue;
        leds[2 * ROW + i] = BG;
```

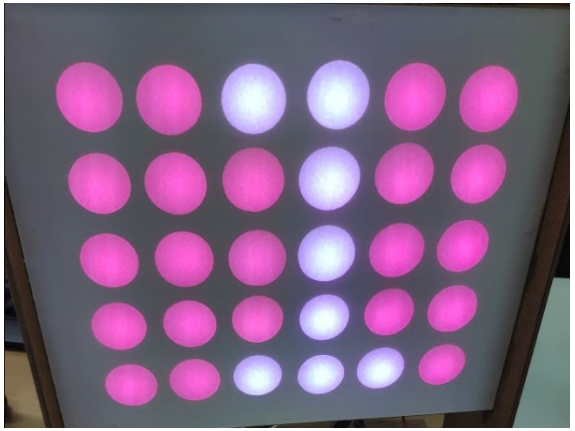
Model
Connect Four

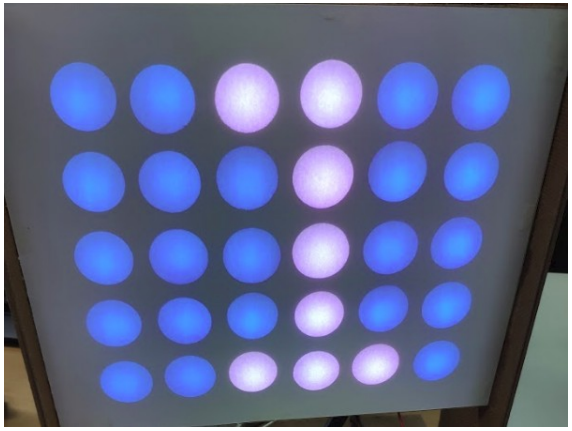
Ready!!!

Select Color

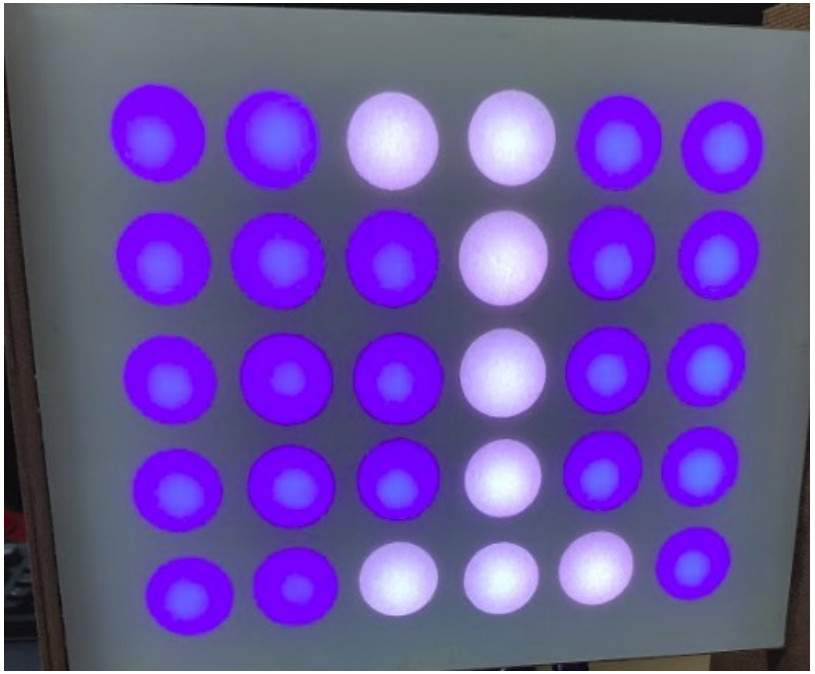


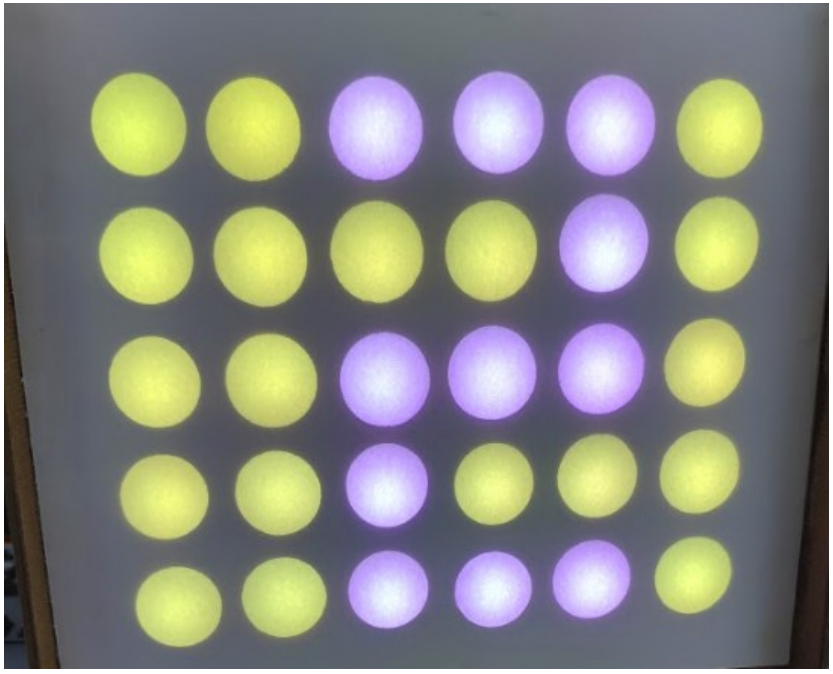




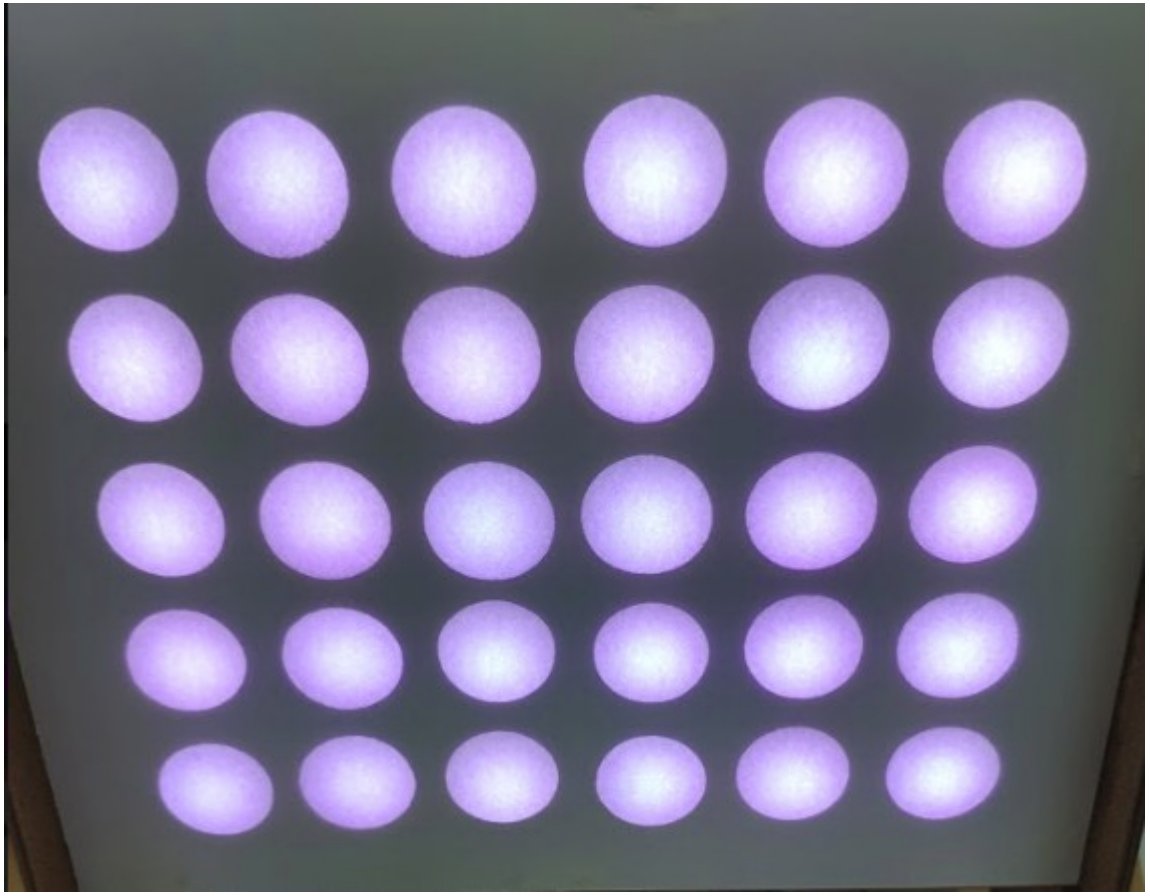


Player1 & Player2

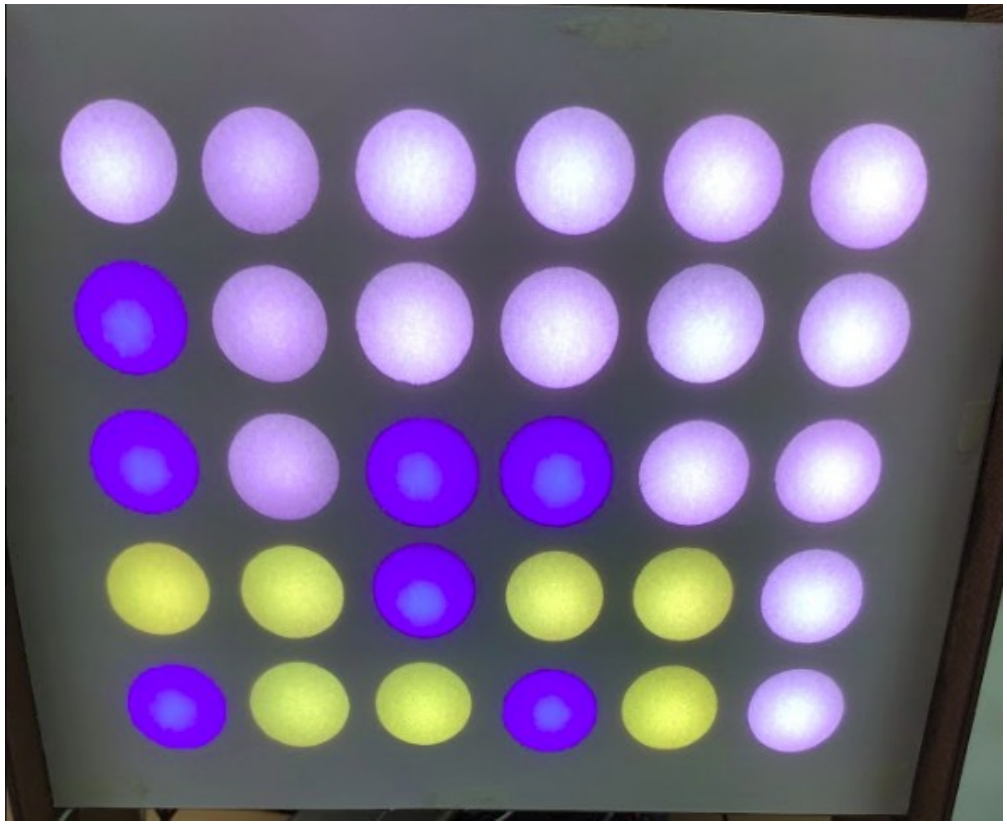




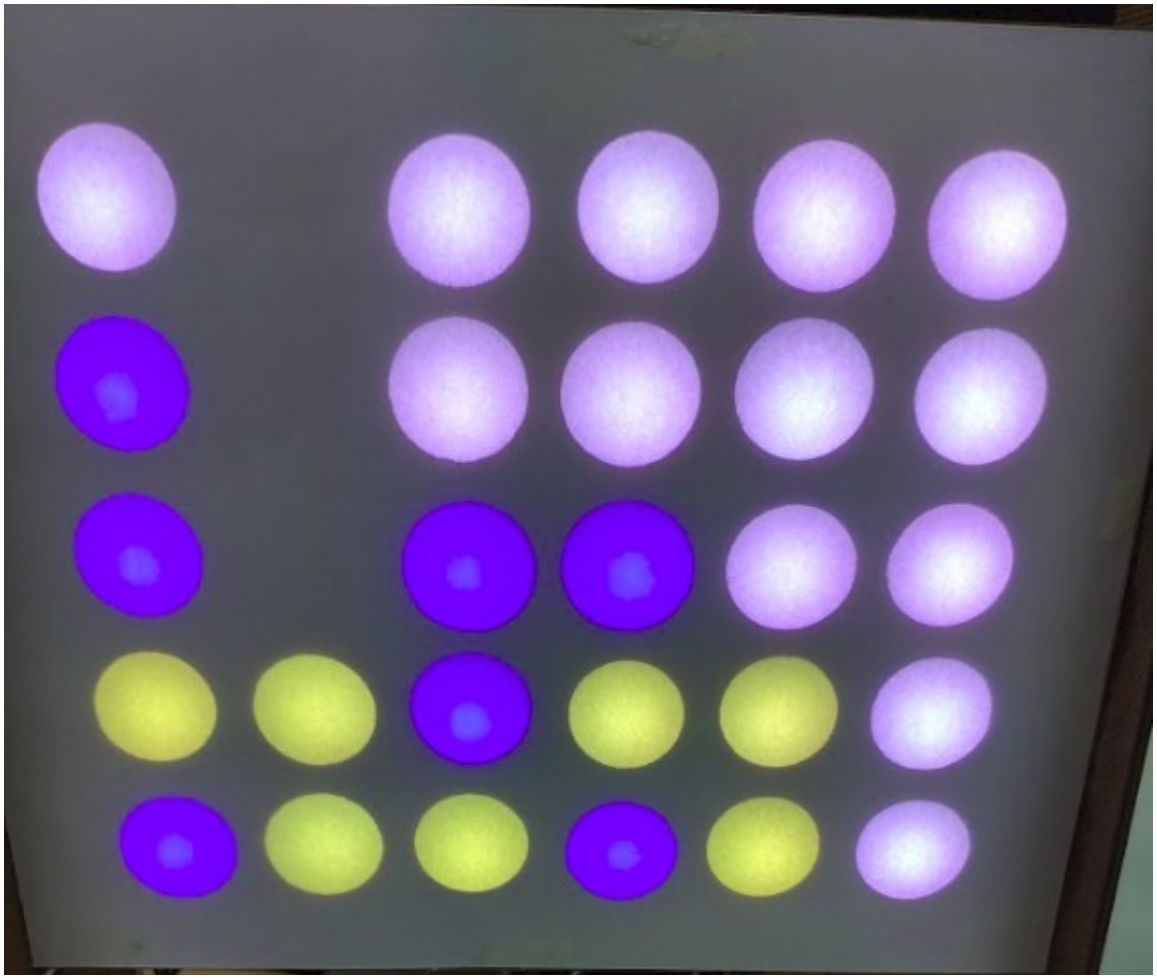
Start!!



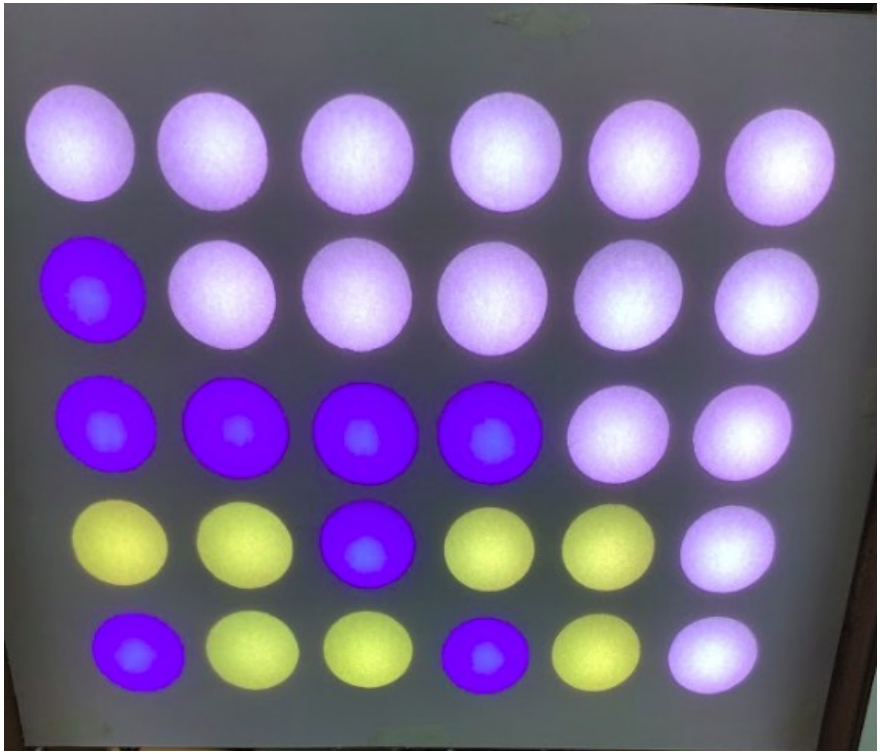
Play

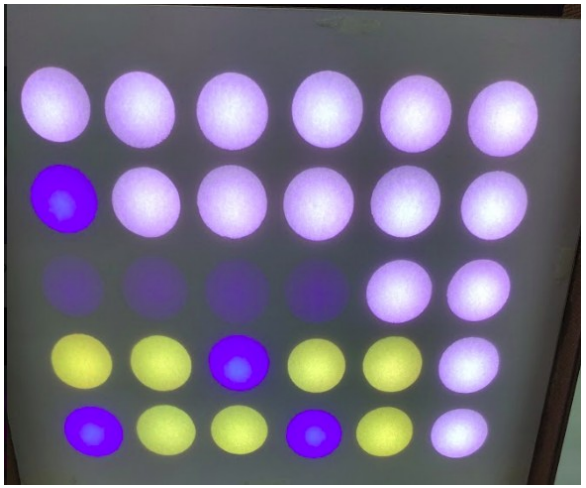


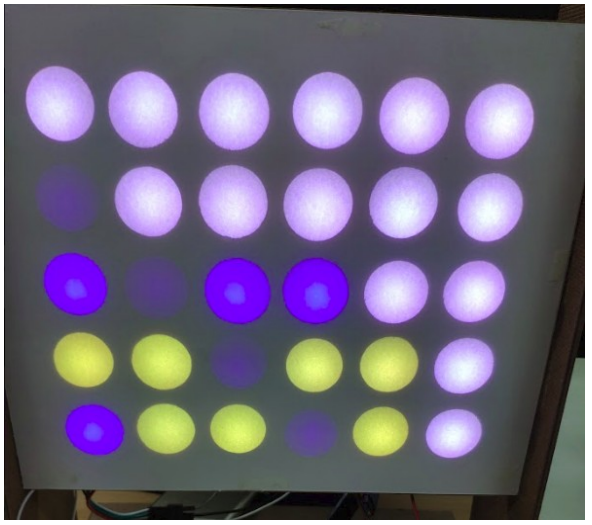
Pip~ Pip~



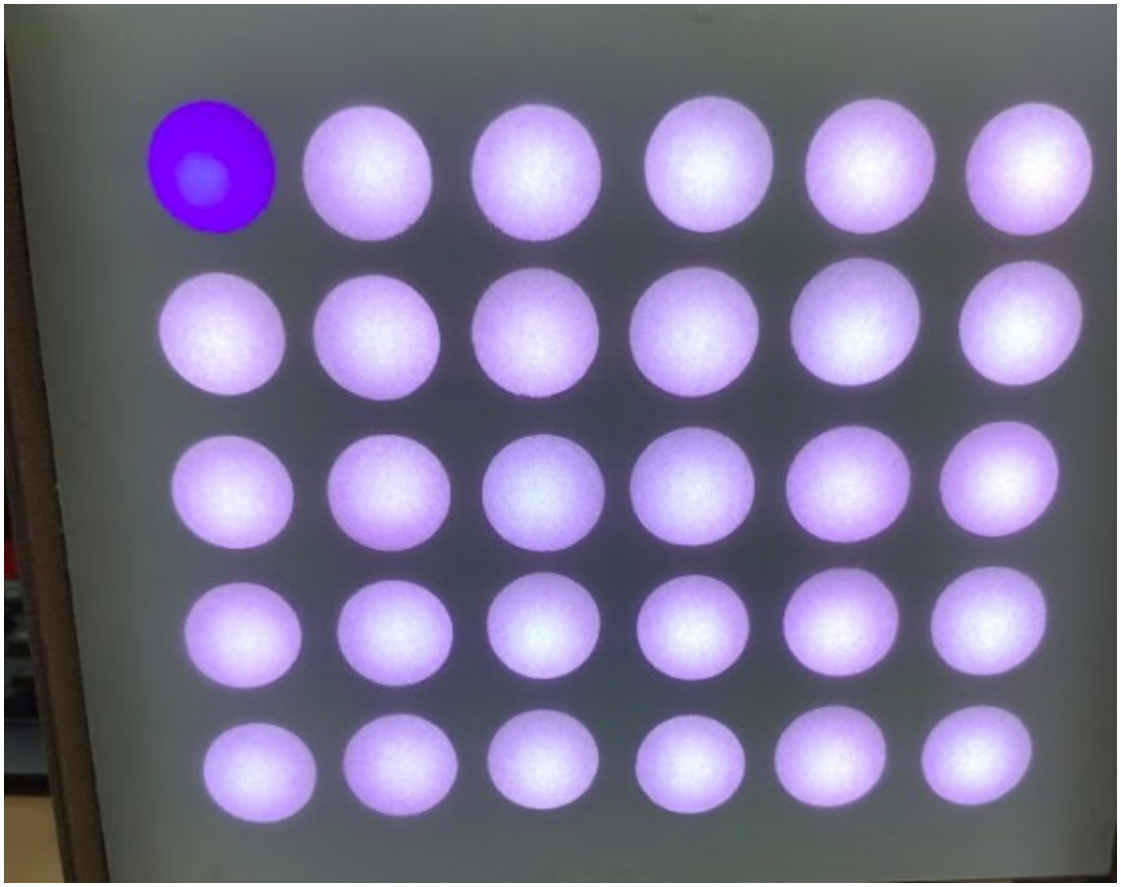
Blue Win!!



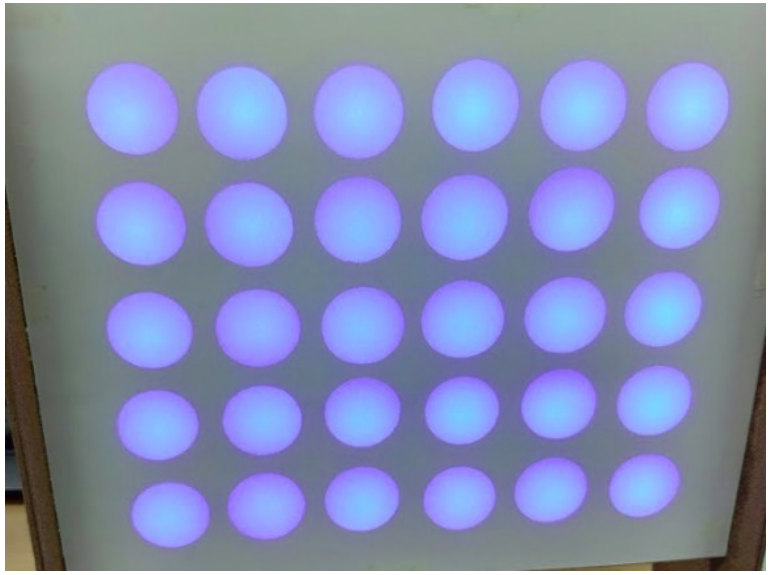




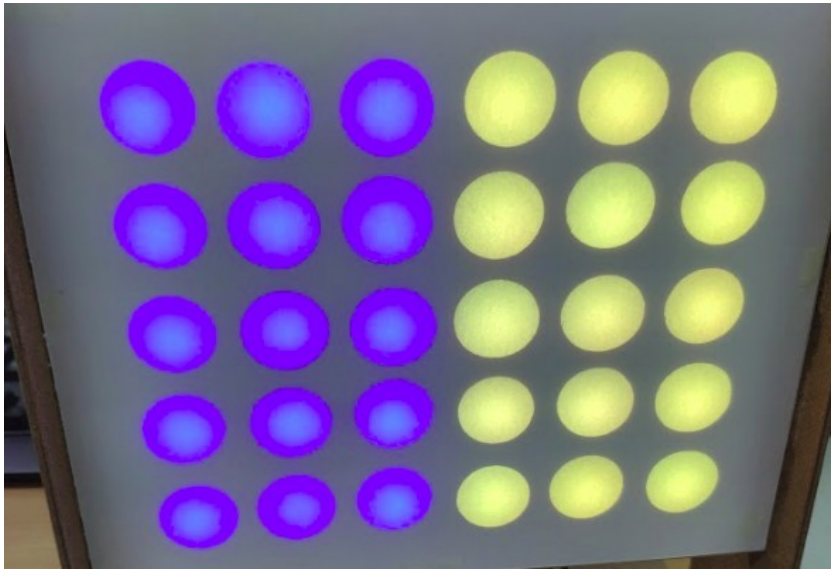
Score Board



End Game



Win



Draw

Switch Off