

ReactionWar 1v1

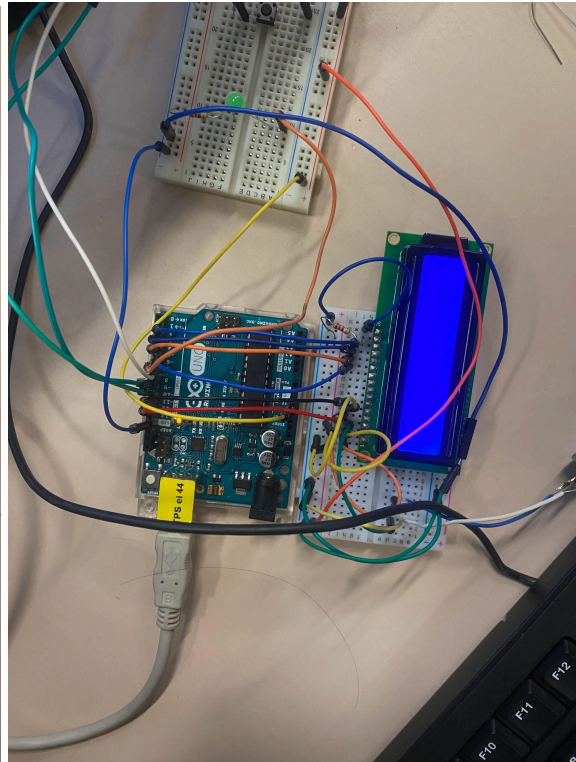
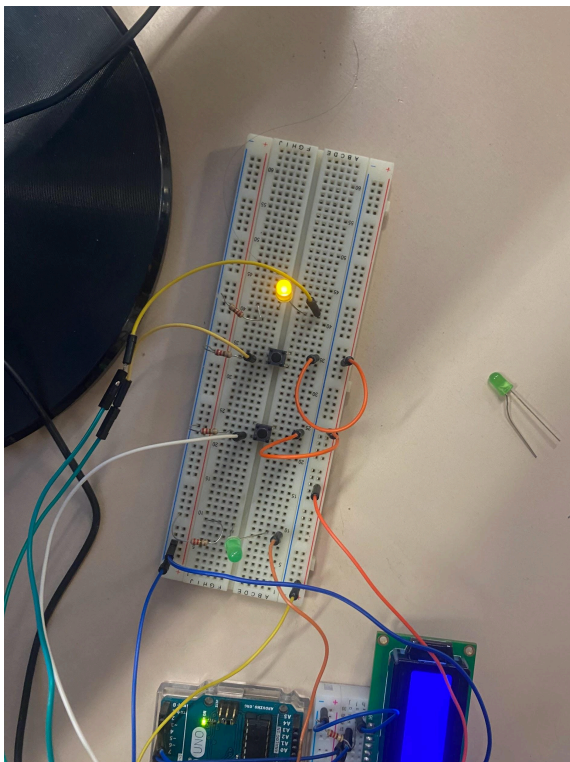
Goal of the game: be the first player to reach 100,000

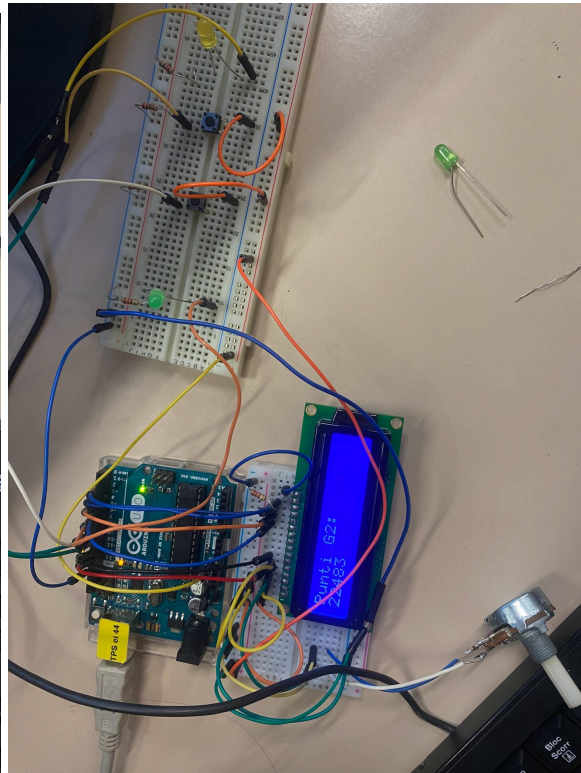
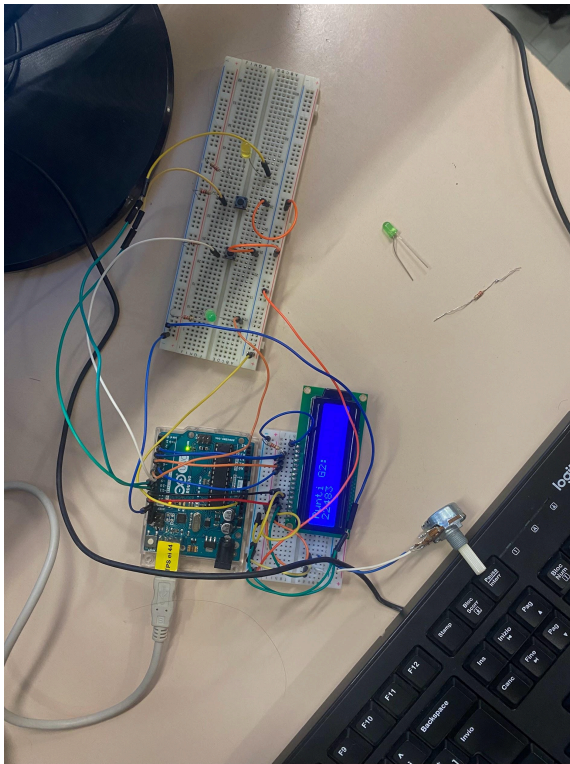
Regole:

1. When your LED lights up click the button as fast as you can
2. You can see who wins/your score on the LCD display
3. Player selection is random

Components:

- A bunch of Arduino cables
- 5 Resistors(3 x 220 ohm, 2 x 10k ohm)
- Potentiometer 250k ohm
- 2 Button (10k ohm resistors)
- 2 Led (220 ohm resistors)
- 1 LCD display (220 ohm resistors)
- 1 Arduino Uno R3

Foto:



Codice:

```
/*
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*/
#include <LiquidCrystal.h>

#define WINPOINT 100000
#define LEDTIME 5000

const int rs = 12, en = 11, d4 = 5, d5 = 4, d6 = 3, d7 = 2; //LCD display pins
LiquidCrystal lcd(rs, en, d4, d5, d6, d7);

const int ledPinG1 = 6; //Led/button pins
const int buttonPinG1 = 7;
const int ledPinG2 = 8;
const int buttonPinG2 = 9;

unsigned long int pointG1 = 0;
unsigned long int pointG2 = 0;
```

```
bool checkWin(int g)
{
    return g>=WINPOINT;
}

bool debounce(int pin) {
    static unsigned long lastTime = 0;
    unsigned long currentTime = millis();
    if (currentTime - lastTime > 50) {
        lastTime = currentTime;
        return digitalRead(pin) == HIGH;
    }
    return false;
}

int awardPoints(int reaction){
    if (reaction >= 500)
    {
        return 5000;
    }
    else if(reaction < 500 && reaction > 200 )
    {
        return 8000;
    }
    else{
        return 10000;
    }
}

void setup() {
    Serial.begin(9600);
    pinMode(ledPinG1, OUTPUT);
    pinMode(ledPinG2, OUTPUT);
    pinMode(buttonPinG1, INPUT);
    pinMode(buttonPinG2, INPUT);
    randomSeed(analogRead(0)); //For random number
    lcd.begin(16, 2);
}
```

```
void loop() {

    int long time=0;
    int long reactionS=0;
    int player = random(0, 10) % 2;

    switch(player){
        case 0:
            delay(random(0, 10) * 100 + 100);
            lcd.clear();
            digitalWrite(ledPinG1, HIGH);
            reactionS = millis();
            while(!debounce(buttonPinG1))
            {
            }
            time = millis();
            pointG1 += awardPoints(time - reactionS);
            lcd.setCursor(0, 0);
            lcd.print("G1's Points: ");
            lcd.setCursor(0, 1);
            lcd.print(pointG1);
            digitalWrite(ledPinG1, LOW);
            if(checkWin(pointG1))
            {
                lcd.clear();
                lcd.setCursor(0, 0);
                lcd.print("G1 WON!!!");
            }
            break;
        case 1:
            delay(random(0, 10) * 100 + 100);
            lcd.clear();
            digitalWrite(ledPinG2, HIGH);
            reactionS = millis();
            while(!debounce(buttonPinG2))
            {
            }
            time = millis();
            pointG2 += awardPoints(time - reactionS);
            digitalWrite(ledPinG2, LOW);
            lcd.clear();
    }
```

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```
    lcd.setCursor(0, 0);
    lcd.print("G2's Points: ");
    lcd.setCursor(0, 1);
    lcd.print(pointG2);
    digitalWrite(ledPinG2, LOW);
    if(checkWin(pointG2))
    {
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("G2 WON!!!");
    }
    break;
}

delay(LEDTIME);
}
```

Code info:

The WINPOINT constant is how many points you need to get to in order to win

The LEDTIME constant is the fixed time between turning on the various leds(then you add the random time value)

At the top you can change the various pins for leds/buttons/displays