Nome: Leo Candoli	ReactionWar 1v1	22/05/2025

ReactionWar 1v1

Scopo del gioco: essere il primo giocatore ad arrivare a 100’000

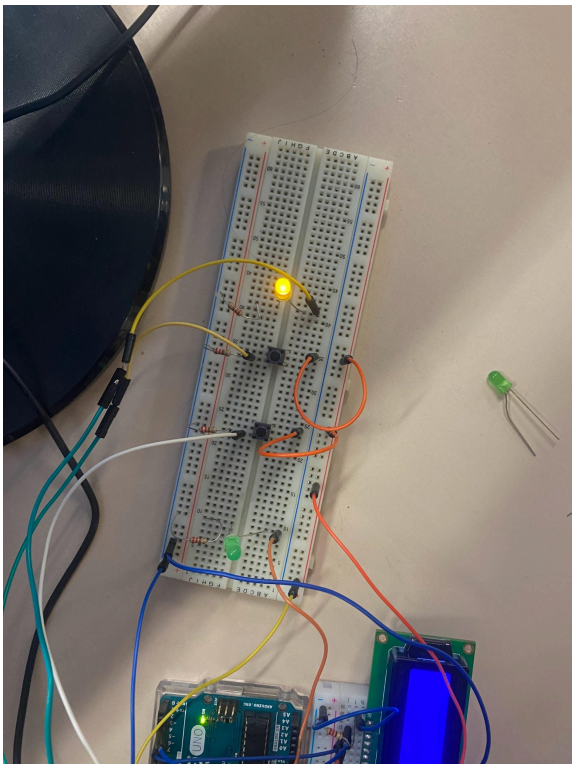
Regole:

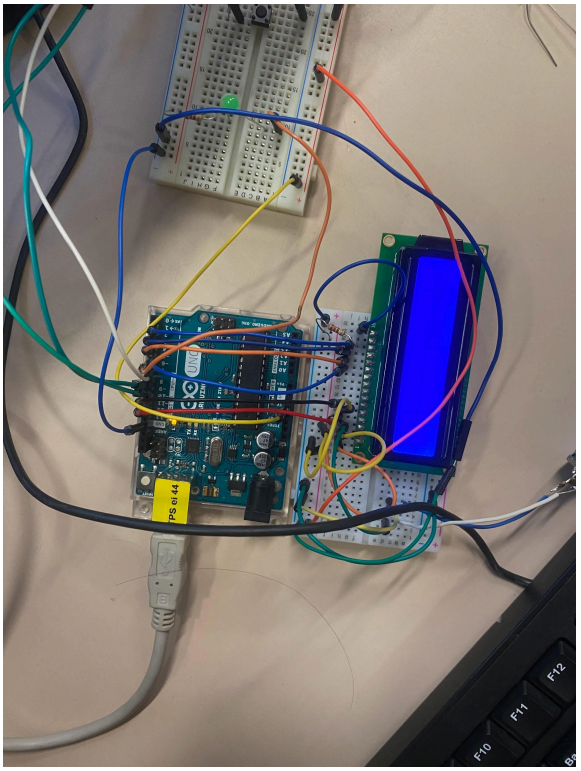
1. Quando il tuo led si accende clicca il pulsante più velocemente che puoi
2. Puoi vedere chi vince/il tuo punteggio sul display LCD
3. La scelta del giocatore è casuale

Componenti:

- Cavi arduino
- Resistenze
- Potenziometro
- Pulsante
- Led
- Display LCD
- Arduino uno

Foto:





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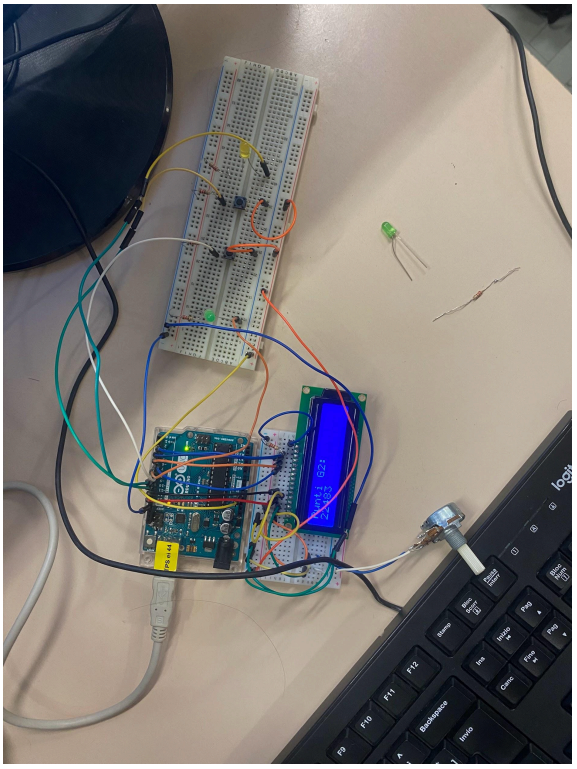

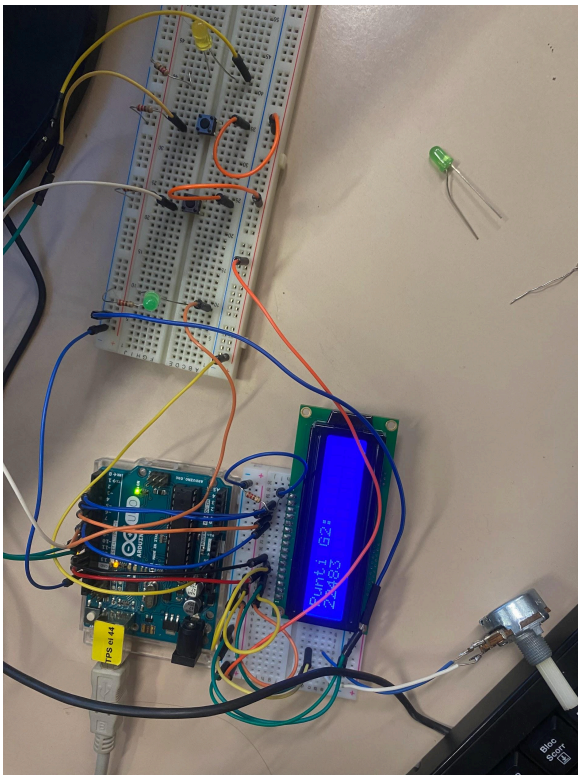

Codice:

```
/*
 Candoli Leo
 22/05/2025
 ReactionWar 1v1
*/
#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;
```

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```
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);
}
```

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```
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();
```

Nome: Leo Candoli	ReactionWar 1v1	22/05/2025

```
    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);
}
```

Info sul codice:

La costante WINPOINT è a quanti punti bisogna arrivare per vincere
La costante LEDTIME è il tempo fisso tra l'accensione dei vari led(poi si aggiungere il valore casuale time)
In alto si possono cambiare i vari pin per led/pulsanti/display