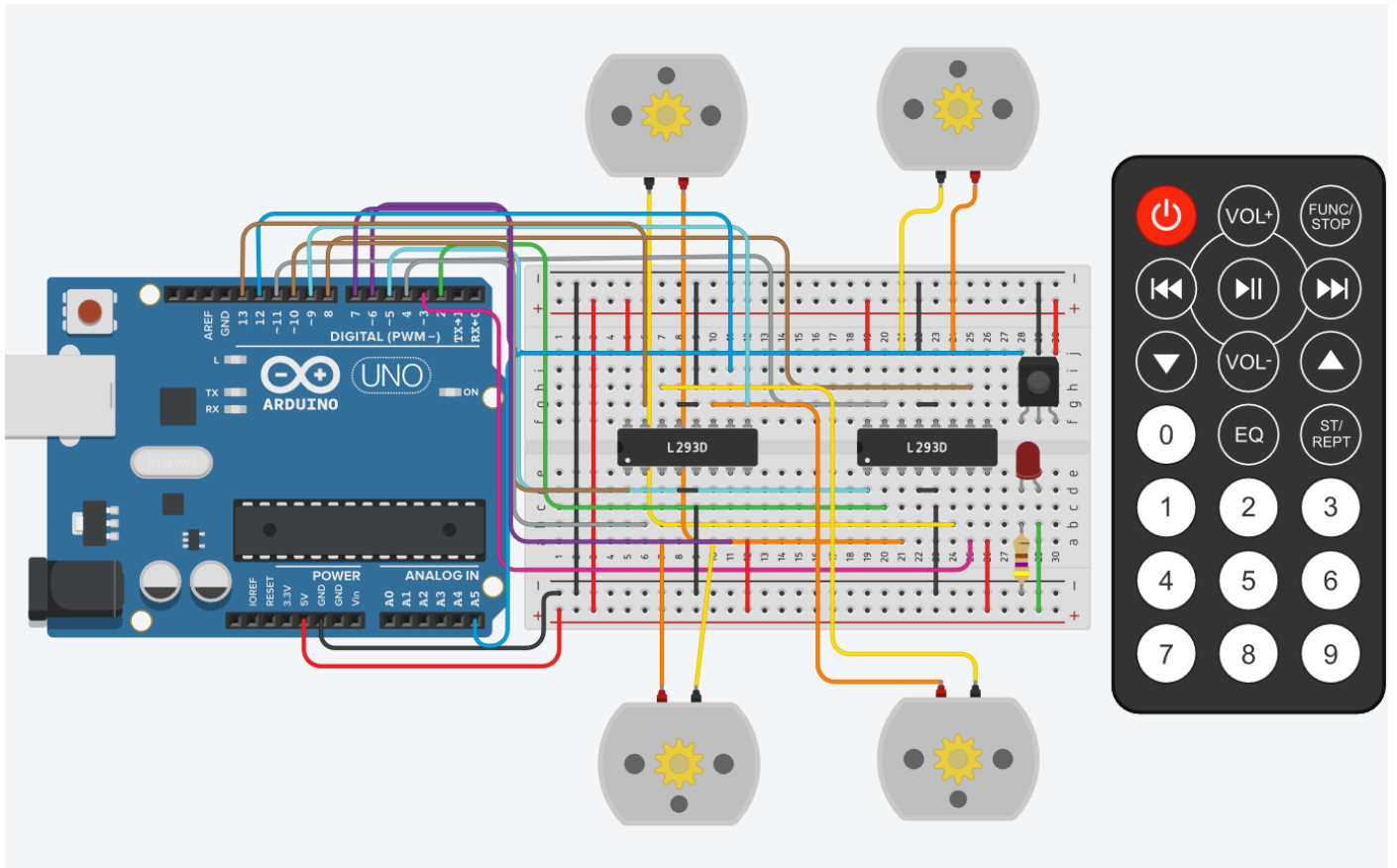INSTITUT MONTSERRAT

Projecte-3: Control-Remot-3

Dissenya un cotxe amb control remot

Codi:

```
/**
#define BUTTON_1    0xfd08f7
#define BUTTON_2    0xfd8877
#define BUTTON_3    0xfd48b7
#define BUTTON_4    0xfd28d7
#define BUTTON_5    0xfda857
#define BUTTON_6    0xfd6897
#define BUTTON_7    0xfd18e7
#define BUTTON_8    0xfd9867
#define BUTTON_9    0xfd58a7

**/

#include <IRremote.h>


int RECV_PIN = A5;
IRrecv irrecv(RECV_PIN);
decode_results results;




const int PWM_M1 = 5;
const int IN1_M1 = 2;
const int IN2_M1 = 3;

const int PWM_M2 = 6;
const int IN1_M2 = 8;
const int IN2_M2 = 11;

const int PWM_M3 = 10;
const int IN1_M3 = 4;
const int IN2_M3 = 7;

const int PWM_M4 = 9;
const int IN1_M4 = 12;
const int IN2_M4 = 13;

int speed = 100;
```

```
void setup(){
  Serial.begin(9600);
  irrecv.enableIRIn(); // Habilita el sensor


  pinMode(PWM_M1,OUTPUT);
  pinMode(PWM_M2,OUTPUT);
  pinMode(PWM_M3,OUTPUT);
  pinMode(PWM_M4,OUTPUT);

  pinMode(IN1_M1,OUTPUT);
  pinMode(IN2_M1,OUTPUT);

  pinMode(IN1_M2,OUTPUT);
  pinMode(IN2_M2,OUTPUT);

  pinMode(IN1_M3,OUTPUT);
  pinMode(IN2_M3,OUTPUT);

  pinMode(IN1_M4,OUTPUT);
  pinMode(IN2_M4,OUTPUT);
}
```

```
void loop(){
 if (irrecv.decode(&results))
 {
   switch (results.value)
   {


     case 0xFD807F:// Botó-1-Endavant
      forward();
      break;

     case 0xFD906F:// Botó-2-Endarrera
      backward();
      break ;

    case 0xFD20DF:// Botó-3-Esquerra
      turnLeft();
      break;

    case 0xFD609F:// Botó-4-Dreta
      turnRight();
      break ;

    case 0xfd08f7:// Botó-5-Sentit Horari
      clockwise();
      break ;

    case 0xFD30CF:// Botó-6-Sentit Anti-horari
      anticlock();
      break ;

    case 0xFD50AF:// Botó-7-Velocitat-Alta
      speedUp();
      break ;

     case 0xFD10EF:// Botó-8-Velocitat-Baixa
      speedDown();
      break ;

     case 0xFDA05F:// Botó-9-Stop
      stop();
      break ;

     default:
     Serial.print("Codi desconegut: 0x");
     Serial.println(results.value, HEX);
     break;

   }
   irrecv.resume(); //Coje la siguiente instruccion
 }
}
```

```
void forward(){
  Serial.println("Botó-1-Endavant");
  analogWrite(PWM_M1, speed);
  analogWrite(PWM_M2, speed);
  analogWrite(PWM_M3, speed);
  analogWrite(PWM_M4, speed);

  digitalWrite(IN1_M1, HIGH);
  digitalWrite(IN2_M1, LOW);

  digitalWrite(IN1_M2, HIGH);
  digitalWrite(IN2_M2, LOW);

  digitalWrite(IN1_M3, HIGH);
  digitalWrite(IN2_M3, LOW);

  digitalWrite(IN1_M4, HIGH);
  digitalWrite(IN2_M4, LOW);
}
void backward(){
  Serial.println("Botó-2-Endarrera");
  analogWrite(PWM_M1, speed);
  analogWrite(PWM_M2, speed);
  analogWrite(PWM_M3, speed);
  analogWrite(PWM_M4, speed);

  digitalWrite(IN1_M1, LOW);
  digitalWrite(IN2_M1, HIGH);

  digitalWrite(IN1_M2, LOW);
  digitalWrite(IN2_M2, HIGH);

  digitalWrite(IN1_M3, LOW);
  digitalWrite(IN2_M3, HIGH);

  digitalWrite(IN1_M4, LOW);
  digitalWrite(IN2_M4, HIGH);
}
void turnLeft(){
  Serial.println("Botó-3-Esquerra");
  analogWrite(PWM_M1, speed);
  analogWrite(PWM_M2, speed);
  analogWrite(PWM_M3, 0);
  analogWrite(PWM_M4, 0);

  digitalWrite(IN1_M1, HIGH);
  digitalWrite(IN2_M1, LOW);

  digitalWrite(IN1_M2, HIGH);
  digitalWrite(IN2_M2, LOW);

  digitalWrite(IN1_M3, LOW);
  digitalWrite(IN2_M3, LOW);

  digitalWrite(IN1_M4, LOW);
  digitalWrite(IN2_M4, LOW);
}
```

```
void turnRight(){
  Serial.println("Botó-4-Dreta");
  analogWrite(PWM_M1, 0);
  analogWrite(PWM_M2, 0);
  analogWrite(PWM_M3, speed);
  analogWrite(PWM_M4, speed);

  digitalWrite(IN1_M1, LOW);
  digitalWrite(IN2_M1, LOW);

  digitalWrite(IN1_M2, LOW);
  digitalWrite(IN2_M2, LOW);

  digitalWrite(IN1_M3, HIGH);
  digitalWrite(IN2_M3, LOW);

  digitalWrite(IN1_M4, HIGH);
  digitalWrite(IN2_M4, LOW);
}


void clockwise(){
  Serial.println("Botó-5-Sentit Horari");
  analogWrite(PWM_M1, speed);
  analogWrite(PWM_M2, speed);
  analogWrite(PWM_M3, speed);
  analogWrite(PWM_M4, speed);

  digitalWrite(IN1_M1, LOW);
  digitalWrite(IN2_M1, HIGH);

  digitalWrite(IN1_M2, LOW);
  digitalWrite(IN2_M2, HIGH);

  digitalWrite(IN1_M3, HIGH);
  digitalWrite(IN2_M3, LOW);

  digitalWrite(IN1_M4, HIGH);
  digitalWrite(IN2_M4, LOW);
}
```

```
void anticlock(){
  Serial.println("Botó-6-Sentit Antihorari");
  analogWrite(PWM_M1, speed);
  analogWrite(PWM_M2, speed);
  analogWrite(PWM_M3, speed);
  analogWrite(PWM_M4, speed);

  digitalWrite(IN1_M1, HIGH);
  digitalWrite(IN2_M1, LOW);

  digitalWrite(IN1_M2, HIGH);
  digitalWrite(IN2_M2, LOW);

  digitalWrite(IN1_M3, LOW);
  digitalWrite(IN2_M3, HIGH);

  digitalWrite(IN1_M4, LOW);
  digitalWrite(IN2_M4, HIGH);
}


void speedUp(){
  Serial.println("Botó-7-Velocitat alta");
  speed+=10;
  if(speed>255) speed =255;
  analogWrite(PWM_M1, speed);
  analogWrite(PWM_M2, speed);
  analogWrite(PWM_M3, speed);
  analogWrite(PWM_M4, speed);
}


void speedDown(){
  Serial.println("Botó-8-Velocitat baixa");
  speed-=10;
  if(speed<0) speed =0;
  analogWrite(PWM_M1, speed);
  analogWrite(PWM_M2, speed);
  analogWrite(PWM_M3, speed);
  analogWrite(PWM_M4, speed);
}


void stop(){
  Serial.println("Botó-9-stop");
  digitalWrite(IN1_M1, LOW);
  digitalWrite(IN2_M1, LOW);

  digitalWrite(IN1_M2, LOW);
  digitalWrite(IN2_M2, LOW);

  digitalWrite(IN1_M3, LOW);
  digitalWrite(IN2_M3, LOW);

  digitalWrite(IN1_M4, LOW);
  digitalWrite(IN2_M4, LOW);
}
```