Arduino Nano Codes

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#include <LiquidCrystal.h>
const int rs = 7, en = 6, d4 = 5, d5 = 4, d6 = 3, d7 = 2;
// initialize the LCD screen
LiquidCrystal lcd(rs, en, d4, d5, d6, d7);

// define the IR sensor pins
const int irPin1 = 12;
const int irPin2 = 11;

// define the distance between the two sensors (in cm)
const int distance = 5;

// variables
float speed = 0;
float prevSpeed = 0;
unsigned long time;
unsigned long prevTime = 0;
int sensor1State = LOW;
int sensor2State = LOW;
unsigned long sensor1Time = 0;
unsigned long sensor2Time = 0;

void setup() {
  // initialize the LCD screen
  lcd.begin(16, 2);
  // clear the screen and display "Speed Detector"
  lcd.clear();
  lcd.setCursor(0, 0);
  lcd.print("Speed Detector");

  // set up the IR sensor pins
  pinMode(irPin1, INPUT);
  pinMode(irPin2, INPUT);

  // set up the serial communication
  Serial.begin(19200);
}

void loop() {
  // read the IR sensor values
  int sensorVal1 = digitalRead(irPin1);
```

```
  int sensorVal2 = digitalRead(irPin2);

  // check if any sensor has been triggered
  if (sensorVal1 != sensor1State) {
    if (sensorVal1 == HIGH) {
      sensor1Time = millis();
    } else {
      time = millis();
      speed = distance / ((time - sensor2Time) / 1000.0);
      prevTime = time;
    }
    sensor1State = sensorVal1;
  }

  if (sensorVal2 != sensor2State) {
    if (sensorVal2 == HIGH) {
      sensor2Time = millis();
    } else {
      time = millis();
      speed = distance / ((time - sensor1Time) / 1000.0);
      prevTime = time;
    }
    sensor2State = sensorVal2;
  }

  // display the speed in m/s on the second LCD screen line
  lcd.setCursor(0, 1);
  lcd.print("Speed: ");
  lcd.print(speed, 2);
  lcd.print(" m/s    ");

  // send the speed over serial communication
  if (speed != prevSpeed) {
    Serial.print("Speed: ");
    Serial.print(speed, 2);
    Serial.println(" m/s");
    prevSpeed = speed;
  }

  // wait a moment before looping again
  delay(100);
}
```