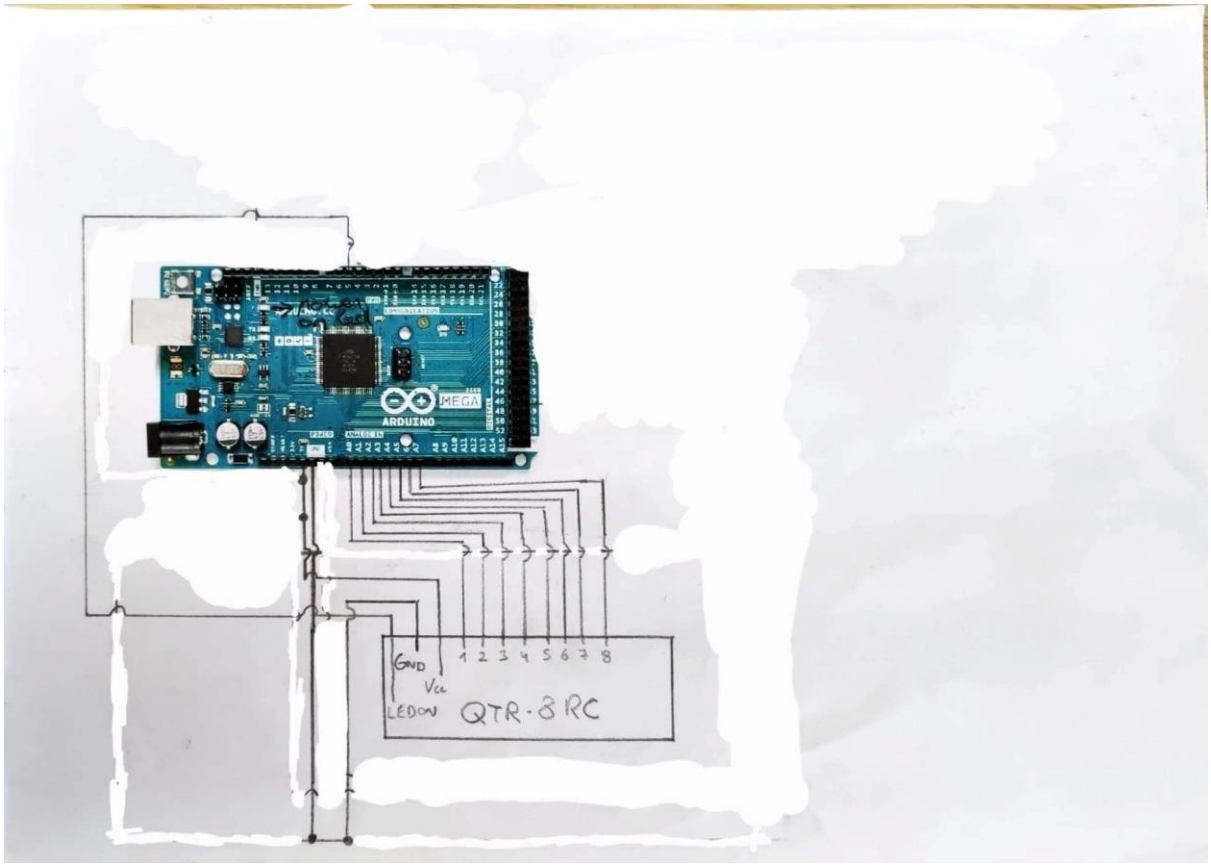
Proof Of Concept: Sensor sturing QTR8-RC

SCHEMA



CODE

QTR 2.0.ino

```ino
#include <QTRSensors.h>

QTRSensors qtr;

const uint8_t SensorCount = 6;
uint16_t sensorValues[SensorCount];

void setup()
{
  // configure the sensors
  qtr.setTypeRC();
  qtr.setSensorPins((const uint8_t[]){A1, A2, A3, A4, A5, A6}, SensorCount);

  delay(500);
  pinMode(LED_BUILTIN, OUTPUT);
  digitalWrite(LED_BUILTIN, HIGH); // turn on Arduino's LED to indicate we are in calibration mode

  // 2.5 ms RC read timeout (default) * 10 reads per calibrate() call
  // = ~25 ms per calibrate() call.
  // Call calibrate() 400 times to make calibration take about 10 seconds.
  for (uint16_t i = 0; i < 400; i++)
  {
    qtr.calibrate();
  }
  digitalWrite(LED_BUILTIN, LOW); // turn off Arduino's LED to indicate we are through with calibration

  // print the calibration minimum values measured when emitters were on
  Serial.begin(9600);
  for (uint8_t i = 0; i < SensorCount; i++)
  {
    Serial.print(qtr.calibrationOn.minimum[i]);
    Serial.print(' ');
  }
  Serial.println();

  // print the calibration maximum values measured when emitters were on
  for (uint8_t i = 0; i < SensorCount; i++)
  {
    Serial.print(qtr.calibrationOn.maximum[i]);
    Serial.print(' ');
  }
  Serial.println();
  Serial.println();
  delay(1000);
}

void loop()
{
  // read calibrated sensor values and obtain a measure of the line position
  // from 0 to 5000 (for a white line, use readLineWhite() instead)
  uint16_t position = qtr.readLineBlack(sensorValues);

  // print the sensor values as numbers from 0 to 1000, where 0 means maximum
  // reflectance and 1000 means minimum reflectance, followed by the line
  // position
  for (uint8_t i = 0; i < SensorCount; i++)
  {
    Serial.print(sensorValues[i]);
    Serial.print('\t');
  }
  Serial.println(position);
  delay(100);
}
```

UITLEG

Als de sensor is aangesloten op de arduino, steken we onze arduino in de usb en uploadden we ons programma op de arduino en openen we de seriële monitor.

Daarna zal de arduino na opstart de sensor calibreren. Na de calibratie zal de sensor een value geven van 0 – 1000 aan de hand van de kleursterkte van het kleur “zwart” in de seriële monitor.