

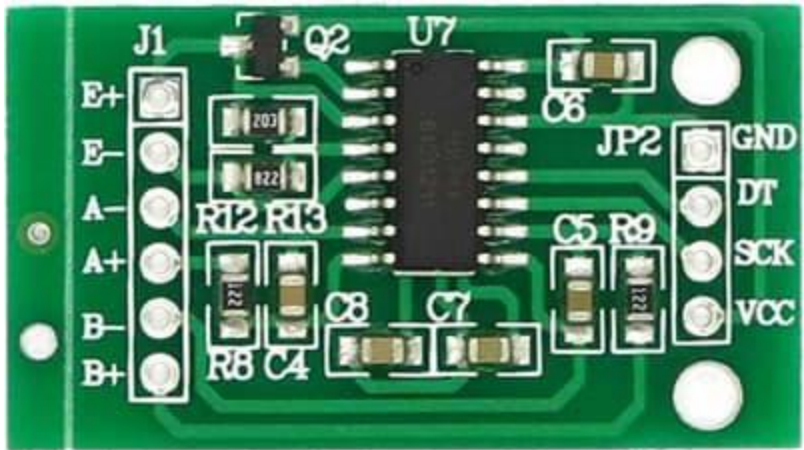
Weighing Machine

Dinesh Kumar

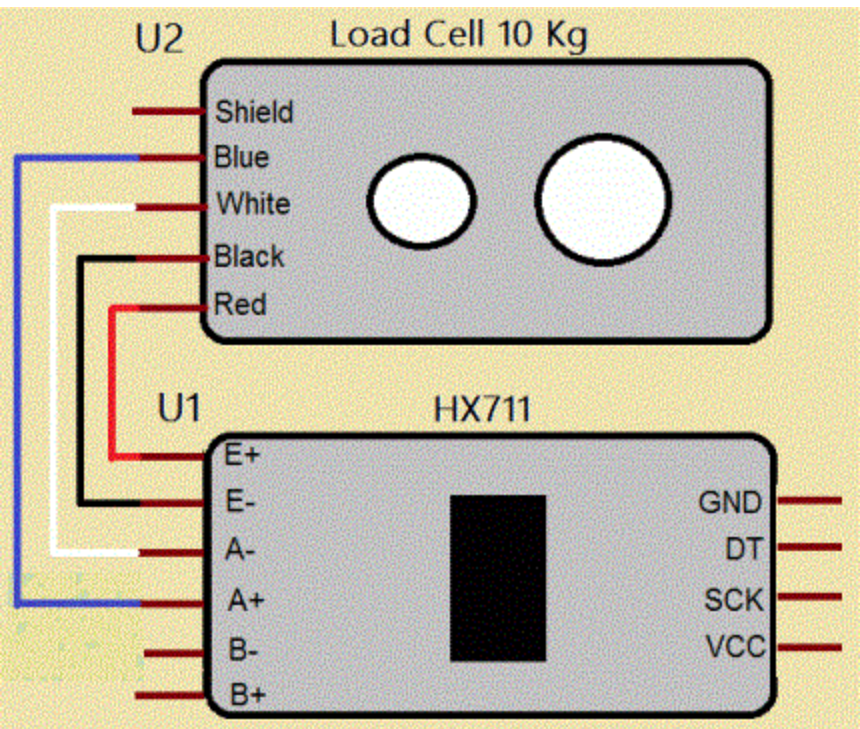
ISRO Satellite Center

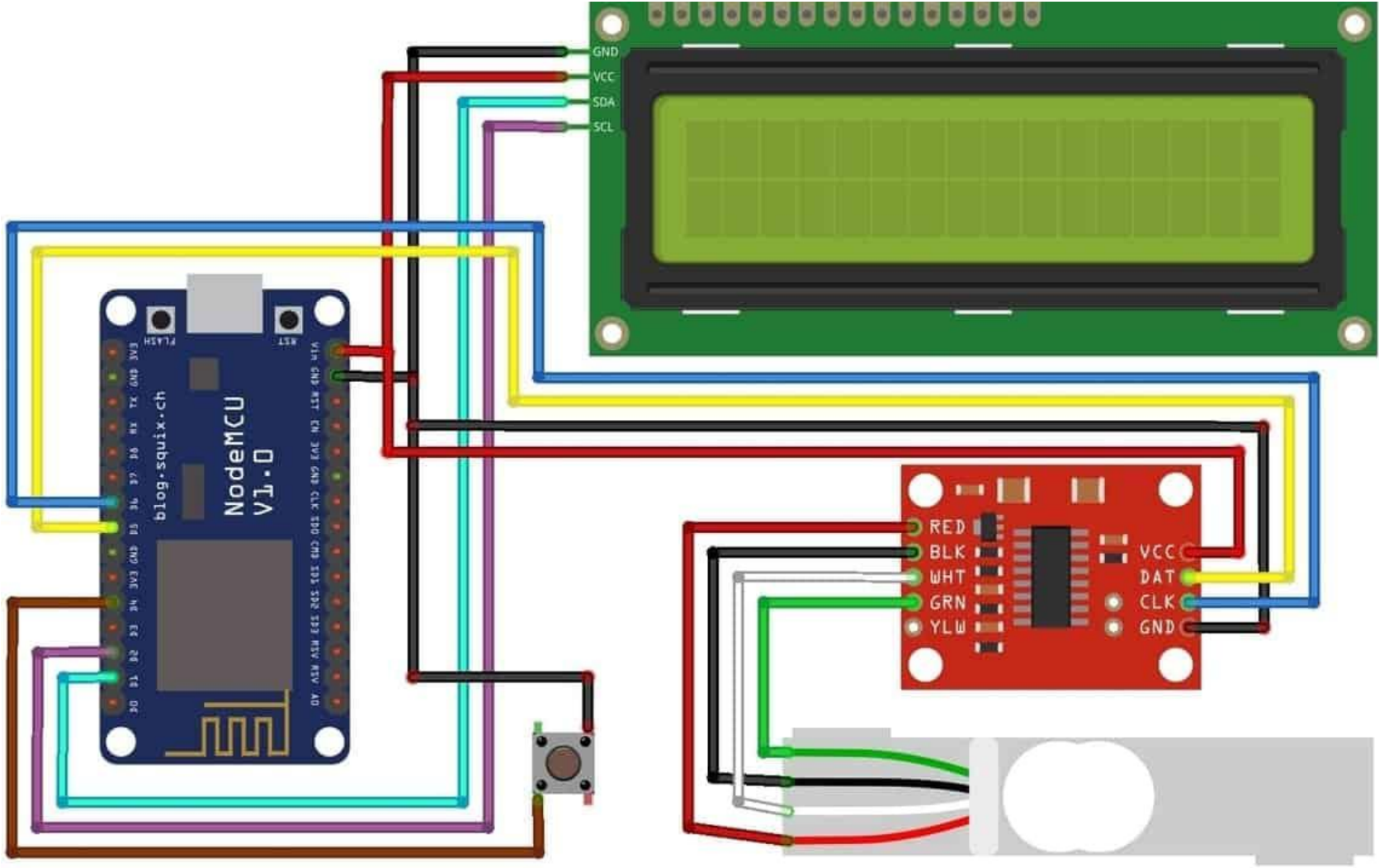
Bangalore

Load Cell



HX711 Module



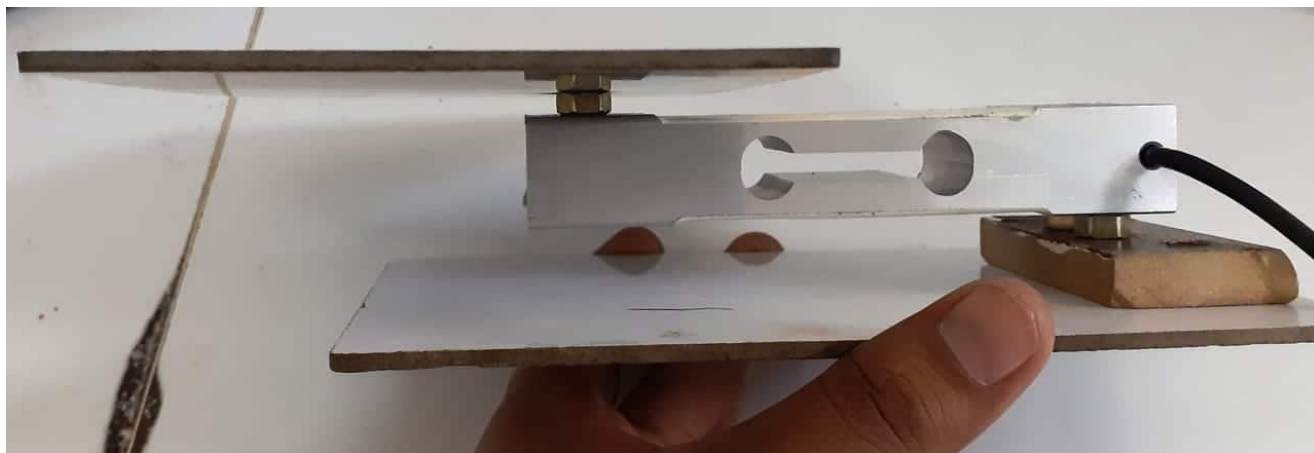
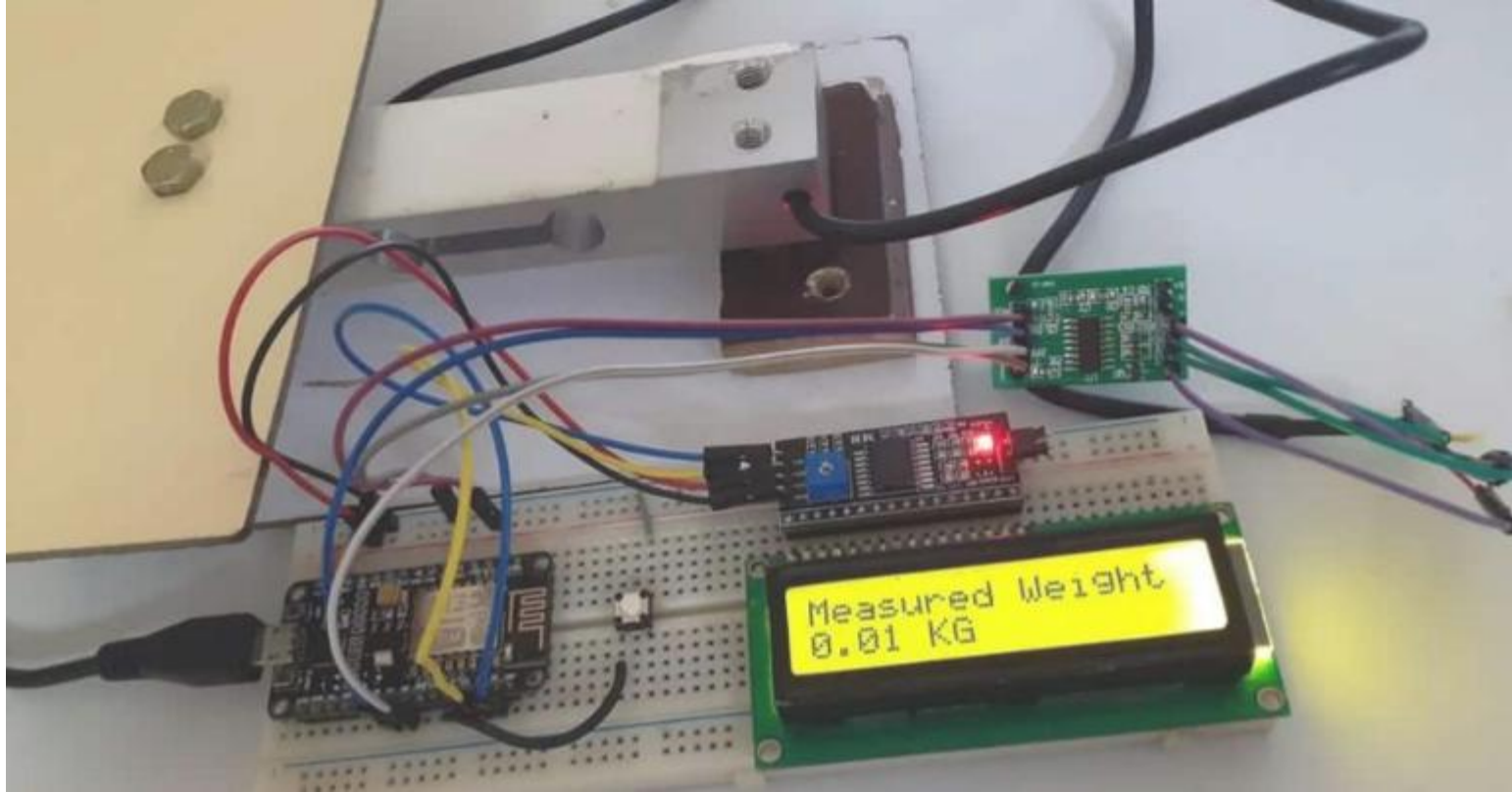


```

#include "HX711.h" //You must have this library in your arduino library folder
#define DOUT D5
#define CLK D6
HX711 scale;
//Change this calibration factor as per your load cell once it is found you may need to vary it in thousands
float calibration_factor = -109525; //-106600 worked for my 40Kg max scale setup
//=====
=====
//          SETUP
//=====
=====
void setup() {
  Serial.begin(9600);
  Serial.println("HX711 Calibration");
  Serial.println("Remove all weight from scale");
  Serial.println("After readings begin, place known weight on scale");
  Serial.println("Press a,s,d,f to increase calibration factor by 10,100,1000,10000 respectively");
  Serial.println("Press z,x,c,v to decrease calibration factor by 10,100,1000,10000 respectively");
  Serial.println("Press t for tare");
  scale.set_scale();
  scale.tare(); //Reset the scale to 0
  long zero_factor = scale.read_average(); //Get a baseline reading
  Serial.print("Zero factor: "); //This can be used to remove the need to tare the scale. Useful in permanent
scale projects.
  Serial.println(zero_factor);
}

```

```
void loop() {  
  scale.set_scale(calibration_factor); //Adjust to this calibration factor  
  Serial.print("Reading: ");  
  Serial.print(scale.get_units(), 3);  
  Serial.print(" kg"); //Change this to kg and re-adjust the calibration factor if you follow SI units like a sane person  
  Serial.print(" calibration_factor: ");  
  Serial.print(calibration_factor);  
  Serial.println();  
  if(Serial.available())  
  {  
    char temp = Serial.read();  
    if(temp == '+' || temp == 'a')  
      calibration_factor += 10;  
    else if(temp == '-' || temp == 'z')  
      calibration_factor -= 10;  
    else if(temp == 's')  
      calibration_factor += 100;  
    else if(temp == 'x')  
      calibration_factor -= 100;  
    else if(temp == 'd')  
      calibration_factor += 1000;  
    else if(temp == 'c')  
      calibration_factor -= 1000;  
    else if(temp == 'f')  
      calibration_factor += 10000;  
    else if(temp == 'v')  
      calibration_factor -= 10000;  
    else if(temp == 't')  
      scale.tare(); //Reset the scale to zero  
  }  
}
```



```
#include "HX711.h"

// Pin configuration
const int DOUT_PIN = D2; // HX711 DT pin
const int SCK_PIN = D1; // HX711 SCK pin

HX711 scale;

void setup() {
  Serial.begin(9600);
  scale.begin(DOUT_PIN, SCK_PIN);
}

void loop() {
  // You can adjust the scale.set_scale() value to match your specific load cell and calibration
  scale.set_scale(); // This value is obtained by calibrating the scale with known weights
  scale.tare(); // Reset the scale to 0

  Serial.println("Place a known weight on the scale...");

  delay(5000); // Allow time to place a known weight on the scale

  // Read the weight and print it to the serial monitor
  float weight = scale.get_units(10); // Read 10 times for stability
  Serial.print("Weight: ");
  Serial.print(weight);
  Serial.println(" g");

  delay(2000); // Pause for 2 seconds before the next reading
}
```