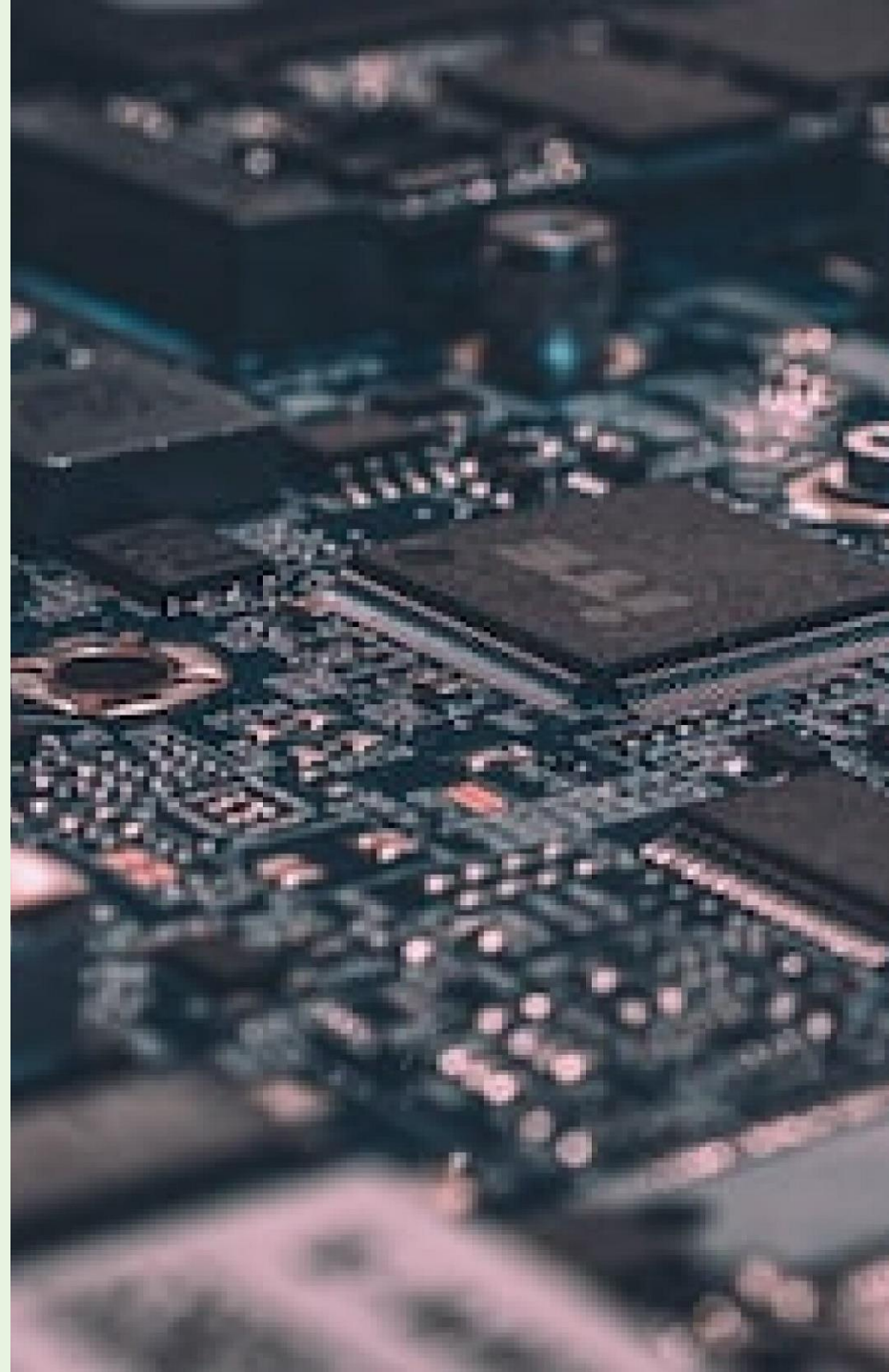


OBJECT COUNTER

- OM PATEL (IT089)
- JIT PATEL (IT081)



INDEX

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INTRODUCTION

OBJECT COUNTER :

- The word itself says that, it is a device which is designed to count the objects which are passing from in front of IR sensor.
- It counts objects or products automatically so it reduces human efforts.

COMPONENTS

- IR Sensor
- Arduino UNO
- Seven Segment LED Display
- Jumper wires
- Breadboard
- USB type B cable for uploading the code

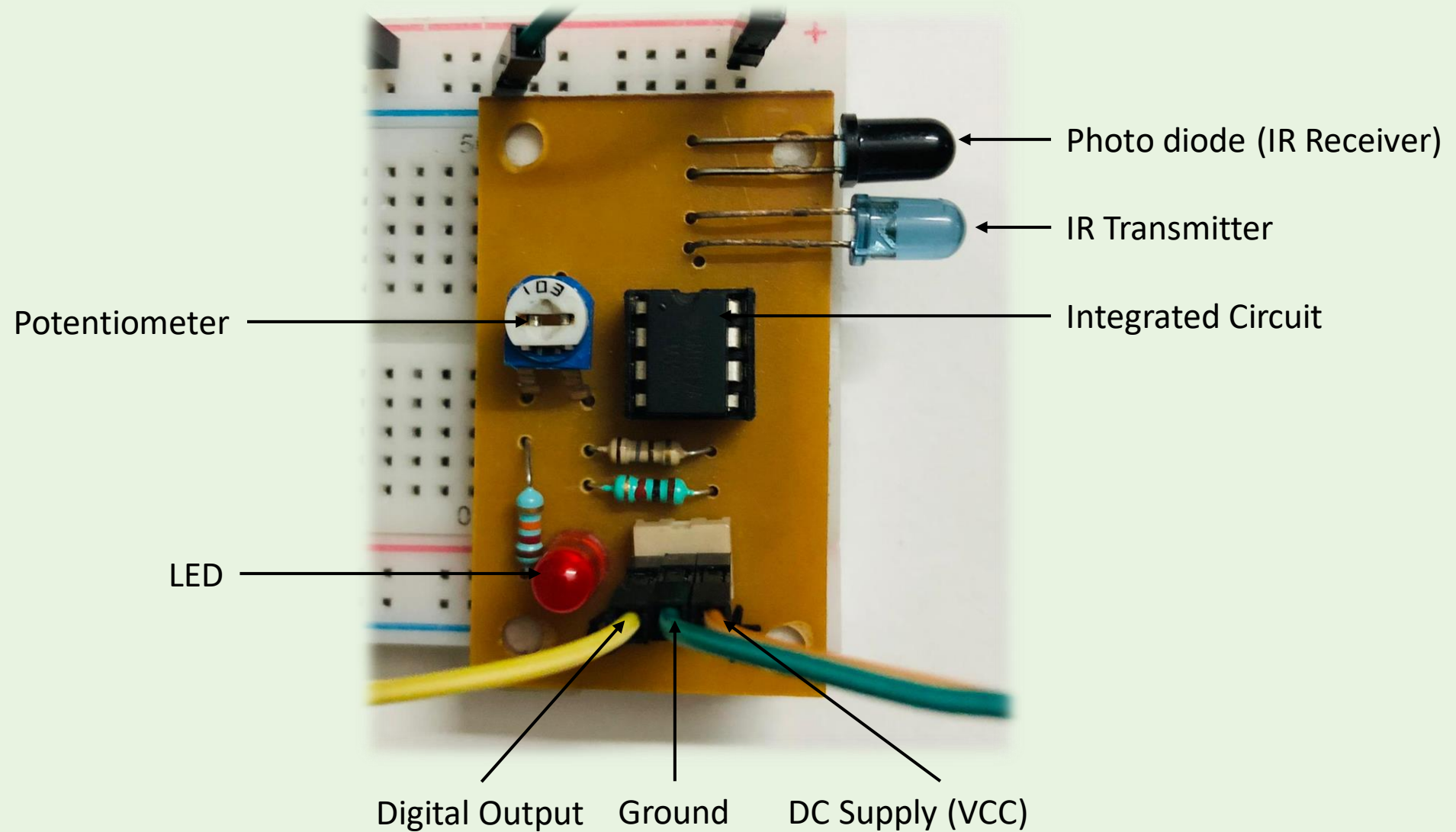
IR SENSOR

-An infrared (IR) Sensor is an electronic device that measure and detect infrared radiation in its surrounding environment. An IR sensor can detects the heat of an object as well as detects the motion.

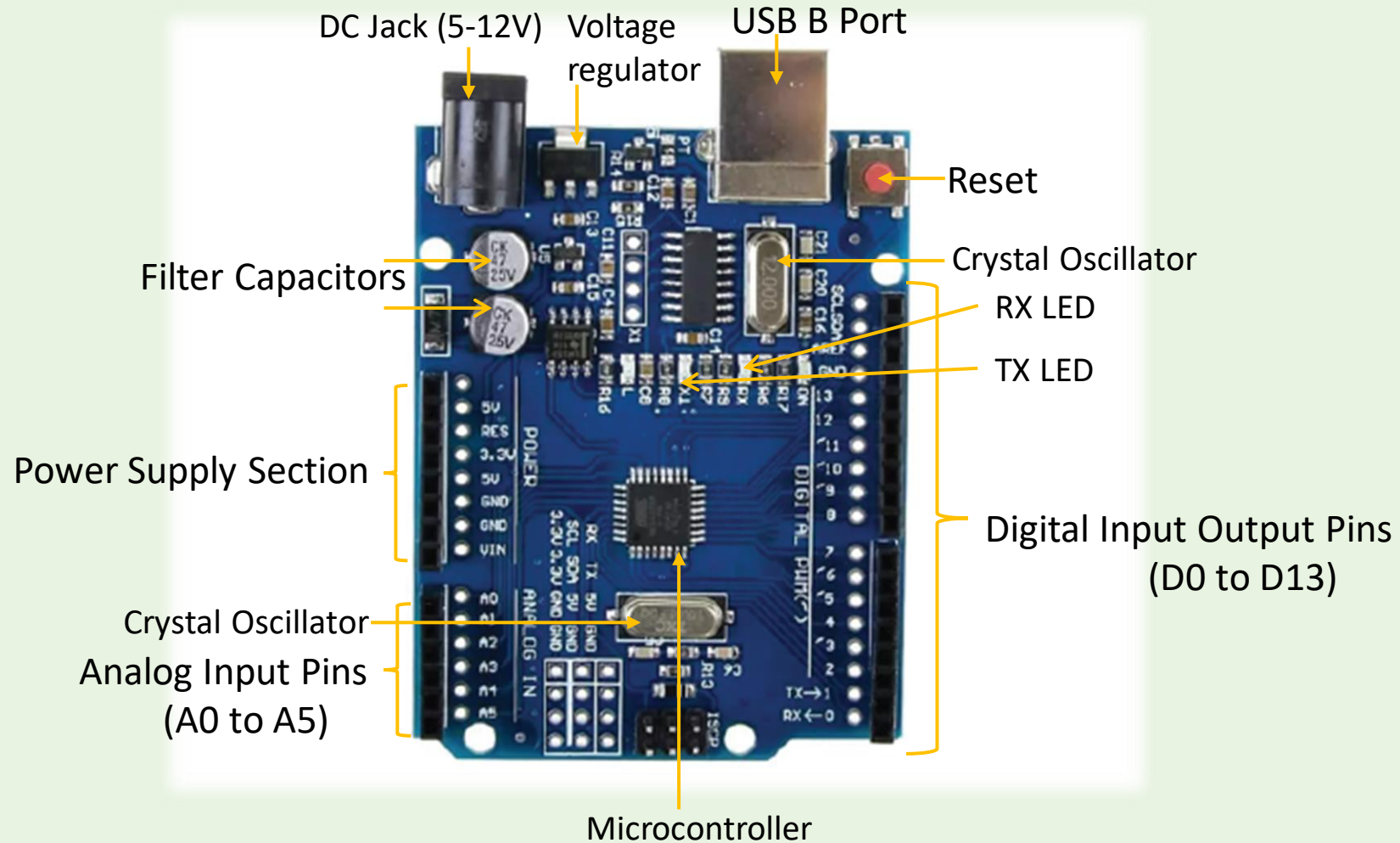
ARDUINO UNO

-The Arduino UNO is an open-source microcontroller board based microchip, which is able to read input like light on sensor , finger on button and so on, and it turns it into output like turning on LED, activate a motor, count the number of objects and so on.

IR SENSOR



ARDUINO UNO



7 SEGMENT LED DISPLAY

-7 Segment LED display is used to display the number of objects pass through sensor.

JUMPER WIRES

-Jumper wires are used for making connection between other components and Arduino UNO on the Breadboard.

BREADBOARD

-A breadboard allows easy and quick creation of temporary electronic circuits.

7 SEGMENT LED DISPLAY

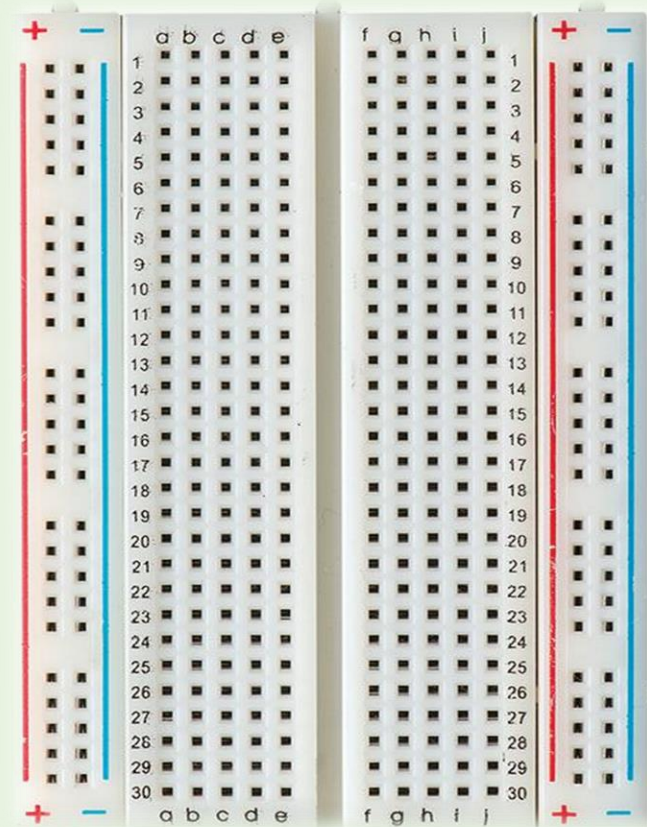


CLK
DIO
VCC
GND

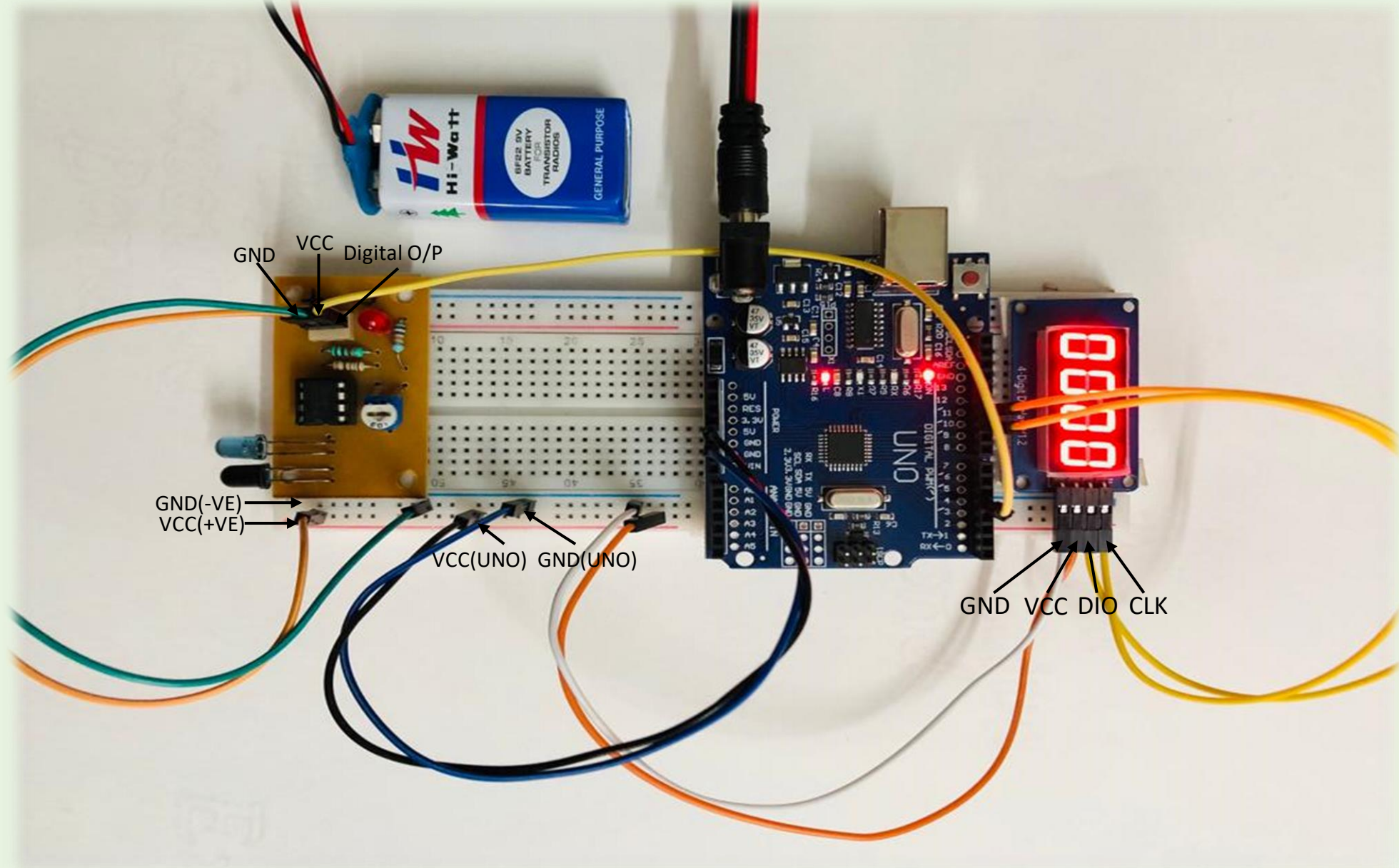
JUMPER WIRES



BREADBOARD

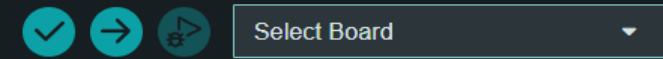


CIRCUIT



CODE

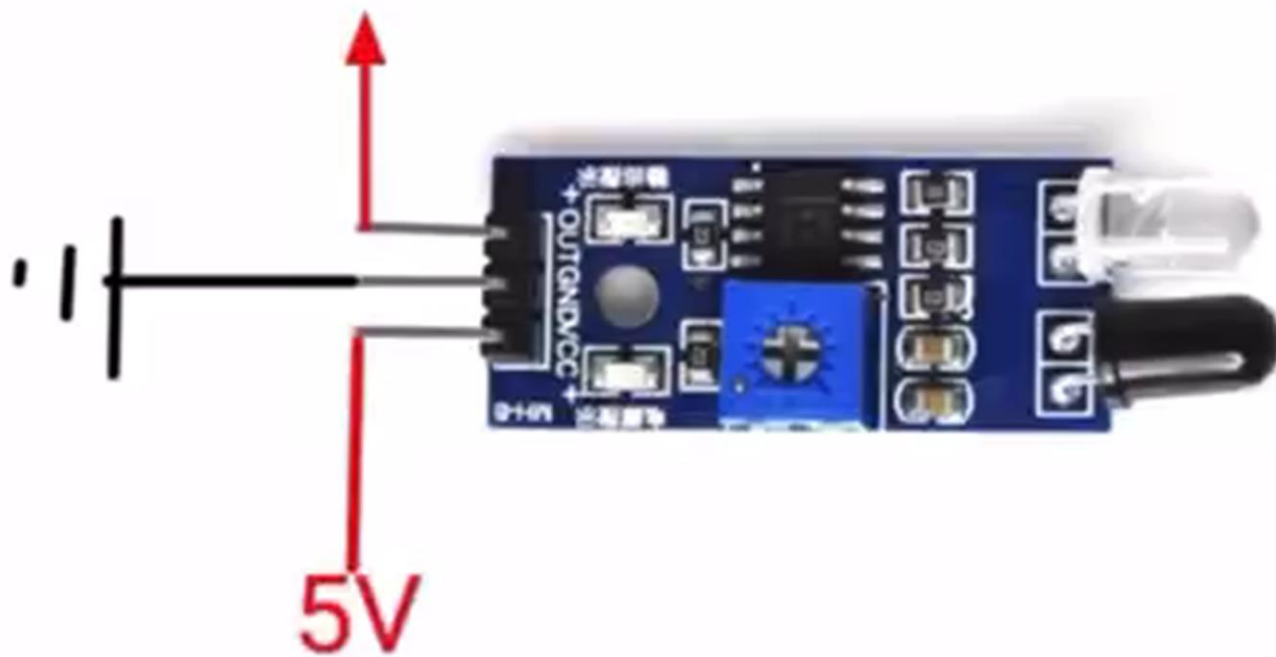
File Edit Sketch Tools Help



IR_Counter.ino IR_Counter.ino

```
1  #include <TM1637Display.h>
2
3  #define CLK 10
4  #define DIO 11
5
6  int sensor = 4;
7  int count = 0;
8
9  TM1637Display display(CLK, DIO);
10
11 void setup()
12 {
13     pinMode(sensor, INPUT);
14     display.setBrightness(0x0f);
15     display.clear();
16 }
17
18 void loop()
19 {
20     display.showNumberDec(count,true);
21
22     if (digitalRead(sensor)==LOW)
23     {
24         count++;
25
26         while (digitalRead(sensor)==LOW)
27         {
28
29         }
30     }
31
32 }
33
```

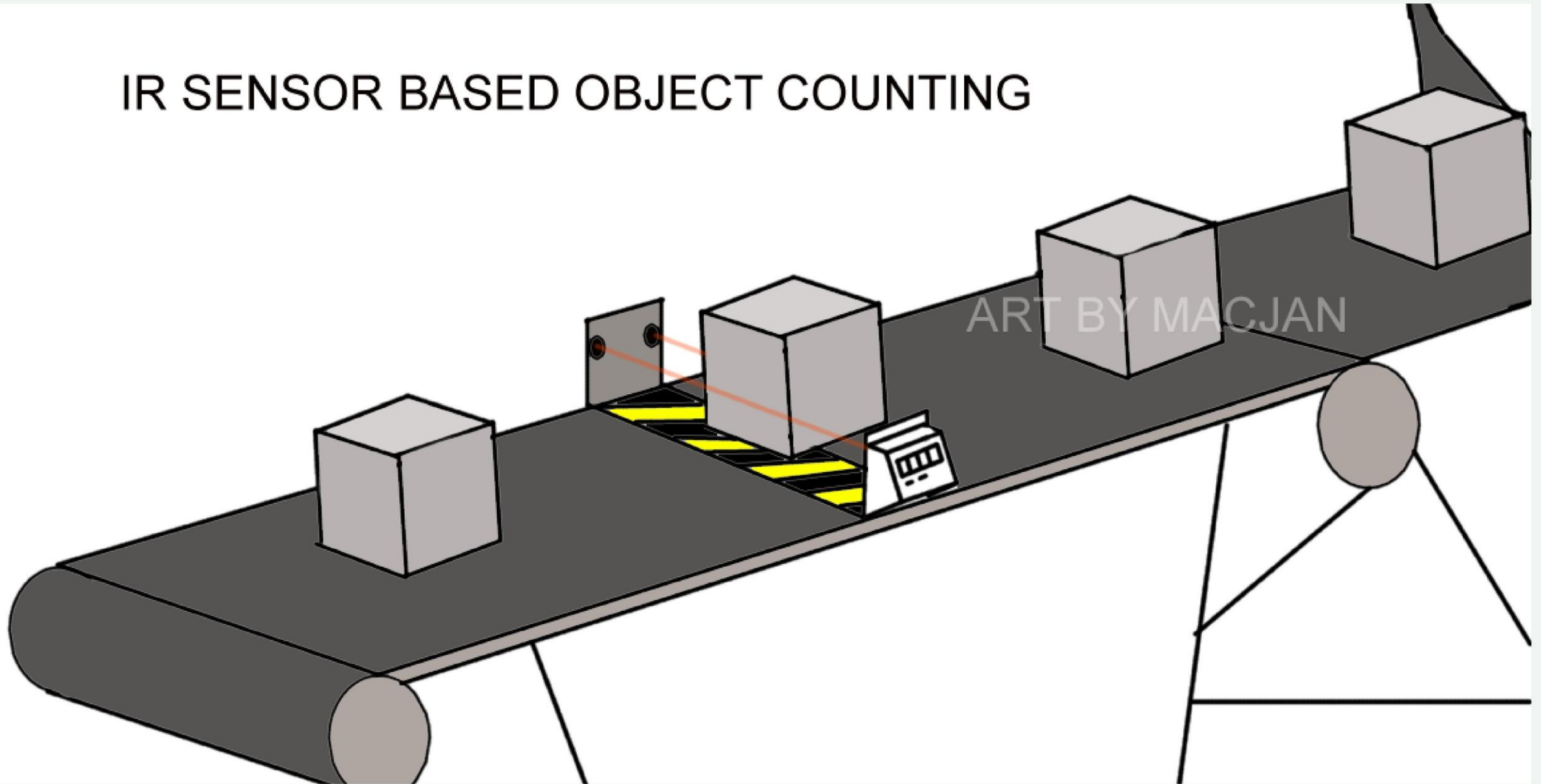
WORKING OF IR SENSOR



USES

- Manufacturing Plants
- Banks
- Vehicle Parking Systems
- Lifts
- Big Super Market or Shopping Malls
- To Count RPM(rotation per minute) of Motors

IR SENSOR BASED OBJECT COUNTING



LIMITATIONS

- Whenever more than one object passes at a time, the object counter counts only one object.
- The another disadvantage is IR sensor can't detect objects of some particular shape or colour.
- It can not detect objects of black colour.
- It only works for some particular range of distance.
- The system can't produce alert when number of objects exceed the predefined or predetermined value.

FUTURE SCOPE

- Range of distance can be improved.
- We can also add Voice Alarm system.
- It can be upgraded to count Object of particular shape and color.
- We can access previous data by sending data to server.
- Accuracy can be also improved.

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THANK YOU