MEASUREMENT & INSTRUMENTATION PROJECT ON

BI-DIRECTIONAL VISITOR COUNTER

Presented by Priyanshu Mishra

OUR DISCUSSION TODAY

TOPICS AND HIGHLIGHTS

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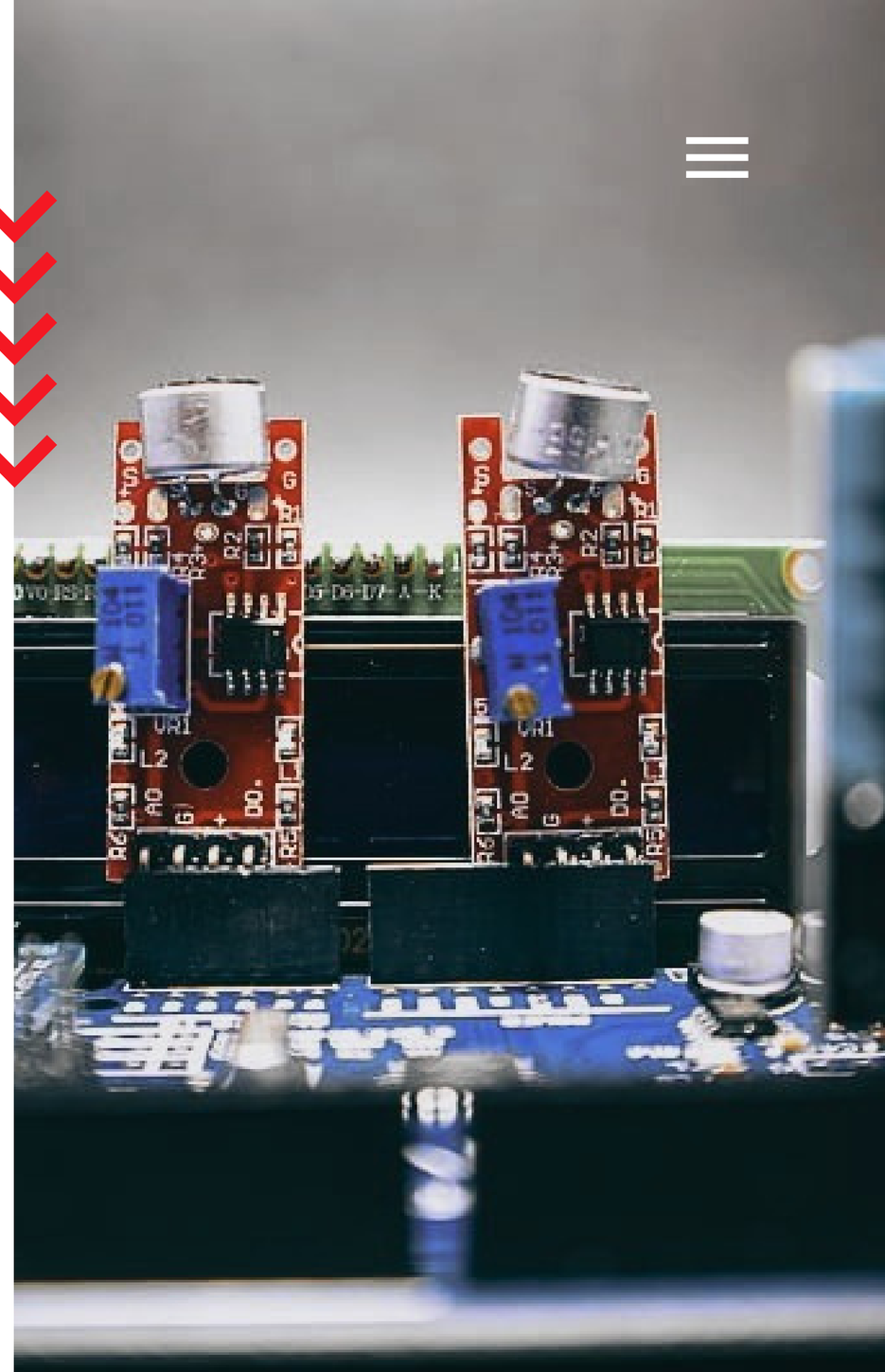
BI-DIRECTIONAL VISITOR COUNTER

USING ARDUINO & PIR SENSOR

A SHORT INTRODUCTION

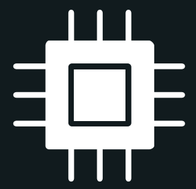
The project is based on the interfacing of some components such as sensors, resistor etc. with Arduino microcontroller. This counter can count people in both directions. This circuit can be used to count the number of persons entering a hall/mall/home/office in the entrance gate and it can count the number of persons leaving the hall by decrementing the count at the exit gate and it depends upon sensor placement in mall/hall. It can also be used at gates of parking areas and other public places.



You’re either the one that creates the automation or you’re getting automated

Tom Preston-Werner

Components Used



Arduino Uno R3

Arduino is an open-source platform used for building electronics projects. (PCB & IDE)

LCD 16 x 2

An electronic device that is used to display data and the message. (16Cs & 2Rs)

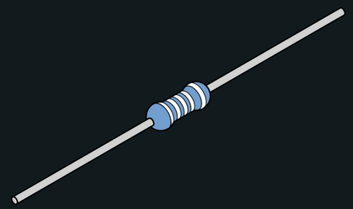
PIR Sensors

A passive infrared sensor (PIR sensor) is an electronic sensor that measures infrared (IR) light radiating from objects in its field of view.

Components Used

250 kΩ Potentiometer

A potentiometer is a three-terminal resistor with a sliding or rotating contact that forms an adjustable voltage divider.



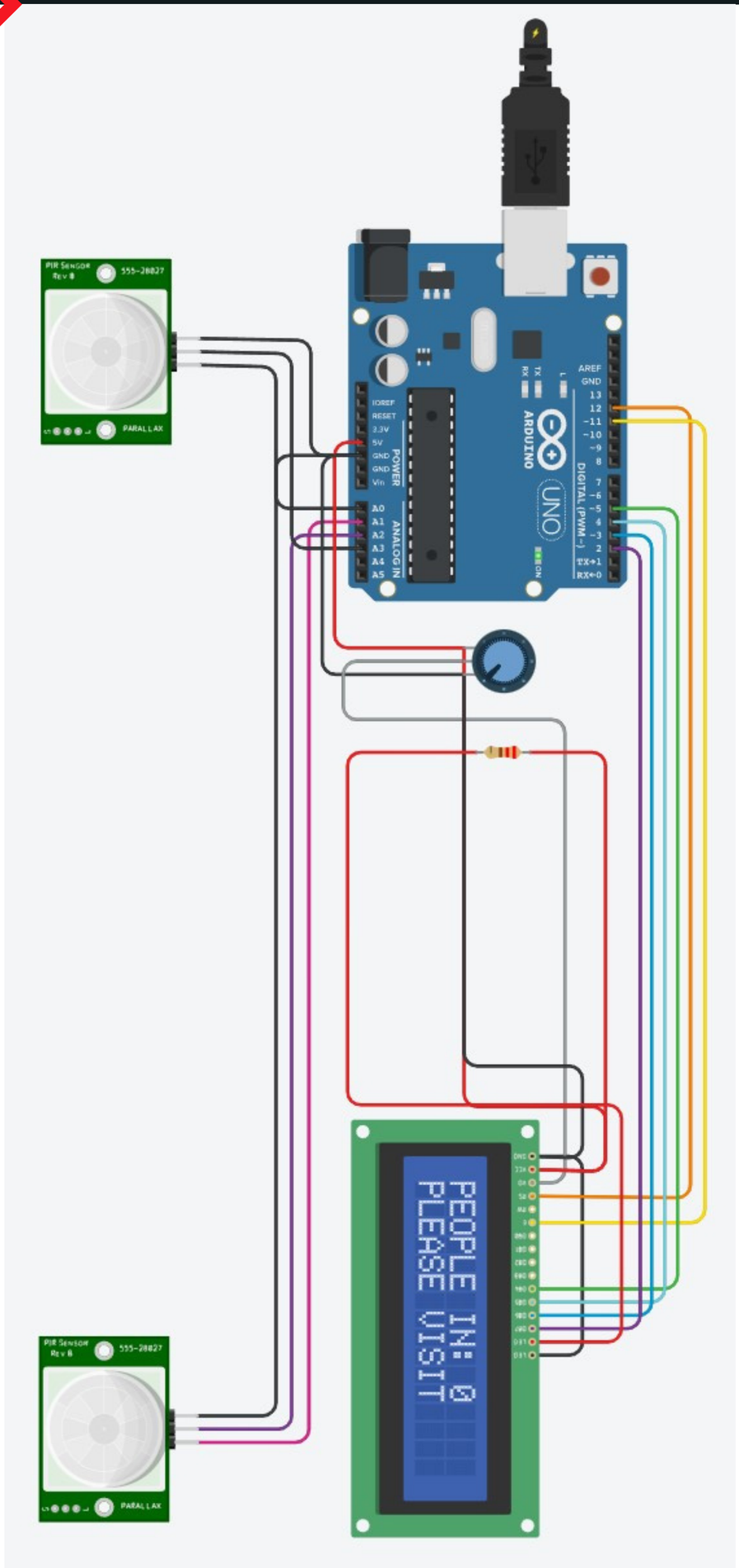
220 Ω Resistor

A resistor is a passive two-terminal electrical component that implements electrical resistance as a circuit element.

Jumper Wires

Jumper cables is a smaller and more bendable corrugated cable which is used to connect components to network cabling.

Circuit Diagram & Code



```
#include <LiquidCrystal.h>
int in = 15;
int inpr = 16;
int out = 14;
int outpr = 17;
int ppl = 0;
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
bool pi = 0;
bool po = 0;
void setup() {
  pinMode(15, INPUT);
  pinMode(14, INPUT);
  pinMode(16, OUTPUT);
  pinMode(17, OUTPUT);
  lcd.begin(16, 2);
}

void loop() {
  lcd.clear();
  digitalWrite(outpr, HIGH);
  digitalWrite(inpr, HIGH);
  pi = digitalRead(in);
  po = digitalRead(out);
```

```
if (pi == 1){
    ppl--;
    delay(500);
  }
  else if (po == 1){
    ppl++ ;
    delay(500);
  }
  ppl = constrain(ppl, 0, 50);
  lcd.setCursor(0, 0);
  lcd.print("PEOPLE IN:");
  lcd.setCursor(11, 0);
  lcd.print(ppl);
  if (ppl >= 20){
     lcd.setCursor(0, 1);
     lcd.print("PLEASE WAIT");
     delay(1000);
  }
  if (ppl <= 19){
     lcd.setCursor(0, 1);
     lcd.print("PLEASE VISIT");
     delay(1000);
  }
}
```

AN IN-DEPTH APPROACH

WORKING OF THE PROJECT

https://www.tinkercad.com/things/hXAVthovL4I-bi-directional-visitor-counter/editel

Applications

Workplaces

In offices to count the number of workers entering or leaving the offices with due time being recorded.

Educational Institutions

In educational institutions the attendance can be measured of students.

Public Places

People entering & leaving records at theaters, airports, railway stations etc.

Household Security

Use of this system can be done in households for security purposes by implementing an alarm system.

and lot more.....

ADVANTAGES

OF THIS PROJECT OVER MANUAL SYSTEMS

01 Precise Reading & Efficient Management

02 Can work 24x7 without any problem

03 Low cost and very easy to implement

DID YOU KNOW?

80%

of the warehouses today have no automation whatsoever.

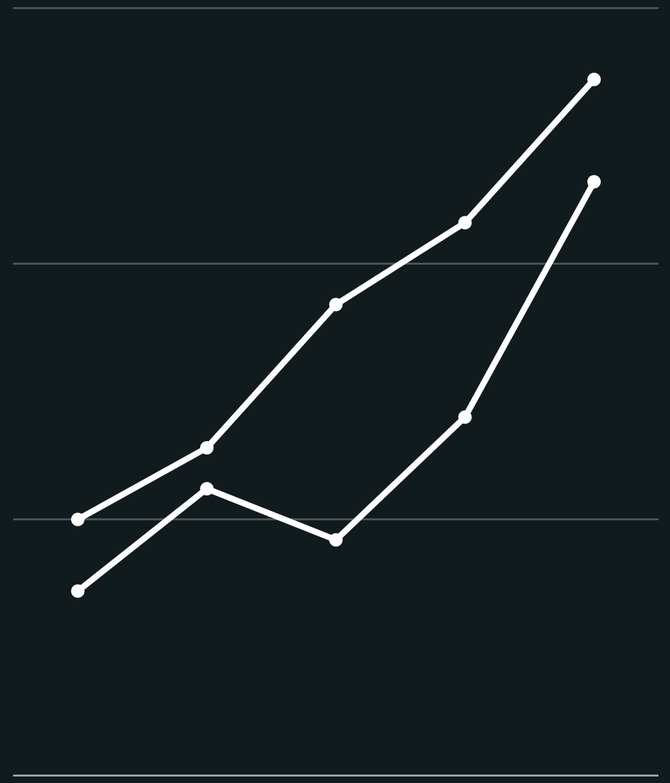
According to **CONVEYCO, 2021**

PROJECTED GROWTH

BASED ON RECENT EVENTS

- In 2021, the automation market is expected to grow by more than 38 percent.
- Systems can improve pick rate productivity by 30-50%.
- Automation technology (robotics, logistics, etc.) are expected to reach a market value of more than $22.4 billion by the end of 2021.

According to CONVEYCO, 2021



THANK YOU!

END OF PRESENTATION

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