PROJECT NAME :- SMART TRAFFIC LIGHT SYSTEM CONTROL USING ARDUINO

NAME OF CONTRIDUTOR: SHIBARGHA CHAKRABORTY

## AIM: Density Based Traffic Control System System Using Arduino & Proteus

THEORY: Density Based Traffic Control System System Using Arduino, Traffic Control Systems collect and analyze driving information of vehicles in the area, perform the optimal traffic signal control in accordance with the constantly changing road traffic situation, and provide useful traffic information to drivers based on the data collected.

There are four basic elements in a computerized traffic control system: computer(s), communications devices, traffic signals, associated equipment, and detectors for sensing vehicles. Traffic flow information is picked up by the detectors from the roadway and transmitted to the computer system for processing.

SOFTWARE USED: Proteus Professional V8.13 & Arduino 1.8.19
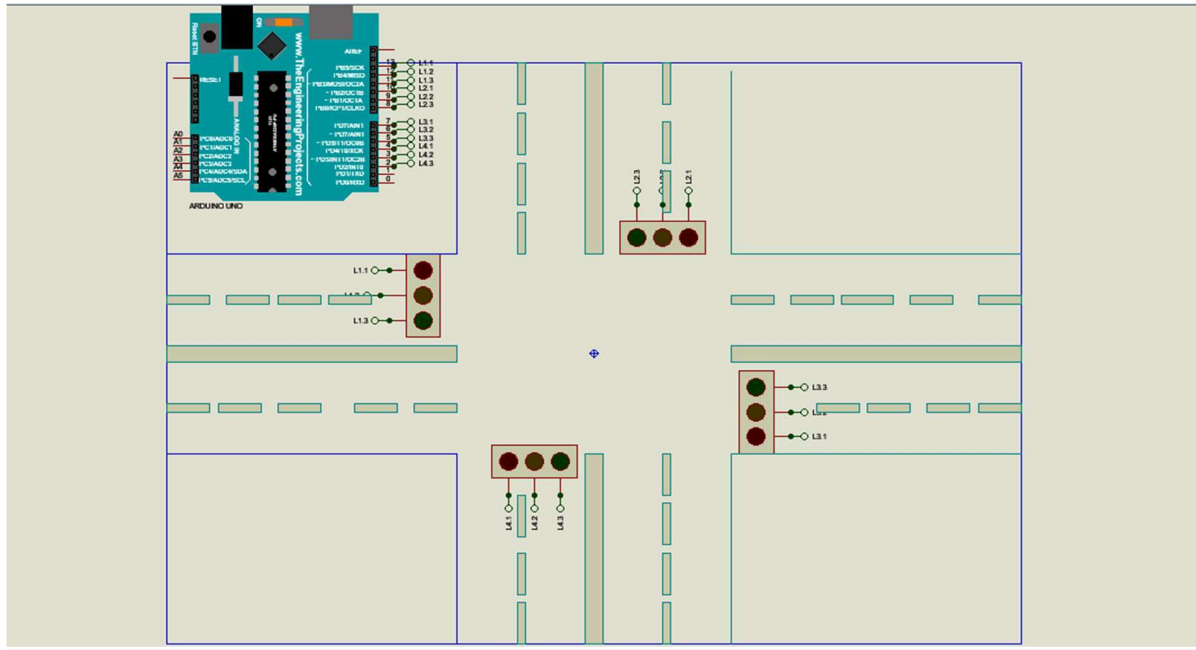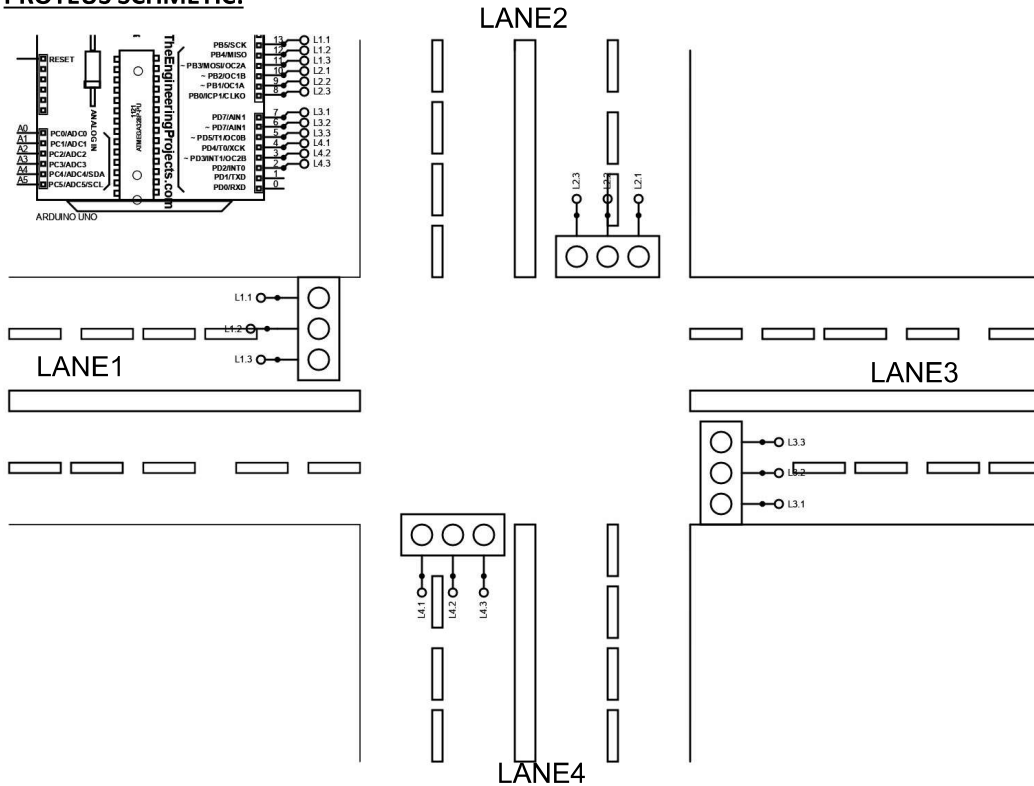
CIRCUIT DIAGRAM:

SCHMETIC1:
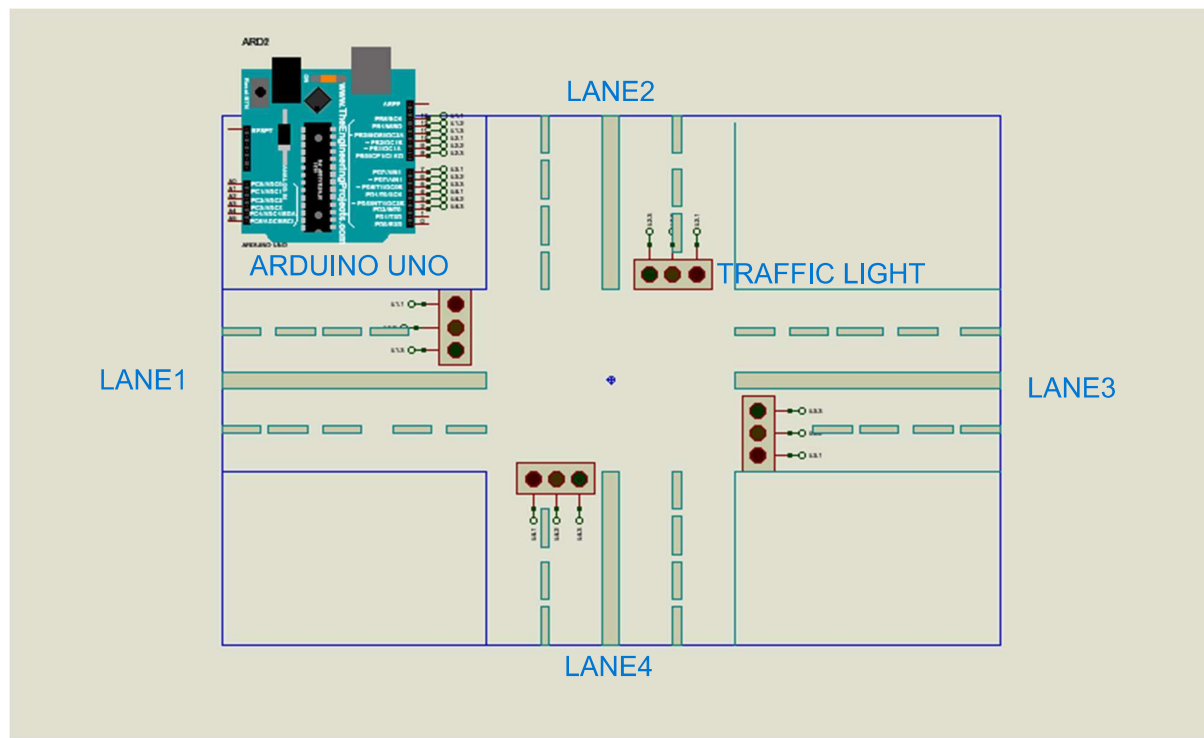
PROJECT NAME :- SMART TRAFFIC LIGHT SYSTEM CONTROL USING ARDUINO

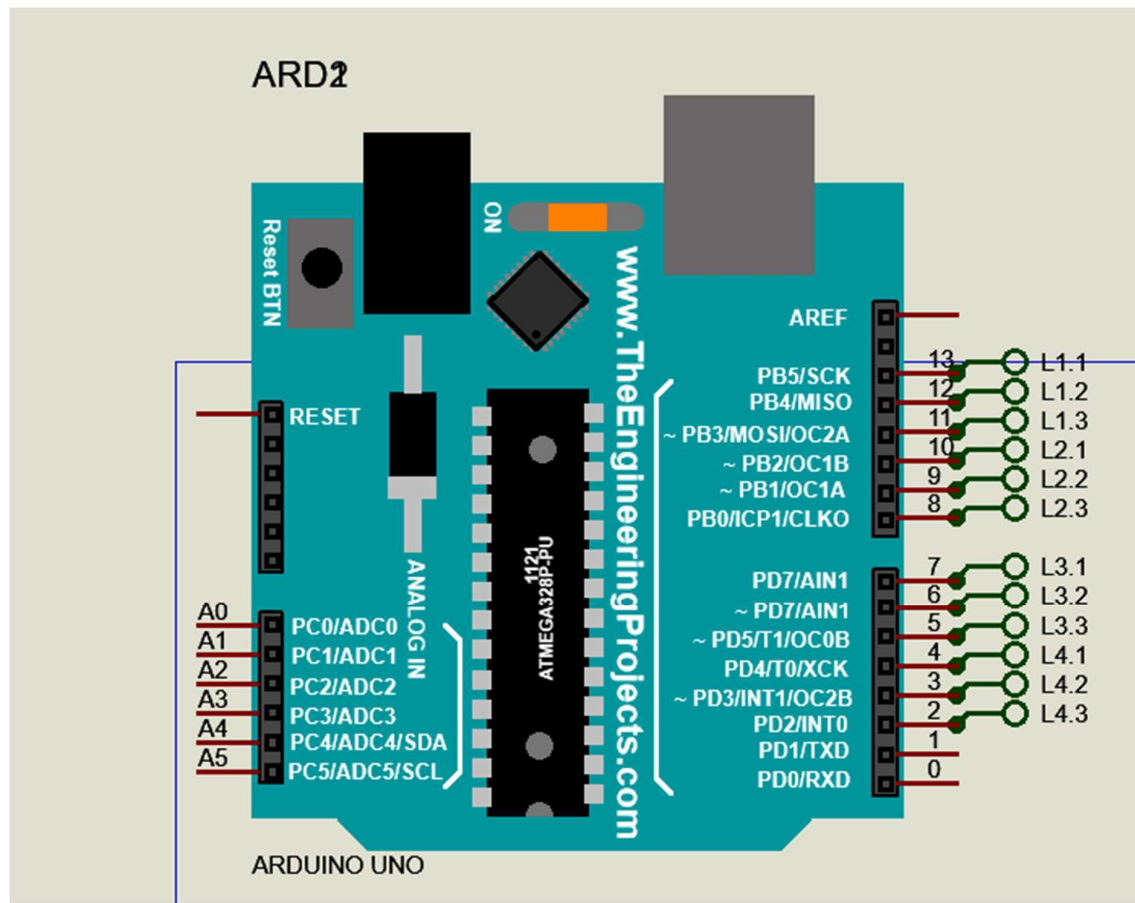# NAME OF CONTRIDUTOR: SHIBARGHA CHAKRABORTY

SCHMETIC2:

PROTEUS SCHMETIC:

PROJECT NAME :- SMART TRAFFIC LIGHT SYSTEM CONTROL USING ARDUINO

NAME OF CONTRIDUTOR: SHIBARGHA CHAKRABORTY

ARDUINO USED: ARDUINO UNO

ARDUINO UNO MICROPROCESSOR

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ARDUINO CODE FOR THE SYSTEM:

```
int Lane1[] = {13,12,11}; // Lane 1 Red, Yellow and Green
int Lane2[] = {10,9,8};// Lane 2 Red, Yellow and Green
int Lane3[] = {7,6,5};// Lane 3 Red, Yellow and Green
int Lane4[]= {4,3,2};// Lane 4 Red, Yellow and Green
int Gotime;
int waitTime;

void setup()
{

for (int i = 0; i < 3; i++)
{
pinMode (Lane1[i], OUTPUT);
pinMode (Lane2[i], OUTPUT);
pinMode (Lane3[i], OUTPUT);
pinMode (Lane4[i], OUTPUT);
}

for (int i = 0; i < 3; i++)
{
digitalWrite(Lane1[i], LOW);
digitalWrite(Lane2[i], LOW);
digitalWrite(Lane3[i], LOW);
digitalWrite(Lane4[i], LOW);
}
}
void loop()
{

digitalWrite(Lane1[2], HIGH);
digitalWrite(Lane3[0], HIGH);
digitalWrite(Lane4[0], HIGH);
digitalWrite(Lane2[0], HIGH);
delay(Gotime);

digitalWrite(Lane1[2], LOW);
digitalWrite(Lane3[0], LOW);
digitalWrite(Lane1[1], HIGH);
digitalWrite(Lane3[1], HIGH);
delay(waitTime);

digitalWrite(Lane1[1], LOW);
digitalWrite(Lane3[1], LOW);
digitalWrite(Lane1[0], HIGH);
digitalWrite (Lane3[2], HIGH);
delay(Gotime);
```

```
digitalWrite(Lane3[2], LOW);
digitalWrite(Lane4[0], LOW);
digitalWrite(Lane3[1], HIGH);
digitalWrite(Lane4[1], HIGH);
delay(waitTime);

digitalWrite(Lane3[1], LOW);
digitalWrite(Lane4[1], LOW);
digitalWrite(Lane3[0], HIGH);
digitalWrite(Lane4[2], HIGH);
delay(Gotime);


digitalWrite(Lane4 [2], LOW);
digitalWrite(Lane2[0], LOW);
digitalWrite (Lane4[1], HIGH);
digitalWrite(Lane2[1], HIGH);
delay(waitTime);

digitalWrite(Lane4[1],LOW);
digitalWrite(Lane2[1], LOW);
digitalWrite (Lane4[0], HIGH);
digitalWrite(Lane2[2], HIGH);
delay(Gotime);

digitalWrite (Lane1[0], LOW);
digitalWrite (Lane2[2], LOW);
digitalWrite(Lane1[1], HIGH);
digitalWrite(Lane2[1], HIGH);
delay(waitTime);

digitalWrite(Lane2[1], LOW);
digitalWrite(Lane1[1], LOW);
}
```
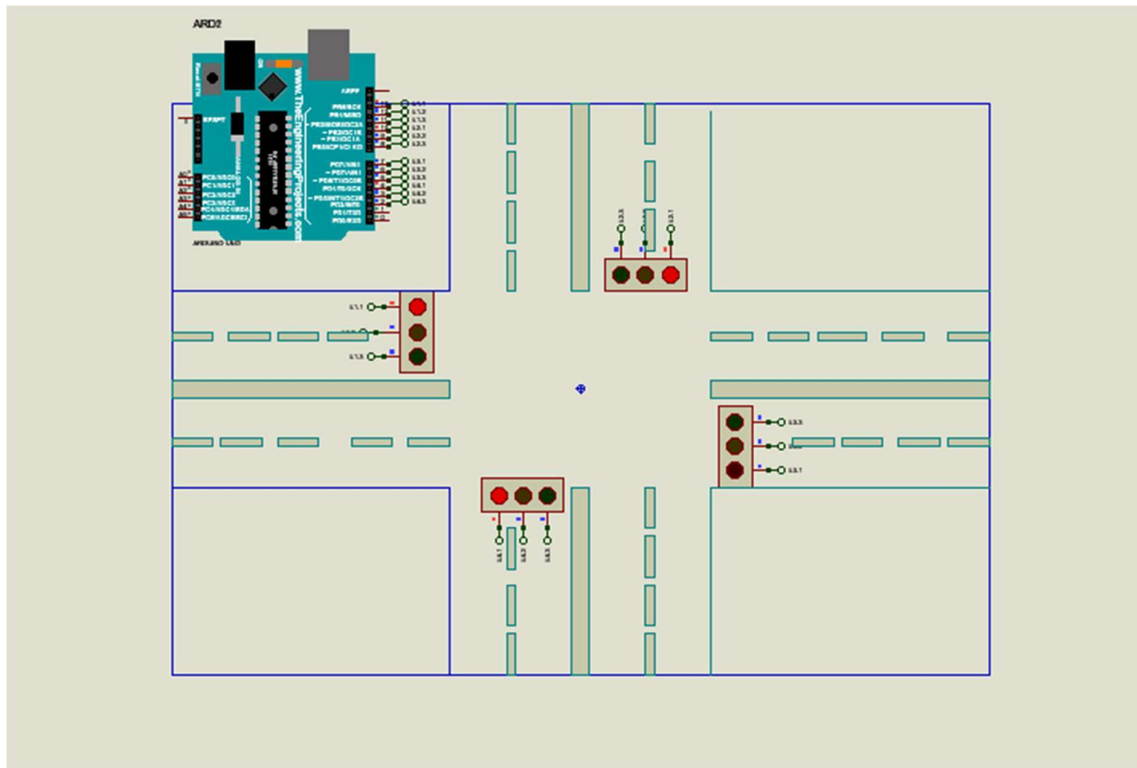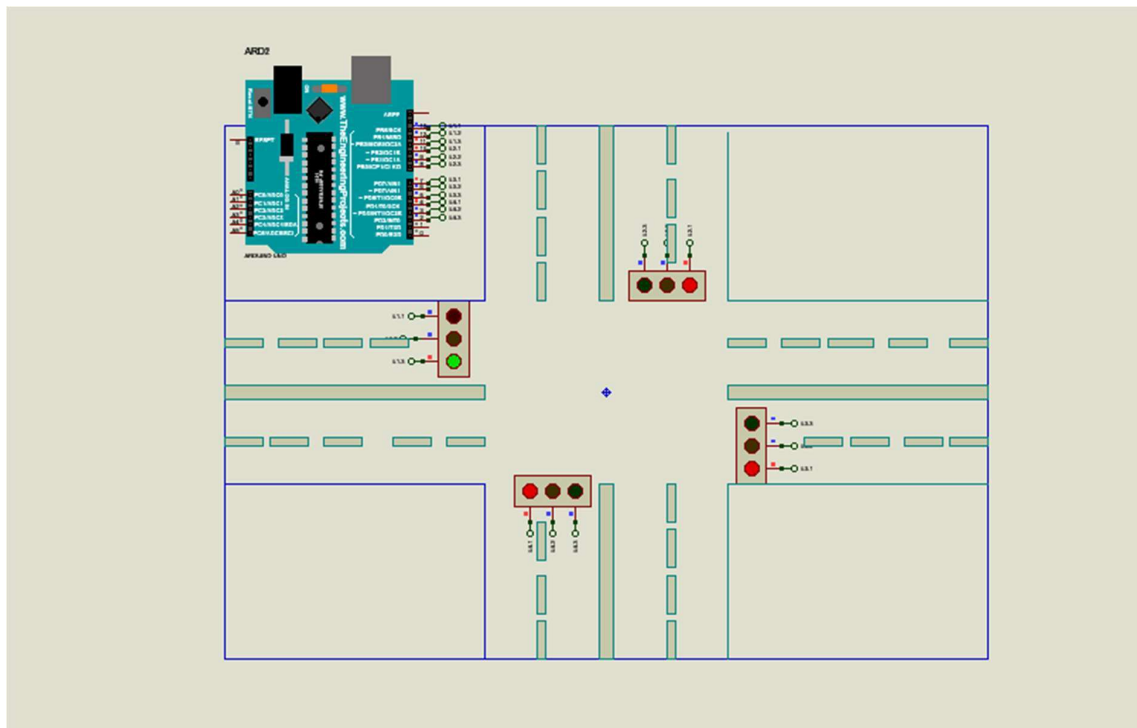
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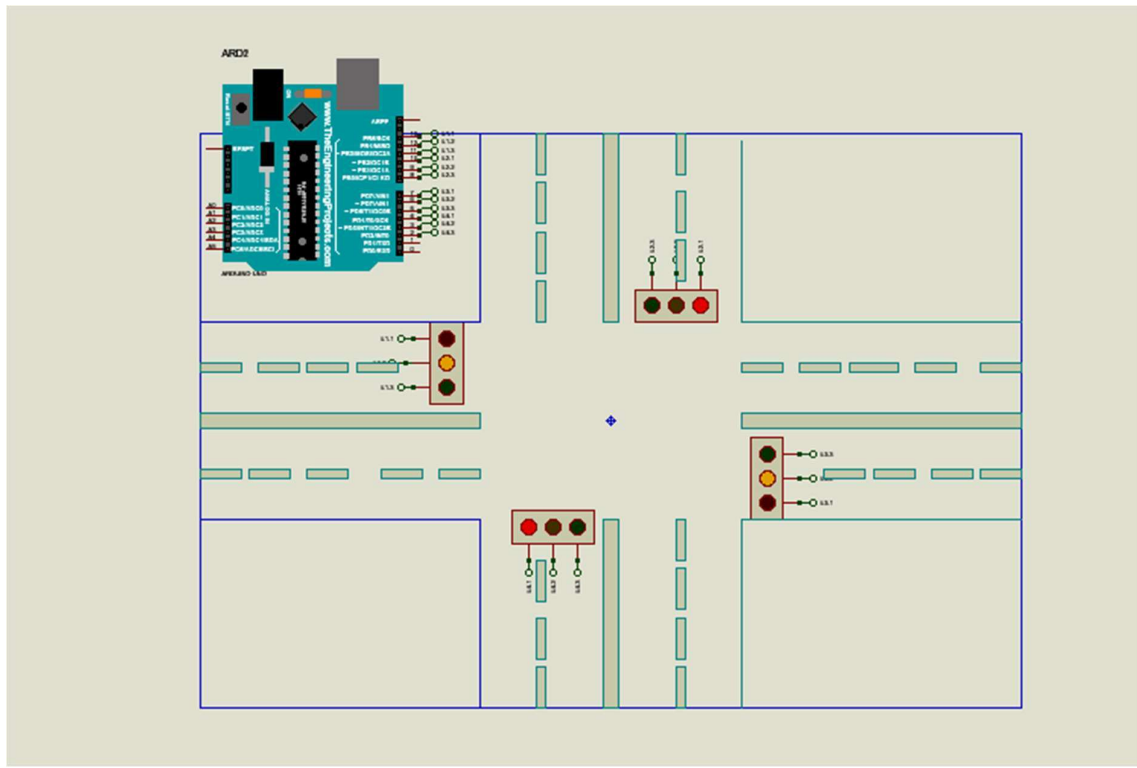
OUTPUT DIAGRAM AFTER SIMULATION1:
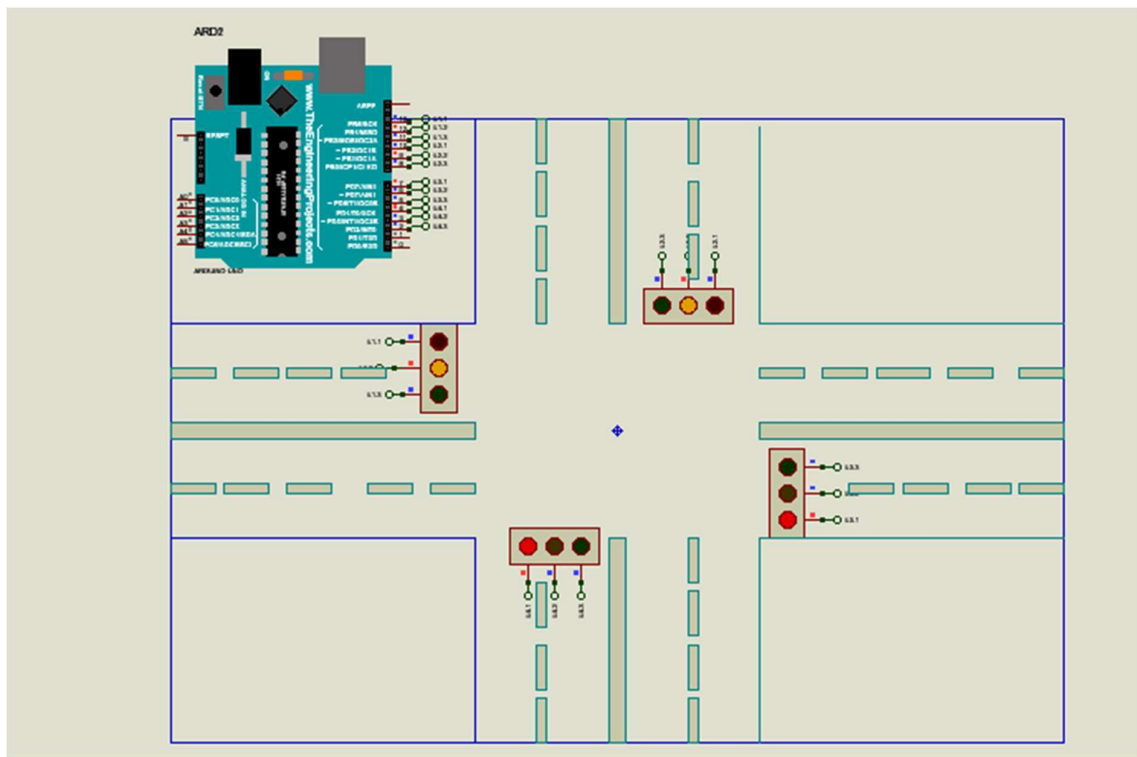

OUTPUT DIAGRAM AFTER SIMULATION2:

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OUTPUT DIAGRAM AFTER SIMULATION3:

OUTPUT DIAGRAM AFTER SIMULATION4:

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VIDEO LINK OF TOTAL PRESENTATION: https://drive.google.com/drive/folders/1R-itPrrgAXTtLqHV-Y1l0uspt2Baqmad

RESOURCES USED: YOUTUBE, GITHUB & GOOGLE

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