Name: Ali Salman Hassan
Class-ID: 105139
Student-ID: 63758

Q) Create a 4– way traffic control signal using arduino. Submit word file and simulation video

ANSWER:

```
void setup()
{

  pinMode(1, OUTPUT);
  pinMode(2, OUTPUT);
  pinMode(3, OUTPUT);
  pinMode(4, OUTPUT);
  pinMode(5, OUTPUT);
  pinMode(6, OUTPUT);
  pinMode(7, OUTPUT);
  pinMode(8, OUTPUT);
  pinMode(9, OUTPUT);
  pinMode(10, OUTPUT);
  pinMode(11, OUTPUT);
  pinMode(12, OUTPUT);

}

void loop()
{

  int r1=1;
  int y1=2;
  int g1=3;
```

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```
int r2=4;
int y2=5;
int g2=6;
int r3=7;
int y3=8;
int g3=9;
int r4=10;
int y4=11;
int g4=12;

digitalWrite(r1,HIGH);
digitalWrite(g2,HIGH);
digitalWrite(g3,HIGH);
digitalWrite(r4,HIGH);
delay(30000);
digitalWrite(r1,LOW);
digitalWrite(g1,LOW);
digitalWrite(y1,LOW);
digitalWrite(g2,LOW);
digitalWrite(r2,LOW);
digitalWrite(y2,LOW);
digitalWrite(r3,LOW);
digitalWrite(g3,LOW);
digitalWrite(y3,LOW);
digitalWrite(g4,LOW);
digitalWrite(r4,LOW);
digitalWrite(y4,LOW);

digitalWrite(y1,HIGH);
```

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```
 digitalWrite(y2,HIGH);
 digitalWrite(y3,HIGH);
 digitalWrite(y4,HIGH);
 delay(10000);
 digitalWrite(r1,LOW);
 digitalWrite(g1,LOW);
 digitalWrite(y1,LOW);
 digitalWrite(g2,LOW);
 digitalWrite(r2,LOW);
 digitalWrite(y2,LOW);
 digitalWrite(r3,LOW);
 digitalWrite(g3,LOW);
 digitalWrite(y3,LOW);
 digitalWrite(g4,LOW);
 digitalWrite(r4,LOW);
 digitalWrite(y4,LOW);

 digitalWrite(g1,HIGH);
 digitalWrite(r2,HIGH);
 digitalWrite(r3,HIGH);
 digitalWrite(g4,HIGH);
 delay(30000);
 digitalWrite(r1,LOW);
 digitalWrite(g1,LOW);
 digitalWrite(y1,LOW);
 digitalWrite(g2,LOW);
 digitalWrite(r2,LOW);
 digitalWrite(y2,LOW);
 digitalWrite(r3,LOW);
```

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```
 digitalWrite(g3,LOW);
 digitalWrite(y3,LOW);
 digitalWrite(g4,LOW);
 digitalWrite(r4,LOW);
 digitalWrite(y4,LOW);

 digitalWrite(y1,HIGH);
 digitalWrite(y2,HIGH);
 digitalWrite(y3,HIGH);
 digitalWrite(y4,HIGH);
 delay(10000);
 digitalWrite(y1,LOW);
 digitalWrite(y2,LOW);
 digitalWrite(y3,LOW);
 digitalWrite(y4,LOW);

}
```

Q) Differentiate between pull-up and pull-down resistor configuration

ANSWER:

PULL UP RESISTOR:

- Makes the default value of digital pin as HIGH.
- It's the most commonly used resistor.
- It provides current when the circuit is OPEN.

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PULL DOWN RESISTOR:

- Makes the default value of digital pin as LOW.
- It's the less commonly used resistor.
- It provides current when the circuit is CLOSED.