IOT LAB - 5th Sem

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Program Title : Ultrasound Distance Sensor

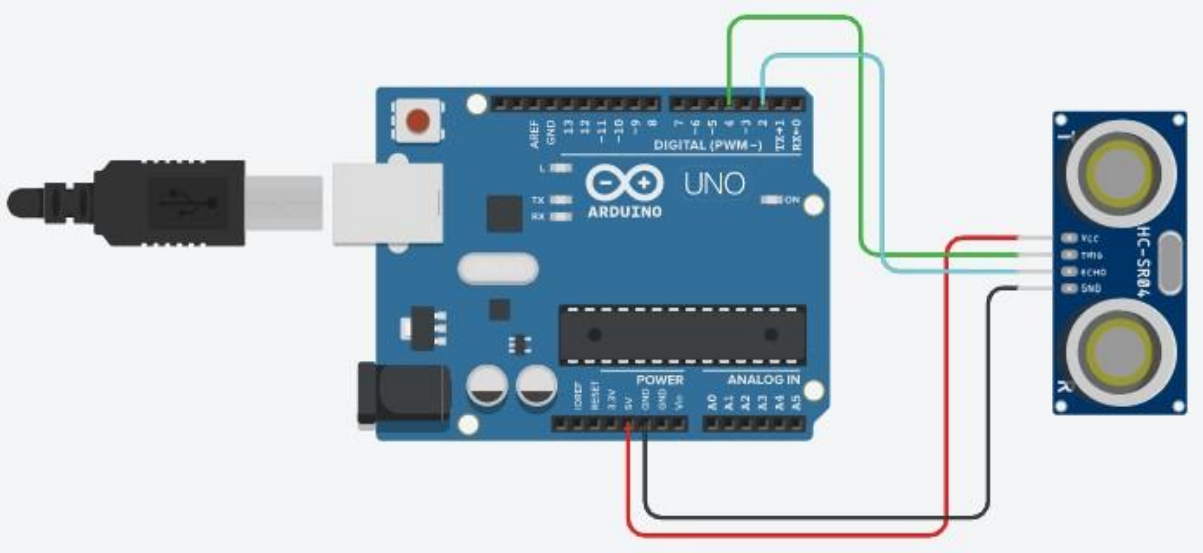
Aim :

To measure distance using an ultrasound sensor and an Arduino Uno board.

Hardware Required :

- Arduino Uno Board
- HC-SR04 Ultrasound Sensor

Circuit Diagram :



Written Code :

10) ULTRASONIC SENOR

```
int Sensor = 7;
int red = 13;
Const int blue = 10;
int green = 9;
Void Setup()
{
PinMode(blue, OUTPUT);
PinMode (green, OUTPUT);
PinMode (red, OUTPUT);

PinMode (7, OUTPUT);
Serial.begin (9600);
}
long duration, inches, cm;
Void loop()
{
PinMode (sensor, OUTPUT);
digital Write (sensor, LOW);
delay (2);
digital write (sensor, HIGH);
delay (5);
digital write (sensor, LOW);
```

```
duration = pulseIn(Sensor, HIGH); //reading
duration for a HIGH Pulse

//time -> distance

inches = microseconds ToInches (duration);
cm = microseconds Tocentimeters (duration

Serial.Print(inches);
Serial.Print("in, ");
Serial.Print(cm);
Serial.Print("cm");
Serial.println();

if (inches < 10)
{
digitalWriter(red, HIGH);
digitalWriter(green, LOW);
digitalWrite(blue, LOW);
}
else if (inches > 10 && inches < 50)
{
digitalWrite (red, low);
digitalwrite(green, HOW);
digtalWrite (blue, HIGH);
}
```

```
else
{
digital Write (red, LOW);
digital write(green, HIGH);

digital Write (blue, Low);
}
}

long microseconds ToInches (long microsecond
{
  return microseconds /74/2;
}
long microseconds Tocentemetors (long microse
{
 return microseconds /29/2;

  }
  }
```

Observation /Output :

The distance was measured using the ultrasound sensor.