Name – Shreya Laddha

Program No. – 08

Program Title – Distance Measurement using ultrasonic sensor
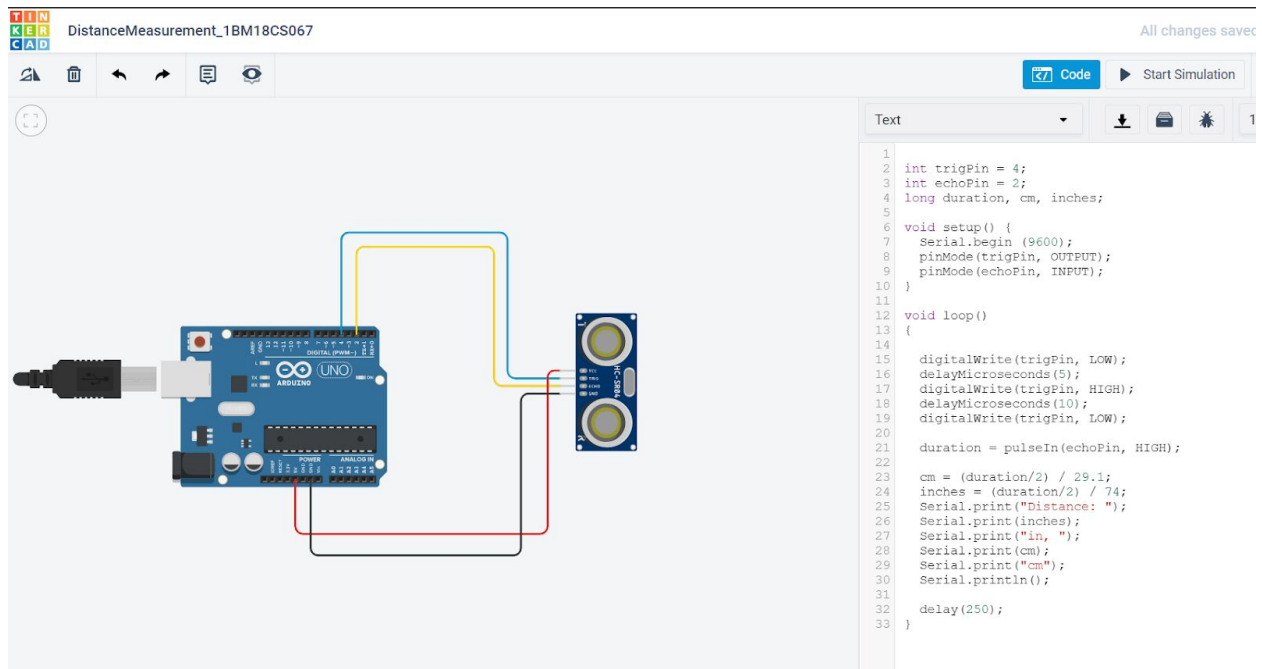

AIM

Design a system to measure the distance between objects.

HARDWARES REQUIRED

- Arduino Board
- Ultrasonic sensor HC-SR04

CIRCUIT DIAGRAM


```
1
2  int trigPin = 4;
3  int echoPin = 2;
4  long duration, cm, inches;
5
6  void setup() {
7    Serial.begin (9600);
8    pinMode(trigPin, OUTPUT);
9    pinMode(echoPin, INPUT);
10 }
11
12 void loop()
13 {
14
15   digitalWrite(trigPin, LOW);
16   delayMicroseconds(5);
17   digitalWrite(trigPin, HIGH);
18   delayMicroseconds(10);
19   digitalWrite(trigPin, LOW);
20
21   duration = pulseIn(echoPin, HIGH);
22
23   cm = (duration/2) / 29.1;
24   inches = (duration/2) / 74;
25   Serial.print("Distance: ");
26   Serial.print(inches);
27   Serial.print("in, ");
28   Serial.print(cm);
29   Serial.print("cm");
30   Serial.println();
31
32   delay(250);
33 }
```

WRITE-UP

PFA

CODE

```
int trigPin = 4;

int echoPin = 2;

long duration, cm, inches;

 void setup() {

  Serial.begin (9600);

  pinMode(trigPin, OUTPUT);

  pinMode(echoPin, INPUT);

}

void loop()

{

  digitalWrite(trigPin, LOW);

  delayMicroseconds(5);

  digitalWrite(trigPin, HIGH);

  delayMicroseconds(10);

  digitalWrite(trigPin, LOW);


  duration = pulseIn(echoPin, HIGH);

  cm = (duration/2) / 29.1;
```

```
inches = (duration/2) / 74;

Serial.print("Distance: ");

Serial.print(inches);

Serial.print("inch, ");

Serial.print(cm);

Serial.print("cm");

Serial.println();

delay(250);

}
```

OUTPUT

Design a system to measure the distance between objects using ultrasonic device.