SERVO DISTANCE INDICATOER

BACHELOR OF TECHNOLOGY

IN ELECTRONICS AND COMMUNICATION ENGINEERING SUBMITTED BY

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SERVO DISTANCE INDICATOR

ABSTRACT:

The main concept of this project is to design a circuit which will detect the distance of the object and displays on the analog meter. The sensory output from the ultrasonic module is used to trigger the rotation of the servo motor.
The degree of rotation of the motor is directly proportional to the distance of the object from the ultrasonic module

INTRODUCTION:

As we are very well familiar with the hurdles faced by the vehicles and their accidents due to the no idea of the vehicle behind of that, we came up with a solution that is servo distance indicator. This project uses an ultrasonic sensor, Arduino uno board, jumper wires. This project can be further miniaturized and fixed on equipment's such as glasses and walking sticks. The servo motor can be fixed with Braile readings which can be used to determine the approximate distances of obstacles from a blind person.

REQUIRED SOFTWARE: ARDUINO UNO

REQUIRED HARDWARE: Arduino UNO,

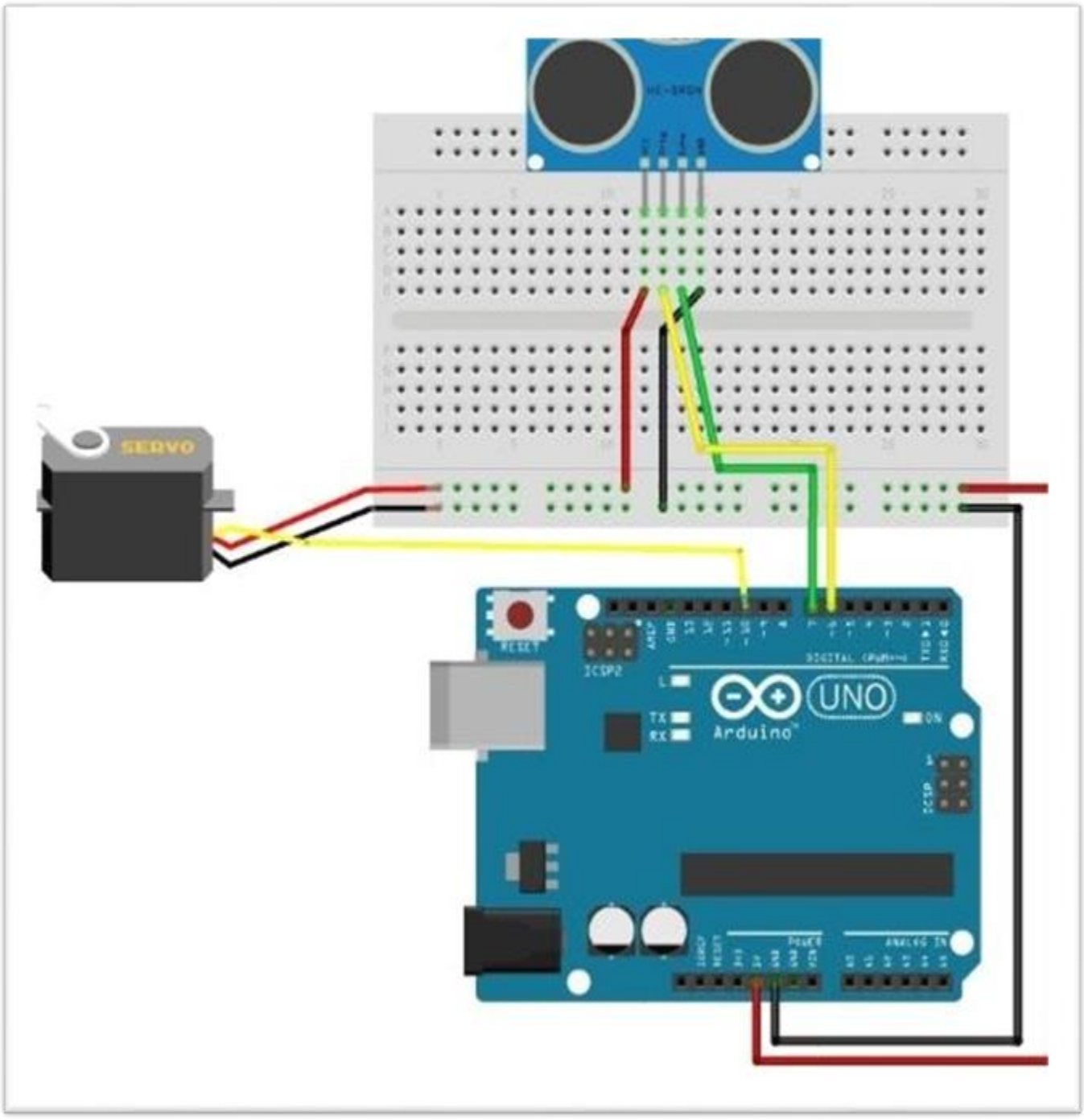
Servo motor,

Ultrasonic Sensor,

Jumper wires,

Arduino cable.

CIRCUIT DIAGRAM:

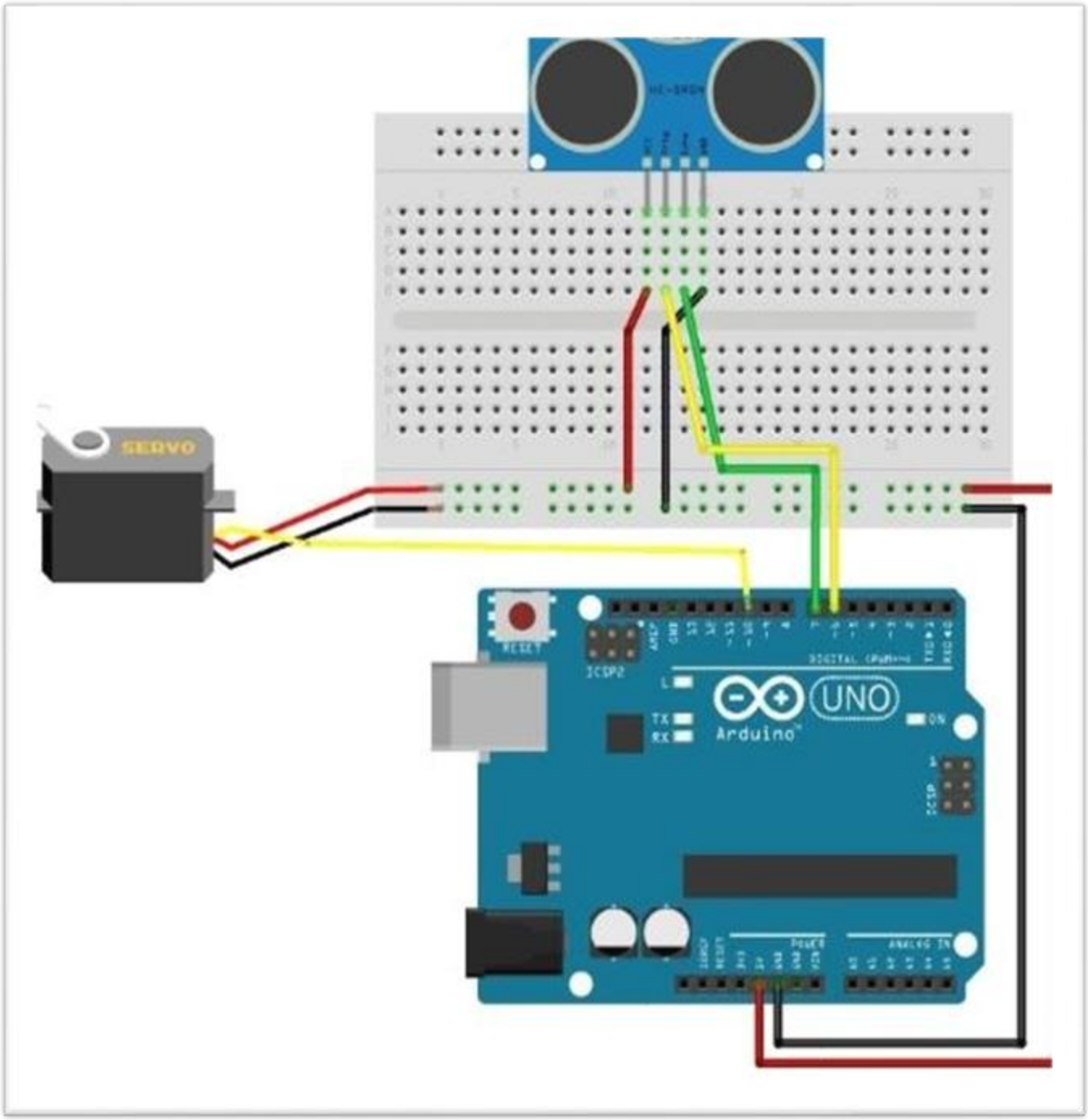


PROGRAMME:

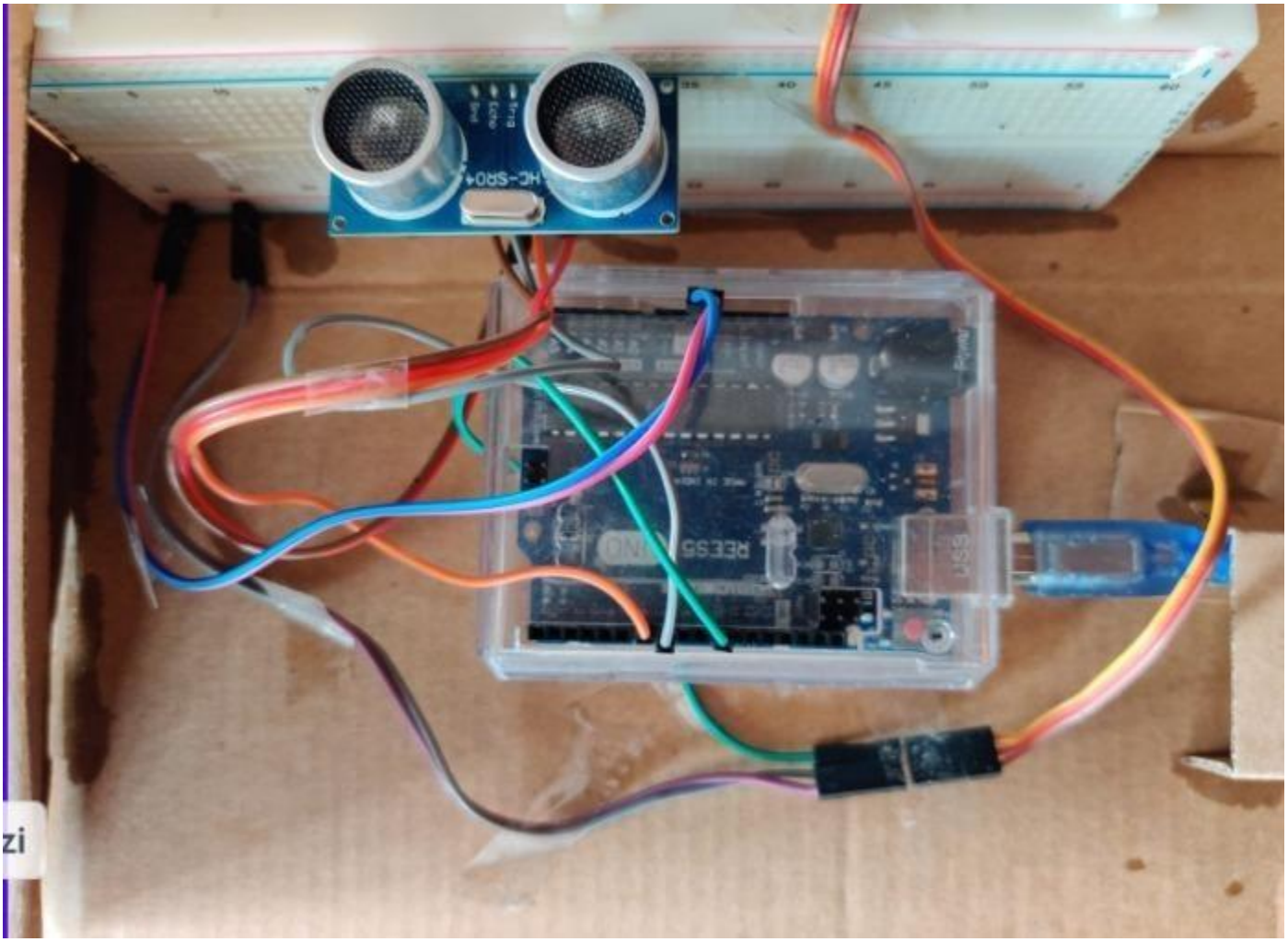
```
#include <Servo.h>
#include <NewPing.h>
const int pingPin = 3; // Trigger Pin of Ultrasonic Sensor

const int echoPin = 4; // Echo Pin of Ultrasonic Sensor

const int ServoPin = 9; Servo

servo;

void setup() {

  Serial.begin(9600); // Starting Serial Terminal servo.attach(ServoPin);

}
void loop() {
long duration, inches, cm; pinMode(pingPin, OUTPUT);
digitalWrite(pingPin, LOW); delayMicroseconds(2);
digitalWrite(pingPin, HIGH);

   delayMicroseconds(10);

   digitalWrite(pingPin, LOW);

   pinMode(echoPin, INPUT); duration =

   pulseIn(echoPin, HIGH);

   inches = microsecondsToInches(duration); cm =

   microsecondsToCentimeters(duration);

   Serial.print(inches);

   Serial.print("in, ");

   Serial.print(cm);
```

```
  Serial.print("cm");
  Serial.println();
  delay(100);
  int angle = map(cm,5, 30, 5, 180);
  servo.write(angle);
}

long microsecondsToInches(long microseconds) { return
  microseconds / 74 / 2;
}

long microsecondsToCentimeters(long
microseconds) {
  return microseconds / 29 / 2;
}
```

CIRCUIT DIAGRAM:



PROTOTYPE:



CONCLUSION:

A simple but useful project called SERVO DISTANCE INDICATOR using Arduino is designed and developed here. Using this project we designed a circuit which will detect the distance of the object and displays on the analog meter. This can be further calibrated to calculate the actual distance of the object from the module.