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Enrollment number - 21162101012 & 21162101017

Branch - CBA Batch - 71

IOT Practical 7

AIM : Interface Servo Motor with Arduino & test it with ultrasonic sensor.

Materials used :

- Arduino Uno
- USB A to B wire
- Ultrasonic sensor
- Servo Motor

Code :

```
#include <Servo.h>

// Define the pin numbers
const int trigPin = 7;
const int echoPin = 6;

Servo myServo;

void setup() {
    // Initialize serial communication
    Serial.begin(9600);

    // Attach the servo motor to pin 9
    myServo.attach(9);

    // Set up the ultrasonic sensor pins
    pinMode(trigPin, OUTPUT);
    pinMode(echoPin, INPUT);
}
```

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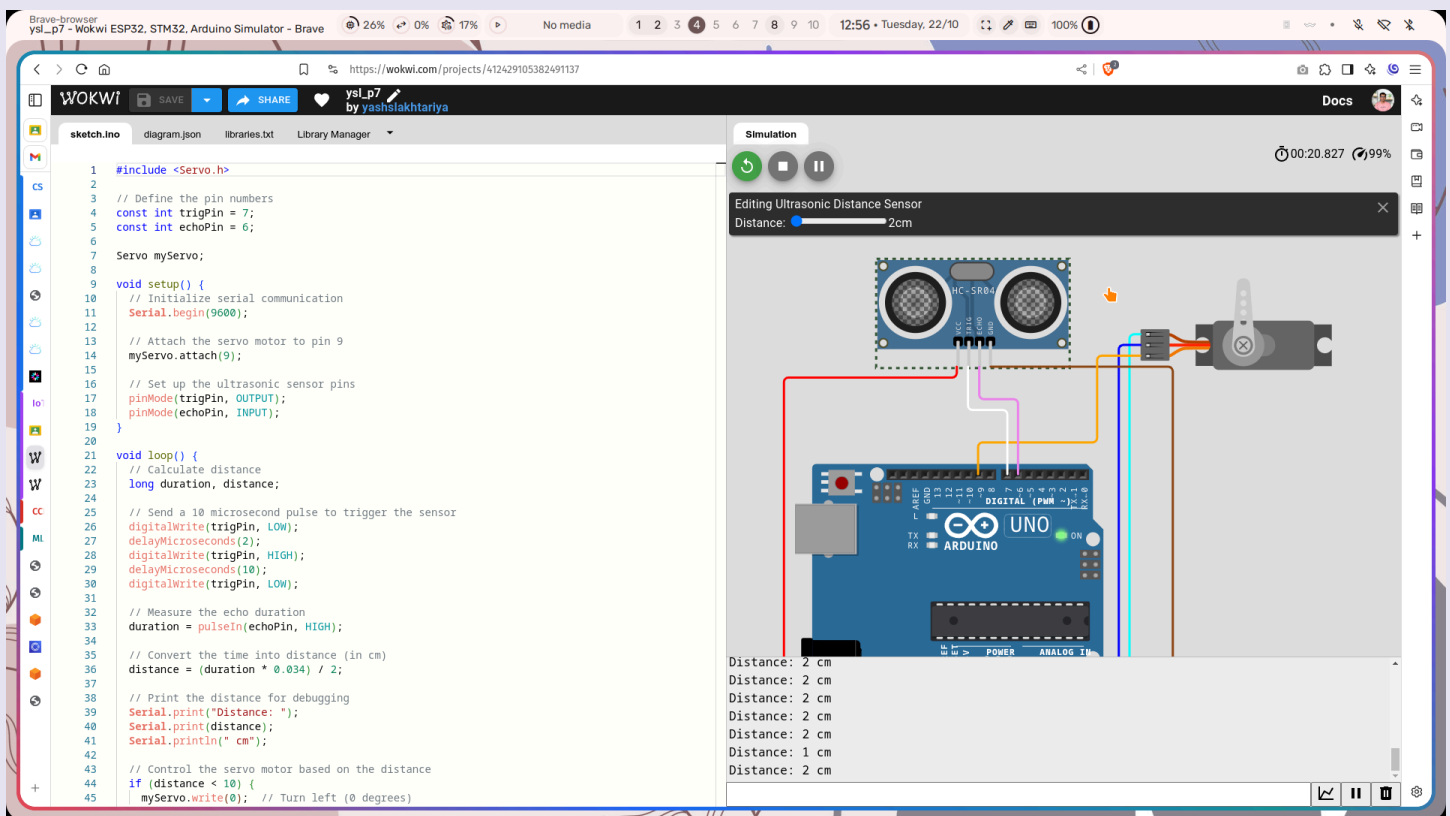
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```
void loop() {  
    // Calculate distance  
    long duration, distance;  
  
    // Send a 10 microsecond pulse to trigger the sensor  
    digitalWrite(trigPin, LOW);  
    delayMicroseconds(2);  
    digitalWrite(trigPin, HIGH);  
    delayMicroseconds(10);  
    digitalWrite(trigPin, LOW);  
  
    // Measure the echo duration  
    duration = pulseIn(echoPin, HIGH);  
  
    // Convert the time into distance (in cm)  
    distance = (duration * 0.034) / 2;  
  
    // Print the distance for debugging  
    Serial.print("Distance: ");  
    Serial.print(distance);  
    Serial.println(" cm");  
  
    // Control the servo motor based on the distance  
    if (distance < 10) {  
        myServo.write(0); // Turn left (0 degrees)  
    } else {  
        myServo.write(180); // Turn right (180 degrees)  
    }  
}
```

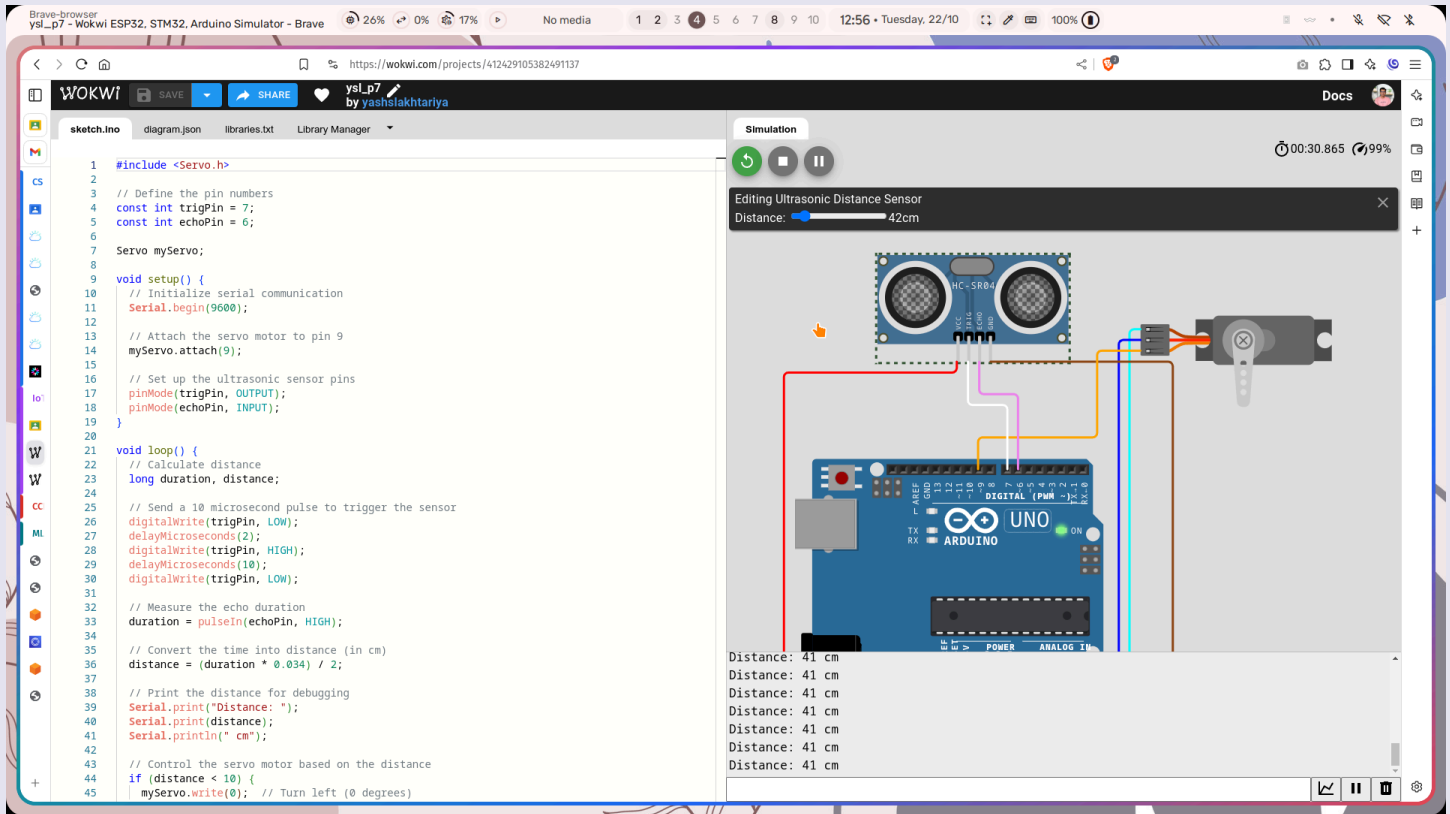
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```
delay(500); // Wait for half a second before next reading  
}
```

Virtual Output :



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Physical Output :

 Servo-Motor.mp4