

## ASSIGNMENT-01

TITLE: HOME AUTOMATION USING SENSORS. ( ULTRASONIC DETECTION)

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CODE:

```
// C++ code
```

```
//
```

```
#include <Servo.h>
```

```
Long readUltrasonicDistance(int triggerPin, int echoPin)
```

```
{
```

```
    pinMode(triggerPin, OUTPUT); // Clear the trigger
```

```
    digitalWrite(triggerPin, LOW);
```

```
    delayMicroseconds(2);
```

```
    // Sets the trigger pin to HIGH state for 10 microseconds
```

```
    digitalWrite(triggerPin, HIGH);
```

```
    delayMicroseconds(10);
```

```
    digitalWrite(triggerPin, LOW);
```

```
    pinMode(echoPin, INPUT);
```

```
    // Reads the echo pin, and returns the sound wave travel time in microseconds
```

```
    Return pulseIn(echoPin, HIGH);
```

```
}
```

```
Servo servo_3;
```

```
Void setup()
```

```
{
```

```
    pinMode(0, INPUT);
```

```
    pinMode(13, OUTPUT);
```

```
    pinMode(0, OUTPUT);
```

```
    servo_3.attach(3, 500, 2500);
```

```
pinMode(A5, INPUT);  
pinMode(12, OUTPUT);  
pinMode(A4, INPUT);  
pinMode(11, OUTPUT);  
}
```

```
Void loop()  
{  
  If (digitalRead(0) == 1) {  
    digitalWrite(13, HIGH);  
  } else {  
    digitalWrite(0, LOW);  
  }  
  If (0.01723 * readUltrasonicDistance(0, 0) >= 100) {  
    Servo_3.write(90);  
    Delay(1000); // Wait for 1000 millisecond(s)  
  } else {  
    Servo_3.write(0);  
    Delay(1000); // Wait for 1000 millisecond(s)  
  }  
  If (analogRead(A5) <= 100) {  
    digitalWrite(12, HIGH);  
  } else {  
    digitalWrite(12, LOW);  
  }  
  If ((-40 + 0.488155 * (analogRead(A4) - 20)) < 30) {  
    digitalWrite(11, HIGH);  
  } else {  
    digitalWrite(11, LOW);  
  }  
}
```

}

}

CIRCUIT DIAGRAM:

