**PROGRAM CODE:**

#include <Servo.h>

#include <NewPing.h>

#define TRIGGER\_PIN 11 // Arduino pin tied to trigger pin on the ultrasonic sensor.

#define ECHO\_PIN 12 // Arduino pin tied to echo pin on the ultrasonic sensor.

#define MAX\_DISTANCE 100 // Maximum distance we want to ping for (in centimeters). Maximum sensor distance is rated at 400-500cm.

Servo s1;

NewPing sonar(TRIGGER\_PIN, ECHO\_PIN, MAX\_DISTANCE); // NewPing setup of pins and maximum distance.

void setup() {

s1.attach(9);

}

void loop() {

delay(50); // Wait 50ms between pings (about 20 pings/sec). 29ms should be the shortest delay between pings.

unsigned int distance = sonar.ping\_cm(); // Send ping, get distance in centimeters and convert to meters.

if (distance > 0 && distance <= 100) { // Check if distance is valid (between 0 and 100 cm).

if (distance <= 100) { // If object detected within 100cm (1 meter)

if (distance <= 100 && distance > 60) { // If object is between 1m and 60cm

s1.write(60); // Move servo to 60 degrees

} else if (distance <= 60) { // If object is closer than 60cm

s1.write(180); // Move servo to 180 degrees

}

}

} else { // If no object detected or out of range

s1.write(0); // Move servo back to initial position

}

}