```
#include <Servo.h>

// Pin definitions
const int trigPin = 9;       // Ultrasonic
sensor Trig pin
const int echoPin = 10;      // Ultrasonic
sensor Echo pin
const int servoPin = 3;      // Servo motor pin
const int leftMotorPin1 = 5; // Motor driver
input for left motor
const int leftMotorPin2 = 6;
const int rightMotorPin1 = 7; // Motor
driver input for right motor
const int rightMotorPin2 = 8;

Servo myServo;               // Servo motor
object

// Function to measure distance using the
ultrasonic sensor
long measureDistance() {
```

```
  digitalWrite(trigPin, LOW);
  delayMicroseconds(2);
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin, LOW);
  long duration = pulseIn(echoPin, HIGH);
  long distance = (duration * 0.034) / 2;
  return distance;
}

// Function to rotate servo for scanning
void scanServo(int angle) {
  myServo.write(angle);
  delay(500);
}

// Function to move the rover forward
void moveForward() {
  digitalWrite(leftMotorPin1, HIGH);
  digitalWrite(leftMotorPin2, LOW);
  digitalWrite(rightMotorPin1, HIGH);
```

```
  digitalWrite(rightMotorPin2, LOW);
}

// Function to stop the rover
void stopRover() {
  digitalWrite(leftMotorPin1, LOW);
  digitalWrite(leftMotorPin2, LOW);
  digitalWrite(rightMotorPin1, LOW);
  digitalWrite(rightMotorPin2, LOW);
}

// Function to turn the rover
void turnRover() {
  // Turn right for a short duration
  digitalWrite(leftMotorPin1, HIGH);
  digitalWrite(leftMotorPin2, LOW);
  digitalWrite(rightMotorPin1, LOW);
  digitalWrite(rightMotorPin2, HIGH);
  delay(500); // Adjust this delay as needed
  stopRover();
}
```

```
void setup() {
  // Pin configurations
  pinMode(trigPin, OUTPUT);
  pinMode(echoPin, INPUT);
  pinMode(leftMotorPin1, OUTPUT);
  pinMode(leftMotorPin2, OUTPUT);
  pinMode(rightMotorPin1, OUTPUT);
  pinMode(rightMotorPin2, OUTPUT);

  // Attach servo to pin
  myServo.attach(servoPin);

  Serial.begin(9600); // Start serial
communication
}

void loop() {
  // Scan surroundings using the servo
  long distance;
  bool obstacleDetected = false;
```

```
  for (int angle = 0; angle <= 180; angle +=
30) {
    scanServo(angle);
    distance = measureDistance();
    Serial.print("Distance at ");
    Serial.print(angle);
    Serial.print(" degrees: ");
    Serial.println(distance);

    if (distance < 30) { // If an obstacle is
within 30 cm
      obstacleDetected = true;
      break;
    }
  }

  if (obstacleDetected) {
    // Stop the rover and turn
    stopRover();
    delay(1000);
```

```
    turnRover();
  } else {
    // No obstacle detected, move forward
    moveForward();
  }
}
```