

# Introduction to the Obstacle Avoiding Car Project

In this project, we'll build an obstacleavoiding car using a Chassis Car Kit, Ultrasonic Sensor, Servo Motor (SG90), L298n motor driver module, and an Arduino UNO. This autonomous vehicle can detect and navigate around obstacles, making it a versatile and practical project for both beginners and experienced hobbyists.



# Components and Materials

1

## Chassis Car Kit

Provides the base structure and wheels for the car.

2

## Ultrasonic Sensor

Detects the presence and distance of obstacles in front of the car.

3

## Servo Motor (SG90)

Allows the Ultrasonic Sensor to rotate and scan for obstacles.

4

## L298n Motor Driver

Controls the speed and direction of the car's motors.

5

## Arduino UNO

The brain of the project, responsible for processing sensor data and controlling the car's movements.

# Building the Obstacle Avoiding Car

## Assembly

Carefully assemble the chassis, motors, and wheels following the instructions provided with the Chassis Car Kit.

## Wiring and Connections

Connect the Ultrasonic Sensor, Servo Motor, and Motor Driver to the Arduino UNO, creating a cohesive electrical system.

1

2

3

## Sensor Integration

Mount the Ultrasonic Sensor and Servo Motor on the car's front, ensuring they can rotate and scan for obstacles.

# Principle of Arduino UNO

## Programming

The Arduino UNO can be programmed using the Arduino IDE, which provides a user-friendly interface for writing, compiling, and uploading code to the board.

The brain of the project, responsible for processing sensor data and controlling the car's movements.





# Principle of Ultrasonic Sensor

Detects the presence and distance of obstacles in front of the car.



# Principle of Servo Motor



## Angular Positioning

Allows the Ultrasonic Sensor to rotate and scan for obstacles.

Servo motors can be commanded to rotate to a specific angle, typically within a 0-180 degree range, enabling the sensor to cover a wide field of view.



# Principle of L298n Motor Driver

Controls the speed and direction of the car's motors.



# Programming the Arduino UNO

1

## Sensor Readings

The Arduino UNO reads distance data from the Ultrasonic Sensor and processes it to determine the presence and location of obstacles.

2

## Motor Control

Based on the sensor data, the Arduino UNO sends control signals to the L298n motor driver to adjust the speed and direction of the car's motors.

3

## Servo Control

The Arduino UNO also controls the Servo Motor to rotate the Ultrasonic Sensor, allowing it to scan for obstacles in a wider field of view.

**Video Link: [Click Here](#)**