**Smart Gesture Controlled Robot-**

The gesture controlled car project was initiated with the goal of designing and developing a car that can be controlled using hand gestures. The project aims to demonstrate the feasibility of using gesture recognition technology for automotive applications, with potential applications in both consumer and industrial settings.

Hardware Development: The hardware consists of the following components:

- Apart from the chassis and wheels, the car itself consists of:

1. An NRF24L01 transceiver module to act as a receiver.
2. An Arduino UNO to read the signals received and give corresponding signals to the motor driver.
3. L298N Dual H Bridge motor driver, to control the motors attached to the wheels.
4. Four single axis gear reducer motors.

The gesture control system fitted on a glove, which includes:

1. An MPU6050 accelerometer to detect orientation of the hand.
2. An arduino to read the Accelerometers signals and communicate through a bluetooth module.
3. An NRF24L01 transceiver module to serve as a transmitter.

Software Development:

- We need a software program that captures and processes real-time acceleration of the hand to recognize hand gestures and serve as the transmitter unit.

-We then need a program that takes the accelerometer readings and maps them to the motion of the car in a particular direction.

- The car can be controlled remotely through a bluetooth module , enabling users to control car motion by various hand gestures .

Breadboard,

Arduino,

Accelerometer,

HC-05 Bluetooth Master Module,

Switch Male to Male Jumper Wires,

Hard Jumper Wire,

Battery clip Battery 9v Arduino UNO,

DC Gear Motor x 4,

Motor Driver,

HC-05 Bluetooth Module, 4Pc (1 for each wheel)

Nuts and Bolts, On/Off Switch,

Battery Holder - 2 Cell, Battery Cell x 2