Course No: CSE 3216

Project Title: GESTURE CONTROLLED ROBOT

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OVERVIEW:

In this project we have used hand motion to drive the robot. Our project consists of two parts. One part includes a gloves. We will use this to control our robot. We implement a circuit on the upper portion of the gloves which main components are accelerometer, RF Transmitter and Arduino Nano. Second part is the Car. Our motion of hand will generate some data on the circuit which we implement on the gloves. Then it will send to the car via RF Transmitter. This data will be received by RF receiver which we have used in our car. According to that our car will move.

FEATURES OF THIS PROJECT:

- A gesture controlled robot is controlled by using hand in place of any other method like buttons or joystick.
- When we tilt hand in upward, robot start to moving forward and continues moving forward until next command is given.
- When we tilt hand in downward, robot change its state and start moving in backwards direction until other command is given.
- When we tilt it in left side Robot get turn left till next command.
- When we tilt hand in right side robot turned to right.
- Finally for stopping robot we keeps hand in stable.

All these tasks will be performed by using hand gesture.

Components:

Our project consists of two different circuits. The components we have used in our project are given below:

Transmitter Part (Implemented on Gloves):

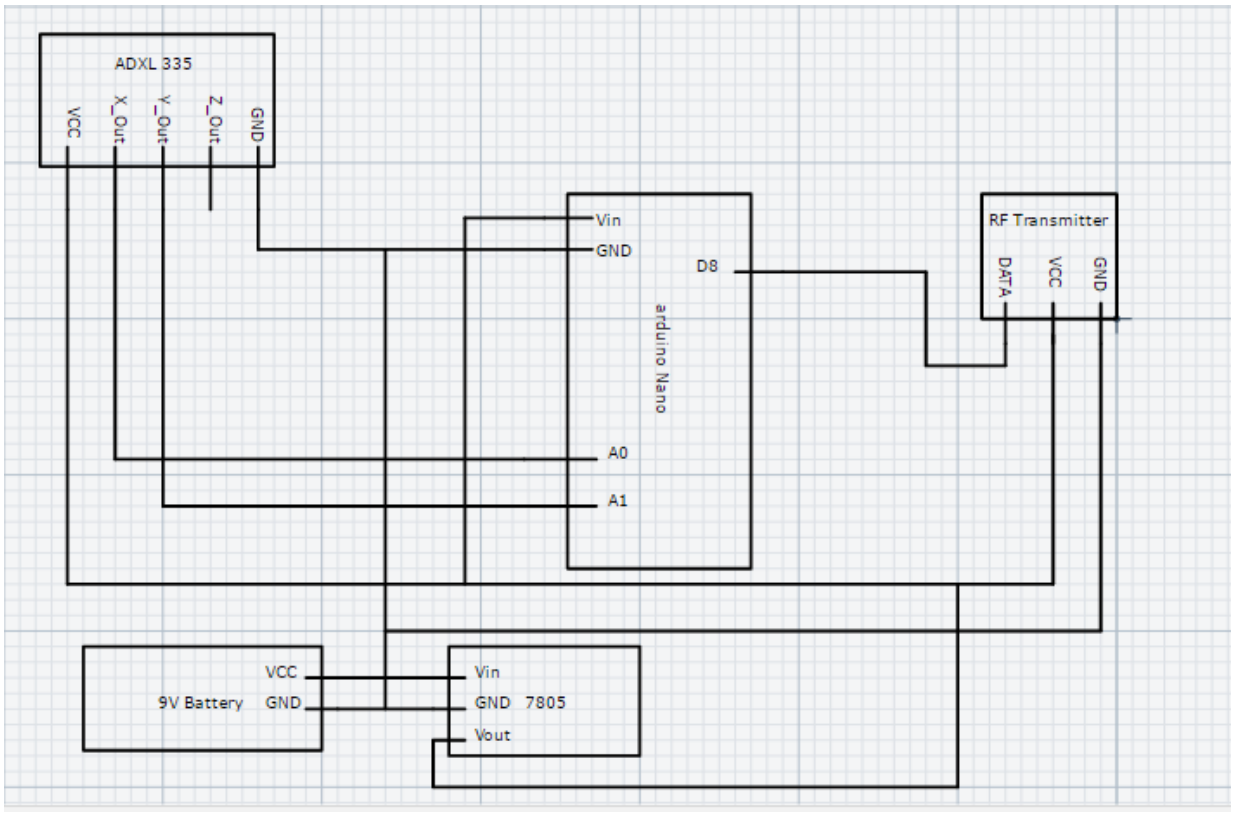
1. Arduino Nano
2. RF transmitter
3. ADXL-335 (Accelerometer)
4. 7805 IC
5. 22 Micro ohm Capacitor
6. Bread Board

Receiver Part (Implemented on the Car):

1. Arduino Mega
2. Two wheeled robot chassis
3. L298N(Motor Driver)
4. RF receiver
5. Two motors
6. 7.4 volt LIPO Battery
7. Bread Board

Connection/circuit diagram:

Transmitter Part:



Receiver Part:

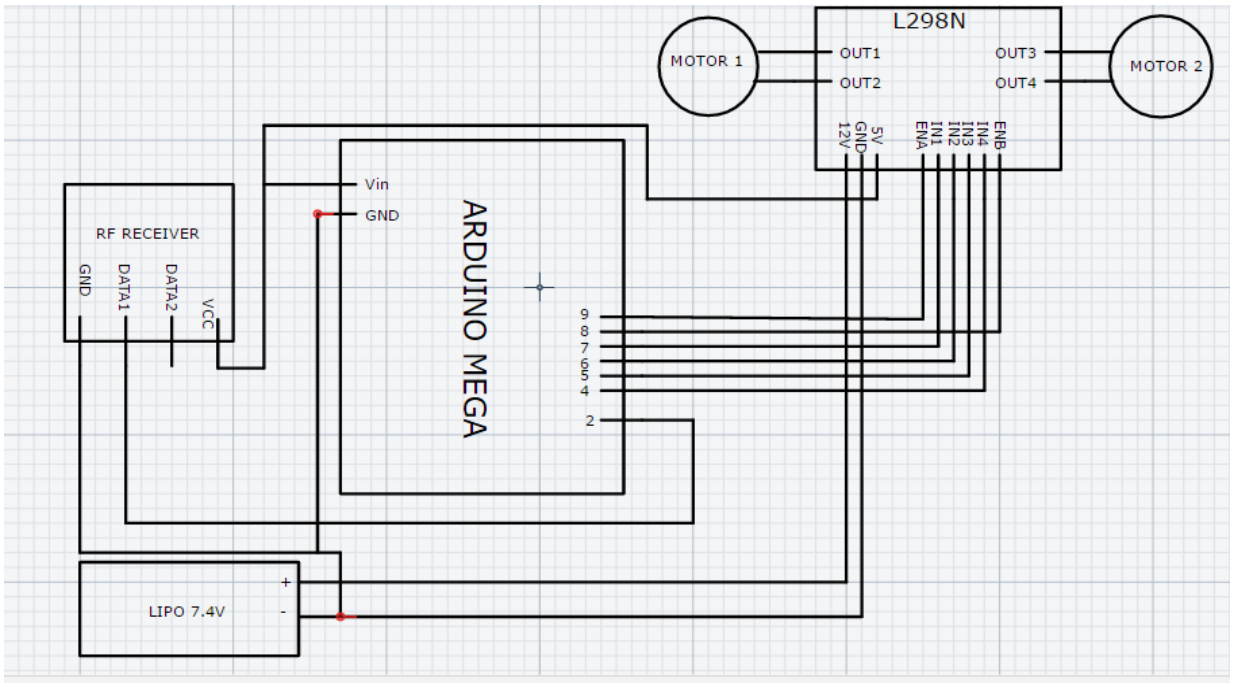
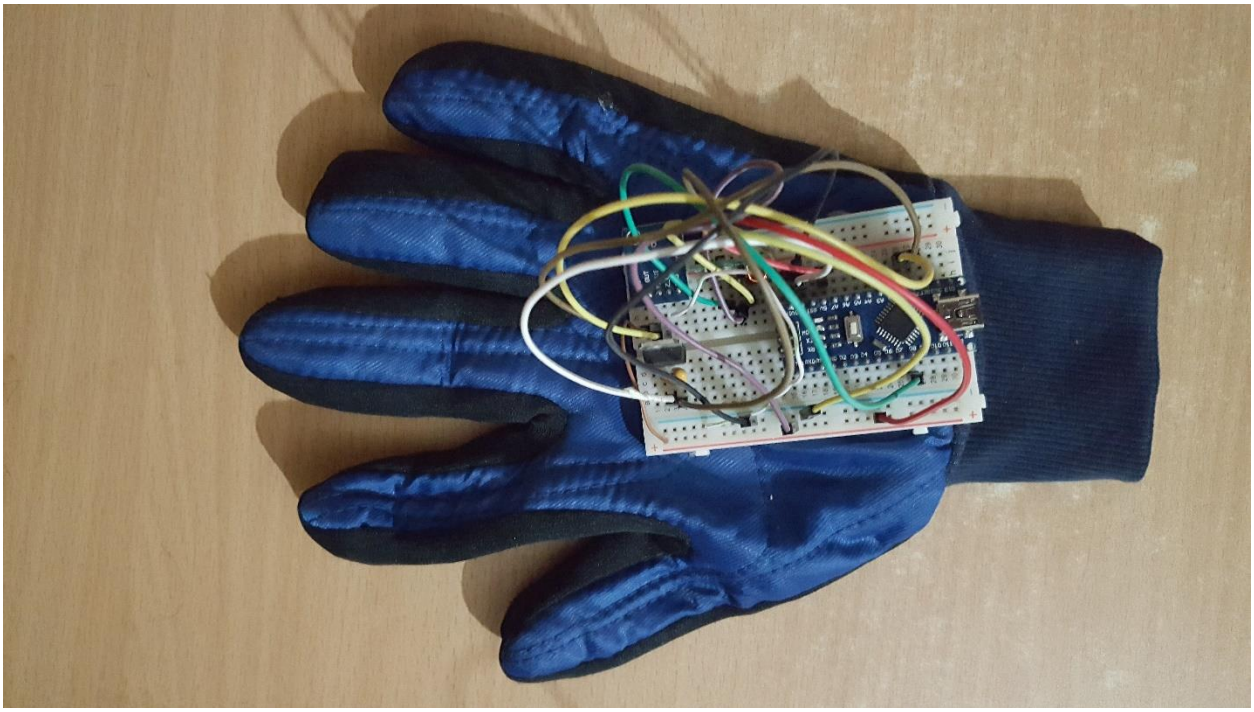
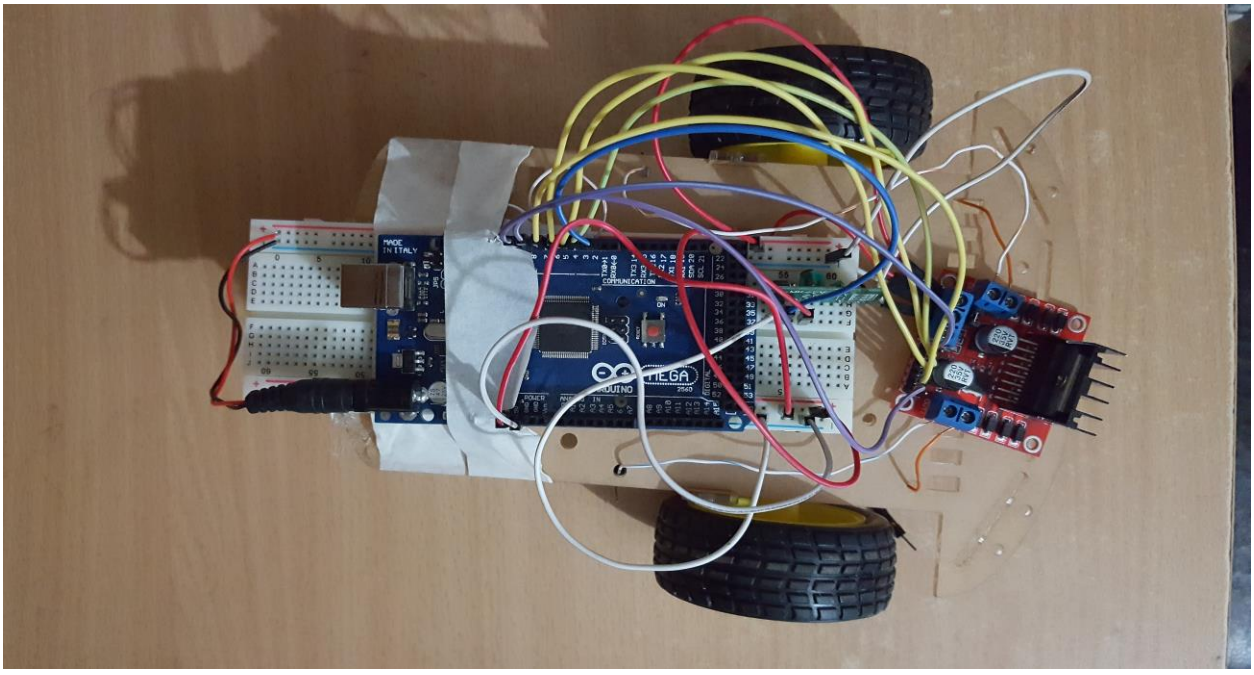


Image of the final project:

Transmitter Part:



Receiver Part:



Possible Future work:

As we have learned how to control a device using the movement of a hand, in future we can implement a robotic hand on the car. We can also control the robotic hand by the movement of our hand. We will add some controller switch to control the car and the hand. If the car switch is active then we can move the car using the movement of our hand. By another switch we will activate the control of the robotic hand. The hand will also move according the movement of our hand. It will help us to do some critical task in risky place where the presence of human is dangerous.