GESTURE CONTROLLED BOT
(Accelerometer based)
By team

A gesture controlled bot is controlled movement of an accelerometer fitted in a steering wheel which can make bot turn left or right or move it toward forward or backwards as per your command bot also contains ultrasonic sensors which prevents bot from colliding to a wall or to get into a pit

Features

➢ Works with steering movement (gesture)

➢ Speed of bot controlled by angle of inclination of steering

➢ Beeps when getting a wrong command (command to move towards an obstacle.)

Working of bot

➢ Accelerometer- movement of accelerometer provides components of g(acceleration due to gravity) in x,y and z directions which is sent to Arduino uno.

➢ Ultrasonic sensor- it gives the distance of nearest object from it (between 2cm to 3 m) here it is used to prevent our bot to collide to a wall, this measured distance is sent to Arduino board.

➢ RF module-It contains a transmitter and a receiver. It uses radio waves to connect two Arduino boards. Transmitter sends radio signals (Encoded by Arduino) which are received by receiver (decoded by 2nd Arduino board).

➢ Arduino Uno- It is the main component of our project which is loaded with our code. Two Arduino boards are used in this project (one in the bot itself and other one in steering wheel). The one with the bot processes data coming from ultrasonic sensors and receiver and 2nd one processes data coming from accelerometer and according to our written code it sends corresponding data to transmitter which then wirelessly sent to receiver.

Timeline

- Week 1 & 2 – Electrical Part (Connections)
- Week 3 – Mechanical Part (Chassis and steering wheel)
- Week 4 – Coding Part (For both the Arduini)
- Week 5 – Testing

Components required

Ultrasonic sensors(4), Arduino Uno(2), ADXL335 Accelerometer, RF Module, Motors(2), Jumper Wires, Wheels(3), Battery(2)