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ARDUINO PROJECT

Our project is a small car based on Arduino platform which can be controlled using Bluetooth and a Android app.

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INTRODUCTION

In this project we have used a toy car for demonstration. Here we have selected a RF toy car with moving left right steering feature. After buying this car we have replaced its RF circuit with our Arduino circuit. This car have two dc motors at its front and rear side. Front side motor is used for giving direction to car means turning left or right side (like real car steering feature). And rear side motor is used for driving the car in forward and backward direction. A Bluetooth module is used to receive command from android phone and Arduino UNO is used for controlling the whole system.

PROJECT REVEIW

This project consists of presenting a didactic robot from a line-following Arduino robot car using the IR sensor modules, the ultrasonic sensor among other components, as well as the assembly of its mechanical structure.

The project is basically constituted by a physical structure similar to a simple vehicle, responsible for supporting the electronic components that will process the signal to make the robot move according to the path it must follow. Figure 2 illustrates the robot's internal region.

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BLUTOOTH CONTROLLED

After developing few popular robotic projects like line follower robot, edge avoiding robot, DTMF robot, gesture controlled robot, etc. in this project we are going to develop a bluetooth controlled robo car. Here we used a Bluetooth module to control the car, and it is also an android based application.

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LINE FOLLOWER

The concept of working of line follower is related to light. We use here the behavior of light at the black and white surfaces. When light falls on a white surface it is almost fully reflected and in the case of a black surface light is completely absorbed. This behavior of light is used in building a line follower robot.

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COMPONENTS

1. Toy Car
2. Arduino UNO with Cable
3 . Bluetooth Module
4. Gear Motor
5. Motor Driver
6. Motor Wheels
7. Wire’s
8. Battery
9. Sensor’s
10. Actuator’s
11. Bridge Rectifier
12. Electrical instruments
13. Bluetooth Controller App
14. Android device
15. Arduino IDE
16 . VS Code

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CONNECTIONS

- Setup Connection

In this connection is only simply like joining all part to toy car.

- * Pin or Physically Connection

Here, I want to tell one important point that, The code that will be given should be uploaded before connection of the pins; else you will face an error in uploading the code, so, just first copy the code provided below and pasted in the Arduino software and upload it to the board before the pin connections.

- * Power Connection

In this connection is electrical connection for battery and his charge and bridge rectifeir connection.

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CODING

* Arduino Code

First install the Arduino software. Installation instructions are very simple, you should not have any trouble with this step. The code at the master device, or the joystick is quite simple. We just need to read the X and Y values of the joystick, which actually regulate the speed of the motors, and send them via the serial port to the slave HC-05 Bluetooth device. We can note here that the analog values of joystick from 0 to 1023 are converted into a values from 0 to 255 by diving them by 4.

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* Android App Code

Create a separate thread in your code to initiate a connection using the MAC Address that we previously obtained. This thread will manage what happens if a connection is successfully established or failed to be established. It also handles if we want to close the Bluetooth connection.

Create a new project with the empty activity template and select the appropriate name for your app. For this app we will create 2 activities and 2 Java classes :

*Web App Code

This web for all information of my project and ppt srs and known my group members. If you have any problem then contact our group member. click here for checking my website.

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OBJECTIVE

This project's main motive is to expand the knowledge for smart micro-controllers like Arduino, which is widely used in the latest IoT technologies.

Making the use of Connectivity Modules like Bluetooth HC-05, to understand the different modes of operating and communications with the micro-controller board.

To get familiar with Codes and programs used for the controlling of the Arduino Uno board.

Introductory project for Every Electronics And Electrical Student, to get the working of the Arduino board and its software.

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