

WIFI CONTROL ROBOT

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ABSTRACT

Robots are a staple on the modern society .Their application are far reaching and can encompass a variety of different machines. Nowadays robots are everywhere as a step ahead we entered into the custom robotics. There are many different types in custom robotics here we saw simple load carrying custom robot.It is a four wheel robot its connected with motors. Its four wheel drive robot. However to make the best use of robot. The behaviors of the robot needs to tailored to learning of object. Robot can carry a load above its weight. Thus we are going to make a custom bot is capable of moving in all areas by even caring a load of its own weight. They are used in the manufacturing industry to perform repetitive or difficult tasks.

KEYWORDS: Arduino IDE, Node MCU, Motor Drive.

1. INTRODUCTION

This robot is controlled by motor drive and node mc devices have transmitters and receivers to make the job. The transmitter (mobile hotshot) send the command to receivers. The input command are processed by components and jobs done by custom bot .Some also use the term industrial Internet interchangeably with IoT. Specialize in robotic solutions for the home with our snow removal robots, remote controlled lawnmowers and even a robotic cooler to provide you with refreshment and entertainment. In the military travel and operate in dangerous areas and in medical industry to assist in procedures.

2. NECESSITY OF THE PROJECT

Consideration for over all safety must be taken into account in order to reduce potential injuries. Since communication between the robot and the controller is wireless, robots can perform effectively. The new design must allow the robot to manipulate.

3. COMPONENT DESCRIPTION

3.1 PIN DIAGRAM OF NODE MCU (ESP 8266):

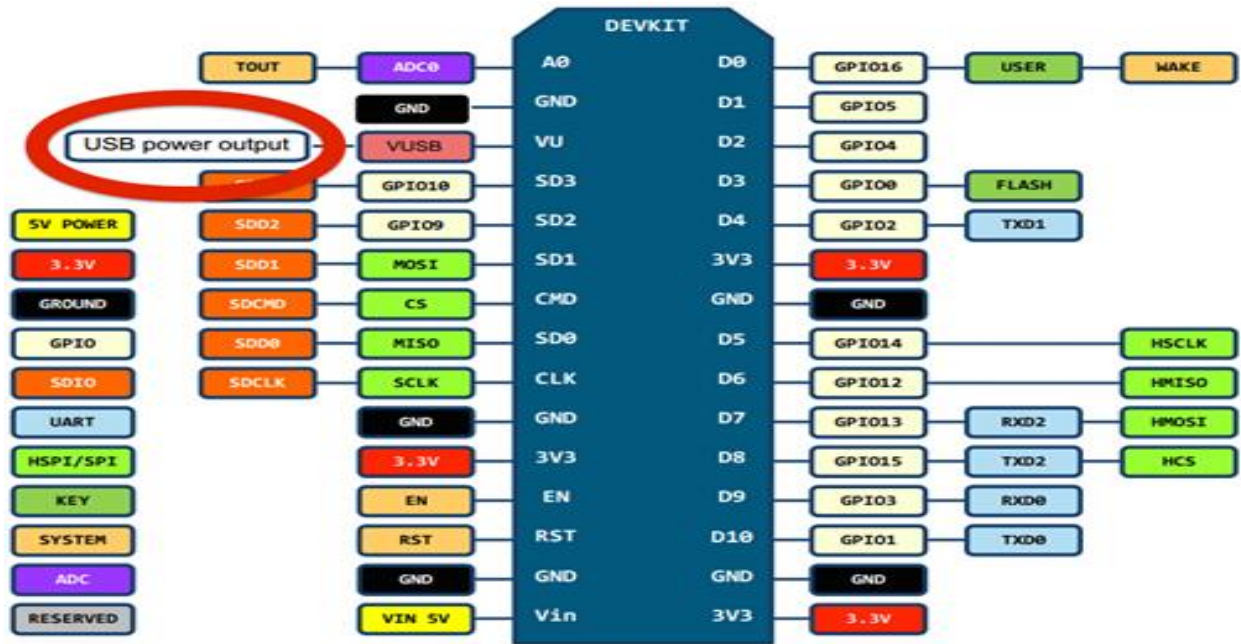


Fig -1 pin diagram

Node mcu is an open source IoT platform. It includes firmware which runs on the esp8266 wifi SoC from Espressif system and a hardware which is based on the esp12 module. The term node mcu by default refers to the firmware rather than the dev kits.

Developer	ESP8266 Open source Community
Type	Single-board microcontroller
Operating system	XTOS
CPU	ESP8266(LX106)
Memory	128kBytes
Storage	4Mbytes
Power	USB

Table_1:Specification of node mcu

3.2ALUMINIUM CHASSIS

The aluminum chassis provides the best of both worlds when it relates to chassis design and manufacturing. A chassis, being the frame of the vehicle has to be rigid or strong to absorb and retain movements and vibrations from the engine, suspension and axles.

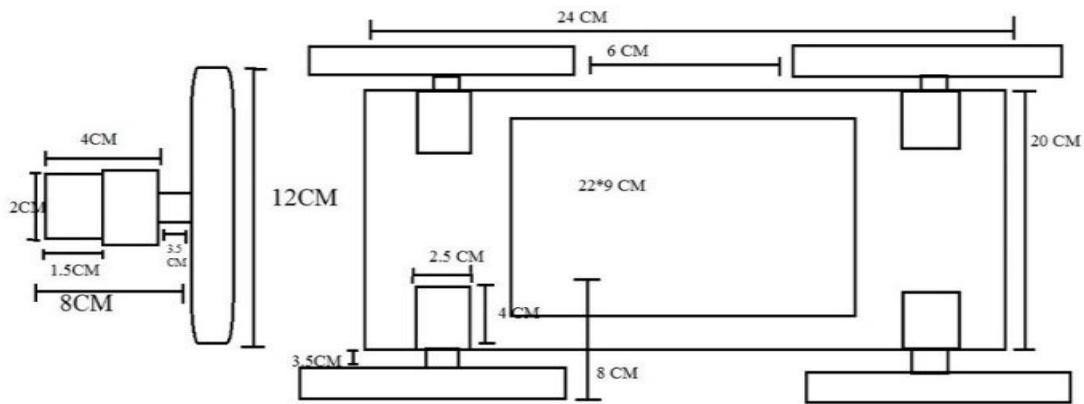


Fig-2 Block diagram

Pure aluminum weighs around one third the weight of steel but pure aluminum is not always used for chassis components the chassis does not only mean the frame itself. Other parts of some high end vehicles where aluminum makes an appearance is the front and rear axles and suspension components.

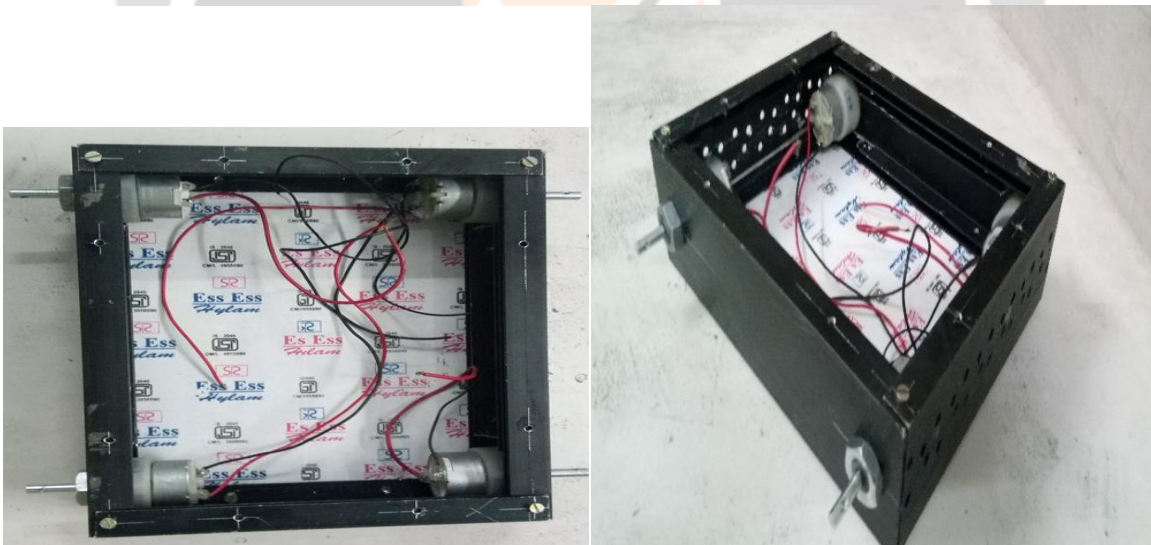


Fig -3 : Aluminum Chasis with DC Motor

3.3 NODE MCU-esp8366:

It is based on the project, and built on the Espressif Non-OS SDK for ESP8266. It uses many open source projects, such as lua-cjson, and, and spiffs.

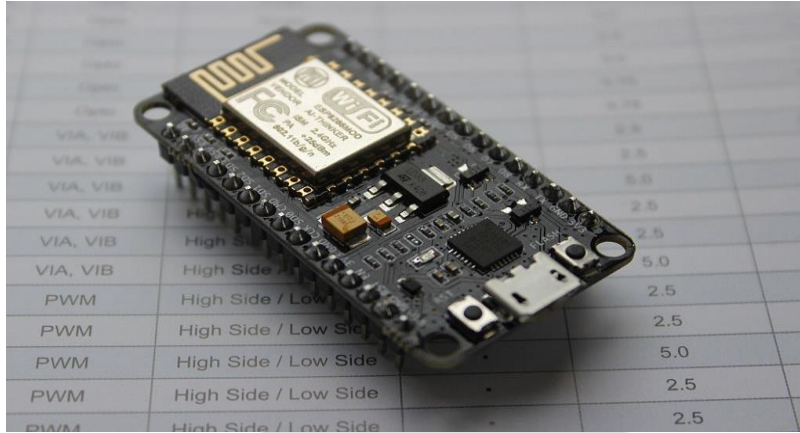


Fig-4 :Node MCU

3.4 Motor Drive-L293D:

L293D is a typical Motor driver or Motor Driver IC which allows DC motor to drive on either direction. L293D is a 16-pin IC which can control a set of two DC motors simultaneously in any direction. It means that you can control two DC motor with a single L293D IC. Dual H-bridge *Motor Driver integrate circuit (IC)*.

The L293d can drive small and quiet big motors as well, check the Voltage Specification at the end of this page for more info.

- L293D is a quadruple high-current half-H driver. The L293D is designed to provide bidirectional drive currents of up to 600-mA at voltages from 4.5 V to 36 V.
- All inputs are TTL compatible. Each output is a complete totem-pole drive circuit, with a Darlington transistor sink and a pseudo-Darlington source.
- Drivers are enabled in pairs, with drivers 1 and 2 enabled by 1,2EN and drivers 3 and 4 enabled by 3,4EN.
- When an enable input is high, the associated drivers are enabled and their outputs are active and in phase with their inputs.
- When the enable input is low, those drivers are disabled and their outputs are off and in the high-impedance state.
- A VCC1 terminal, separate from VCC2, is provided for the logic inputs to minimize device power dissipation.

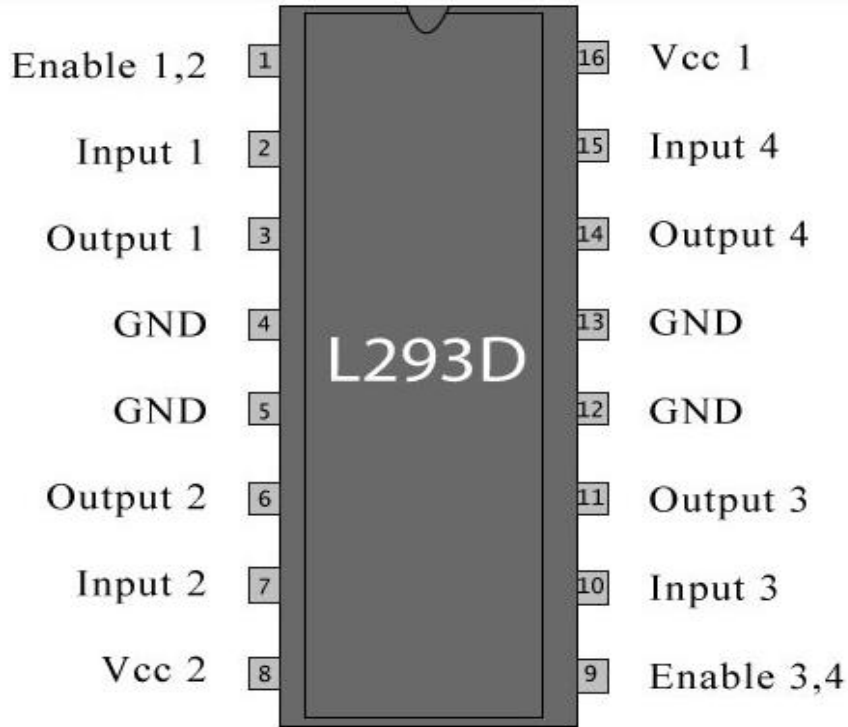


Fig-5: Pin Diagram (Motor Drive- L293D)

4. WORKING PROCESS

In DESIGN AND FABRICATION OF CUTOM BOT basic concept is custom bot is controlled by mobile phone via hotspot. The custom bot is controlled by specific phone application. Node mcu-esp8366 Wi-Fi module main function is connect the mobile phone with custom bot via hotspot. The program needs to be downloaded from a web server, in the run. That means, you must have an online connection to the Internet. For development purpose that is welcome, but for normal operation it is cumbersome. The robot control is difficult, because the motors starts turning from above 600 (control range 0.1023) on, and stop at below 300. This was not taken into consideration.

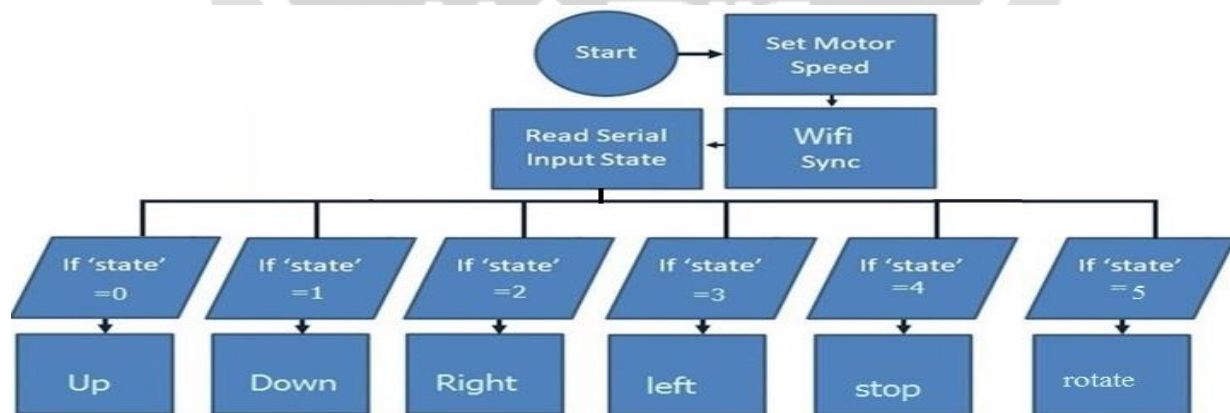


FIG 5.1 Conditions for Working

6. FUTURE SCOPE

Wifi will be a key access technology for Internet of Things enablement due to cost coverage and bandwidth, challenges with mobile cellular which can be compromised through wifi.

7. RESULT AND DESCUSSION

In this project the movement is controlled through the robotic technology .which is also in addition to the advantage of getting it through the wifi module.

8. CONCLUSION

The project carried out by using the node mc and motor drive in the field of mechatronics department. New things and new technology are being invented. As the technology grows day by day, it can imagine about the future in which thing may occupy every place. User friendly and less complex, which can readily be used in order to perform. Several tedious and repetitive tasks. Though it is designed keeping in mind about the need for industry, it can extended for other purposes such as commercial and research application. The chassis of robot made by aluminium it give the efficiency and more speed to robot. The command coding are entered in robot it is very easy to understand. Though it is designed keeping in mind about the need for industry, it can extended for other purposes such as commercial and research application.

9. REFERENCE

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