AUTOMATED VOICE CONTROLLED CAR USING ARDUINO & BLUETOOTH

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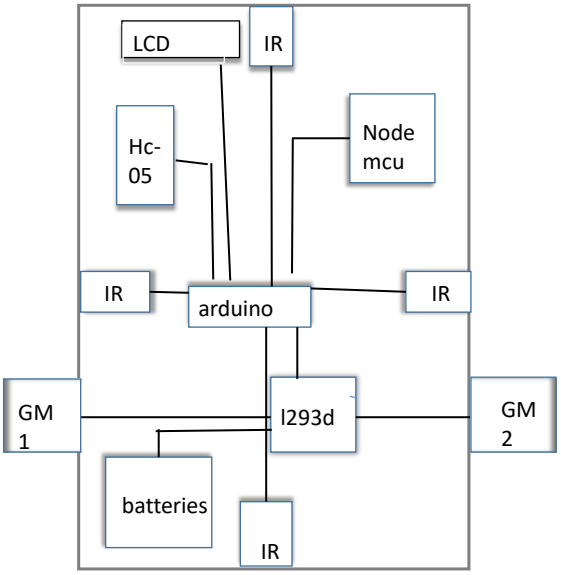
Abstract*:* We are now living in the 21st century. Now, smart phone has become the most essential thing in our daily. life. This project describes how to control a robotic car using mobile through Bluetooth communication. We present a review of robotic car controlled by mobile phone via moving the car forward, backward, left and right side by the android application such as Arduino, Bluetooth .Robotic cars have designed to reduce human effort and to reduce human effort.

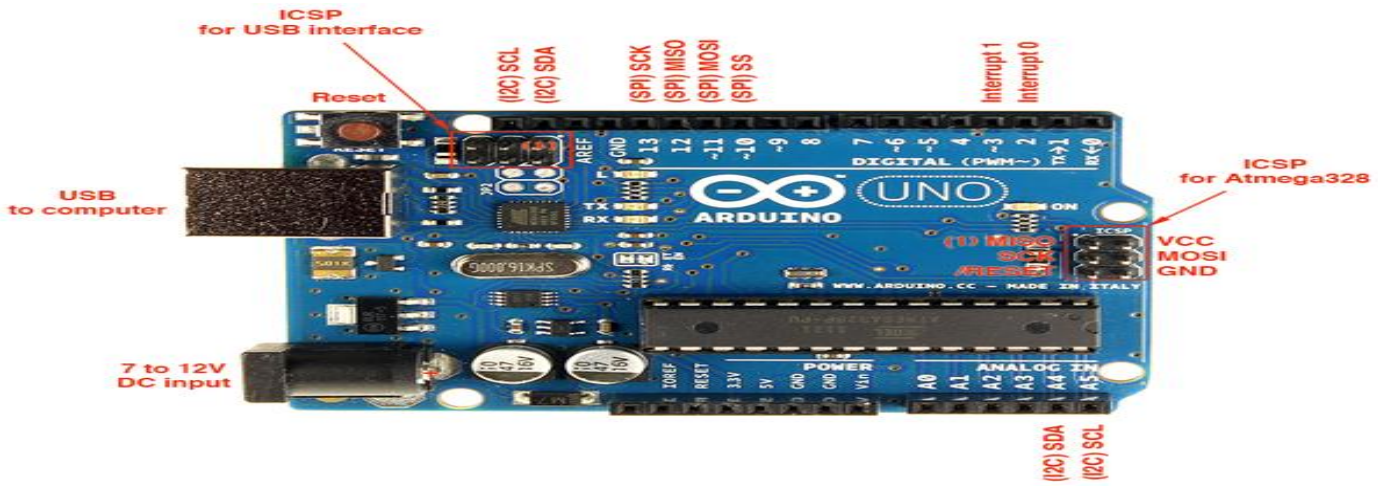
ARCHITECTURE:



MODULES:

ARDUINO:

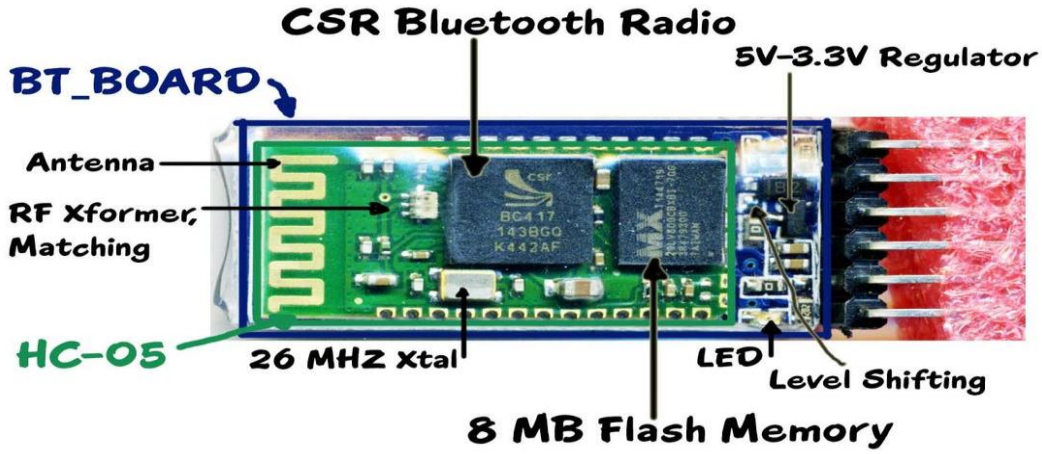
The Arduino Uno is a microcontroller board based on the ATmega328. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, and a reset button.



BLUETOOTH(HC05):

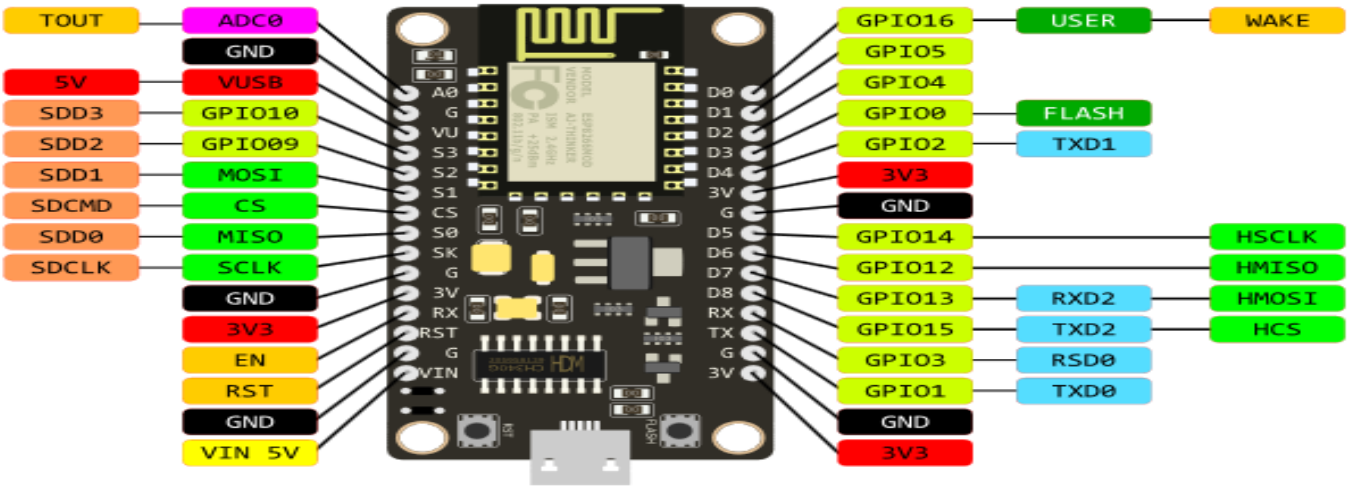
Bluetooth is a wireless technology standard for exchanging data over short distances (using short-wavelength UHF radio waves in the ISM band from 2.4 to 2.485 GHz) from fixed and mobile devices, and building personal area networks (PANs).

2400–2483.5 MHz Operating frequency.



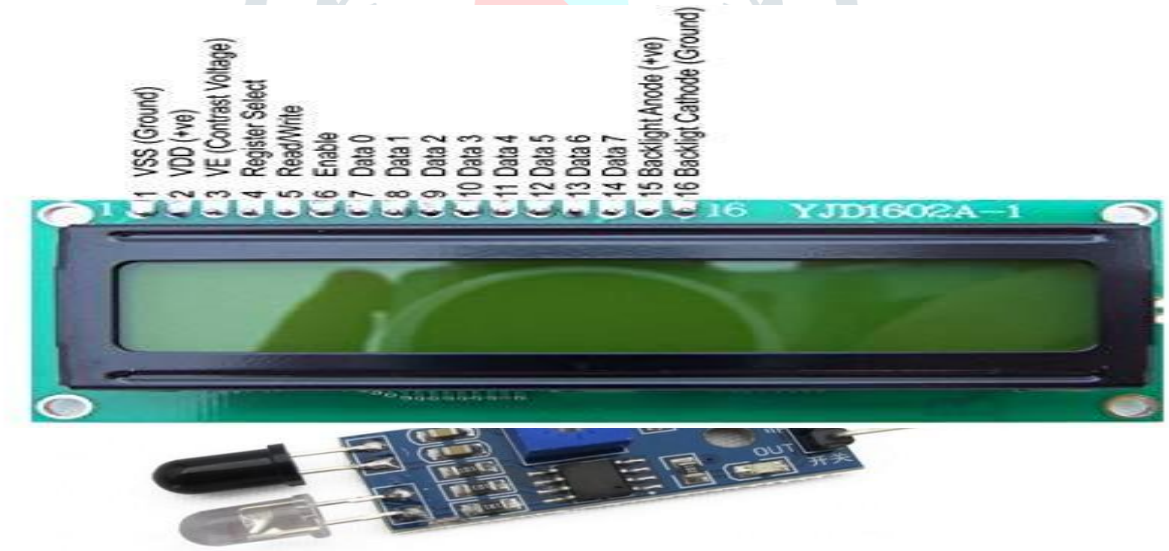
NODE MCU:

NODE MCU is an open source IOT platform. It includes firmware which runs on the ESP8266 Wi-Fi SOC from Express if Systems, and hardware which is based on the ESP-12 module



LCD(LIQUIDCRYSTALDISPLAY):

The LCD is used for the purpose of displaying the words which we are given in the program code. This code will be executed on microcontroller chip. By following the instructions in code the LCD display the related words. Below shows the LCD display.

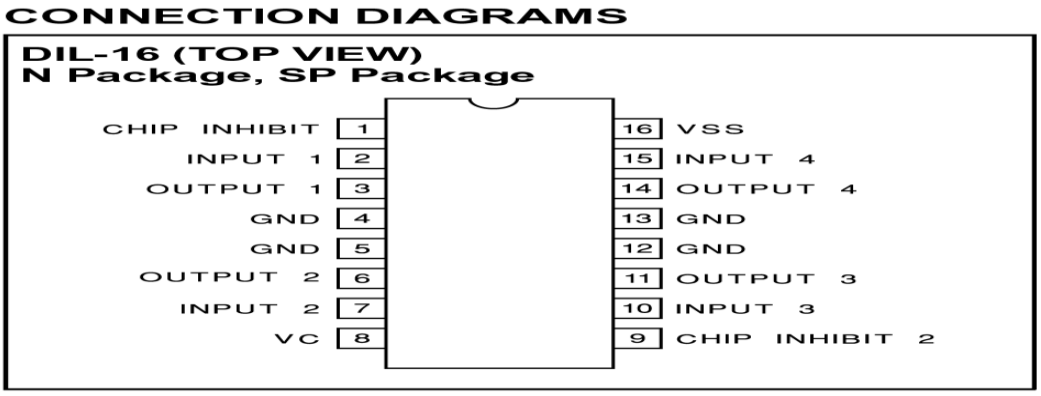


IRSENSORS:

Infrared transmitter is one type of LED which emits infrared rays generally called as IR Transmitter. Similarly IR Receiver is used to receive the IR rays transmitted by the IR transmitter. One important point is both IR transmitter and receiver should be placed straight line to each other.

L293D:

The L293 is an integrated circuit motor driver that can be used for simultaneous, bi-directional control of two motors.



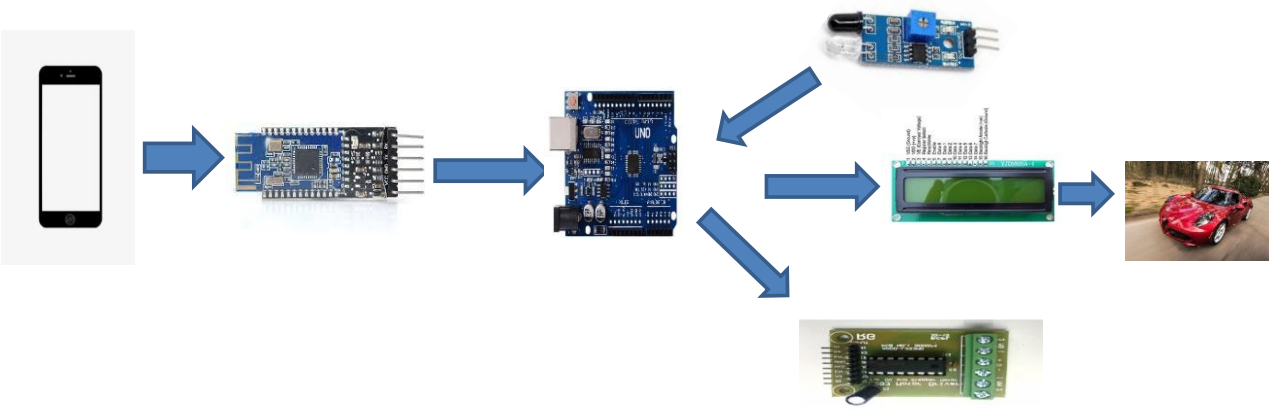
WORKING PROCESS:

STEP1

First we should pair Bluetooth Module With mobile. After we should give a command to Authentication. if it is matched it display matched command on LCD then car get started .if it is not matched it display command is not matched

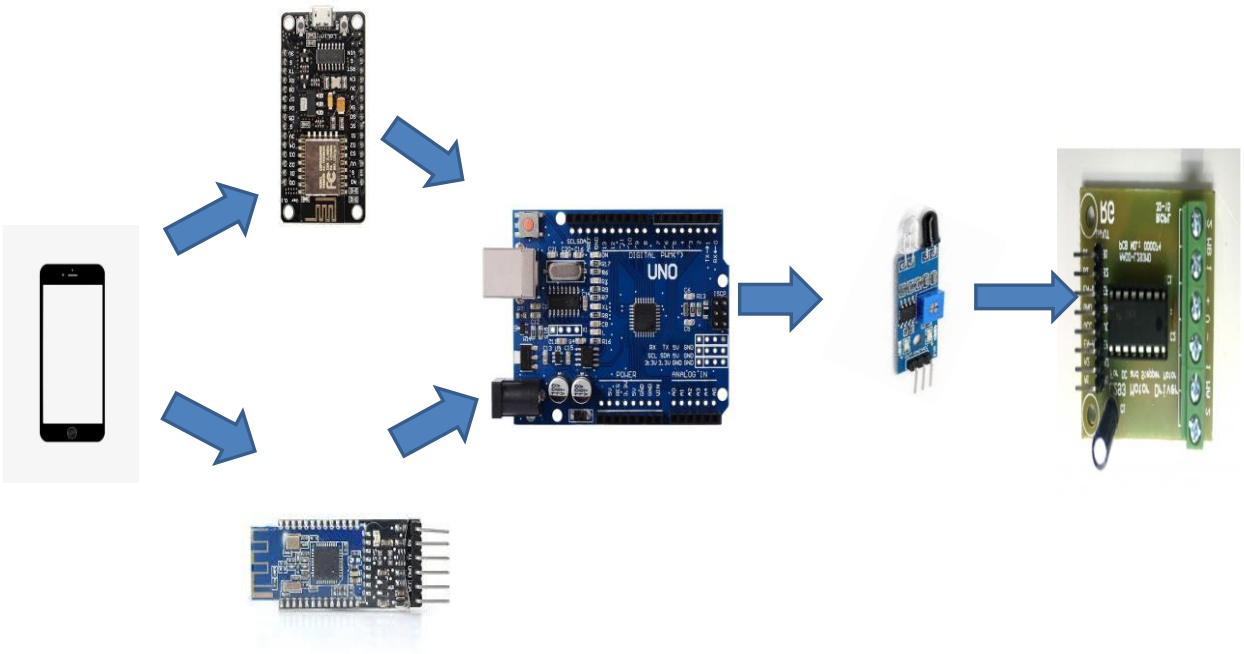
STEP2: In this Step we Should give a commands like 1(forward),2(Backward),3(Right),4(Left).and this commands are received by Arduino it checks whether the command is matched or not . if it is matched then it start moving in the given directions

- STEP3:In step three if any obstacle are surrounded by the car . then IR sensors get activated this sensors send signal to arduino and arduino which is connected to the L293Dmotors makes motors to stop power supply then car stop automatically.



WORKING WITH NODE MCU:

The Nodemcu is connected with mobile hotspot by the given ssid and password.
This uses an app called Blynk. In this we give text commands through Buttons.
Nodemcu(wifi module) is connected with the IR sensors.



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