ABSTRACT

As more and more people drive cars and vehicles, there is a corresponding increase in the number of fatalities that occur due to accidents. As these vehicles are increasingly being connected to the Internet of things (IOT), they form the Internet of vehicles (IOV). Thus, lov is the convergence of the mobile Internet and IOT. It is an emerging field for the automotive industry and an important part of the smart cities. This paper provides a brief introduction to Internet of Vehicles (IoV).

Keywords— Internet of vehicles, In-car Internet, connected cars, intelligent transportation systems, VANET

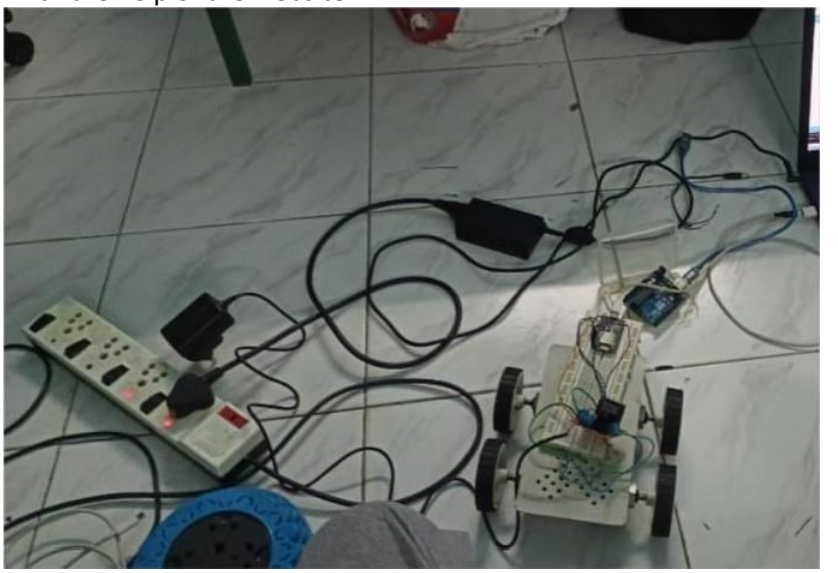
INTRODUCTION

With increasing urban population and rapid expansion of cities, vehicle ownership has been increasing at a rapid rate. There has also been an increase in the deployment of electric vehicles (EV), both fully electric and plug-in hybrids. There is a need for better communications and interconnectivity among these vehicles due to their mobility. As vehicles evolve from simple transportation means to smart entities with sensing and communication capabilities, they become an integral part of a smart city. Smart vehicles exhibit five features: self-driving, safety driving, social driving, electric vehicles, and mobile applications. The Internet of things (IOT) is a global network connecting smart objects and enabling them to communicate with each other. Whenever those smart objects being connected over Internet are exclusively vehicles, then 10T becomes Internet of Vehicles (IoV). Thus, lov is an extended application of 10T in intelligent transportation. It is envisioned to serve as an essential data sensing and processing platform for intelligent transportation systems. A vehicle will be a sensor platform, absorbing information from the environment, from other vehicles, from the driver and using it for safe navigation, pollution control, and traffic management. The Internet of Vehicles (IOV) consists of vehicles that communicate with each other as well as with handheld devices carried by pedestrians, roadside units (RSUs), and the public networks using V2V (vehicle-to-vehicle), V2R (vehicle-to-road), V2H (vehicle-to-human) and V2S (vehicle-to-sensor) interconnectivity thereby creating a social network where the participants are intelligent objects rather than the human beings. This leads to emergence of Social Internet of Vehicles (SIOV). Slov is essentially a vehicular instance of the social 10T (SloT). IOV may be regarded as a superset of Vehicular Adhoc Network (VANET) which originated from Mobile Ad-hoc Network (MANET). It extends

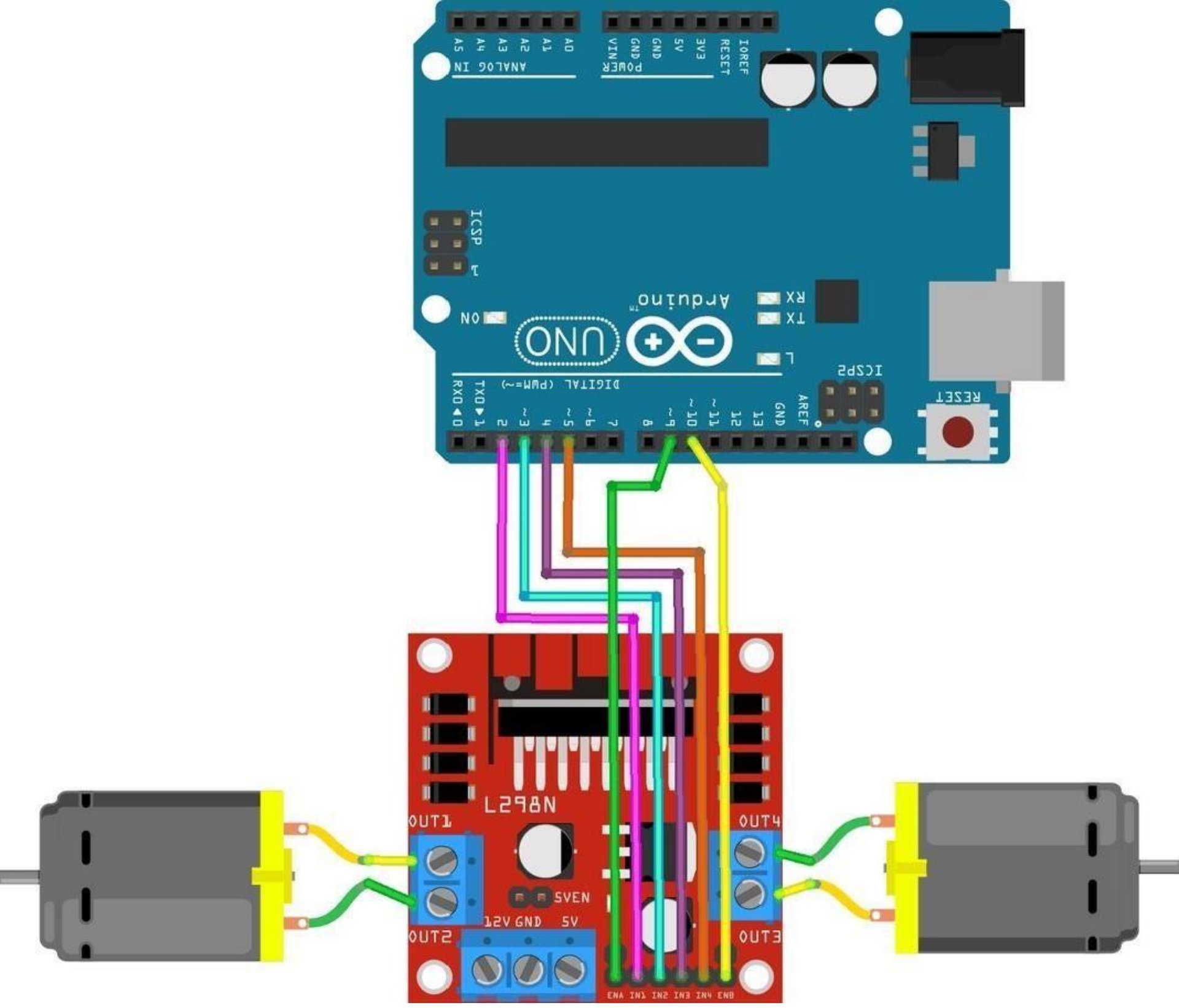
BODY OF REPORT

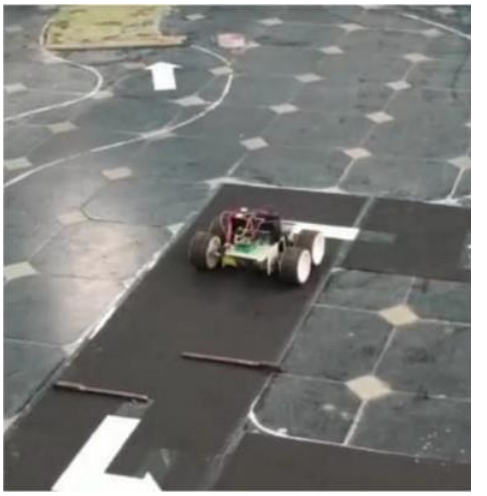
WIFI Control Car — Arduino Concept. We created a car that can be controlled via WIFI. If you host your IP address on a website, you can control it from anywhere in the globe, but we'll stick to local WIFI for now. So, let's get started. About the Node MCU and the Car Node MCU is an ESP-8266 microcontroller (MCU) similar to the 328P, except it has WIFI

incorporated into the ESP-8266. This is a fantastic resource for IOT newcomers. It can connect over WIFI and can function as a Hotspot. See the diagram above for the pinout. In the Arduino code, the GPIO numbers will be used. Now, in this situation, the Node MCU connects with my router and generates a local IP address, which we can enter into our mobile device or computer (both of which are linked to the same router) to see a webpage appear with various buttons that allow us to operate the automobile. You can now control the car with the help of the website.



Connections and Uploading Code Setup your chassis. Connect motors and wheels and the caster wheel with screws. Solder wires with motors and connect them to sockets of the driver. See the figure above and connect. Connect your motors as per your configuration. If you are connecting your motor for the first time with the L298N driver then at a first run a code for moving forward with the UNO. Then give a try to the right and then left. Backward will follow it. It will be just a case of digitalWrite(). Comment freely if you are not okay. Power is required for the Node MCU as well as the L298N. It will be better by using a different supply for the two things. Give 5V from the power bank at the Vin and GND of Node MCU. You can use 9V or 12V for L298N. The whole process is rather easy. See the pictures given in the report and refer to the pinout pic of Node MCIJ. You will understand it better. Opening Browser Get into the website from your device browser. You can see the following webpage. It's already been a host on a free domain site. Press any button and run the car, if not running, check the power supply given and for any loose connections happening. Do not give Node MCI-J beyond 5V. You can use 12V for the L298N. So now you can enjoy riding the WIFIcontrolled car.


ANALOG IN
POWER
ICSP
ON
Arduino
UNO
RX
TX
L
ICSP2
RESET
DIGITAL (PWM=~)
L298N
OUT1
OUT2
OUT3
OUT4
5VEN
12V GND 5V
ENA IN1 IN2 IN3 IN4 ENB



FUTURE WORK

Thus this car can be developed can further changing the chase of the car and reducing the weight drastically. Since weight is a greatest drawback for the motor rpm. And advanced sensor and light equipments can be attached further in this.

CONCLUSION

From the above context of this mini project we can understand the working flow of the ESP8266 IOT car. We made this for the competition held in our robotics club in our college which got us first prize it.

WIFI IOT RACE CAR

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