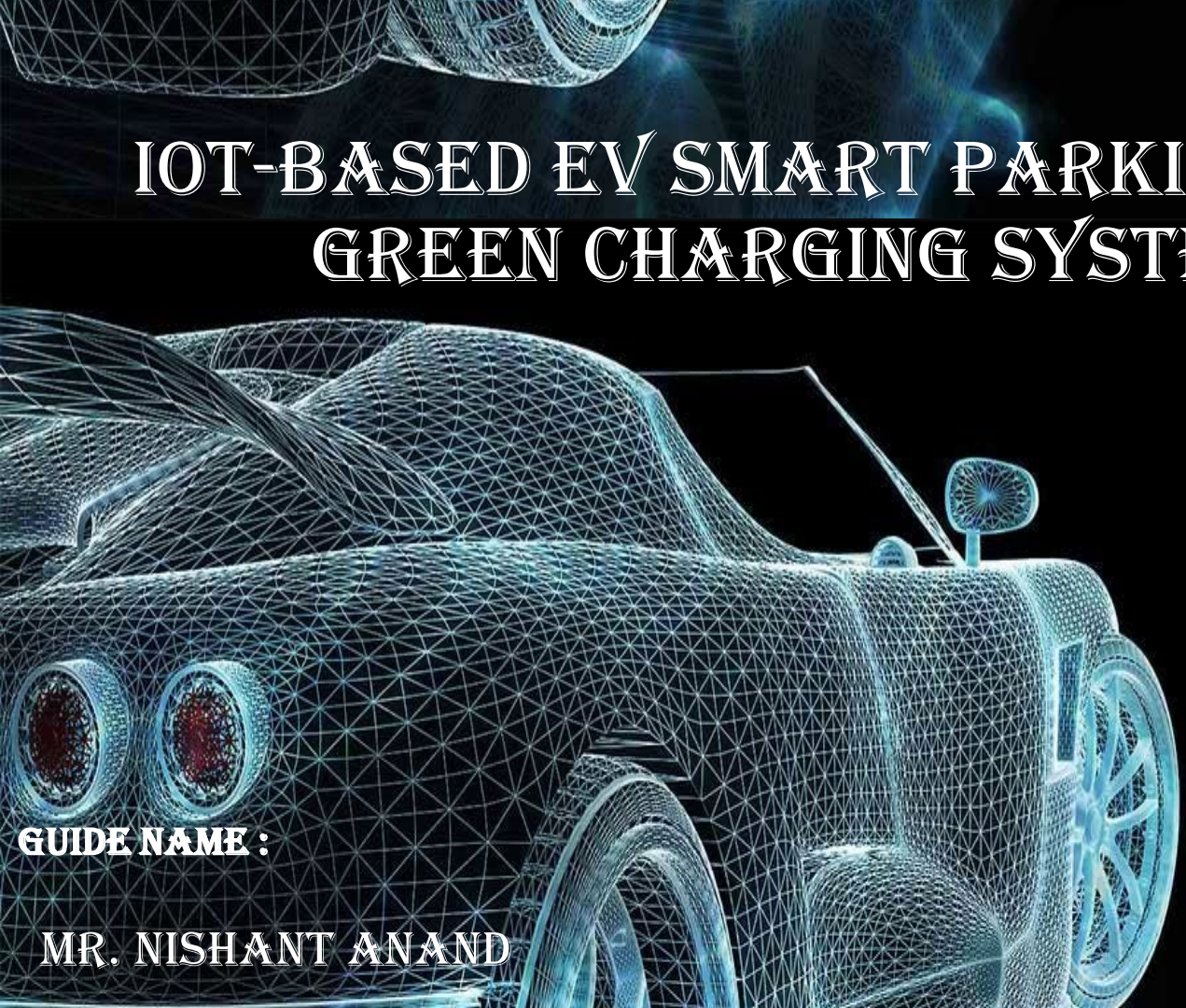
IOT-BASED EV SMART PARKING AND GREEN CHARGING SYSTEM



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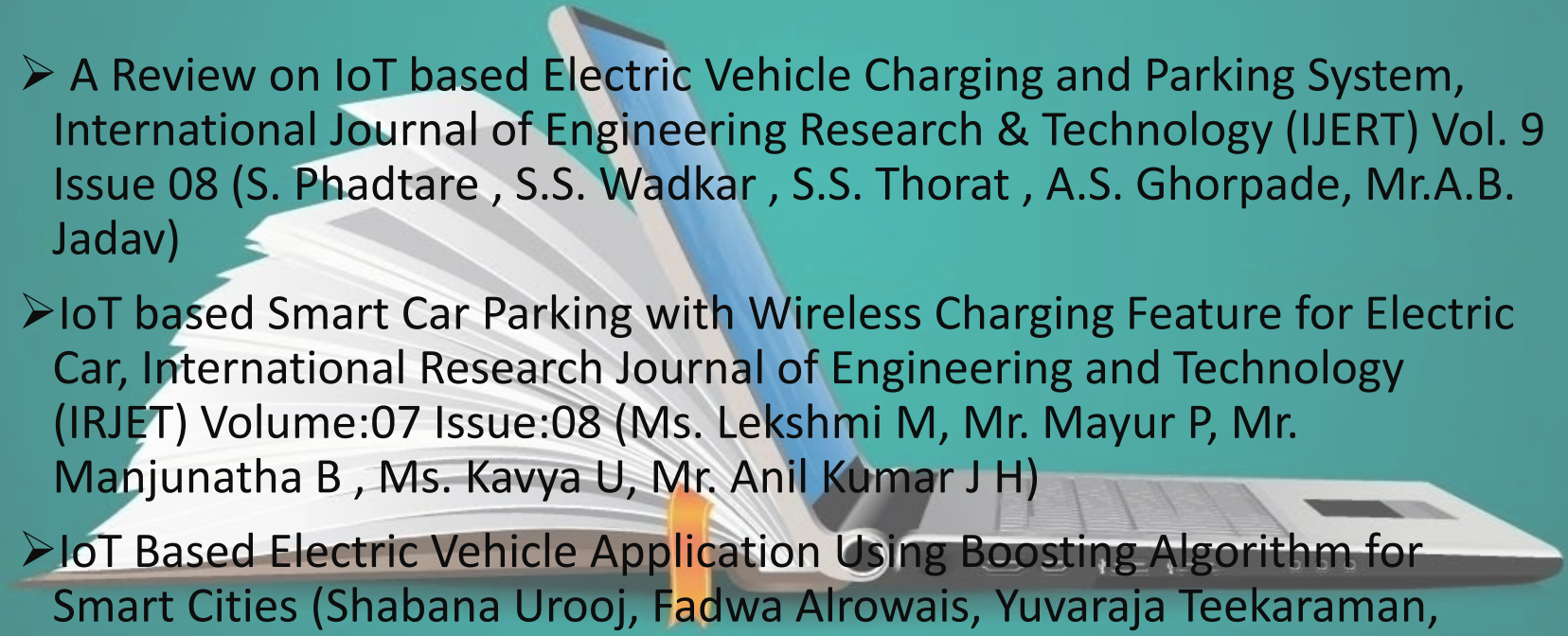
INTRODUCTION :-

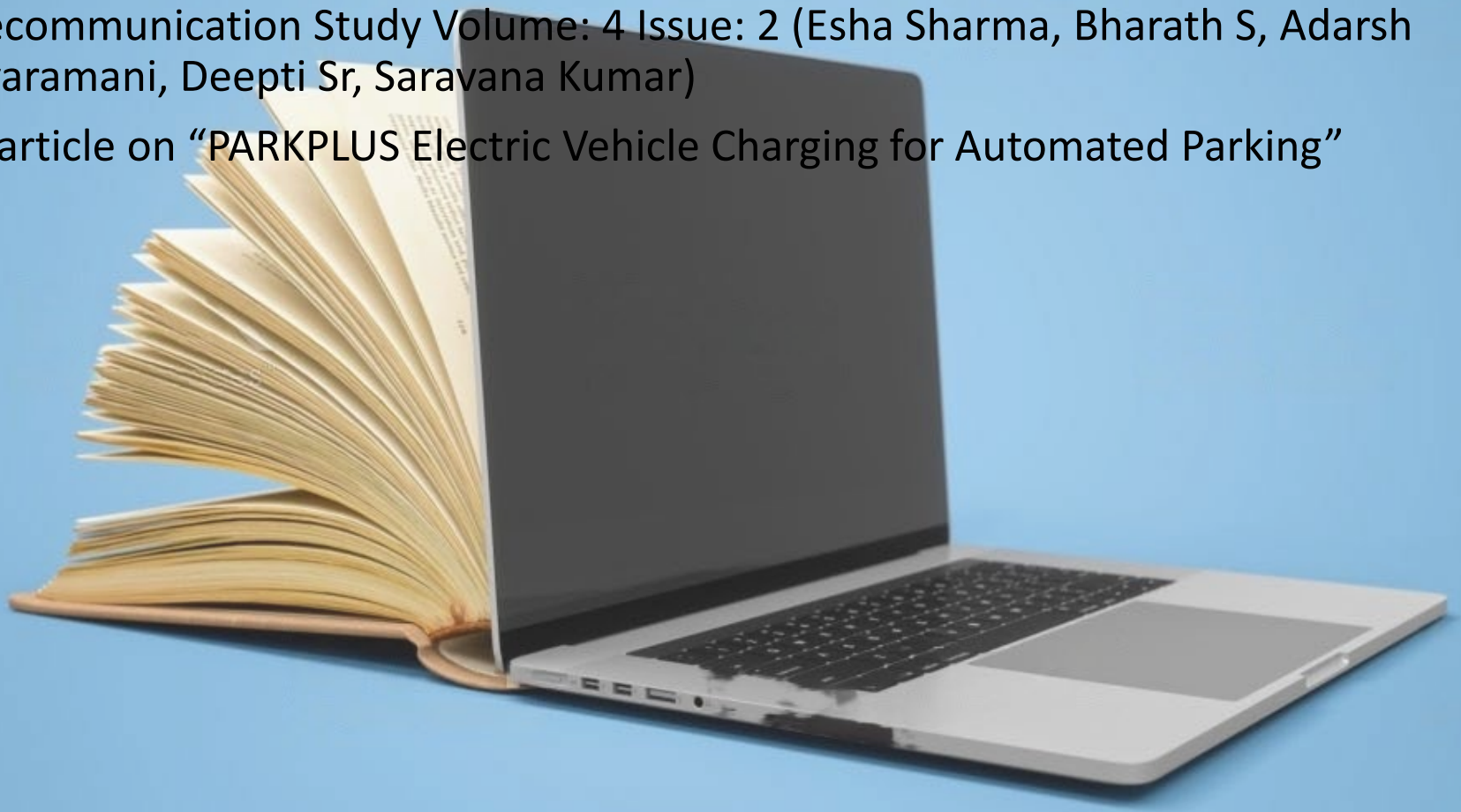
- Smart car parking system is an integrated system to organize cars in public areas.
- All vehicles are enter into the parking and without waste of time for searching parking slots .
- With parking and also provide green charging system .
- Make EV's as the mode of transportation.
- Reduce pollution and provide charging station to EVs.

LITERATURE SURVEY :-

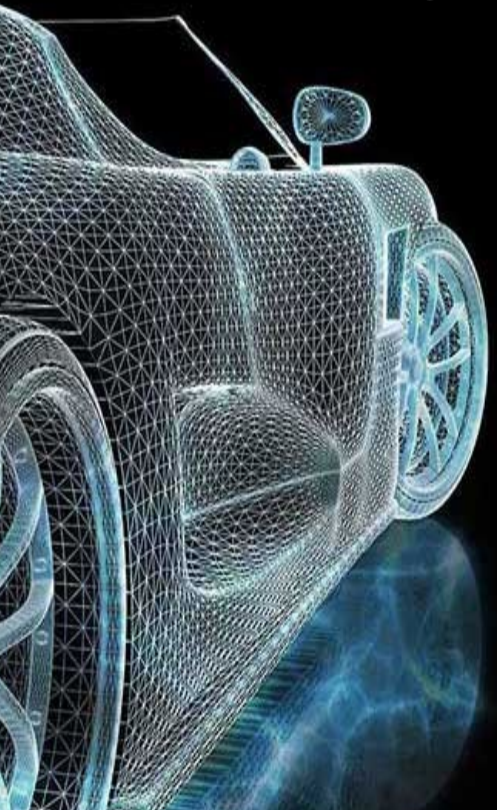


- A Review on IoT based Electric Vehicle Charging and Parking System, International Journal of Engineering Research & Technology (IJERT) Vol. 9 Issue 08 (S. Phadtare , S.S. Wadkar , S.S. Thorat , A.S. Ghorpade, Mr.A.B. Jadav)
- IoT based Smart Car Parking with Wireless Charging Feature for Electric Car, International Research Journal of Engineering and Technology (IRJET) Volume:07 Issue:08 (Ms. Lekshmi M, Mr. Mayur P, Mr. Manjunatha B , Ms. Kavya U, Mr. Anil Kumar J H)
- IoT Based Electric Vehicle Application Using Boosting Algorithm for Smart Cities (Shabana Urooj, Fadwa Alrowais, Yuvaraja Teekaraman, Hariprasath Manoharan, Ramya Kuppusamy)

- IoT Enabled Smart Charging Stations for Electrical Vehicles,Journal of Telecommunication Study Volume: 4 Issue: 2 (Esha Sharma, Bharath S, Adarsh Devaramani, Deepti Sr, Saravana Kumar)
- An article on “PARKPLUS Electric Vehicle Charging for Automated Parking”



Problem Statement :



Urban living needs centralized public facilities.

Almost no car parking facilities in operation today can handle the flood of vehicles. It takes time to look for a vacant parking space.

It causes increased traffic congestion since many vehicles may compete for limited parking spaces.

After that there is also a problem with EV charging points across the city.

EV charging points are yet to upgrade to a renewable source of energy.

Proposed Solution :

- To provide information about slot availability for parking using **IoT App/Browser.**
- To provide **wired charging** of Electric Vehicle .
- To provide green charging using **solar panels.**

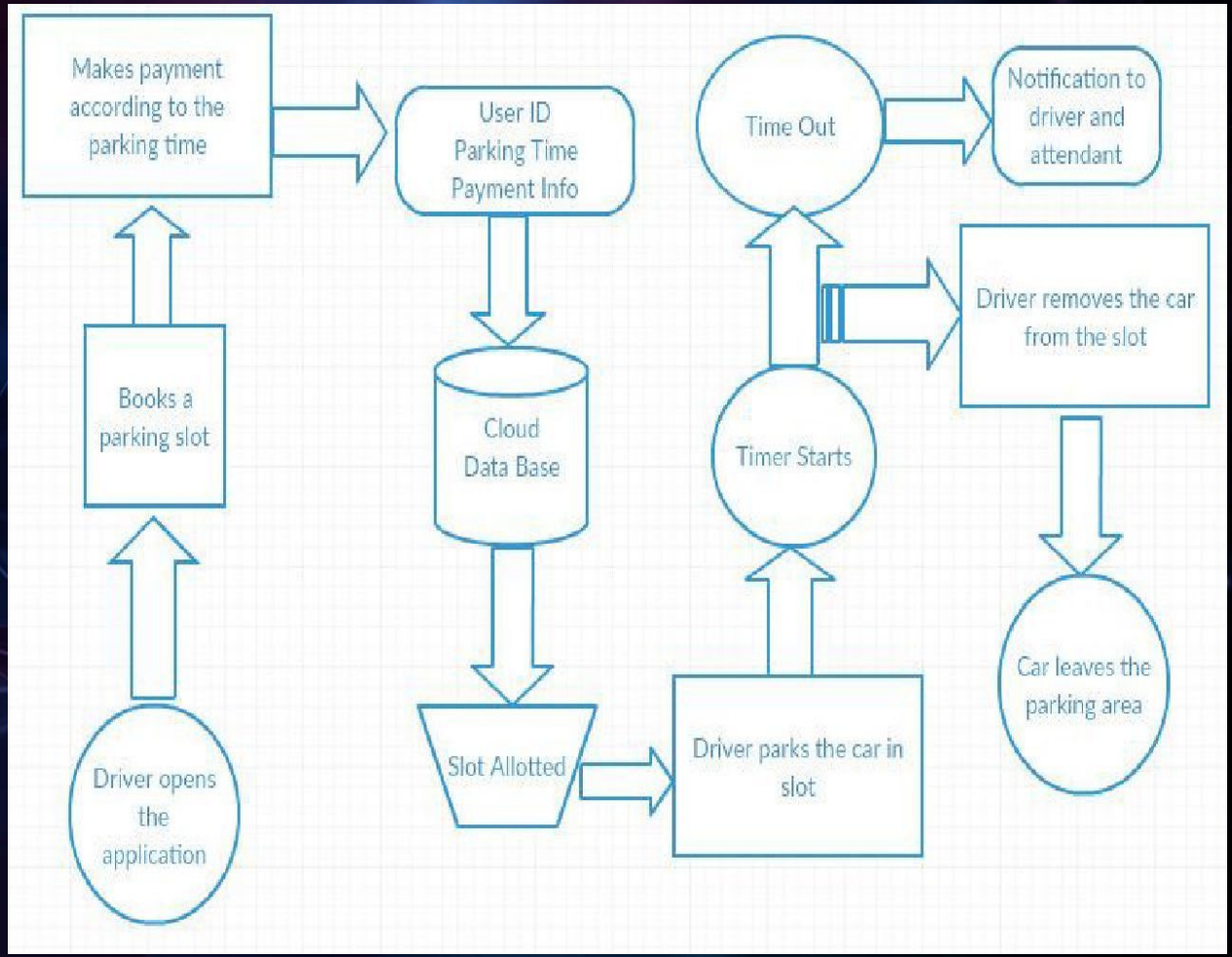
Hardware components :

- Node MCU/ Wi-Fi ESP-32
- Arduino UNO
- Power hub
- 6 IR Sensors
- Servomotor
- 16x2 LCD Display
- Solar Panel(15V)
- Programming cables
- LM35 Temperature Sensor
- Diode, LED, Capacitor
- Battery(12V)
- Regulator 7805

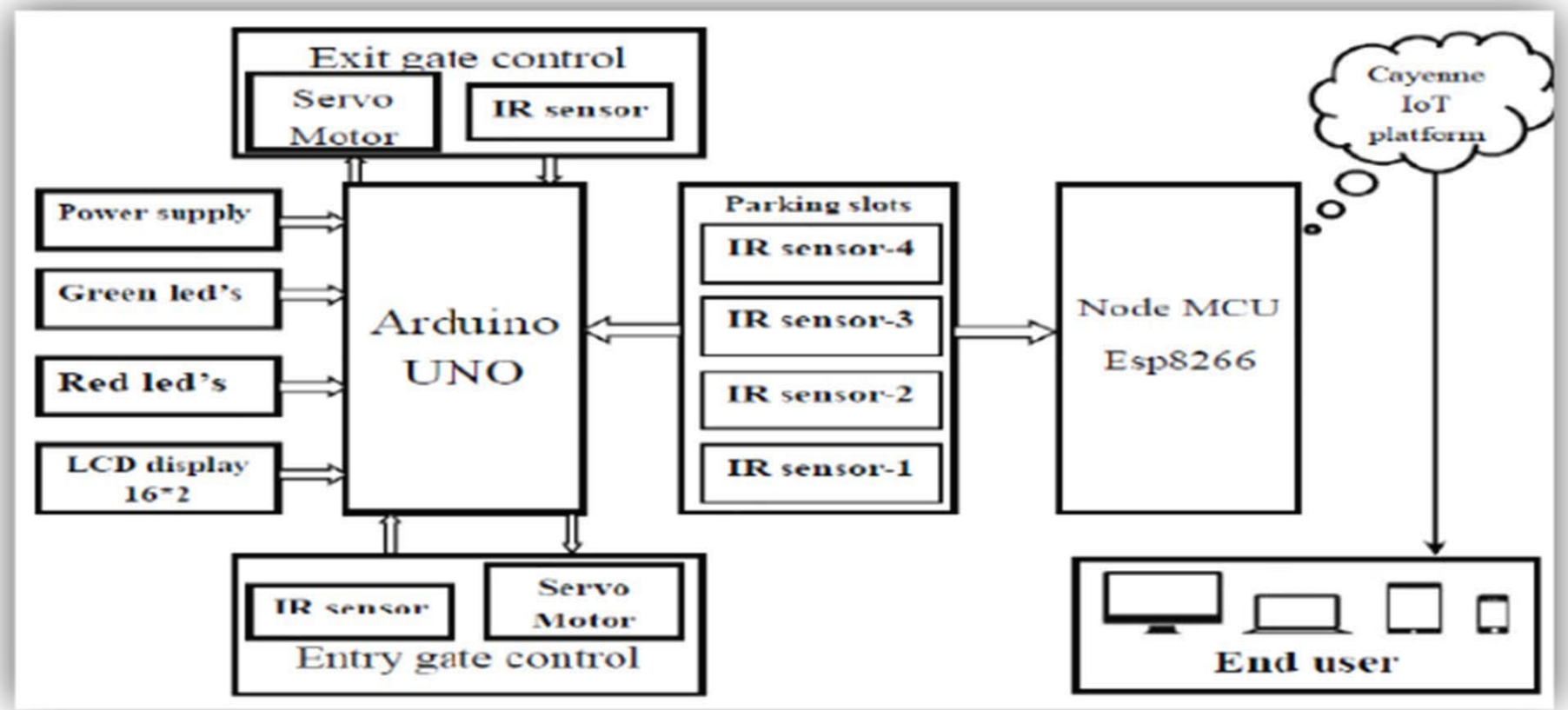
Software Used :

- Arduino IDE 1.8.15
- Internet of Things (IoT) App.

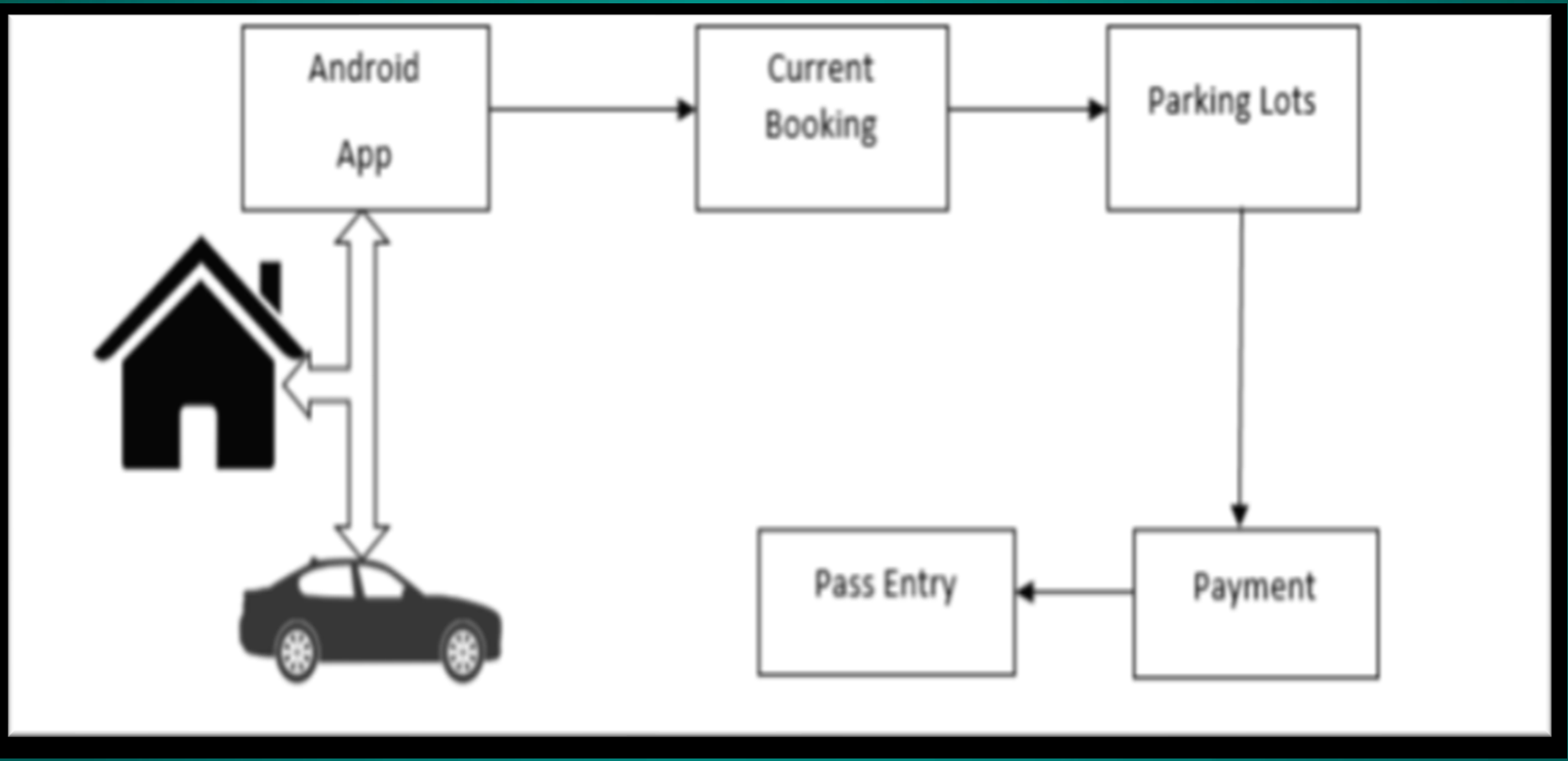
System Methodology & Flow-Chart:



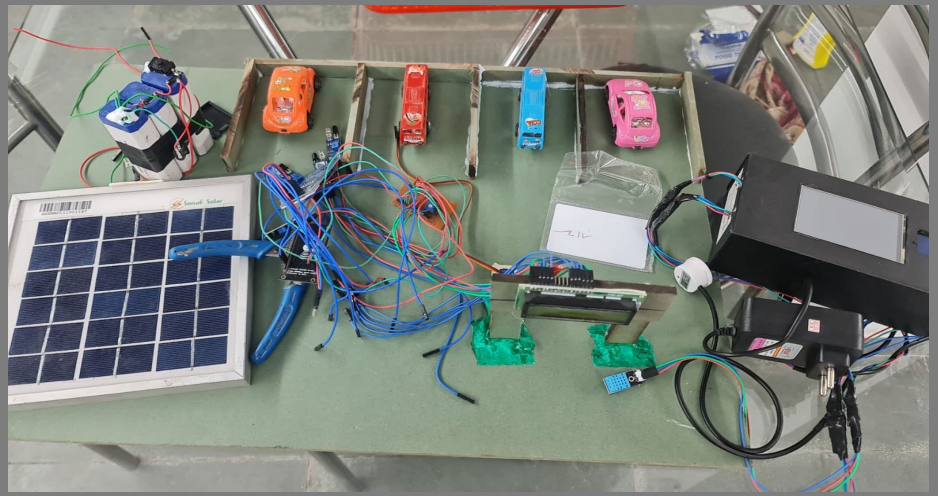
Block Diagram of IoT

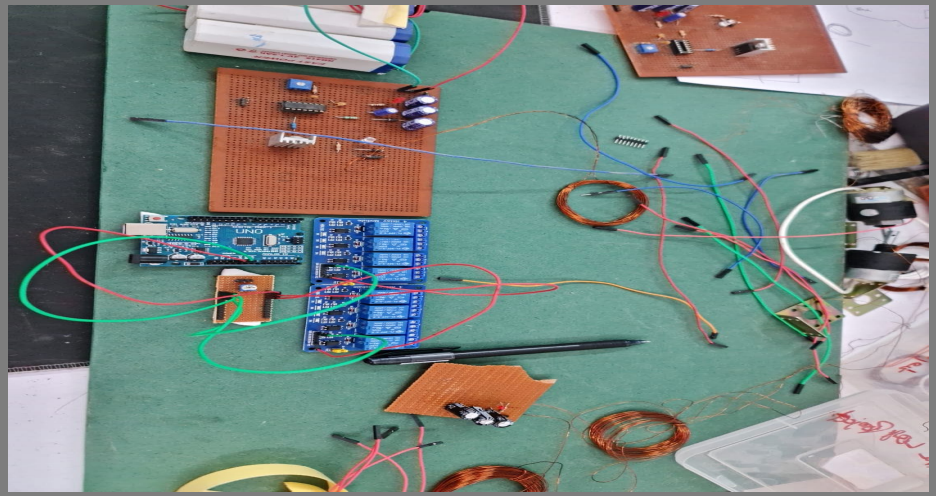


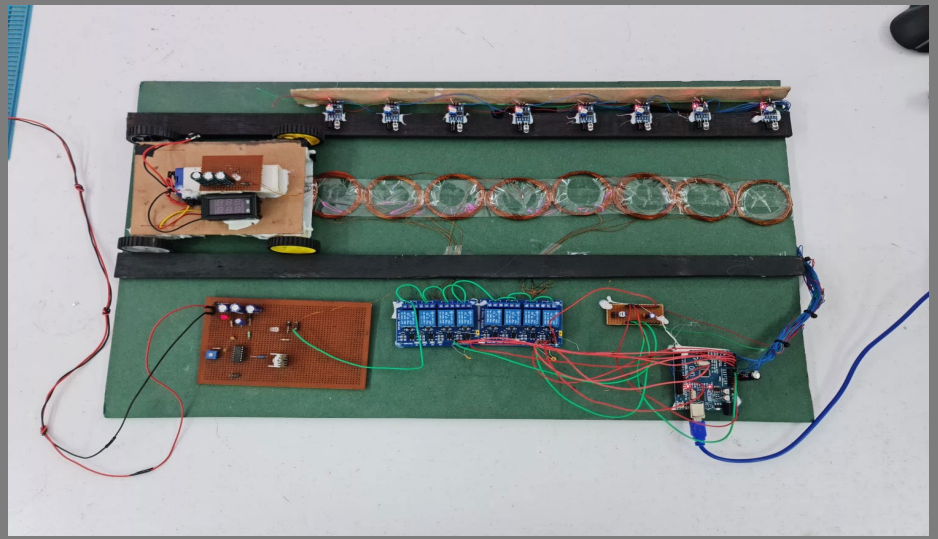
Payment Gateway

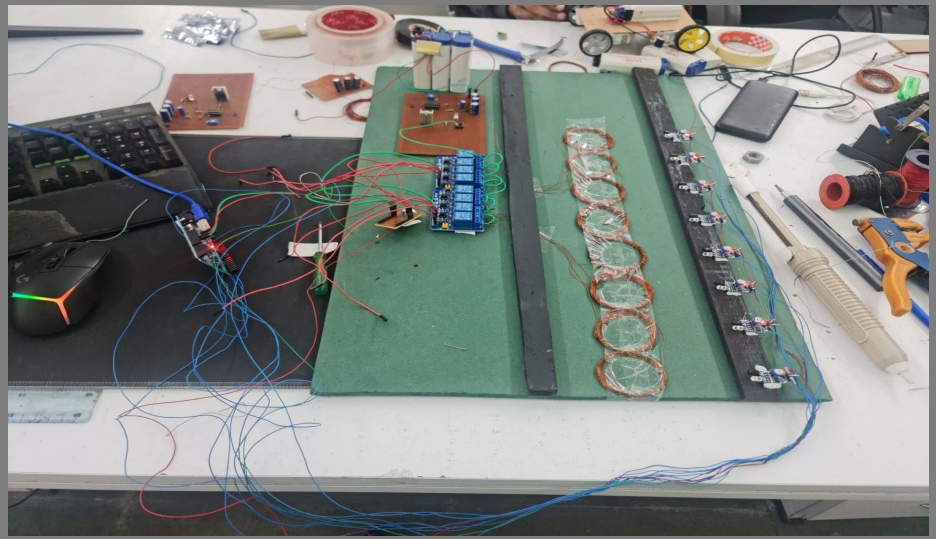


WORK TILL NOW…









Conclusion :

- Optimised Parking
- Reduced Traffic and Reduced Pollution
- Green charging system
- New Revenue Options
- Fast Payments
- Decreased Management Costs
- Real-Time Data and Trend Insight

REFERENCES:-

- Review on IoT based Electric Vehicle Charging and Parking System, International Journal of Engineering
- Research & Technology (IJERT) Vol. 9 Issue 08 (S. Phadtare , S.S. Wadkar , S.S. Thorat , A.S. Ghorpade, Mr.A.B. Jadav)
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THANK YOU