Introduction to IOT Project Write-up

Wi-Fi Controlled Car

6 Nov, 2023

Project by:
K. Mohana Sri Bhavitha
22STUCHH010641
P. Neha
22STUCHH010982
--Section D

INTRODUCTION

The Internet of Things (IoT) has transformed our interactions with everyday items. In this project, we will construct a WiFi Controlled vehicle utilizing the versatile and budget-friendly ESP8266 microcontroller. By integrating this module with some additional components, we can construct a remotely controlled car that can be operated from anywhere with an internet connection. This car can be controlled remotely over a WiFi connection using a smartphone app, as per the commands sent by the user.

COMPONENTS NEEDED

1. NodeMCU (ESP-12e)
2. L293D or L298 motor driver IC
3. 2 x DC motors
4. Ultrasonic Sensors (HC-SR04)
5. 12v Battery
6. Smartphone for operating
7. 5v Power supply (optional)

SOFTWARE

- Arduino IDE for programming the microcontroller
- Blynk app (for creating a smartphone control interface)

CIRCUIT CONNECTION AND PROGRAMMING

We connect the DC motors to the motor driver module and the module to the microcontroller. And further connect the microcontroller to the WiFi network. Set up the arduino IDE with the necessary libraries for the microcontroller. Now we write the code to control the motors. This code should listen for commands from the Blynk app and translate them into motor movements.

FURTHER ENHANCEMENTS

We can implement a vacuum cleaner, a smart mop, room mapping and navigation algorithms to optimize cleaning patterns and other smart gadgets that are useful in daily life from this basic WiFi controlled car. We can also add dust and debris collection mechanisms with a container for easy disposal, integrate camera modules for remote monitoring and control. These gadgets can be implemented by adding additional components like sensors, or by using the Arduino Uno board.

APPLICATIONS

- Home Automation and Remote Monitoring
- Smart Cleaning and Home Maintenance
- Indoor Mapping and Navigation
- Education and learning concepts and coding
- Agriculture and Farming

- Assistance for the Elderly and Disabled
- Entertainment and Gaming
- Research and Development
- Emergency Response, Search and Rescue
- Restaurant and Food service
- Environmental Impact
- Safety and Security

CONCLUSION-

Our project is a tool for education as it provides hands-on experience in programming, and IoT concepts, which can lead to a more tech-savvy workforce. Also, projects like this push boundaries of what's possible in terms of remote control, sensor integration, and data communication. This highlights the potential for automation and efficiency improvements in various domains. Remote control and autonomous navigation can streamline tasks and reduce need for human intervention.