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Software Controlled Car

Mr. Raj Kamble, Mr. Shaurya Jayvardhan Yedle, Mr. Prasad Yedle, Mr. Atharva Sabnis, Prof. Mrs. Dharashive A. S.
Students, Computer Engineering
Lecturer, Computer Engineering
Vishweshwarayya Institute of Engineering and Technology, Almala, India.

Abstract: *This project aims to build a Bluetooth-controlled car using Arduino technology. A smartphone controls the vehicle wirelessly. The main part of the system is the Arduino Uno, which processes signals from the HC-05 Bluetooth module and sends them to the L298 motor driver to control the DC motors. Users can easily move the car forward, backward, left, or right by sending commands through a mobile application.*

Features:

• Wireless Operation – Controlled via smartphone using Bluetooth connectivity.
• Cost-Effective – Uses affordable and easily available components.
• Multi-Directional Movement – Moves forward, backward, left, and right.
• Easy to Use – Simple mobile app interface for real-time control.
• Portable Design – Compact and battery-powered for mobility.

Requirements:

• Hardware:- Arduino UNO, TT Gear Motor, L298 motor driver, Wheels, HC – 05 Bluetooth module, Jumper Wires, Lithium Battery.
• Software:- Arduino IDE C/C++, Arduino Bluetooth Controller.

Advantages and Disadvantages:

• Advantages:
- Real-Time Response – Provides smooth and quick movement based on user commands.
- Low Cost – Built using inexpensive and easily available components.
- Customizable – Can be enhanced with sensors for obstacle avoidance, line following, or automation.
• Disadvantages:
- Limited Range – Bluetooth control works only within a short distance (about 10 meters).
- Low Speed & Power – DC motors and battery power restrict heavy load or highspeed operation.

Existing system (feedback):

The Arduino Bluetooth-controlled car is a simple, low-cost project that demonstrates wireless control using a smartphone. It provides hands-on learning in Arduino programming, motor control, and Bluetooth communication, while also offering scope for future upgrades like sensors and automation.

Keywords: Software , Bluetooth, Arduino, Motor Drivers

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