Project Proposal

Course Title : Computer Peripherals And Interfacing Lab

Course Code : CSEL-3208

Group Members

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Project Title: "Arduino Innovations: Smart Mobility Solutions"

Problem Statement: The project aims to address the need for innovative, Arduino-based solutions to enhance mobility, control, and automation by creating smart vehicles that offer a range of features.

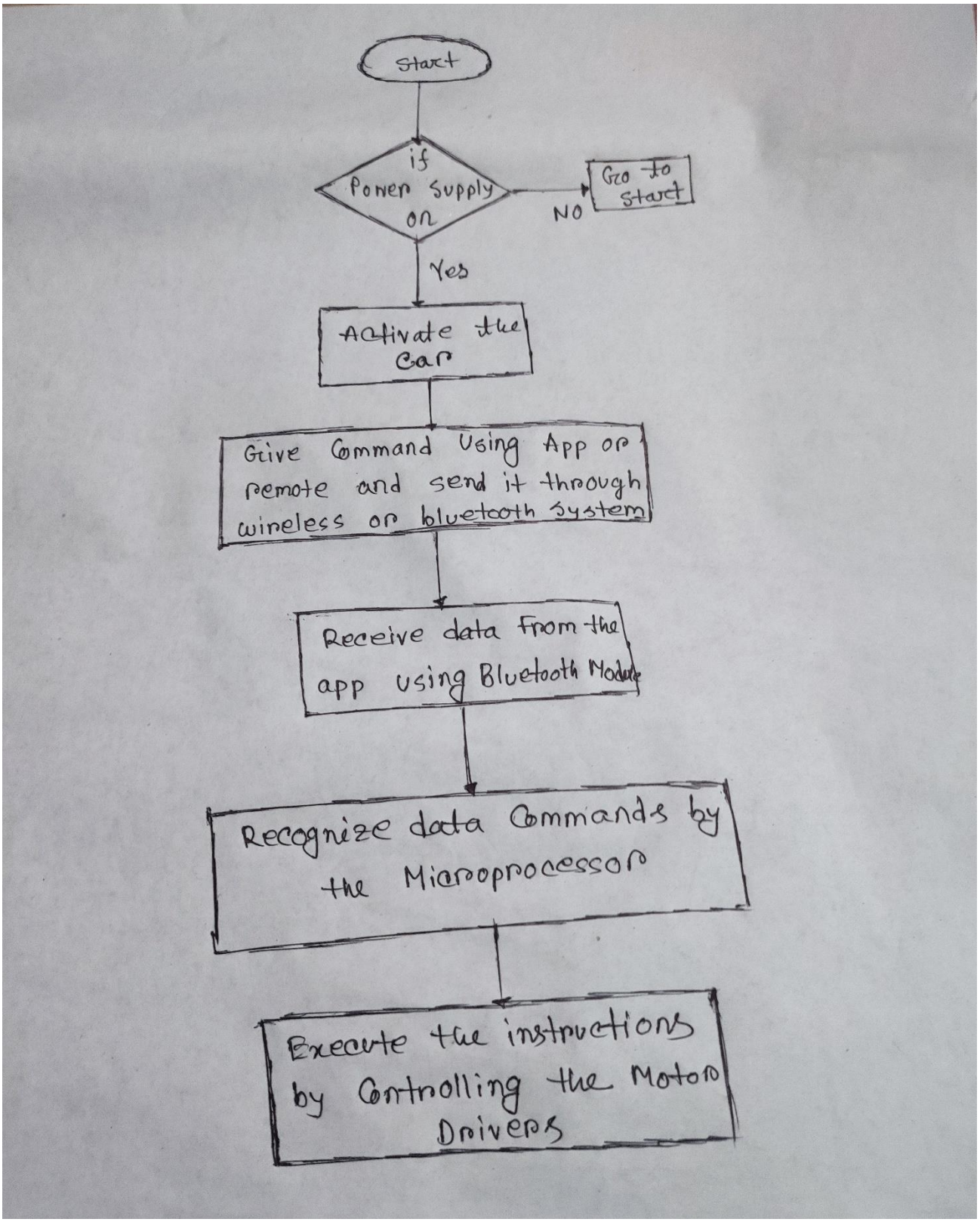
Objective: This project focuses on:

- Developing Arduino-controlled vehicles with diverse functionality.
- Introducing essential hardware and programming skills through engaging mini-projects.
- Exploring automation, safety, and remote control features.

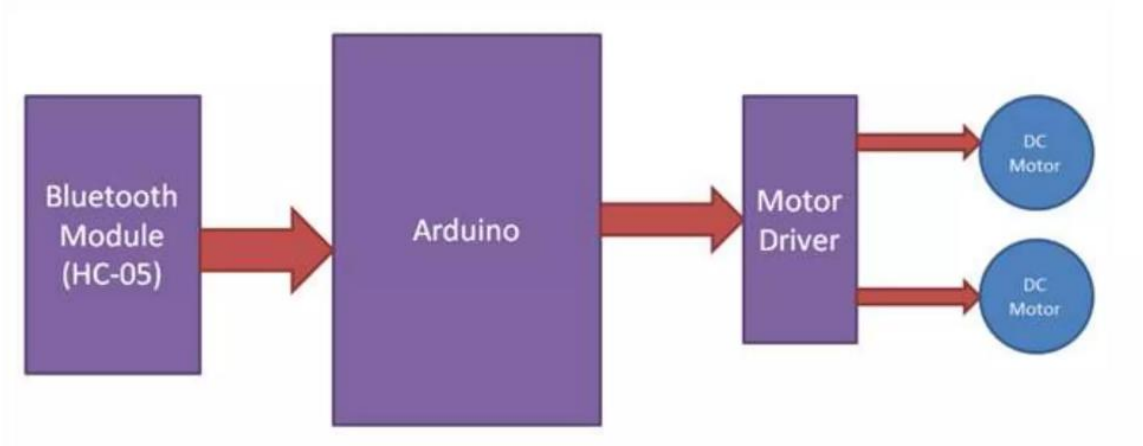
Features:

- The project will include:
- Control via joystick, infrared controller, and smartphone.
- Ultrasonic distance sensor for safety.
- Bluetooth Low Energy (BLE) and ESP01S Wifi for remote control.
- Compensation for motor differences.
- Speed control of DC motors.
- Integration of various hardware components.

Workflow Diagram:


Start
if Power supply on
NO
Go to start
Yes
Activate the car
Give Command Using App or remote and send it through wireless or bluetooth system
Receive data from the app using Bluetooth Module
Recognize data Commands by the Microprocessor
Execute the instructions by Controlling the Motor Drivers

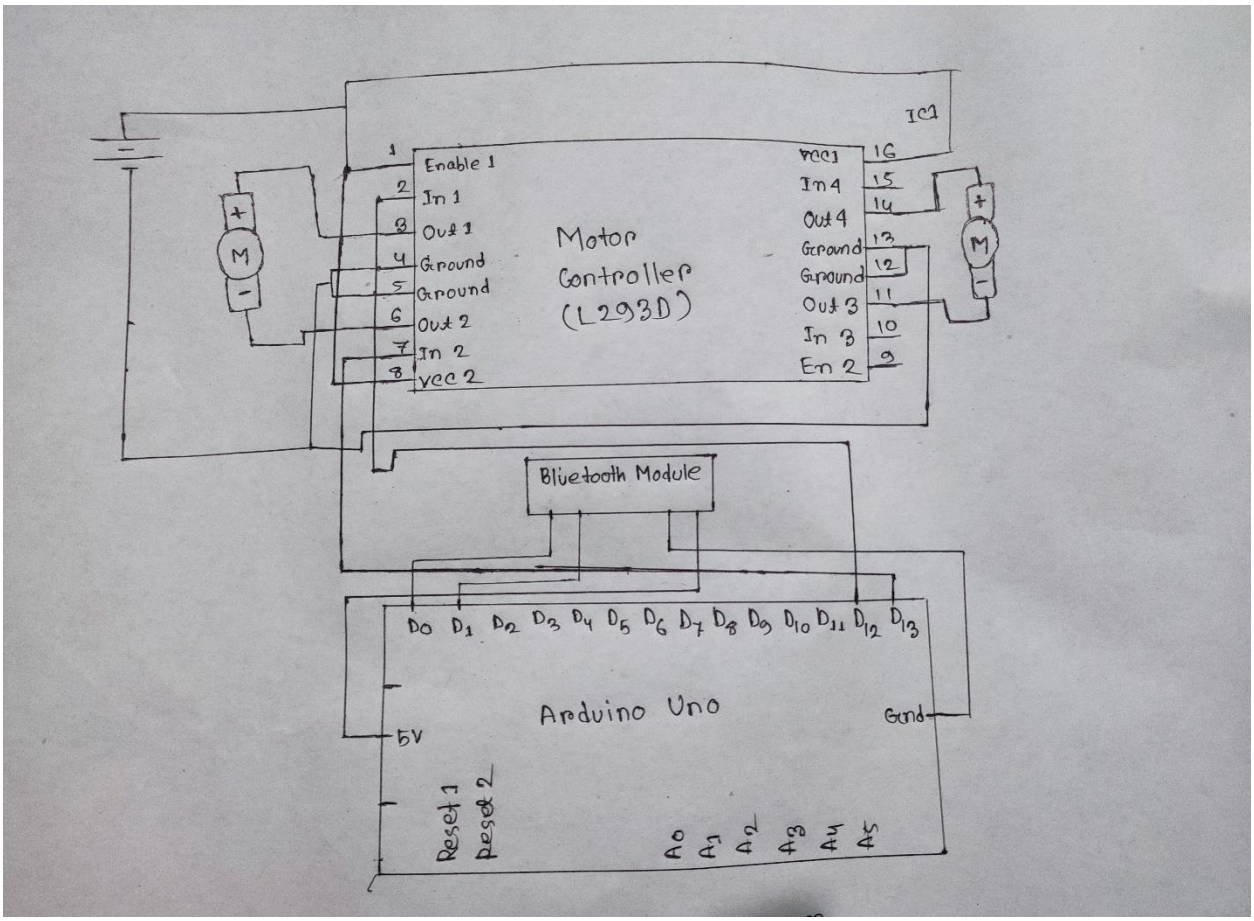
Block Diagram:



Tools and Devices:

- Arduino Uno
- DC motors and motor controller module
- Analog joystick
- Infrared sensor
- Ultrasonic distance sensor
- Buzzer
- Bluetooth BLE module
- ESP01S Wifi module
- Batteries for powering motor and Arduino circuits

Schematic Diagram:



References:

1. Arduino Official Website - https://www.arduino.cc/
2. YouTube Official Website- https://www.youtube.com/
3. Wikipedia : https://www.wikipedia.org/