VOICE CONTROL ROBOT

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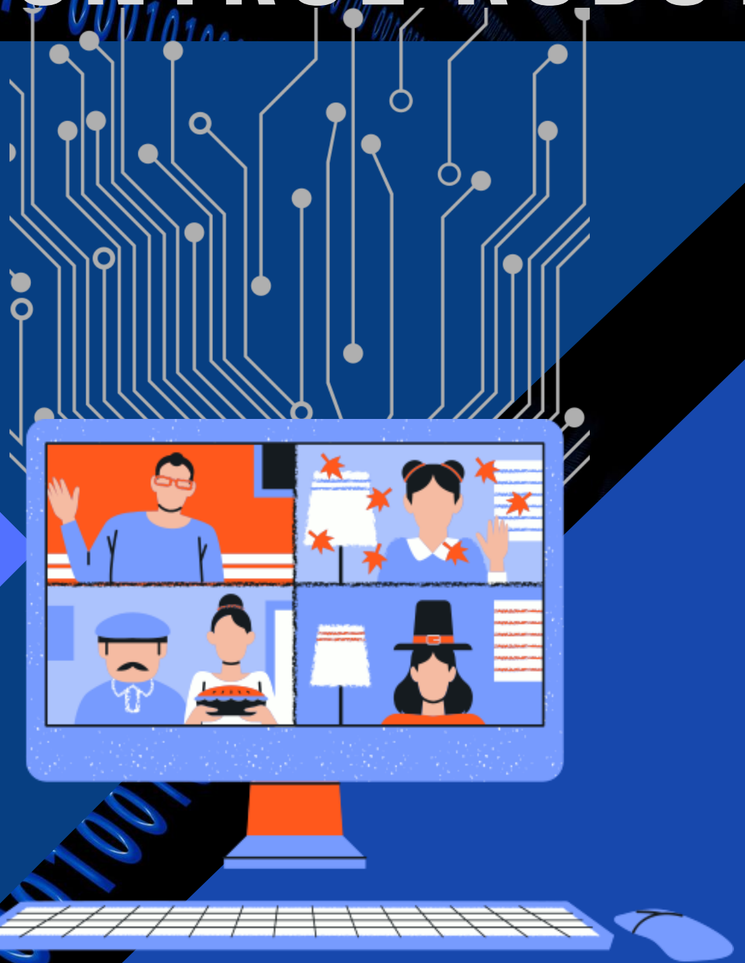

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INTRODUCTION

Voice control technology has gained significant traction, transforming the way we interact with robots and machines. These intelligent robots are capable of understanding and responding to human voice commands, opening up a world of possibilities for enhanced user experiences and increased productivity. The primary goal of the project is voice control robot with four directional movement by voice command. In this setup, the Arduino will communicate with the Android app through Bluetooth module to accept voice commands. The ultrasonic sensor will serve as the car's obstacle detector.

WORKING PROCESS

Voice control robots utilize state-of-the-art speech recognition algorithms to convert spoken language into text, which is then processed and understood by the robot's software. Natural language processing techniques enable the robot to comprehend the meaning, context, and intent behind user commands. The robot's voice synthesis capabilities allow it to respond audibly to users, creating a seamless conversational experience.

FEATURES

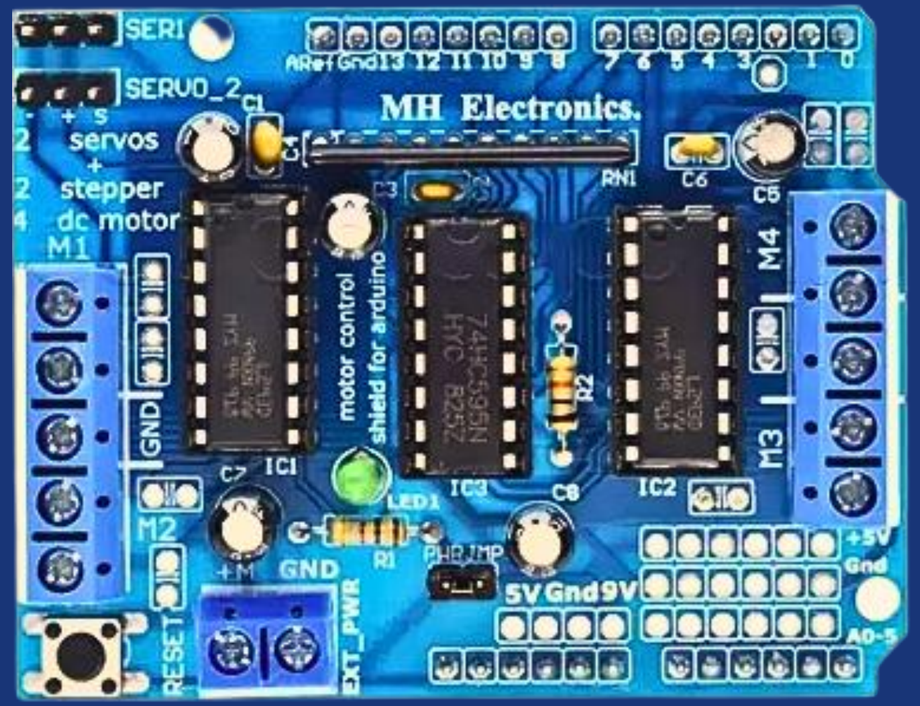
- Speech Recognition
- Directional Display
- Bluetooth Control
- Obstacle Avoidance

ARDUINO UNO

- The Arduino Uno is an open-source microcontroller board with microchip ATmega328P microprocessor. A number of expansion boards and other circuits can be interfaced with the board's sets of digital and analog input and output pins.

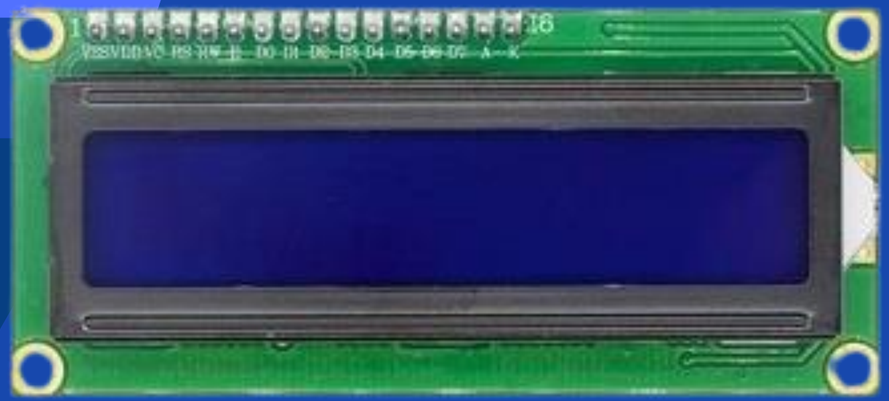
L 293D MOTOR SHIELD

The "L 293D motor shield" hardware expansion board was created to make it simpler to drive and regulate motors using the L 293D IC. The extra power outputs, control signals, and interface connections provided by the motor shield make it simpler to wire and set up projects involving motor control.



I2C LCD DISPLAY

I2C_LCD is an easy-to-use display module, It can make display easier. Using it can reduce the difficulty of make, so that makers can focus on the core of the work.



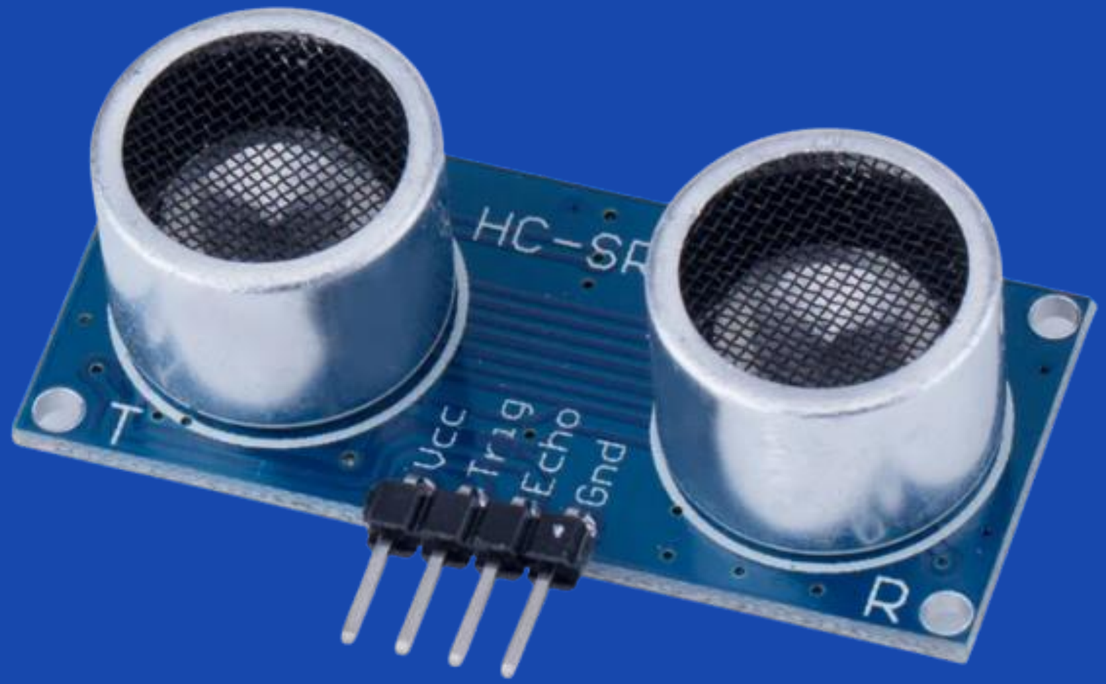
HC 5 BLUETOOTH MODULE

HC-05 6 Pin Wireless Serial Bluetooth Module is a Bluetooth module for use with any microcontroller. It uses the UART protocol to make it easy to send and receive data wirelessly.

SERVO MOTORS

Servo Motors are used to control its speed. When stepping on the gas pedal, it sends electrical signals to the car's computer. The computer then processes that information and sends a signal to the servo attached to the throttle to adjust the engine speed.

ULTRASONIC SENSOR

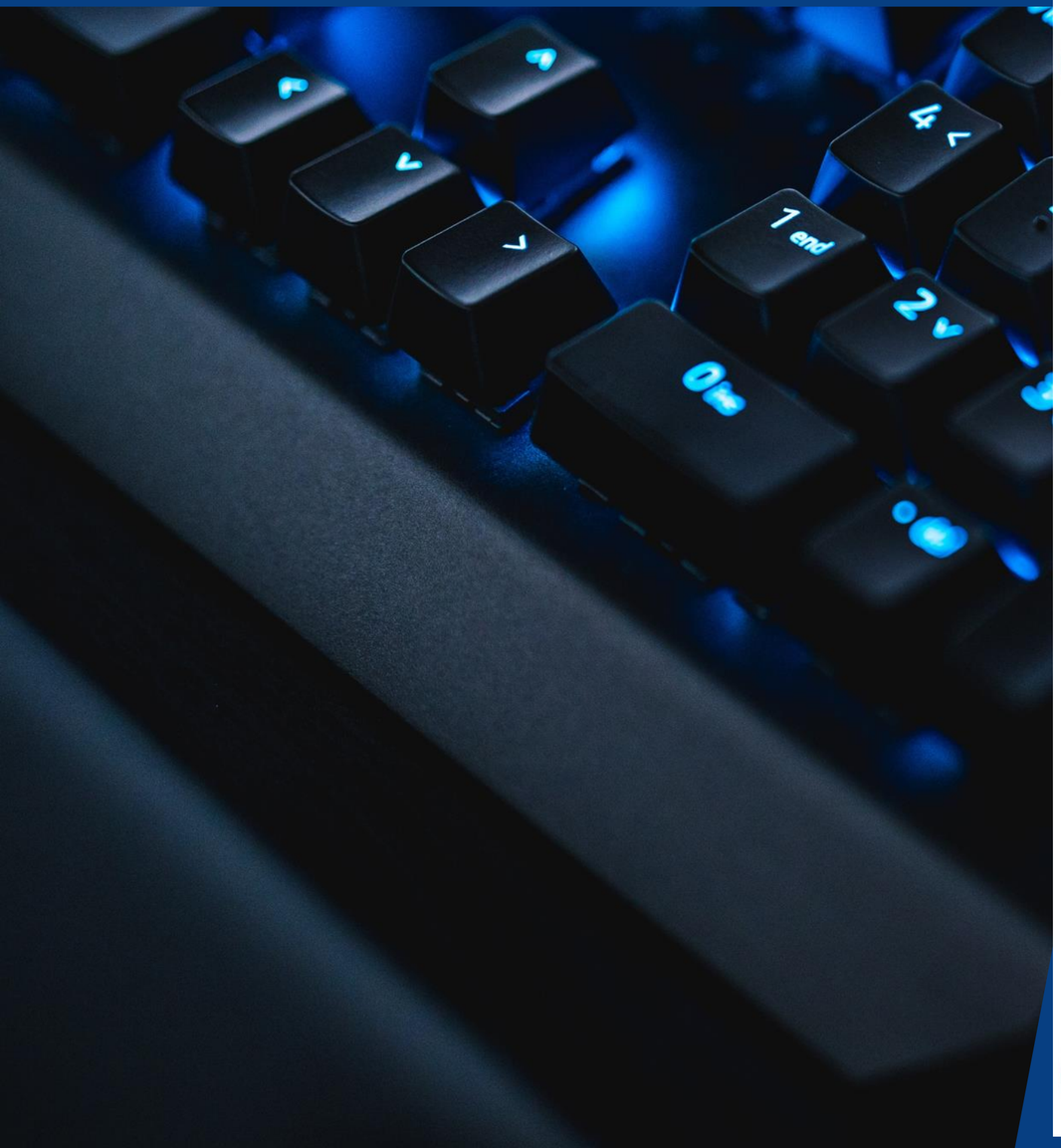


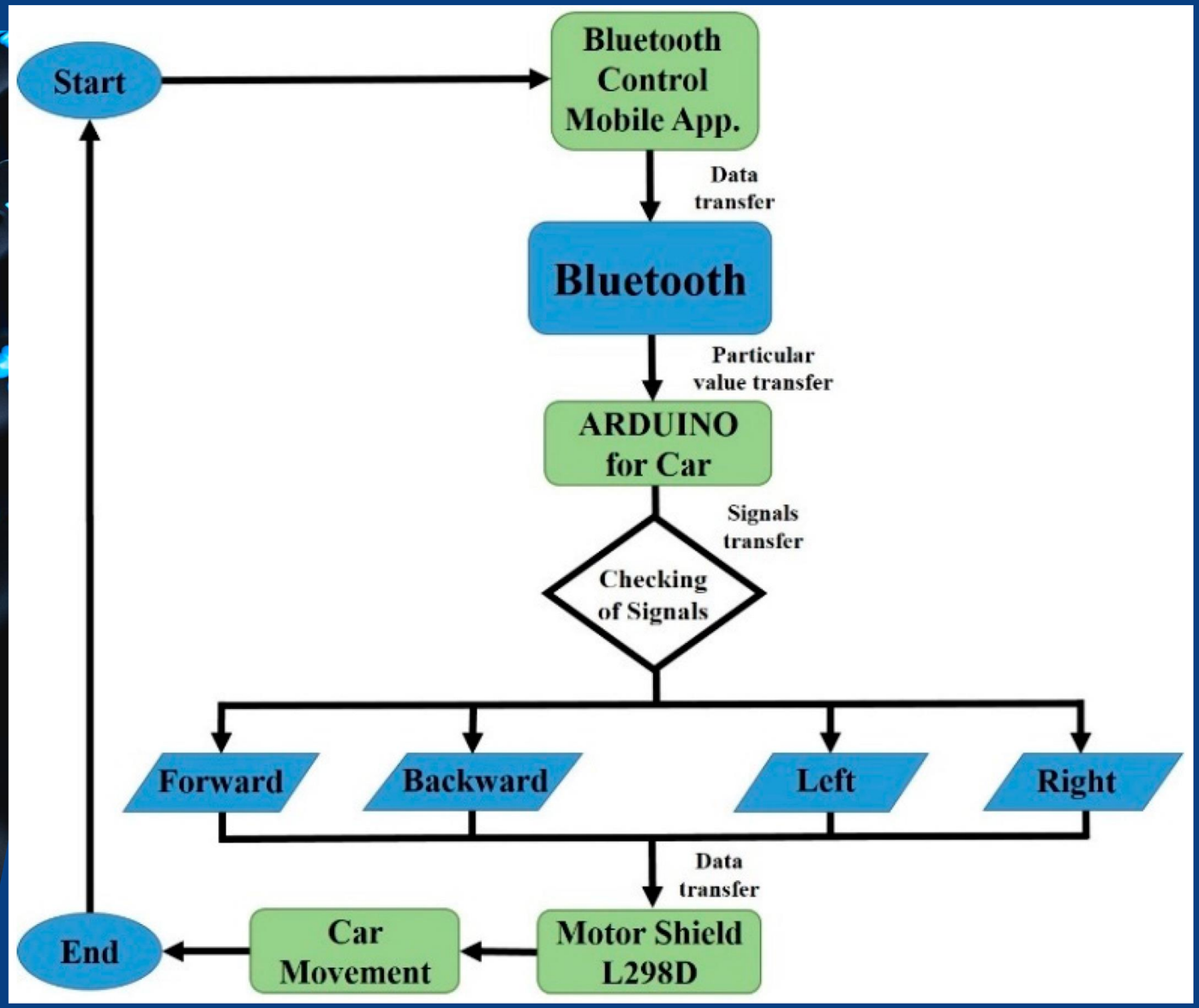
An ultrasonic sensor is an instrument that measures the distance to an object using ultrasonic sound waves. An ultrasonic sensor uses a transducer to send and receive ultrasonic pulses that relay back information about an object's proximity.

MOTOR, WHEEL & CHASSIS

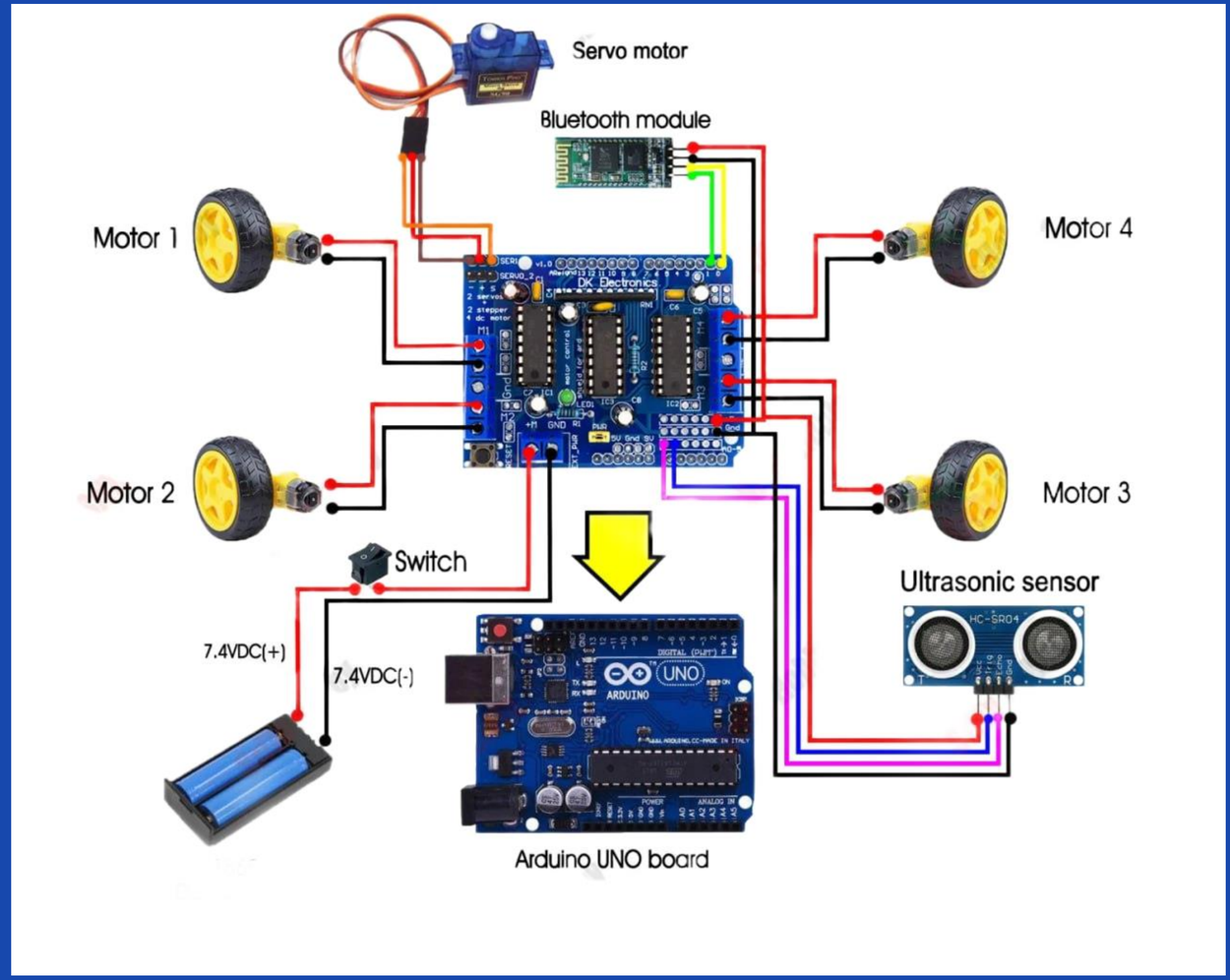
The DC Motor and Wheel Set is the same motor and wheel sets that come with our basic smart car chassis. We offer them separately for use in constructing our own mobile platform.

FLOWCHART




Start
Bluetooth Control Mobile App.
Data transfer
Bluetooth
Particular value transfer
ARDUINO for Car
Signals transfer
Checking of Signals
Forward
Backward
Left
Right
Data transfer
Motor Shield L298D
Car Movement
End

BLOCK DIAGRAM



APPLICATIONS

- Home Automation
- Security Surveillance
- Industrial Automation
- Assistance for People with Disabilities

LIMITATIOS

- Power
- Misdirection
- Accuracy
- Background Noise Interference

THANK YOU