BLUETOOTH CONTROLLED CAR

The

'*OG WAGON*'

ABOUT US

We are the students of CSE(AIML) 1st year and we have build a Bluetooth controlled car as our RnD project.

We enthusiastically present you our car named ‘OG WAGON’.

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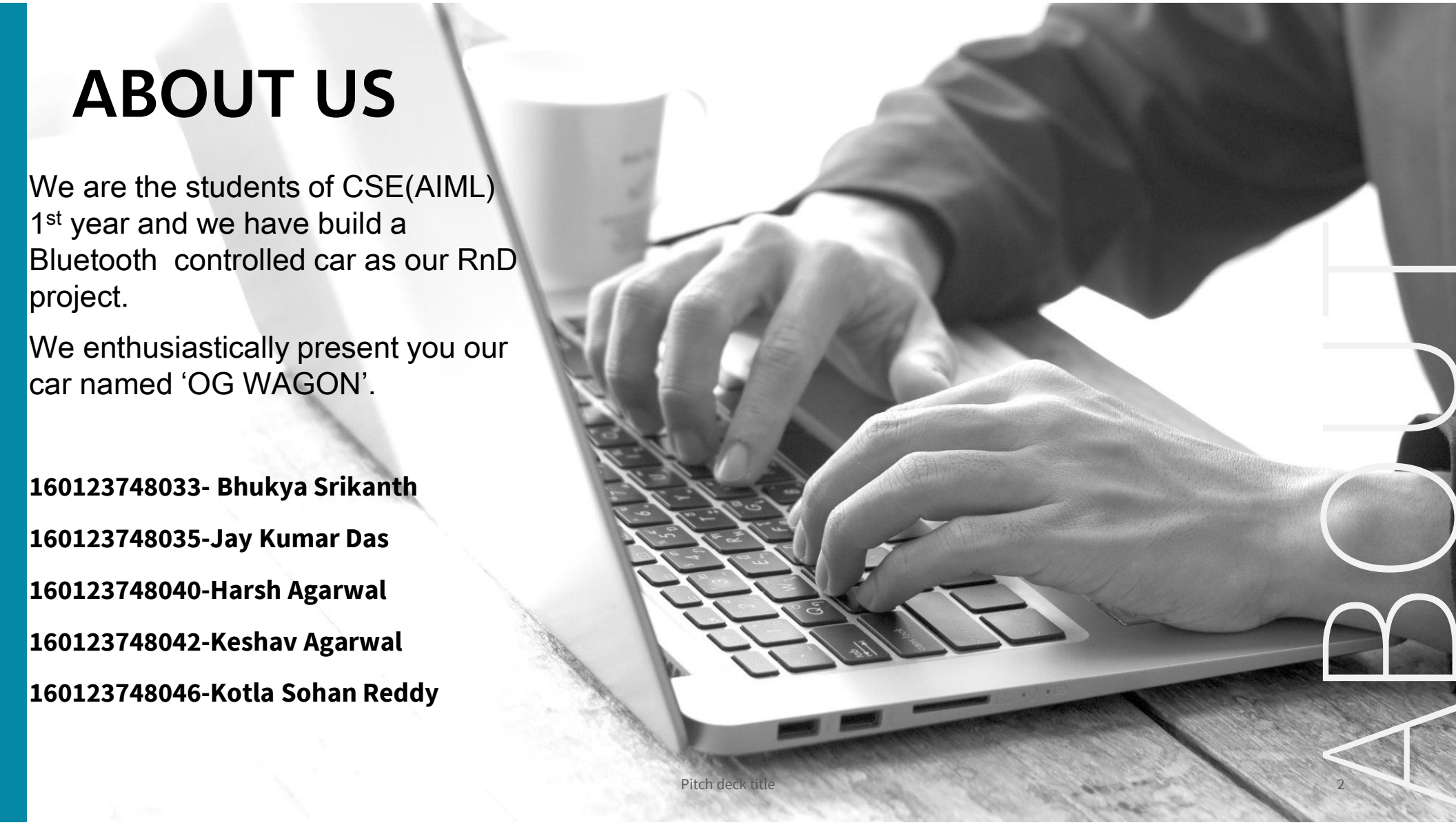
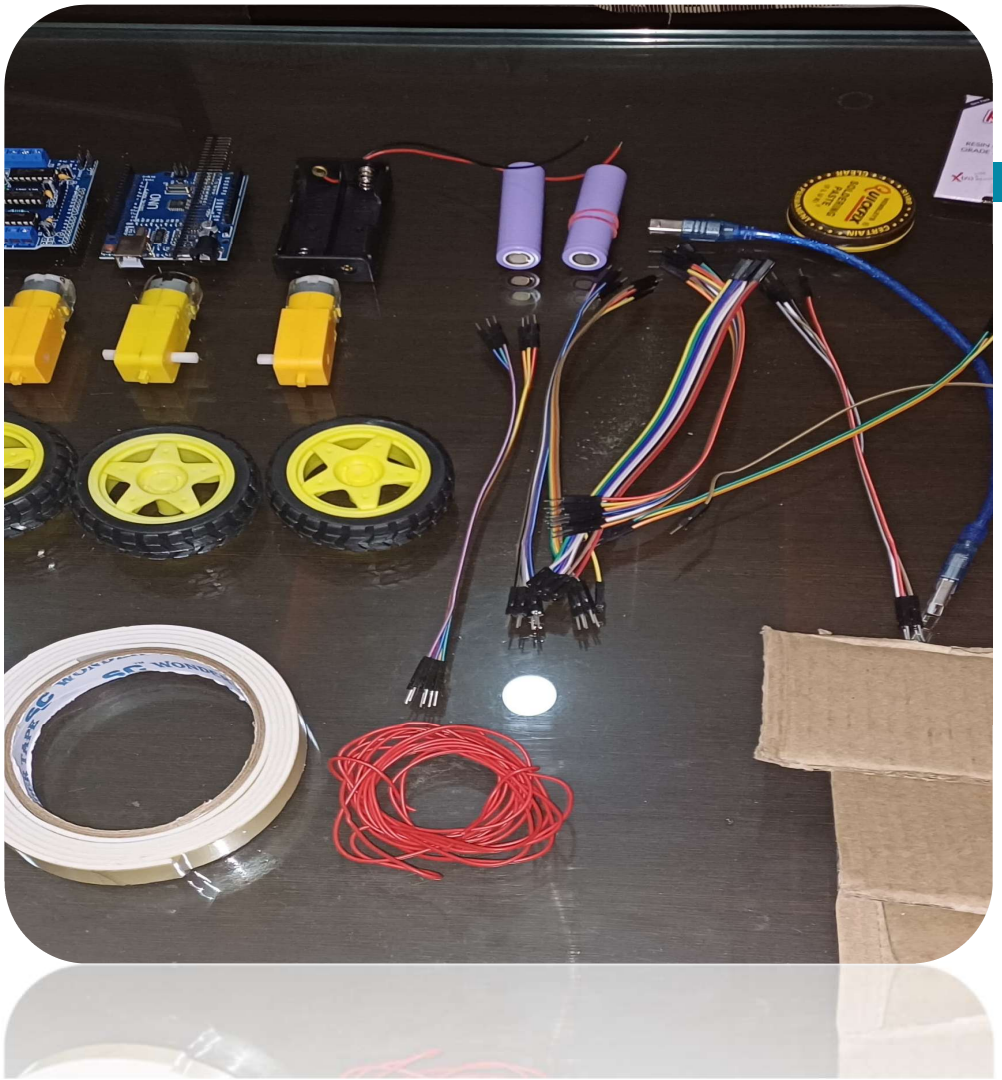


AIM

TO BUILD A BLUETOOTH CONTROLLED CAR USING ARDUINO UNO



APPARATUS

- Arduino UNO
- Motor driver shield
- DC motor
- Car wheels
- HC-05
- Li ion batteries (2600mAh)
- Battery Holder
- Jumper Wires
- Soldering Iron
- 10mm LEDs
- Resistor

ARDUINO UNO

The Arduino Uno is a popular microcontroller board based on the ATmega328P. It is widely used for building digital devices and interactive objects that can sense and control physical devices. The Arduino Uno is particularly favored in education, prototyping, and hobbyist projects due to its ease of use, large community, and extensive documentation.

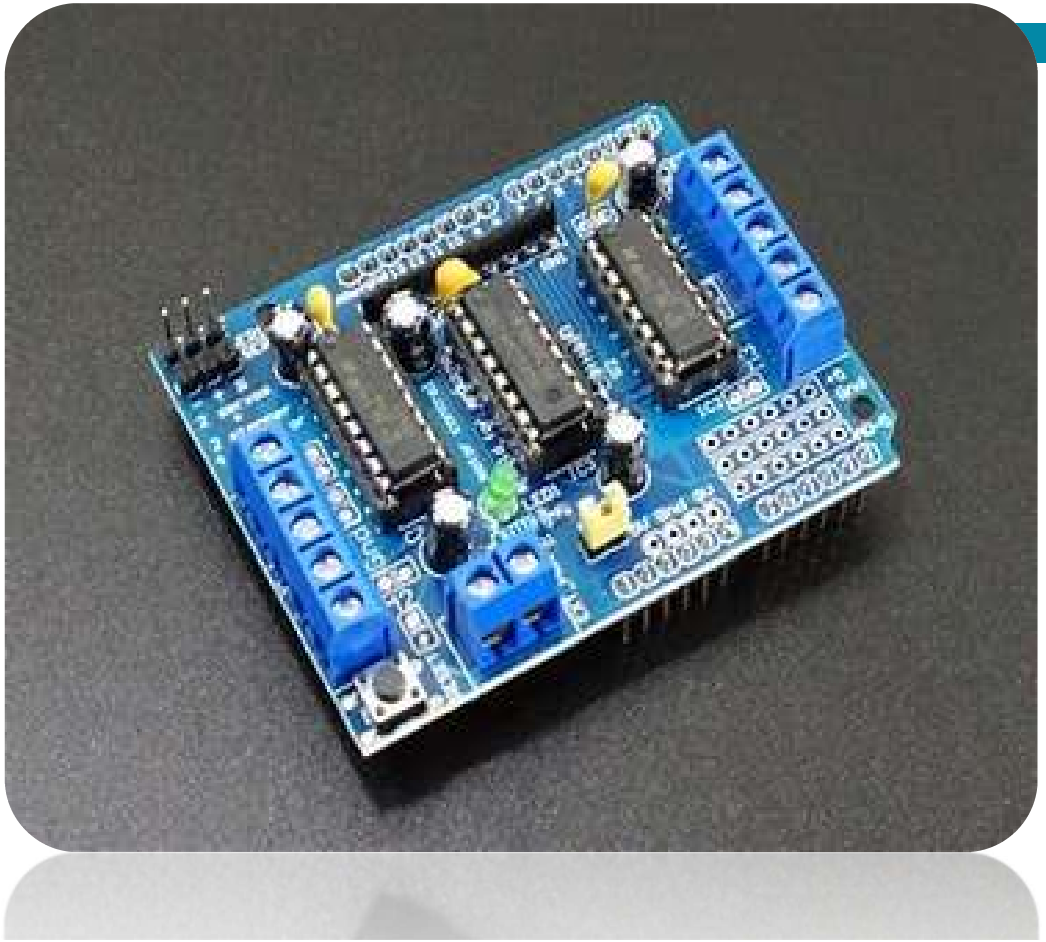
TT MOTOR

A DC motor converts direct current electrical energy into mechanical energy. Widely used in applications from small devices to large industrial machinery. Based on the Lorentz force, where a current-carrying conductor in a magnetic field experiences a force. Main components: Stator (stationary part) and Rotor (rotating part).

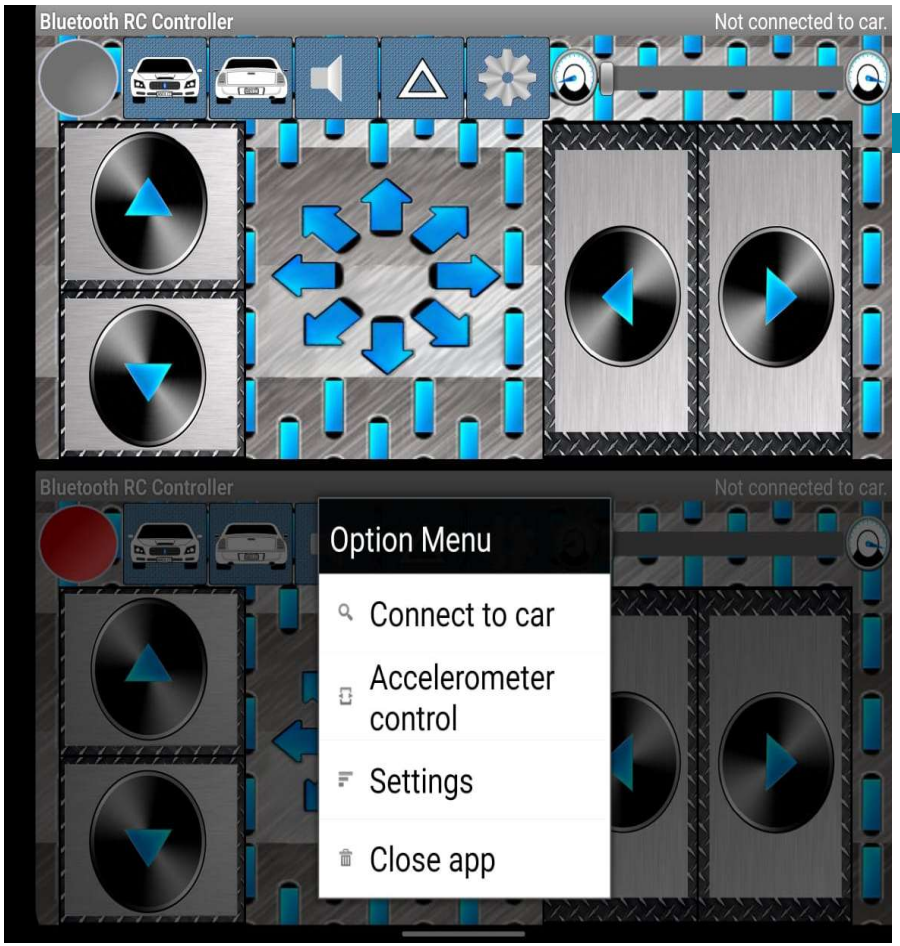
HC-05

The HC-05 is a popular Bluetooth module used in various electronics projects to enable wireless communication between devices. Wireless communication between microcontrollers (e.g., Arduino, Raspberry Pi).Remote control is an application of this device.

MOTOR DRIVER SHIELD



- The **L293D** is a **dual-channel H-bridge motor driver IC**.
- It can drive **two DC motors** simultaneously.
- The IC provides **bidirectional control** for the motors, allowing them to rotate in both directions.
- It's commonly used in robotics, automation, and hobby projects.



BLUETOOTH RC CONTROLLER

We have downloaded this software named ‘Bluetooth controller v1.0’ from the internet.

This application is being used to control the car, to make it move forward, backward, right, left and to make the car turn around.

Here is the apk file attached to download the software.

braulio.calle.bluetoothRCcontroller.apk

THE CODE

```
#include <Adafruit_MotorShield.h>
 #include <AFMotor.h>
 //initial motors pin
AF_DCMotor motor1(1, MOTOR12_1KHZ);
AF_DCMotor motor2(2, MOTOR12_1KHZ);
AF_DCMotor motor3(3, MOTOR34_1KHZ);
AF_DCMotor motor4(4, MOTOR34_1KHZ);
int val;
int Speeed = 255;
void setup()
{
  Serial.begin(9600);  //Set the baud rate to your Bluetooth module.
}
void loop(){
  if(Serial.available() > 0){
    val = Serial.read();
    Stop(); //initialize with motors stoped
```

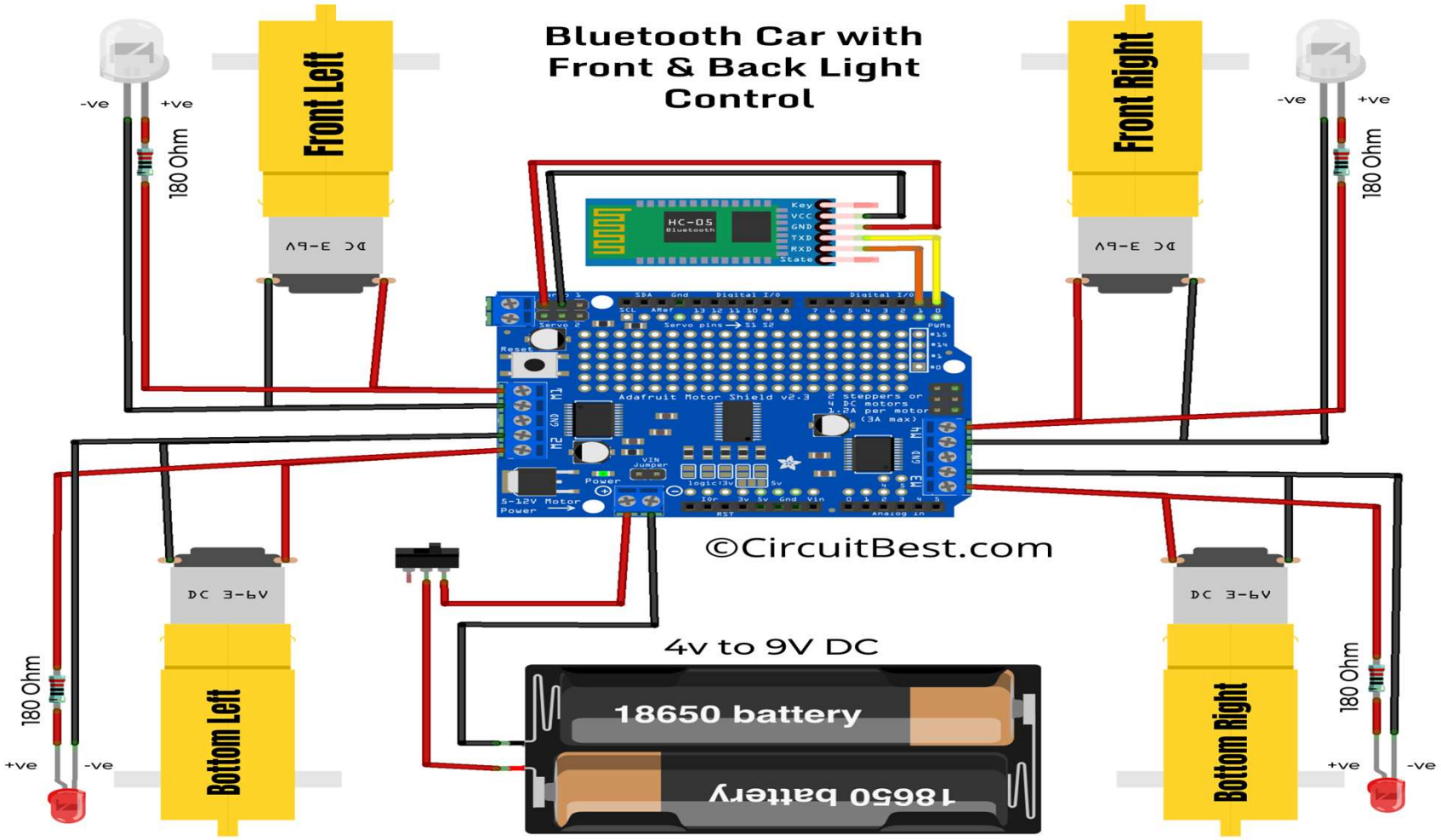
```
        if (val == 'F'){
         forward();
         }
         if (val == 'B'){
         back();
         }
         if (val == 'L'){
         left();
         }
         if (val == 'R'){
         right();
         }
         if (val == 'T'){
         Stop();
         }
  }
}
```

```
void forward()
{
  motor1.setSpeed(Speeed); //Define maximum velocity
  motor1.run(FORWARD); //rotate the motor clockwise
  motor2.setSpeed(Speeed); //Define maximum velocity
  motor2.run(FORWARD); //rotate the motor clockwise
  motor3.setSpeed(Speeed);//Define maximum velocity
  motor3.run(FORWARD); //rotate the motor clockwise
  motor4.setSpeed(Speeed);//Define maximum velocity
  motor4.run(FORWARD); //rotate the motor clockwise
}
void back()
{
  motor1.setSpeed(Speeed); //Define maximum velocity
  motor1.run(BACKWARD); //rotate the motor anti-clockwise
  motor2.setSpeed(Speeed); //Define maximum velocity
  motor2.run(BACKWARD); //rotate the motor anti-clockwise
  motor3.setSpeed(Speeed); //Define maximum velocity
  motor3.run(BACKWARD); //rotate the motor anti-clockwise
```

```
motor4.setSpeed(Speeed); //Define maximum velocity
  motor4.run(BACKWARD); //rotate the motor anti-clockwise
}
void left()
{
  motor1.setSpeed(Speeed); //Define maximum velocity
  motor1.run(BACKWARD); //rotate the motor anti-clockwise
  motor2.setSpeed(Speeed); //Define maximum velocity
  motor2.run(BACKWARD); //rotate the motor anti-clockwise
  motor3.setSpeed(Speeed); //Define maximum velocity
  motor3.run(FORWARD);  //rotate the motor clockwise
  motor4.setSpeed(Speeed); //Define maximum velocity
  motor4.run(FORWARD);  //rotate the motor clockwise
}
void right()
{
  motor1.setSpeed(Speeed); //Define maximum velocity
```

```
 motor1.run(FORWARD); //rotate the motor clockwise
  motor2.setSpeed(Speeed); //Define maximum velocity
  motor2.run(FORWARD); //rotate the motor clockwise
  motor3.setSpeed(Speeed); //Define maximum velocity
  motor3.run(BACKWARD); //rotate the motor anti-clockwise
  motor4.setSpeed(Speeed); //Define maximum velocity
  motor4.run(BACKWARD); //rotate the motor anti-clockwise
}
void Stop()
{
  motor1.setSpeed(0); //Define minimum velocity
  motor1.run(RELEASE); //stop the motor when release the button
  motor2.setSpeed(0); //Define minimum velocity
  motor2.run(RELEASE); //rotate the motor clockwise
  motor3.setSpeed(0); //Define minimum velocity
  motor3.run(RELEASE); //stop the motor when release the button
  motor4.setSpeed(0); //Define minimum velocity
  motor4.run(RELEASE); //stop the motor when release the button}
```

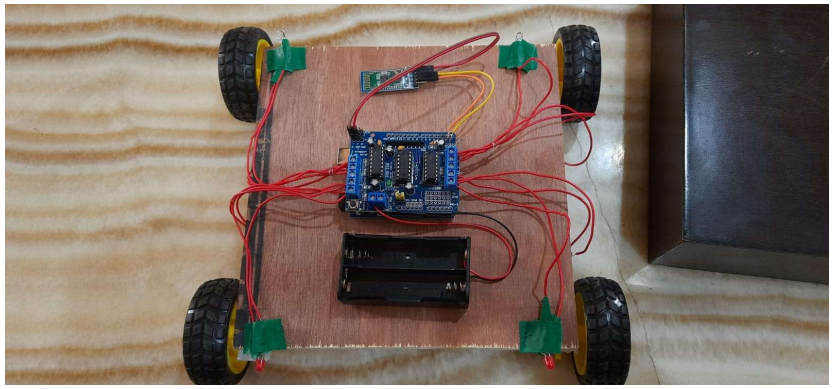
CIRCUIT DIAGRAM

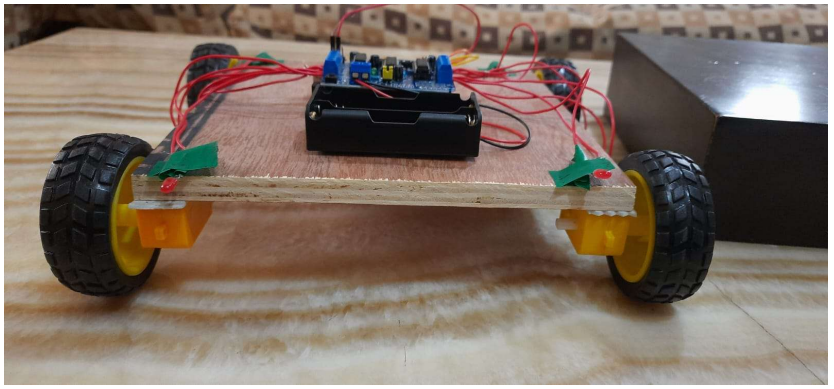


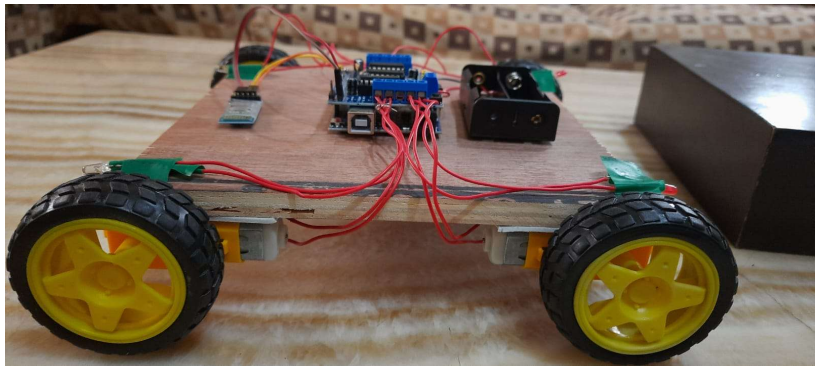

PRESENTING
YOU
THE
WAGON

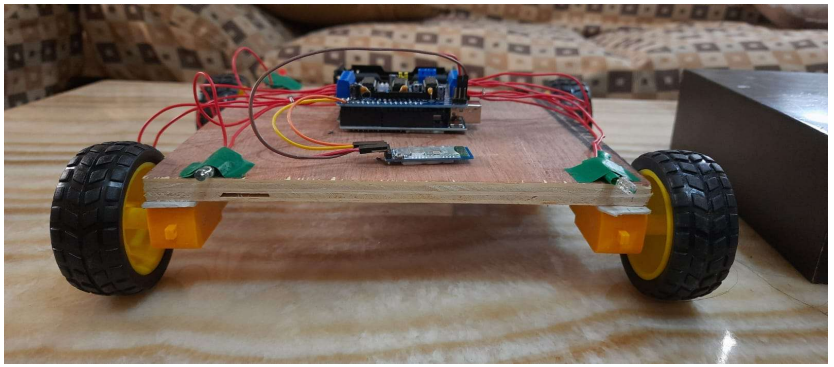
Please play the video

AN INSIDE VIEW OF THE CAR









THANK YOU