

INTRODUCTION:

As an engineer it is necessary to know about technology and the ways to implement technology. This helps in building up a strong carrier and helpful environment filled with technologies, especially using devices such as mobile. Being an Engineer, one should know how useful we can contribute to society using technology, our project is developed for providing solution for one such problem.

The advent of automation resulted in less human intervention for tasks. In general the number of people using smart phones as increased variably very high. And many voice command application such as SIRI. These perform certain actions in real life such as turn on/off lights. These technologies are used especially by specially disabled people. This project aims to find a solution to for disabled persons.

ABSTRACT:

There are people who don't know or who can't ride a vehicle and travelling has become indispensable part of our lives. Therefore, instead of learning to drive, it is easy for such people to navigate the path for which they have to travel, this seems to be simpler and less laborious. Also the cart should detect obstacle such as wall, and must make the vehicle to stop. This makes travel safe and easy.

This project aims to automate such tasks, using carts programmed to follow commands of the user to travel using voice control and stop the cart incase of detecting any obstacles with the help of hardware and software tools.

COMPONENTS REQUIRED:

1. 1 X ArduinoUno
2. 1 X UltrasonicSensor
3. 1 X MotorShield
4. 2 X DCMotor
5. 4X 1.5VBattery
6. 1X BatteryHolder
7. Jumpers
8. 1 X Switch
9. 1 X Bluetooth Module

IMPLEMENTATION:

```
const int sa = 5; //In1 motor sheild
```

```
const int sb = 6; // In2 motor sheild
```

```
const int sc = 9; // In3 motor sheild
```

```
const int sd = 10; //In4 motor sheild
```

```
//Ultra sonic Sensor connection
```

```
const int trigPin = 3;
```

```
const int echoPin = 4;
```

```
long duration;
```

```
int distance;
```

```
int vel = 200; // rotaion of wheel
```

```
char junk;
```

```
String estado="";
```

```
void setup() {
```

```
Serial.begin(9600);
```

```
pinMode(sc, OUTPUT);
```

```
pinMode(sd, OUTPUT);
```

```
pinMode(sa, OUTPUT);
```

```
pinMode(sb, OUTPUT);
```

```
pinMode(trigPin, OUTPUT);
```

```
pinMode(echoPin, INPUT);
```

```
}
```

```
void distance1()
```

```
{
```

```
    digitalWrite(trigPin, LOW);
```

```
    delayMicroseconds(2);
```

```
    digitalWrite(trigPin, HIGH);
```

```
    delayMicroseconds(10);
```

```
    digitalWrite(trigPin, LOW);
```

```
    duration = pulseIn(echoPin, HIGH);
```

```
    distance= duration*0.034/2;
```

```
    Serial.print("Distance: ");
```

```
    Serial.println(distance);
```

```
}
```

```
void loop()
```

```
{
```

```
    if(Serial.available()>0){ // bluetooth connection
```

```
        //estado = Serial.read();
```

```
        //Serial.println(estados);
```

```
        if(Serial.available()){
```

```
            while(Serial.available())
```

```
            {
```

```
                char inChar = (char)Serial.read(); //read the input
```

```

    estado += inChar;    //make a string of the characters coming on serial
    delay(10);
}
Serial.println(estado);
}
while (Serial.available() > 0)
{ junk = Serial.read() ; }    // clear the serial buffer

}
distance1();

if(distance<30)
{
    estado="stop";
    Serial.println("Object detected!!!");

}

if(estado=="go"){ // go front
Serial.println("forward ");
analogWrite(sa, 0);
analogWrite(sb, vel);
analogWrite(sc, 0);
analogWrite(sd, vel);
}

```

```
if(estado=="stop"){ //stop
Serial.println("stop");

analogWrite(sd, 0);
analogWrite(sb, 0);
analogWrite(sa, 0);
analogWrite(sc, 0);

}

if(estado=="back"){ // Reverse
Serial.println("backs");

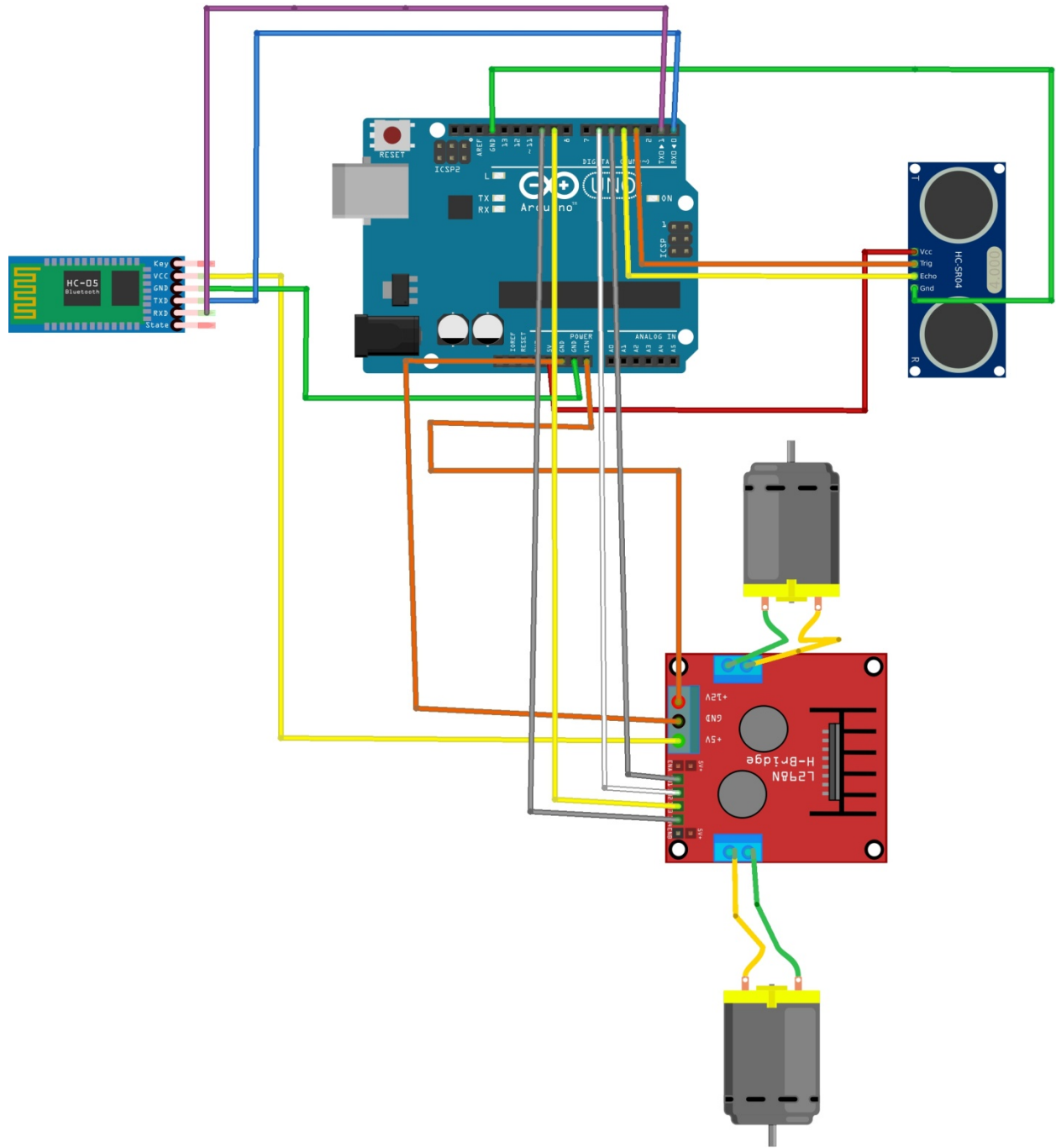
analogWrite(sa, vel);
analogWrite(sb, 0);
analogWrite(sc, vel);
analogWrite(sd, 0);

}

if(estado=="left"){ //left aside
Serial.println(estado);
analogWrite(sa, 0);
analogWrite(sb, vel);
analogWrite(sc, vel); ///
analogWrite(sd, 0);
}
```

```
if(estado=="right"){ // right aside
Serial.println(estado);
analogWrite(sa, vel);///
analogWrite(sb, 0);
analogWrite(sc, 0);
analogWrite(sd, vel);
}
estado = "";
}
```

SCHEMATIC DIAGRAM:



1. ULTRA SONIC SENSOR
2. AURDINO UNO
3. MOTOR SHIELD
4. DC MOTOR
5. DC MOTOR

6. BLUETOOTH

CHALLENGES FACED:

1. The speed of the cart to control the break on detection of the obstacle .
2. Turning left and right of the cart.
3. Calculating the distance from the cart and to the obstacle.
4. Getting to know about a few components such as the motor shield and ultrasonic sensor.
5. Identification of bugs in the code and debugging them.

CONTRIBUTION OF TEAM MEMBERS:

Ajay Venkat S: Hardware Assembly

Harish Kumar R: Coding Segment

Mathi Akhass S : Hardware Assembly

All team members were actively involved in all aspects of the project and the contribution of each member is ineludible.

REFERENCE:

1. https://create.arduino.cc/projecthub/Yug_Ajmera/voice-controlled-car-983ef1
2. https://how2electronics.com/wireless-voice-controlled-robot-car-using-arduino/#Circuit_Diagram_Connections