Voice Controlled Arduino Robot
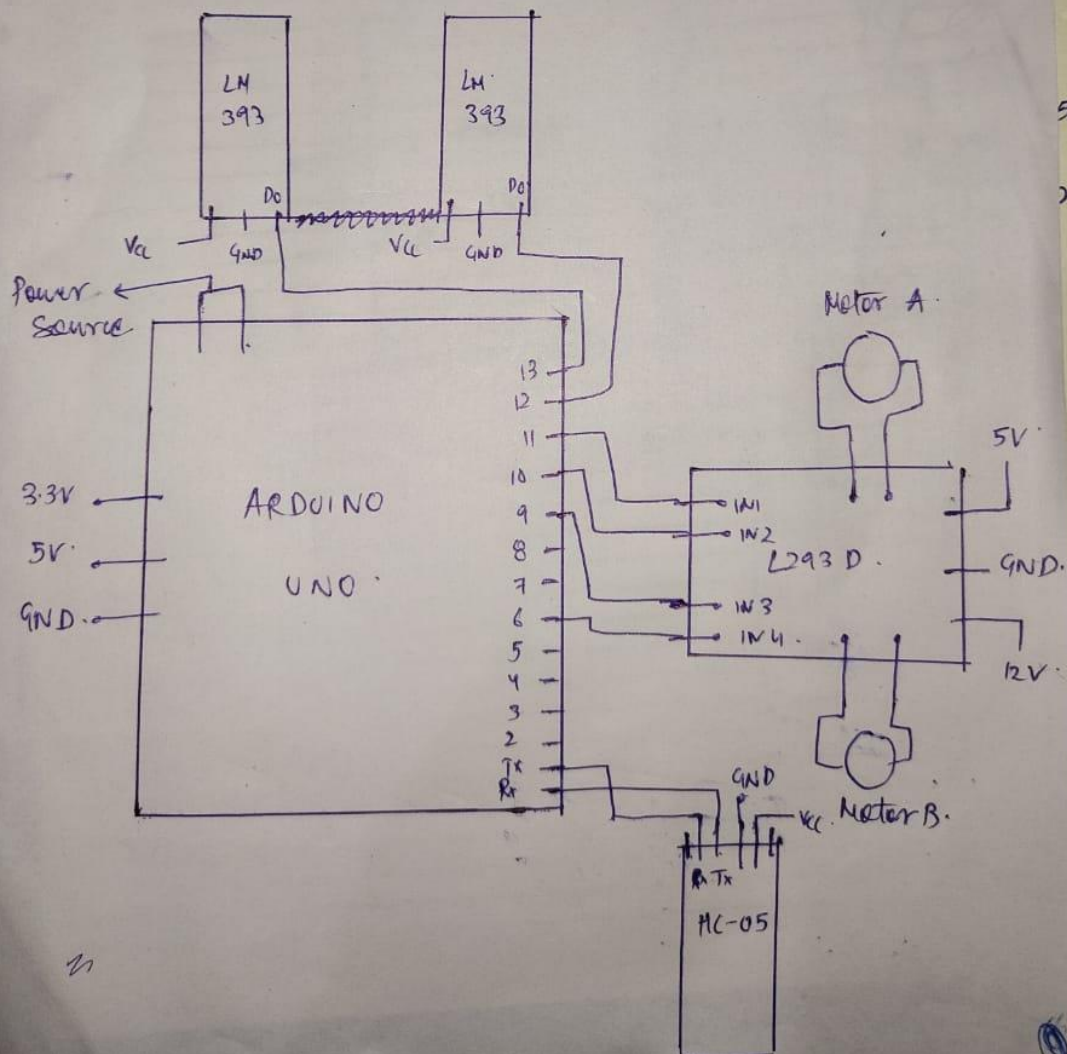
Components → Arduino Uno, Chassis, HC-05 Bluetooth Module,
L293 D Motor Driver, Speed Sensor (LM393) with
Encoder wheel, wheels, DC-Motors; Breadboard,
Power supply, ".

Circuit Diagram :

Code :-

```
/* Voice controlled Robot */
/* PLZ NOTE : the code has been hard-coded for some distances because of
the incorrect serial communication b/w bluetooth and arduino .
Voice Commands were exact in case of serial communication b/w computer
and arduino so i have to hard-code . plz excuse me for that  */
/* Ex. when i say forward it takes the input something else mixed of
symbols and characters . i tried everything but not successful */

int in1 = 9; //motor1
int in2 = 6; //motor1
int in3 = 10; //motor2
int in4 = 11; //motor2
int flag = 0;
int sensor = 13;
unsigned long start_time = 0;
unsigned long end_time = 0;
int steps=0;
float steps_old=0;
float temp=0;
float rps=0;
float r;
float radius=3;
float c= 2*3.14*radius ;
float t=0;

void setup()
{
 Serial.begin(9600);
 pinMode(9,OUTPUT);
 pinMode(8,OUTPUT);
 pinMode(10,OUTPUT);
 pinMode(11,OUTPUT);
 pinMode(sensor,INPUT_PULLUP);

 Serial.println(" RPS   - 0.00");
}

void loop()
{
  if (Serial.available()) {
   flag = Serial.read();      //reading input
    Serial.println(flag);

    /* hardcoded as if we speak "forward 50" then it sends input 8(ascii
code as 56) , we speak "reverse" it sends input 1(ascii value 49). etc.
*/
```

```arduino
if (flag == 48) //stop
{
  analogWrite(9,0);
  analogWrite(10,0);
  analogWrite(6,0);
  analogWrite(11,0);
}
  else if (flag == 49) //reverse
{
  analogWrite(9,0);
  analogWrite(10,0);
   analogWrite(6,255);
  analogWrite(11,255);

  delay(1000);

  analogWrite(9,0);
  analogWrite(10,0);
  analogWrite(6,0);
  analogWrite(11,0);
  }

else if (flag == 50) //left
{
  analogWrite(9,200);
  analogWrite(10,0);
  analogWrite(6,0);
  analogWrite(11,0);
  delay(1000);
  analogWrite(9,0);
  analogWrite(10,0);
  analogWrite(8,0);
  analogWrite(11,0);

}
else if (flag == 51) //right
{
  analogWrite(9,0);
  analogWrite(10,200);
  analogWrite(6,0);
  analogWrite(11,0);
  delay(1000);
  analogWrite(9,0);
  analogWrite(10,0);
  analogWrite(6,0);
  analogWrite(11,0);

}
else if (flag == 52) // forward 10
{
  analogWrite(9,255);
  analogWrite(10,255);
  analogWrite(6,0);
  analogWrite(11,0);

   r=claculateRPM();
```

```arduino
   t=10/(c*r);
 delay(t*1000);

 analogWrite(9,0);
 analogWrite(10,0);
 analogWrite(6,0);
 analogWrite(11,0);
  }

 else if (flag == 53) //forward 20
{
 analogWrite(9,255);
 analogWrite(10,255);
 analogWrite(6,0);
 analogWrite(11,0);
  r=claculateRPM();
  t=20/(c*r);
  delay(t*1000);

 analogWrite(9,0);
 analogWrite(10,0);
 analogWrite(6,0);
 analogWrite(11,0);
  }
 else if (flag == 54) //forward 30
{
 analogWrite(9,255);
 analogWrite(10,255);
 analogWrite(6,0);
 analogWrite(11,0);
  r=claculateRPM();
  t=30/(c*r);
  delay(t*1000);

 analogWrite(9,0);
 analogWrite(10,0);
 analogWrite(6,0);
 analogWrite(11,0);
  }
 else if (flag == 55) //forward 40
{
 analogWrite(9,255);
 analogWrite(10,255);
 analogWrite(6,0);
 analogWrite(11,0);
  r=claculateRPM();
  t=40/(c*r);
  delay(t*1000);

 analogWrite(9,0);
 analogWrite(10,0);
 analogWrite(6,0);
 analogWrite(11,0);
  }
 else if (flag == 56) //forward 50
{
 analogWrite(9,255);
```

```
   analogWrite(10,255);
   analogWrite(6,0);
   analogWrite(11,0);
    r=claculateRPM();
    t=50/(c*r);
    delay(t*1000);

   analogWrite(9,0);
   analogWrite(10,0);
   analogWrite(6,0);
   analogWrite(11,0);
    }
   else if (flag == 57) //forward 100
 {
   analogWrite(9,255);
   analogWrite(10,255);
   analogWrite(8,0);
   analogWrite(11,0);
    r=claculateRPM();
    t=100/(c*r);
    delay(t*1000);

   analogWrite(9,0);
   analogWrite(10,0);
   analogWrite(8,0);
   analogWrite(11,0);
    }
   }

}

//function to calculate rps
float claculateRPM(){
  start_time=millis();
 end_time=start_time+1000;
 while(millis()<end_time)
 {
   if(digitalRead(sensor))
   {
    steps=steps+1;
    while(digitalRead(sensor));
   }
 }
    temp=steps-steps_old;
    steps_old=steps;
    rps=(temp/20);

    Serial.println(rps);

    return rps;
   }
```
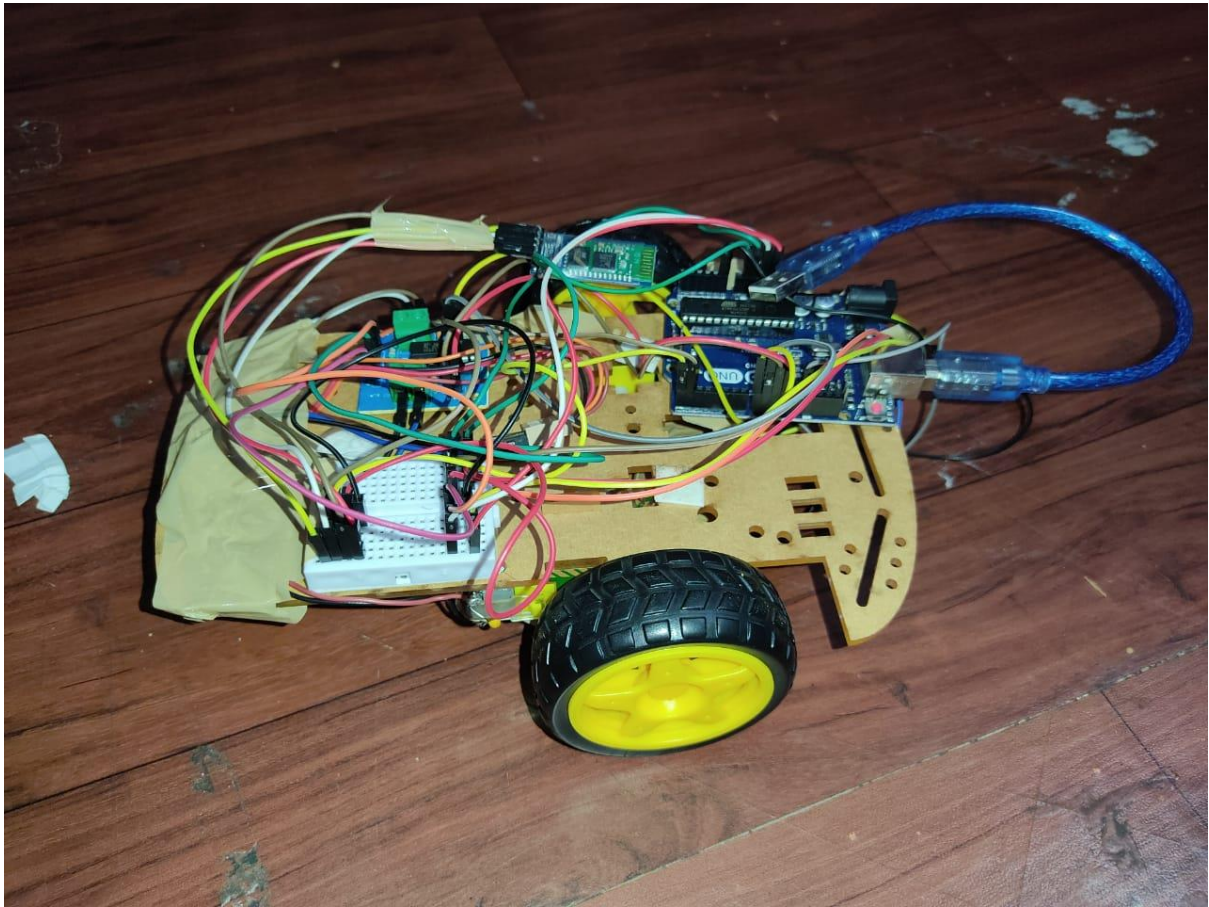
Model

Video Attached .