

SMART BAG

Arwa Ujjainwala 60003200121

Shazia Talib 60003190049

Tanvi Save 60003190059

Guide: Prof. Arjun Jaiswal

CONTENT

1. Project objective
2. System Architecture
3. How much is completed?
4. Remaining work
5. References



PROJECT OBJECTIVE

Our primary aim is to make travelling one step easier especially for people with disabilities and solo travelers by reducing the constant concern of heavy/unmanageable and misplaced luggage.

So in order to make journeys comfortable and safe, we have decided to make a smart bag IOT based project.

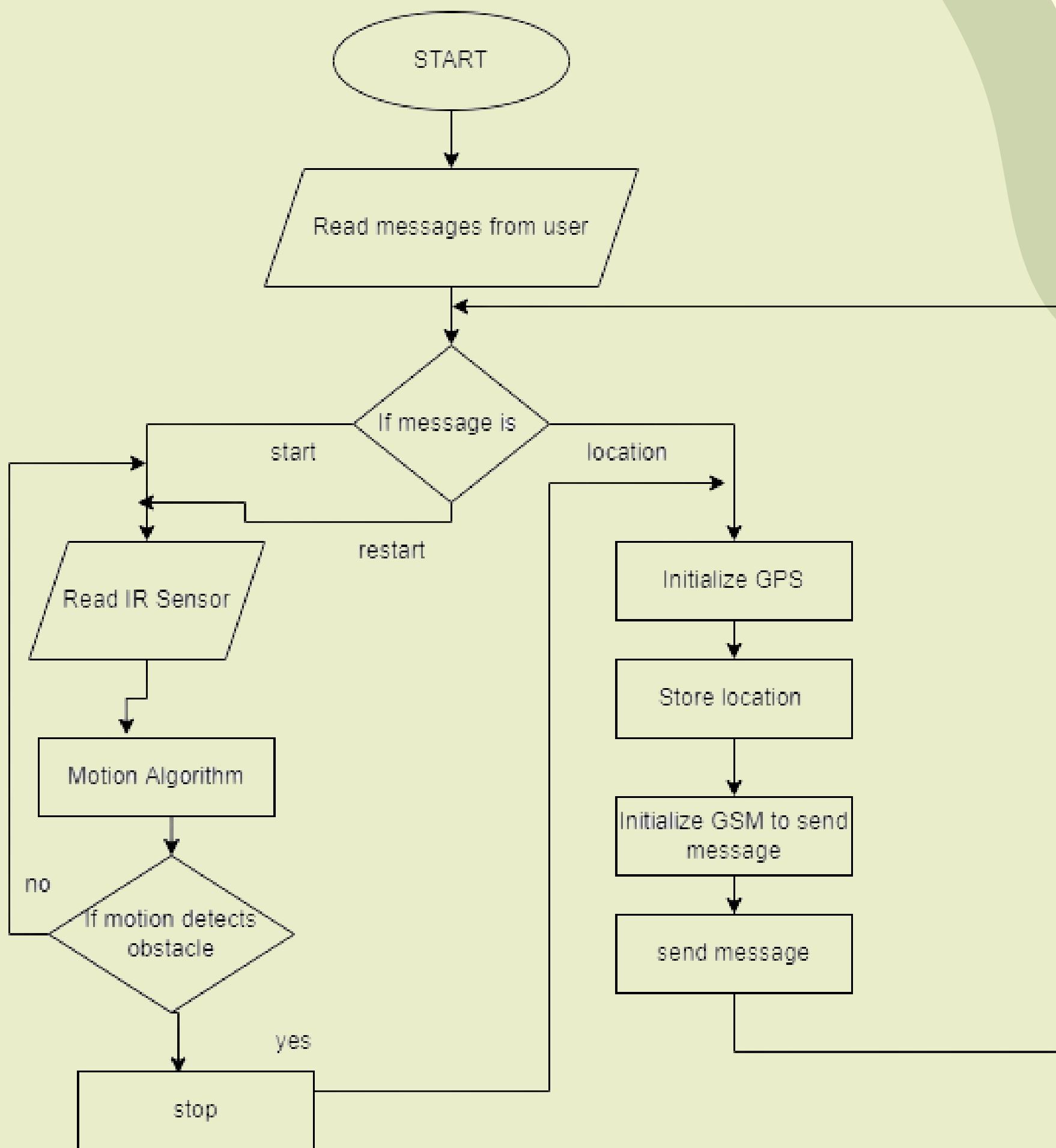
WHY SHOULD WE BUILD SMART BAG?

Literature
review on
similar
systems

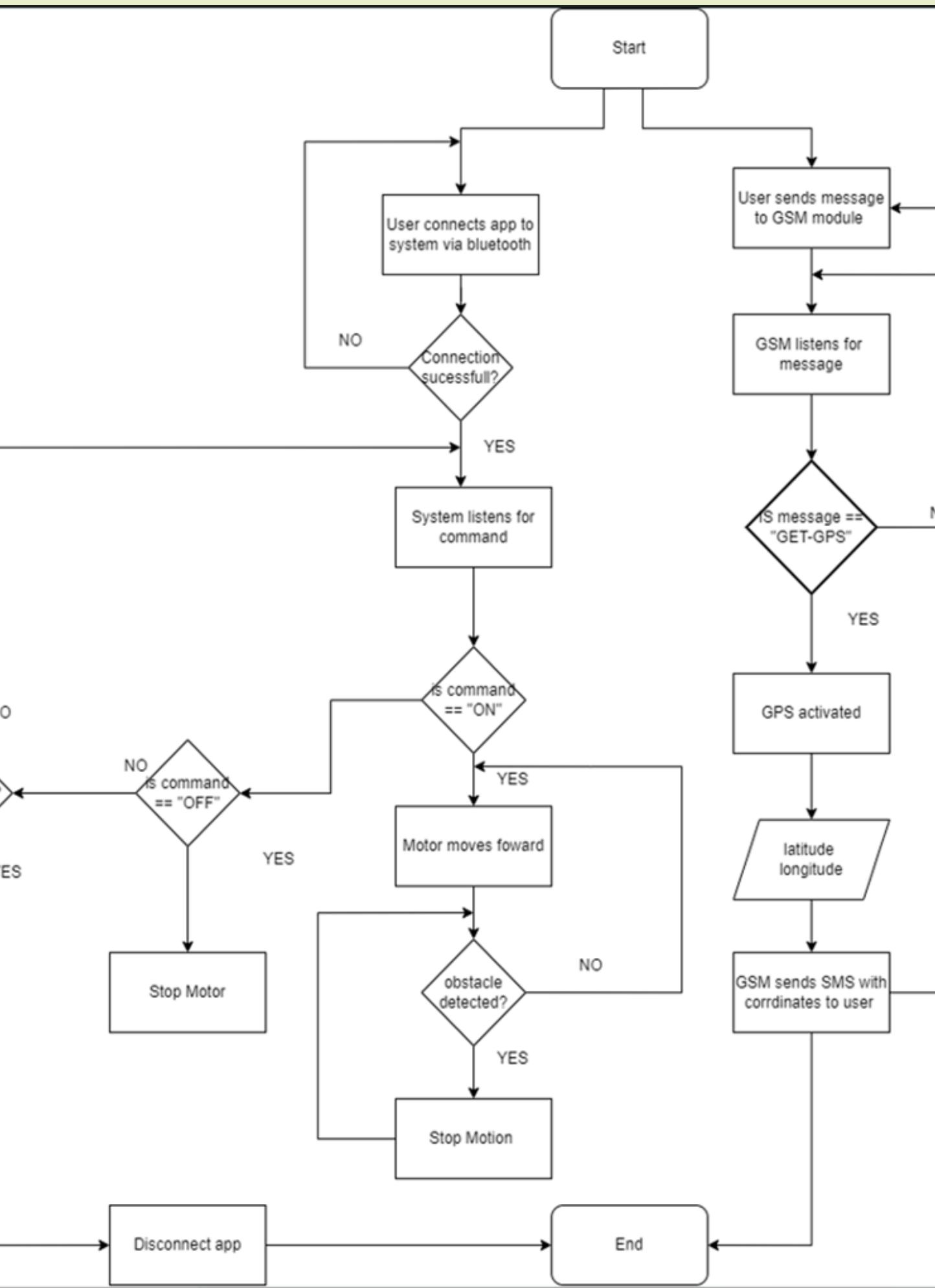
Comparative
functionality
of our system

Our basic
system
structure

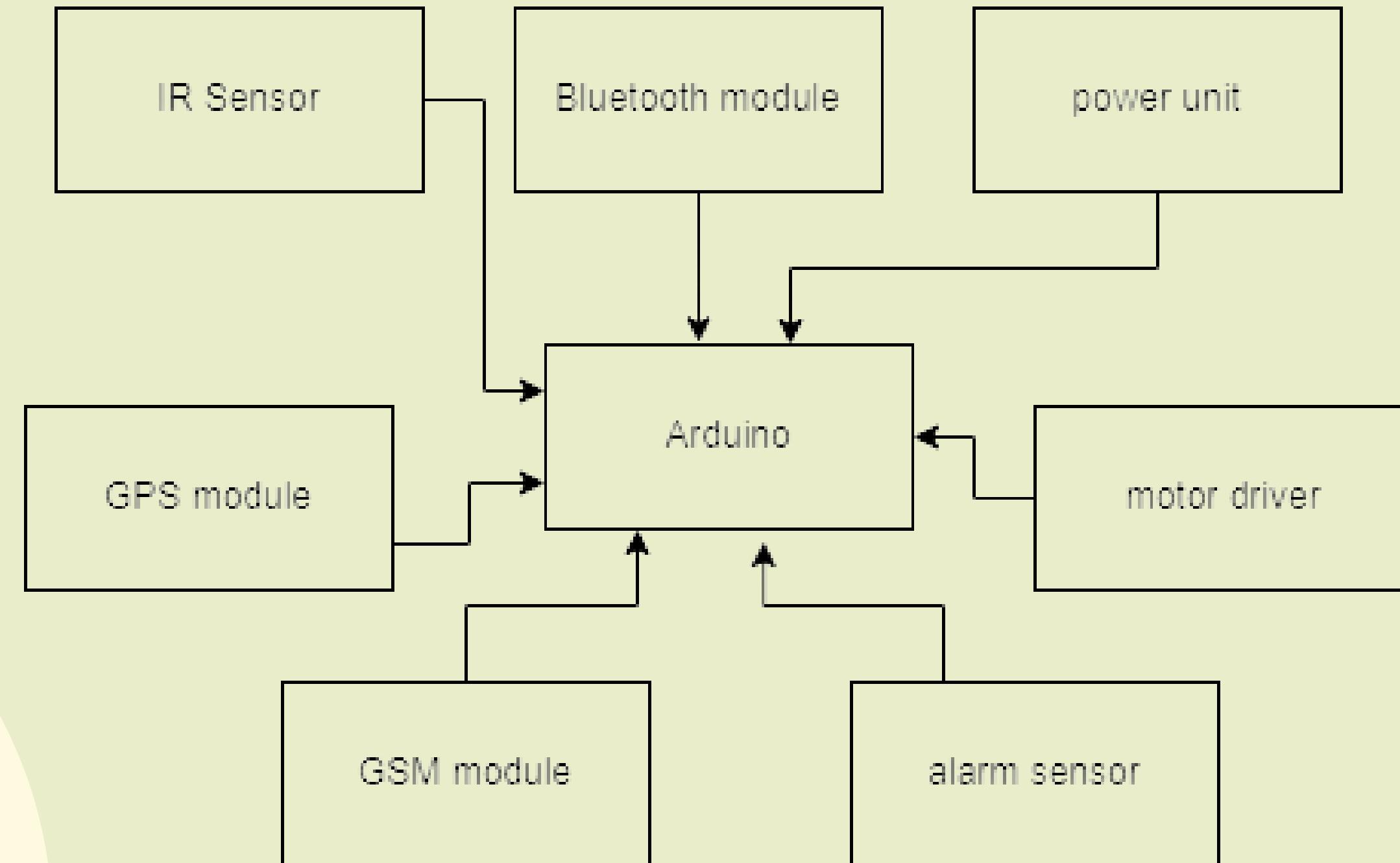
SYSTEM PROCESS FLOW



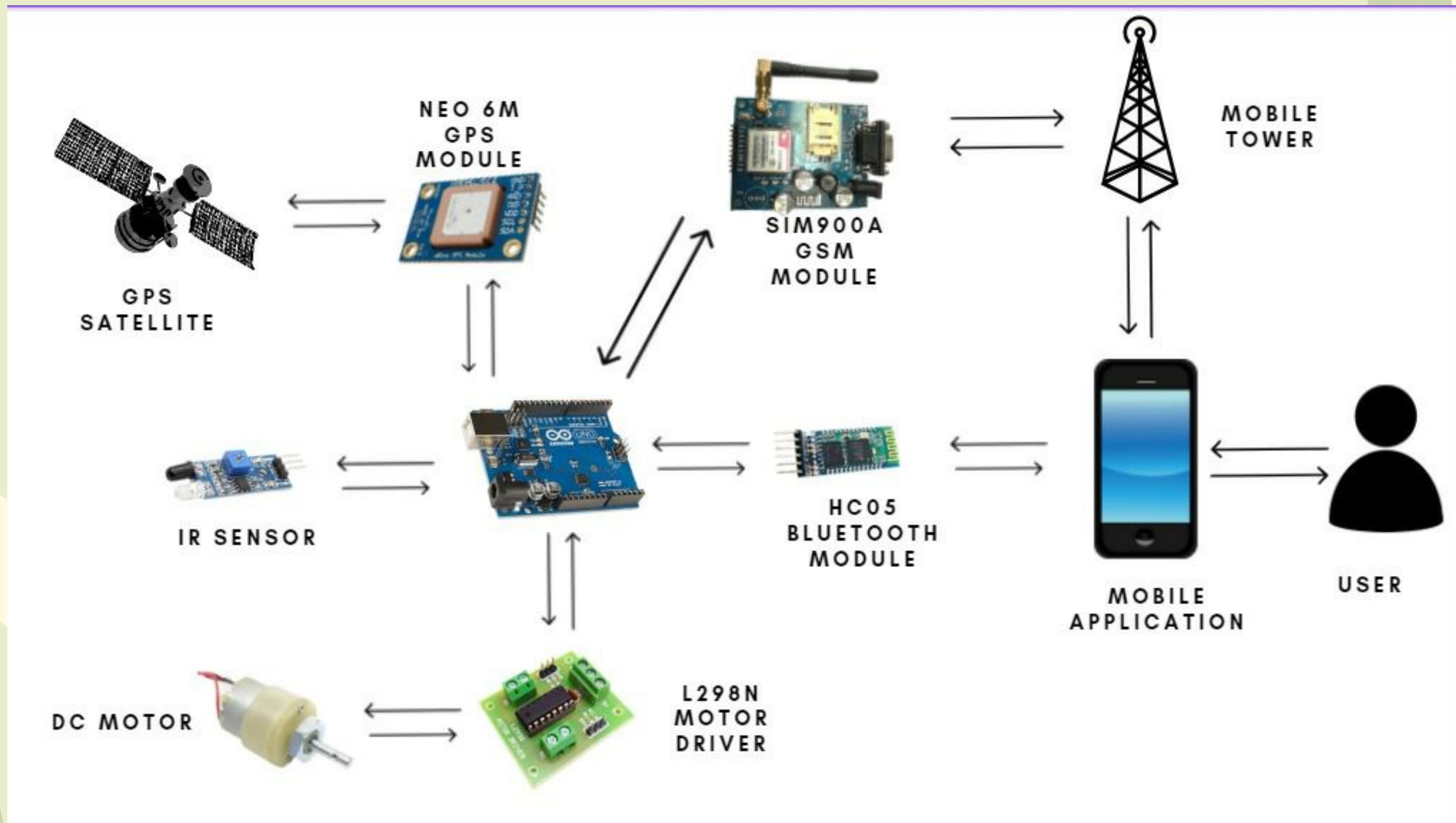
SYSTEM PROCESS FLOW



SYSTEM COMPONENTS



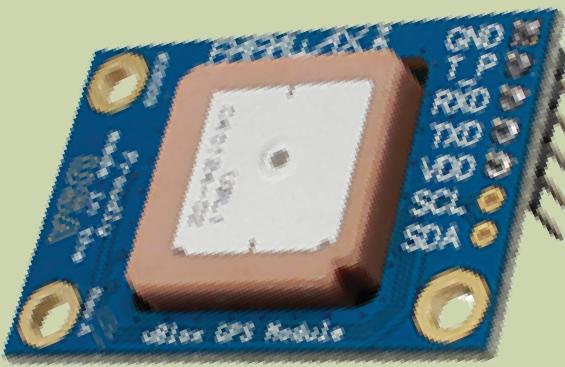
INFORMATION ARCHITECTURE



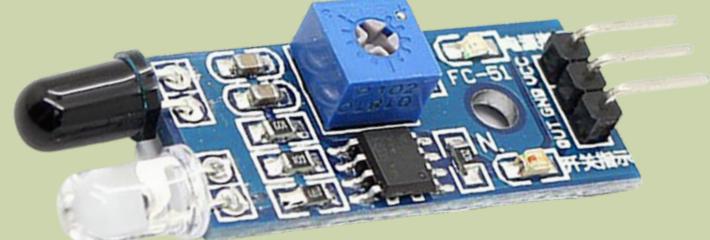
COMPONENTS



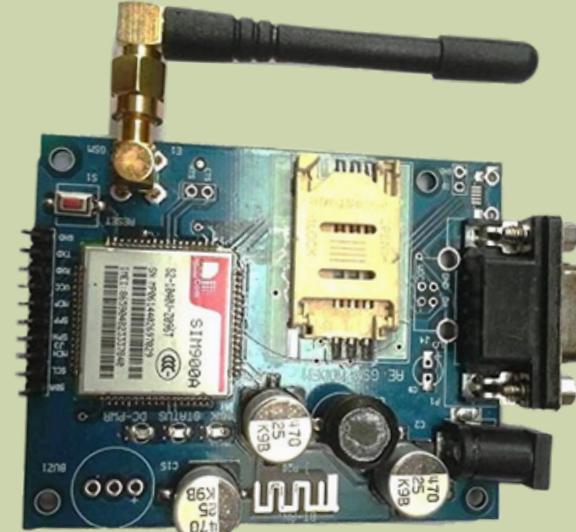
ARDUINO UNO



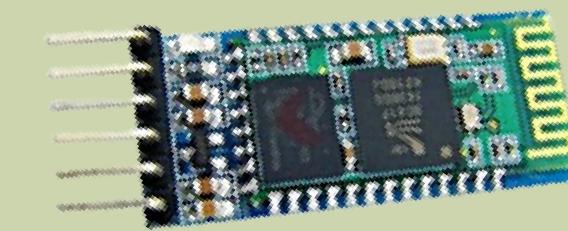
GPS MODULE



IR SENSOR

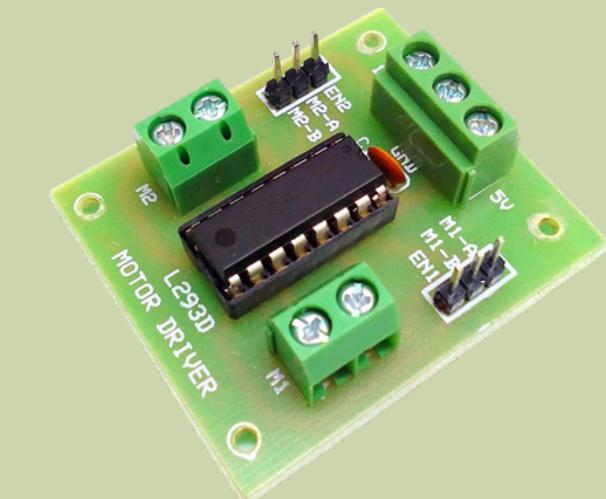


GSM MODULE

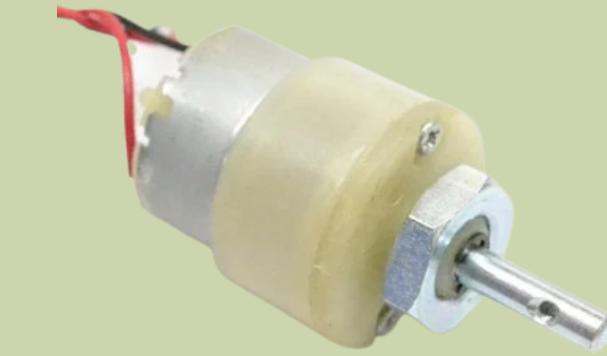


BLUETOOTH MODULE

**FINGERPRINT
MODULE**



MOTOR DRIVER AND MOTOR



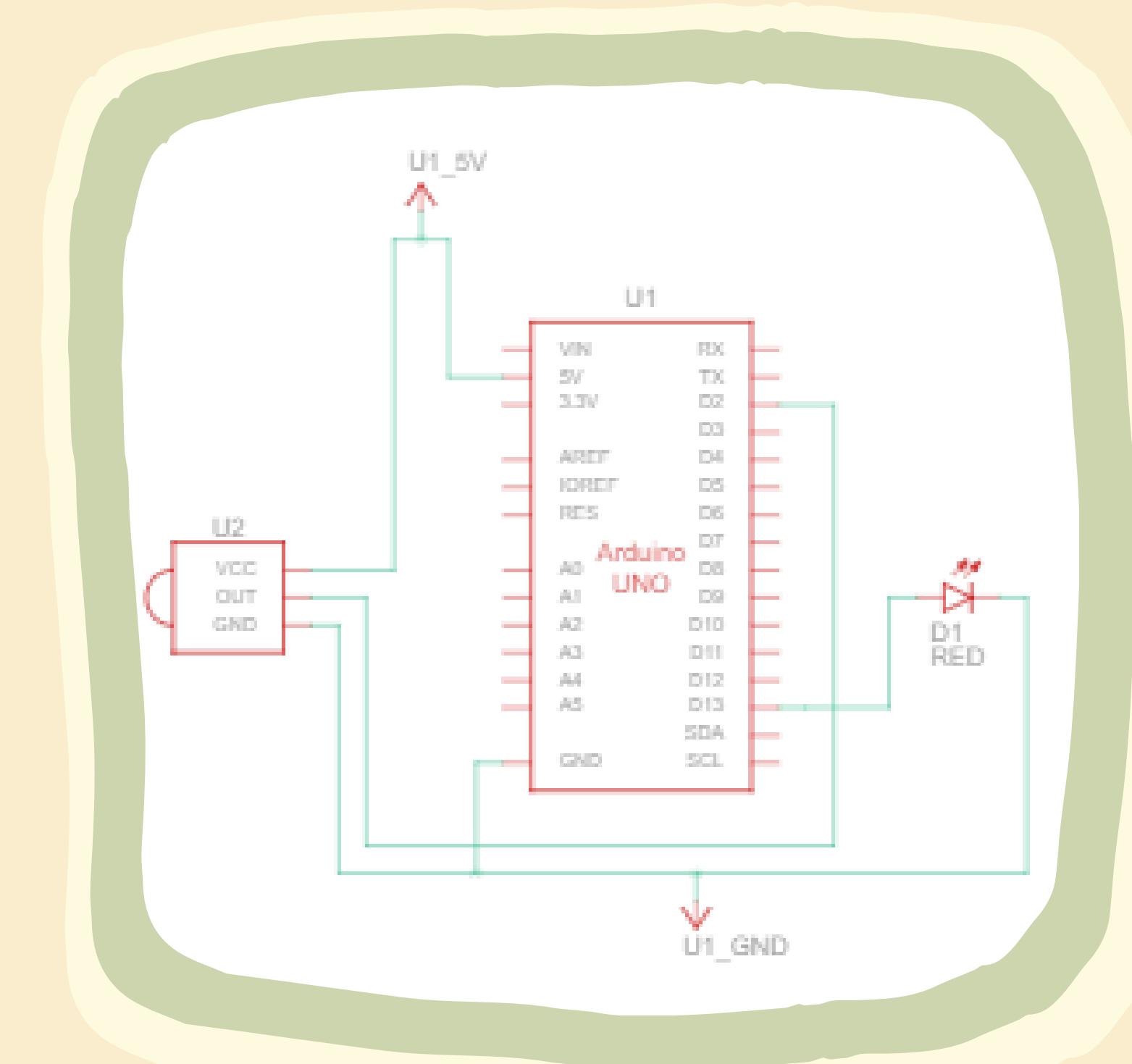
IMPLEMENTATION OF IR SENSOR

```
IRsensor control_led_using_ir_remote

void setup() {
    // put your setup code here, to run once:
    pinMode(2, INPUT);
    pinMode(13, OUTPUT);
}

void loop() {
    // put your main code here, to run repeatedly:
    if(digitalRead(2)==LOW) {
        digitalWrite(13, LOW);
    }else{
        digitalWrite(13, HIGH);
    }
}
```

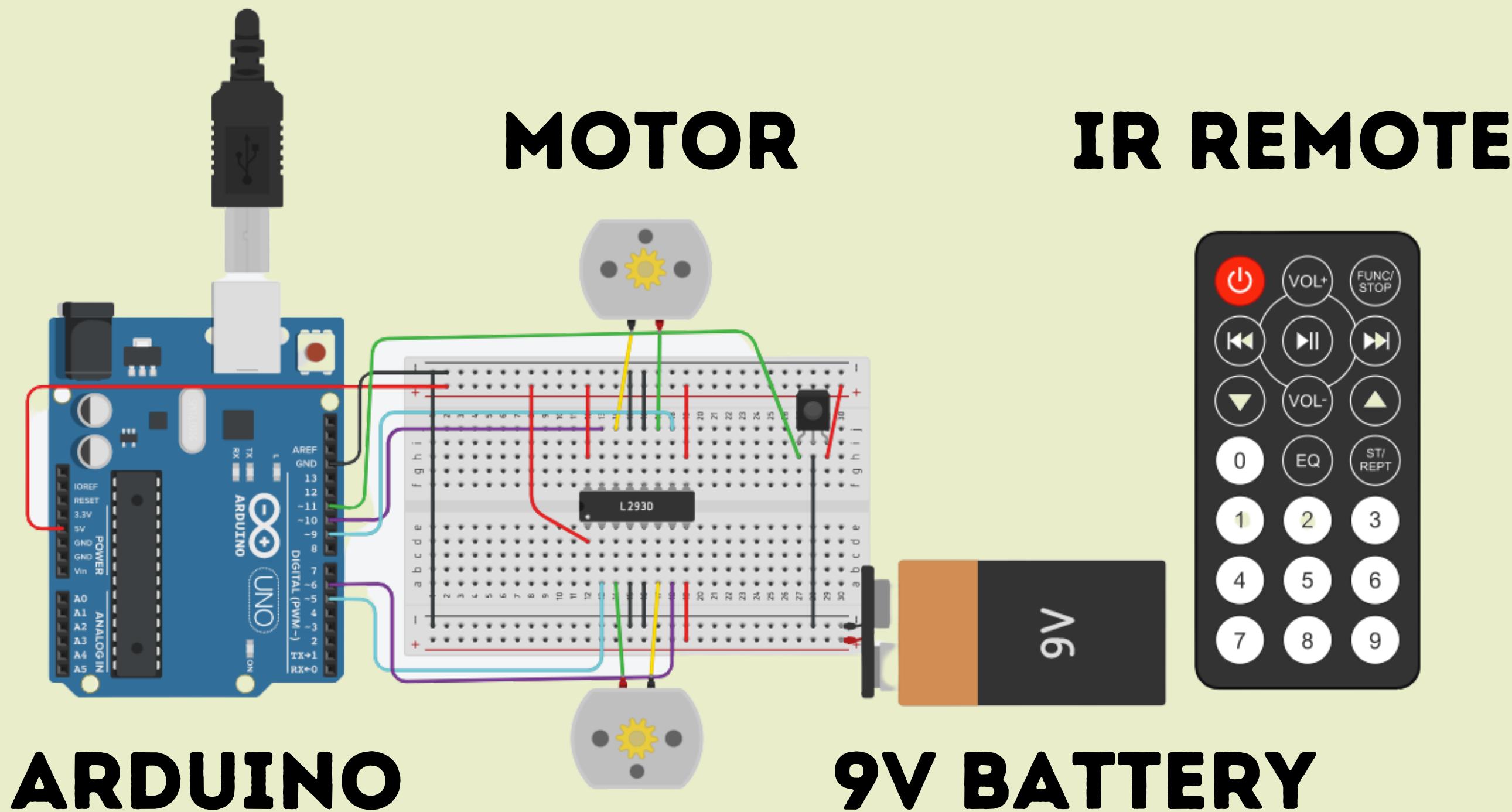
code for

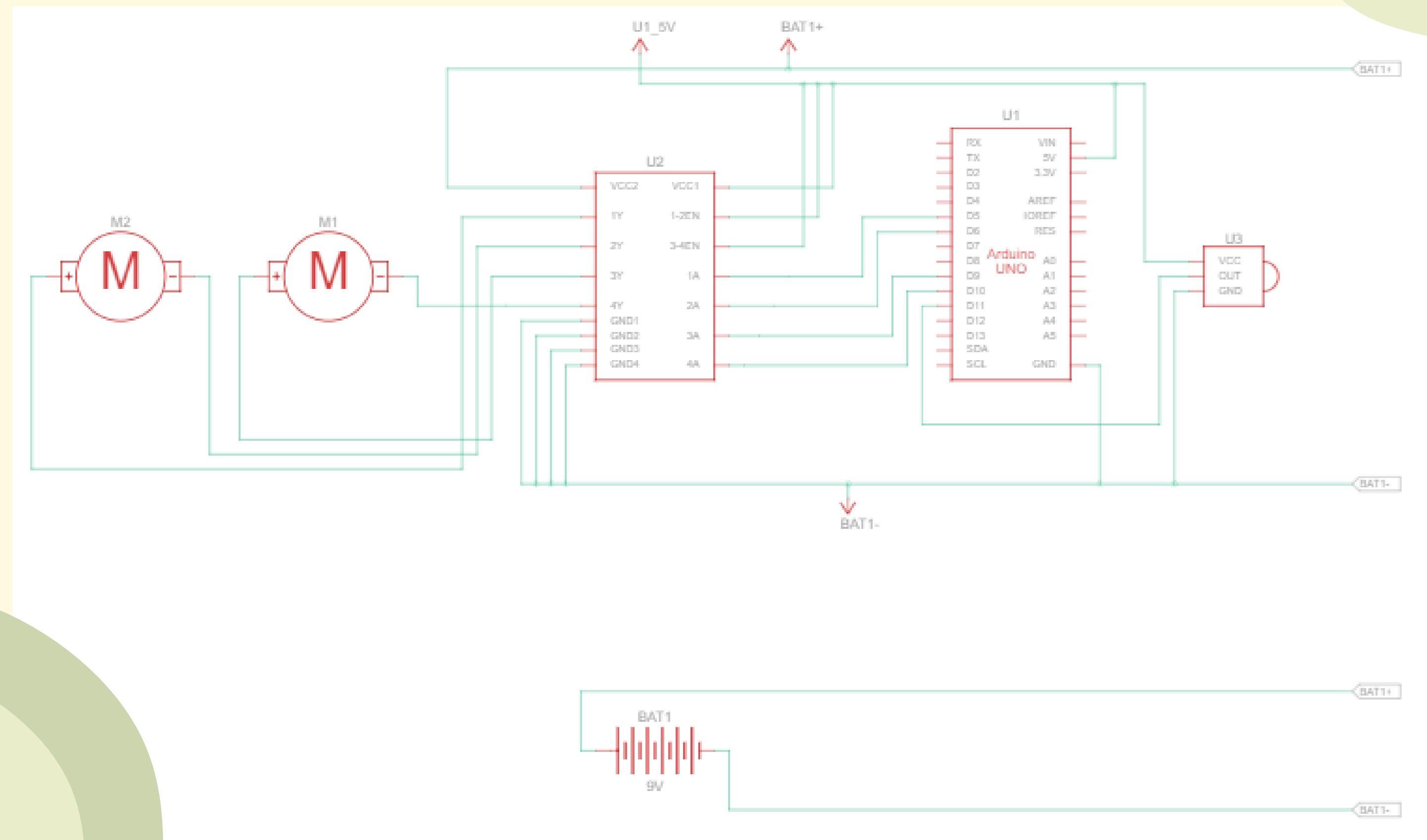


DEMONSTRATION OF IR SENSOR

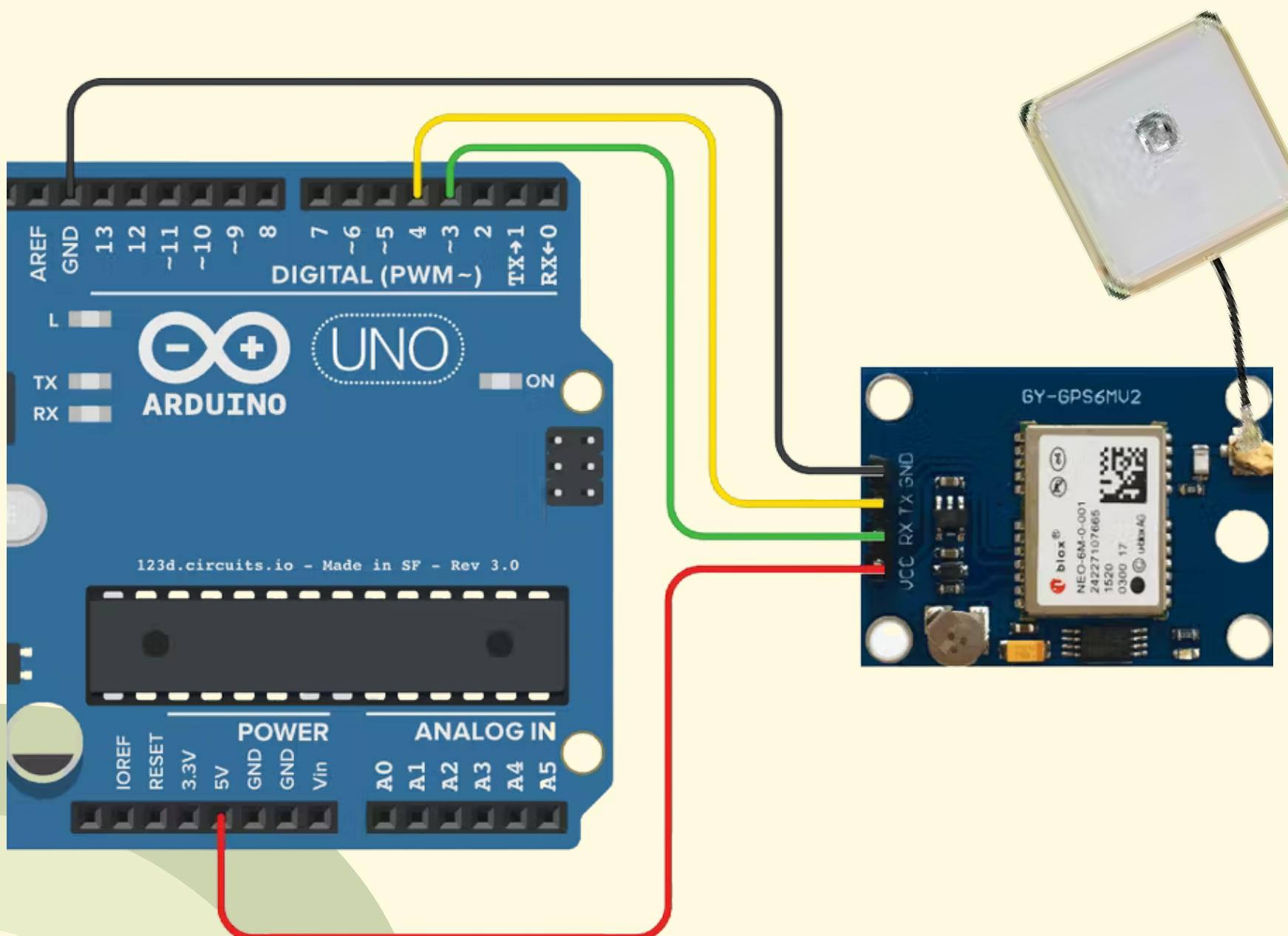


MOTOR DRIVER CIRCUIT DIAGRAM.





IMPLEMENTATION OF GPS MODULE



```
#include <SoftwareSerial.h>

SoftwareSerial ss(4, 3);
// GPS Module's TX to D4 & RX to D3

void setup() {
Serial.begin(9600);
ss.begin(9600);
} s

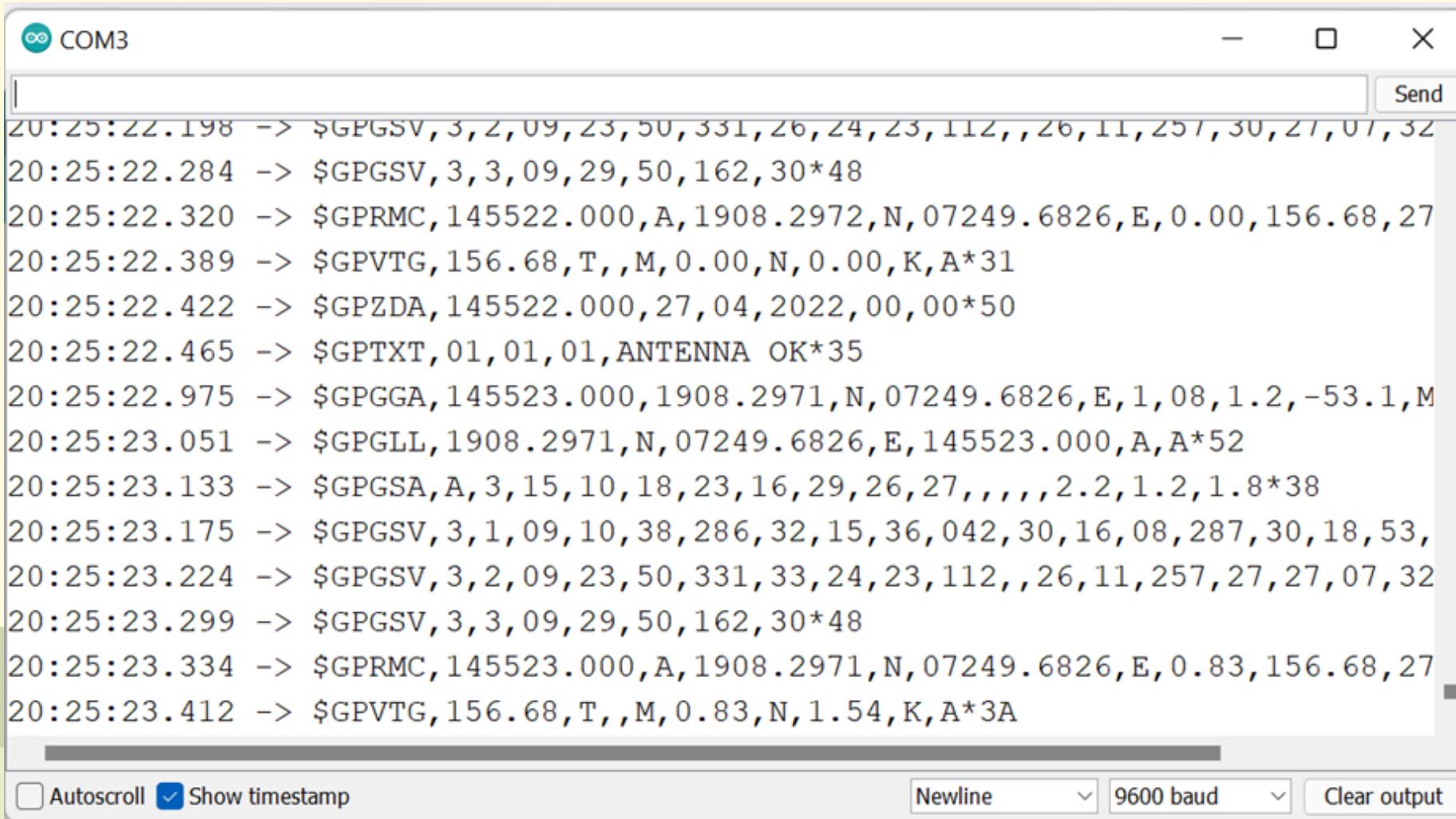
void loop() {
while (ss.available() > 0) {
byte gpsData = ss.read();
Serial.write(gpsData);
}
}
```

CODE FOR 
ARDUINO

OUTPUT OF GPS MODULE

20:25:22.422 -> \$GPZDA,145522.000,27,04,2022,00,00*50

DATE: 27/04/2022



The screenshot shows a terminal window titled "COM3". The window displays a series of GPS NMEA messages. One message is highlighted with a dashed border:

```
20:25:22.198 -> $GPGSV,3,2,09,23,50,331,26,24,23,112,,26,11,257,30,21,01,32
20:25:22.284 -> $GPGSV,3,3,09,29,50,162,30*48
20:25:22.320 -> $GPRMC,145522.000,A,1908.2972,N,07249.6826,E,0.00,156.68,27
20:25:22.389 -> $GPVTG,156.68,T,,M,0.00,N,0.00,K,A*31
20:25:22.422 -> $GPZDA,145522.000,27,04,2022,00,00*50
20:25:22.465 -> $GPTXT,01,01,01,ANTENNA OK*35
20:25:22.975 -> $GPGGA,145523.000,1908.2971,N,07249.6826,E,1,08,1.2,-53.1,M
20:25:23.051 -> $GPGLL,1908.2971,N,07249.6826,E,145523.000,A,A*52
20:25:23.133 -> $GPGSA,A,3,15,10,18,23,16,29,26,27,,,2.2,1.2,1.8*38
20:25:23.175 -> $GPGSV,3,1,09,10,38,286,32,15,36,042,30,16,08,287,30,18,53,
20:25:23.224 -> $GPGSV,3,2,09,23,50,331,33,24,23,112,,26,11,257,27,27,07,32
20:25:23.299 -> $GPGSV,3,3,09,29,50,162,30*48
20:25:23.334 -> $GPRMC,145523.000,A,1908.2971,N,07249.6826,E,0.83,156.68,27
20:25:23.412 -> $GPVTG,156.68,T,,M,0.83,N,1.54,K,A*3A
```

At the bottom of the window, there are several configuration options: "Autoscroll" (unchecked), "Show timestamp" (checked), "Newline" dropdown set to "Newline", "9600 baud" dropdown set to "9600 baud", and a "Clear output" button.

20:25:22.975 -> \$GPGGA,145523.000,1908.2971,N,07249.6826,E,1,08,1.2,-53.1,M

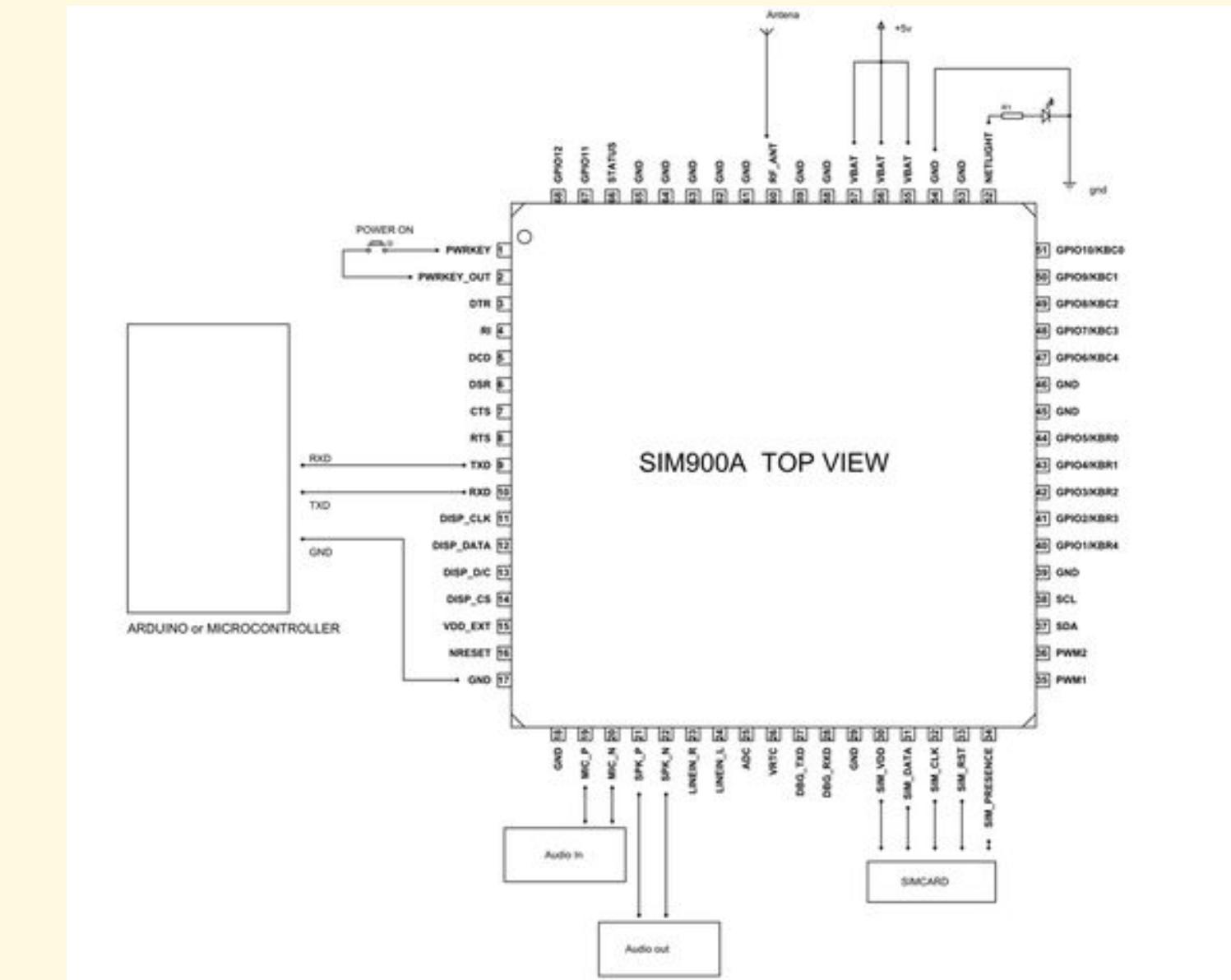
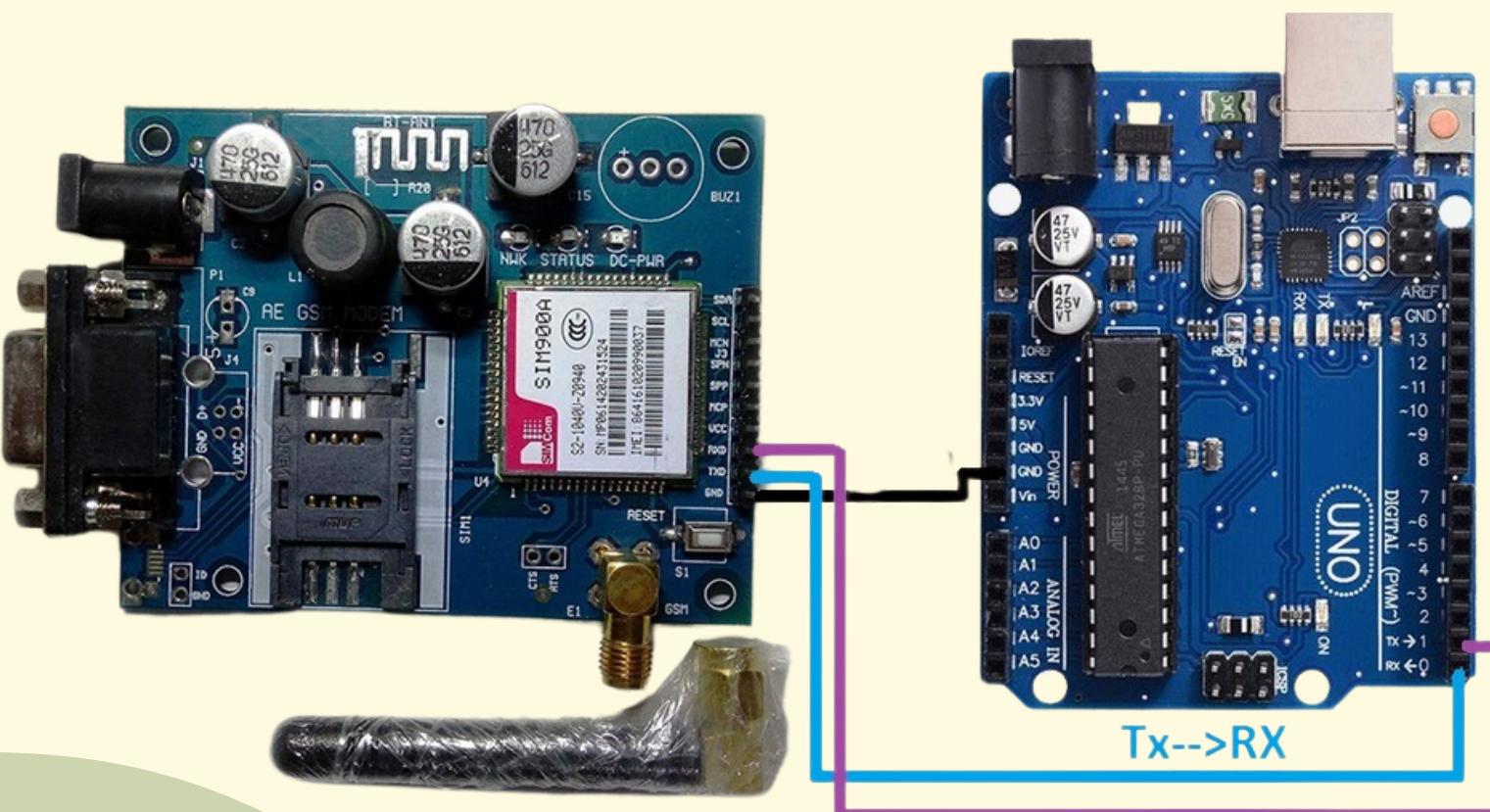
ACTIVE SATELLITES: 08

LATITUDE: 19.082971

LONGITUDE: 72.496826

20:25:23.051 -> \$GPGLL,1908.2971,N,07249.6826,E,145523.000,A,A*52

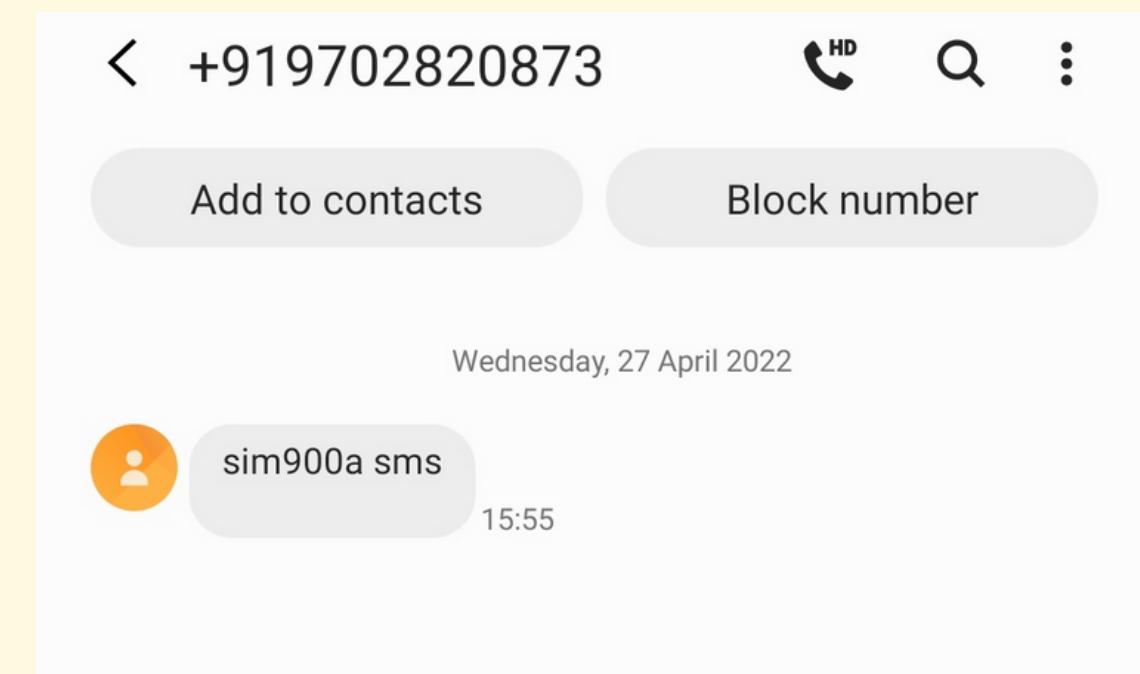
IMPLEMENTATION OF GSM MODULE



IMPLEMENTATION OF GSM MODULE

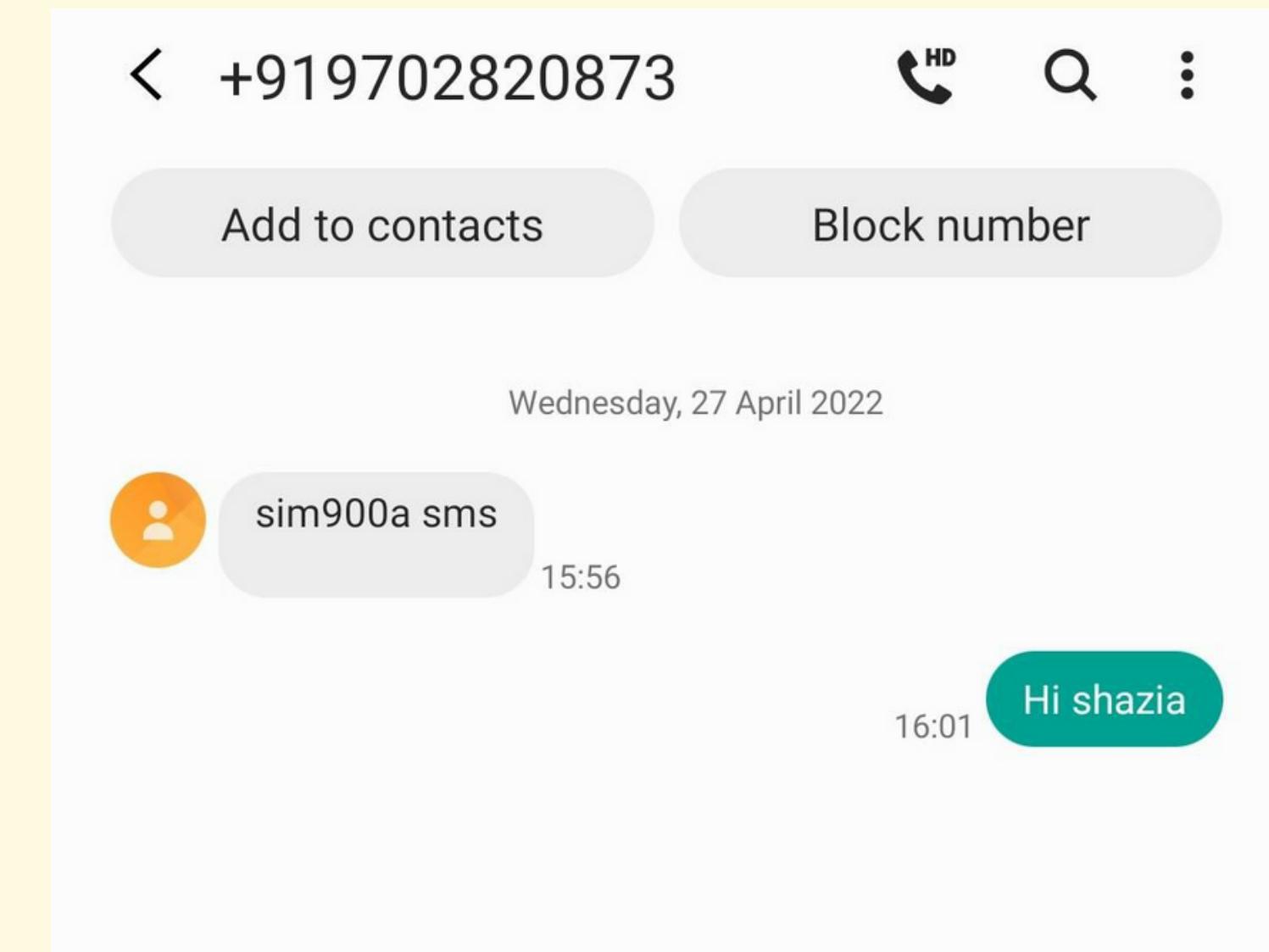
```
void SendMessage()
{
    mySerial.println("AT+CMGF=1");      //Sets the GSM Module in Text Mode
    delay(1000); // Delay of 1000 milli seconds or 1 second
    mySerial.println("AT+CMGS=\"+919137376878\"\r");
    delay(1000);
    mySerial.println("sim900a sms");// The SMS text you want to send
    delay(100);
    mySerial.println((char)26);// ASCII code of CTRL+Z
    delay(1000);
}
```

CODE FOR SEND

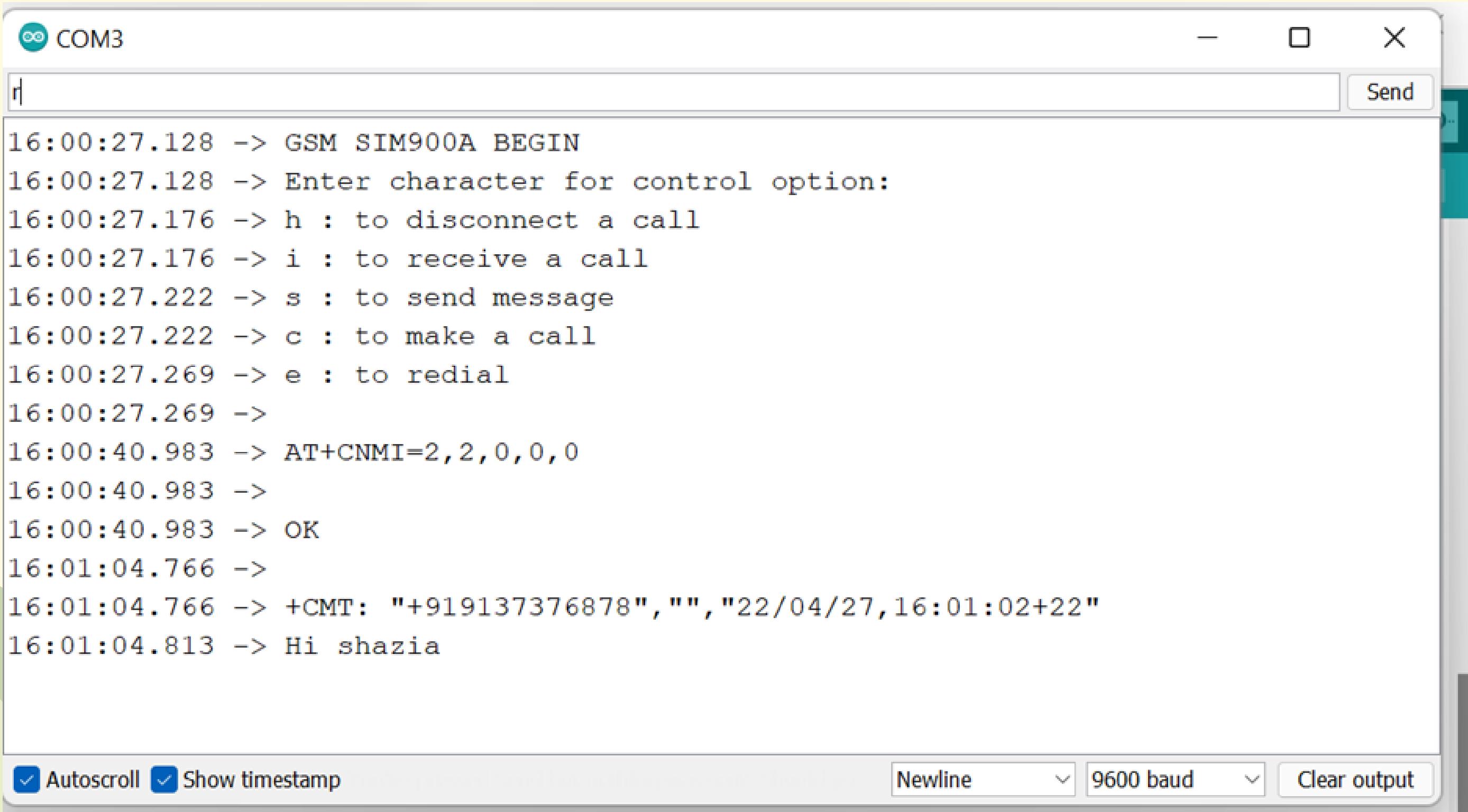


CODE FOR RECEIVE

```
void ReceiveMessage()
{
    mySerial.println("AT+CNMI=2,2,0,0,0");
    // AT Command to receive a live SMS
    delay(1000);
    if (mySerial.available() > 0)
    {
        msg = mySerial.read();
        Serial.print(msg);
    }
}
```



OUTPUT



The screenshot shows a terminal window titled "COM3" with the following content:

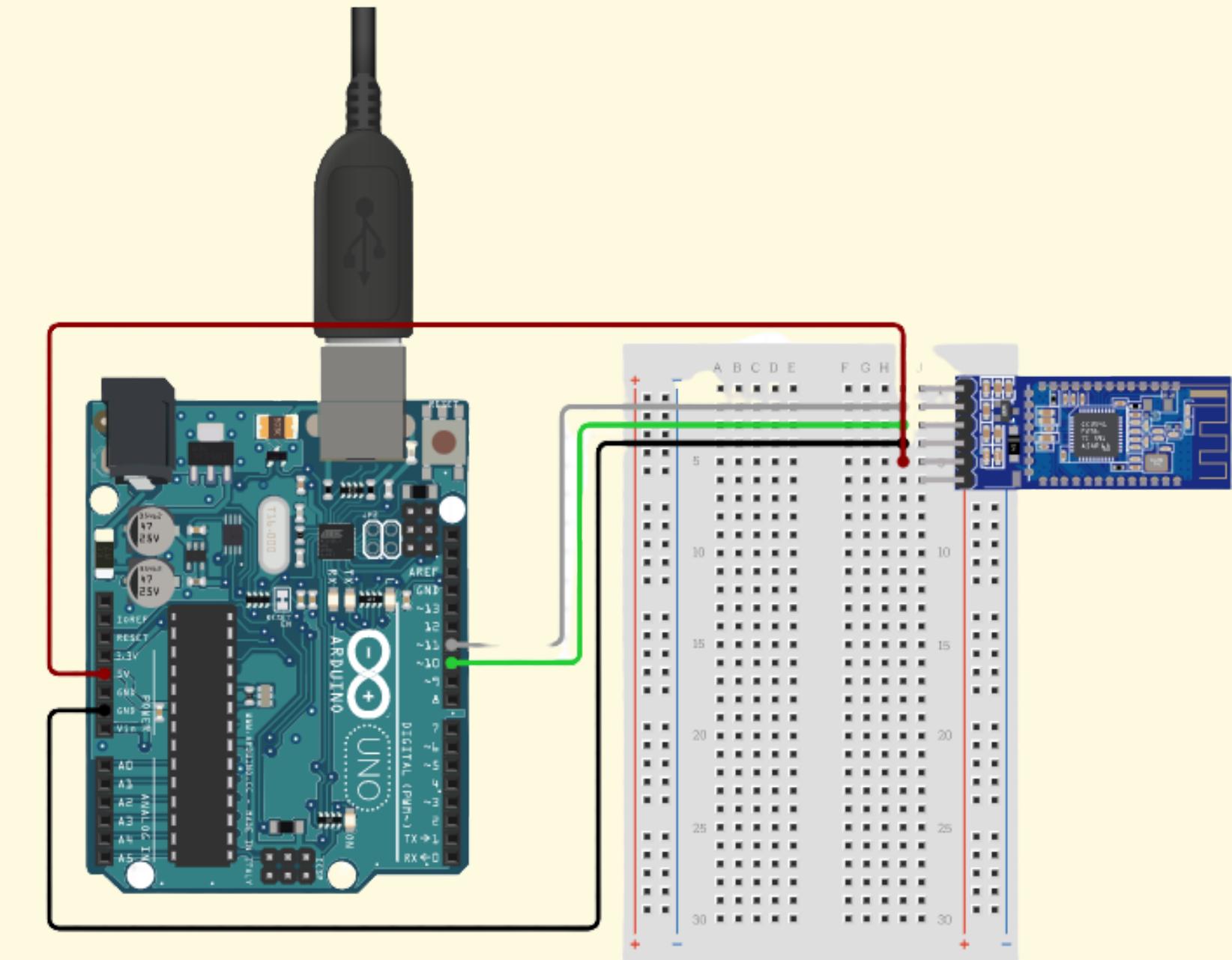
```
16:00:27.128 -> GSM SIM900A BEGIN
16:00:27.128 -> Enter character for control option:
16:00:27.176 -> h : to disconnect a call
16:00:27.176 -> i : to receive a call
16:00:27.222 -> s : to send message
16:00:27.222 -> c : to make a call
16:00:27.269 -> e : to redial
16:00:27.269 ->
16:00:40.983 -> AT+CNMI=2,2,0,0,0
16:00:40.983 ->
16:00:40.983 -> OK
16:01:04.766 ->
16:01:04.766 -> +CMT: "+919137376878", "", "22/04/27, 16:01:02+22"
16:01:04.813 -> Hi shazia
```

At the bottom of the window, there are several configuration options:

- Autoscroll
- Show timestamp
- Newline
- 9600 baud
- Clear output

IMPLEMENTATION OF BLUETOOTH SENSOR

```
bluetooth2 §  
  
int a;  
int led = 13;  
void setup() {  
Serial.begin(9600);  
pinMode(led,OUTPUT);  
}  
  
void loop() {  
while(Serial.available()) {  
a=Serial.read();  
Serial.println(a);  
if(a==78){  
digitalWrite(led,HIGH);}  
if(a==70){  
digitalWrite(led,LOW);}  
}  
}
```



IMPLEMENTATION OF BLUETOOTH SENSOR



REMAINING WORK

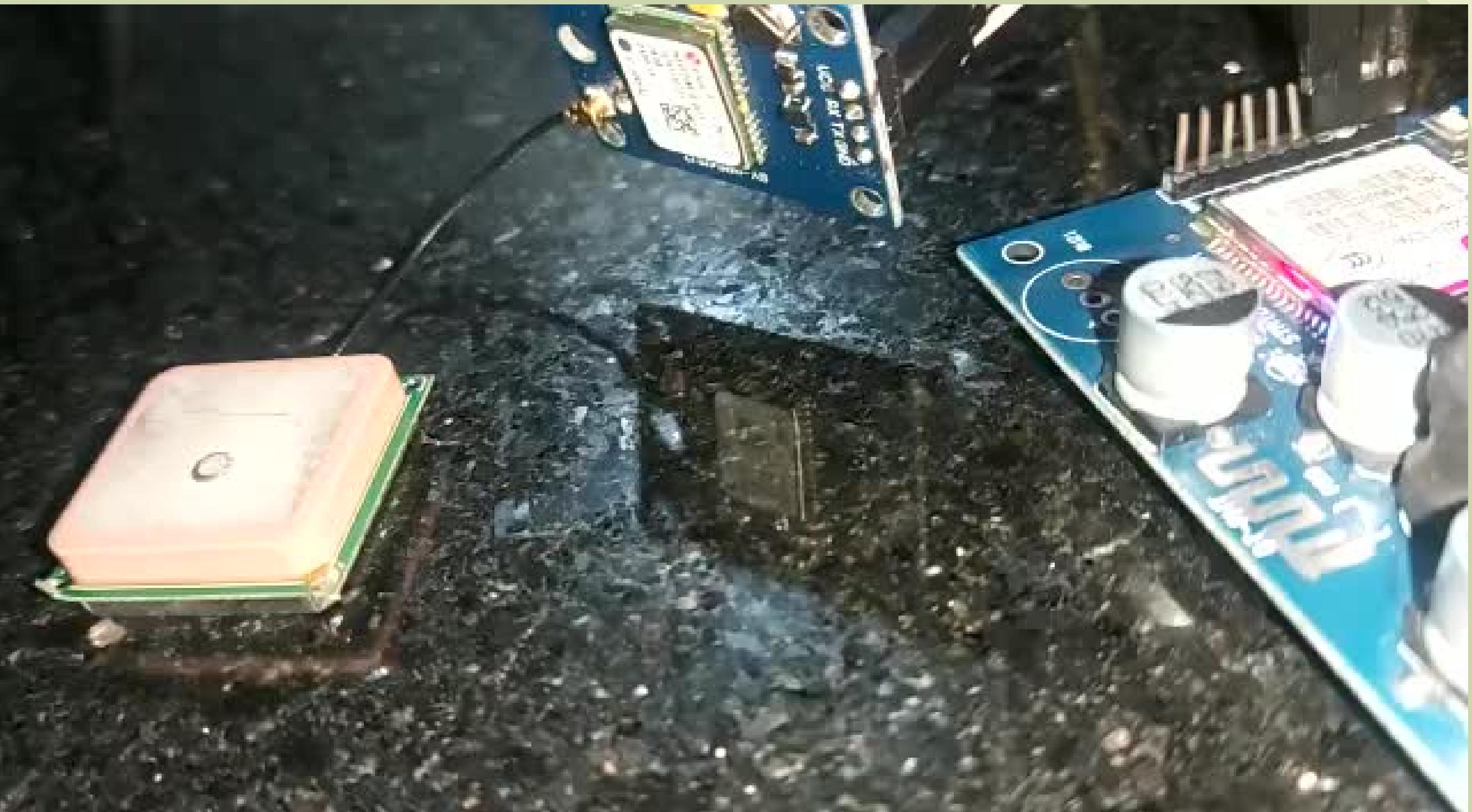
**INTEGRATION
OF
ALL MODULES**

**BUILDING
OUR APP AND
CONNECTING
IT TO
HARDWARE**

**TESTING OUT
OUR SYSTEM
WITH A
LUGGAGE BAG**

**WRITING A
TECHNICAL
PAPER**

INTEGRATION OF GPS AND GSM MODULE:



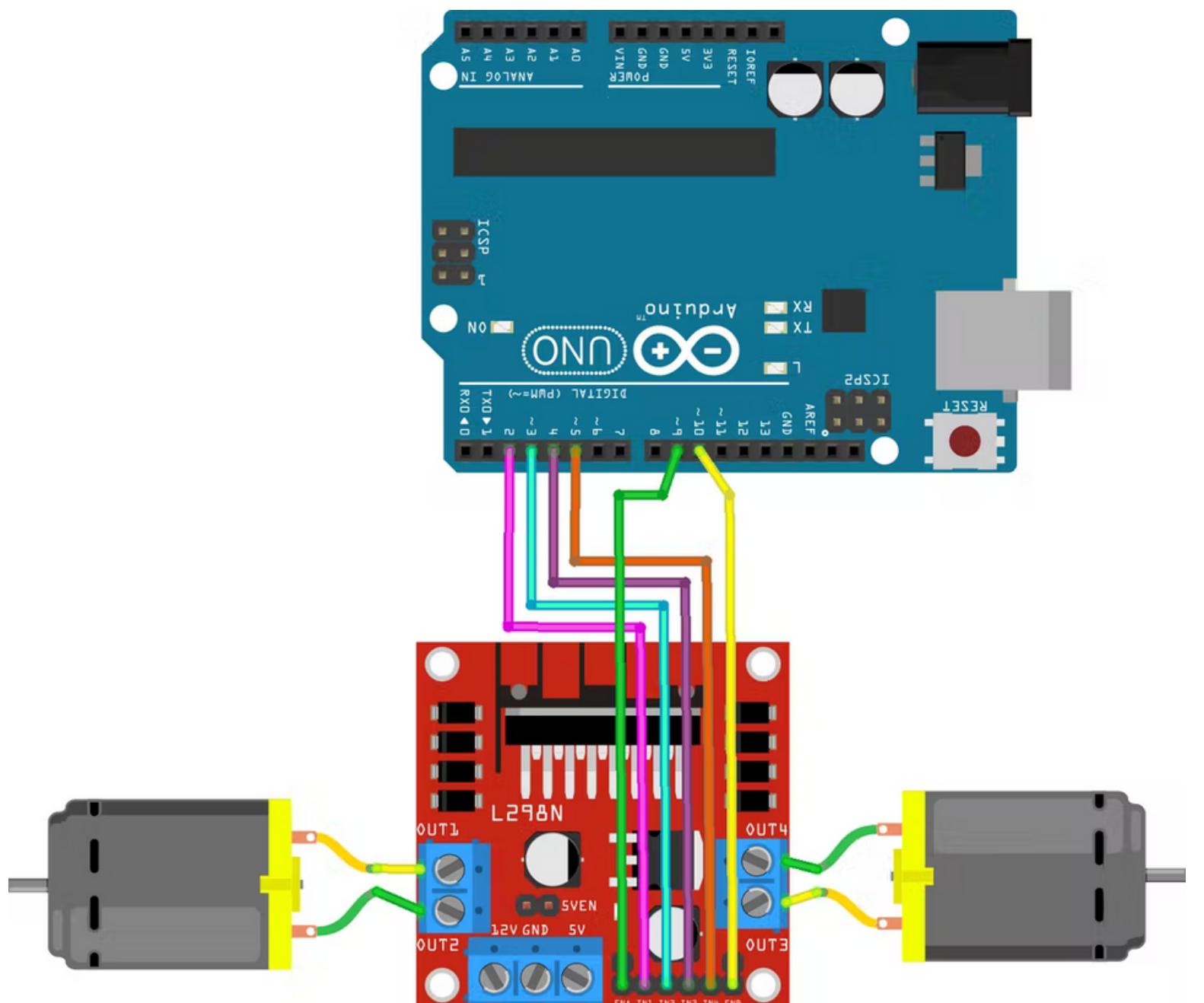
FUTURE SCOPE

We plan on implementing fingerprint technology in our system to increase the security of our system. We can extend this system with slight modifications for courier systems and warehouse management and logistics.

REFERENCES

- [1] Dwij Sukeshkumar Sheth, Shantanu Singh, Prakhar S Mathur, Vydeki D, SMART LAPTOP BAG WITH MACHINE,
https://www.researchgate.net/publication/332726179_Smart_Laptop_Bag_with_Machine_Learning_for_Activity_Recognition
LEARNING FOR ACTIVITY RECOGNITION
- [2] KEERTHI PRIYA S V, LIKITHA D, NAVYA M. IOT Based Smart Luggage System using RFID
http://203.201.63.46:8080/jspui/bitstream/123456789/6211/1/PR3208%20-%20IOT004_IOT%20Based%20Smart%20Luggage%20system_Report%20-%20LIKITHA%20D.pdf
- [3] <https://techatronic.com/interfacing-sim-900-gsm-module-with-arduino/>
- [4] <https://create.arduino.cc/projecthub/akshayjoseph666/interfacing-bluetooth-module-hc-05-with-arduino-uno-f5209b>
- [5] <https://www.electronicwings.com/arduino/gps-module-interfacing-with-arduino-uno>

THANK YOU!



fritzing