SPRINT-1

Assignment Date	08th October 2022
Team ID	PNT2022TMID39421
Project Name	Smart Solution For Railways Using IOT

Project Description:-

Smart solution for railways is designed to reduce the work load of the user and also the use of paper.

Project Feature:-

A GPS module is present in the train to track it.The live status of the journey is updated in the web application.

Task:-

Connection setup of GPS and ArudinoUNO using C or C++ language to trackthe exact train location

Code :-

```
#include <LiquidCrystal.h>

#include <SoftwareSerial.h>s

#include <TinyGPS.h>

float lat = 28.5458,lon = 77.1703; // create variable for latitude and
      longitude object

SoftwareSerial gpsSerial(3,4);//rx,tx

LiquidCrystal lcd(A0,A1,A2,A3,A4,A5);

TinyGPS gps; // create gps object
```

```
void setup(){
Serial.begin(9600); // connect serial
//Serial.println("The GPS Received Signal:");
gpsSerial.begin(9600); // connect gps sensor
lcd.begin(16,2);
}
void loop(){
while(gpsSerial.available()){ // check for gps data
if(gps.encode(gpsSerial.read()))// encode gps data
{
gps.f_get_position(&lat,&lon); // get latitude and longitude
// display position
lcd.clear();
lcd.setCursor(1,0);
lcd.print("GPS Signal");
//Serial.print("Position: ");
//Serial.print("Latitude:");
//Serial.print(lat,6);
//Serial.print(";");
//Serial.print("Longitude:");
//Serial.println(lon,6);
lcd.setCursor(1,0);
lcd.print("LAT:");
lcd.setCursor(5,0);
```

```
lcd.print(lat);
//Serial.print(lat);
//Serial.print(" ");
lcd.setCursor(0,1);
lcd.print(",LON:");
lcd.setCursor(5,1);
lcd.print(lon);
}
}
String latitude = String(lat,6);
String longitude = String(lon,6);
Serial.println(latitude+";"+longitude);
delay(1000);
}
#include <LiquidCrystal.h>
#include <SoftwareSerial.h>
#include <TinyGPS.h>
float lat = 28.5458,lon = 77.1703; // create variable for latitude and
      longitude object
SoftwareSerial gpsSerial(3,4);//rx,tx
LiquidCrystal lcd(A0,A1,A2,A3,A4,A5);
TinyGPS gps; // create gps object
void setup(){
Serial.begin(9600); // connect serial
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gpsSerial.begin(9600); // connect gps sensor
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}
void loop(){
while(gpsSerial.available()){ // check for gps data
if(gps.encode(gpsSerial.read()))// encode gps data
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gps.f_get_position(&lat,&lon); // get latitude and longitude
// display position
lcd.clear();
lcd.setCursor(1,0);
lcd.print("GPS Signal");
//Serial.print("Position: ");
//Serial.print("Latitude:");
//Serial.print(lat,6);
//Serial.print(";");
//Serial.print("Longitude:");
//Serial.println(lon,6);
lcd.setCursor(1,0);
lcd.print("LAT:");
lcd.setCursor(5,0);
lcd.print(lat);
//Serial.print(lat);
//Serial.print(" ");
lcd.setCursor(0,1);
```
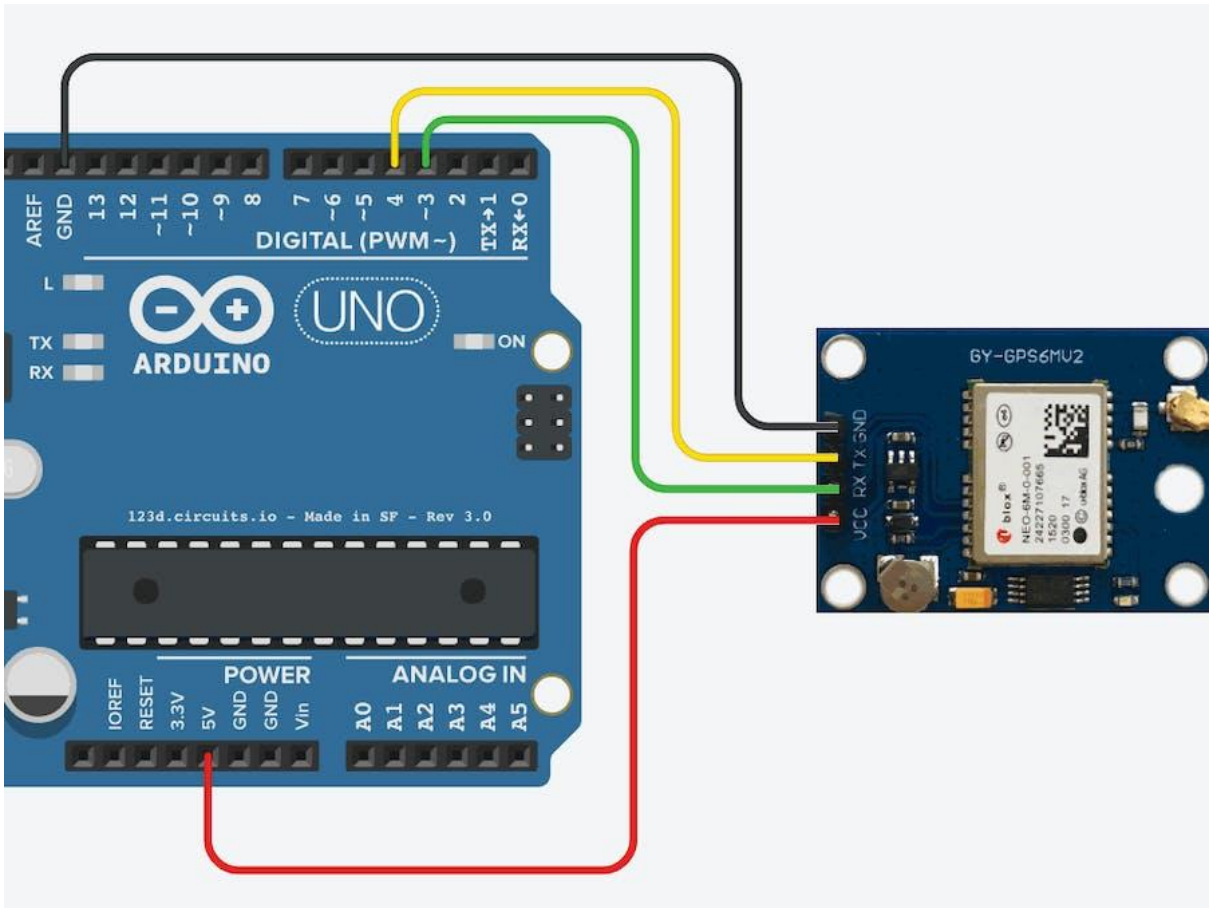
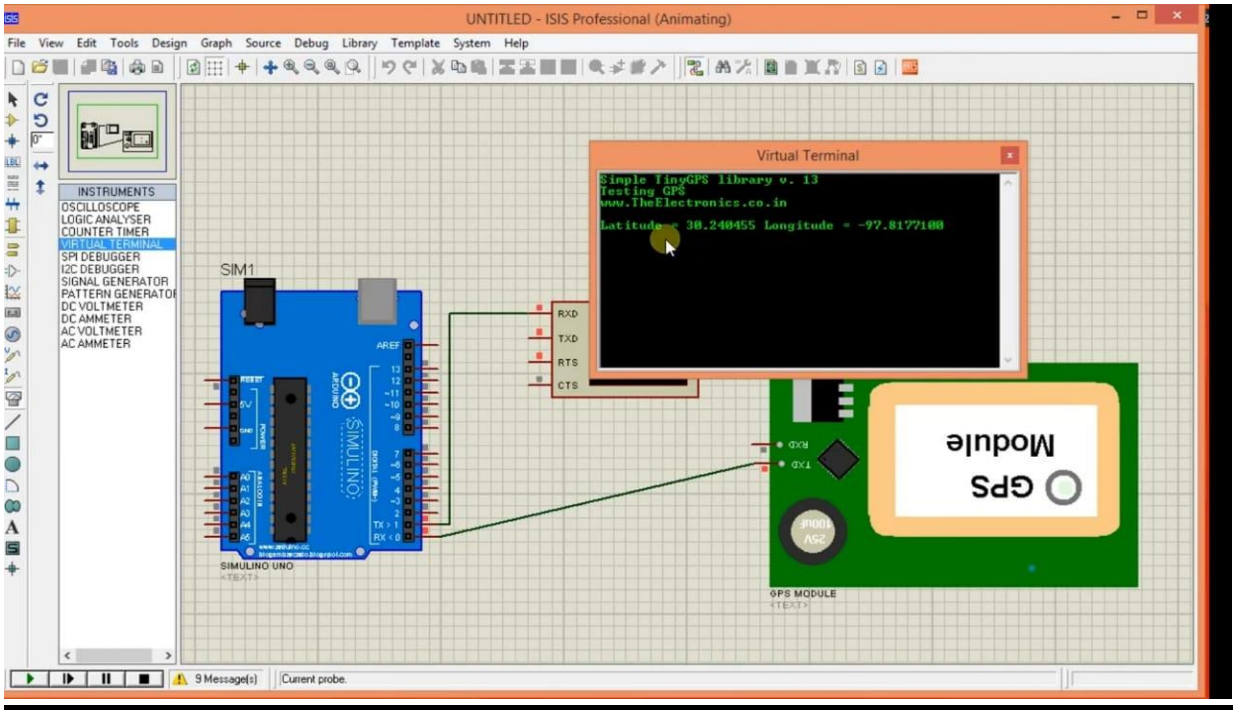

```
lcd.print(",LON:");
lcd.setCursor(5,1);
lcd.print(lon);
}
}
String latitude = String(lat,6);
String longitude = String(lon,6);
Serial.println(latitude+";"+longitude);
delay(1000);
}
```

Connection Setup:-



Sample Output:-



Output:-