PUBLIC TRANSPORT

OPTIMIZATION **USING IOT**

Abstract:

The development project of GPS using

public transport optimization

By,

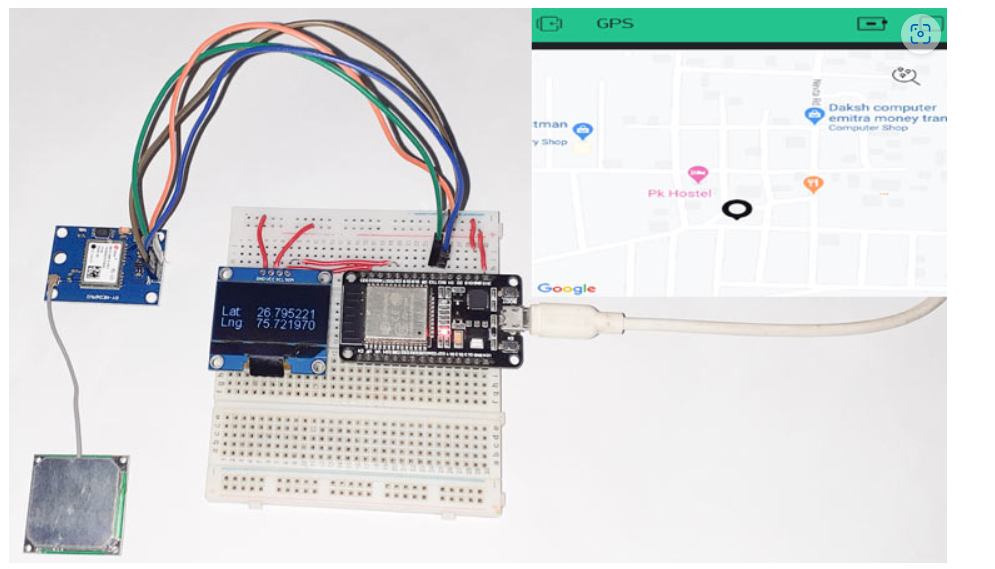
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**Model diagram: Components required:**

•ESP32

•GPS Module

•OLED Display Module

•Jumper Wires

•Breadboard

**Specifications for components:**

•OLED Driver IC: SSD1306

•Resolution: 128 x 64

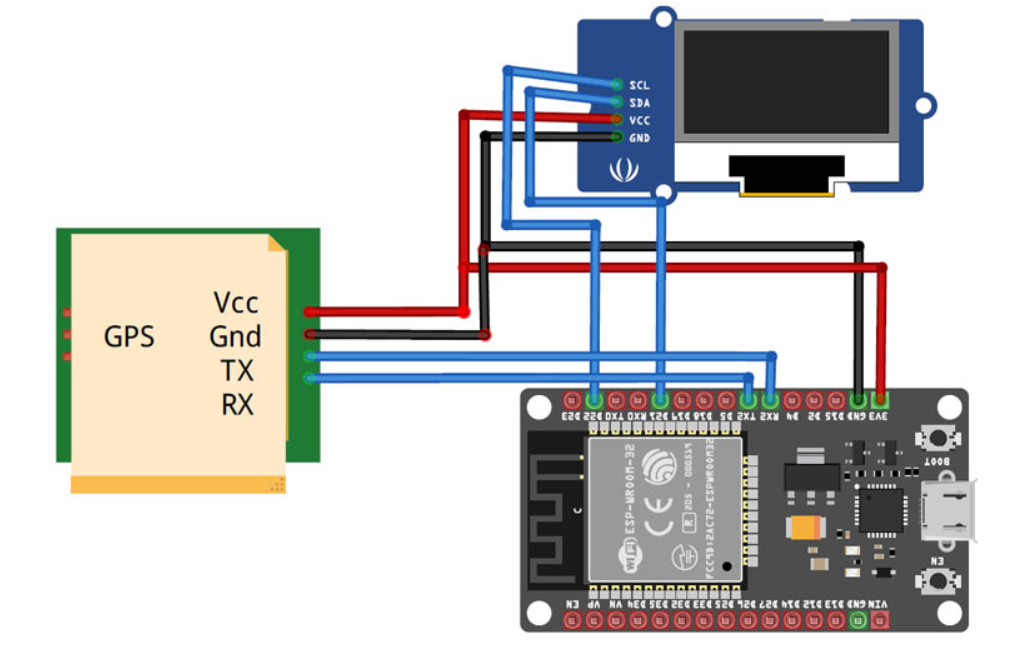
•Visual Angle: >160°

•Input Voltage: 3.3V ~ 6V

•Pixel Colour: Blue

•Working temperature: -30°C ~ 70°C

**Circuit diagram:**

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**Code:**

#include <TinyGPS++.h>  
#include <HardwareSerial.h>  
#include <WiFi.h>  
#include <Wire.h>                 
#include<SH1106.h>   
#include <BlynkSimpleEsp32.h>  
float latitude , longitude;  
String  lat\_str , lng\_str;  
const char \*ssid =  "Galaxy-M20";       
const char \*pass =  "ac312129";   
char auth[] = "loPrSaL0eQFY9clcQ518R1SmYsRVC0eV";   
WidgetMap myMap(V0);   
SH1106 display(0x3c, 21, 22);  
WiFiClient client;  
TinyGPSPlus gps;  
HardwareSerial SerialGPS(1);  
void setup()  
{  
  Serial.begin(115200);  
  Serial.println("Connecting to ");  
  Serial.println(ssid);  
  WiFi.begin(ssid, pass);  
  while (WiFi.status() != WL\_CONNECTED)  
  {  
    delay(500);  
    Serial.print(".");                 
  }  
  Serial.println("");  
  Serial.println("WiFi connected");  
  display.init();  
  display.flipScreenVertically();  
  display.setFont(ArialMT\_Plain\_10);  
  SerialGPS.begin(9600, SERIAL\_8N1, 16, 17);  
  Blynk.begin(auth, ssid, pass);  
  Blynk.virtualWrite(V0, "clr");   
}  
void loop()  
{  
  while (SerialGPS.available() > 0) {  
    if (gps.encode(SerialGPS.read()))  
    {  
      if (gps.location.isValid())  
      {  
        latitude = gps.location.lat();  
        lat\_str = String(latitude , 6);  
        longitude = gps.location.lng();  
        lng\_str = String(longitude , 6);  
        Serial.print("Latitude = ");  
        Serial.println(lat\_str);  
        Serial.print("Longitude = ");  
        Serial.println(lng\_str);  
        display.clear();  
        display.setTextAlignment(TEXT\_ALIGN\_LEFT);  
        display.setFont(ArialMT\_Plain\_16);  
        display.drawString(0, 23, "Lat:");  
        display.drawString(45, 23, lat\_str);  
        display.drawString(0, 38, "Lng:");  
        display.drawString(45, 38, lng\_str);  
        Blynk.virtualWrite(V0, 1, latitude, longitude, "Location");  
        display.display();  
      }  
     delay(1000);  
     Serial.println();    
    }  
  }    
  Blynk.run();  
}

THANK YOU