

## I2C Scan

The screenshot shows the Arduino IDE interface with the title "Blink | Arduino IDE 2.3.6". The code editor contains a sketch named "Blink.ino" which performs an I2C scan. The output window shows the results of the scan, listing multiple I2C devices found at addresses 0x69, 0x6A, and 0x6B.

```
#include <Wire.h>
void setup() {
    Wire.begin(02, D1); // SDA, SCL
    serial.begin(115200);
    serial.println("\nI2C Scanner");
}
void loop() {
    byte error, address;
    int nDevices = 0;
    for (address = 1; address < 127; address++) {
        Wire.beginTransmission(address);
        error = Wire.endTransmission();
        if (error == 0) {
            Serial.print("I2C device found at address 0x");
            if (address < 16) Serial.print("0");
            Serial.print(address, HEX);
            Serial.println("!");
        }
    }
}
```

Output:

```
Message (Enter to send message to 'NodeMCU 1.0 (ESP-12E Module)' on 'COM5')
23:59:27.570 -> ax = 0 | ay = 0 | az = 0 | gx = 0 | gy = 0 | gz = 0
23:59:54.255 -> I2C device found at address 0x69 !
23:59:54.298 -> Done
23:59:54.298 -> I2C device found at address 0x6A !
23:59:54.320 -> Done
23:59:54.320 -> I2C device found at address 0x6B !
23:59:54.344 -> Done
23:59:54.344 ->
```

## Wi-Fi Connection

The screenshot shows the Arduino IDE interface with the title "gps | Arduino IDE 2.3.6". The code editor contains a sketch named "gps.ino" which connects to a Wi-Fi network and sets up an HTTP server. The output window shows the connection process and the start of the HTTP server.

```
void setup() {
    Serial.begin(115200);
    gpsSerial.begin(9600); // GPS module baud rate
    Serial.println("GPS Module Initialized.");
    // WiFi
    Serial.print("Connecting to "); Serial.println(ssid);
    WiFi.begin(ssid, password);
    while (WiFi.status() != WL_CONNECTED) {
        delay(500);
        Serial.print(".");
    }
    Serial.println("WiFi connected!");
    Serial.print("ESP8266 IP: ");
    Serial.println(WiFi.localIP());
    // HTTP routes
    server.on("/gps", HTTP_GET, handleGPSData);
    server.on("/", []() { server.send(200, "text/plain", "GPS Server. Use /gps"); });
    server.begin();
    Serial.println("HTTP Server started!");
}
void loop() {
    server.handleClient();
}
```

Output:

```
Message (Enter to send message to 'NodeMCU 1.0 (ESP-12E Module)' on 'COM5')
05:02:48.541 -> .....
05:02:53.771 -> WiFi Connected!
05:02:53.807 -> ESP8266 IP: 10.113.209.175
05:02:53.807 -> HTTP Server started!
```

## Sensor Data

The screenshot shows the Arduino IDE interface. The code in the editor is for a NodeMCU 1.0 (ESP-12E) module. It reads sensor data from I2C and prints it to the Serial Monitor. The serial monitor output shows continuous data from the sensors.

```
int16_t AcX = Wire.read() << 8 | Wire.read();
int16_t AcY = Wire.read() << 8 | Wire.read();
int16_t AcZ = Wire.read() << 8 | Wire.read();
int16_t Temp = Wire.read() << 8 | Wire.read();
int16_t GyX = Wire.read() << 8 | Wire.read();
int16_t GyY = Wire.read() << 8 | Wire.read();
int16_t GyZ = Wire.read() << 8 | Wire.read();

Serial.print("ax="); Serial.print(AcX);
Serial.print(" | ay="); Serial.print(AcY);
Serial.print(" | az="); Serial.print(AcZ);
Serial.print(" | gx="); Serial.print(GyX);
Serial.print(" | gy="); Serial.print(GyY);
Serial.print(" | gz="); Serial.println(GyZ);
} else {
  Serial.println("Data not ready or read error!");
}

delay(500);
}
```

Message (Enter to send message to 'NodeMCU 1.0 (ESP-12E Module)' on 'COM5')

```
01:15:25.324 -> ax=9356 | ay=4292 | az=12596 | gx=48 | gy=2 | gz=-94
01:15:25.831 -> ax=9352 | ay=4092 | az=12600 | gx=451 | gy=-151 | gz=-303
01:15:26.332 -> ax=9252 | ay=4132 | az=12624 | gx=-165 | gy=-1 | gz=166
01:15:26.872 -> ax=9292 | ay=4208 | az=12709 | gx=131 | gy=106 | gz=-270
01:15:27.373 -> ax=9404 | ay=4280 | az=12669 | gx=-338 | gy=151 | gz=117
01:15:27.874 -> ax=9364 | ay=4348 | az=12692 | gx=50 | gy=67 | gz=89
01:15:28.371 -> ax=9404 | ay=4204 | az=12592 | gx=-64 | gy=98 | gz=94
01:15:28.867 -> ax=9356 | ay=4352 | az=12736 | gx=223 | gy=88 | gz=253
01:15:29.301 -> ax=9316 | ay=4308 | az=12612 | gx=-58 | gy=105 | gz=-172
01:15:29.878 -> ax=9336 | ay=4278 | az=12683 | gx=-175 | gy=111 | gz=35
```

## API Output

```
{"timestamp":141681,"accel_x":-1,"accel_y":-1,"accel_z":-1,"gyro_x":-1,"gyro_y":-1,"gyro_z":-1,"speed":0}
```

## Location Coordinates

Get Your Location

### Location Coordinates

Latitude: 12.9564672  
Longitude: 77.594624

[Get Location](#)



## Final Hardware Output

Blink | Arduino IDE 2.3.6

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NodeMCU 1.0 (ESP-12...)

Blink.ino

```

118     Serial.print(" | VelocityX"); Serial.print(velocityx, 2);
119     Serial.print(" | VelocityY"); Serial.print(velocityy, 2);
120     Serial.print(" | VelocityZ"); Serial.print(velocityz, 2);
121
122     Serial.print(" | TotalDeceleration"); Serial.print(totalDeceleration, 2);
123     Serial.print(" | LeanAngle"); Serial.print(leanAngle, 1);
124     Serial.print(" | AccMag"); serial.print(accMag, 2);
125     Serial.print(" | VehicleType"); serial.println(vehicleType);
126
127     Serial.println("-----");
128 } else {
129     Serial.println("Data not ready or read error!");
130 }

```

Output Serial Monitor X

Message (Enter to send message to 'NodeMCU 1.0 (ESP-12E Module)' on 'COM5')

09:06:49.051 ->
09:06:49.222 -> ax=-1.04 | ay=0.03 | az=-0.25 | VelocityX=-20.21 | VelocityY=124.03 | VelocityZ=-39.05 | TotalDeceleration=2.20 | LeanAngle=15.8 | AccMag=1.07 | VehicleType=Aeroplane
09:06:49.268 ->
09:06:49.426 -> ax=-0.97 | ay=0.07 | az=-0.03 | VelocityX=-22.19 | VelocityY=124.47 | VelocityZ=-39.15 | TotalDeceleration=1.89 | LeanAngle=8.0 | AccMag=0.97 | VehicleType=Aeroplane
09:06:49.472 ->
09:06:49.631 -> ax=-0.99 | ay=0.18 | az=0.01 | VelocityX=-24.21 | VelocityY=124.84 | VelocityZ=-39.12 | TotalDeceleration=2.05 | LeanAngle=9.7 | AccMag=1.00 | VehicleType=Aeroplane
09:06:49.671 ->
09:06:49.849 -> ax=-1.02 | ay=0.37 | az=-0.17 | VelocityX=-26.20 | VelocityY=125.59 | VelocityZ=-39.47 | TotalDeceleration=2.25 | LeanAngle=16.0 | AccMag=1.10 | VehicleType=Aeroplane
09:06:49.893 ->
09:06:50.066 -> ax=-0.44 | ay=0.75 | az=-0.41 | VelocityX=-27.19 | VelocityY=127.12 | VelocityZ=-40.30 | TotalDeceleration=1.95 | LeanAngle=22.7 | AccMag=0.96 | VehicleType=Motorcycle
09:06:50.066 ->
09:06:50.294 -> ax=-0.55 | ay=0.53 | az=-0.50 | VelocityX=-27.91 | VelocityY=128.21 | VelocityZ=-41.32 | TotalDeceleration=1.66 | LeanAngle=44.5 | AccMag=0.81 | VehicleType=Motorcycle
09:06:50.294 ->
09:06:50.471 -> ax=-0.52 | ay=0.70 | az=-0.62 | VelocityX=-26.04 | VelocityY=129.65 | VelocityZ=-42.60 | TotalDeceleration=2.20 | LeanAngle=61.0 | AccMag=1.07 | VehicleType=Motorcycle
09:06:50.517 ->
09:06:50.689 -> ax=-0.04 | ay=0.07 | az=-0.53 | VelocityX=-25.13 | VelocityY=131.43 | VelocityZ=-43.68 | TotalDeceleration=2.09 | LeanAngle=80.4 | AccMag=1.32 | VehicleType=Motorcycle
09:06:50.734 ->
09:06:50.922 -> ax=-0.60 | ay=0.63 | az=-0.55 | VelocityX=-23.91 | VelocityY=132.72 | VelocityZ=-44.80 | TotalDeceleration=2.10 | LeanAngle=51.3 | AccMag=1.08 | VehicleType=Motorcycle
09:06:50.922 ->

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File Edit Sketch Tools Help

NodeMCU 1.0 (ESP-12...)

Blink.ino

```

118     Serial.print(" | VelocityX"); Serial.print(velocityx, 2);
119     Serial.print(" | VelocityY"); Serial.print(velocityy, 2);
120     Serial.print(" | VelocityZ"); Serial.print(velocityz, 2);
121
122     Serial.print(" | TotalDeceleration"); Serial.print(totalDeceleration, 2);
123     Serial.print(" | LeanAngle"); Serial.print(leanAngle, 1);
124     Serial.print(" | AccMag"); serial.print(accMag, 2);
125     Serial.print(" | VehicleType"); serial.println(vehicleType);
126
127     Serial.println("-----");
128 } else {
129     Serial.println("Data not ready or read error!");
130 }

```

Output Serial Monitor X

Message (Enter to send message to 'NodeMCU 1.0 (ESP-12E Module)' on 'COM5')

09:08:30.453 ->
09:08:30.613 -> ax=-0.79 | ay=-0.52 | az=-0.44 | VelocityX=-61.96 | VelocityY=-363.19 | VelocityZ=-123.47 | TotalDeceleration=2.13 | LeanAngle=-83.6 | AccMag=1.04 | VehicleType=Aeroplane
09:08:30.655 ->
09:08:30.823 -> ax=-0.67 | ay=-0.62 | az=-0.42 | VelocityX=-63.34 | VelocityY=-364.47 | VelocityZ=-124.32 | TotalDeceleration=2.07 | LeanAngle=-81.4 | AccMag=1.01 | VehicleType=Aeroplane
09:08:30.872 ->
09:08:31.030 -> ax=-0.62 | ay=-0.50 | az=-0.43 | VelocityX=-64.60 | VelocityY=-365.49 | VelocityZ=-125.21 | TotalDeceleration=1.85 | LeanAngle=-83.1 | AccMag=0.90 | VehicleType=Aeroplane
09:08:31.070 ->
09:08:31.240 -> ax=-1.02 | ay=-0.24 | az=-0.31 | VelocityX=-66.69 | VelocityY=-365.98 | VelocityZ=-125.84 | TotalDeceleration=2.23 | LeanAngle=-82.2 | AccMag=1.09 | VehicleType=Aeroplane
09:08:31.279 ->
09:08:31.453 -> ax=-0.88 | ay=-0.32 | az=-0.37 | VelocityX=-68.50 | VelocityY=-366.63 | VelocityZ=-126.61 | TotalDeceleration=2.07 | LeanAngle=-78.5 | AccMag=1.01 | VehicleType=Aeroplane
09:08:31.497 ->
09:08:31.658 -> ax=-0.89 | ay=-0.34 | az=-0.39 | VelocityX=-70.33 | VelocityY=-367.33 | VelocityZ=-127.40 | TotalDeceleration=2.12 | LeanAngle=-75.1 | AccMag=1.03 | VehicleType=Aeroplane
09:08:31.703 ->
09:08:31.865 -> ax=-0.59 | ay=-0.10 | az=-0.33 | VelocityX=-71.54 | VelocityY=-367.54 | VelocityZ=-128.09 | TotalDeceleration=1.40 | LeanAngle=-64.6 | AccMag=0.66 | VehicleType=Scooter
09:08:31.903 ->
09:08:32.093 -> ax=-0.83 | ay=-0.45 | az=-0.39 | VelocityX=-73.24 | VelocityY=-368.45 | VelocityZ=-128.95 | TotalDeceleration=2.09 | LeanAngle=-68.8 | AccMag=1.02 | VehicleType=Aeroplane
09:08:32.092 ->
09:08:32.323 -> ax=-0.88 | ay=-0.44 | az=-0.40 | VelocityX=-74.99 | VelocityY=-369.36 | VelocityZ=-129.71 | TotalDeceleration=2.14 | LeanAngle=-53.7 | AccMag=1.04 | VehicleType=Aeroplane
09:08:32.323 ->

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