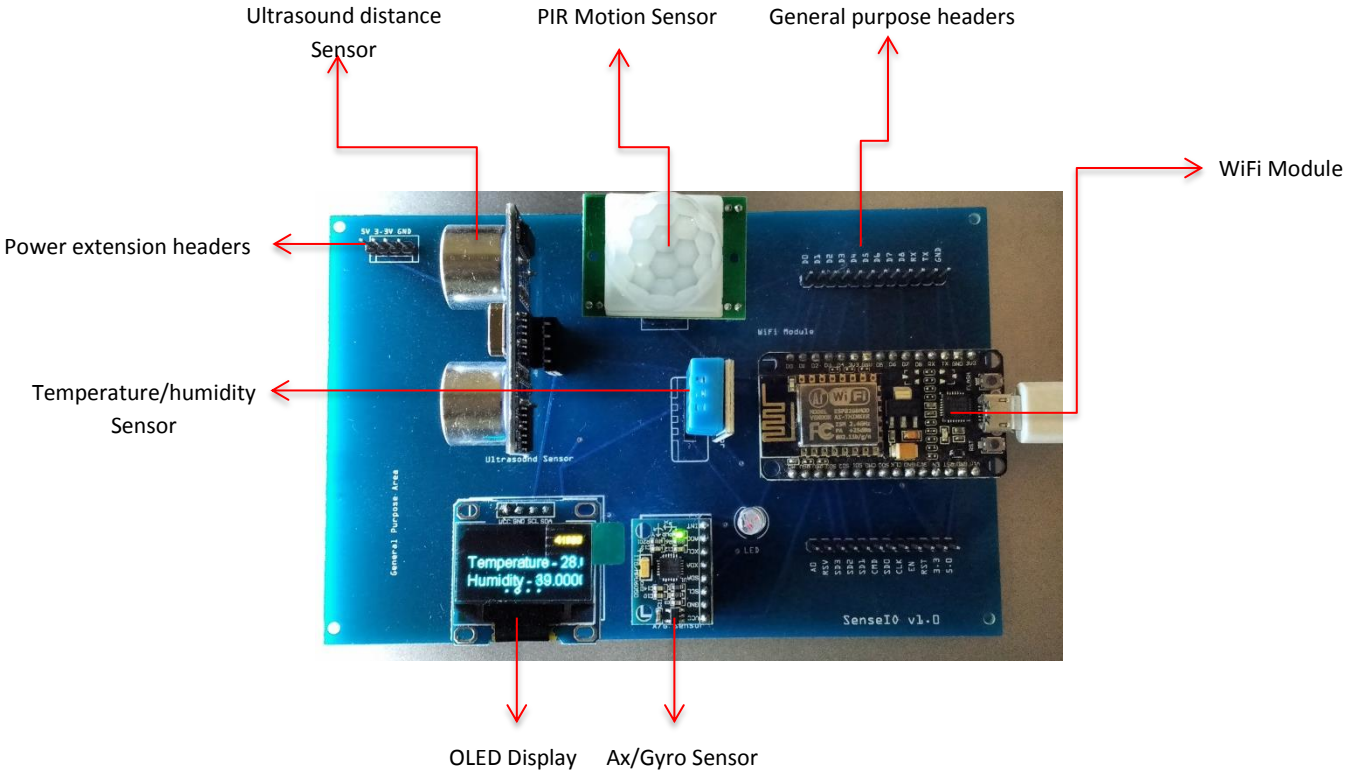
User Manual & Sensor Tutorials

Contents

Version 1.0

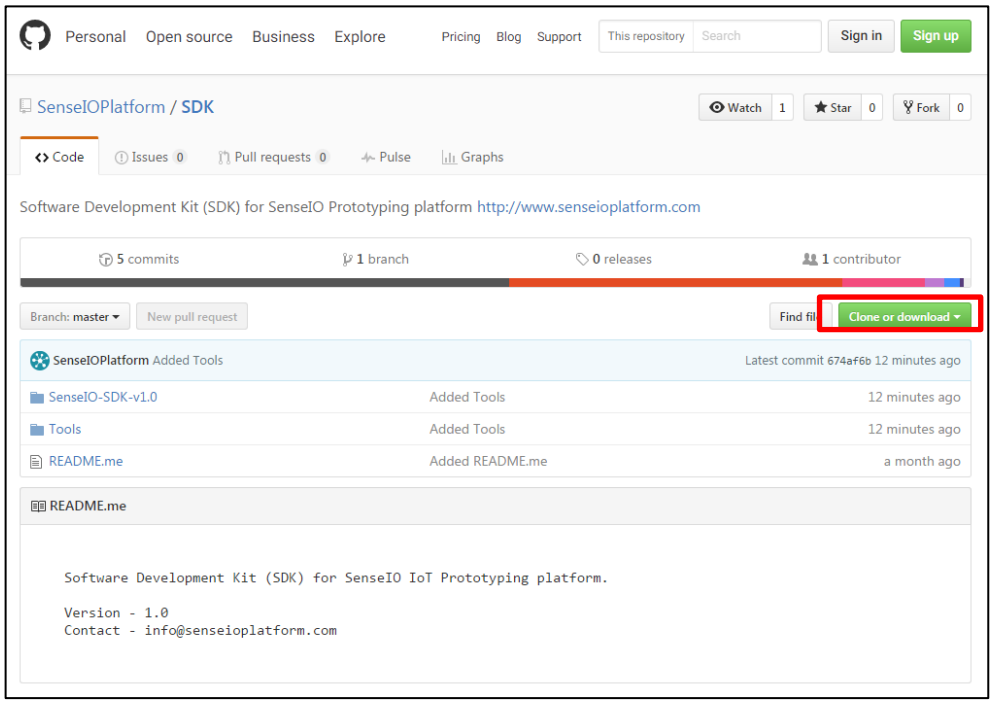
SenseIO™ Platform consists of following components

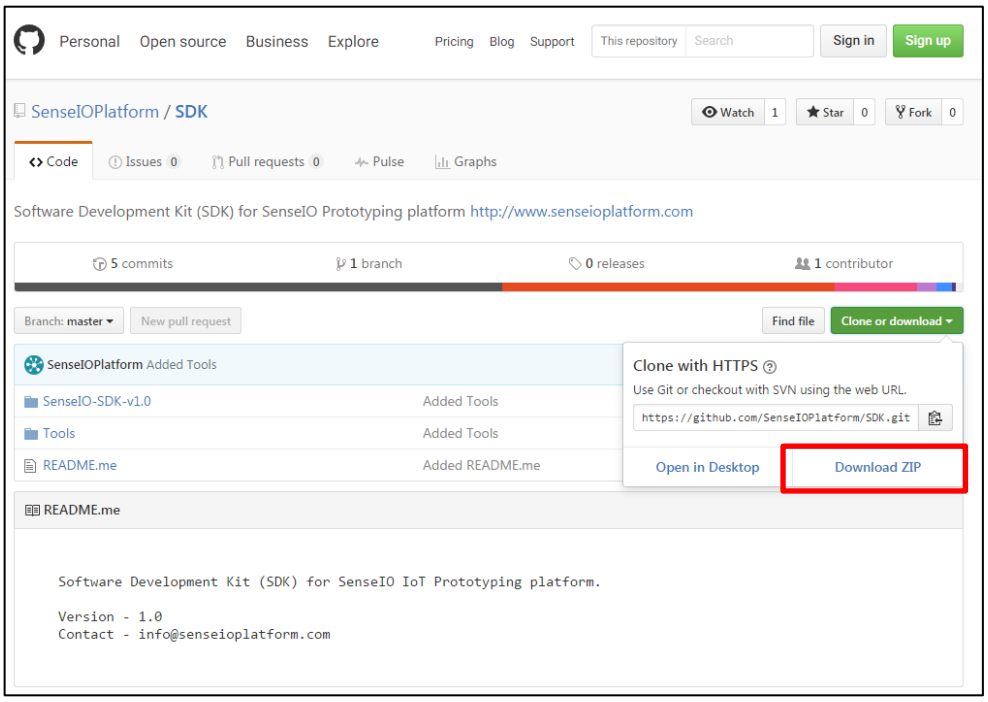
1. WiFi module
2. DHT11 temperature sensor
3. PIR Motion sensor
4. Accelerometer/Gyroscope sensor
5. Ultrasound distance sensor
6. OLED display
7. General purpose headers
8. Power extension header



SDK & Drivers installation

1. Download the SDK from below path:
   https://github.com/SenseIOPlatform/SDK





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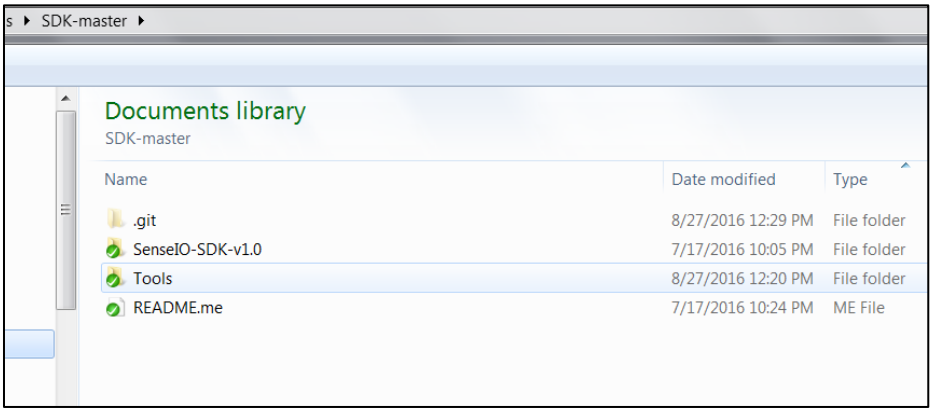
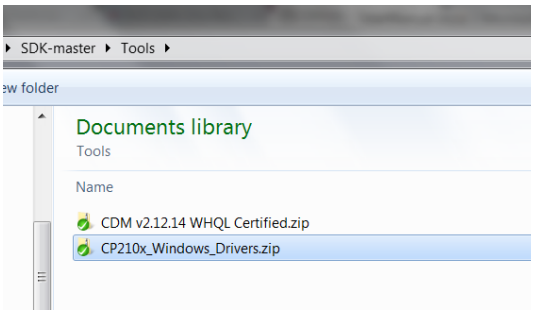
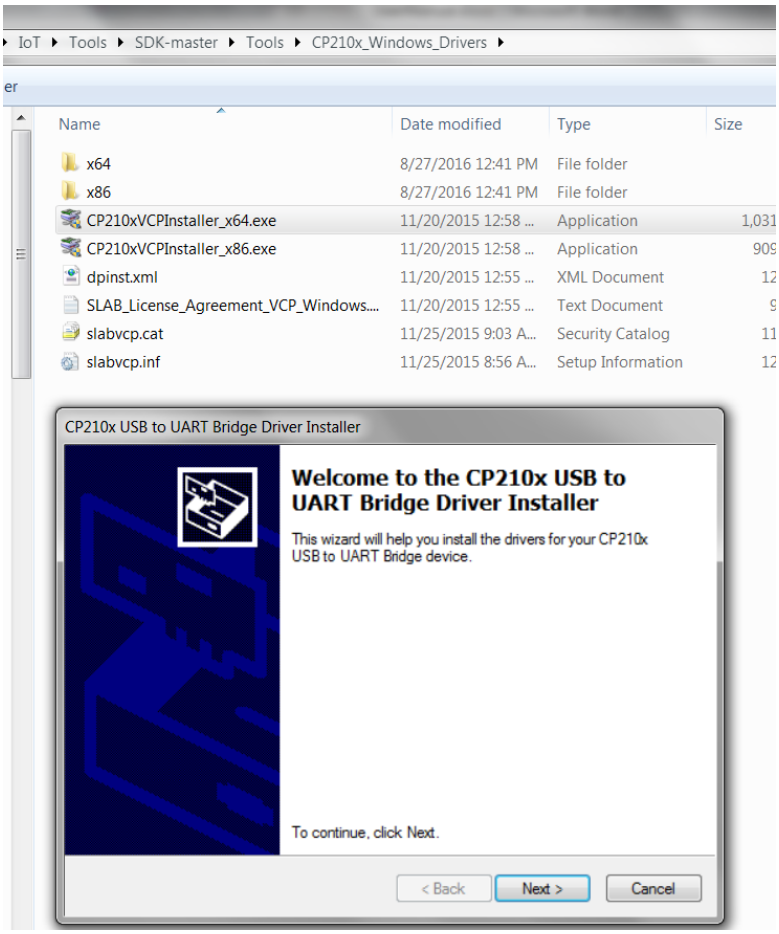
2. Unzip SDK zip file which was downloaded



3. Connect the SenseIO platform to PC using USB cable.

4. Navigate inside SDK-master/Tools folder & unzip the CP210x_Windows_Drivers.zip. Install the CP210xVCPInstaller_x64.exe(if PC is 64 bit) or CP210xVCPInstaller_x86.exe(if PC is 32 bit).





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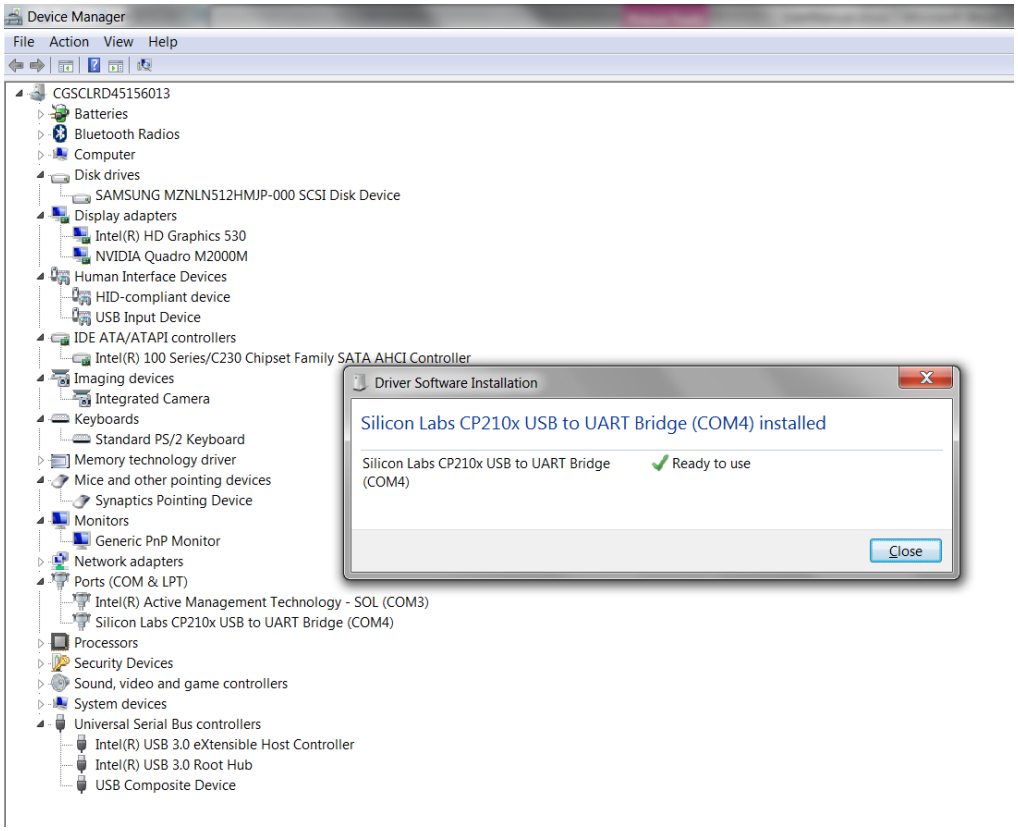
5. A pop will be shown on successful installation of the driver. Please note the COM port at which the SenseIO platform is detected (COM4, in below case).



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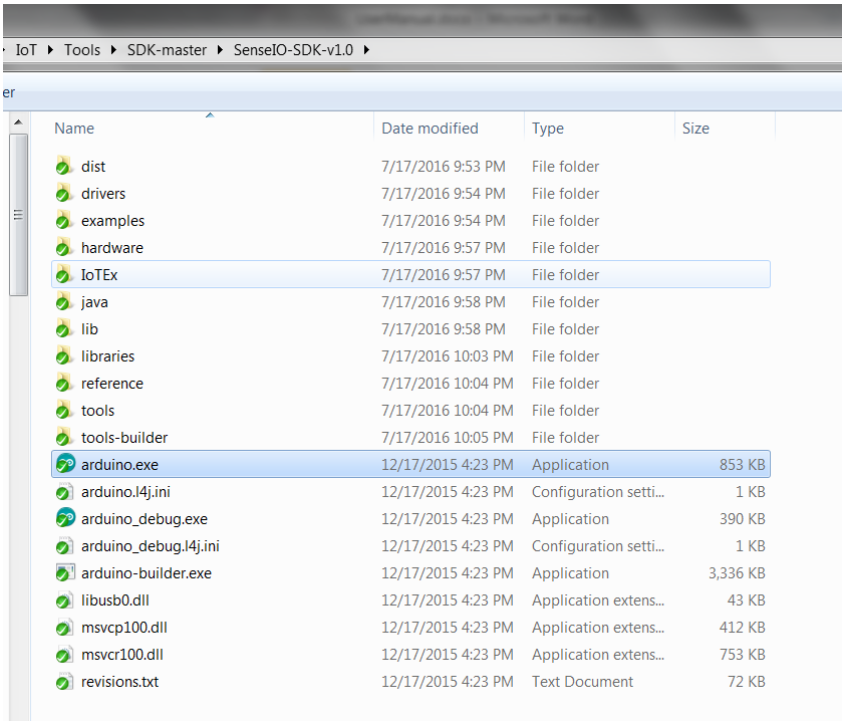
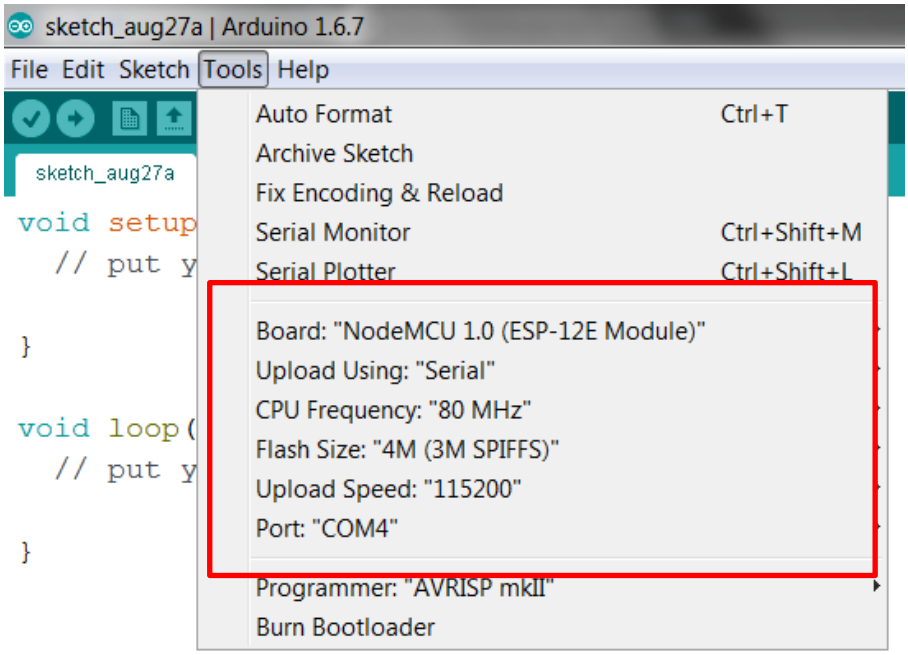
Basic Compile & Run test

1. Open Arduino IDE application.



2. Select Board as "**NodeMCU 1.0(ESP-12E Module)**"; make sure other configuration parameters are set as below. COM Port will be the PC's port at which device is currently connected; it may be different than it is shown below.



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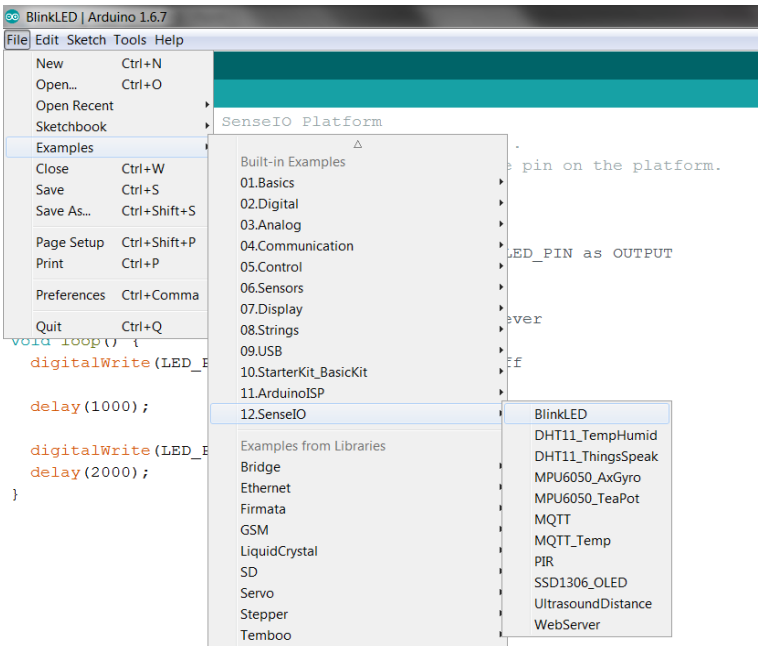
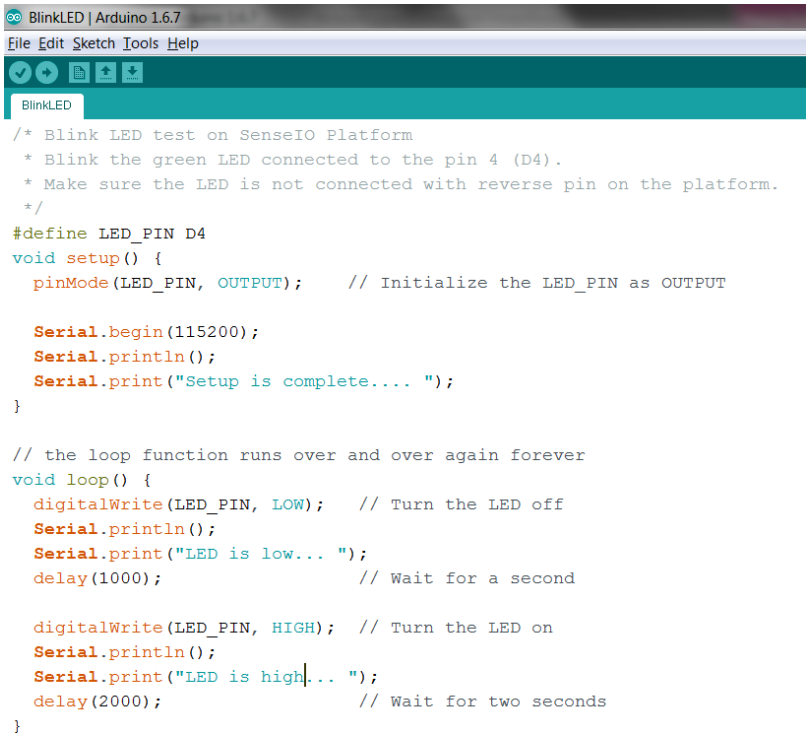
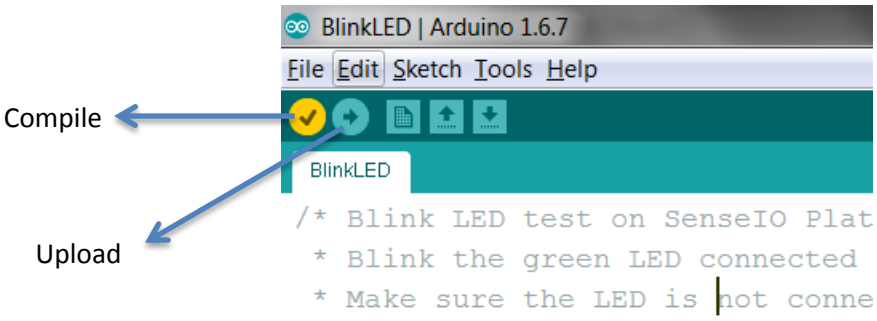
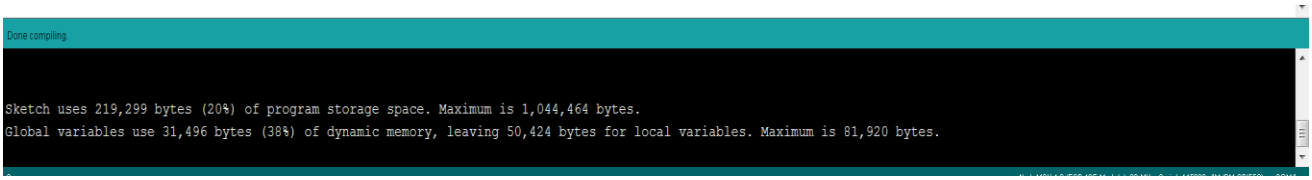
3. Navigate to **File->Examples->SenseIO->BlinkLED**





4. Press on compile button (Program will only be compiled & not uploaded on platform). Press on upload button to upload the program on platform.





5. Observe above compile message, when there are no errors in the code.

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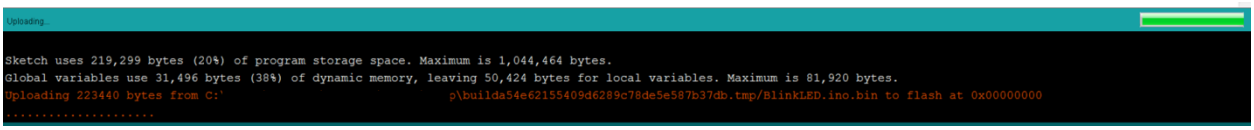
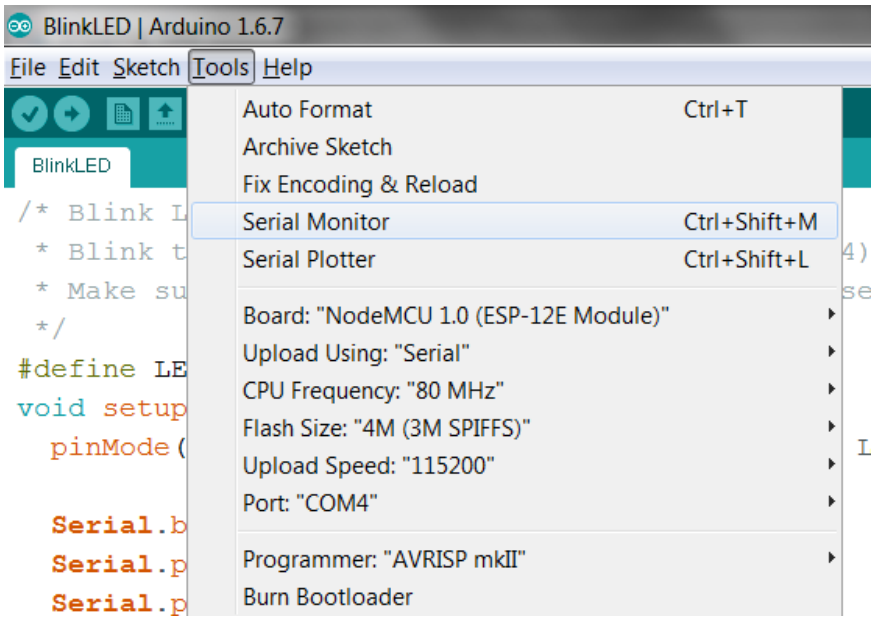
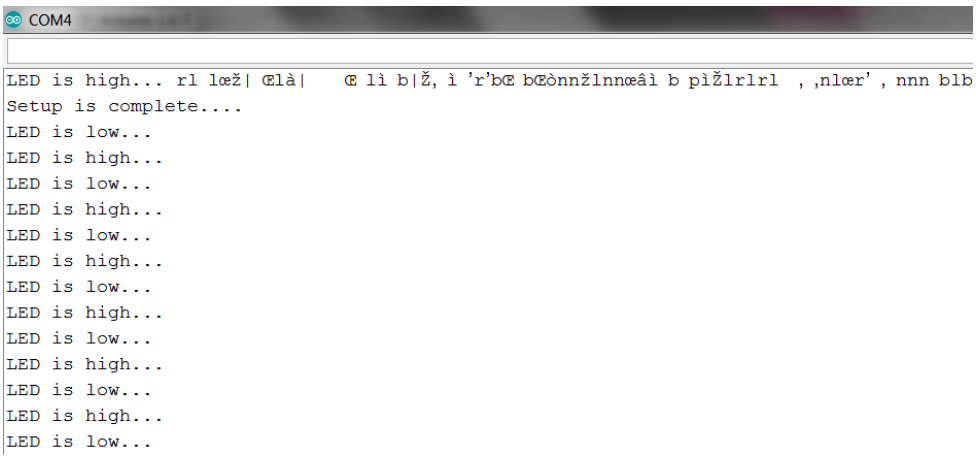
6. On upload button, binary will be flashed on the platform. Check the status of upload as progress bar.



7. Open the Serial Monitor to view the messages.

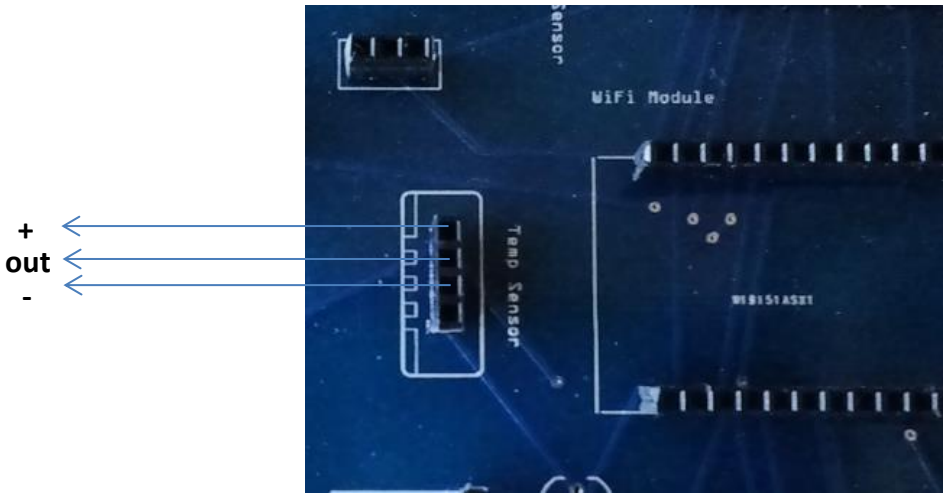


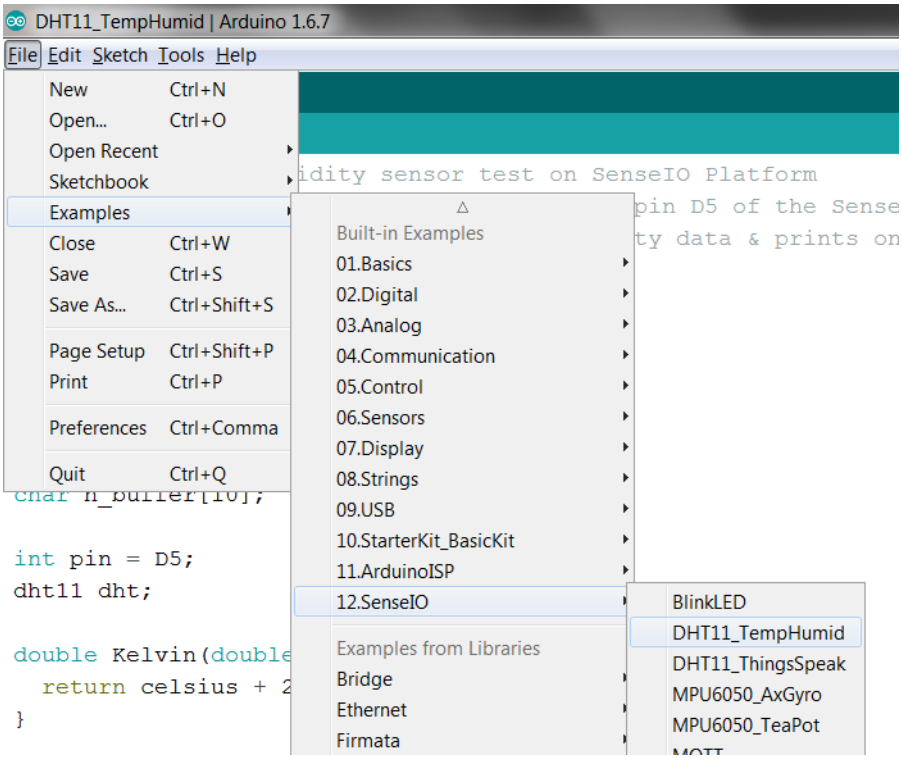


SenseIO

Sensor Tutorials

1. Temperature/Humidity Sensor
    a. Test file: **Files->Examples->SenseIO->DHT11_TempHumid**





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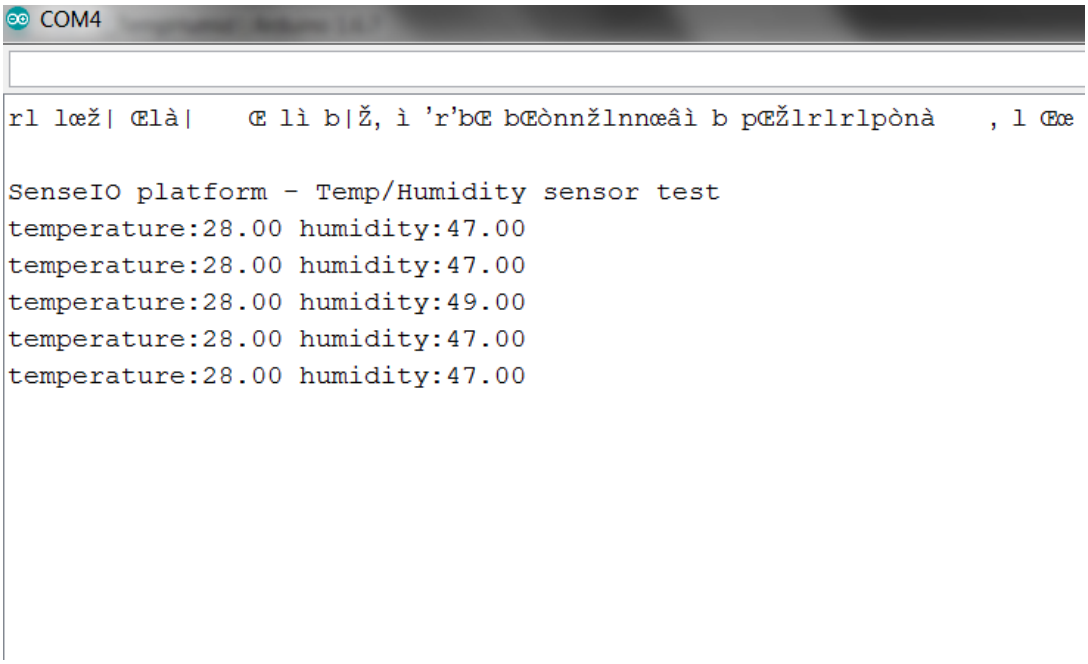

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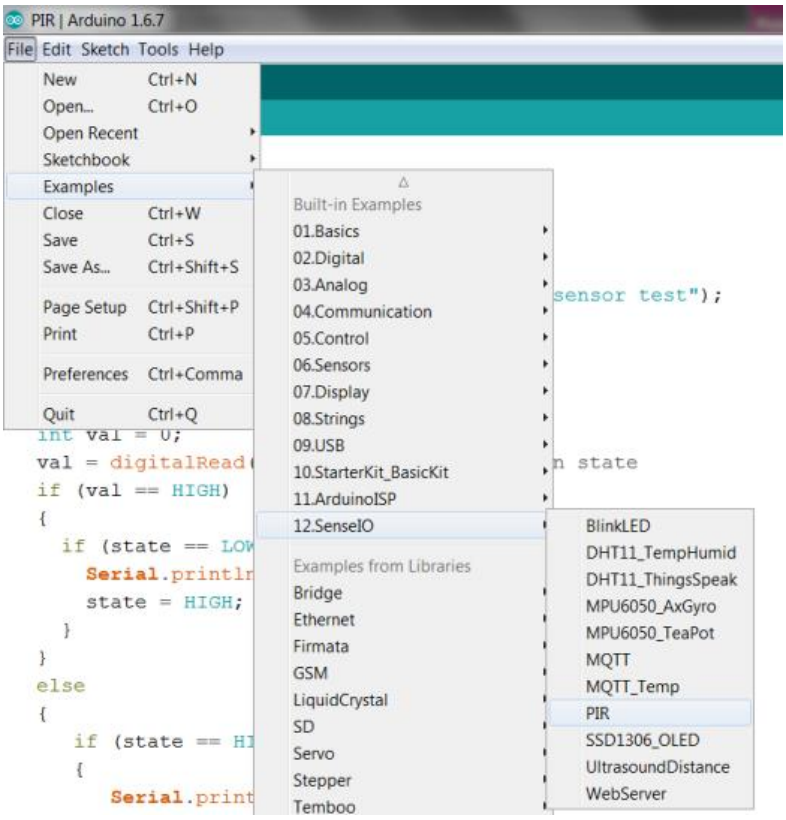
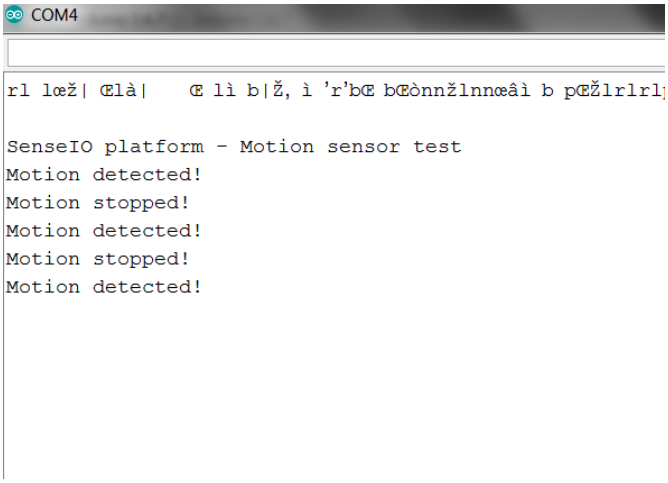
2. PIR Motion Sensor:

a. Test file: **Files->Examples->SenseIO->PIR**

b. Motion sensor will detect the human motion, the sensor output remains at detect level for few seconds before going back to not-detected state.



c. Make a motion in front of motion sensor to test this sensor.



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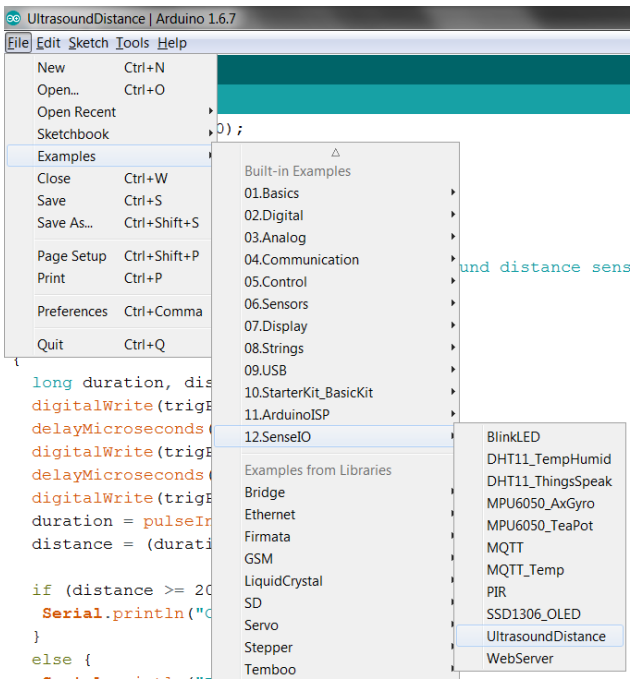
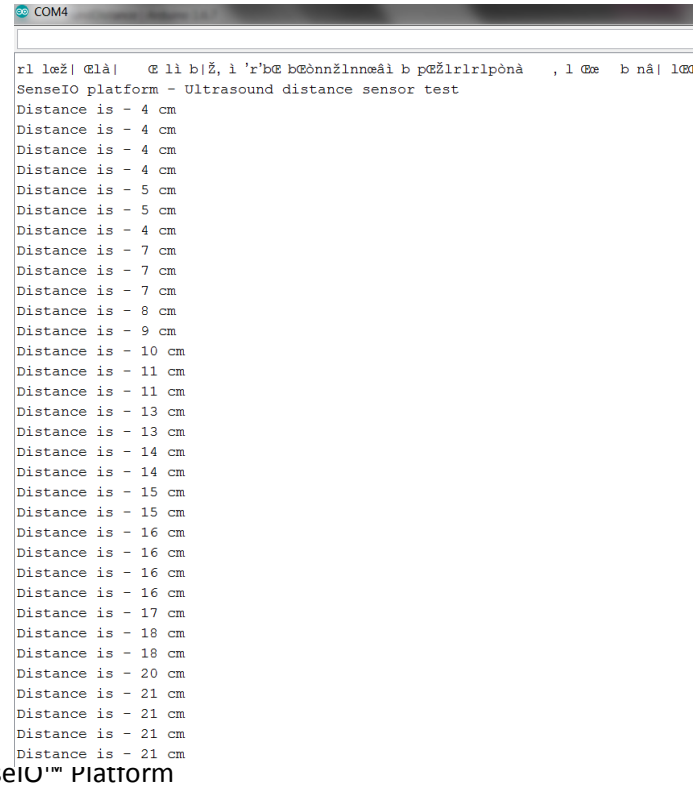
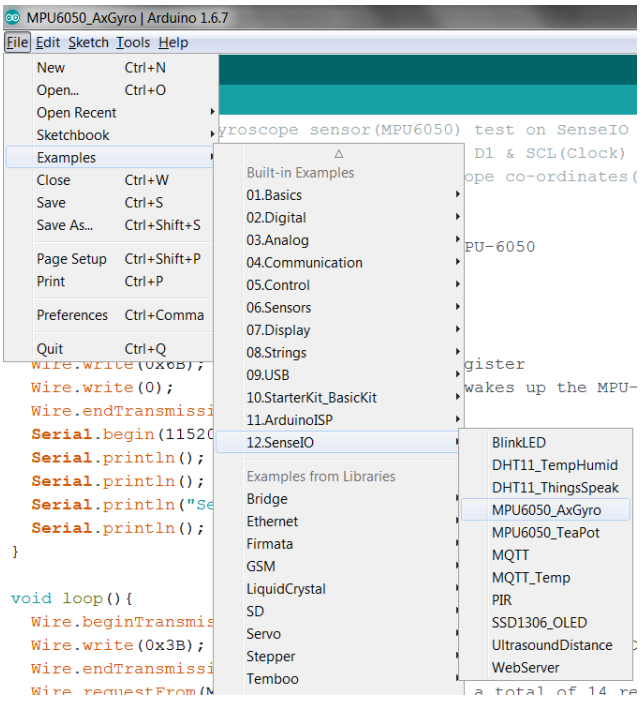
3. Ultrasound Distance Sensor
    a. Test file: **Files->Examples->SenseIO->UltrasoundDistance**
    b. Ultrasound sensor detects the distance at which the obstacle is present in front of it.



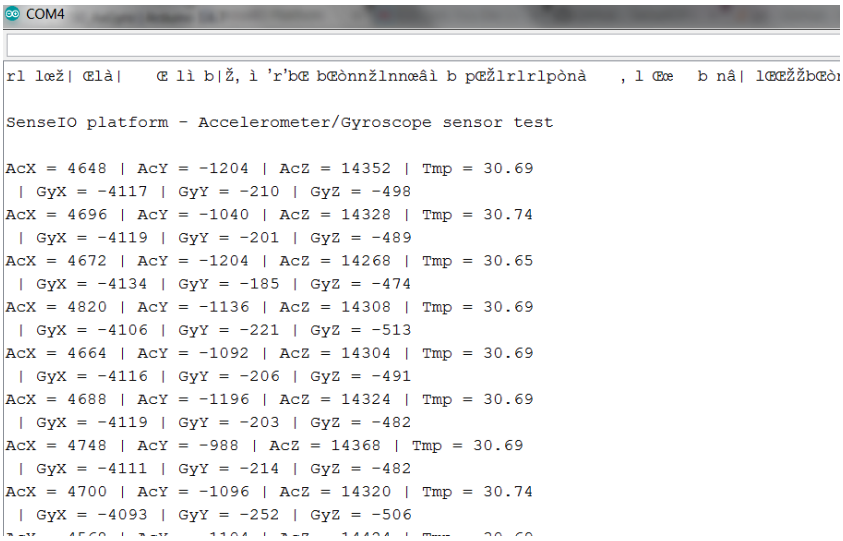
    a. Distance detection test can be performed by varying the distance between an obstacle & the sensor.



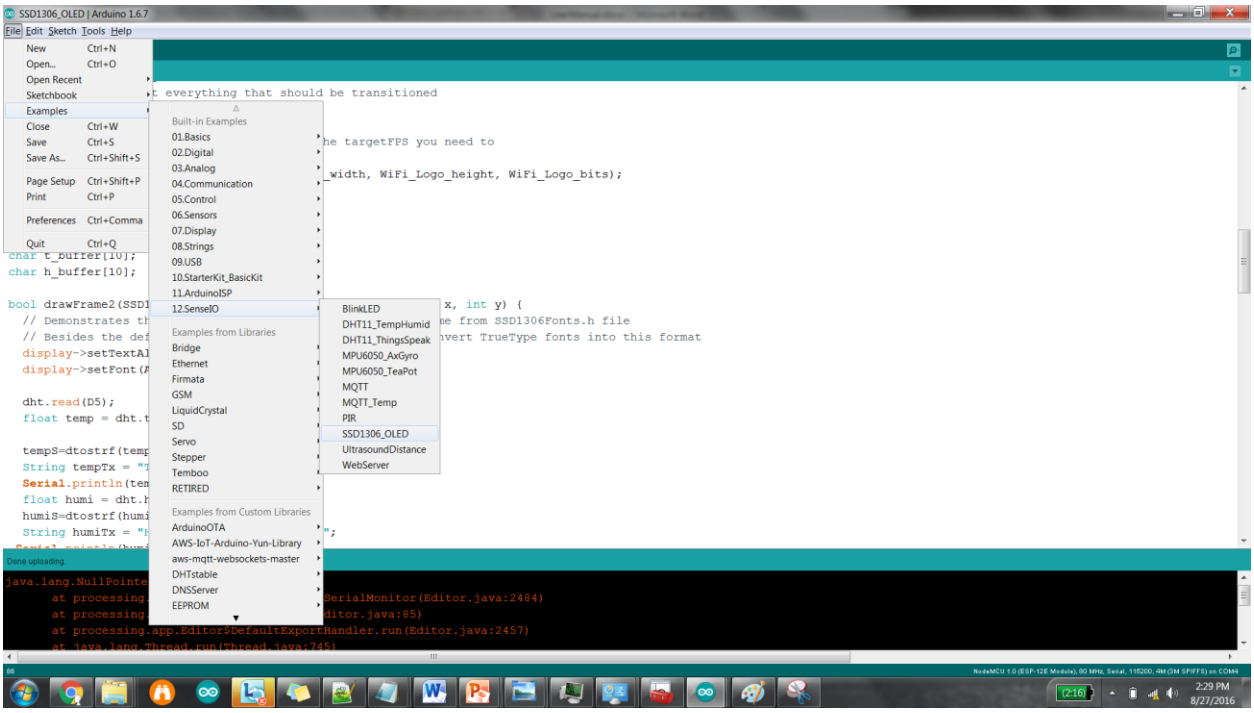
4. Accelerometer/Gyroscope sensor test
    a. Test file: **Files->Examples->SenseIO->MPU6050_AxGyro**
    b. This sensor detects acceleration & gyroscope property in 3 directions.



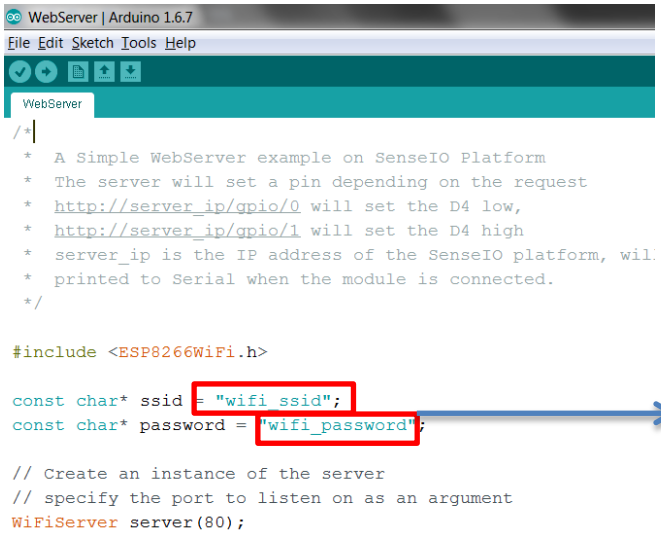
b. Change in values of Ax & Gyro can be observed by moving the platform in different axis (x, y & z).



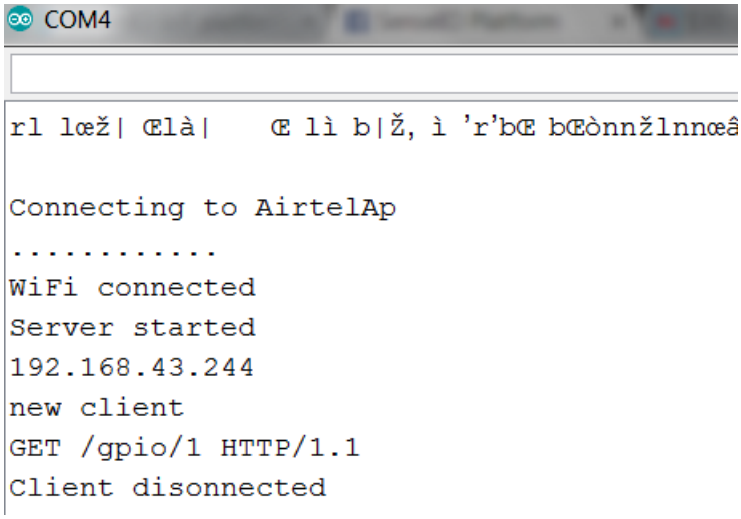
5. OLED display test
    a. Test file: **Files->Examples->SenseIO->SSD1306_OLED**



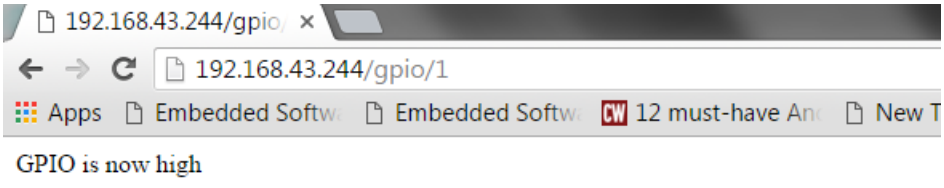
6. Simple Web Server
    a. Test file: **Files->Examples->SenseIO->WebServer**
    b. This simple webserver controls the provides an url through which the LED connected to SenseIO can be controlled. LED can be controlled from a browser on a PC connected to the same network as SenseIO platform.
    c. URL will be as follows
    <server_ip_address>/gpio/1 → to turn LED on
    <server_ip_address>/gpio/0 → to turn LED off



Use your WiFi SSID & password



d. LED on the platform will be turned ON/OFF based on the URL; HTTP response from the platform will be displayed on the webpage.



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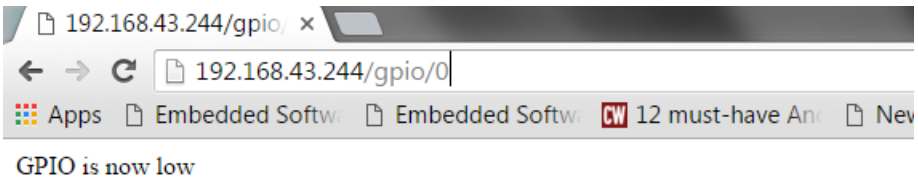

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