
NexBrd Documentation

Release 1

NexIO

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1.1 Overview

1.2 Setup

1.2.1 Arduino

Setting up NexBrd on Arduino is as easy as 1,2,3!

Step 1: Download and Install the latest Arduino from [here](#)

Step 2: Go to File>Preference and add http://thenexio.com/boards/nexbrd/v1/package_thenexio.com_index. to the **Additional Boards Manager**.

Step 3: Go to Tools>Board>Boards Manager, and install NexBrd v1.0.

You are ready to Develop your Internet of Things, THING!

1.3 Example Projects

1.3.1 Blinky

The basic blinky program.

```
1 void setup() {  
2     // This code block runs only once, ie: it is the setup code  
3     pinMode(D1,OUTPUT); //Set the pin D1 to output  
4 }  
5  
6 void loop() {  
7  
8     digitalWrite(D1,LOW); //Set the pin D1 to LOW ie 0v  
9     delay(1000); //Wait for 1 sec(1000 ms) by creating a delay  
10    digitalWrite(D1,HIGH); //Set the pin D1 to HIGH ie 3.3v  
11    delay(1000);  
12 }  
13 }
```

1.3.2 Server based blinky

```
1 #include <ESP8266WiFi.h>
2
3 //Enter your WiFi credentials here
4 const char* ssid = "*****";
5 const char* password = "*****";
6
7 int ledPin = D1;
8 WiFiServer server(80);
9
10 void setup() {
11     Serial.begin(115200);
12     delay(10);
13
14     pinMode(ledPin, OUTPUT);
15     digitalWrite(ledPin, LOW);
16
17     // Connect NexBRD to WiFi network
18     Serial.println();
19     Serial.println();
20     Serial.print("Connecting to ");
21     Serial.println(ssid);
22
23     WiFi.begin(ssid, password);
24
25     while (WiFi.status() != WL_CONNECTED) {
26         delay(500);
27         Serial.print(".");
28     }
29     Serial.println("");
30     Serial.println("WiFi connected");
31
32     // Begin server on NexBRD
33     server.begin();
34     Serial.println("Server started");
35
36     // Print the IP address of NexBRD
37     Serial.print("Use this URL to connect: ");
38     Serial.print("http://");
39     Serial.print(WiFi.localIP());
40     Serial.println("/");
41
42 }
43
44 void loop() {
45     // Check if a client has connected
46     WiFiClient client = server.available();
47     if (!client) {
48         return;
49     }
50
51     // Wait until the client sends some data
52     Serial.println("new client");
53     while(!client.available()){
54         delay(1);
55     }
56 }
```

```

57
58 String request = client.readStringUntil('\r');
59 Serial.println(request);
60 client.flush();
61 int value = LOW;
62 if (request.indexOf("/LED=ON") != -1) {
63     digitalWrite(ledPin, HIGH);
64     value = HIGH;
65 }
66 if (request.indexOf("/LED=OFF") != -1) {
67     digitalWrite(ledPin, LOW);
68     value = LOW;
69 }
70
71 // Set ledPin according to the request
72 digitalWrite(ledPin, value);
73
74 // Return the response
75 client.println("HTTP/1.1 200 OK");
76 client.println("Content-Type: text/html");
77 client.println(""); // do not forget this one
78 client.println("<!DOCTYPE HTML>");
79 client.println("<html>");
80 client.println("Hi from NexBRD");
81 client.print("<br><br>Led pin is now: ");
82
83 if(value == HIGH) {
84     client.print("On");
85 } else {
86     client.print("Off");
87 }
88 client.println("<br><br>");
89
90 client.println("<a href=\""/LED=ON\"/\"><button>Turn On </button></a>");
91 client.println("<a href=\""/LED=OFF\"/\"><button>Turn Off </button></a><br />");
92 client.println("</html>");
93
94 delay(1);
95 Serial.println("Client disconnected");
96 Serial.println("");
97
98 }

```

1.3.3 ADC data on Server

```

1 #include <ESP8266WiFi.h>
2
3 //Enter your WiFi credentials here
4 const char* ssid = "****";
5 const char* password = "****";
6
7 int ledPin = 5; // GPIO13
8 WiFiServer server(80);
9
10 void setup() {
11     Serial.begin(115200);
12     delay(10);

```

```
13
14 pinMode(ledPin, OUTPUT);
15 digitalWrite(ledPin, LOW);
16
17 // Connect to WiFi network
18 Serial.println();
19 Serial.println();
20 Serial.print("Connecting to ");
21 Serial.println(ssid);
22
23 WiFi.begin(ssid, password);
24
25 while (WiFi.status() != WL_CONNECTED) {
26     delay(500);
27     Serial.print(".");
28 }
29 Serial.println("");
30 Serial.println("WiFi connected");
31 server.begin();
32 Serial.println("Server started");
33 Serial.print("Use this URL to connect: ");
34 Serial.print("http://");
35 Serial.print(WiFi.localIP());
36 Serial.println("/");
37 }
38 void loop() {
39     // Check if a client has connected
40     WiFiClient client = server.available();
41     if (!client) {
42         return;
43     }
44
45     // Wait until the client sends some data
46     Serial.println("new client");
47     while(!client.available()){
48         delay(1);
49     }
50     float value =analogRead(A0);
51     Serial.println(value);
52
53     client.println("HTTP/1.1 200 OK");
54     client.println("Content-Type: text/html");
55     client.println("Refresh: 5");           // This line tells the browser to refresh every 5 seconds
56     client.println("");                   // do not forget this one
57     client.println("<!DOCTYPE HTML>");
58     client.print("analog input ");
59
60     client.print(" is ");
61     client.print(value);
62     client.println("<br />");
63     client.println("</html>");
64     Serial.println("Client disonnected");
65     Serial.println("");
66 }
```


1.3.4 Data logging to SD Card

```

1  #include <SPI.h>
2  #include <SD.h>
3
4  File myFile;
5
6  void setup() {
7      // Open serial communications of NexBRD and wait for port to open:
8      Serial.begin(115200);
9      while (!Serial) {
10         ;
11     }
12
13
14     Serial.print("Initializing SD card...");
15
16     if (!SD.begin(4)) {
17         Serial.println("initialization failed! Check if SD card properly mounted on NexBRD");
18         return;
19     }
20     Serial.println("initialization done.");
21
22     // open the file. note that only one file can be open at a time,
23     // so you have to close this one before opening another.
24     myFile = SD.open("test.txt", FILE_WRITE);
25
26     // if the file opened okay, write to it:
27     if (myFile) {
28         Serial.print("Writing to test.txt...");
29         myFile.println("testing 1, 2, 3.");
30         // close the file:
31         myFile.close();
32         Serial.println("done.");
33     } else {
34         // if the file didn't open, print an error:
35         Serial.println("error opening test.txt");
36     }
37
38     // re-open the file for reading:
39     myFile = SD.open("test.txt");
40     if (myFile) {
41         Serial.println("text.txt:");
42
43         // read from the file until there's nothing else in it:
44         while (myFile.available()) {
45             Serial.write(myFile.read());
46         }
47         // close the file:
48         myFile.close();
49     } else {
50         // if the file didn't open, print an error:
51         Serial.println("error opening test.txt");
52     }
53 }
54
55 void loop() {
56     // nothing happens after setup

```

57 }
}

1.3.5 Serving html code from SD Card

You can download the required htm (yes, its htm not html) files from here: [index.htm](#) [on.htm](#) [off.htm](#)

PLEASE CHANGE THE FILE EXTENSION FROM *.txt* to *.htm*

```

1  #include <ESP8266WiFi.h>
2  #include <SPI.h>
3  #include <SD.h>
4
5  File myFile;
6
7  const char* ssid = "*****";
8  const char* password = "*****";
9
10 int ledPin = 5; // GPIO13
11 WiFiServer server(80);
12
13 void setup() {
14     Serial.begin(115200);
15     delay(10);
16
17     pinMode(ledPin, OUTPUT);
18     digitalWrite(ledPin, LOW);
19
20     // Connect NexBRD to WiFi network
21     Serial.println();
22     Serial.println();
23     Serial.print("Connecting to ");
24     Serial.println(ssid);
25
26     WiFi.begin(ssid, password);
27
28     while (WiFi.status() != WL_CONNECTED) {
29         delay(500);
30         Serial.print(".");
31     }
32     Serial.println("");
33     Serial.println("WiFi connected");
34
35     // Begin server on NexBRD
36     server.begin();
37     Serial.println("Server started");
38
39     // Print the IP address of NexBRD
40     Serial.print("Use this URL to connect: ");
41     Serial.print("http://");
42     Serial.print(WiFi.localIP());
43     Serial.println("/");
44     if (!SD.begin(4)) {
45         Serial.println("initialization failed! Check if SD card properly mounted on NexBRD");
46         return;
47     }
48     Serial.println("initialization done.");
49

```

```
50 }
51 }
52
53 void loop() {
54     // Check if a client has connected
55     WiFiClient client = server.available();
56     if (!client) {
57         return;
58     }
59
60     // Wait until the client sends some data
61     Serial.println("new client");
62     while(!client.available()){
63         delay(1);
64     }
65
66
67
68     String request = client.readStringUntil('\r');
69     Serial.println(request);
70     client.flush();
71     int value = LOW;
72     if (request.indexOf("/on.htm") != -1) {
73         digitalWrite(ledPin, HIGH);
74         value = HIGH;
75     }
76     if (request.indexOf("/off.htm") != -1) {
77         digitalWrite(ledPin, LOW);
78         value = LOW;
79     }
80
81     // Set ledPin according to the request
82     digitalWrite(ledPin, value);
83
84     // Return the response
85     client.println("HTTP/1.1 200 OK");
86     client.println("Content-Type: text/html");
87     client.println(""); // do not forget this one
88     client.println("<!DOCTYPE HTML>");
89
90     myFile = SD.open("index.htm");
91     if (myFile) {
92         Serial.println("index.htm:");
93
94         // read from the file until there's nothing else in it:
95         while (myFile.available()) {
96             client.write(myFile.read());
97
98         }
99         // close the file:
100         myFile.close();
101     }
102     delay(1);
103     Serial.println("Client disonnected");
104     Serial.println("");
105
106 }
```

1.3.6 OTA updates

Coming soon

1.3.7 Sleep mode

coming soon

1.3.8 IFTTT Integration

coming soon