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/*
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mkr1000_ledtest_version_2
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This is the initial test program for the mkr1000 board from Arduino.
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five LEDs can be switched ON and OFF via WiFi commands.
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This program is based on the original program described
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in chapter 5.5.2 of the "Arduino and Genuino
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MKR1000 Development Workshop 2016" from Agus Kurniawan.
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However updated with 7 LEDs connected between output pins D1..D7 via 1kOhm resistors and GND.
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If you want to know more about the mkr1000 board,
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see https://www.arduino.cc/en/Main/ArduinoMKR1000
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```
modified and improved april 2017
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```
by Alex Pikkert
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Improvements:
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- . fixed IP address for the mkr1000
- . one white LED on port D6 showing "trying to connect"
- . one green LED on port D7 showing "connected"
- . five ports (D1...D5) that can be switched ON/OFF independent from each other
- . automatic reconnection when wiFi goes down and returns
- . no connection failures with quick commands
- . all C++ commands are removed, only use of standard Arduino commands

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*/
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#include <WiFi101.h>
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int port1 = 1;
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```
int port2 = 2;
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```
int port3 = 3;
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```
int port4 = 4;
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```
int port5 = 5;
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```

int led1 = 6;//White led (trying to connect to WiFi)

int led2 =7;//Green led (WiFi connected)

int val1 = 0;

int val2 = 0;

int val3 = 0;

int val4 = 0;

int val5 = 0;

int portreq = 0;

String req;

String s;

// Add here your local WiFi network data:
//*****
IPAddress ip(xxx,xxx,xxx,xxx);// CHANGE INTO YOUR IP ADDRESS
const char* ssid = "xxxxxxx"; // CHANGE INTO YOUR NETWORK NAME
const char* password = "xxxxxxxxx"; // CHANGE INTO YOUR SECRET PASSWORD
//*****

int status = WL_IDLE_STATUS;

WiFiServer server(80);

void setup() {
Serial.begin(9600);
delay(10);

// prepare GPIO pins
pinMode(port1, OUTPUT);
pinMode(port2, OUTPUT);
pinMode(port3, OUTPUT);
pinMode(port4, OUTPUT);

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```
pinMode(port5, OUTPUT);
pinMode(led1, OUTPUT);
pinMode(led2, OUTPUT);

digitalWrite(port1, 0);
digitalWrite(port2, 0);
digitalWrite(port3, 0);
digitalWrite(port4, 0);
digitalWrite(port5, 0);
digitalWrite(led1, 0);
digitalWrite(led2, 0);

delay(5000);
}

void loop() {
// Try to connect to the WiFi network
if (WiFi.status() != WL_CONNECTED)
{ConnectWiFi();}

// Wait here until a client has connected
WiFiClient client = server.available();
if (!client) {return;}

// if connected, Wait until the client sends some data
Serial.println("new client");
if(!client.available()){delay(100);}

// Read the first line of the request
req = client.readStringUntil('\r');
Serial.println(req);
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client.flush();

// Match the request to switch the leds
if (req.indexOf("/port1/0") != -1)
{val1 = 0;portreq = 1;}
else
if (req.indexOf("/port1/1") != -1)
{val1 = 1;portreq = 1;}
else
if (req.indexOf("/port2/0") != -1)
{val2 = 0;portreq = 2;}
else
if (req.indexOf("/port2/1") != -1)
{val2 = 1;portreq = 2;}
else
if (req.indexOf("/port3/0") != -1)
{val3 = 0;portreq = 3;}
else
if (req.indexOf("/port3/1") != -1)
{val3 = 1;portreq = 3;}
else
if (req.indexOf("/port4/0") != -1)
{val4 = 0;portreq = 4;}
else
if (req.indexOf("/port4/1") != -1)
{val4 = 1;portreq = 4;}
else
if (req.indexOf("/port5/0") != -1)
{val5 = 0;portreq = 5;}
else
if (req.indexOf("/port5/1") != -1)
```

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{val5 = 1;portreq = 5;}  
else  
{Serial.println("invalid request");  
client.stop();  
return;  
}  
  
// Set the output pins according to the request  
digitalWrite(port1,val1);  
digitalWrite(port2,val2);  
digitalWrite(port3,val3);  
digitalWrite(port4,val4);  
digitalWrite(port5,val5);  
client.flush();  
  
// Prepare the HTML response  
s = "HTTP/1.1 200 OK\r\nContent-Type: text/html\r\n\r\n<!DOCTYPE HTML>\r\n<html>\r\n";  
if(portreq==1 && val1==0)  
{s += "port1 switched OFF "};  
if(portreq==1 && val1==1)  
{s += "port1 switched ON "};  
  
if(portreq==2 && val2==0)  
{s += "port2 switched OFF "};  
if(portreq==2 && val2==1)  
{s += "port2 switched ON "};  
  
if(portreq==3 && val3==0)  
{s += "port3 switched OFF "};  
if(portreq==3 && val3==1)  
{s += "port3 switched ON "};
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```
if(portreq==4 && val4==0)
{s += "port4 switched OFF "};
if(portreq==4 && val4==1)
{s += "port4 switched ON "};

if(portreq==5 && val5==0)
{s += "port5 switched OFF "};
if(portreq==5 && val5==1)
{s += "port5 switched ON "};

s += "</html>\n";

// Send the HML response to the client
client.print(s);
delay(100);
client.stop();
Serial.println("Client disconnected");
}

// Subprogram to connect to the WiFi network
void ConnectWiFi(){
Serial.print("Attempting to connect to SSID: ");
Serial.println(ssid);
status = WiFi.begin(ssid, password);
digitalWrite(led2,0);digitalWrite(led1,1);

// wait 5 seconds for connection:
delay(5000);
WiFi.config(ip);
Serial.println("");
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```
Serial.println("WiFi connected");

// Start the server
server.begin();
Serial.println("Server started");
digitalWrite(led2,1);digitalWrite(led1,0);

// Print the IP address
IPAddress ip = WiFi.localIP();
Serial.println(ip);
}
```