

PicoMite W network course

Chapter 6

Putting data on your webpage

The previous chapters showed how you could get the IP address of your PicoMiteWeb and how to build your first webserver and webpage.

That webpage displayed the following text on your webrowsers screen:

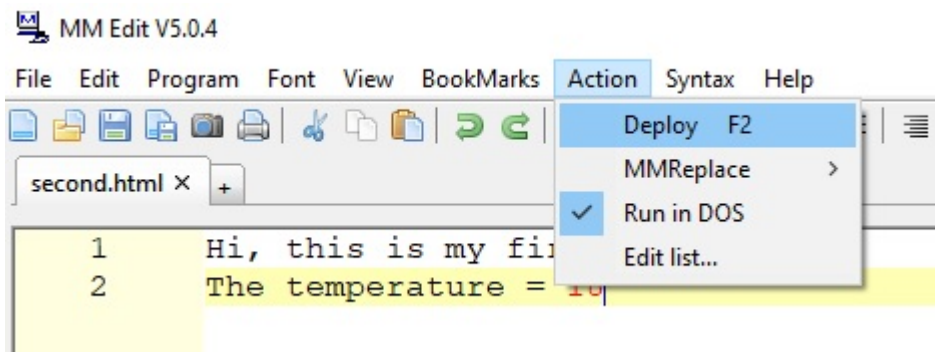
Hi, this is my first webpage

Well that is not very exciting is it. What we would like is that the Pico offered us some real information.

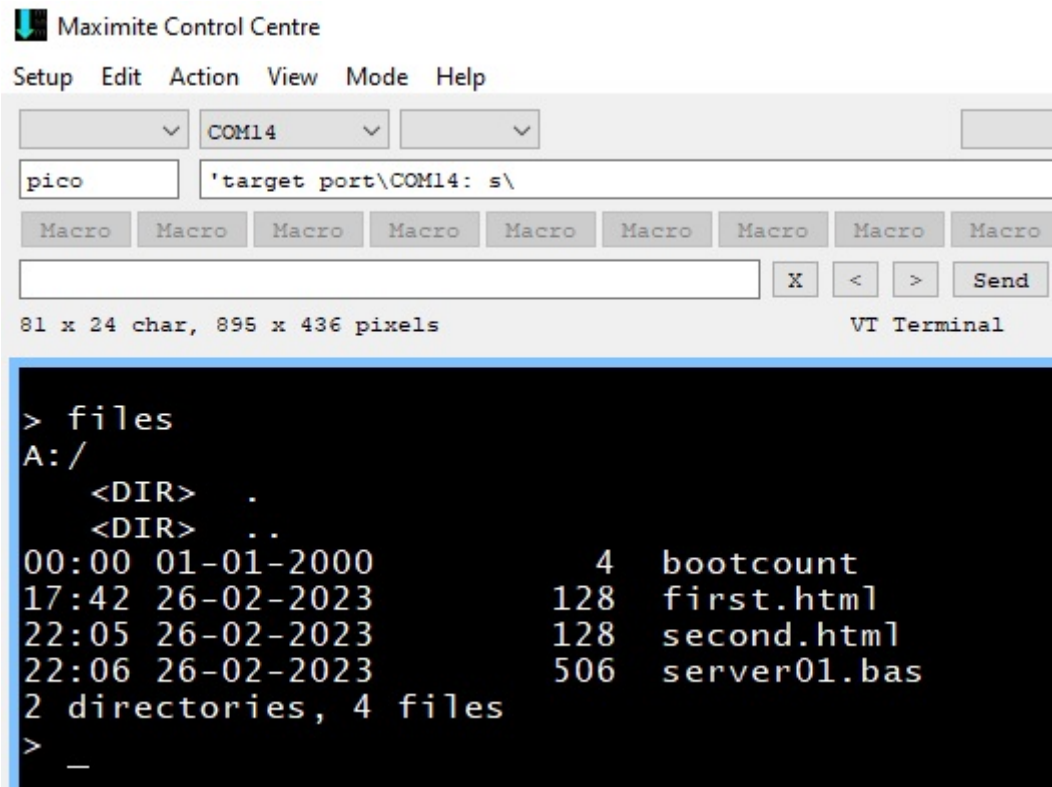
Let us therefore alter the html file.

In MMEdit load the file "first.html" then alter the lines as follows:

```
Hi, this is my first webpage  
The temperature = 18
```



And save it on your computer giving it the name "second.html"
Then press in the Action menu the Deploy entry.



If you type "files" in the console you will see that there are 3 files in the PicoMiteWeb filesystem: first.html, second.html and server01.bas

If you would run server01.bas you would get the same result as in the previous chapter as this program points to first.html. So we have to make a change. We have to change the line:

```
WEB transmit PAGE a%,"first.html"
```

into

```
WEB transmit PAGE a%,"second.html"
```

To do that load server01.bas from your computer into MMEdit and change the line.

```
MM Edit V5.0.4
File Edit Program Font View BookMarks Action Syntax Help
server02c.bas x ntp-timeout.bas x server02a.bas x +
1 DIM buff%(512)
2 WEB ntp 1
3 PRINT
4 PRINT "Your IP address is : " + MM.INFO(ip address)
5 PRINT
6 WEB tcp INTERRUPT serverstart
7
8 SUB serverstart
9 LOCAL p%, t%
10 FOR a%=1 TO MM.INFO(MAX connections)
11     LONGSTRING CLEAR buff%()
12     WEB tcp READ a%,buff%()
13     p%=LINSTR(buff%(),"GET")
14     t%=LINSTR(buff%(),"HTTP")
15     s$=""
16     IF (p%<>0) AND (t%<>0) AND (t%>p%) THEN
17         s%=LGETSTR$(buff%(),p%,t%-p%+4)
18         PRINT "String is ",s$
19     ENDIF
20     IF INSTR(s$,"HTTP") THEN
21         PRINT "sending page"
22         WEB transmit PAGE a%,"second.html"
23     ENDIF
24 NEXT a%
25 END SUB
26
```

Now save this program as "server02.bas" on your computer and then transfer it to the PicoMiteWeb with the Deploy entry in the action menu as we did before.

For your convenience I hereby give you the full program with the altered lines. This program incorporates the changes discussed in chapter 5.

```
DIM buff%(512)
WEB ntp 1
PRINT
PRINT "Your IP address is : " + MM.Info(ip address)
PRINT
WEB tcp interrupt serverstart
```

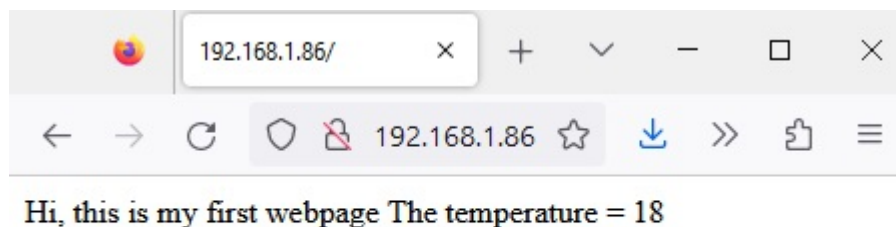
```

DO
LOOP

SUB serverstart
LOCAL p%, t%
FOR a%=1 TO MM.INFO(MAX connections)
    LONGSTRING CLEAR buff%()
    WEB tcp READ a%,buff%()
    p%=LINSTR(buff%(),"GET")
    t%=LINSTR(buff%(),"HTTP")
    s$=""
    IF (p%<>0) AND (t%<>0) AND (t%>p%) THEN
        s%=LGETSTR$(buff%(),p%,t%-p%+4)
        PRINT "String is ",s$
    ENDIF
    IF INSTR(s$,"HTTP") THEN
        PRINT "sending page"
        WEB transmit PAGE a%,"second.html"
    endif
NEXT a%
END SUB

```

As soon as the program has been uploaded to the PicoMiteWeb it automatically runs. So let's have a look at how the website looks now.



Hey ???

The text is printed on the same line. And we did write it on 2 separate lines in our editor.....

Well that is how HTML works.

Your browser does not recognize the “new line” in our text. To do so, we explicitly have to tell it to put the text on a new line.

In HTML language that is done with

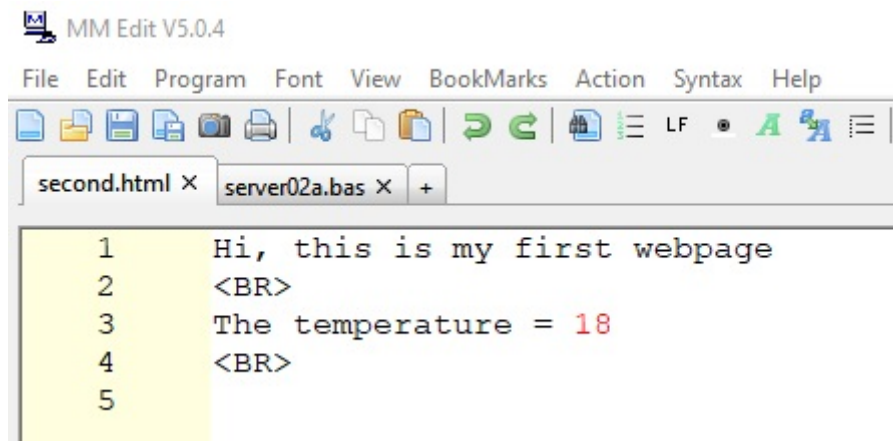
So we have to put `
` everywhere in a text where we want the next line to start on a new line. For our example we do that as follows:

```
Hi, this is my first webpage  
<BR>  
The temperature = 18  
<BR>
```

You can also put the `
` after each line like this:

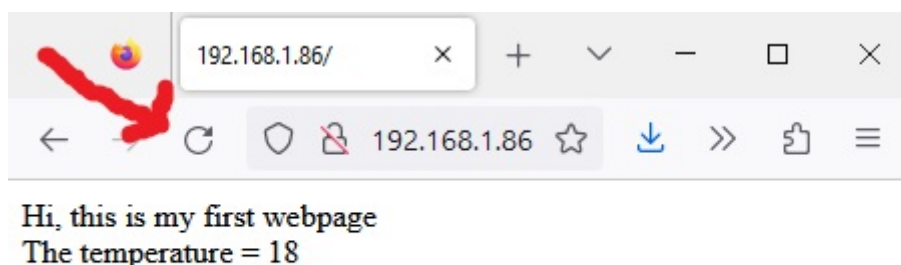
```
Hi, this is my first webpage<BR>  
The temperature = 18<BR>
```

Your webbrowser will not mind. Both are the same to the browser. For clarity however in large programs I often use the first method.



So edit the webpage accordingly and save it again as "second.html". Then use Deploy again to send it to the PicoMiteWeb.

As we saved the new HTML file using the same name "second.html" we do not have to alter the webserver program as that already was programmed to use that file name.



In your browser use the refresh button (where the arrow points). Or press enter after

the ip number. Both have the same function: refreshing the webpage. And presto both texts are on a separate line.

There you are: you just used your first HTML command.

Real Data

This works but is still not really usable. The webpage just has a line of text that displays a number. Still not very exciting. We want real data.

Many of you will already have worked with sensors like the DS18B20 digital thermometer or the DHT22 temperature and humidity sensor. But as not everyone owns such a sensor I am going to put a random value on the webpage. If you have used these sensors before the webserver code should not be difficult to change.

Here is the code:

```
Dim buff%(512)
WEB ntp 1
PRINT
PRINT "Your IP address is : " + MM.Info(ip address)
PRINT

WEB tcp interrupt serverstart

Do
    randomnum = Int(Rnd(100)*100)
Loop

Sub serverstart
Local p%, t%
For a%=1 To MM.Info(MAX connections)
    LongString CLEAR buff%()
    WEB tcp READ a%,buff%()edit

    p%=LInStr(buff%(),"GET")
    t%=LInStr(buff%(),"HTTP")
    s$=""
    If (p%<>0) And (t%<>0) And (t%>p%) Then
        s%=LGetStr$(buff%(),p%,t%-p%+4)
        Print "String is ",s$
    EndIf
    If Instr(s$,"HTTP") Then
```

```

    Print "sending page"
    WEB transmit PAGE a%,"second.html"
  EndIf
Next a%
End Sub

```

The previous chapter discussed the program extensively so I am only discussing the change here.

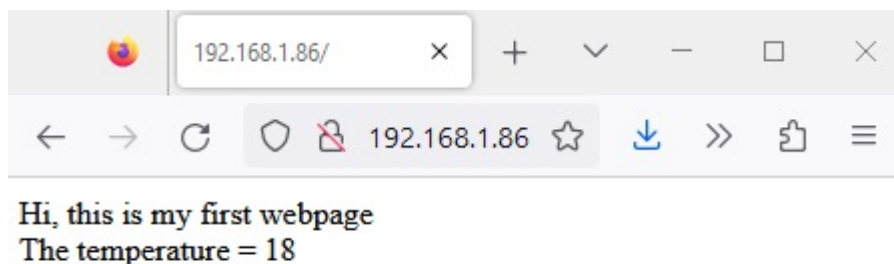
```

Do
  randomnum = Int(Rnd(1)*100)
Loop

```

In the DO-LOOP a random number is generated with a value between 1 and 100.

And the website ???



Nothing changed !!!

Indeed nothing changed and that is not surprising. We are sending the same "second.html" file as we did previously. And on that page is a fixed text.

So how do we get the variable randomnum on the webpage ???

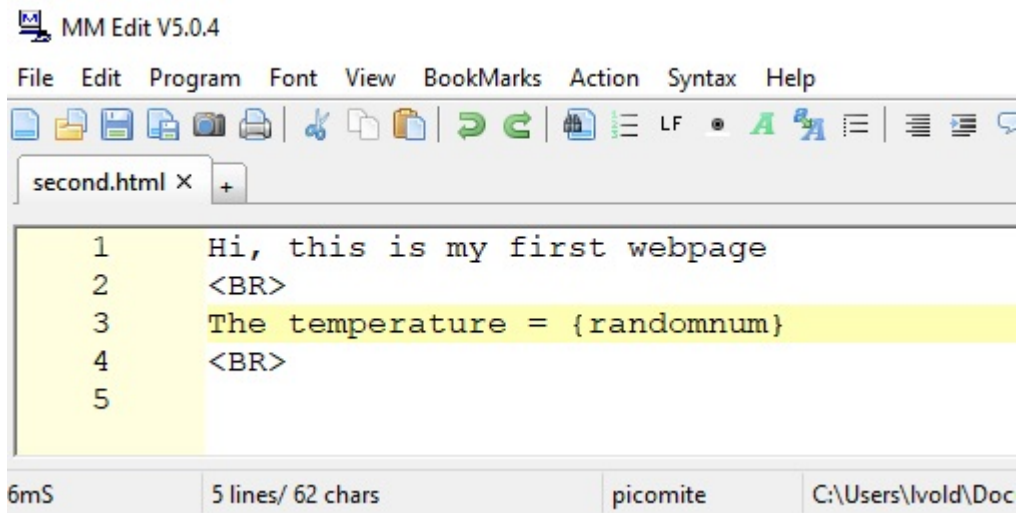
Getting the data on the page.

Well actually Peter did something very clever. I have not seen this before in other languages, and it makes our life in certain aspects much easier.

If you want to put a variable on a webpage you need to alter the HTML file and put the variable between curly brackets {}

In our example we need to use {randomnum}

So open the "second.html" file again in MMEdit and alter the file as follows:



MM Edit V5.0.4

File Edit Program Font View BookMarks Action Syntax Help

second.html x +

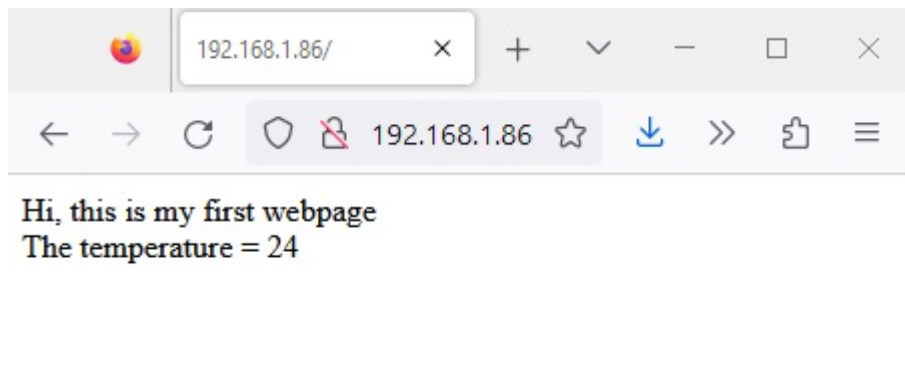
```
1 Hi, this is my first webpage
2 <BR>
3 The temperature = {randomnum}
4 <BR>
5
```

6mS 5 lines/ 62 chars picomite C:\Users\lvold\Doc

Here is the html code so you can copy it. Better is to edit the file in your computer and save it again as "second.html"

```
Hi, this is my first webpage
<BR>
The temperature = {randomnum}
<BR>
```

And: now you're talking !!



The random number has changed from 18 to 24. And each time you refresh the page (by clicking on the refresh icon or pressing enter after the IP number) a new value will be shown on your webpage.

If you look at the console screen at the same time you can see that the program prints "The String is GET /HTTP" on the screen and "Sending page".

So if you are using a temperature sensor the only thing you have to do is to alter randomnum in the variable you are using for the temperature. You have to alter the

variable's name in the program AND in the HTML code.

Nobody stops you in altering the text and in displaying multiple values on the webpage.

That is it for now.

Next chapter we are going to enhance the page to make it visually more attractive.