

Introduction

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Web servers

- a – what the server does (role of server)**
- b – when problem occurs (in case of problems)**
- c – how to make know your web site?**

Introduction

The programming tools gathered in this page are essentially for beginners, who will like to get some knowledge so far as programming a web site is concerned.

The materials relevant for the implementation of a web page are as follows:

- a computer equipped with a modem
- an application software such as internet explorer, netscape navigator (communicator), opera, etc ...
- a text editor such as notepad, microsoftWord, or wordPerfect etc ...
- an operating system such as windows 98, windows 2000, linux, etc ...

definitions

www: world wide web

web : a series of inter connected servers (computers) that support specially formatted documents. The documents are formatted in a language called HTML (HyperText Markup Language) that supports links to other documents as well as to graphics, audio and video files. This means you can switch from one document to another just by clicking on marked text.

Navigator: an application software that allows to browse through the internet. It is important for viewing, learning the content of web pages.

examples of navigator: internet explorer 6.0,
netscape 7.0, opera.

web site: a set of pages located on a machine that is connected to internet and broadcasting a kind of information and link in a coherent manner to give adequate information to the user.

1. HTML : basics elements

a. definition

HTML: Hyper Text Markup Language

HTML is a language that is used to describe the structure of a web page (heading, paragraph, ...). The different parts of a document can be identified by giving them a name. This name can later be used to perform certain tasks.

Under HTML, the identifiers are known as a tag, containers, or markers. All that are not part of the tags, are the document.

There are several versions of HTML (2.0, 4.0, 5.0).

b – HTML file and structure

HTML file is an ASCII file made up of 2 parts:

- document text and
- the HTML tags precisising the structure and the hypertexts links.

The syntax for a tag is as followed:

```
<marker name>  
.  
.  
.  
text (mark)  
.  
.  
.  
</name of the same marker>
```

The markers can be written in capital letters as well as in small letters.
The structure of a document is as follow:

```
<HTML>  
.  
.  
.  
document content  
.  
.  
.  
</HTML>
```

In general, the document has 2 parts :

```
<HTML>  
<head>  
.  
.  
<TITLE> title must be written here </TITLE>  
.  
.  
</head>  
<BODY>  
.  
.  
</BODY>  
</HTML>
```

assignment 1:

example of a small program; type exactly what is below without adding or subtracting a part from it, on a text editor such as notepad, wordpad, wordPerfect, etc ... **and save this document with the extension ".HTML"**. To execute this program, open the document from your browser: either internet explorer, nestcape, etc ...

```
<HTML>
<HEAD>
<TITLE> assignment 1 </TITLE>
</HEAD>
<BODY>
My first web page
</BODY>
</HTML>
```

2 . programming with HTML

a. formatting elements

Formatting a web page enhances the appearance of your web page. The user will be interested by in viewing how your pages is colourful and text is aligned properly. To make your page look better, you can create bulleted lists, change the font sizes, colour and style, insert images.

Character style

- to transform a character in italic: `text to be transformed in italic`
- bold character: ` text to be transformed in bold`
- to emphasize a text: `<DFN> text here </DFN>`

physique style

- bold: `text to be transformed in bold`
- italic: `<I> text to be transformed in italic</I>`
- index: `_{text to be put in index}`
- exponent: `^{text to be put in exponent}`
- beginning of the line: `
 put this tag to bring the cursor back to the line`

police of characters

`enter the text in which the attributes of marker FONT` **Note:** "n" is a variable that varies from 1 to 7 and which represents the length of the police; "k" is a chain of character having the name of a police of character; e.g: k = Times New Roman, or k = Verdana, or k = Fixedsys, or k = Courier New etc ...

assignment 2:

```
<HTML>
<HEAD>
<TITLE> assignment 2 </TITLE>
</HEAD>
<BODY>
```

You are making your first steps in programming web sites

Let's change of subject now: who does the problems in Irak devide?<I>the rich countries</I>

 it is time now to try another police of character and vary the length of characters.

```
</BODY>
</HTML>
```

b. links

A link point to a file; the file opens when the link is actif (for instance by clicking on). The tag used is as followed: <A> ...

Syntax: <A>Name = "VarTag" HREF = "fileName"> TITLE = "title of link"

Assignment 3:

```
<HTML>
<HEAD>
<TITLE> assignment 3 </TITLE>
</HEAD>
<BODY>
```

I'm making progress! click here to view my first web page

the end is still far! </BODY>

```
</HTML>
```

warning ! the name "C:/WebFolder/assigmt1.html" is an example; instead of writing it rather copy the name of assignment1.

Note: the name contains also the access path of the document; below, the access path is "C:/WebFolder/".

c. tables

creation:

```
<TABLE>
.
.
.
</TABLE>
```

the attributes of this marker are:

- BORDER = n : boder size

- ALIGN = LEFT/RIGHT/CENTER : justification of the table (left, righth or center)

- CELSPACING = n : space between the contents and inside border of a cell (width of the cell)

- CELLPADDING = n : space between the contents and inside border of a cell (height of the cell)

- *WIDTH = n %*: percentage of the screen that must be occupied by the table
- NB:** n is an add number

You will notice that none of the table will appear on the screen, this level creation. When the table is made up, the cells are physically created, and appear one by one at same that you are filling them.

To fill a table, the use of other markers is necessary:

- marker of line: `<TR></TR>`
- heading of cells: `<TH> heading here </TH>`
- content of cells: `<TD>content of cells here</TD>`

In each cell, you can introduce a text, a numeric number, etc ...

Assignment 4

```
<HTML>
<HEAD>
<TITLE> assignment 4 </TITLE>
</HEAD>
<BODY>
<TABLE border = 3 cellspacing = 5 cellpadding = 6 >
<TD> Sunday </TD>
<TD> Monday </TD>
<TD> Tuesday </TD>
<TD> Wednesday </TD>
<TD> Thursday </TD>
<TD> Friday </TD>
<TD> Saturday </TD>
</TABLE>
</BODY>
</HTML>
```

assignment 5: creation of the second table

```
<HTML>
<HEAD>
<TITLE> assignment 5 </TITLE>
</HEAD>
<TABLE border=3 cellpadding=14 align=center>
<TR>
<TH> </TH>
<TH> Sunday </TH>
<TH> Monday </TH>
<TH> Tuesday </TH>
<TH> Wednesday </TH>
<TH> Thursday </TH>
<TH> Friday </TH>
</TR>
<TR>
<TH> 7h - 7h55 </TH>
<TH> algo </TH>
<TH> C++ </TH>
<TH> Vbasic </TH>
<TH> OOP </TH>
<TH> Network </TH>
<TH> Num calc </TH>
</TR>
<TR>
<TH> 8h - 8h55 </TH>
<TH> algo </TH>
<TH> C++ </TH>
<TH> Vbasic </TH>
<TH> OOP </TH>
<TH> Network </TH>
<TH> Num calc </TH>
</TR>
<TR>
<TH> 9h - 9h55 </TH>
<TH> algo </TH>
<TH> C++ </TH>
<TH> Vbasic </TH>
<TH> OOP </TH>
<TH> Network </TH>
<TH> Calc num </TH>
</TR>
<TR>
<TH> 10h - 10h55 </TH>
<TH> Network </TH>
<TH> Num calc</TH>
<TH> algo </TH>
<TH> Cs maint </TH>
<TH> C++ </TH>
<TH> Cs maint </TH>
</TR>
<TR>
<TH> 11h - 11h55 </TH>
<TH> Network </TH>
<TH> Num calc</TH>
<TH> algo </TH>
```

```
<TH> Cs maint </TH>
<TH> C++ </TH>
<TH> Cs maint </TH>
</TR>
</TABLE>
</BODY>
</HTML>
```

d. pictures, colors, and background

pictures

```
<IMG SRC = "NomFichier" align = k>
```

Note : k can take the value LEFT or RIGHT or CENTER

Colors and background

B – Javascript

Javascript is a language which associated with HTML can make a web page dynamic. It makes use of variables, functions, objects unlike other programming languages such as C++, Java, etc.

1. variable type and data

a. variables

A variable is a temporary location in which data can be stored and modified later during execution.

A variable has a name that enables it to be accessed and a data type that defines the type of information that should be stored.

In JavaScript, it is not compulsory for a variable to be declared before its use; their identifiers should be written as follows:

- they start by letter
- a maximum length of 255 characters
- they shouldn't contain any dot nor
- they must be unique within a particular domain of validity

The declaration syntax is: *var idvar [=value]*

Note: *idvar* is the name of the declared variable

Example of a variable declaration: numPers = 0

It is possible to declare several variables by separating them by a comma.

Example: x, y, NumPers = 20, price = 10000, name = tonguim

The variables are of the same type with the value assigned to them.

b. basics types

- *boolean*: variables of this type can only take values *true* or *false*
- *number*: variables of this type contain numbers
- *string*: variables of this type contain characters strings

There are some special characters for formatting characters strings.

- `"\b"`: back space
- `"\t"`: tabulation
- `"\n"`: new line
- `"\r"`: return chariot
- `"\""`: antislash

c. arrays

declaration syntax: var idTab = new array (dim)

Note: *idTab* is the name of the variable (an array in this case); *dim* is the array length.

We can initialize the array by using the following syntax: `var idTab = new array ("id1", "id2", ..., "idn")`

To access to one of the array fields, we can use the following syntax: *idVar [i]* with $I = [0; dim-1]$

2. arithmetic and comparison operators

a. arithmetic operators

- "+": addition
- "-": subtraction
- "*": multiplication
- "/": division

b. comparison operators

- "<": less than
- ">": greater than
- "<=": less or equal to
- ">=": greater or equal to
- "=": equal
- "==": strictly equal
- "!=": not equal
- "||": or
- "&&": and

3. control structures

a. conditionnal structures

- *if (condition)*
{instruction 1}
[else
{instruction 2}
]

- *for (expression, initialization; exit condition; incrementation)*
{instruction}

b. loops

- *while (condition)*
{instruction}

- *do*
{instruction}
while(condition)

- *break*: terminate immediately a statement within the loop

- *switch (expression)*

```

{
case v1: instruction 1; break;
case v2: instruction 2; break;
.
.
.
default::
instructionParDefault;break;
}

```

4. events handling

Handling an event is a mechanism that joins a JavaScript function to an event such as clicking on a mouse.

In event-driven programming, it is important to identify the different elements necessary in the program execution process. Generally, these events are linked to behaviour of the following:

- the mouse
- the keyboard
- controls (in visual programming, the objects are all that are displayed on the screen).
- the windows
- etc

The most useful events are:

- in relation with the behaviour of the mouse click

```

on DbClick
on MouseMove
on MouseOut
on MouseOver
on MouseUp

```

- in relation with the behaviour of the keyboard

```

on keyPress
on keyDown
on keyUp

```

- in relation with the behaviour of the controls

```

on Blur
on Form
on Change
on Select

```

- in relation with the behaviour of the windows

```

on Resize
on Load
on unLoad

```

assignment 6: use of HTML and JavaScript in a program

```
<HTML>
<HEAD>
<TITLE> assignment 6 </TITLE>
<script langage = "JavaScript">
function dispAge (lastname, firstname, yearOfBirth)
{
if(!lastname) { lastname = "GUINKO"};
if(!firstname) {firstnname = "Ferdinand"};
if(!yearOfBirth) { yearOfBirth = 1979};
window.alert (lastname + " " + firstname + " you are " + (2003 - yearOfBirth) + " years
old");
}
</script>
</HEAD>
<BODY>
<CENTER> <b>handling age by JavaScript</b> </CENTER><br>
To know your age, enter your lastname, firstname et birth year, and click the button
CalculAge at bottom <p>
In case of errors, or to restart, click on reset <p>
<p>
<form name = "varform">
Last name: <input name = "varlastN", size = "30"> <p>
First name:: <input name = "varfirstN", size = "28"> <p>
Year of birth: <input name = "varAge", size = "17"> <p>
<input type = "button" name = "varExe" value = "CalculAge"
onclick = "dispAge (document.varform.varlastN.value,
document.varform.varfirstN.value,
document.varform.varAge.value) "><input type = "reset" name = "varRebegin" value =
"reset"></form>
</BODY>
</HTML>
```

C – after the web site design

• web server

a. what a server does

A web server is a program that is located in the computer and that has access to internet. It responds to a request from any kind of browser connected to internet. The server identifies the requested file and send it back to the browser. We generally talk about server and web client.

When the programmer ends his web site, he locates it in a web server, and that can be done in several ways:

- trough the use of internet services provider (ISP)
- using the appropriate host
- by creating your own server

b. in case of problems

After connecting your site, problems may occur; you must then:

- verify the spelling of the server name
- verify the links; it is advisable to use relative links rather than absolute ones
- verify the various access point
- when images are wrongly displayed, verify their extension
- verify the case (capital or small letters of the links)

If the problems remain contact the system administrator.

b. how to make known your web site

To be known you must be linked to an electronic engine (e.g. hotBot France, altavista, voila, google, lycos France, northern light, all the webs, etc ..) or through the use of the main electronics directories (e.g. France, lycos France, nomade, msn, multimania).

Conclusion

This small course above even though incomplete allows beginners in web sites design to have basic tools on how to start. These tools have been taken from several documents, specially *web site and Java programming* course prepared by M. BINDIA Jules Ferry, lecturer in computer science at "Ecole Supérieure des Sciences Économiques (ESSEC) of Douala", and at Adventist University Cosendai (AUC) of Nanga-Eboko, in CAMEROON, but also from my own experience on that subject.