

```

<html>
<head>
<title>Untitled Document</title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
</head>
<body bgcolor="#FFCC99">
<p><font face="Verdana, Arial, Helvetica, sans-serif" size="6"><b><font color="#000000">Quaders
de Disseny</font></b></font></p>
<p><font face="Times New Roman, Times, serif"><i><font size="5" color="#FF9900">Disseny
a Internet</font></i></font></p>
<table width="323">
<tr>
<td><i><font size="4">Quan jo el vaig conèixer ja feia parlar d'ell.
<br>
Encara me'n recordo. <i>Els meus a mig curs del 67. Ell seguia els estudis
de <i>psicologia</i> per millor portar ses hisendes. Jo estudiava
el dret civil. L'Armandó, el meu a l'entorn, ve venir, con cada vespre, a
la dispensa, per anar a fer un tomb en l'horari <i>opac</i>. I com que ja m'ho
abans hi havia hagut <i>escopetades</i> a la Rambla, i tal com amava el poble es
podia repetir, ell que, essent al carrer en dia:</font></i></td>
</tr>
</table>
</body>
</html>

```

Figura 6. En función de lo que se modificaba en la pantalla el programa ha generado todo el código HTML de forma automatizada. El texto en negro es el contenido del documento, el texto en azul es el código HTML, los anclajes o atributos del documento. Para el título *Quaders de Disseny*, el programa ha añadido las pautas `<p><font face="Verdana, Arial, Helvetica, Sans-serif" size="6"><b><font color="#000000">` y detrás del texto `</font></b></font></p>`.

La empresa que buscaba un diseñador con conocimiento perfecto de HTML y XML plantea una situación mucho más atractiva del sector: es necesario que el diseñador conozca el lenguaje de sus productos, como un diseñador industrial debe conocer los materiales con los cuales trabaja, pero también es necesario que continúe siendo diseñador y que pueda trabajar formando un equipo con informáticos y especialistas de contenido. En los seis o siete años de WWW, se han desarrollado centenares de herramientas, docenas de variantes de lenguajes y miles de utilidades específicas. Controlar este material, conocer sus especificaciones y escoger el mejor seguramente está bien que continúe siendo parte de la labor de los informáticos, y que la elección final se haga con un diseñador al lado.

# Languages, style guides, tools and design on the Internet

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## Abstract

Design on the Internet, not only when it comes to websites but also final documents, is opening up a new creative space for many professionals. The design of products on the net, however, requires methods and knowledge that, in some cases, do not coincide with habitual ways of working. The need –or not– of being familiar with programming languages, the specificity of style guides or technical guides and the role that tools play have become a battle field for professionals, work groups and the industrial sector.

## Key words

Interactive design, website design, design on the Internet, methodology of interactive design, HCI, website languages, HTML languages.

## Introduction

A few days ago, an advertisement for a job vacancy appeared in the Business section of *El País* newspaper, which was a good example of the bulk of this type of advertisements that appear in all of the Sunday newspapers. This is a summary of its contents, after having taken out the name of the company that placed the advertisement, and translated it:

As a result of our great expansion as contents manufacturers, we are looking for a head of design and interfacing projects in our Madrid office. This person will work in a team in the department of contents and programming, and will be responsible for designing interfaces for users, integrating contents and developing the browser network of web sites. This position requires a creative person, with a minimum of two years experience and a perfect knowledge of HTML and XML.

This sector requires head designers who, as the advertisement specifies, will be responsible for defining how and the way in which users will be able to

gain access to contents, the interfaces (mostly graphic and textual ones) they will come across and how they will be able to use the system as a whole. The job description should not surprise any minimally experienced designer in the world of publishing or graphic arts, who is used to defining the sort of front cover, back cover, page setup or typography the user of the book (or content) will find or what kind of cover or booklet a disc or video (with a multimedia content) should have. The frightening thing will probably be having to have a perfect knowledge of HTML and XML. In other shorter advertisements, this list can become even broader, requiring someone who has a perfect knowledge of programmes such as Flash 4.0, Photoshop 5.5 and ImageReady 2.0, DreamWeaver 3.0, Shockwave and Director 7.0 or VRML, CCS and DHTML along with a possible et cetera including programmes specific to audio or video processing, languages of data processing or return systems of information for users.

According to companies in this field, could it be that design on the Internet simply involves using different computer programmes related to more traditional areas of communication media, such as animation, photography, video, graphic design and infographic images? Or is it perhaps, having a knowledge of and using programming languages such as HTML, XML and DHTML? If the Head of Design of the company that placed the advertisement has to work in a team in the department of contents and programming, why must he or she also have a perfect knowledge of computer languages? Would the same company also ask of computer programmers they wished to employ that they have a broad knowledge of typography, design methodology or any knowledge whatsoever regarding theory of colour or the rhetoric of images?

Beyond any possible confusion or lack of definition within the sector, beyond suspecting that more often than not, instead of wanting a person who has the skills to be able to conceptualise and complete a project, what is supposedly required is a model maker or an assembly technician specialised in using a particular tool—even though the profile of this job description is made out to be that of a graphic designer—, beyond the comings and goings of the sector, one could almost suspect that the space or medium we know as the Internet has, or may have, features of its own which are redefining what design is all about, whether it be a global communication project of a corporate web

or a small product that is created and transmitted to be seen on the net. Design work in the field of communication by means of computer networks may correspond to new features that entail new strategies and work methods.

## Languages, systems and protocols

In order to understand to set of tasks that are being included within the term *design* in the interactive communication environment, we may have to return to what Gene Youngblood calls *metadesign* in computer environments, that is, the result of the effort made to devise and define the context that will be used to create interactive products with contents.

*Metadesign*<sup>1</sup> does not only cover the features and the design of circuit boards, microchips, or tubes of cathodic rays, but also keyboards, the design of mice with one, two or three buttons, and even the visual appearance, colours, language and graphic representations that are used on the screen so that users can communicate with their own computer or other computers over the net.

Apart from this effort, which involves the building of machines by computer engineers through to the communication with users carried out by specialists from several fields that make up the HCI (Human-Computer Interaction) group, we must add, along with the Internet, a whole set of new protocols, codes and conditions that establish the final features that any product must have to be incorporated into the network, to be a website or a document that can be opened from a browser.

Metadesign establishes which activities can be carried out in a particular environment and their degree of modularity, and tries, in principle, not to determine what these will be like. This first level of design is thus based on the conceptualising, the definition and the carrying out of the codes and the tools that will make it possible to execute projects.

<sup>1</sup> Peter Broderick's interview with Gene Youngblood, *Millennium Film Journal*, Fall/Winter (1986-1987). He defines *metadesign* as the «creation of context without content, as a specification and limit of the number of possible contents that can fit into that particular context»: Also by Youngblood: «Cinema and the Code», in *Computer Art in Context*, Leonardo, ISSAT, Pergamon Press, pp. 27-30.

The direct verification of this context, regarding the graphic appearance as well as the determination of the product guidelines, become obvious as soon as a website document is opened up from any browser. The contents we have gained access to, whether it is a tax form, the headquarters of the Council or a toy museum, also comprise a whole series of information and location contents that would be unimaginable in any other communicative environment, i.e. browser bars, texts, simulated embossed buttons, icons and pictograms, moving logos and digital clocks. Moreover, the information we have looked up also indicates the presence of previous designs, technological decisions and commercial contexts.

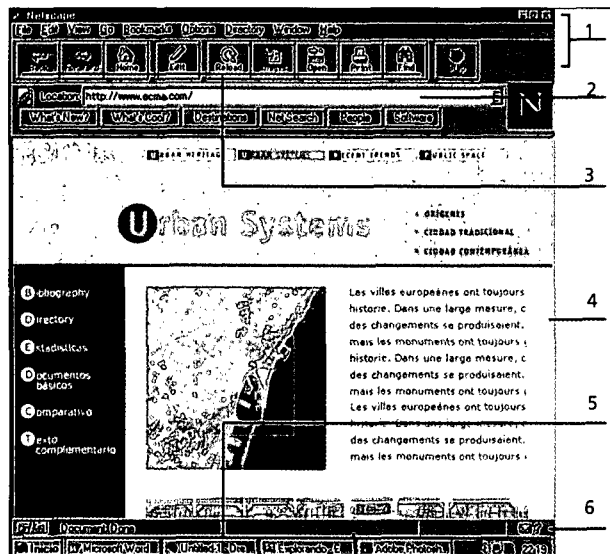


Figure 1. An Internet document opened from Netscape without having modified any option either from the browser or the operative system. On the screen, we can see information characteristic of the operative system in the form of visual representations of functions as well as data structuring.

1. Features and functions of Netscape, arranged and represented according to the codes and principles of the operative system of Windows.
2. Situational information characteristic of the network: location, server name and type. Name and type of final document.
3. Pictograms characteristic of the Netscape design, independent of the operative system being used.
4. Contents with design, structure and their own coding. It follows the guidelines established by HTML languages, characteristic of the Internet.
5. Information of the Windows operative system: hour, direct access-ing, activated programmes, activated tools, and so on. The colours, spacing, typography and visual codes are characteristic of the Windows design, although the user is able to change some parameters.
6. Information of the browser regarding the state of the document which has been looked up, such as transference speed, state of connection with the server, loaded document, and so forth.

When the World Wide Web was established in 1994, several operative systems were adopted, such as Windows, Macintosh, Unix, and so on, along with ways of communicating with the computer –a keyboard and mouse for using tools or responding to the system, a monitor as a visual aid, textual documents as a basic form of content–, from which the bases of a common language were established in order to transmit information from one computer to another, no matter what operative system was in use.

This is a very ambitious proposal of minimums, consisting of taking advantage of what already exists, keeping what is common to all of them and elaborating the basic rules, i.e. codes that allow for maximum operating capacity between systems. So a system of protocols connecting computers and servers has been developed, as well as HTML language, which is no more than a set of marks, anchorages or tags associated with the textual documents written on a word processor and sent via programmes and tools from one computer to another via a telephone network.

Therefore, even though this is all based on the same technologies and inherited principles belonging to the field of HCI, as well as the interaction of people with and by means of machines and programmes, the Internet put an end<sup>2</sup> to the tradition of interactive products until then developed on hard disks or engraved on CD-ROM. The adopted transmission technology, the telephone network, achieves a laughable speed –2, 3 up to 7 k/s in standard modems– compared to what was being achieved in 1994 from a CD-ROM of, for example, double or quadruple the speed –300/600 k/s– which is almost ridiculous when compared to hard disks.

This technical limitation is associated with, and is what brought about the decision to use a page of text as a minimal contents unit of the net itself, to the detriment of the concept of node or screen space with basic units of multimedia contents.

<sup>2</sup> This split between off-line interactive products compared to the on-line ones is often considered by producers, publishers and multimedia designers as a step backwards because it explicitly returns to principles that are linked to the world of textual publication to the detriment of audio-visual (and rhetoric) space that has been achieved in this field over the last few years. The multimedia options on the Internet in 1994 are similar to those available off-line in the eighties. Besides the limitations of technological resources, one must take into consideration the doubts and reticence that the publishing sector has shown towards working with the Internet given that it cannot reap the benefits of its products in a short time.

Given that it is lacking in quality, this text space and can only have low-quality, tightly compressed images, as well as other files containing audiovisual material. Moreover, the Internet is based on the communication between users who transmit their own contents to each other or else they leave them with a server so that any user whatsoever can gain access to them, unlike off-line products, which maintain a unidirectional communication structure characteristic of traditional media, in which the authors create the contents of a text which the producer/publisher then prints on to some kind of material, which is then reproduced and sold individually.

## Style guides: definition of a context, definition of a creative space

The Internet has changed a great deal between 1994 and now, firstly because of how it has been used in the market and the new user profiles that have been created, and secondly because of how it has opened up more possibilities of developing projects and products, has improved in speed and transference capacity, and has created better tools and languages which permit a greater creative or authorship space. A valid reference, which has nothing to do with manufacturers or products, to follow the evolution guidelines of this medium as far as the specifications and technical possibilities are concerned, are the recommendations that are periodically published by W3C, the World-Wide Web consortium<sup>3</sup> founded by Tim Berners-Lee from MIT, in collaboration with the CERN, with the support of the European Commission as well as more than four hundred institutions from all over the world. These recommendations or technical specifications aim towards setting common guidelines, both in developing communication protocols as well as language specifications that can be adopted by all of the manufacturers involved in communication technologies via networks.

In the specific field of design, these recommendations establish the parameters that can be modified by the user as far as setting up a format or the structuring of contents are concerned. The set of defined principles, in the environment of computer programming, in HTML language and its subsequent variants, which affect design of visual aspects, the organisation, the structuring and the execution of

contents, are divided into groups called design style guides on the Internet.

To a certain extent, these style guides establish the syntactic constructions that can be produced in every programming language. The company that requires someone who has a perfect knowledge of HTML or XML is asking for the designer to know which language he or she will use to create his or her projects.

Bert Bos, the head of the design team of W3C, defines the design guidelines of the consortium, over and above other considerations, as ease of use, efficiency, ease of maintenance, connectability, accessibility, simplicity, economising resources.<sup>4</sup> Returning to the real world, this has been conveyed, for example, in the fact that typography has not been valued as a fundamental factor in text communication. For example, if design guidelines establish that the text is in a Garamond italics font, size 14 with a normal interline and is justified on the left, when these specifications are converted into the HTML code, the programme will translate them into its own language and will ensure that the text contents are legible for any computer with a browser; the feature associated to the Garamond italics 14 text will only be recognised by those who have this font on their computer. If this font is not installed, the text will be read in a similar font with a similar size, most probably times new roman or a serif font characteristic of the operative system. The size of the letter will have to be translated into a size 1, 2, 3 or 4 according to HTML's own scale. The justification on the left will not change, but if more specific guidelines are not established, the width and the length of a paragraph, along with the combination with the other elements on the screen may vary.

However, the text can be seen from any computer in the world that is connected to the net and the time and volume of data that is transferred over the phone line will be minimal.

<sup>3</sup> W3C, <<http://www.w3.org/consortium>>. From this main address, it is possible to gain access to most of the recommendations, previous reports carried out by various work groups and information regarding organisations and the consortium's work principles and structure. «The W3C consortium was created [...] by developing common protocols that promote its (Internet) evolution and ensure its interoperability». Despite its will to be internationalist and to act as a reference, like the UN, the space that W3C has to act in is often more symbolic than effective, coming up against the great corporate monsters of companies who work in this sector.

<sup>4</sup> Bos, Bert (2000). «What is a good standard? An essay on W3C's design principles». In: <<http://www.w3.org/consortium>>.

The current versions of HTML languages, the language programmes JAVA, DHTML, XML, VRML, and so on, make it possible to broaden parameters that can be designed with more structuring control and contents form, but they also run the risk of losing part of their users –those who have not updated their browser programmes or who have computers that for whatever reason, will not respond to the needs of this kind of progress. They also involve a large increase in the amount of data that is being transmitted over the net, then stored and processed, which eventually means that production costs will soar.

The company that placed the advertisement in *El País* last Sunday was probably looking for someone who could use design to work through the jumble of possibilities the net currently offers and find the combination that will achieve the best possible balance between all of the elements involved. We could call this creativity with criterion.

### **Style guides: *Carmencita o la buena cocinera* (*Carmencita or the good cook*)**

For many years, the families in this country could have been divided into two large groups: those who had been passed down the recipe book *Sabores* (Flavours) by their parents, and the disciples of *Carmencita o la buena cocinera*. In fact, both books were remarkably similar: they were both quite happy to use stock cubes, margarine and frozen products in their recipes. They are both good books on traditional cuisine and they show a high level of common sense as far as domestic finances are concerned. They have recipes for soup using stale bread, croquettes using left-over chicken, and for festive days, there are recipes like cannelloni or meat stew. There is something about the Internet that vaguely smells like *Sabores* or *Carmencita...* and it probably has something to do with being at home, contents that never quite end, that can be adapted to anyone's computer but which you are never quite sure whether you are perceiving as you should.

The same page can change from one day to the next, it can be modified, updated without us knowing how long it will remain that way, if it has been chan-

ged or whether it will vanish in a few hours. At one address alone, we may gain access to the national library of the United States Congress or the personal web page of an employee who works in the library of the United States Congress telling us about how much he loves city cats or salsa music.

Unlike any other communication medium, even interactive off-line media, communication over the net allows a large part of the population to gain access to publishing as never before and at a very low cost. And all of this published material, all these texts, photographs, diaries or pictures can be combined, treated visually, graphically designed by their creators. Thanks to the technical guides published by programming or design specialists, describing the abilities of each language, a whole series of style guides have appeared with instructions of how to design whole web sites or web documents that bring back an aftertaste of *Carmencita*.

The origin of all this can be found in publications than mean to be serious, in electronic versions of books on style brought out by large corporations or companies that, owing to their importance or quality, have established kinds of guidelines or references. This is the case, for example, of the classic Macintosh<sup>5</sup> style guide, or that of the University of Yale, or even NASA.

### **Yale C/AIM Web Style Guide<sup>6</sup>**

The Center for Advanced Instructional Media at the University of Yale included this book in its website on the Internet in 1996. It is a style book which contains advice regarding the design of web sites on the Internet. It is interesting to see the convergence of different fonts or traditions, i. e. text editing and the traditional field of publishing, the remnants of HCI that define the interaction principles and the dialogue with the user,

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<sup>5</sup> Electronic version adapted to the web of its now classic *Macintosh Human Interface Guidelines*, Apple Computer Inc., Addison-Wesley Publishing, Reading, MA. 1992. In: <<http://developer.apple.com/techpubs/mac/HIGuidelines2.html>>.

The Microsoft version can be found in *The Windows Interface Guidelines for Software Design*, Redmon, WA: Microsoft Press. 1995.

<sup>6</sup> *Yale Web Style Manual*. In: <<http://info.med.yale.edu/caim/manual/contents.html>>. Created by P. J. Link and S. Horton. The book version is called *Web Style Guide, Basic Design Principles for Creating Web Sites*, Yale University Press. 1999.

and the way this can be adapted to HTML language and its variants. It suggests a kind of methodology of how to plan a website project that is summarised below:

Table 1

- Previous considerations
· Purpose of the web site
· Strategies of interactive design
- Interface design
· Basic interface design of a website
· Criteria for accessing information
· Browsing and tag or link criteria
- Design of the website
· Structure of the site
· Featuring elements of the site
- Page design
· Graphic design
· Composition of pages and menus
· Design of master copies
· Headings and footers
· Typography
· Characterisation of tables, page size
· Characteristics to optimise different operative systems
· Publishing style
· Frames - windows -
· Style pages
- Characterisation of graphs on the website
· Basic colours
· Graphic formats, GIF, JPEG, compressing, interweave
· Optimising graphs
· Summaries, format of files
· Backgrounds
- Multimedia characterisation in the website
· Design of audiovisual elements
· Video and digital audio
· Animation and interactive activities

The previous considerations, the interface design and the design of the website creates the need for our project to be applied to an interactive environment, in a broad sense. The contents must be structured according to the assessment of multicultural audiences characteristic of the net, or to the need to specify the technical characterisation of the project. The page design, characterisation of graphs and multimedia characterisation are all linked with the standard con-

cepts of page setup and text editing, which are adapted to the limitations of the medium.

Over and above the possible practical use this style manual may have, or the possible use of any style manual taken out of the context it has been created for, it is interesting to see how the defining principles of HTML have been accepted as valid many years later. Any site project on the net is structured according to final textual documents; audiovisual media are graphic and sound annexes which complement textual information and are defined by their weight (size in function of the bytes of information the file takes up) and the specific technical conditions they require. Thus, a JPG image can be seen from any computer, although if the quality of the computer is not very good, the colours cannot be modified. A GIF has a limited number of colours but they can be specified with utmost accuracy. A video will need a complementary computer programme, along with a sound card, and Shockwave or Flash animation. However, if the animation has no sound and it is created as an animated GIF, it will not require any additional software.

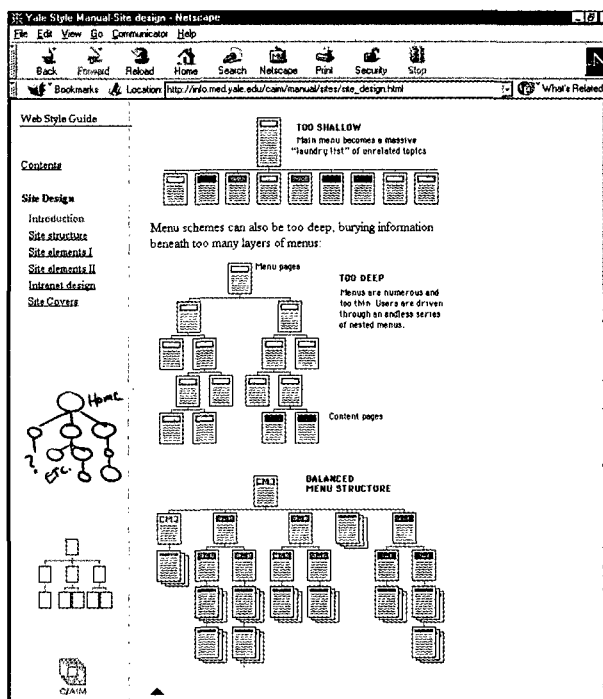


Figure 2. Screen image of the style manual elaborated by experts at Yale. It looks at menu schemes in a website or interactive complex and the way they are set out in interactive design manuals of HCI.

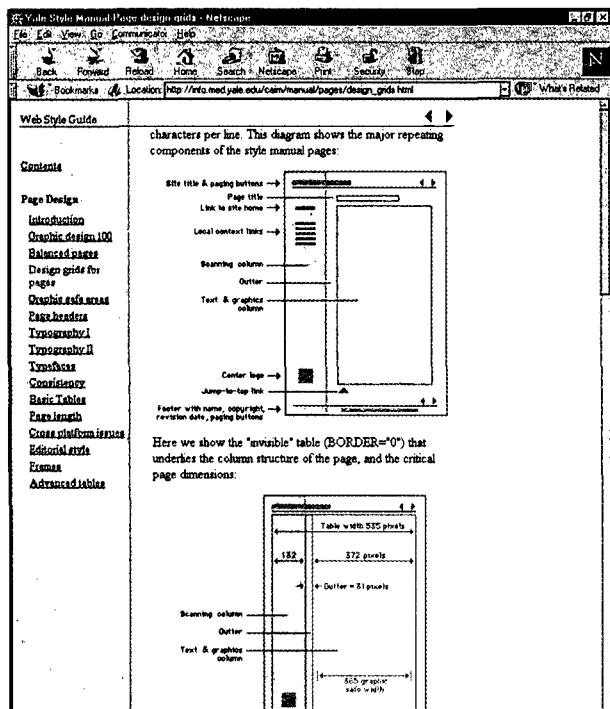


Figure 3. Screen image of the style manual elaborate by experts at Yale. We can see the guidelines of how each of the pages of a web site should be set out.

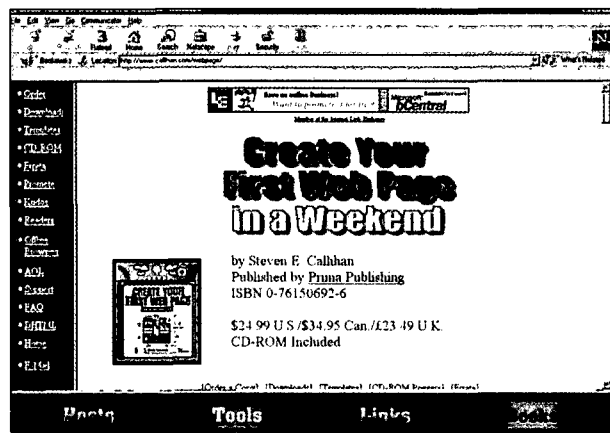


Figure 4. Main page of a web site that invites us to create a web page in a weekend. Its contents has also been published on paper. <<http://www.callihan.com/webpage/>>.

One of the problems that arise –or perhaps one of the great virtues– in this environment is that any principle or recipe that is established does not last for very long. Every three or four months, there are technological aspects that have to be revised, new guidelines or variations in programming codes, changes in for-

mat and transference protocols that make it possible to reconsider a project and begin it all over again.

In a more or less structured and academic style, following the style of recipes, there is a whole selection of style guides that have been published both on paper and in web sites that supposedly give solutions to any problematic situations that may arise. This can be verified by looking up concepts such as «web, style, guide, design» in Yahoo or Altavista.

## Tools and softwares to design contents on the Internet

If the Internet contents are mostly textual, the programmes specific to Internet would have to be text processors i.e., programmes that incorporate invisible HTML tags that are invisible on the screen. In fact, a large number of computer programmers are still working in this way, assigning properties to texts and giving programming orders, whether in HTML, JAVA or XML.

The average mortal who is not a programmer finds working directly on a programme complicated and obscure, as it requires learning and using programming languages well. Software companies have developed tools that allow documents to be created in HTML without coding, showing only what the user will see on the screen. A good example of these kinds of programmes is Macromedia DreamWeaver,<sup>7</sup> where the quality control of the end product can be carried out with hardly any knowledge about programming languages.

The programme that generates the programming code, in this case DreamWeaver, becomes the basic work tool to create sites and contents for the net. In its most direct use –organising screens, establishing colour codes, spatially distributing contents, etc.– it is a useful tool for text setups and creating prototypes. However, it is also accompanied by a considerable number of tools depending on the complexity of the project that is going to be carried out, i.e. a programme for treating photographic images, an-

<sup>7</sup> Can a programme be called «Dream Weaver?» Macromedia's electronic address: <<http://www.macromedia.com/>>. It is currently considered in this sector as one of the best tools for creating HTML documents.

ther one for graphic images, tools to treat, create and save sounds or programmes and equipment to elaborate animation and videos.

The temptation to confuse design with the knowledge and use of these tools has become common in many companies and professionals in this sector. Learning what can be done with DreamWeaver together with a quick look at a guide about applied design are what now give visual appearance to most of the web pages that are found on the net. In fact, most of the companies who place advertisements in newspaper offering work to web designers match this model. Thus, there is now a whole list of programmes that are in vogue in this sector: DreamWeaver, Flash, Shockwave, Photoshop, Illustrator, Premiere, and so on.

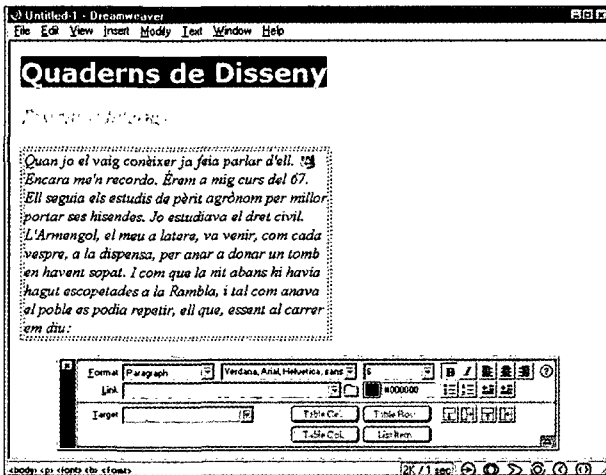


Figure 5. Document created using DreamWeaver. The text features of the title, italics, background colour and margin width are established in the visual menu that appears on the screen. The options that the menu offer correspond to those established in HTML: a text can have a hierarchy of assigned fonts (Verdana, Arial, Helvetica, Sans-serif), a size (1, 2, 3, 4, 5, 6), a colour (#000000, which is black), and it can be normal, in bold or in italics.

The company that was looking for a designer who had a perfect knowledge of HTML and XML, has presented a rather more attractive situation in the sector. A designer must now be familiar with the language of his products, in the same way as an industrial designer has to know the materials he will work with, but he must continue being a designer and work in a team along with computer technicians and contents specialists. In the six or seven years of the World-Wide Web, hundreds of tools, dozens of language variants and thousands of specific utilities have been cre-

ated. The best option would be if the work involved in controlling this material, knowing the specifications and choosing the best alternative were carried out by a computer programmer. However, a designer should be present when it comes to making any final decisions.

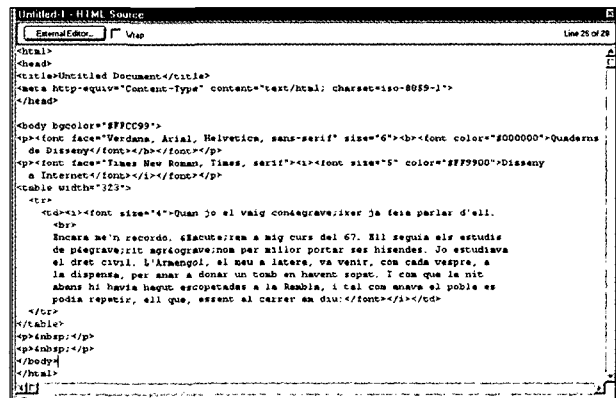


Figure 6. Depending on what is modified on the screen, the programme has generated a whole HTML code in an automated way. The black text is the contents of the document, the blue text is the HTML code, the tags or attributes of the document. To the title Quaderns de Disseny, the programme has added the following guidelines: <p><font face="Verdana, Arial, Helvetica, Sans-serif" size=6> <b> <font color=" #000000"> and behind the text </font> </b> </font> </p>.