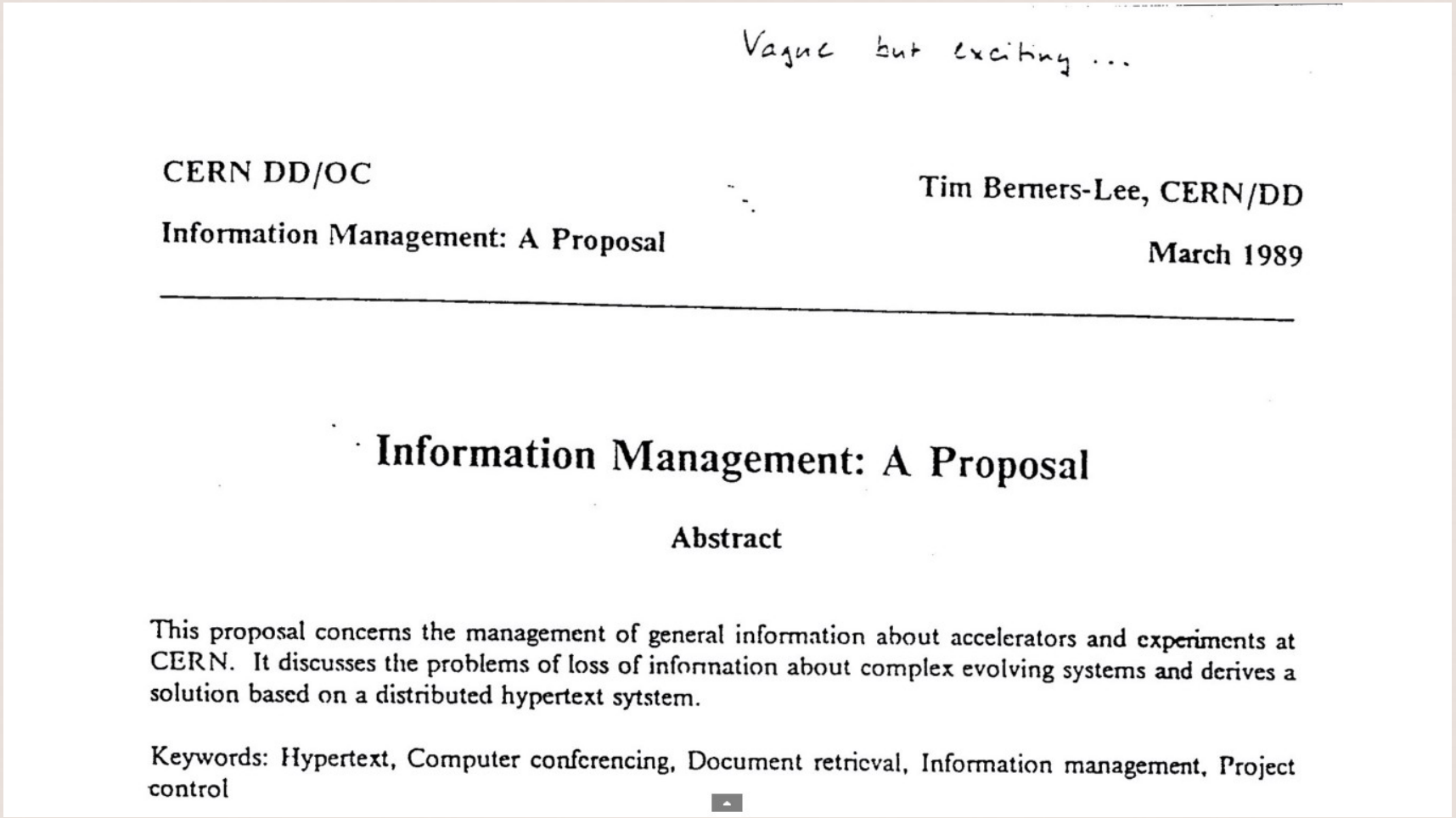
M4: Markup language

Consorci d'Educació de Barcelona
Generalitat de Catalunya
Ajuntament de Barcelona

History

In 1989, Tim Berners-Lee spent several years working at CERN, the European Organization for Nuclear Research. Although Tim was a physicist, he had been working in telecommunications and computer science since graduating from college. In March 1989, Tim wrote a short report, Information Management: A Proposal, in which he proposed the development of a distributed information management system.

History



Vague but exciting ...

CERN DD/OC

Tim Berners-Lee, CERN/DD

Information Management: A Proposal

March 1989

Information Management: A Proposal

Abstract

This proposal concerns the management of general information about accelerators and experiments at CERN. It discusses the problems of loss of information about complex evolving systems and derives a solution based on a distributed hypertext sytstem.

Keywords: Hypertext, Computer conferencing, Document retrieval, Information management, Project control

History

On April 30, 1993, CERN placed the *website client and server software* in the public domain, thus guaranteeing that the website was free and that no one would take it. As can be read in the document, CERN waived all intellectual property rights over the code; and granted permission to anyone to use, duplicate, modify, and redistribute it.

History

930430

ORGANISATION EUROPEENNE POUR LA RECHERCHE NUCLEAIRE
CERN EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

STATEMENT CONCERNING CERN W3 SOFTWARE RELEASE INTO PUBLIC DOMAIN

TO WHOM IT MAY CONCERN

Introduction

The World Wide Web, hereafter referred to as W3, is a global computer networked information system.

The W3 project provides a collaborative information system independent of hardware and software platform, and physical location. The project spans technical design notes, documentation, news, discussion, educational material, personal notes, publicity, bulletin boards, live status information and numerical data as a uniform continuum, seamlessly intergated with similar information in other disciplines.

The information is presented to the user as a web of interlinked documents .

Acces to information through W3 is:

- via a hypertext model;
- network based, world wide;
- information format independent;
- highly platform/operating system independent;
- scalable from local notes to distributed data bases.

Webs can be independent, subsets or supersets of each other. They can be local, regional or worldwide. The documents available on a web may reside on any computer supported by that web.

2.

Declaration

The following CERN software is hereby put into the public domain:

- W 3 basic ("line-mode") client
- W 3 basic server
- W 3 library of common code.

CERN's intention in this is to further compatibility, common practices, and standards in networking and computer supported collaboration. This does not constitute a precedent to be applied to any other CERN copyright software.

CERN relinquishes all intellectual property rights to this code, both source and binary form and permission is granted for anyone to use, duplicate, modify and redistribute it.

CERN provides absolutely NO WARRANTY OF ANY KIND with respect to this software. The entire risk as to the quality and performance of this software is with the user. IN NO EVENT WILL CERN BE LIABLE TO ANYONE FOR ANY DAMAGES ARISING OUT THE USE OF THIS SOFTWARE, INCLUDING, WITHOUT LIMITATION, DAMAGES RESULTING FROM LOST DATA OR LOST PROFITS, OR FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Geneva, 30 April 1993

W. Hoogland
Director of Research

H. Weber
Director of Administration

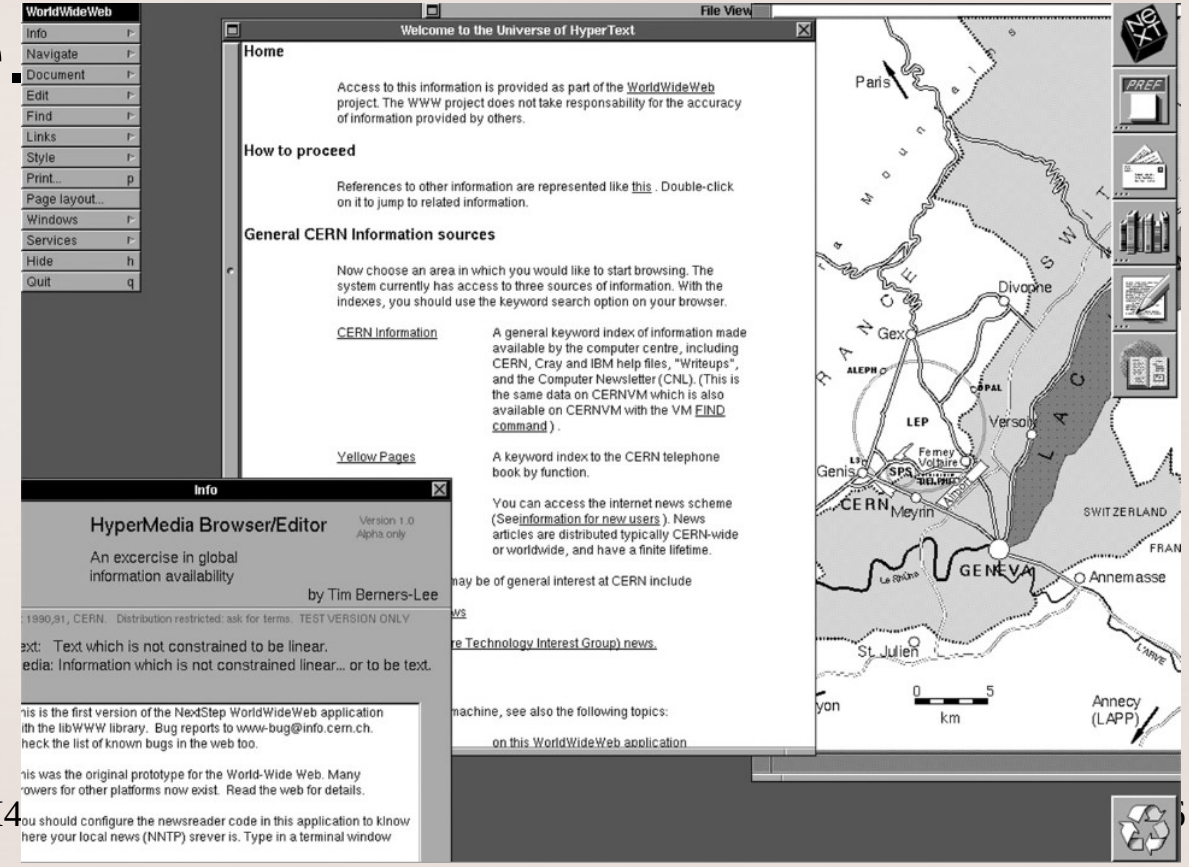
opie certifiée conforme

ait à Genève le 03-05-93

ORGANISATION EUROPEENNE POUR LA RECHERCHE NUCLEAIRE
DIVISION DES FINANCES
CERN

Browser history

The first web browser was developed by Tim Berners-Lee in 1990 at CERN. It was called WorldWideWeb and was a browser and web editor at same time.



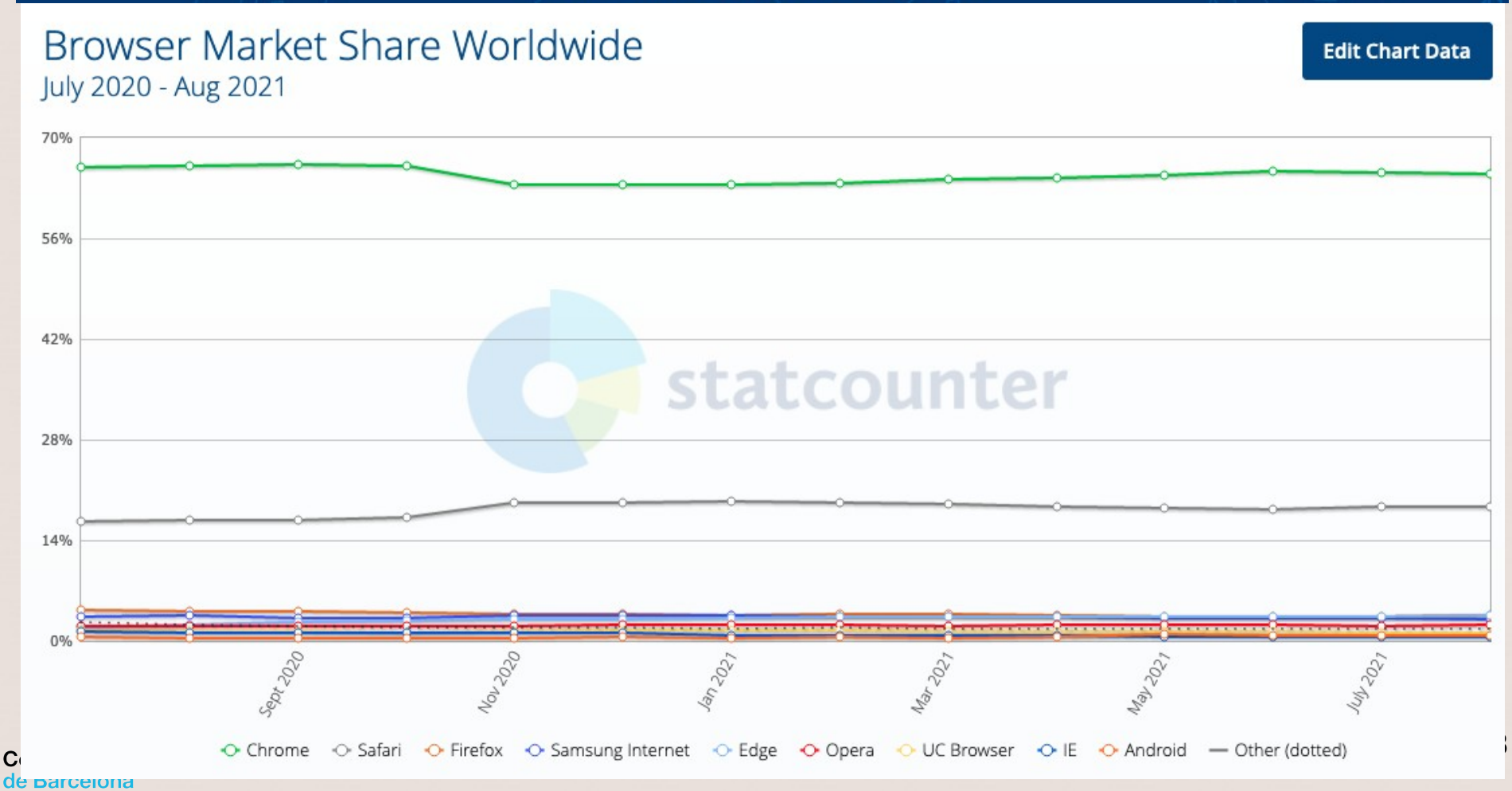
Browser history

- Mosaic
- Netscape
- Internet Explorer
- Firefox
- Opera
- Safari
- Chrome
- Tor

Browser history

Chrome	Safari	Edge	Firefox	Samsung Internet	Opera
64.92%	18.77%	3.56%	3.54%	3.06%	2.17%

Browser Market Share Worldwide - August 2021



Hypertext and hypermedia

Web pages are the best example of **hypertext** and **hypermedia**.

- **Hypertext** is the structured set of texts, graphics, etc., joined together by logical links and connections.

- **Hypermedia** is the structured set of various media, such as texts, graphics, images and sounds, joined together by links and logical connections for the transmission of information.

Domain names

It is a **unique name** that is commonly used to identify a website on the Internet. A domain name appears in a URL, but a domain name and a URL are two different things to confuse.

IP addresses identify devices connected to a network, such as a computer. Usually, we use a domain name, so *what is the relationship between IP addresses and domain names?*

Domain names

Let's watch a video that will clarify the relationship between IP addresses and domain names:

https://www.youtube.com/watch?v=oN7ripK5uGM

Markup languages

Markup languages

In this module we will start learning how to **make web pages**, without the help of anything. We will learn **HTML** (**H**yper**T**ext **M**arkup **L**anguage), the web pages language, and later **XML** (e**X**tensible **M**arkup **L**anguage).

Learn a markup language is very **similar to learn a new language**. When a person starts learning a new language, does not expect to learn it in 21 days, three months, or a year… usually that it takes several years.

HTML and **XML** are not as difficult as a language, they will not take a lifetime to learn them, but they will take months or years.

HTML

HTML is a language used to create web pages. It is very easy to see the code of any web page.

These languages have many tags, but applying the Pareto Principle (the **80-20 rule**), you only need to know **20%** of the tags well, to create **80%** of the content of web pages.

HTML

Mainly tangs are:

html	head	meta	title	span
style	script	body	p	a
em	img	form	input	i
textarea	table	tr	th	strong
td	hr	ul	ol	li
div	header	section	br	b

Class exercise

Search info about the previous HTML tags, and share in class the results of your exploration.

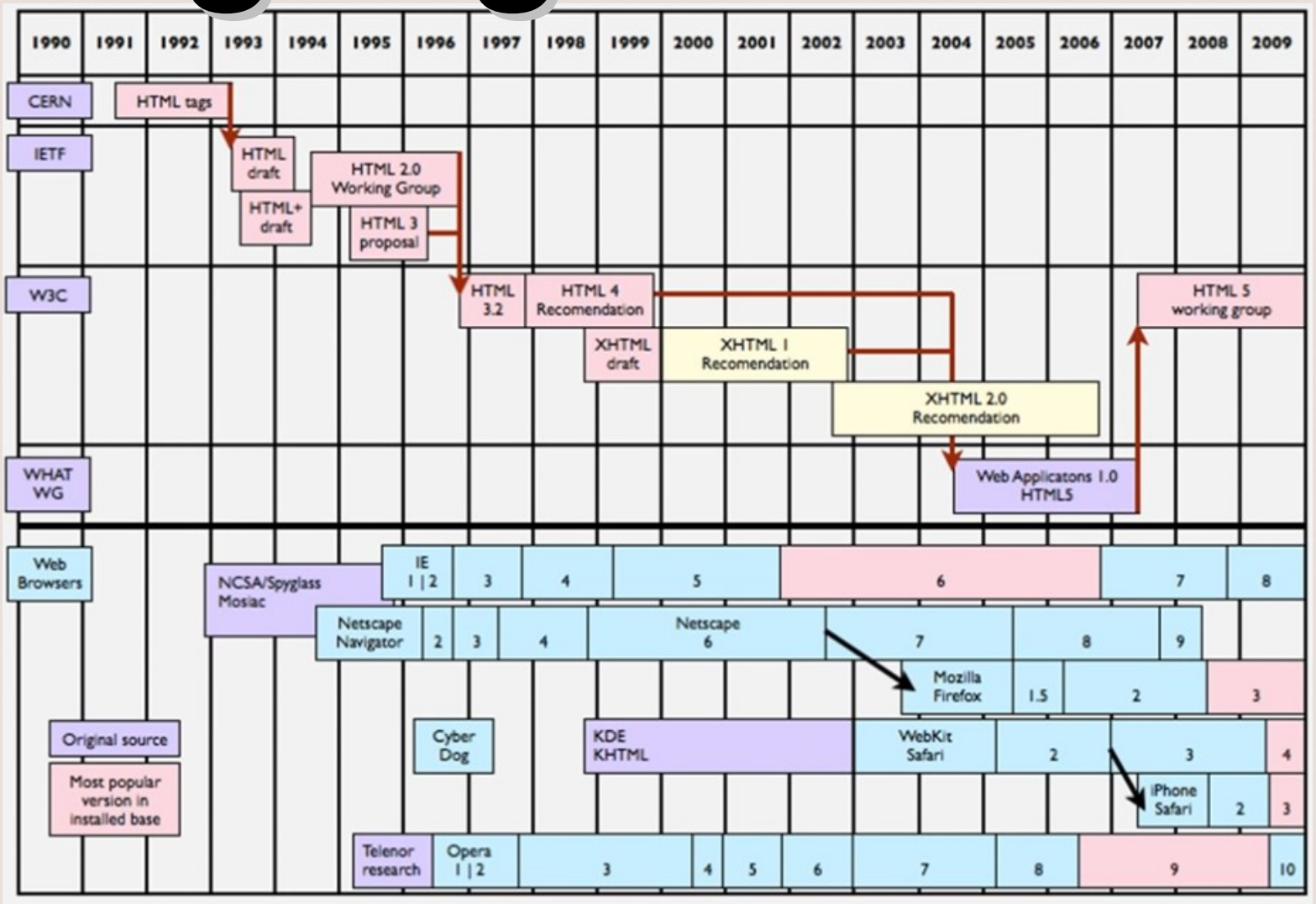
HTML

The **HTML** language was developed from the **S**tandard **G**eneralized **M**arkup **L**anguage (SGML) used for organizing and tagging texts.

SGML is used to specify document labeling rules and does not impose any set of tags to be used, so SGML is equivalent to current XML.

The **main innovation** that HTML included was the **<a href=" ">** tag to use ***hyperlinks***.

Language evolution



Basic concepts

How can I learn HTML correctly?

Basic concepts

Practice

Practice

Practice

Basic concepts

The beginnings are always difficult... What program do you need to write a website? Where do I start? What if I'm wrong? Can I break something?

Before to learn to run you need to learn to walk.

HTML and XML are used only to **define the structure and content** of a web page, the visual presentation is not defined with them.

Basic concepts

The HTML language is based on **tags** (elements or nodes) that are written closed by the "greater than' 'and "less than" angular brackets.

< tag_name >

</ tag_name >

Basic concepts

The **element** (or node) is the basic component of a web page.

An element is composed (usually) of an **initial** (or opening) **tag** and a **final** (or closing) **tag**. The end tag is defined with a **slash** and the name of the start tag.

A web page is composed of a set of elements written in a specific order.

** **Example paragraph** **

Basic concepts

- Only the **initial tag** can carry **attributes** (extra information), the final one never carries them.
- Attributes can carry one (or more) value(s) between **double quotes**.
- The elements can include content (or not), which is **everything written** between the start and end tag. Content can consist in other tags, or be just text; the elements can nest inside each other.

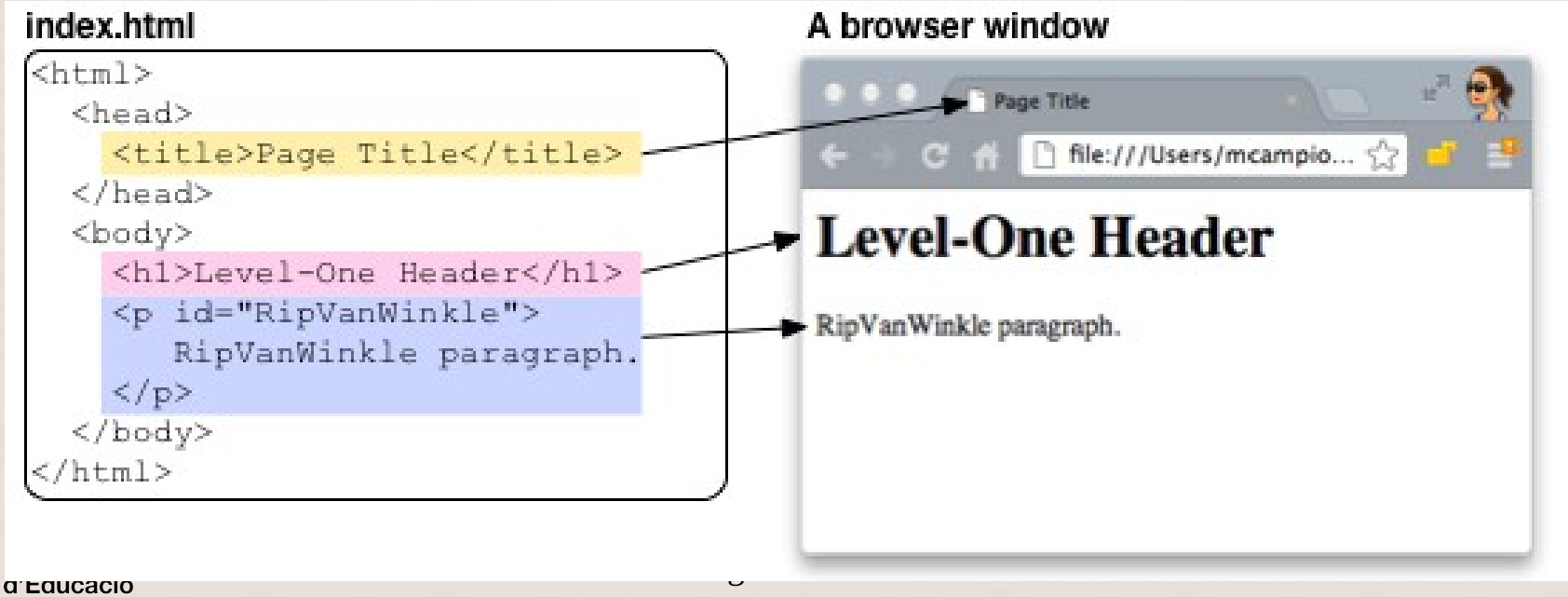
```
<p class = "warning">Example paragraph</p>
```

Basic concepts

- Example paragraph
- Example paragraph
- Exampleparagraph
-
-

Basic concepts

As you may have noticed looking the web page source code, you can clearly see that the **tags are not displayed** in the end result, but each tag performs a function or defines a behavior in the webpage.



Basic concepts

Correct structure to create a web page:

<!DOCTYPE html> → When we write our HTML document, the first thing we have to write is the doctype line. The doctype is the **document type declaration**. In other words, the doctype serves us to indicate that our document is written following the structure determined by a particular DTD.

More info: here.

Basic concepts

Correct structure to create a web page:

<html> → Main tag (root), only one can exist and **the whole web page** must be written between (inside) the initial and final html tags.

<head> → Defines the first part of a web page. Typically what is written here is not reflected on the web page, but is used to define metadata, page information, or instructions on how to process the web page.

Basic concepts

Correct structure to create a web page:

<title> → Goes **inside the head tag**, is required, there can only be one and is used to define the title of the web page.

<body> → **Outside the head tag**, but inside the html tag. Defines the second part of a web page. What is written here does appear on the resulting web page.

Basic concepts

Document checking completed. No errors or warnings to show.

Source

```
1. <!DOCTYPE html>↵
2. <html lang="en">↵
3.   <head>↵
4.     <title>Text</title>↵
5.   </head>↵
6. ↵
7.   <body>↵
8.   </body>↵
9. </html>
```

Exercise

Create your first web page with the validator webpage. This must contain the correct structure, and at least the following labels with text inside. Check your code too.

<h1></h1>

<h2></h2>

Editors

With a regular notepad we can work correctly to create web pages, but there are more suitable tools that can help us with the creation and edition of our websites. For all environments the recommendation is Visual Studio Code.

RECOMMENDED

- To avoid OS conflicts, writhe the file names with these characters:

AB...YZ ab...yz 01..9-_

- And the files extension:

.html

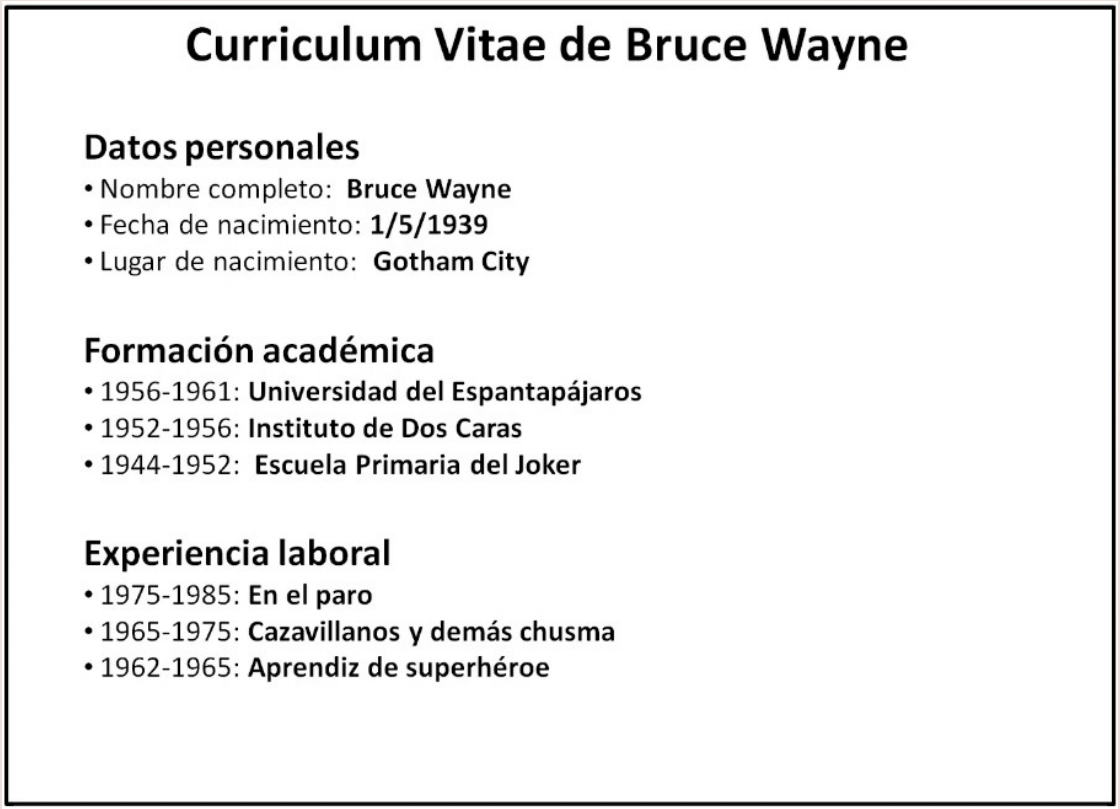
.htm

REMEMBER!

- Labels must always be **closed**.
- Labels must be closed in the **correct order**.
- Write the labels in **lower case** (for compatibility with language previous versions).
- Attribute **values always in quotes**.

Exercise

Find on the internet what tags are needed to create **unordened lists** and **text headers**. Then create a tiny web page with an invented resume:



Curriculum Vitae de Bruce Wayne

Datos personales

- Nombre completo: **Bruce Wayne**
- Fecha de nacimiento: **1/5/1939**
- Lugar de nacimiento: **Gotham City**

Formación académica

- 1956-1961: **Universidad del Espantapájaros**
- 1952-1956: **Instituto de Dos Caras**
- 1944-1952: **Escuela Primaria del Joker**

Experiencia laboral

- 1975-1985: **En el paro**
- 1965-1975: **Cazavillanos y demás chusma**
- 1962-1965: **Aprendiz de superhéroe**

Help links

- https://www.w3schools.com/tags/default.asp
- https://lenguajehtml.com/
- https://www.tutorialesprogramacionya.com/htmlya/
- https://desarrolloweb.com/home/html

- Mobile app: https://getmimo.com/