

HTML

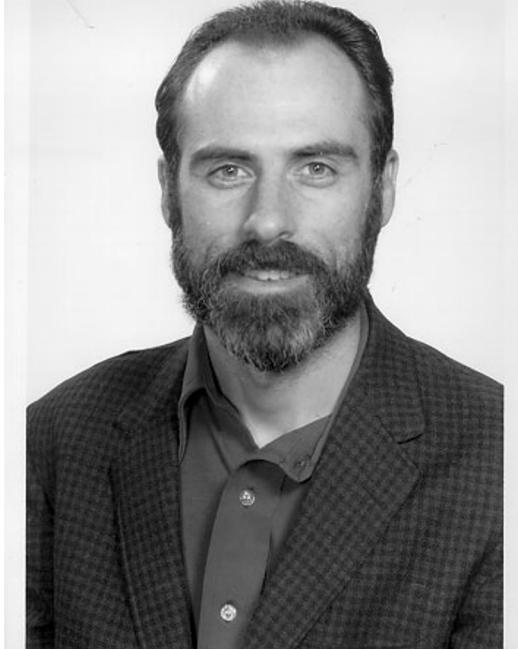
Introduction

- History of Internet & www
- HTML Fundamentals
 - Definition and Purpose
 - HTML versions
 - HTML structure
 - XHTML vs HTML
- More fundamentals of HTML
 - Other Related Concepts
 - Relative vs Absolute URLs
 - Virtual vs Physical path
- HTML type of elements
- HTML special details
- HTML forms
- HTML 5

Internet & WWW

History

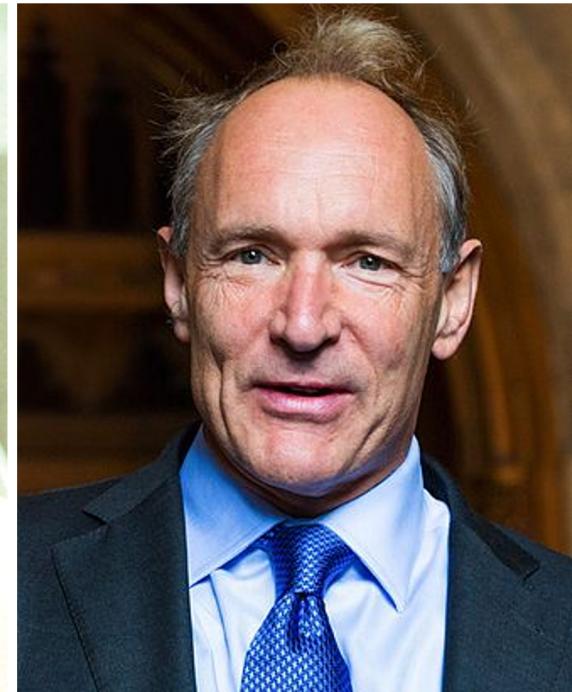
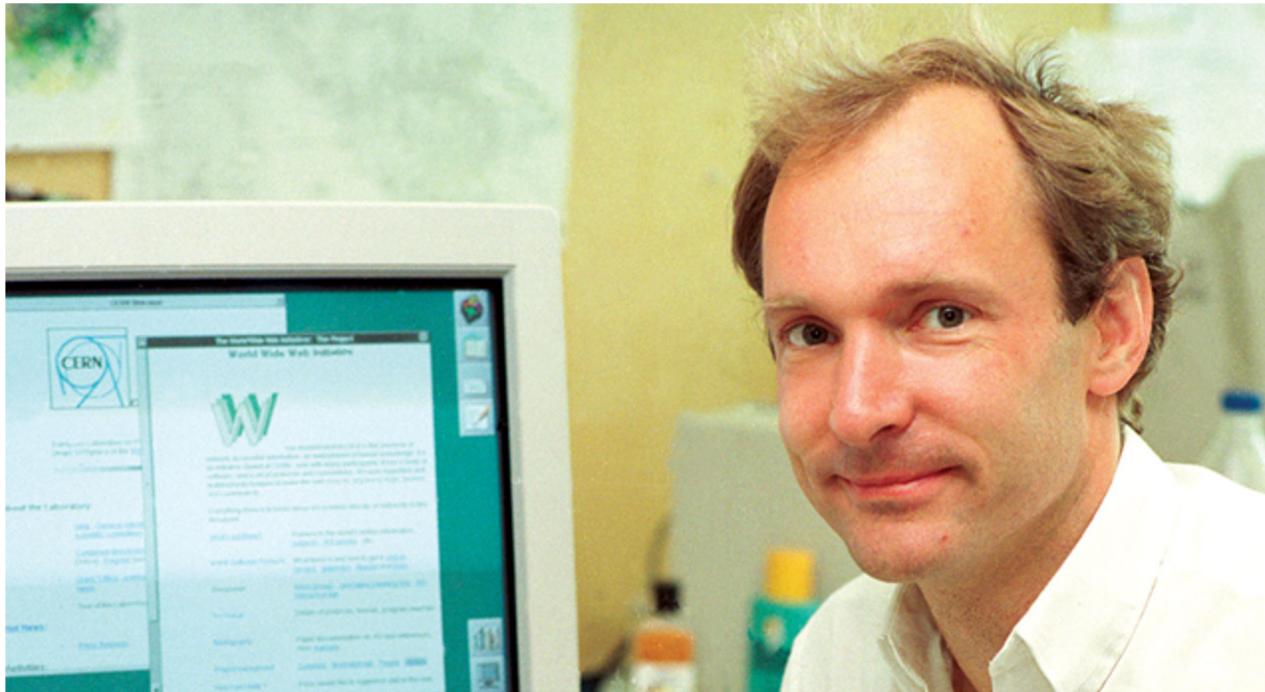
Vinton Gray Cerf, is an American Internet pioneer, who is recognized as one of "**the fathers of the Internet**", sharing this title with TCP/IP co-inventor **Bob Kahn**. Cerf was a manager for the United States' Defense Advanced Research Projects Agency (DARPA).



Robert Elliot Kahn, is an American electrical engineer, who, along with Vint Cerf, invented the Transmission Control Protocol (TCP) and the Internet Protocol (IP), the fundamental communication protocols at the heart of the Internet.



Timothy John Berners-Lee, is an English engineer and computer scientist, best known as the inventor of the **World Wide Web** (November 1989). In 1994, Berners-Lee founded the World Wide Web Consortium (W3C), at the Massachusetts Institute of Technology.



HTML

Fundamentals

What's HTML?



- HyperText Markup Language is the standard markup language used to create web pages
- It's written in form of HTML elements
- The purpose of the Web Browser is to read HTML documents
- Development is on going
- Describes the **structure** of a website semantically along with **hints** of presentation
- It's a **markup** instead of a programming language

HTML history



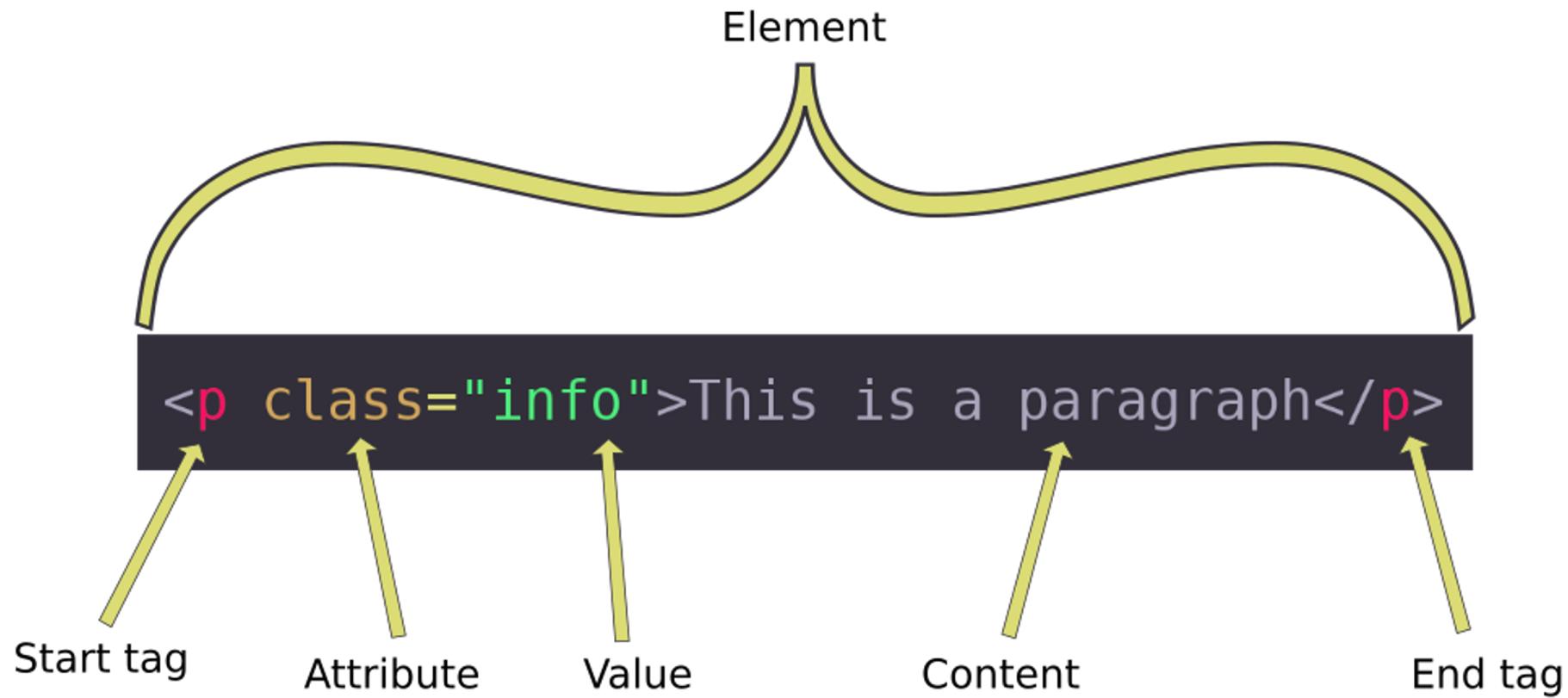
- HTML Is now a Living Standard, managed by the WHATWG (Apple, Google, Mozilla, Microsoft) <https://html.spec.whatwg.org/multipage/>
- On W3C (the old spec manager of HTML) the latest version is 5.2 <https://www.w3.org/TR/html52/> (14 December 2017)

HTML elements

- Are the building blocks of HTML
- Are keywords surrounded by angle brackets
- Can represent text, input fields, style, page properties, images, objects, links, headings.
- HTML element is everything between the start and the end of the **HTML tag**, including the tags

```
<p class="info">This is a paragraph</p>
```

```
<tag
    attribute1="value"
    attribute2="...">
    innerHTML
</tag>
```



- Elements should have open and close tags: `
`
- Tags can have more than one property (attributes):
``
- There are some predefined attributes for each different tag type. ie: `href`, `src`
- HTML elements can be nested in other elements
(contain others HTML elements in their content)

- Element content (**innerHTML**) is everything between the open and close tag.
- Some HTML elements has no content, ie:
, <hr />
- Tags are not case sensitive (XHTML requires lowercase)
- Every tag has a specific purpose, use them accordingly. They have a semantic meaning (google loves proper semantically correct HTML).

- Common set of attributes shared by all the HTML elements:
 - Global: id, class, style, title, lang, dir, accesskey
 - Events: onload, onunload, onblur, onchange, onclick, onsubmit, etc.
 - Are common to subgroups of HTML elements, for example form elements share form events.

```
1  <!DOCTYPE html>
2  <html lang="en" dir="ltr">
3      <head>
4          <meta charset="utf-8">
5              <title>Page title</title>
6      </head>
7      <body>
8          <h1>This is a Heading</h1>
9          <p>This is a paragraph.</p>
10         </body>
11     </html>
```

- Extensible HyperText Markup Language (XHTML) is a family of XML markup languages that mirror or extend versions of the widely used Hypertext Markup Language (HTML)
- Born in year 2000
- Its main purpose was to split structure from design on an HTML document and to create some sort of constraints in an attempt for HTML code standardization

- Is stricter than HTML (a lot of bad code)
- Is HTML defined as an XML application
- Is supported by all major browsers
- Behavior differences
 - Parse XML error causes document processing to be aborted
 - All CSS selectors become case-sensitive

- Syntax differences:
 - each element should have a closing tag.
 - is case-sensitive for elements and attributes names
 - attribute minimization it's not permitted, so all property's values should be enclosed with quotes ("")

- Always enclose attributes values with “ ”
- Always use lower-case, W3C recommends it and XHTML requires it.
- When opening tag, make sure to create its corresponding closing one.
- Each tag has a reason to exist, use them accordingly.
 - Semantically correct

Workshop Time

- Install XAMP (or use the one already install it)
- Research about HTML5 and HTML 4.1, focus in the new features that HTML5 has.
- Create an HTML5 file showing at least 10 different HTML tags.
- Host the file in Apache (XAMP)

URLs, paths, other tags

More fundamentals

- Uniform Resource Locator
- Requests are done by referencing an URL
- Theoretically: is unique in the World
- Structure:
 - scheme://subdomain.domain.tld:port/uri
 - Some common schemes:
 - http, https, ftp

```
schema://[:user[:password]@]host[:port][/path][?query][#bookmark]
```

Assuming the following Folder Structure:

mysite.com/index.html

mysite.com/test.html

mysite.com/examples/

mysite.com/examples/index.html

mysite.com/examples/one.html

Browser URL: **http://mysite.com/**

Type	Anchor element	Resulting URL
Absolute	 Test 	http://mysite.com/test.html
Relative	 Test 	http://mysite.com/test.html

Browser URL: **http://mysite.com/examples/**

Type	Anchor element	Resulting URL
Absolute	 Test 	http://mysite.com/test.html
Relative	 Test 	http://mysite.com/examples/test.html

Root Relative

Browser URL: **http://mysite.com/**

Type	Anchor element	Resulting URL
Absolute	 Test 	http://mysite.com/test.html
Relative	 Test 	http://mysite.com/test.html

Browser URL: **http://mysite.com/examples/**

Type	Anchor element	Resulting URL
Absolute	 Test 	http://mysite.com/test.html
Relative	 Test 	http://mysite.com/test.html

- Virtual → /example/1.html
- Physical
 - Windows → C:\Site\test.com\example\1.html
 - Unix → /var/www/test.com/example/1.html

Note: Add a trailing slash to subfolder references, ie:
<http://goto.com/test/>, reduces from 2 to 1 requests to the server

HTML

Type of Elements

- Comments → <!-- comment here -->
- Doctype → it's optional in some cases, it defaults to HTML5, but it's recommended to include it
- Required Elements → html, body, head
- Headings → h1 to h6
- Text Related → p, span, pre, br, b, i, strong, italic, ul, ol, li,
- Wrappers → div, fieldset, table, form
- Media → iframe, img, a, form
- Form → input, button, label, textarea, select

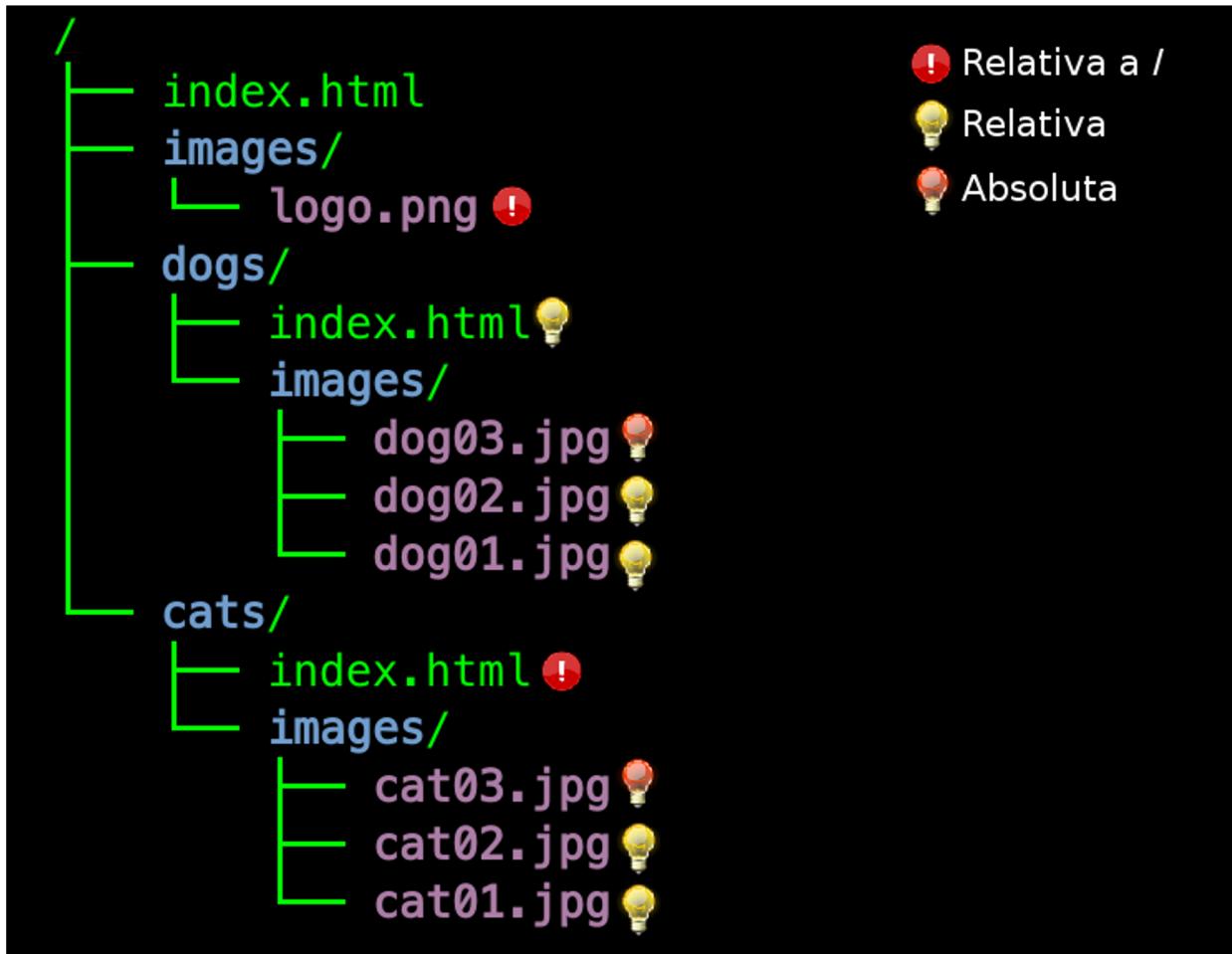
- **<head> tag has:**
 - **<title>** → Page title, very important for SEO
 - **<base>** → All relative url will use this as base
 - ie: `<base href="http://google.com/" />`
 - **<style>** → Add CSS to the document
 - **<meta>** → Meta tags (keywords), important for SEO

```
<meta content="http://www.google.com/logos/doodles/2015/first-
day-of-fall-2015-northern-hemisphere-6003706315145216-thp.png"
property="og:image">
```
 - **<link>** → links the HTML with external document

```
<link rel="stylesheet" type="text/css"
href="mystyle.css">
```

Replicate the site represented in the following directory tree,
using the types of references indicated in the legend.

Resources: <https://s3.amazonaws.com/coding-rs/resources/raw-images.tar.gz>



Entities, encoding, conditional comments, bookmarks

HTML special details

- Reserved and special characters could be represented as an HTML entity.
- Entities format: &entity_name; or &#entity_number;
- When to use them:
 - Lets say you want to put this text in a p: “X < Y”
 - At your HTML you try: <p> X < y </p> (see the issue?)
 - You will convert that to: <p> X < Y </p> using entities.

- ASCII, first character encoding 127 different alphanumeric characters that could be used on the internet.
 - Supported numbers (0-9), letters (A-Z), and some special characters like ! \$ + - () @ < > .
- ANSI (Windows-1252) was the default character set for Windows (up to Windows 95). It supported 256 different codes.

- ISO-8859-1 (extension to ASCII), was the default character set for HTML 4. It also supported 256 different codes.
- Because ANSI and ISO was too limited, the default character encoding was changed to Unicode (UTF-8) in HTML5.
- Unicode covers (almost) all the characters and symbols in the world.

- To determine the charset of the doc:
 - HTML 4
 - `<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">`
 - HTML 5
 - `<meta charset="UTF-8">`

- Available only for IE (ver 10 and below only)
- Identifies a portion of HTML to be created if condition matches.
- Examples:

```
<![if lt IE 8]>
<p>Please upgrade to Internet Explorer version
8.</p>
<![endif]>
<!--[if IE 8]>
<p>Welcome to Internet Explorer 8.</p>
<![endif]-->
```

- Add an id attribute to an anchor element:

```
<a id="tips">Useful Tips Section</a>
```

- Create link to that section on the same doc

```
<a href="#tips">Visit the Useful Tips Section</a>
```

- An external link

```
<a href="http://goto.com/html_links.htm#tips">
```

```
Visit the Useful Tips Section</a>
```

HTML elements, HTTP verbs

Forms

- Form attributes
 - action: defines which url will receive the request upon submission
 - method: defines the HTTP verb to submit on the request, values (post or get)
- form, input(text,password,submit, reset, radio, checkbox, hidden, email, phone), select, label, textarea, button.

- Existents verbs: PUT, POST, GET, DELETE, PATCH, HEAD
- Most common in forms: GET or POST
- POST
 - Data is included in the body of the request
 - Not “visible” to users
- GET
 - Data is included in the query string (URL)
 - Has a max limit

Whats new on

HTML 5 ?

- data-*
- draggable
- contextmenu
- dropzone
- hidden
- spellcheck
- translate
- contenteditable

HTML



- Semantic tags like: header, footer, section, article.
- New Input types: number, date, time, calendar, range
- New graphic elements: <canvas>, svg
- Multimedia elements: <audio>, video

- Localstorage, SessionStorage
- Drag and Drop
- Geolocation
- Web Workers
- App Cache
- Server Side Events

Create a html5 page.

Use html bookmarks and forms.

Create a registration form, use the next section with
bookmarks.

1. General information: name, last name, birthday
2. Address: provincia, canton, distrito
3. Event: event name, date