HTML+ CSS PRINCIPLES

Getting started with web design the right way

HTML : a brief history

➊ 1960s : ARPANET is developed... It is the first “packet-switching” network using TCP/IP protocol and is a precursor to World Wide Web.

http://en.wikipedia.org/wiki/ARPANET

HTML : a brief history

❷ HTML language is invented in early 1980s

http://www.w3.org/History.html

HTML : a brief history

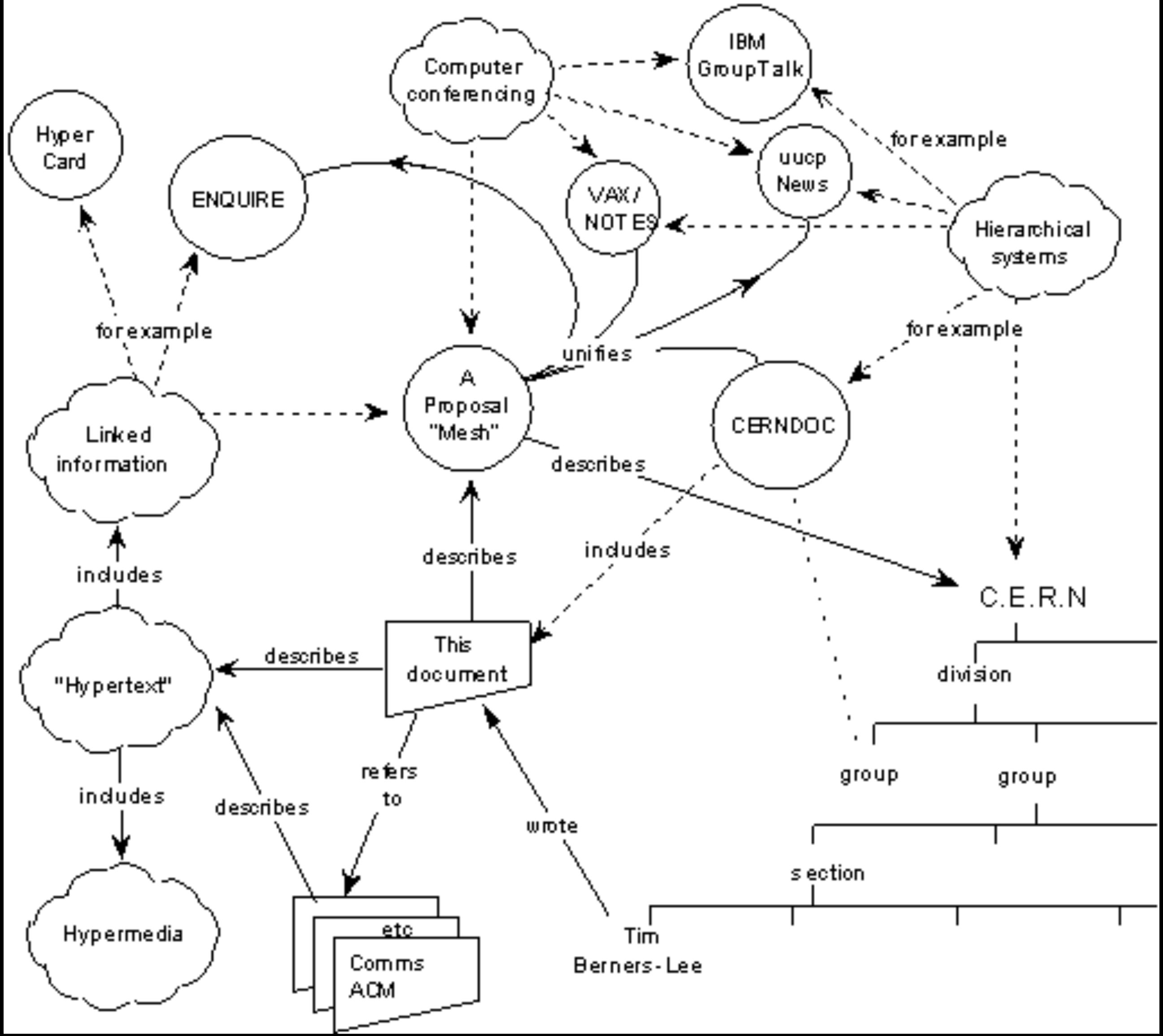
❸ In the 1980s desktop computing also became a much more common tool for businesses and consumers.

HTML : a brief history

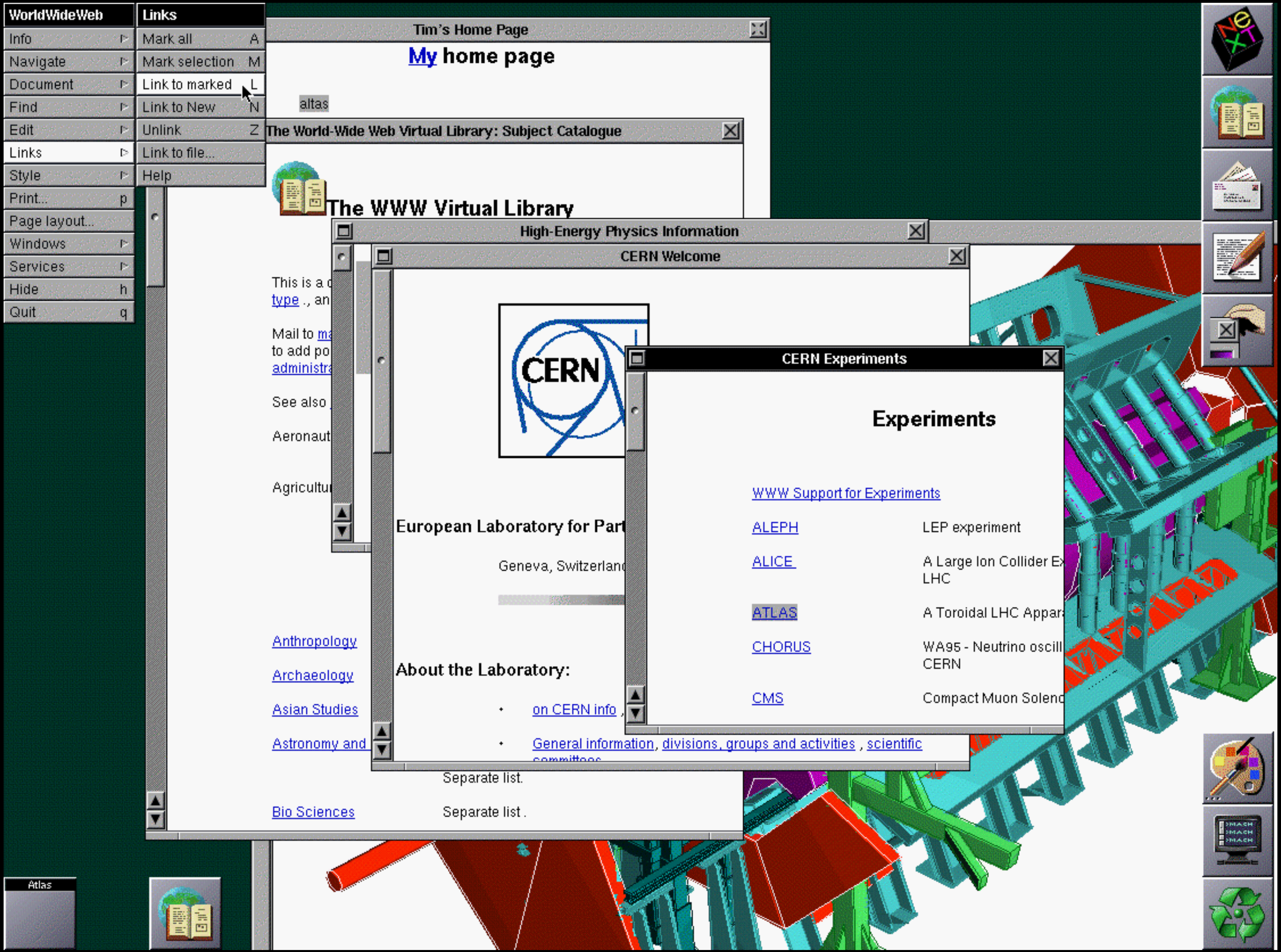
❹ 1989-90 the “World Wide Web” is developed by Tim Berners-Lee along with the first visual web browser…

http://www.w3.org/History/1989/proposal.html

The idea:


Computer conferencing
IBM GroupTalk
Hyper Card
ENQUIRE
VAX/ NOTES
uucp News
for example
Hierarchical systems
for example
unifies
for example
A Proposal "Mesh"
CERNDOC
Linked information
describes
includes
describes
includes
C.E.R.N
division
This document
describes
"Hypertext"
group
group
refers to
includes
describes
wrote
section
Hypermedia
etc
Comms ACM
Tim Berners-Lee

The browser:



Tim's Home Page

My home page

altas

The World-Wide Web Virtual Library: Subject Catalogue

The WWW Virtual Library

This is a c
type ., an

Mail to ma
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administra

See also

Aeronaut

Agricultu

Anthropology

Archaeology

Asian Studies

Astronomy and

Separate list.

Bio Sciences Separate list .

High-Energy Physics Information

CERN Welcome

CERN

European Laboratory for Part

Geneva, Switzerland

About the Laboratory:

- on CERN info ,
- General information, divisions, groups and activities , scientific committees

CERN Experiments

Experiments

WWW Support for Experiments

ALEPH	LEP experiment
ALICE	A Large Ion Collider E LHC
ATLAS	A Toroidal LHC Appar
CHORUS	WA95 - Neutrino oscill CERN
CMS	Compact Muon Solen

HTML : a brief history

❺ More users + new addition of commercial uses created more complexities and greater need for standards.

HTML : a brief history

⑥ 2002: XHTML was developed for use with stricter standards and a more flexible framework to incorporate XML data files.

HTML : a brief history

⑦ Then this started happening:

HTML : a brief history

⑧ 2008: HTML5 is introduced. It moves away from xml but offers database integration, semantic markup, javascript integration, and and better video capabilities.

HTML

Hypertext Markup Language

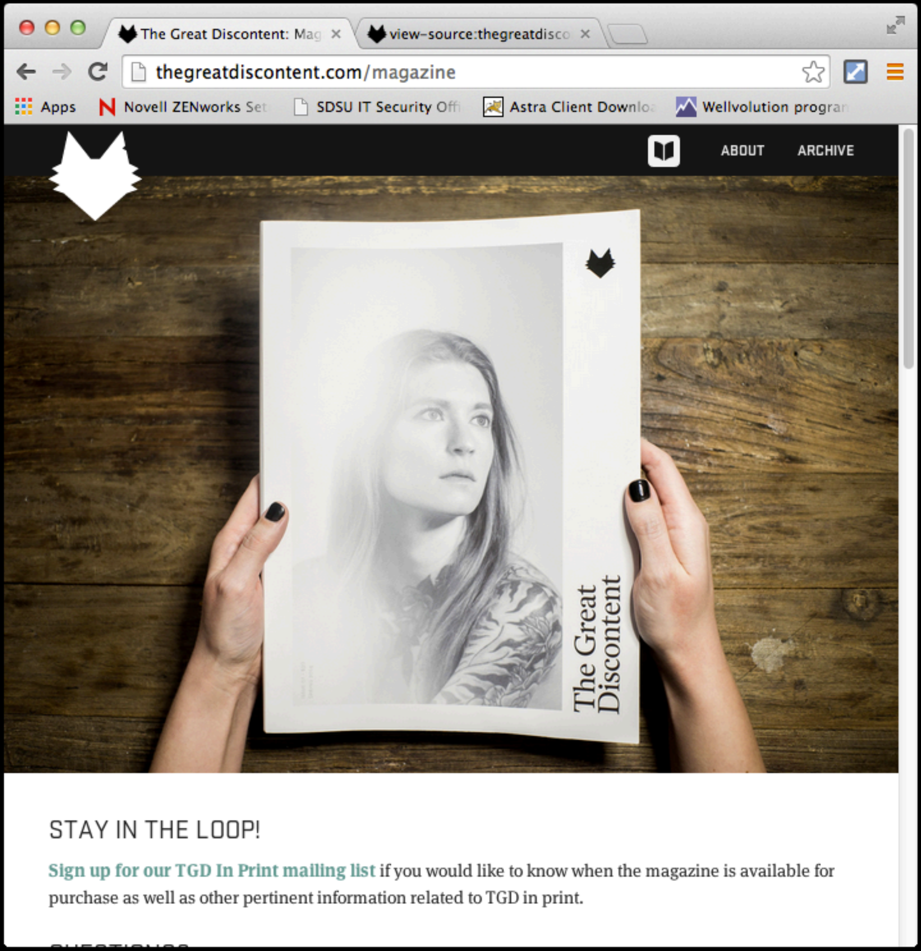
Current version of HTML is HTML5. Prior to HTML5 the standard was XHTML, which was the first to offer strict semantic markup and a focus on separating “*presentation from structure.*”

WHAT HTML LOOKS LIKE

display view VS. code view

HTML > display

Here's what we see as a viewing audience:

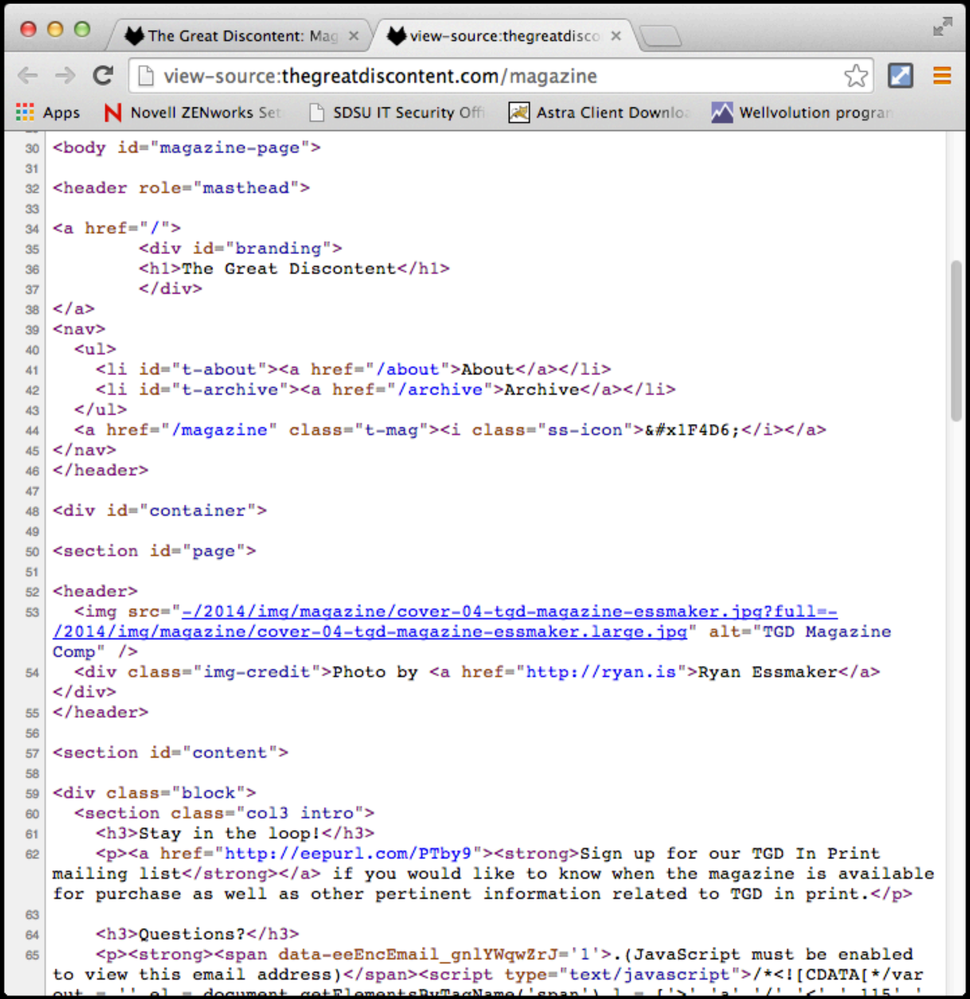


STAY IN THE LOOP!

Sign up for our TGD In Print mailing list if you would like to know when the magazine is available for purchase as well as other pertinent information related to TGD in print.

HTML > code

Here's what we do as web designers and developers:


The Great Discontent: Mag
view-source:thegreatdisco
view-source:thegreatdiscontent.com/magazine
Apps
Novell ZENworks Set
SDSU IT Security Offi
Astra Client Downlo
Wellvolution progran

```
<body id="magazine-page">

<header role="masthead">

<a href="/">
        <div id="branding">
        <h1>The Great Discontent</h1>
        </div>
</a>
<nav>
  <ul>
    <li id="t-about"><a href="/about">About</a></li>
    <li id="t-archive"><a href="/archive">Archive</a></li>
  </ul>
  <a href="/magazine" class="t-mag"><i class="ss-icon">&#x1F4D6;</i></a>
</nav>
</header>

<div id="container">

<section id="page">

<header>
  <img src="-/2014/img/magazine/cover-04-tgd-magazine-essmaker.jpg?full=-
/2014/img/magazine/cover-04-tgd-magazine-essmaker.large.jpg" alt="TGD Magazine
Comp" />
  <div class="img-credit">Photo by <a href="http://ryan.is">Ryan Essmaker</a>
</div>
</header>

<section id="content">

<div class="block">
  <section class="col3 intro">
    <h3>Stay in the loop!</h3>
    <p><a href="http://eepurl.com/PTby9"><strong>Sign up for our TGD In Print
mailing list</strong></a> if you would like to know when the magazine is available
for purchase as well as other pertinent information related to TGD in print.</p>

    <h3>Questions?</h3>
    <p><strong><span data-eeEncEmail_gnlYWqwZrJ='1'>.(JavaScript must be enabled
to view this email address)</span><script type="text/javascript">/*<![CDATA[*/var
out = '',el = document.getElementsByTagName('span'),l = ['>','a','/','<',' 115',' 
```

HTML > where to start

HTML is based on the use of TAGs.

TAGs are the beginnings and endings of element declarations. They tell the browser how to process the given data.

HTML > how to start

The basic anatomy of a TAG:

```
<tagname>Blah blah blah</tagname>
```

(BTW, this is a dummy, not-real example)

HTML > how to start

It could also look like this:

```
<tagname>
     Blah blah blah
</tagname>
```

(Still not-real)

HTML > how to start

It could also look like this:

```
<tagname>
      Blah blah blah
</tagname>
```

Almost all tags have an opening AND closing tag. The only difference is that the closing tag starts with a “/” forward-slash.

HTML > tag examples

<p>This is where you type the paragraph text you want to show up on the screen.</p>

(This is a real example of a “paragragh” tag)

HTML > tag examples

```
<h1>I’m the most important heading</h1>
<h2>I’m important heading level #2</h2>
…
<h6>Headings go down to a level #6</h6>
```

(These are real examples of “heading level” tags.)

HTML > tag examples

```
<ul>
	<li>List item one goes here</li>
	<li>List item two goes here</li>
</ul>
```

(These are real examples of “unorded list” and “list item” tags.)

HTML > tag examples

...and the TAG list goes on:

<html>
<head>
<title>
<base>
<link>
<meta>
<style>
<body>
<section>
<nav>
<article>

<aside>
<header>
<footer>
<address>
<p>
<hr>
<pre>
<blockquote>
<ol>
<ul>
<li>

<dl>
<dt>
<dd>
<figure>
<figcaption>
<div>
<a>
<em>
<strong>
<small>

<cite>
<q>
<abbr>
<data>
<code>
<img>

...AND MANY
MANY MORE.

HTML > tag examples

A TAG can also be referred to as an ELEMENT. Here is a GREAT resource list of HTML5 elements with explanations of each one is used:

https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML5/HTML5_element_list

HTML > attributes

A TAG can also have ATTRIBUTES:

```
<a href=“http://gmail.com”>Go to GMAIL</a>
```

HTML > attributes

ATTRIBUTES are information within the tag, defining the tag. Different tags have different attribute options.

```
<a href=“http://gmail.com”>Go to GMAIL</a>
```

HTML > values

A VALUE is what pinpoints the ATTRIBUTE to more specific information.

```
<a href=“http://gmail.com”>Go to GMAIL</a>
```

HTML > tag, attribute, value

In this example below, we have an <a> tag, which is an “*anchor*” *link*. But we need to know where the link will go, so we give it an attribute, “href”, which stands for *hyper-reference*. And that href will take us to the value of “http://gmail.com” when clicked. What the viewer sees as a clickable link is inside the <a></a> tags, “Go to GMAIL”.

```
<a href=“http://gmail.com”>Go to GMAIL</a>
```

HTML > nesting tags

To make pages, we have to “nest” TAGs:

```
<article>
        <header>
                <h1>How Cells Multiply</h1>
        </header>
        <p>Our cells are amazing. They really can
                multiply…</p>
</article>
```

HTML > nesting tags

…and nest them properly:

```
<p>
        <a href="contact.html">Contact Us</a>
</p>
```

✓

```
<p>
        <a href="contact.html">Contact Us</p>
</a>
```

X

SPEAKING OF WHICH…

Let’s look at the basic, required parts of any HTML page….

Minimum HTML5 requirements

```
<!DOCTYPE html>
<html>
        <head>
                <title>Title goes here</title>
        </head>

        <body>
        </body>
</html>
```

What is <!DOCTYPE> ???

```
<!DOCTYPE html>
<html>
        <head>
                <title>Title goes here</title>
        </head>


        <body>
        </body>
</html>
```

What is <!DOCTYPE> ???

<!DOCTYPE html>

The “doctype” announces to a browser which version of HTML it is using. This helps the browser know what to expect and how to behave.

Without a “doctype”, browsers go into “quirks mode” and can interpret code unpredictably.

The <html> tag

```
<!DOCTYPE html>
<html>
    <head>
        <title>Title goes here</title>
    </head>

    <body>
    </body>
</html>
```

The <html> tag

<html>…</html>

The “html” tag represents the root of an HTML or XHTML document. All other elements (except “doctype”) must be descendants of this element.

The <head> tag

```
<!DOCTYPE html>
<html>
    <head>
        <title>Title goes here</title>
    </head>

    <body>
    </body>
</html>
```

The <head> tag

```
<head><title>…</title></head>
```

The “head” tag contains a collection of metadata about the document, including links to, or definitions of, scripts and style sheets. At a minimum, it MUST contain a “title” tag.

The <title> tag

```
<!DOCTYPE html>
<html>
    <head>
        <title>Title goes here</title>
    </head>

    <body>
    </body>
</html>
```

The <title> tag

```
<title>Title goes here</title>
```

Defines the title of the document, shown in a browser's title bar or on the page's tab.

It can only contain text. Nested HTML tags will not be interpreted.

Finally, the <body> tag

```
<!DOCTYPE html>
<html>
    <head>
        <title>Title goes here</title>
    </head>

    <body>
    </body>
</html>
```

Finally, the <body> tag

<body>...</body>

Contains the content of an HTML document that is visually displayed in the browser's viewport/window.

There is only one <body> element in a document.

A technical recap

```
<!DOCTYPE html>
<html>
    <head>
        <title>Title goes here</title>
    </head>

    <body>
    </body>
</html>
```

A metaphorical recap

HTML tags are fairly intuitive. An easy way to remember the basic parts is to humanize a page:

Doctype = laws governing behavior
<html> = the whole person
<head> = the brain that gathers information
<title> = name / identity a person calls one's self
<body> = the physical representation and behaviors of the person

SPEAKING OF INTUITIVE…

Let’s talk about “SEMANTIC” html markup.

SEMANTIC

adjective \si-ˈman-tik\

: of or relating to the meanings of words and phrases

Semantic tags in HTML

- HTML tags are imbued with meaning.
- They should not be arbitrarily assigned.
- They have meaning outside of visual representation.
- Visually impaired people can still understand the meaning of sections in a page with semantic markup.
- Search engines can too.

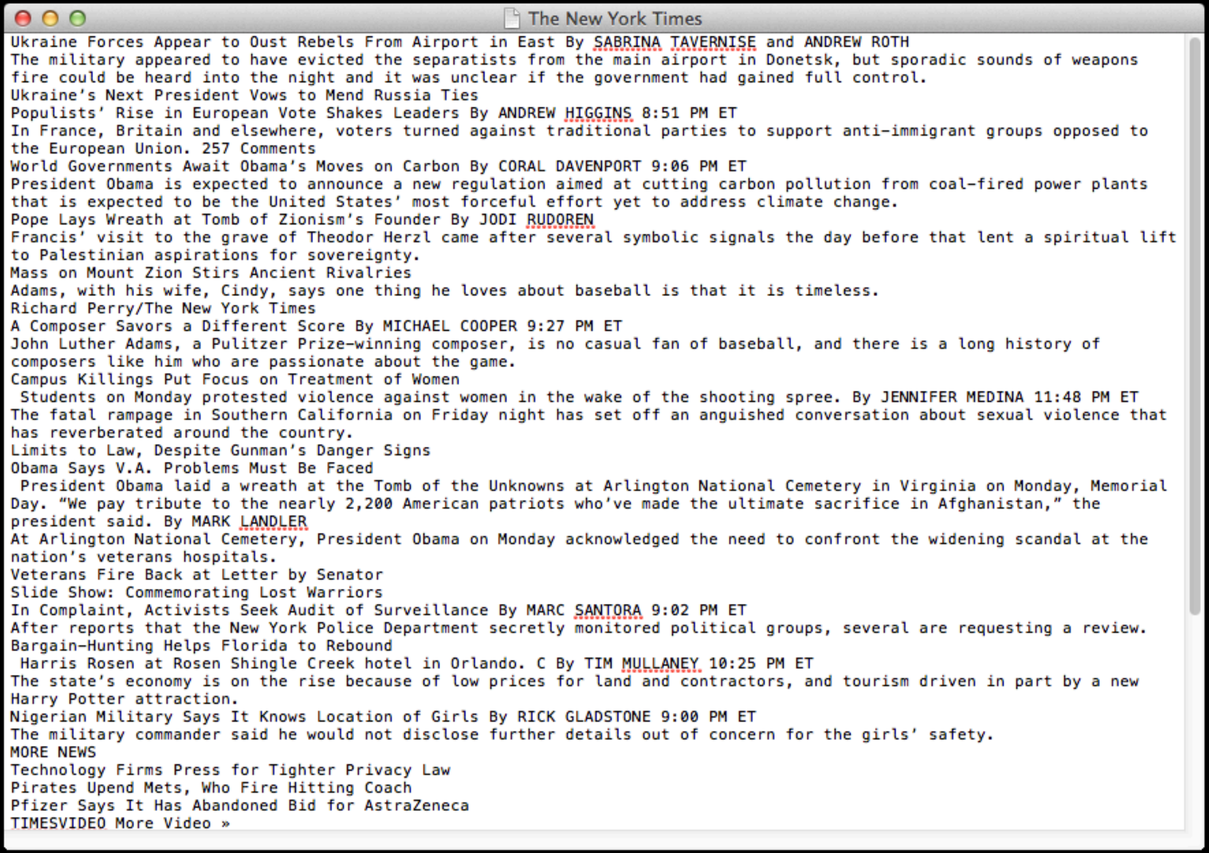
A “semantic” case study

Imagine that you are reading a newspaper but there are no headings, no margins, no indents, no bold, no italics, no paragraph separations, etc.

IT’S JUST TEXT…

A “semantic” case study

LIKE THIS:



```
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In France, Britain and elsewhere, voters turned against traditional parties to support anti-immigrant groups opposed to
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Veterans Fire Back at Letter by Senator
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In Complaint, Activists Seek Audit of Surveillance By MARC SANTORA 9:02 PM ET
After reports that the New York Police Department secretly monitored political groups, several are requesting a review.
Bargain-Hunting Helps Florida to Rebound
 Harris Rosen at Rosen Shingle Creek hotel in Orlando. C By TIM MULLANEY 10:25 PM ET
The state’s economy is on the rise because of low prices for land and contractors, and tourism driven in part by a new
Harry Potter attraction.
Nigerian Military Says It Knows Location of Girls By RICK GLADSTONE 9:00 PM ET
The military commander said he would not disclose further details out of concern for the girls’ safety.
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Technology Firms Press for Tighter Privacy Law
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Pfizer Says It Has Abandoned Bid for AstraZeneca
TIMESVIDEO More Video »
```

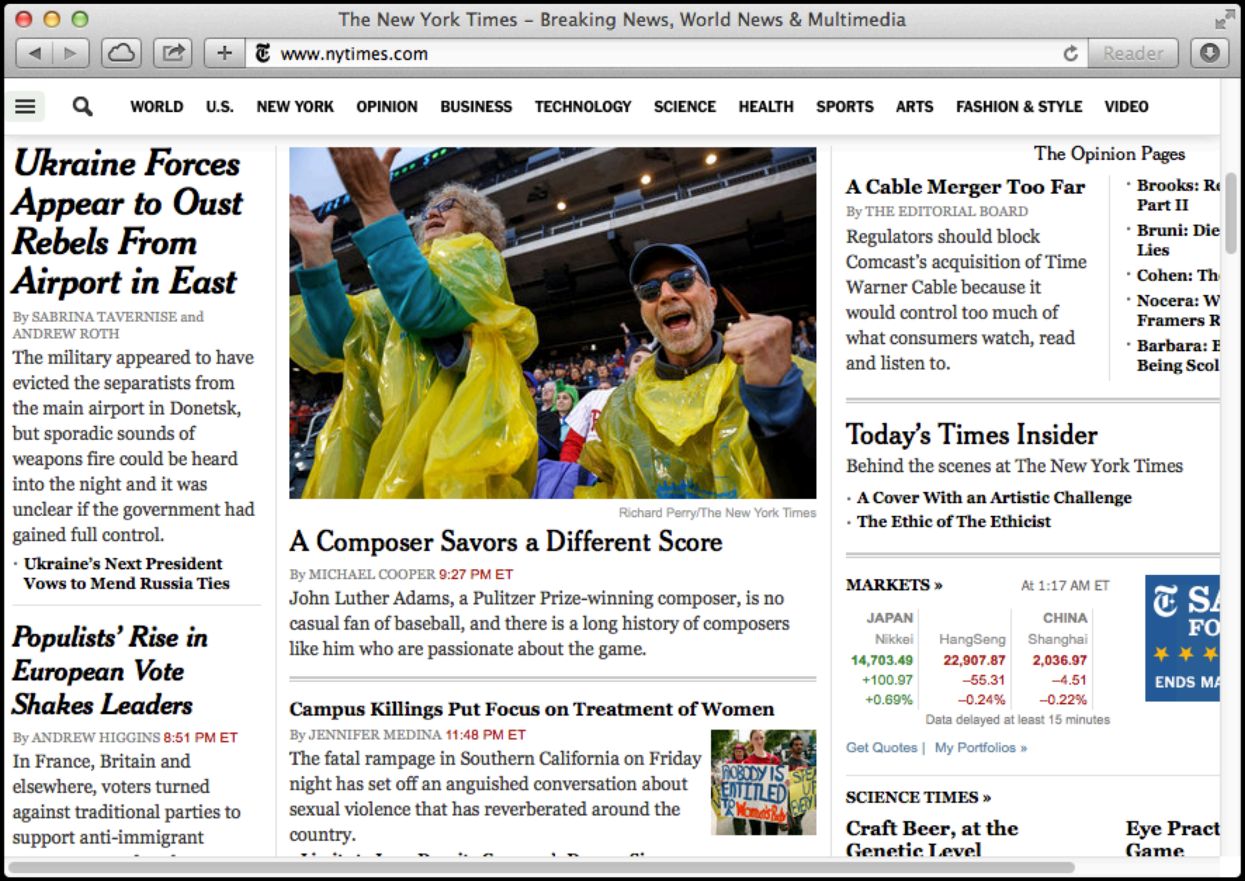
A “semantic” case study

Without meaningful hierarchy, no one would want to read through that page because it would be a laborious experience.

That is how search engines and blind people experience pages with poor semantic markup.

A “semantic” case study

SAME SITE, BUT BETTER EXPERIENCE:



The New York Times – Breaking News, World News & Multimedia

www.nytimes.com

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- **Barbara: E Being Scol**

Today’s Times Insider

Behind the scenes at The New York Times

- **A Cover With an Artistic Challenge**
- **The Ethic of The Ethicist**

MARKETS » At 1:17 AM ET

JAPAN		CHINA
Nikkei	HangSeng	Shanghai
14,703.49	22,907.87	2,036.97
+100.97	–55.31	–4.51
+0.69%	–0.24%	–0.22%

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Craft Beer, at the Genetic Level

Eye Pract Game

An argument for semantics

This brings us to the importance of

STRUCTURE

vs.

PRESENTATION

Structure vs. Presentation

The STRUCTURE of an HTML document should be a well-crafted page that can be understood semantically by search engines and assistive devices like screen readers (aids for the blind).

Structure vs. Presentation

Additionally, STRUCTURE also incorporates the actual CONTENT of the document (e.g. headings, article text, links, pictures, video, etc).

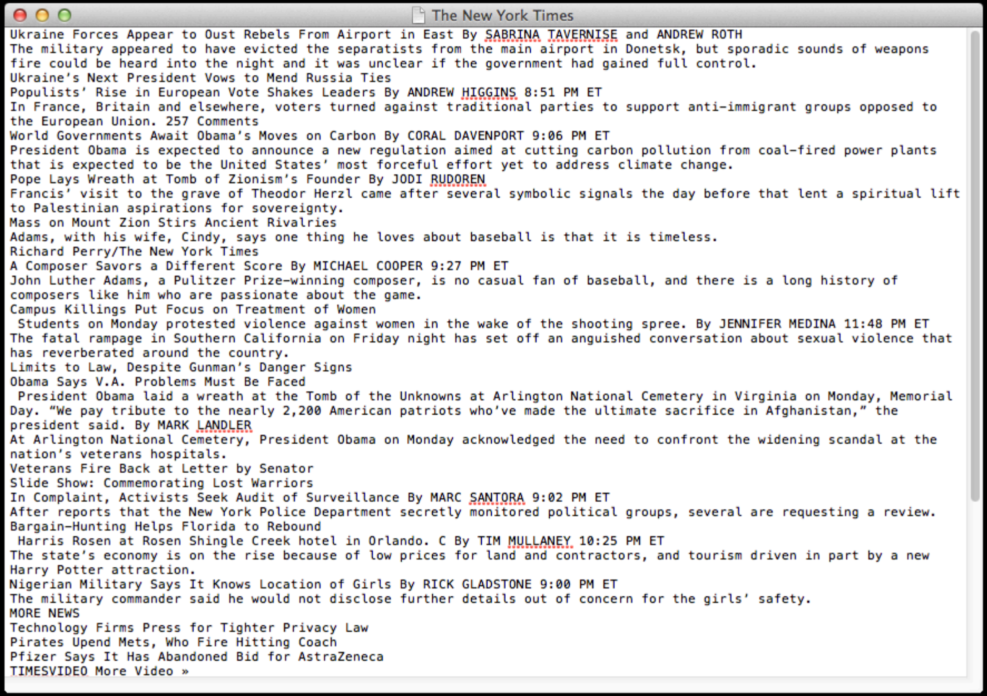
Structure vs. Presentation

The PRESENTATION half of the coin uses VISUAL STYLING to communicate the semantics to people not using screen readers.

This is accomplished by pairing CSS with the structure.

Structure vs. Presentation

To make a point about STRUCTURE vs. PRESENTATION, let's revisit the page with no semantic markup or structure at all:



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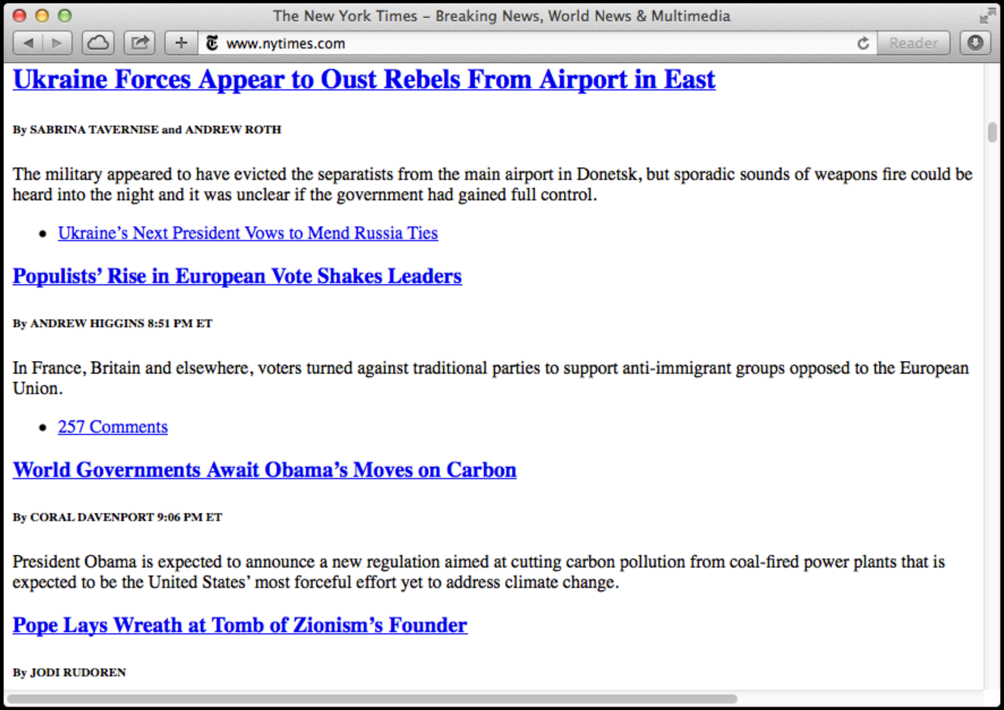
TIMESVIDEO More Video »
```

Structure vs. Presentation

By simply adding semantic markup STRUCTURE we can have a meaningful page readable by search engines, screen readers, and even people:



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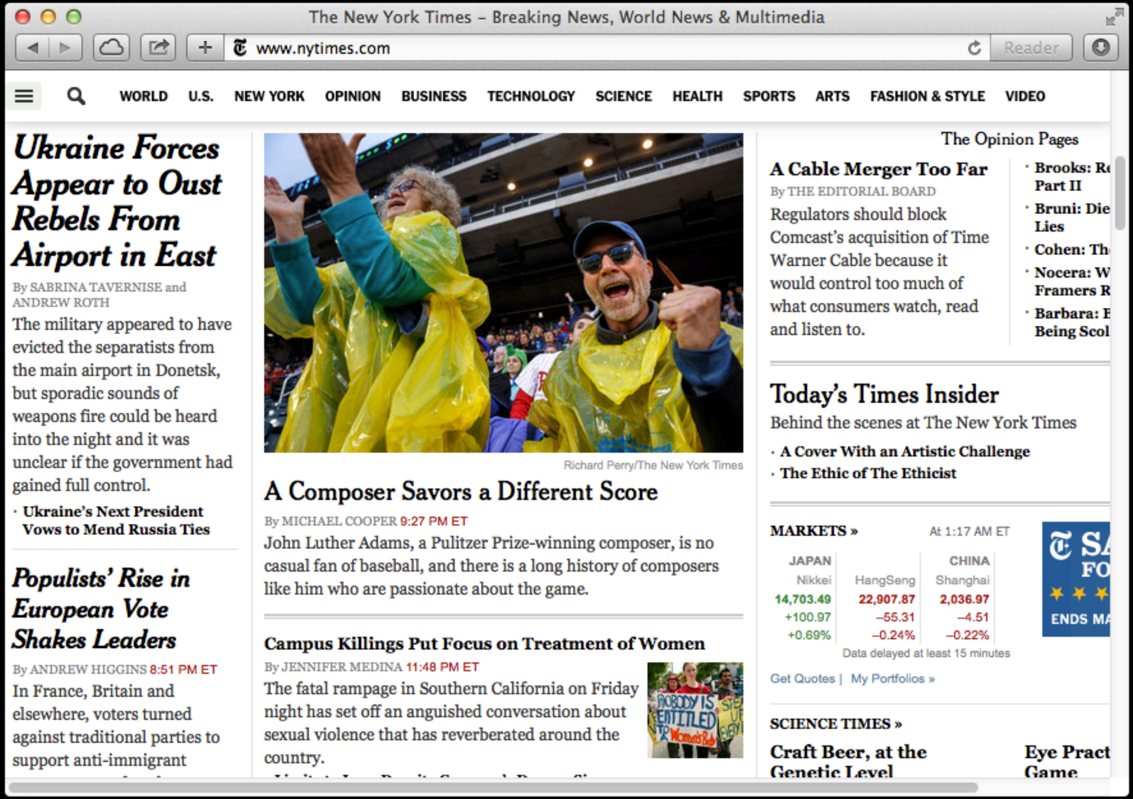
[Pope Lays Wreath at Tomb of Zionism's Founder]

By JODI RUDOREN

Structure vs. Presentation

Now let's add CSS styling to it for better visual PRESENTATION:



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Nikkei	HangSeng	Shanghai
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+100.97	–55.31	–4.51
+0.69%	–0.24%	–0.22%

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SCIENCE TIMES »

Craft Beer, at the Genetic Level

Eye Pract Game

Structure vs. Presentation

So, you might ask:

Is there ever a time to use non-semantic tags?

SURE.

<DIV>
<SPAN>

The only two generic html tags that have no semantic meaning at all.

<div> and <span>

There are occasions when you need to use generic tags for PRESENTATION purposes and really don’t want a tag container to have any special meaning.

That is when you use either <div> or <span>.

What’s the difference between the two?

<div>

A “block-level” container tag.

“Block-level” elements take up the entire width of a line unless otherwise specified in the CSS.

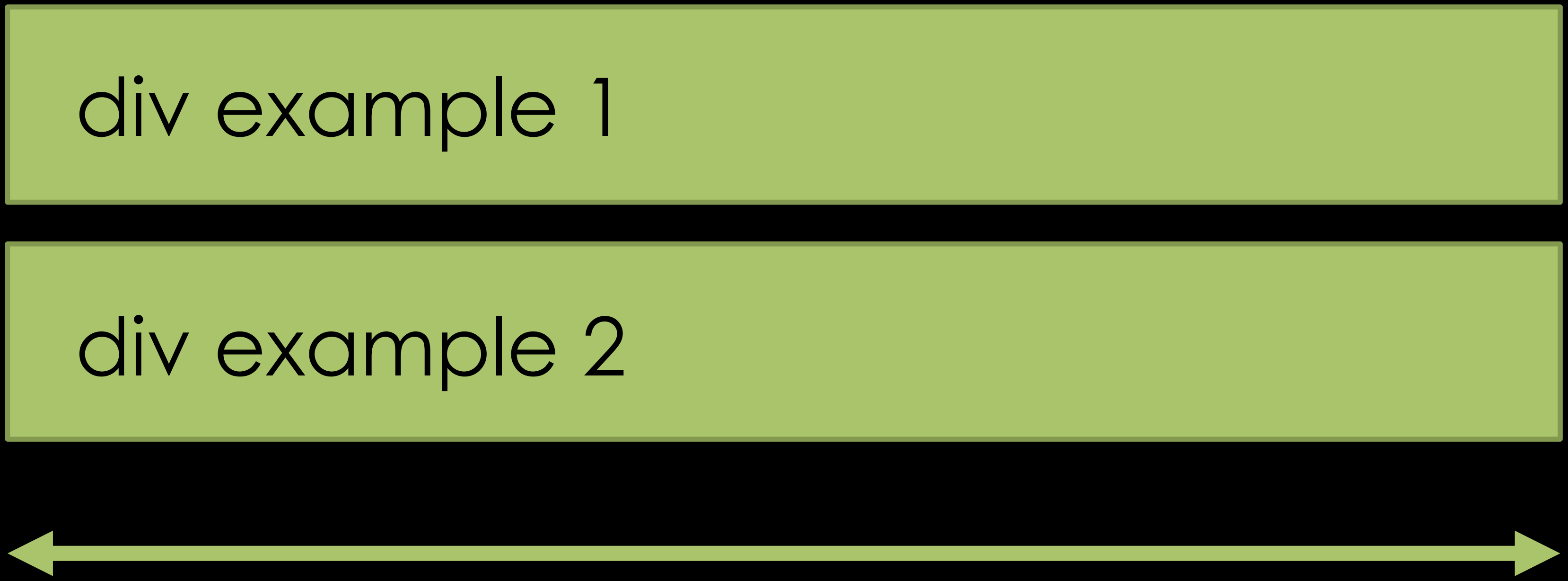
<span>

An “inline” container tag.

“Inline” elements take up only as much space as necessary and can sit side-by-side with other “inline” elements *within a line*.

<div> “block” example

```
<div>div example 1</div>
<div>div example 2</div>
```

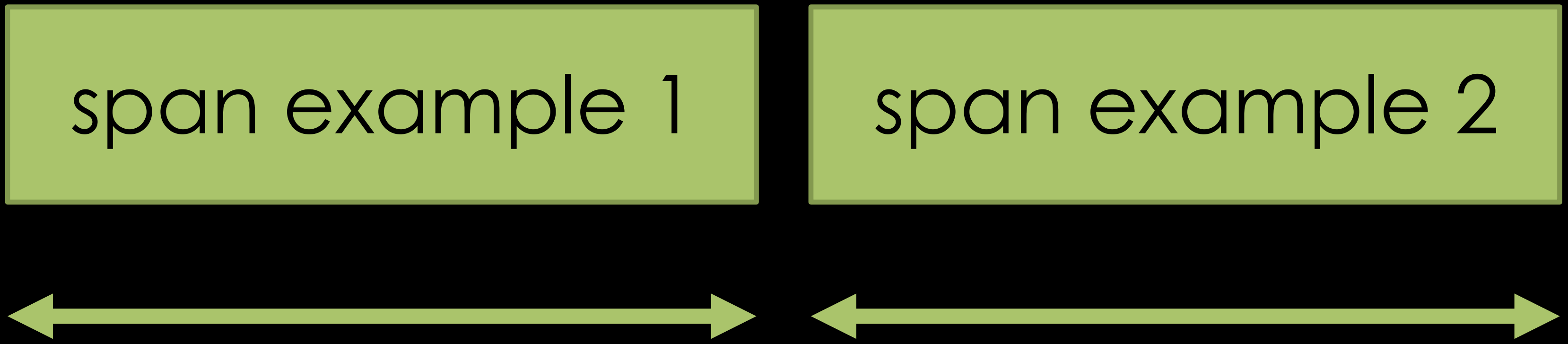


div example 1

div example 2

<span> “inline” example

```
<span>span example 1</span>
<span>span example 2</span>
```



span example 1

span example 2