



Intro to Web Development

Technology, Culture + Society
Integrated Design Media (I <3 IDM)

Monday + Wednesday IDM room 308
Section A - 10:00 am
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<  week 0 >
hello world(s)!

"The main challenge is trying to create work that touches people at an emotional level, as opposed to them thinking about the technology or wondering about how it was made. Making poems, not demos, is how we refer to it, ie making work that is like a poem, short yet dense, re-tellable, rhythmic, meaningful as opposed to a demo that feels like technology for technology's sake. "

—Zach Lieberman

**what are ways humans have
moved information across
geographic space?**

**what do you think of when you
hear the terms: remote + local**



Great Wall of China Signal Towers

400 BC - fire/smoke or drum beats

200 BC - 220 AD - Han dynasty - flags, lights, gunshots



First message sent from Washington D.C. to Baltimore
Samuel Morse 1844

A decorative horizontal separator consisting of two rows of pink dots and dashes, separated by a thick pink diagonal line.

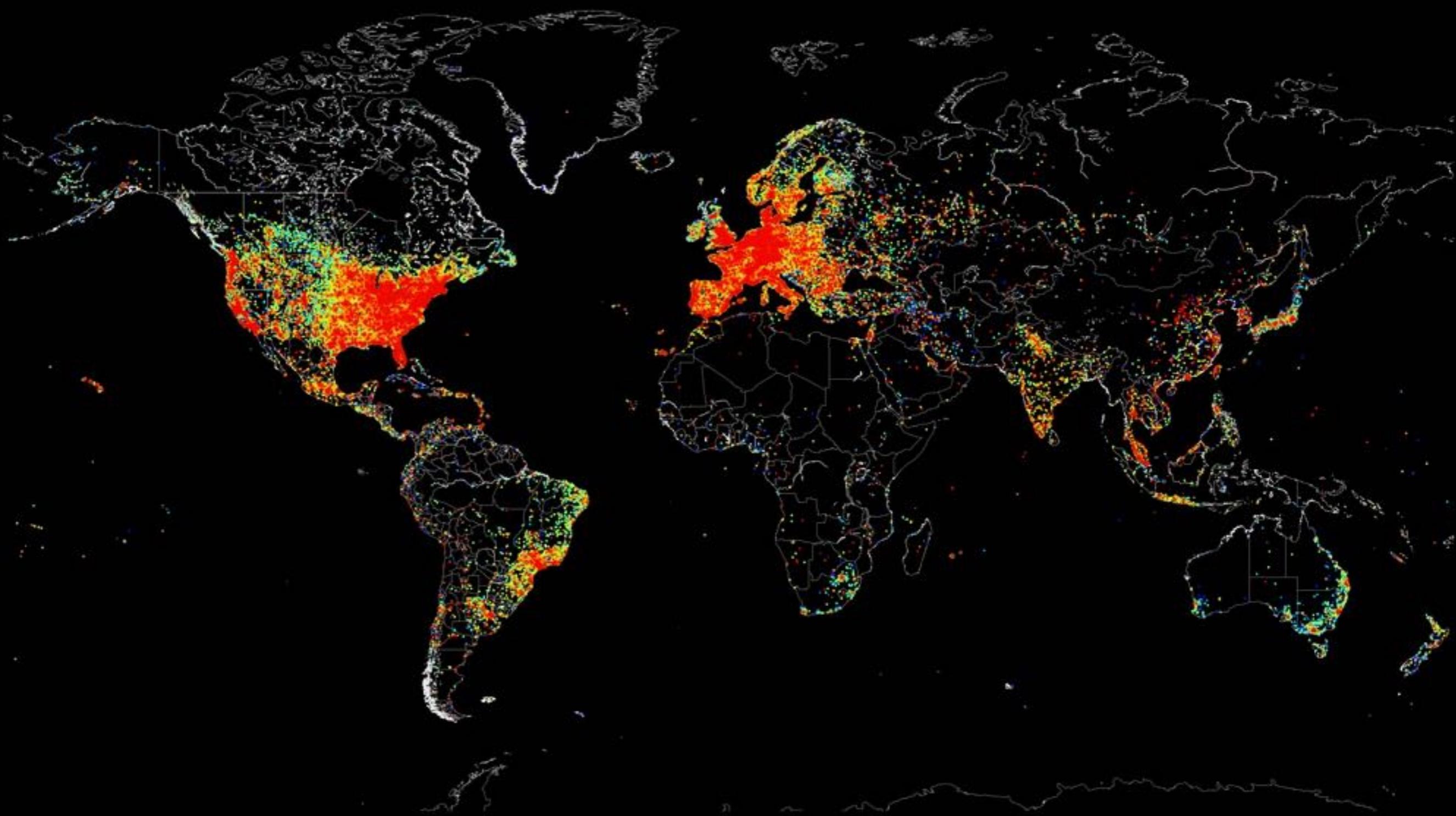
“What hath God wrought?”

TO COMPLETE THE CIRCUIT OF THE GLOBE.

Lines constructed and in operation Lines under contract for construction Mr. Cyrus W. Field's projected Lines



1871 Telegraph cables

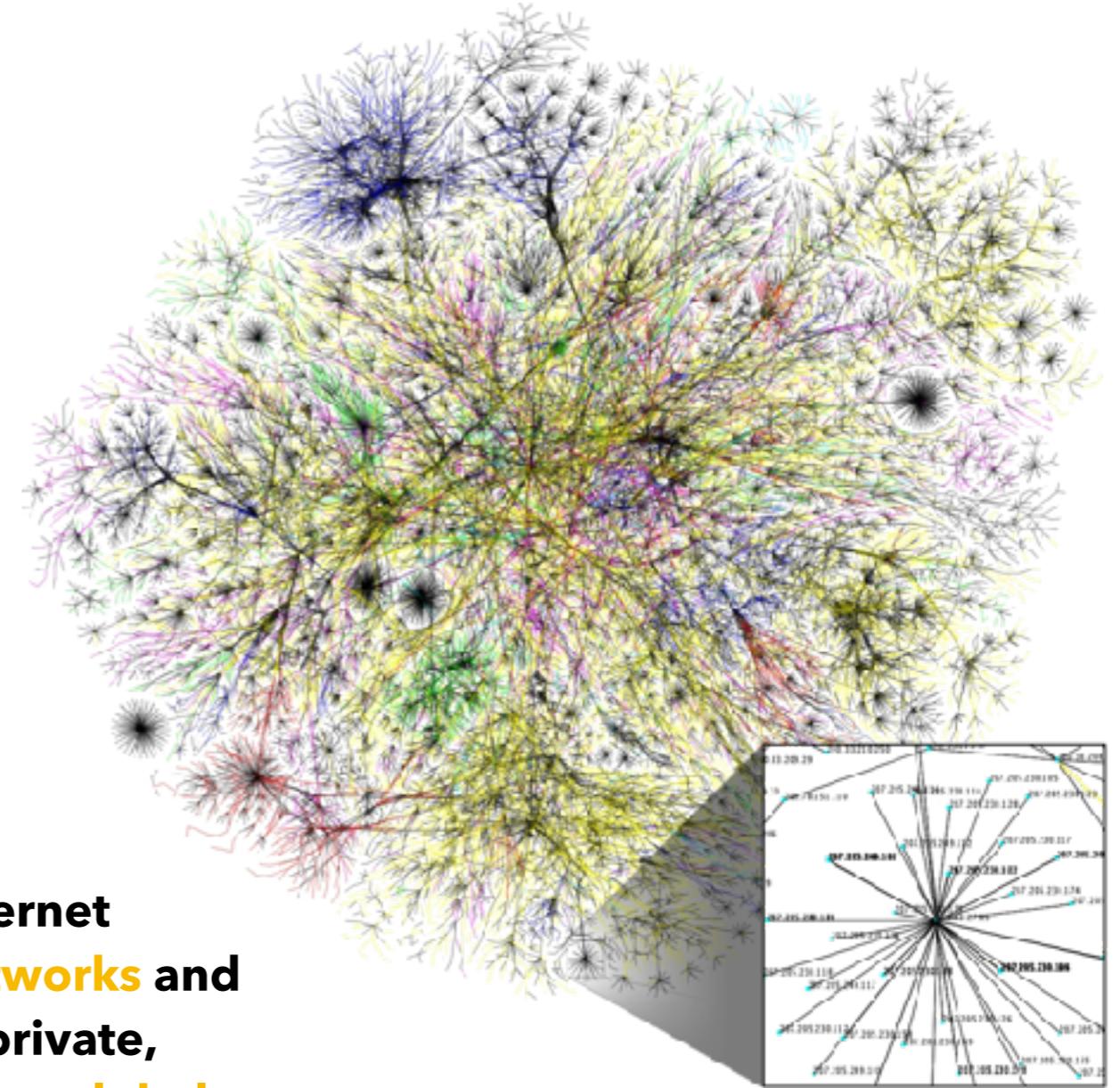


2014 map of every connected device

what is the **internet?**

The Internet (or internet) is the global system of interconnected computer networks that uses the Internet protocol suite (TCP/IP) to communicate between networks and devices. It is a network of networks that consists of private, public, academic and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies.

The Internet carries a vast range of information resources and services, such as the inter-linked hypertext documents and applications of the World Wide Web (WWW), electronic mail and file sharing.



the internet was
invented to enable
access to remote
computers

who invented the **internet?**

the Defense Advanced Research Projects Agency (aka DARPA)

organized and funded **ARPANET**

"most of the significant advances in computer technology—including the work that my group did at Xerox PARC—were simply extrapolations of Lick's [[Joseph Licklider](#)] vision. They were not really new visions of their own. So he was really the father of it all""

—Robert (Bob) Taylor
head of ARPANET + founder of Xerox Parc



1969 - Arpanet (Advanced Research Projects Agency)

first message sent from UCLA to Stanford via **TCP/IP protocol**

stanford machine had 128 Kb of memory and 24 Mb of disk space



System crashed before rest of the message was transmitted



1974 - Arpanet network map

what is the web?

www

The World Wide Web is an
information system where
documents and other
resources are identified by

Uniform Resource Locators
which may be interlinked by
hyperlinks, and are
accessible over the internet.

we colloquially call a URL an address

the URL for this web page is: <https://www.google.com>

A screenshot of a web browser window showing the Google homepage. A large blue arrow points from the text in the previous slide to the address bar at the top of the browser. The address bar displays the URL <https://www.google.com>. Below the address bar, there are several icons and links: Apps, idm, prtt, js, a green folder icon, a red folder icon, a blue folder icon, a yellow folder icon, a green leaf icon, a red leaf icon, and a Reading List link. The main content area features a Google doodle for a scientist. The scientist is holding a test tube and a microscope, with a petri dish containing a microorganism in the background. The word "Google" is written in its signature blue, red, yellow, and green colors. Below the doodle is a search bar with a magnifying glass icon and a microphone icon for voice search. At the bottom of the page are two buttons: "Google Search" and "I'm Feeling Lucky". In the bottom right corner, there is a carbon neutrality badge with the text "Carbon neutral since 2007".

what is a web page?

HTML



CSS



JS



**Web content may be any
type of downloadable media
(text, img, video, pdf) but
web pages are hypertext
documents formatted in
Hypertext Markup Language.**



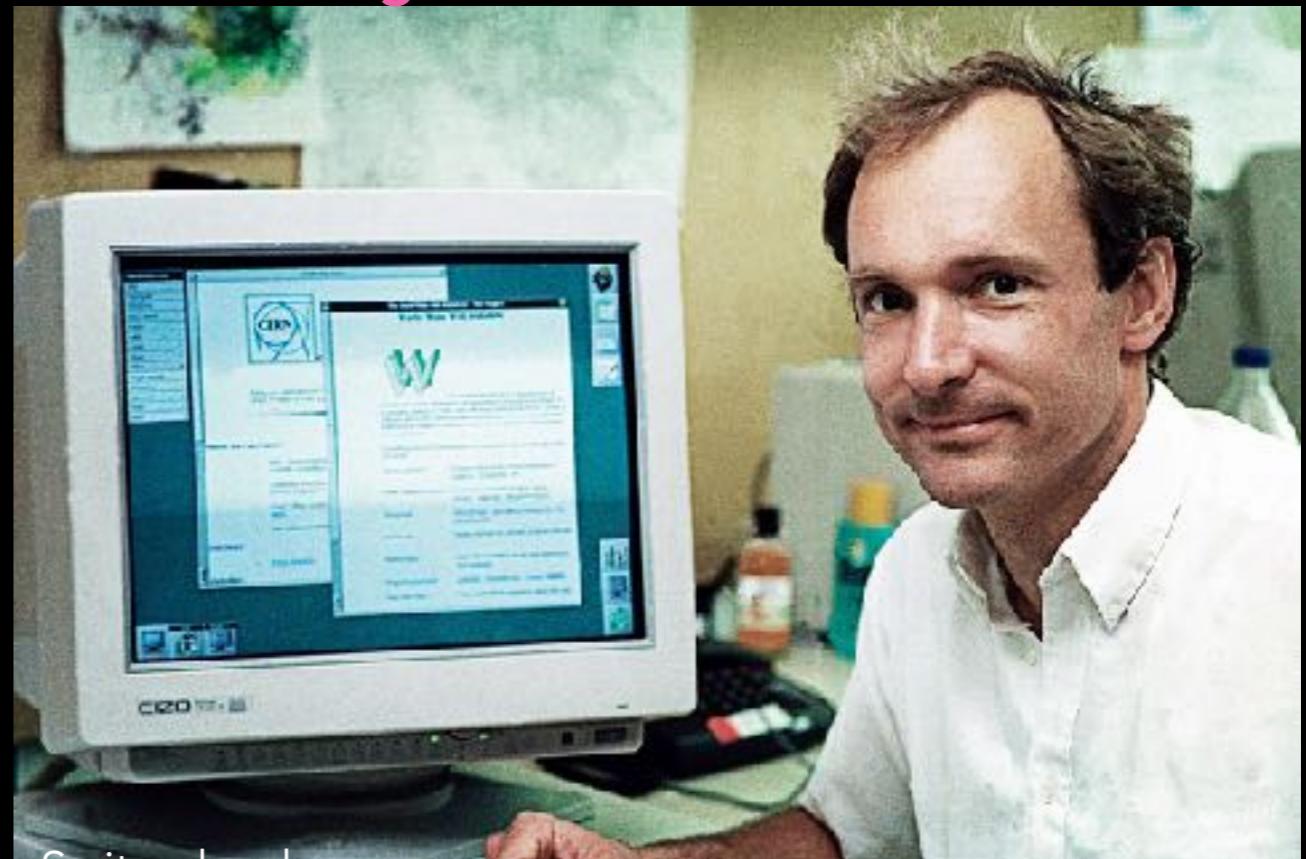
.html files almost always live on a server in a directory with other open source “code” files with the extensions: .css and .js. Server storage works much like the local storage on yr laptop (which is why we need to avoid having our class work on any kind of “cloud” as it could (and will!) interfere with your work.

The resources for the Web are transferred via the Hypertext Transfer Protocol may be accessed by users by a software application called a browser, and are published by a software application called a server. HTML pages + the servers they communicate with can vary from relatively simple (ie what we'll be doing) to very sophisticated web applications but in any case they must be written in proper HTML syntax in a file with .html extension (although a user might not always see it!)

who invented the web?

"I still has to find a way to turn text into hypertext, though. This required being able to distinguish text that was a link from text that wasn't. I delved into the files that defined the internal workings of the text editor, and happily found a spare thirty-two bit piece of memory, which the developers of NeXT had graciously left open for future use by tinkerers like me. I was able to use the spare space as a pointer from each span of text to the address for any hypertext link. With this, hypertext was easy."

—Berners Lee, *Weaving the Web*



1989 - Tim Berners Lee invents the WWW

1990 - Tim Berners writes the first web browser at CERN in Switzerland

1991 - The browser released outside CERN + to the general public

1993 -4 - Web begins to enter everyday use

Border

All boxes have borders even if invisible or 0px wide. It separates the edge of one box from another.

Padding

Padding is the space btw the border + any content contained within it. More padding increases the readability of its contents.

Margin

Margins sit outside the edge of the border. You can set the width to create a gap btw borders of adjacent boxes.

the Box Model



Content

< HTML >

3 categories of HTML elements

1 - **block**: large blocks of content has height + width

`<p>, <h1>, <blockquote>, , , <table>`

2 - **inline**: small about of content, no height or width

`<a>, , ,
, , <time>`

a. **inline block**: inline content w/ height + width

3 - **metadata**: information abou the page, usually not visible

`<title>, <meta>, <script>`

Parent + Child

```
<!doctype html>
  <head>
    head is the parent of title
    <title> Week 1 </title>
  </head>
  <body>
    div is the child of body
    <div>
      Here's a Great Site.
    </div>
    body is the child of html
    </body>
</html>
```

The `<head>` element contains the metadata for a web page. Metadata is information about the page that isn't displayed directly on the web page. Unlike the information inside of the `<body>` tag, the metadata in the head is information about the page itself.

Text tags

h1, h2, h3, h4, h5, h6 are text tags for headings

p is a tag for paragraphs

b is for bold, **i** is for italics

**** is for **bold** **** is for *italics*

ul, ol, li are used for making lists

ul: unordered lists

ol: ordered lists

li: an individual list tag

**
** will break to a new line

<div>s can contain any text or other HTML elements, such as links, images, or videos. Remember to always add two spaces of indentation when you nest elements inside of <div>s for better readability.

Semantic HTML

HTML should be coded to represent the data that will be populated and not based on its default presentation styling. Presentation (how it should look), is the sole responsibility of CSS.

Some of the benefits from writing semantic markup are as follows:

- Search engines will consider its contents as important keywords to influence the page's search rankings (see SEO)
- Screen readers can use it as a signpost to help visually impaired users navigate a page
- Finding blocks of meaningful code is significantly easier than searching through endless divs with or without semantic or namespaced classes
- Suggests to the developer the type of data that will be populated
- Semantic naming mirrors proper custom element/component naming

Semantic elements

<p>

<h1> - <h6>

<main>

dominant content of the <body> element

<article>

A document, page or site. This is usually a root container element after body

<section>

Generic section of a document

<header>

Intro section of a document

<footer>

Footer at end of a document or section

<nav>

Navigational section

Use these **before** div when appropriate.

Semantic elements

represents a portion of a document whose content is only indirectly related to the document's main content. Asides are frequently presented as sidebars or call-out boxes.

<details> creates a disclosure widget in which information is visible only when the widget is toggled into an "open" state.

<figcaption> represents a caption or legend describing the rest of the contents of its parent **<figure>**

<mark> represents text which is marked or highlighted for reference or notation purposes, due to the marked passage's relevance or importance in the enclosing context.

<summary> element specifies a summary, caption, or legend for a **<details>** element's disclosure box. Clicking the **<summary>** element toggles the state of the parent **<details>** element open and closed.

<time> represents a specific period in time.

tag attribute value

<video src= "filepath/file.mov" alt= "this is the video" height="300"> </video>

<html attribute= "value" attribute= "value" attribute= "value"> </html>

Absolute Links direct to another server

OPENING
LINK TAG

URL WE ARE
DIRECTED TO



TEXT WE
CLICK ON

CLOSING
TAG

```
<a href="https://www.youtube.com/watch?v=qcnnI6HD6DU"> absolute link</a>
```

< a href — stands for *hyperlink reference*

RELATIVE Links

direct to a file on the same site /server

re: Unix!!

if the file is in the same folder:

```
<a href="index.html">Homepage</a>
```

if the file is in the parent folder:

```
<a href="../index.html">Homepage</a>
```

if the file is in the child folder:

```
<a href="images/photos.html">Photos</a>
```

id attribute: [Jump to a different element on page](#thisID)

RELATIVE Links

direct to a file on the same site /server

It's faster to simple direct to the file path.

id attribute: Jump to a different element on page

```
<li><a href="#">#theFoot">id attribute link</a></li>
```

Why index.html?

Why index.html?

The main homepage of a site written in HTML (and the homepage of each section in a child folder) is called index.html.

Web servers are usually set up to return the index.html file if no file name is specified. Therefore, it's always a good idea to name your "home" page index.html

The **** tag has a required attribute called **src**.

The **src** attribute must be set to the image's source, or the location of the image. In some cases, the value of **src** must be the *uniform resource locator* (URL) of the image. A URL is the web address or local address where a file is stored.

Images: relative vs. absolute url

```
<img src= "images/potato07.png" alt= "spud" >
```

```
<img src= "https://pngriver.com/wp-content/uploads/2018/04/Download-Potato-PNG-Pic.png" alt= "spud" >
```

The **** tag is for images, which can be on your local directory or on another webpage.
Read all about **** tag [here](#). The same goes for **<video>** + **<audio>** tags

The **alt** attribute, which means alternative text, brings meaning to the images on our sites. The **alt** attribute can be added to the image tag just like the **src** attribute. The value of **alt** should be a description of the image.

```

```

1. If an image fails to load on a web page, a user can mouse over the area originally intended for the image and read a brief description of the image. This is made possible by the description you provide in the **alt** attribute.
2. Visually impaired users often browse the web with the aid of screen reading software. When you include the **alt** attribute, the screen reading software can read the image's description out loud to the visually impaired user.
3. The **alt** attribute also plays a role in Search Engine Optimization (SEO), because search engines cannot "see" the images on websites as they crawl the internet. Having descriptive **alt** attributes can improve the ranking of your site.

Like the `` tag, the `<video>` tag requires a `src` attribute with a link to the video source.

Unlike the `` tag however, the `<video>` element requires an opening and a closing tag.

After the **src** attribute, the **width** and **height** attributes are used to set the size of the video displayed in the browser.

The **controls** attribute instructs the browser to include basic video controls: pause, play and skip. Unlike the **** tag however, the **<video>** element requires an opening and a closing tag.

The text, "Video not supported", between the opening and closing video tags will only be displayed if the browser is unable to load the video.

Some Media Attributes

Preload - what preloads when the page loads

Controls - if the play/stop buttons are visible

Autoplay - if the video should start playing
automatically

Loop - if the video should loop on completion

Attributes

If we want to expand an element's tag, we can do so using an attribute. Attributes are content added to the opening tag of an element and can be used in several different ways, from providing information to changing styling. Attributes are made up of the following two parts:

- 1) The **name** of the attribute
- 2) The **value** of the attribute

One commonly used attribute is the **id**.

We can use the **id** attribute to specify different content (such as **<div>**s) and is really helpful when you use an element more than once.

```
<div id="intro">  
  <h1>Technology</h1>  
  </div>
```

**** contains short pieces of text or other HTML. They are used to separate small pieces of content that are on the same line as other content.

```
<div>
    <h1>Technology</h1>
</div>
<div>
    <p> Wherever there's a
    <span>computer</span>, there's a skilled
    person developing, maintaining, hacking,
    advancing or simply using it.</p>
</div>
```