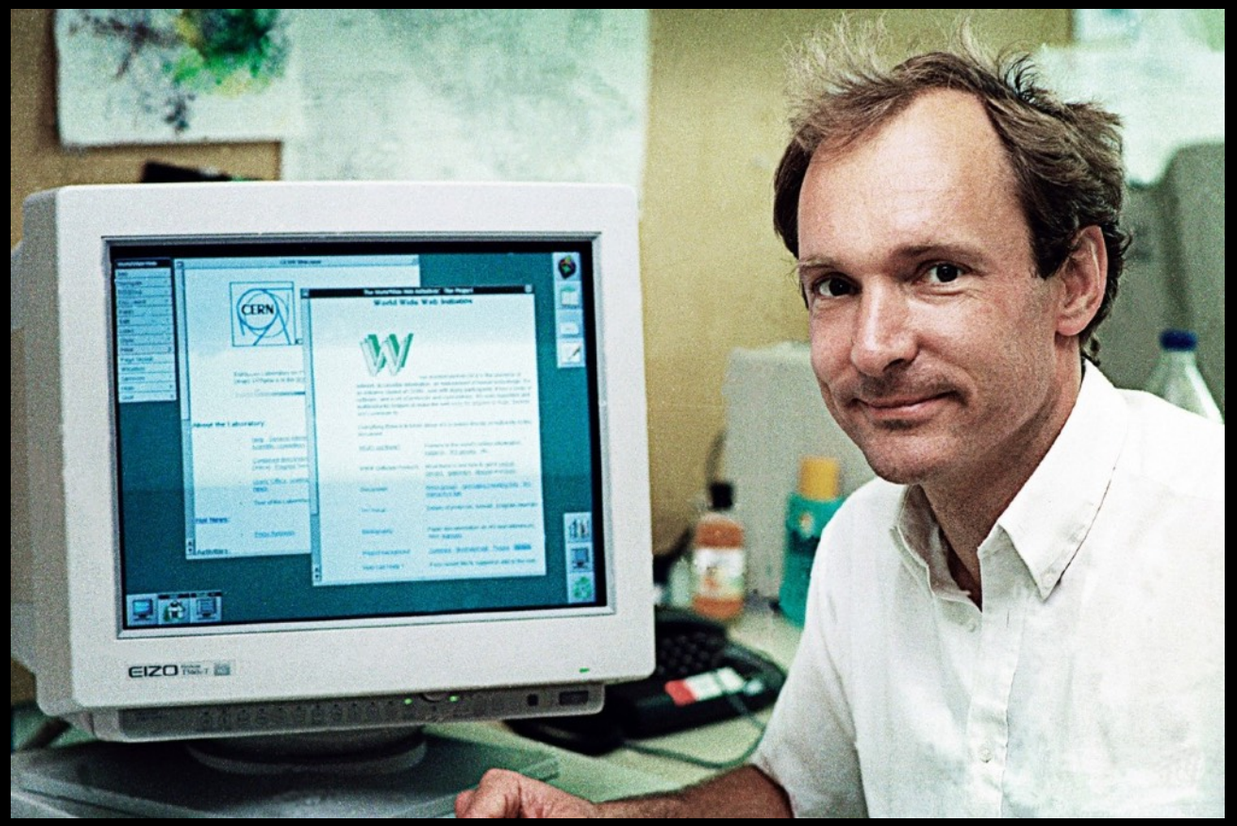
“I still has to find a way to turn text into hypertext, though. This required being able to distinguish text that was a link from text that wasn’t. I delved into the files that defined the internal workings of the text editor, and happily found a spare thirty-two bit piece of memory, which the developers 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 - First Web Server

Due to the way the computer’s storage was designed, Tim Berners-Lee invents the WWW (HTTP) on a NeXT machine

< HTML >

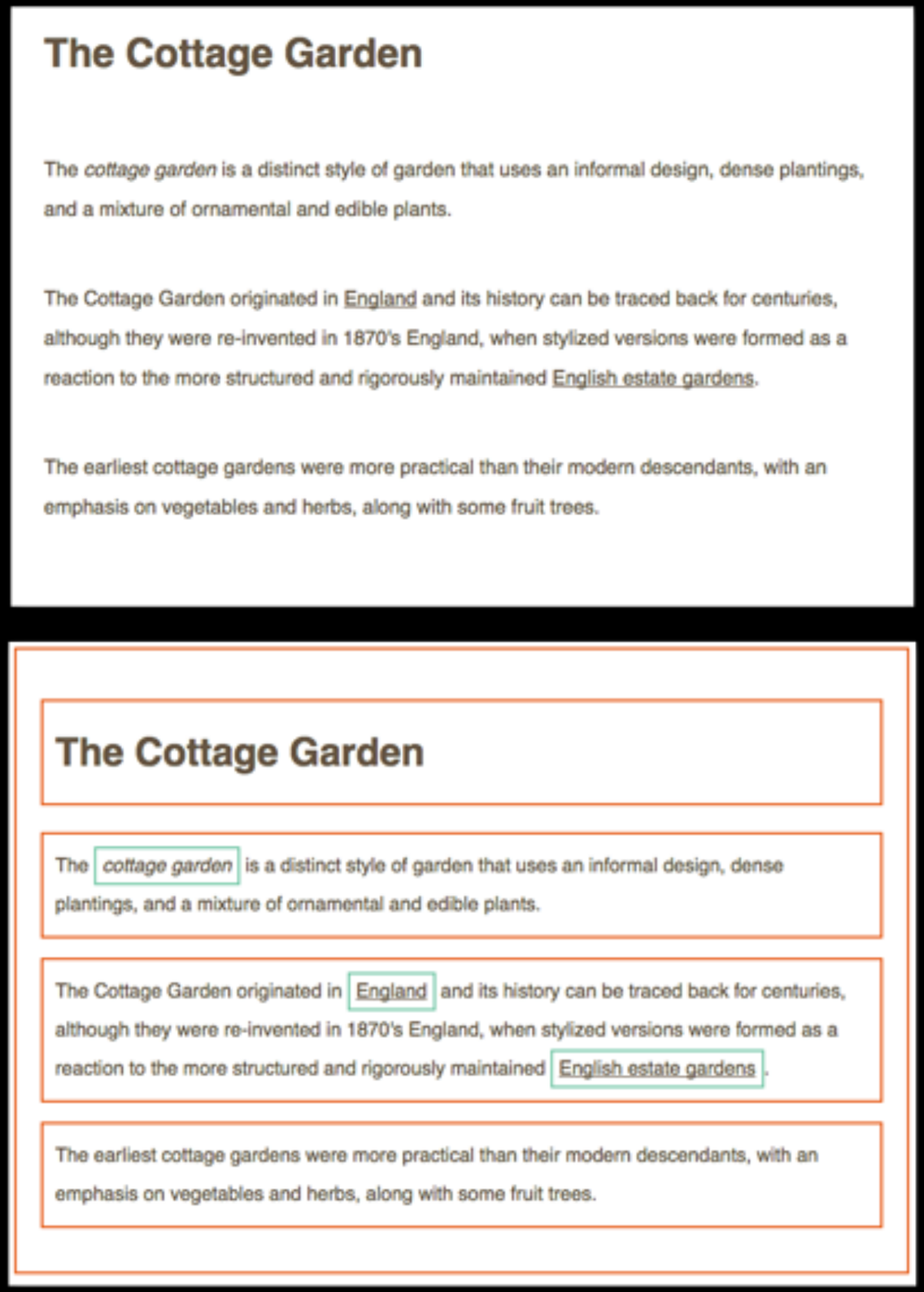
Hypertext Markup Langauge

Describes the content + structure of a web page;
NOT a programming language

The key to understanding how **HTML** + **CSS** works is to imagine that there is an invisible box around every **HTML** element.

Block level elements are outlined w/ red + inline elements in green.

<body> creates 1st box, then **<h1>**, **<h2>**, **<p>**, **<i>** + **<a>** each create their own boxes within it.



< HTML >

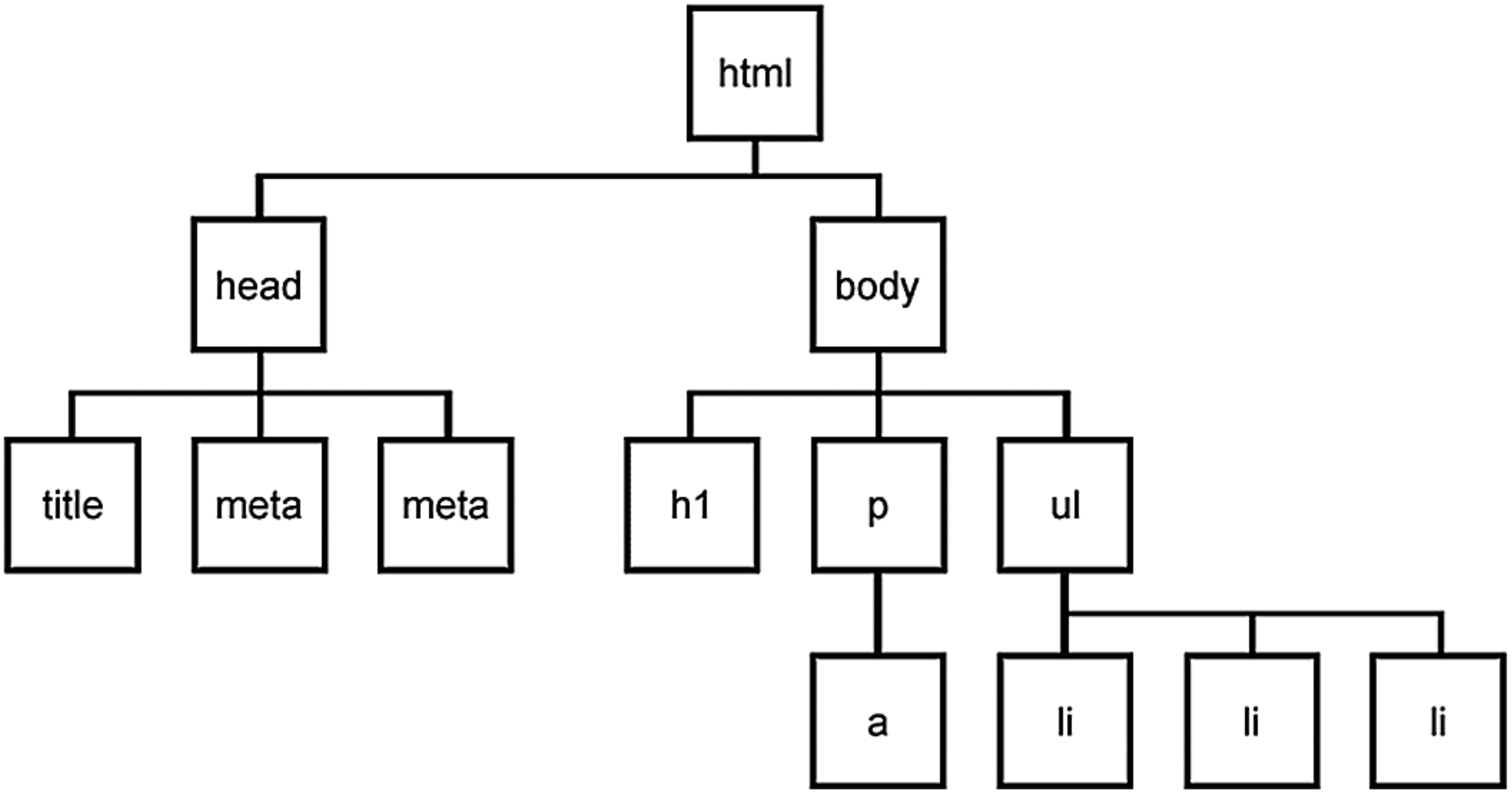
3 categories of HTML elements

1 - block: large blocks of content has height + width
<p>, **<h1>**, **<blockquote>**, **<ol>**, **<ul>**, **<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 Element Structure



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

```
<h1>Heading 1</h1>
<h2>Heading 2</h2>
<h3>Heading 3</h3>
<h4>Heading 4</h4>
<h5>Heading 5</h5>
<h6>Heading 6</h6>
```

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 though 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

https://developer.mozilla.org/en-US/docs/Glossary/Semantics

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

<aside> 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>` element.

<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"> aboslute link</a>
```

< a href — stands for *hyperlink reference*

RELATIVE Links

direct to a file on the same site /server

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

re: Unix!!

if the file is in the same folder:

Homepage

if the file is in the parent folder:

Homepage

if the file is in the child folder:

Photos

id attribute: Jump to a different element on page

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

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?

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 <img> 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. ab solute 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 **<img>** tag is for images, which can be on your local directory or on another webpage.
Read all about **<img>** 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.

```
<img src="https://www.fordham.edu/
images/fordham_102907_0455.jpg"
alt="Computer Sciences" height="300">
```

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 EngineOptimization (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.

<video /> structure

main tag

poster

width/ height

control attributes

```
<body>

    <!-- Adding video tag -->
    <video poster="media/listen.jpg" width="400px" preload loop autoplay controls>
        <source src="media/listen.mp4"/>
        <source src="media/listen.webm"/>
    </video>
</body>
```

different sources

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 <img> 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.

<audio /> structure

main tag

control attributes

```
<audio controls autoplay loop>
    <source src="audio/virginia.mp3" />
    <source src="audio/virginia.ogg" />
    <p>This browser does not support this audio format</p>
</audio>
```

different sources

text is the file cannot be found

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 s) and is really helpful when you use an element more than once.

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