Intro to HTML

Body
Only content inside the opening and closing body tags can be displayed to the screen.
<body> …. </body>

HTML Structure

```
<body>
  <h1>Hello World</h1>

  <div>
    <p>This paragraph is a child of the div element and a grandchild of the body element</p>
  </div>
</body>
```

Headings
In HTML, there are six different headings, or heading elements. Headings can be used for a variety of purposes, like titling sections, articles, or other forms of content.

<h1> — used for main headings. All other smaller headings are used for subheadings.
<h2> <h3> <h4> <h5> <h6>

Divs

 is short for "division" or a container that divides the page into sections. These sections are very useful for grouping elements in your HTML together.

```
<body>
   <h1>The Brown Bear</h1>
   <div>
      <h2>About Brown Bears</h2>
      <h3>Species</h3>
      <h3>Features</h3>
   </div>
   <div>
      <h2>Habitat</h2>
      <h3>Countries with Large Brown Bear Populations</h3>
      <h3>Countries with Small Brown Bear Populations</h3>
   </div>
   <div>
      <h2>Media</h2>
   </div>
</body>
```

Attributes
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:
- The **name** of the attribute
- The **value** of the attribute

```
<body>
   <h1>The Brown Bear</h1>
   <div id="introduction">
      <h2>About Brown Bears</h2>
      <h3>Species</h3>
      <h3>Features</h3>
   </div>
   <div id="habitat">
      <h2>Habitat</h2>
```

```
    <h3>Countries with Large Brown Bear Populations</h3>
    <h3>Countries with Small Brown Bear Populations</h3>
  </div>
  <div id="media">
    <h2>Media</h2>
  </div>
</body>
```

paragraphs and span

Use them to display text in HTML
- Paragraphs (<p>) contain a block of plain text.
- 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.

```
<body>
  <h1>The Brown Bear</h1>
  <div id="introduction">
    <h2>About Brown Bears</h2>
    <p>The brown bear (Ursus arctos) is native to parts of northern Eurasia and North America. Its co
nservation status is currently Least Concern. There are many subspecies within the brown bear specie
s, including the Atlas bear and the Himalayan brown bear.</p>
    <h3>Species</h3>
    <h3>Features</h3>
    <p>Brown bears are not always completely brown. Some can be reddish or yellowish. They have ve
ry large, curved claws and huge paws. Male brown bears are often 30% larger than female brown bear
s. They can range from 5 feet to 9 feet from head to toe.</p>
  </div>
  <div id="habitat">
    <h2>Habitat</h2>
    <h3>Countries with Large Brown Bear Populations</h3>
    <h3>Countries with Small Brown Bear Populations</h3>
    <p>Some countries with smaller brown bear populations include Armenia, Belarus, Bulgaria, Chin
a, Finland, France, Greece, India, Japan, Nepal, Poland, Romania, Slovenia, Turkmenistan, and Uzb
ekistan.</p>
  </div>
  <div id="media">
    <h2>Media</h2>
  </div>
</body>
```

Styling text

- The tag emphasizes (italicizes) text
- tag highlights important text.

```
<body>
  <h1>The Brown Bear</h1>
  <div id="introduction">
    <h2>About Brown Bears</h2>
    <p>The brown bear (<em>Ursus arctos</em>) is native to parts of northern Eurasia and North America.
 Its conservation status is currently <strong>Least Concern</strong>. There are many subspecies within the
brown bear species, including the Atlas bear and the Himalayan brown bear.</p>
    <h3>Species</h3>
    <h3>Features</h3>
```

```
  <p>Brown bears are not always completely brown. Some can be reddish or yellowish. They have very large, curved claws and huge paws. Male brown bears are often 30% larger than female brown bears. They can range from 5 feet to 9 feet from head to toe.</p>
 </div>
 <div id="habitat">
  <h2>Habitat</h2>
  <h3>Countries with Large Brown Bear Populations</h3>
  <h3>Countries with Small Brown Bear Populations</h3>
  <p>Some countries with smaller brown bear populations include Armenia, Belarus, Bulgaria, China, Finland, France, Greece, India, Japan, Nepal, Poland, Romania, Slovenia, Turkmenistan, and Uzbekistan.</p>
 </div>
 <div id="media">
  <h2>Media</h2>
 </div>
</body>
```

// output

The Brown Bear

About Brown Bears

The brown bear (*Ursus arctos*) is native to parts of northern Eurasia and North America. Its conservation status is currently **Least Concern**. There are many subspecies within the brown bear species, including the Atlas bear and the Himalayan brown bear.

Species

Features

Brown bears are not always completely brown. Some can be reddish or yellowish. They have very large, curved claws and huge paws. Male brown bears are often 30% larger than female brown bears. They can range from 5 feet to 9 feet from head to toe.

Habitat

Countries with Large Brown Bear Populations

Countries with Small Brown Bear Populations

Some countries with smaller brown bear populations include Armenia, Belarus, Bulgaria, China, Finland, France, Greece, India, Japan, Nepal, Poland, Romania, Slovenia, Turkmenistan, and Uzbekistan.

Media

Line Breaks

```
<body>
  <h1>The Brown Bear</h1>
  <div id="introduction">
    <h2>About Brown Bears</h2>
    <p>The brown bear (<em>Ursus arctos</em>) is native to parts of northern Eurasia and North America. Its conservation status is currently <strong>Least Concern</strong>. <br><br> There are many subspecies within the brown bear species, including the Atlas bear and the Himalayan brown bear.</p>
    <h3>Species</h3>
    <h3>Features</h3>
    <p>Brown bears are not always completely brown. Some can be reddish or yellowish. They have very large, curved claws and huge paws. Male brown bears are often 30% larger than female brown bears. They can range from 5 feet to 9 feet from head to toe.</p>
  </div>
  <div id="habitat">
    <h2>Habitat</h2>
    <h3>Countries with Large Brown Bear Populations</h3>
    <h3>Countries with Small Brown Bear Populations</h3>
    <p>Some countries with smaller brown bear populations include Armenia, Belarus, Bulgaria, China, Finland, France, Greece, India, Japan, Nepal, Poland, Romania, Slovenia, Turkmenistan, and Uzbekistan.</p>
```

```
  </div>
  <div id="media">
    <h2>Media</h2>
  </div>
</body>

// output
```

The Brown Bear

About Brown Bears

The brown bear (*Ursus arctos*) is native to parts of northern Eurasia and North America. Its conservation status is currently **Least Concern**.
**(space space space due to

**
There are many subspecies within the brown bear species, including the Atlas bear and the Himalayan brown bear.

Unordered List

```
<h3>Species</h3>
    <ul>
      <li>Arctos</li>
      <li>Collarus</li>
      <li>Horribilis</li>
      <li>Nelsoni (extinct)</li>
    </ul>

// output
```

Species

- Arctos
- Collarus
- Horribilis
- Nelsoni (extinct)

Ordered List

```
<ol>
  <li>Preheat the oven to 350 degrees.</li>
  <li>Mix whole wheat flour, baking soda, and salt.</li>
  <li>Cream the butter, sugar in separate bowl.</li>
  <li>Add eggs and vanilla extract to bowl.</li>
</ol>

// output
```

1. Preheat the oven to 350 degrees.
2. Mix whole wheat flour, baking soda, and salt.
3. Cream the butter, sugar in separate bowl.
4. Add eggs and vanilla extract to bowl.

Images

```
<img src="https://s3.amazonaws.com/codecademy-content/courses/web-101/web101-image_brownbear.jpg" />
<img src="image-location.jpg" />

<img src="https://s3.amazonaws.com/codecademy-content/courses/web-101/web101-image_brownbear.jpg"
alt="A Brown Bear"/> ## alt attribute

## Video

<video src="https://content.codecademy.com/courses/freelance-1/unit-1/lesson-2/htmlcss1-vid_brown-
```

bear.mp4" width="320" height="240" controls>Video not supported</video>

➔ 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.

HTML Document Standards

Declaration

```
<!DOCTYPE html>
```

include <!DOCTYPE html> at the very beginning of your HTML documents

HTML tag / head tag

Html – head – title - body tag (in order)

```
<!DOCTYPE html>
<html>
   <head>
      <title>My Coding Journal</title>
   </head>
</html>
```

Linking to other web pages

```
<a>This is a link to Wikipedia</a>
<a href="https://www.wikipedia.org/">This Is A Link To Wikipedia</a>
<a href="https://en.wikipedia.org/wiki/Brown_bear" target="_blank">The Brown Bear</a>
```

➔ setting the target attribute to "_blank" instructs the browser to open the relevant Wikipedia page in a new window.

Linking to Relative Page

Say three files - about.html, contact.html, index.html are in the same folder; we can use relative paths to link to relative pages

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

Linking webpage to any element other than text

HTML allows you to turn nearly any element into a link by wrapping that element with an anchor element. With this technique, it's possible to turn images into links by simply wrapping the <img> element with an <a> element.

```
<a href="https://en.wikipedia.org/wiki/Opuntia" target="_blank"><img src="https://www.Prickly_Pear_Closeup.jpg" alt="A red prickly pear fruit"/></a>
```

Jumping to specific parts of page within the same page

```
<p id="top">This is the top of the page!</p>
<h1 id="bottom">This is the bottom! </h1>

<ol>
   <li><a href="#top">Top</a></li> # will jump to id="top"
   <li><a href="#bottom">Bottom</a></li> # will jump to id="bottom"
</ol>
```

Indentation and Comments

W3C recommends 2 spaces of indentation when writing HTML code

Comment: **<!--**Favorite FilmSection **-->**

FULL EXAMPLE

```
<!DOCTYPE html>
```

```
<html>

<head>
  <title>Brown Bears</title>
</head>

<body>
  <a href="./index.html">Brown Bear</a>
  <a href="./aboutme.html">About Me</a>
  <h1>The Brown Bear</h1>
  <ul>
    <li><a href="#introduction">Introduction</a></li>
    <li><a href="#habitat">Habitat</a></li>
    <li><a href="#media">Media</a></li>
  </ul>
  <div id="introduction">
    <h2>About Brown Bears</h2>
    <p>The brown bear (<em>Ursus arctos</em>) is native to parts of northern Eurasia and North America. Its conservation status is currently <strong>Least Concern</strong>.<br /><br /> There are many subspecies within the brown bear species, including the
      Atlas bear and the Himalayan brown bear.</p>
    <a href="https://en.wikipedia.org/wiki/Brown_bear" target="_blank">Learn More</a>
    <h3>Species</h3>
    <ul>
      <li>Arctos</li>
      <li>Collarus</li>
      <li>Horribilis</li>
      <li>Nelsoni (extinct)</li>
    </ul>
    <h3>Features</h3>
    <p>Brown bears are not always completely brown. Some can be reddish or yellowish. They have very large, curved claws and huge paws. Male brown bears are often 30% larger than female brown bears. They can range from 5 feet to 9 feet from head to toe.</p>
  </div>
  <div id="habitat">
    <h2>Habitat</h2>
    <h3>Countries with Large Brown Bear Populations</h3>
    <ol>
      <li>Russia</li>
      <li>United States</li>
      <li>Canada</li>
    </ol>
    <h3>Countries with Small Brown Bear Populations</h3>
    <p>Some countries with smaller brown bear populations include Armenia, Belarus, Bulgaria, China, Finland, France, Greece, India, Japan, Nepal, Poland, Romania, Slovenia, Turkmenistan, and Uzbekistan.</p>
  </div>
  <div id="media">
    <h2>Media</h2>
    <a href="https://en.wikipedia.org/wiki/Brown_bear" target="_blank"><img src="https://s3.amazonaws.com/codecademy-content/courses/web-101/web101-image_brownbear.jpg"/></a>
    <video src="https://s3.amazonaws.com/codecademy-content/courses/freelance-1/unit-1/lesson-2/htmlcss1-vid_brown-bear.mp4" height="240" width="320" controls>Video not supported</video>
  </div>
</body>
</html>
```

Tables

Basic Syntax

```
<table></table>
```

In HTML, all of these components (rows, columns, cells etc.) must be created.

e.g. two rows have been added to the table

```
<table>
   <tr>
   </tr>
   <tr>
   </tr>
</table>
```

e.g. adding two cells of data onto the only existing row

```
<table>
   <tr>
      <td>73</td>
      <td>81</td>
   </tr>
</table>
```

Table Headings

scope attribute, which can take one of two values:
- row: this value makes it clear that the heading is for a row.
- col: this value makes it clear that the heading is for a column.

```
<table>
   <tr>
      <th></th> //Blank Heading to alignment
      <th scope="col">Saturday</th>
      <th scope="col">Sunday</th>
   </tr>
   <tr>
      <th scope="row">Temperature</th>
      <td>73</td>
      <td>81</td>
   </tr>
</table>
```

Table Borders

```
<table border="1"> // integer is the thickness of border line
   <tr>
      <td>73</td>
      <td>81</td>
   </tr>
</table>
```

*** But the above border syntax is deprecated…*

Follow CSS border syntax…

```
table, td {
   border: 1px solid black;
}
```

Spanning across multiple columns or rows

```
<table>
   <tr>
      <th>Monday</th>
      <th>Tuesday</th>
```

```
    <th>Wednesday</th>
  </tr>
  <tr>
    <td colspan="2">Out of Town</td>
    <td>Back in Town</td>
  </tr>
</table>
```

** similarly, for rows we use **rowspan="some integer"**

Long Table Body (sectioning off)

Long tables can be sectioned off using the table body element: **<tbody>**

When a table's body is sectioned off, however, it also makes sense to section off the table's column headings using the **<thead>** element.

The bottom part of a long table can also be sectioned off using the **<tfoot>** element.

```
<table>
  <thead>
    <tr>
      <th></th>
      <th scope="col">Saturday</th>
      <th scope="col">Sunday</th>
    </tr>
  </thead>
  <tbody>
    <tr>
      <th scope="row">Morning</th>
      <td rowspan="2">Work</td>
      <td rowspan="3">Relax</td>
    </tr>
    <tr>
     <th scope="row">Afternoon</th>
    </tr>
  </tbody>
  </tfoot>
    <tr>
      <th scope="row">Evening</th>
      <td>Dinner</td>
    </tr>
  </tfoot>
</table>
```

Styling with CSS

e.g. 1

```
table, th, td {
  border: 1px solid black;
  font-family: Arial, sans-serif;
  text-align: center;
}
```

++++++++++++++++++++

e.g. 2

```
body {
  background: #EEE;
  margin: 0;
```

```
    padding: 0;
}

/* Navigation */

.navigation {
    box-sizing: border-box;
    background-color: #3587A4;
    overflow: auto;
    padding: 18px 50px;
    position: relative;
    top: 0;
    width: 100%;
    z-index: 999;
}

ul {
    padding: 0;
    margin: 0;
}

li {
    color: #FFF;
    display: inline-block;
    font-family: 'Oxygen', sans-serif;
    font-size: 16px;
    font-weight: 300;
    letter-spacing: 2px;
    margin: 0;
    padding: 20px 18px 10px 18px;
    text-transform: uppercase;
}

.active {
    color: #88CCF1;
}

/* Table */

table {
    height: 40%;
    left: 10%;
    margin: 20px auto;
    overflow-y: scroll;
    position: static;
    width: 80%;
}

thead th {
    background: #88CCF1;
    color: #FFF;
    font-family: 'Lato', sans-serif;
    font-size: 16px;
    font-weight: 100;
    letter-spacing: 2px;
    text-transform: uppercase;
}

tr {
    background: #f4f7f8;
```

```
    border-bottom: 1px solid #FFF;
    margin-bottom: 5px;
}

th, td {
    font-family: 'Lato', sans-serif;
    font-size: 18px;
    font-weight: 400;
    padding: 20px;
    text-align: left;
    width: 33.3333%;
}

.search {
    background-color: #FFF;
    border: 1px solid #DDD;
    border-radius: 3px;
    color: #AAA;
    padding: 20px;
    margin: 50px auto 0px auto;
    width: 77%;
}
```

HTML Form

Form element

```
<form action="/example.html" method="POST">
    <h1>Creating a form</h1>
    <p>Looks like you want to learn how to create an HTML form. Well, the best way to learn is to play around with it.</p>
</form>
```

The <form> element is a great tool for collecting information, but then we need to send that information somewhere else for processing. We need to supply the <form> element with both the location of where the <form>'s information goes and what HTTP request to make.

- The action attribute determines where the information is sent.
- The method attribute is assigned a HTTP verb that is included in the HTTP request.

Input element

The <input> element has a type attribute which determines how it renders on the web page and what kind of data it can accept.

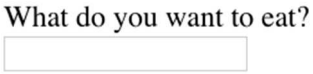
```
<form action="/example.html" method="POST">
    <input type="text" name="first-text-field" value="already pre-filled">
</form>
```

// output

Adding a Label

```
<form action="/example.html" method="POST">
    <label for="meal">What do you want to eat?</label>
    <br>
    <input type="text" name="food" id="meal">
</form>
```

// output



Password Input

For sensitive information, type="password" attribute for <input>! An <input type ="password"> element will replace input text with another character like an asterisk (*) or a dot (•).

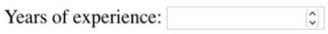
```
<form>
   <label for="user-password">Password: </label>
   <input type="password" id="user-password" name="user-password">
</form>
```

// output

Number Input

```
<form>
   <label for="years"> Years of experience: </label>
   <input id="years" name="years" type="number" step="1">
</form>
```

// output



range input

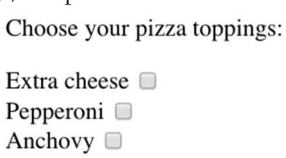
```
<form>
   <label for="volume"> Volume Control</label>
   <input id="volume" name="volume" type="range" min="0" max="100" step="1">
</form>
```

// output

checkbox input

```
<form>
   <p>Choose your pizza toppings:</p>
   <label for="cheese">Extra cheese</label>
   <input id="cheese" name="topping" type="checkbox" value="cheese">
   <br>
   <label for="pepperoni">Pepperoni</label>
   <input id="pepperoni" name="topping" type="checkbox" value="pepperoni">
   <br>
   <label for="anchovy">Anchovy</label>
   <input id="anchovy" name="topping" type="checkbox" value="anchovy">
</form>
```

// output



Radio Button Input
there are cases where we want to present multiple options and only allow for one selection

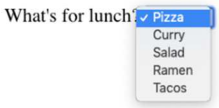
```
<form>
  <p>What is sum of 1 + 1?</p>
  <input type="radio" id="two" name="answer" value="2">
  <label for="two">2</label>
  <br>
  <input type="radio" id="eleven" name="answer" value="11">
  <label for="eleven">11</label>
</form>
```

What is sum of 1 + 1?

- 2
- 11

Dropdown List

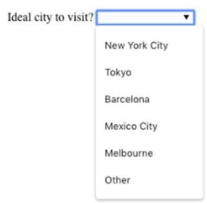
```
<form>
  <label for="lunch">What's for lunch?</label>
  <select id="lunch" name="lunch">
    <option value="pizza">Pizza</option>
    <option value="curry">Curry</option>
    <option value="salad">Salad</option>
    <option value="ramen">Ramen</option>
    <option value="tacos">Tacos</option>
  </select>
</form>
```



Datalist input

```
<form>
  <label for="city">Ideal city to visit?</label>
  <input type="text" list="cities" id="city" name="city">

  <datalist id="cities">
    <option value="New York City"></option>
    <option value="Tokyo"></option>
    <option value="Barcelona"></option>
    <option value="Mexico City"></option>
    <option value="Melbourne"></option>
    <option value="Other"></option>
  </datalist>
</form>
```



Textarea element

```
<form>
  <label for="blog">New Blog Post: </label>
  <br>
  <textarea id="blog" name="blog" rows="5" cols="30">
  </textarea>
</form>
```

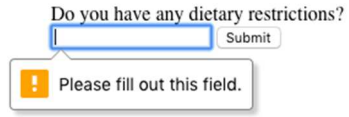
Submit form

```
<form>
  <input type="submit" value="Send">
</form>
```

Form Validation

Requiring an input

```
<form action="/example.html" method="POST">
  <label for="allergies">Do you have any dietary restrictions?</label>
  <br>
  <input id="allergies" name="allergies" type="text" required>
  <br>
  <input type="submit" value="Submit">
</form>
```

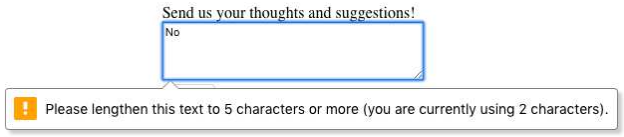


setting min and max

```
<form action="/example.html" method="POST">
  <label for="guests">Enter # of guests:</label>
  <input id="guests" name="guests" type="number" min="1" max="4">
  <input type="submit" value="Submit">
</form>
```

Checking text length

```
<form action="/example.html" method="POST">
  <label for="summary">Summarize your feelings in less than 250 characters</label>
  <input id="summary" name="summary" type="text" minlength="5" maxlength="250" required>
  <input type="submit" value="Submit">
</form>
```



Matching a pattern

regex: [0-9]{14,16} which checks that the user provided only numbers and that they entered at least 14 digits and at most 16 digits.

```
<form action="/example.html" method="POST">
   <label for="payment">Credit Card Number (no spaces):</label>
   <br>
   <input id="payment" name="payment" type="text" required pattern="[0-9]{14,16}">
   <input type="submit" value="Submit">
</form>
```

Semantic HTML

Semantic : relating to meaning
e.g. By using a <header> tag instead of a , we provide context as to what information is inside of the opening and closing tag.

Benefits of semantic HTML
- accessibility
- SEO
- Easy to understand

Header and Nav

*Header instead of *

```
<header>
   <h1>
      Everything you need to know about pizza!
   </h1>
</header>
```

```
<div id="header">
   <h1>
      Everything you need to know about pizza!
   </h1>
</div>
```

A <nav> is used to define a block of navigation links such as menus and tables of contents. It is important to note that <nav> can be used inside of the <header> element but can also be used on its own.

<nav> instead of <div id="nav>

```
<header>
   <nav>
      <ul>
         <li><a href="#home">Home</a></li>
         <li><a href="#about">About</a></li>
      </ul>
   </nav>
</header>
```

Main and Footer

The element <main> is used to encapsulate the dominant content within a webpage. By using <main> as opposed to a element, screen readers and web browsers are better able to identify that whatever is inside of the tag is the bulk of the content.

```
<main>
   <header>
      <h1>Types of Sports</h1>
```

```
  </header>
  <article>
    <h3>Baseball</h3>
    <p>
      The first game of baseball was played in Cooperstown, New York in the summer of 1839.
    </p>
  </article>
</main>
```

As we see above, <main> contains an <article> and <header> tag with child elements that hold the most important information related to the page.

The content at the bottom of the subject information is known as the footer, indicated by the <footer> element. The footer contains information such as:

- Contact information
- Copyright information
- Terms of use
- Site Map
- Reference to top of page links

```
<footer>
  <p>Email me at Codey@Codecademy.com</p>
</footer>
```

Section and Article

<section> defines elements in a document, such as chapters, headings, or any other area of the document with the same theme. For example, content with the same theme such as articles about cricket can go under a single <section>.

The <article> element holds content that makes sense on its own. <article> can hold content such as articles, blogs, comments, magazines, etc. An <article> tag would help someone using a screen reader understand where the article content (that might contain a combination of text, images, audio, etc.) begins and ends.

```
<section>
  <h2>Fun Facts About Cricket</h2>
  <article>
    <p>A single match of cricket can last up to 5 days.</p>
  </article>
</section>
```

Aside

The <aside> element is used to mark additional information that can enhance another element but isn't required in order to understand the main content.

Bibliographies
Endnotes
Comments
Pull quotes
Editorial sidebars
Additional information

```
<article>
  <p>The first World Series was played between Pittsburgh and Boston in 1903 and was a nine-game series.</p>
</article>
<aside>
  <p>
    Babe Ruth once stated, "Heroes get remembered, but legends never die."
  </p>
</aside>
```

Figure

<figure> is an element used to encapsulate media such as an image, illustration, diagram, code snippet, etc,

```
<figure>
   <img src="overwatch.jpg">
   <figcaption>This picture shows characters from Overwatch.</figcaption>
</figure>
```

audio

```
<audio>
   <source src="iAmAnAudioFile.mp3" type="audio/mp3">
</audio>
```

Video and embed

- controls: When added in, a play/pause button will be added onto the video along with volume control and a fullscreen option.
- autoplay: The attribute which results in a video automatically playing as soon as the page is loaded.
- loop: This attribute results in the video continuously playing on repeat.

```
<video src="coding.mp4" controls>Video not supported</video>
```

```
<embed src="download.gif"/>
```