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How the Web works

How the Web works

The Internet

- The Internet is a network of connected computers.
- No company owns
- a cooperative effort governed by a system of standards and rules
- purpose of connecting computers together to share information
- Eg/ Email, File Transfer (FTP)

How the Web works

The Web

- World Wide Web, “www” in site addresses
- is just one of the ways information can be shared over the Internet.
- It is unique in that it allows documents to be linked to one another
- using hypertext links— forming a huge “web” of connected information.
- uses a protocol called HTTP (HyperText Transfer Protocol).

How the Web works

Server

- computers that make up the Internet
- Because they "serve up" documents upon request, these computers are known as servers.
- The role of server software is to wait for a request for information, then retrieve and send that information back as quickly as possible.
- Web servers are also called "HTTP servers."

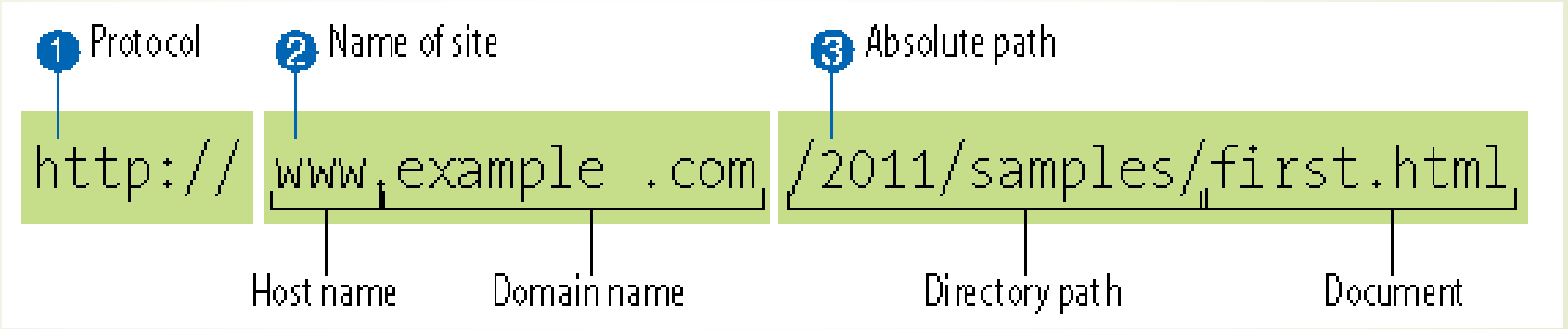
How the Web works

Browser

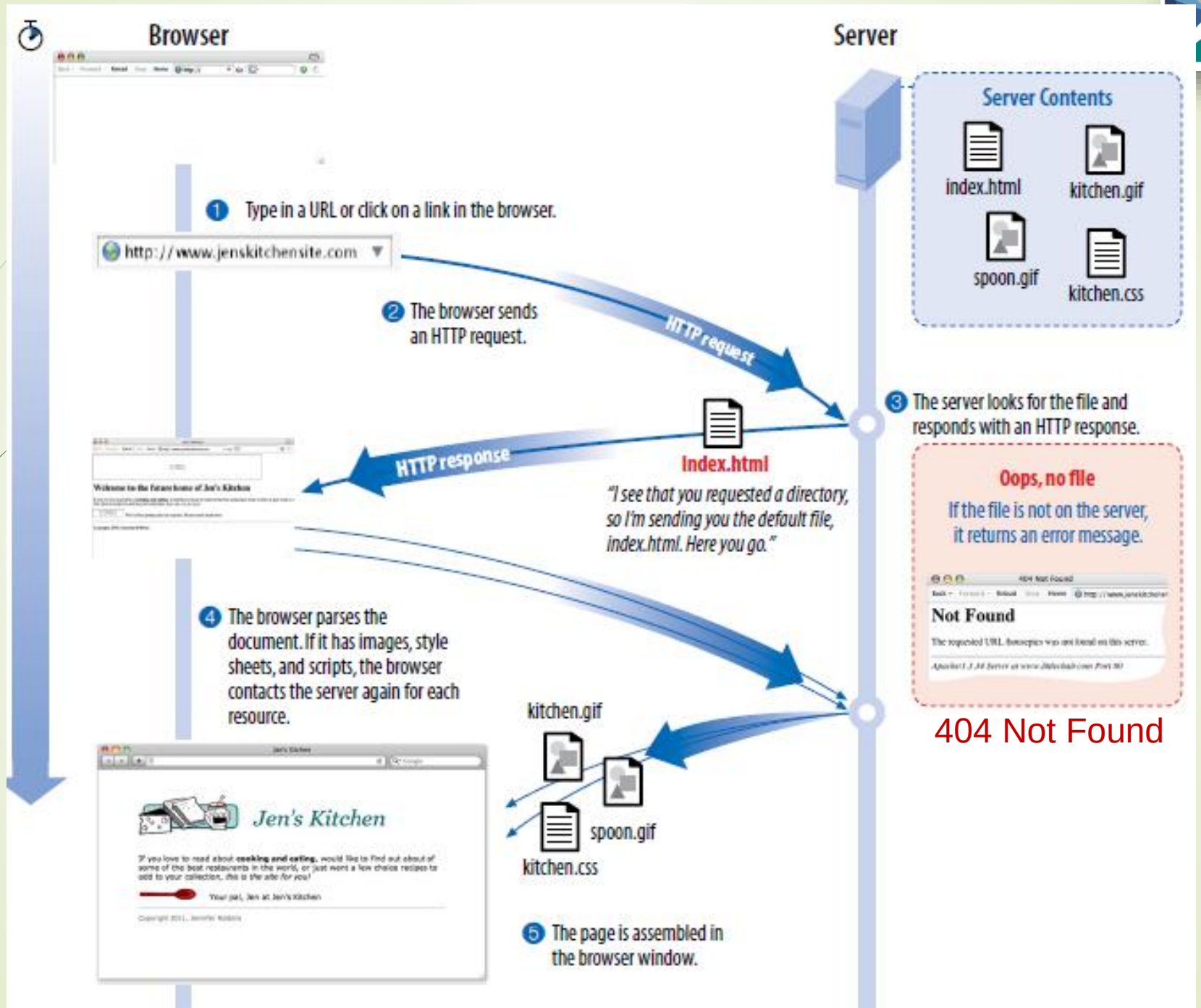
- The software that does the requesting is called the client.
- desktop browsers, mobile browsers, and other assistive technologies (such as screen readers) as clients to access documents on the Web
- The server returns the documents for the browser to display.
- Eg/ Internet Explorer for Windows, Chrome, Firefox, and Safari, with Opera
- The requests and responses are handled via the HTTP protocol
- HTTP can be used to transfer images, movies, audio files, data, scripts

Web Page Addresses (URLs)

- Uniform Resource Locator



How browsers display web pages



Exercise

- Go to a simple web page and view source page
  - ✓ www.learningwebdesign.com/4e/materials/chapter02/kitchen.html
  - ✓ right click on the page and click “view page source”

Devices


THIS IS NOT
THE WEB.

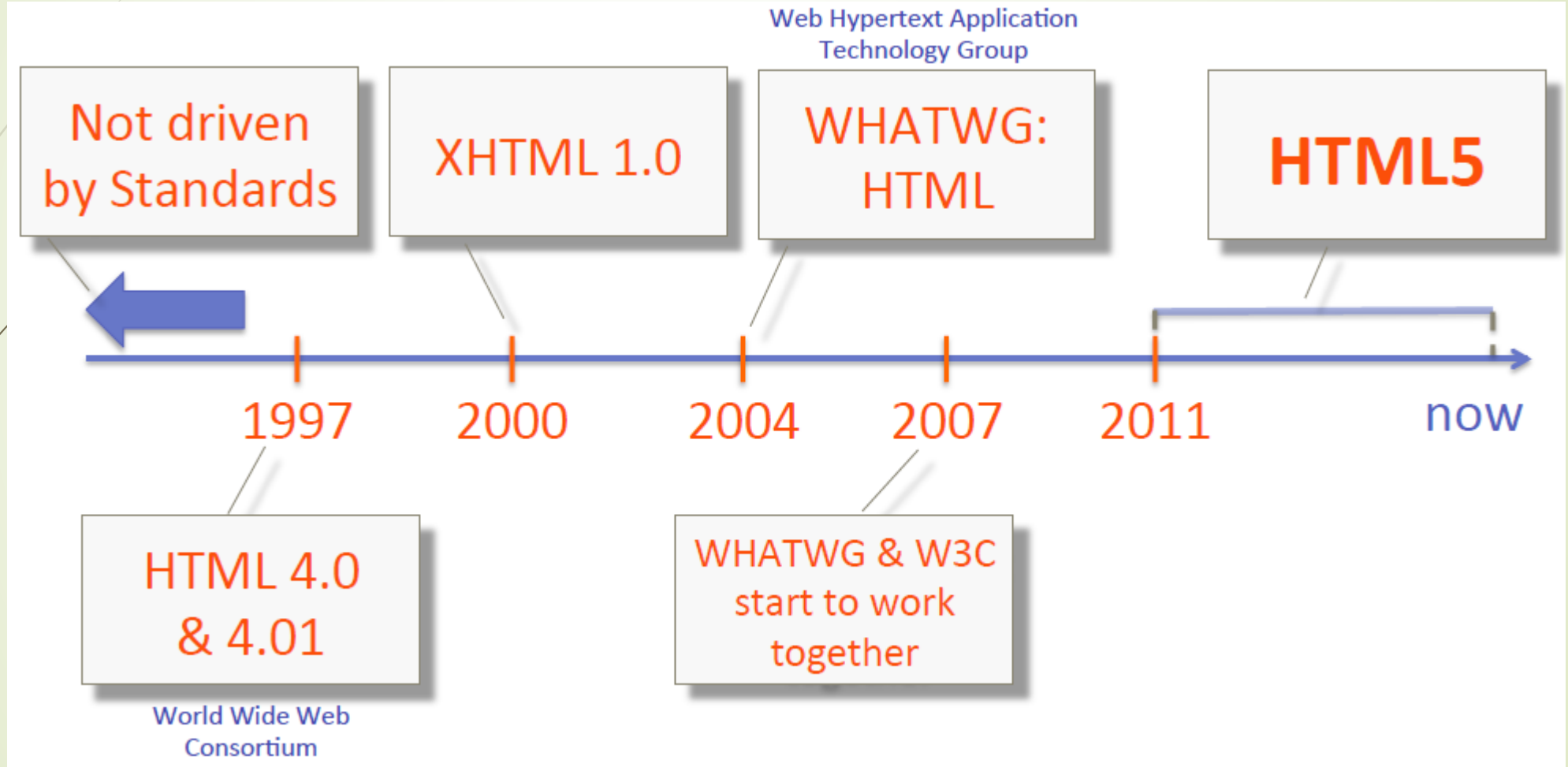

THIS IS THE WEB.
WEB
WEB
WEB
WEB
WEB
WEB
WEB
WEB
WEB
WEB
WEB


THIS WILL BE THE WEB.
WEB
WEB
WEB
WEB

Responsive Web Design

- strategy for providing custom layouts to devices based on the size of the viewport (browser window).
- serve a single HTML document to all devices
- Apply different style sheets based on the screen size in order to provide the most optimized layout for that device

History of HTML



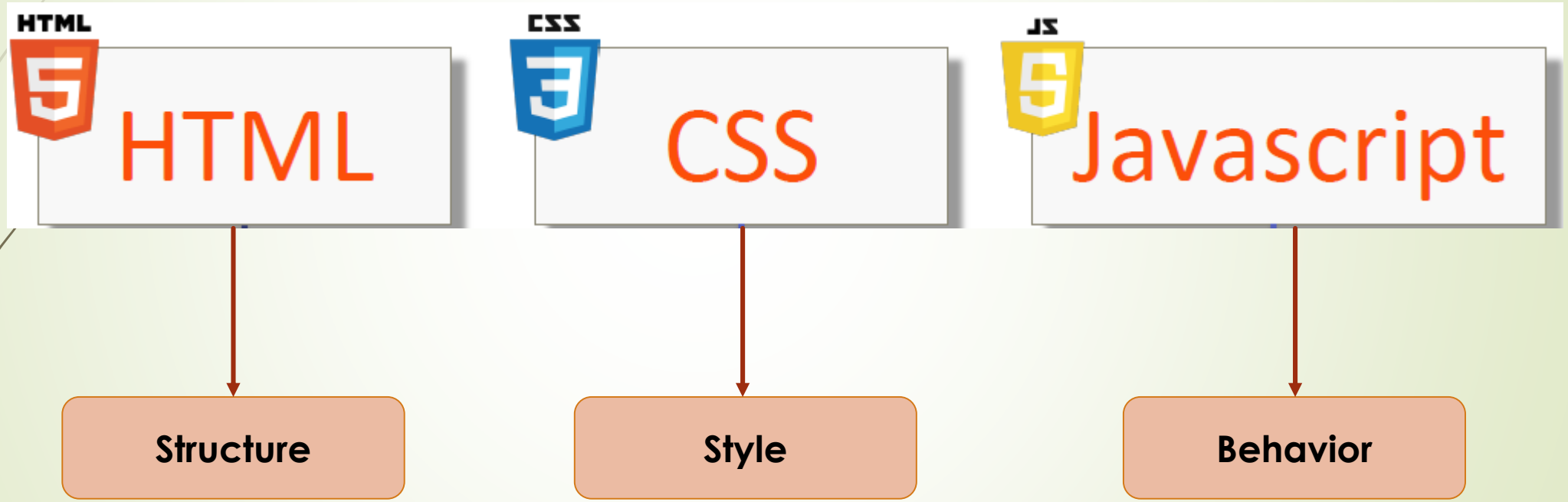
- created by ***Sir Tim Berners-Lee*** in late ***1991*** but was not released officially
- published in 1995 as HTML 2.0

Sticking with the Standards

- World Wide Web Consortium (W3C)
- primary tool for ensuring web site is as consistent as possible on all standards-compliant browsers (that's approximately 99% of browsers in current use)

What is HTML?

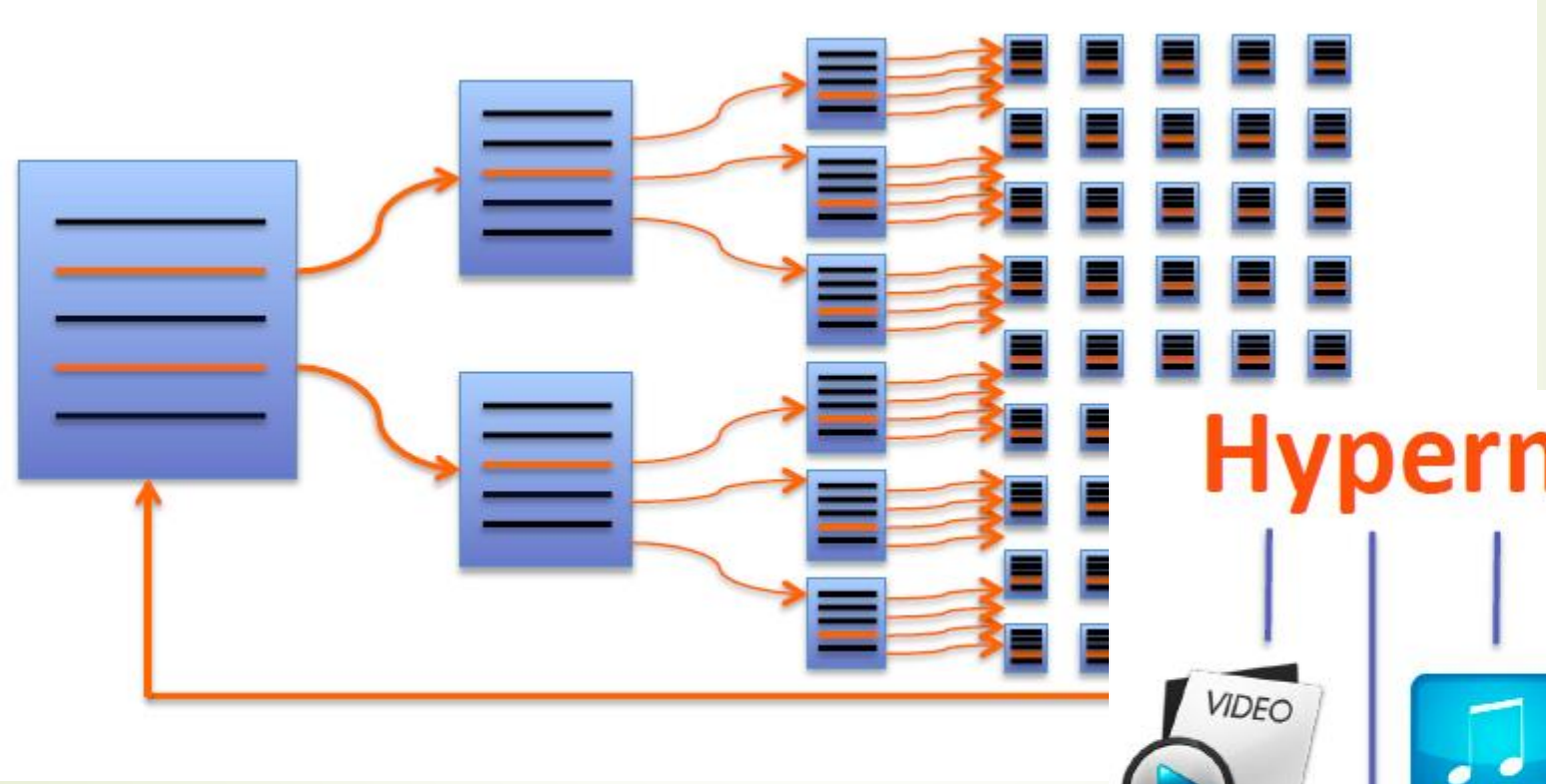
Technologies that drive the Web

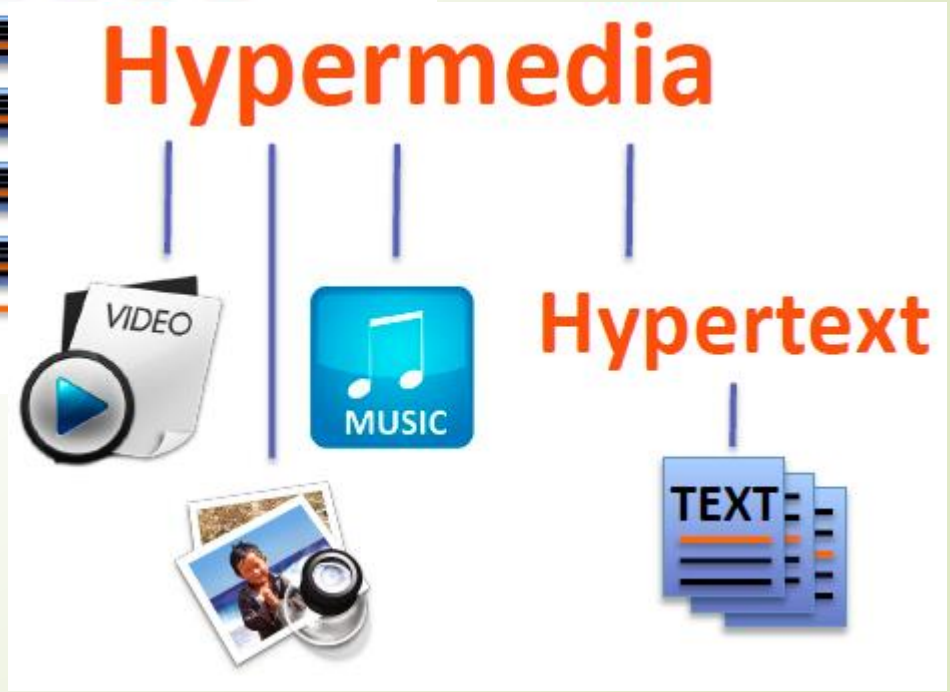


HTML

- HyperText
- Markup
- Language

HyperText





Markup

```
<!doctype html>
<html>
<head>
  <title>Why I Love This Course</title>
</head>
<body> [...]
</body>
</html>
```

content

Language

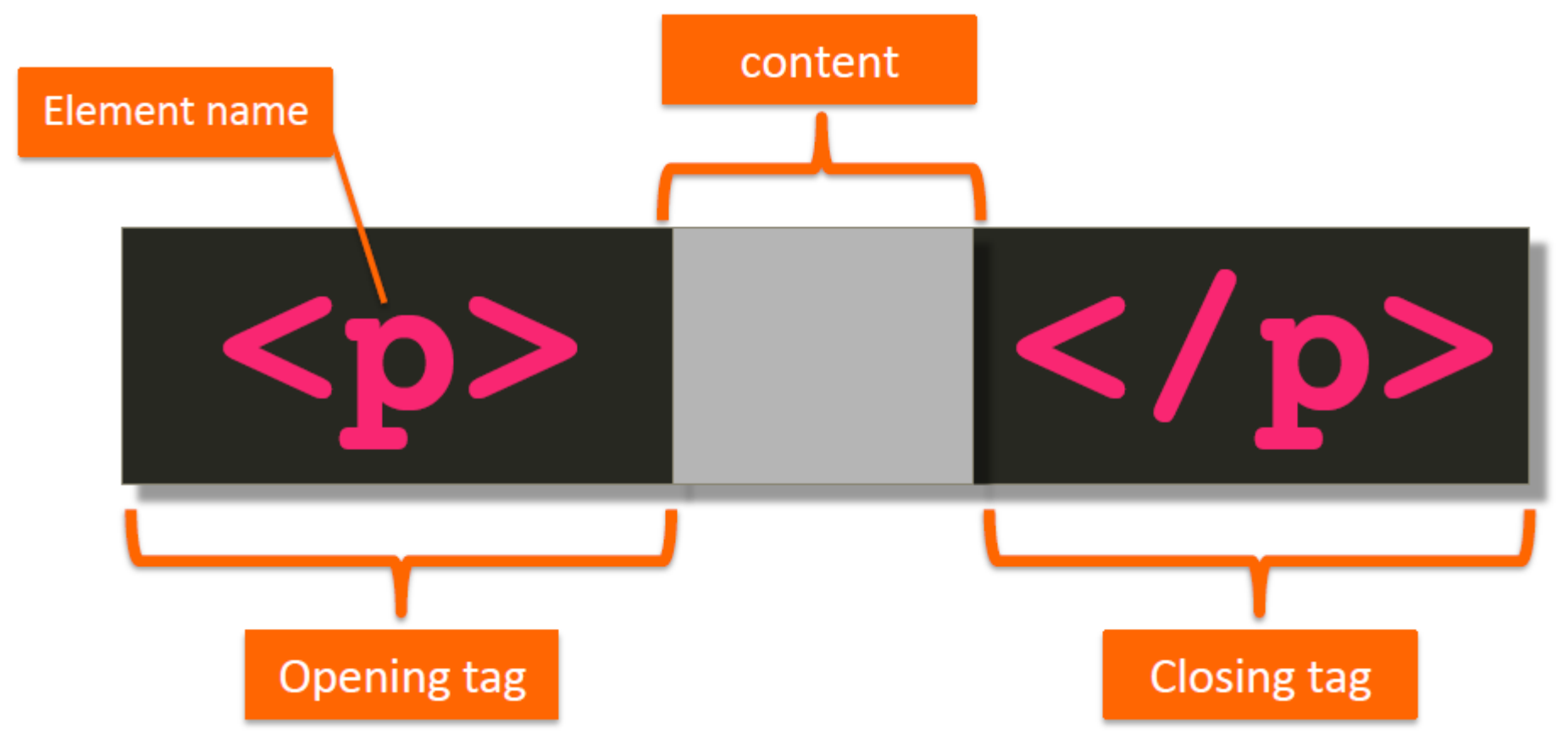
```
<h1>
  <div>Hello World!</h1>
</div>
```

```
<h1>
  <div>Hello World!</div>
</h1>
```

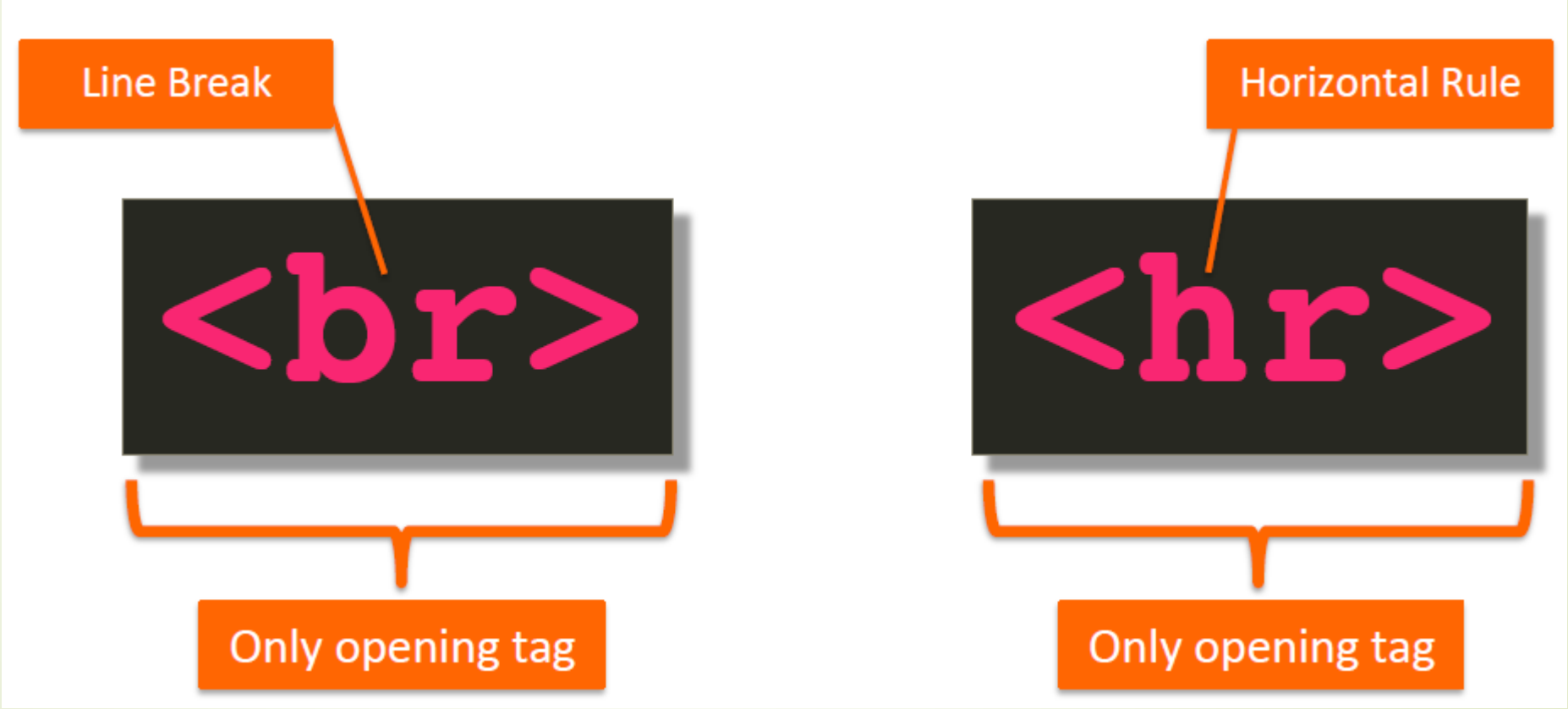
Anatomy of an HTML Tag

- Opening and closing tag
- Attributes
- Using double and single quotes
- How to specify tag without any content

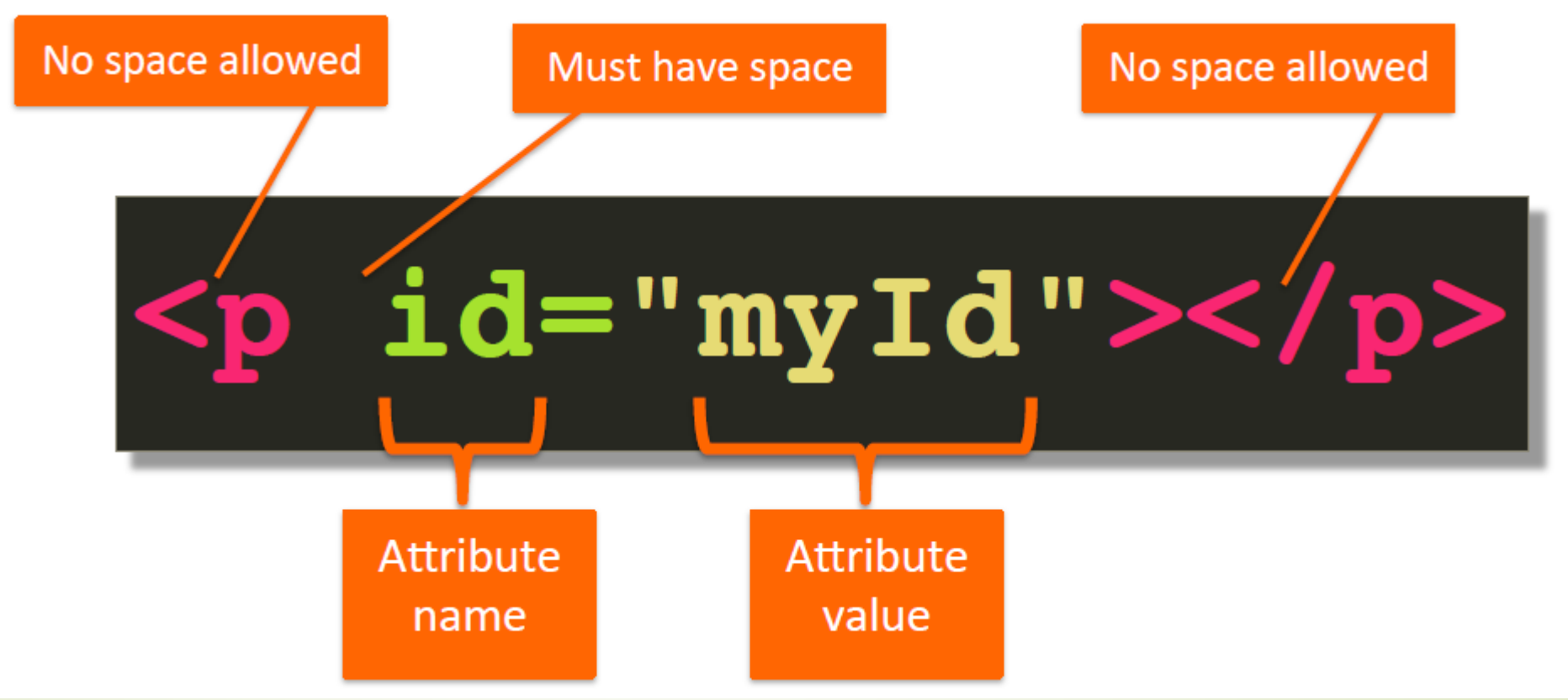
Anatomy of an HTML Tag



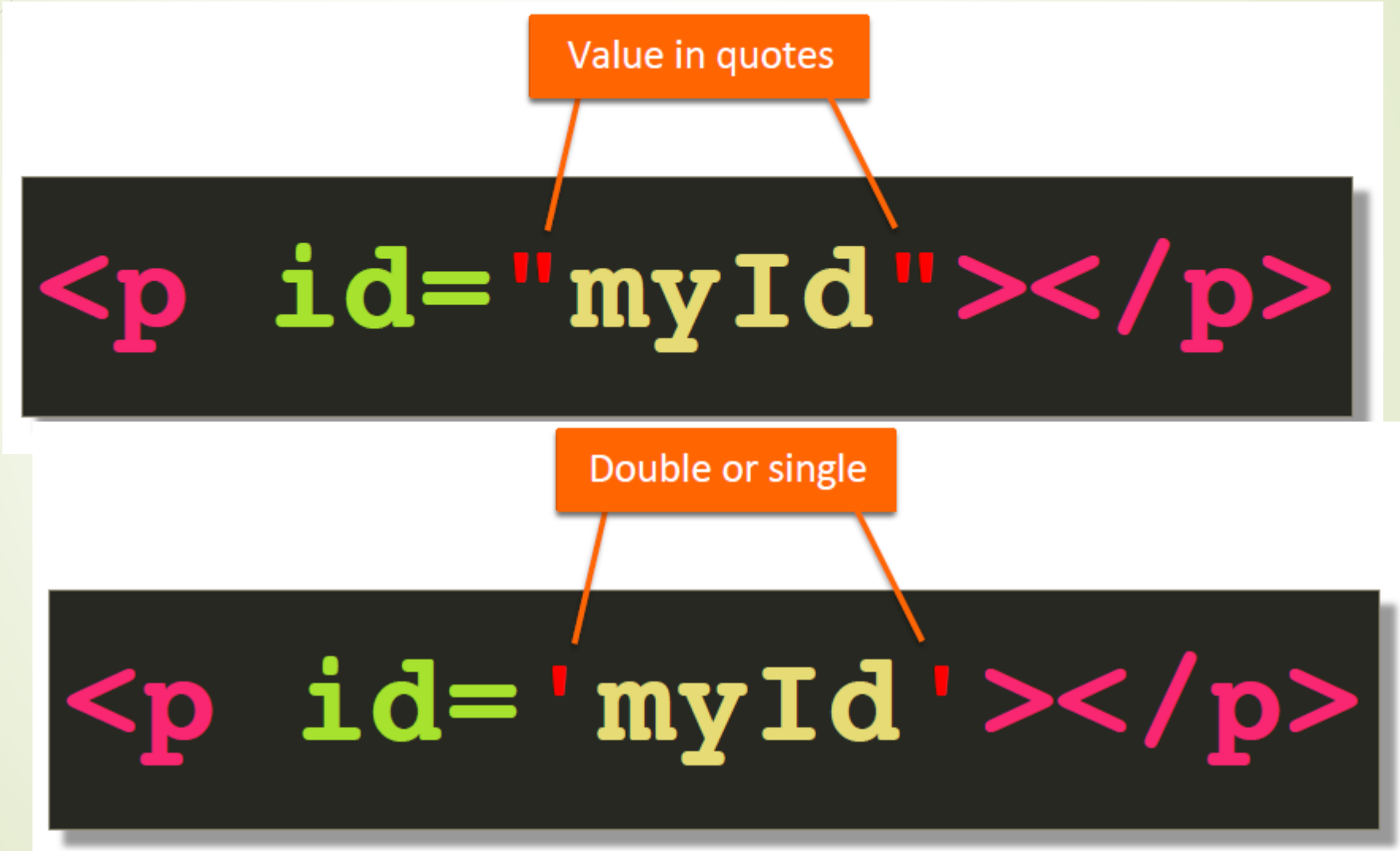
Anatomy of an HTML Tag



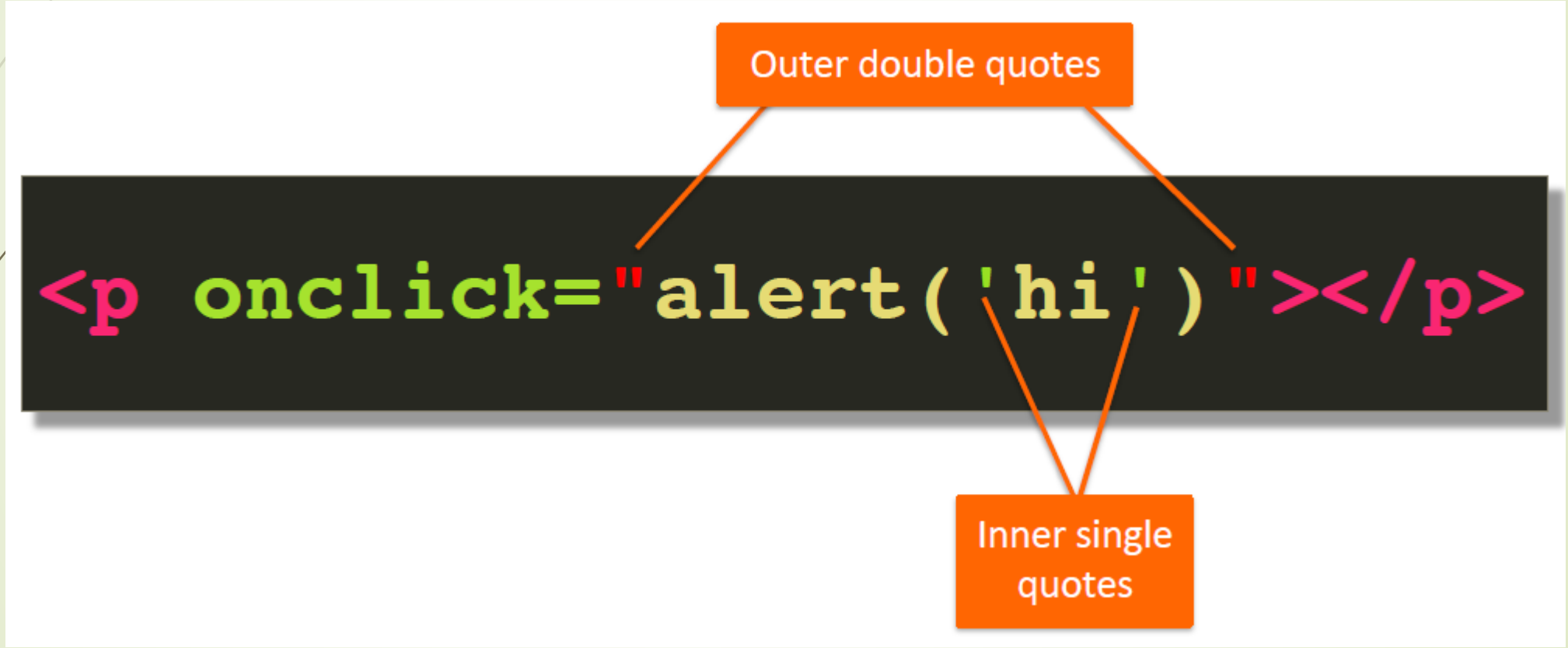
Anatomy of an HTML Tag



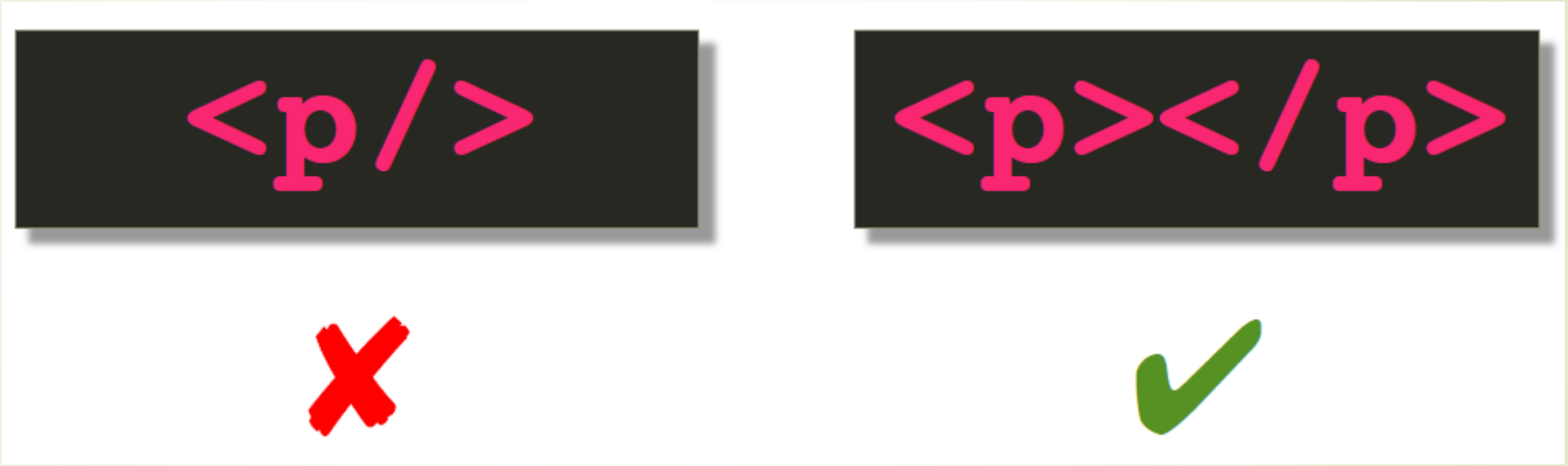
Anatomy of an HTML Tag



Anatomy of an HTML Tag



Anatomy of an HTML Tag



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Creating a simple page

Five steps for the basics of page production

exercise1 | Entering Content

Save as
"**blackgoose.html**"

Naming Conventions

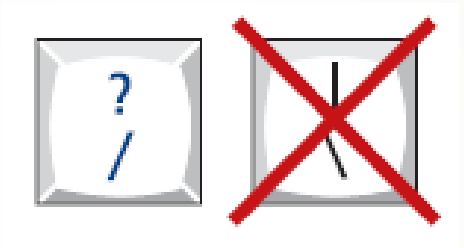
- Use proper suffixes for your files
  - ✓ .html, .png, .jpg
- Never use character spaces within filenames
  - ✓ use an underline character or hyphen to visually separate words within filenames, such as *robbins_bio.html* or *robbins-bio.html*
- Avoid special characters
  - ✓ **?**, **%**, **#**, **/**, **:**, **;**, **•**, etc. Limit filenames to letters, numbers, underscores, hyphens, and periods
- Keep filenames short
  - ✓ If the file long, multiword name, you can separate words with hyphens, such as *a-long-document-title.html*, to improve readability.
- Self-imposed conventions
  - ✓ helpful to develop a consistent naming scheme for huge sites.

What Browsers Ignore

- Multiple (white) spaces.
- Line breaks (carriage returns)
- Tabs
- Unrecognized markup
- Text in comments, **<!--** and **-->**

Slash vs. Backslash

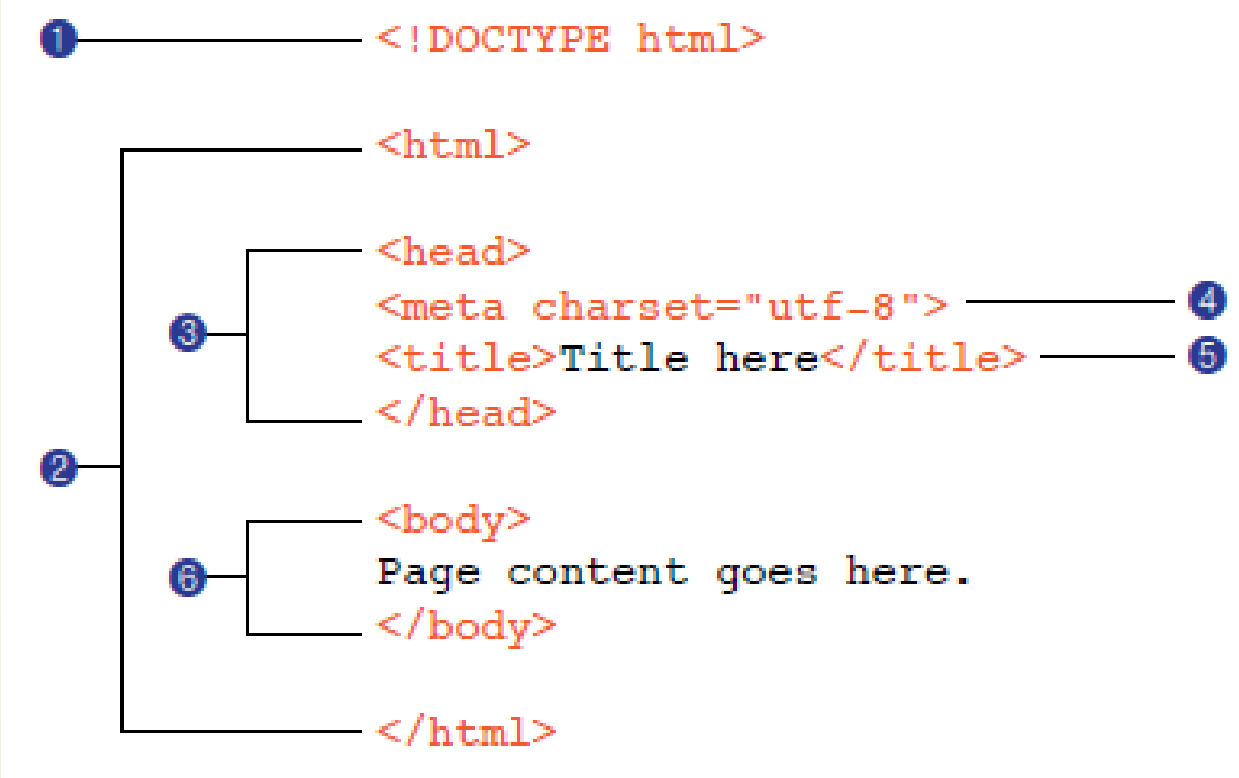
- HTML tags and URLs use the slash character (/).



Capitalization

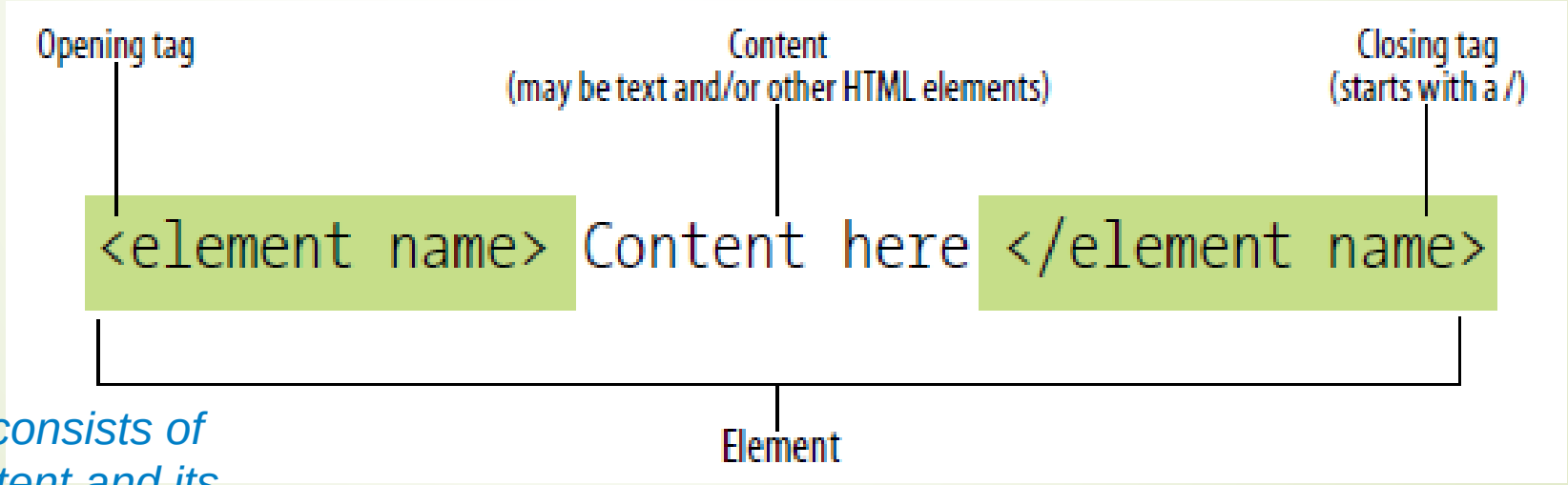
- In HTML, the capitalization of element names is **not** important.
- <img>, <Img>, and <IMG> are all the same

The minimal structure of an HTML document



Document Structure

- A tag consists of the element name (usually an abbreviation of a longer descriptive name) within angle brackets (**< >**).
- The browser knows that any text within brackets is hidden and not displayed in the browser window.



An element consists of both the content and its markup.

exercise1 | Adding Basic Structure

- Start by adding the HTML5 DOCTYPE declaration
- Put the entire document in an HTML root element
- create the document head that contains the title for the page
- Add information about the character encoding and title
- define the body of the document

```
<!DOCTYPE html>
<html>

<head>
<meta charset ="utf-8">
<title>Black Goose Bistro</title>
</head>

<body>
Black Goose Bistro

The Restaurant
The Black Goose Bistro offers casual lunch and dinner fare in
a hip atmosphere. The menu changes regularly to highlight the
freshest ingredients.

Catering Services
You have fun... we'll do the cooking. Black Goose catering can
handle events from snacks for bridge club to elegant corporate
fundraisers.
Location and Hours
Seekonk, Massachusetts;
Monday through Thursday 11am to 9pm, Friday and Saturday, 11am to
midnight
</body>

</html>
```

exercise1 | Identify Text Elements

- Main heading →"Black Goose Bistro" **<h1></h1>**
- Sub headings → "The Restaurant", "Catering", "Location and Hour" **<h2></h2>**
- Paragraphs → ** **
- emphasis element → "we'll handle the cooking" ****

exercise1 | Add an Image

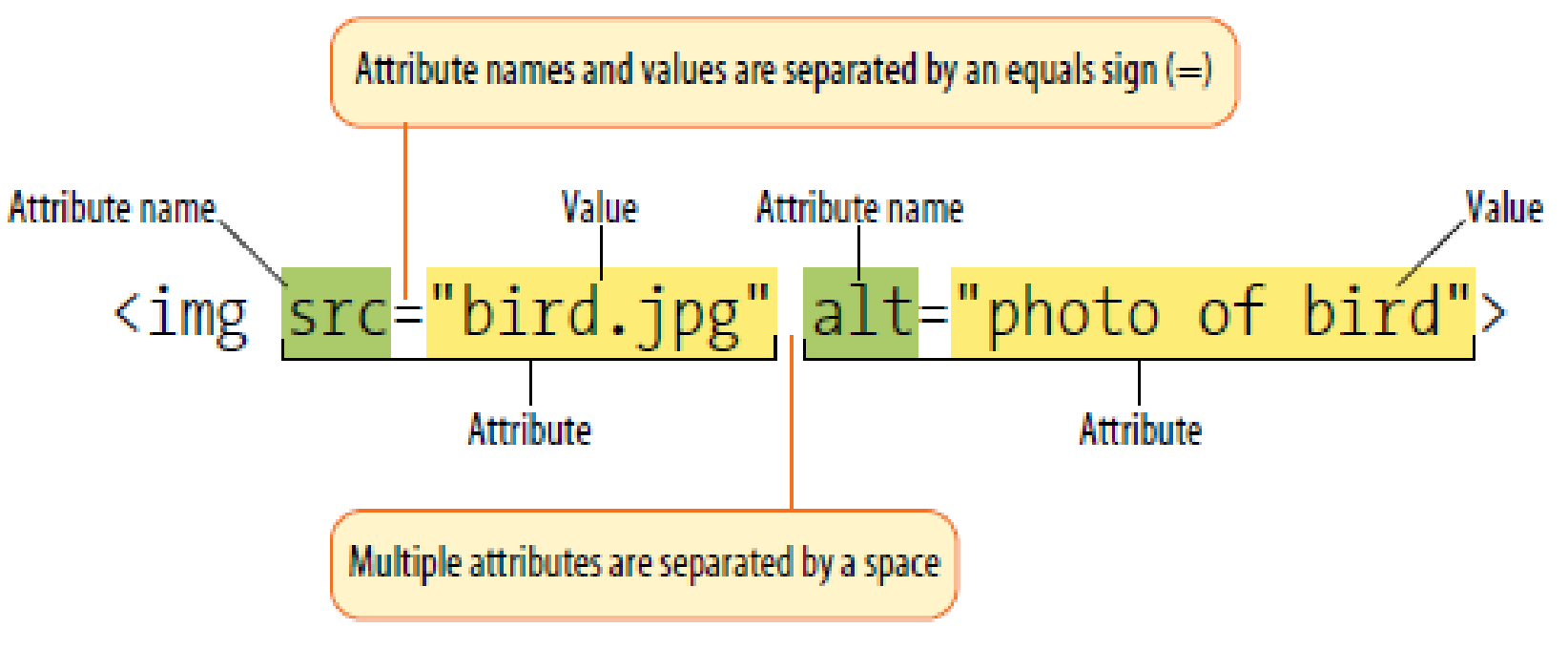
- <h1>
  <img src="blackgoose.png" alt="Black Goose logo">
  Black Goose Bistro
  </h1>
- **src** attribute – the name of the image file that should be inserted
- **alt** attribute – text that should be displayed if the image is not available
- make sure that the image file, *blackgoose.png*, is in the same directory as .html file

Empty Elements

- Image element **<img>**
- Line break **
**
- Thematic break **<hr>**
- elements that provide information about a document but don't affect its displayed content **<meta>**

Attributes

- Attributes are instructions that clarify or modify an element.



exercise1 | Change the Look with a Style Sheet

- The **style** element is placed inside the **head** of the document.

```
    <style>

body {
    background-color: #faf2e4;
    margin: 0 15%;
    font-family: sans-serif;
    }

h1 {
    text-align: center;
    font-family: serif;
    font-weight: normal;
    text-transform: uppercase;
    border-bottom: 1px solid #57b1dc;
    margin-top: 30px;
}

h2 {
    color: #d1633c;
    font-size: 1em;
}

    </style>
```

Validating the document

- Documents that are error-free are said to be **valid**.
- Valid documents are more consistent on a variety of browsers, they display more quickly, and they are more accessible.
- W3C offers a free online validator at "*validator.w3.org*"

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HTML Attributes

HTML Attributes

- HTML attributes provide additional information about HTML elements.
- All HTML elements can have **attributes**
- Attributes provide **additional information** about elements
- Attributes are always specified in **the start tag**
- Attributes usually come in name/value pairs like: **name="value"**

Core Attributes

- There are **four** essential attributes which you can implement on almost all HTML elements:

1. id - provides a unique identifier
2. title - gives a recommended title for your element
3. class - is implemented by combining an element through a stylesheet (CSS) and identifying its class element.
4. style - specifying the rules for Cascading Style Sheet (CSS) in the element.

Core Attributes (Examples)

Example:

```
<p id = "para1"> Paragraph 1 in your HTML document.</p>

<p id = "para2"> Paragraph 2 in your HTML document.</p>
```

Example:

```
<h3 title="Welcome to my Journal">Please visit</h3>
```

Example:

```
<p class = "classname1 classname2">This is a sample paragraph text.</p>
```

Example:

```
<p style = "font-family:arial;">An example of style attribute.</p>
```

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Meta tag

HTML Meta Tag

- Meta – data about data
- holds information about other information, but the information is in the form of raw data
- HTML meta tag – provide Metadata of your HTML page.
- do not emerge out on the web page
- seen in the source code of HTML page
- convey to the search engines some information about what the web page is about and what keywords it has.