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CREATING A SIMPLE PAGE

(HTML OVERVIEW)

OVERVIEW

- **How markup works: Elements and attributes**
- **Minimal HTML document structure**
- **Identifying text elements: Block and inline**
- **Troubleshooting and validating HTML**

Content Without Markup

Without HTML markup to describe content structure, text runs together; line breaks are ignored:

Black Goose Bistro

The Restaurant

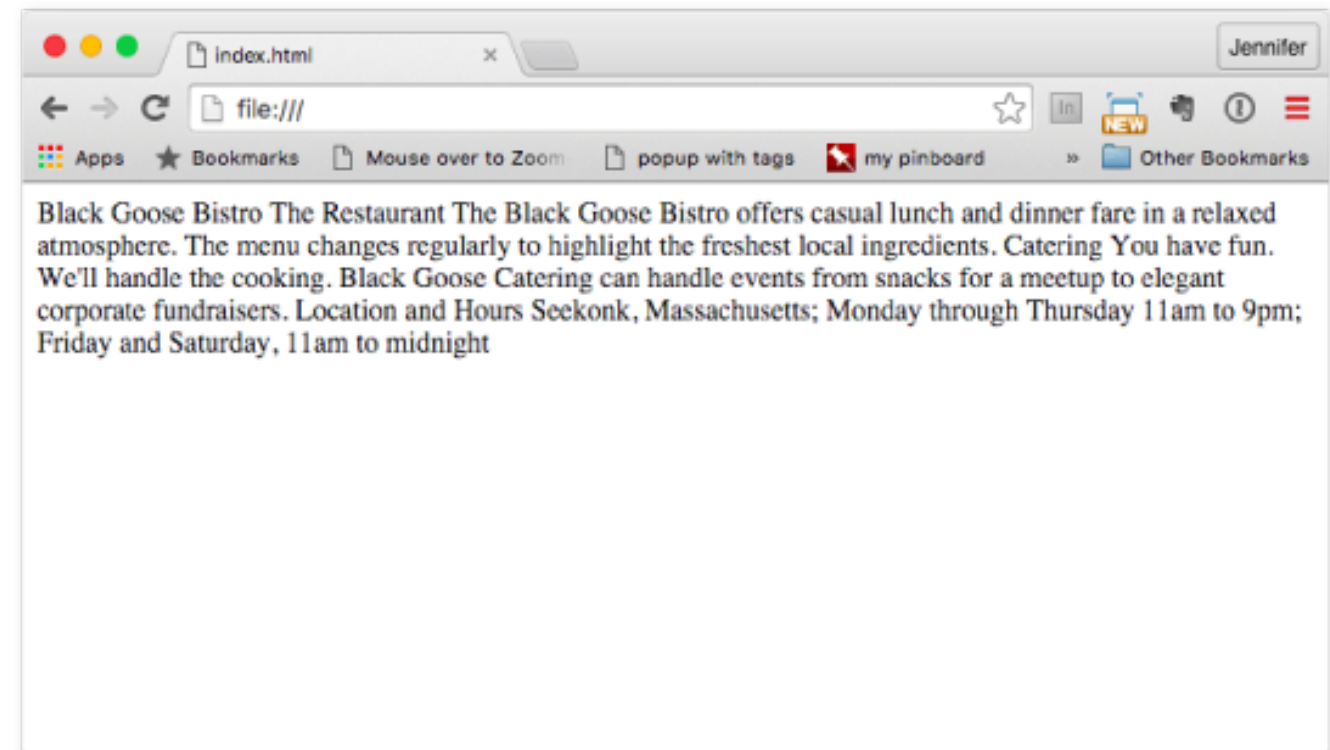
The Black Goose Bistro offers casual lunch and dinner fare in a relaxed atmosphere. The menu changes regularly to highlight the freshest local ingredients.

Catering

You have fun. We'll handle the cooking. Black Goose Catering can handle events from snacks for a meetup to elegant corporate fundraisers.

Location and Hours

Seekonk, Massachusetts;
Monday through Thursday 11am to 9pm; Friday
and Saturday, 11am to midnight



What Browsers Ignore

- Multiple character spaces (white space)
- Line breaks (carriage returns)
- Tabs
- Unrecognized markup

Markup Basics

Text must be marked up meaningfully and accurately (**semantically**) with HTML tags:

- Browsers need markup to display content correctly.
- Markup makes content elements available to scripts and style rules.
- Markup aids search engines.

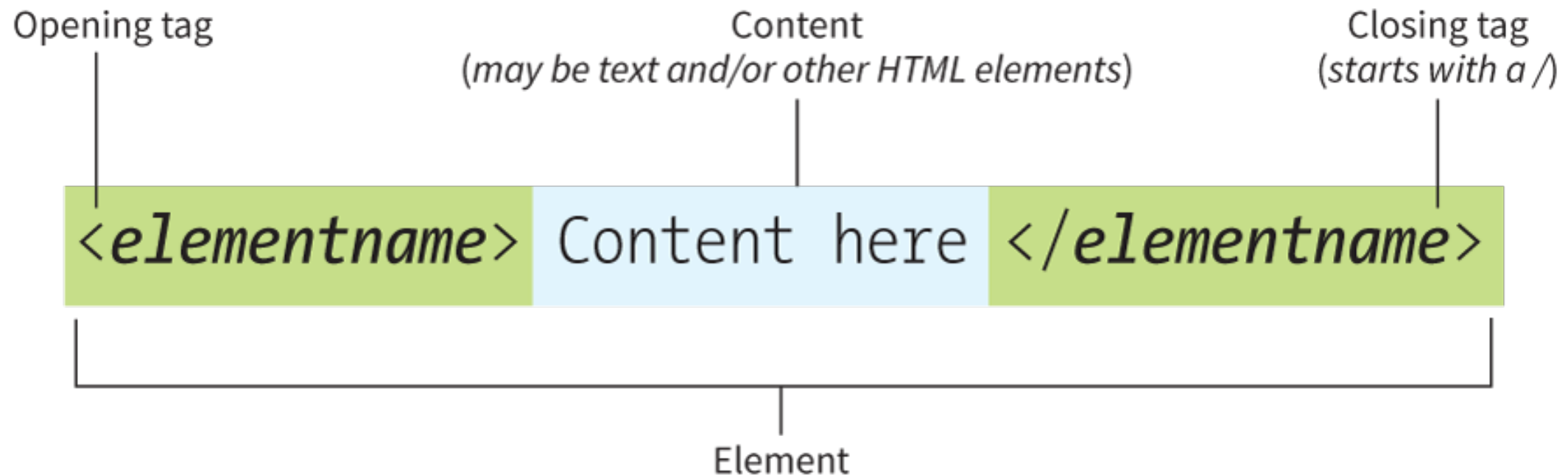
Anatomy of an HTML Element

tag

The element name in angle brackets

element

The content and its markup (start and end tags)



Example:

```
<h1>Black Goose Bistro</h1>
```

Some Elements Are Empty

Some elements have no content and provide a simple directive. They are called **empty elements**:

<element-name>

Example: The **br** element inserts a line break.

`<p>1005 Gravenstein Highway North
Sebastopol, CA 95472</p>`

Attributes

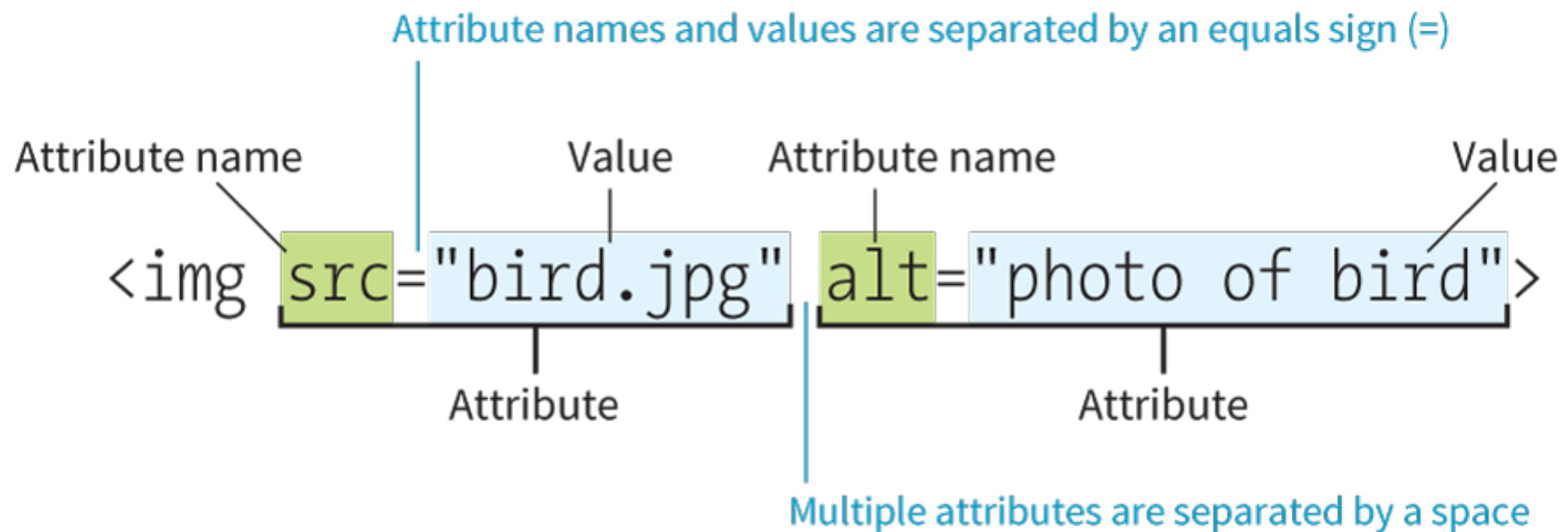
Attributes are instructions that clarify or modify an element. They appear in the opening tag after the element name:

```
<element attribute="value">Content</element>
```

```
<a href="http://oreilly.com">O'Reilly site</a>
```


Attributes (cont'd)

There can be more than one attribute in a tag:



They are separated by spaces and can go in any order.

Attributes (cont'd)

- Most attributes take values, which follow an = sign; some are single descriptive words.
- A value might be a number, word, string of text, URL, or measurement.
- Quotation marks aren't strictly required but are recommended for consistency.
- Single or double quotation marks are okay.
- Attribute names and values are defined in the HTML specification.
- Some attributes are required.

Nesting Elements

Putting elements inside other elements is called **nesting**. Make sure closing tags don't overlap:

```
<div>
  <h1>Headline</h1>
  <p>This is <em>emphasized</em> text.</p>
</div>
```

HTML Comments

To leave a note in an HTML document, mark it up as a **comment**:

```
<!-- start global navigation -->  
<ul>  
...  
</ul>  
<!-- end global navigation  
and begin the main header  
for content page -->
```

Text between `<!--` and `-->` won't display in the browser. Keep in mind that they are still visible in the source.

Minimal Document Structure

It is recommended that HTML documents have the following minimal structure:

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Title here</title>
  </head>
  <body>
    <!-- Page content goes here.-->
  </body>
</html>
```

Minimal Document Structure (cont'd)

The **DOCTYPE declaration** lets browsers know that the document is written according to the HTML5 specification:

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Title here</title>
  </head>
  <body>
    [Page content goes here.]
  </body>
</html>
```

Minimal Document Structure (cont'd)

The **html** element is the **root element** that contains all the elements in the document:

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Title here</title>
  </head>
  <body>
    [Page content goes here.]
  </body>
</html>
```

Minimal Document Structure (cont'd)

The **head** element contains elements that pertain to the document and are not rendered as content, such as **title**, **metadata**, **style sheets**, and **scripts**:

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Title here</title>
  </head>
  <body>
    [Page content goes here.]
  </body>
</html>
```


Minimal Document Structure (cont'd)

meta elements provide document **metadata**. In this case, it says that the document uses an expanded **character set** (UTF-8). It could also provide keywords, author information, publishing status, and more:

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Title here</title>
  </head>
  <body>
    [Page content goes here.]
  </body>
</html>
```

Minimal Document Structure (cont'd)

The **title** element is required. Titles display in the browser tab and bookmark lists, and are used by search engines:

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Title here</title>
  </head>
  <body>
    [Page content goes here.]
  </body>
</html>
```

Minimal Document Structure (cont'd.)

The **body** element contains the content of the document. The content is everything you want to show up in the browser window:

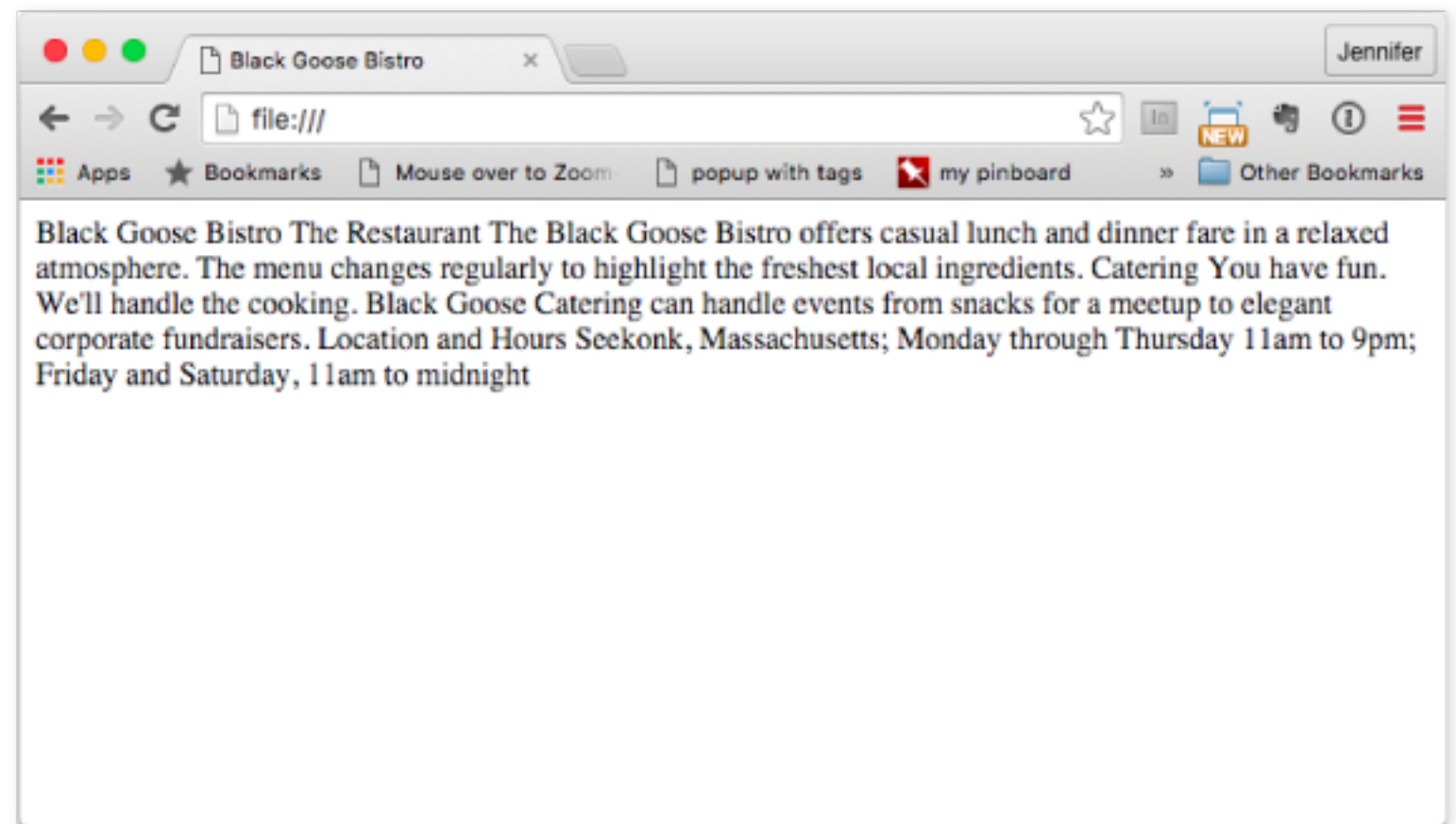
```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Title here</title>
  </head>
  <body>
    [Page content goes here.]
  </body>
</html>
```

A Structured Document

With the document structure in place, there is a title in the browser tab, but the content is still unstructured.

```
<!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 relaxed
atmosphere. The menu changes regularly
to highlight the freshest local
ingredients.
...
Location and Hours
Seekonk, Massachusetts;
Monday through Thursday 11am to 9pm;
Friday and Saturday, 11am to midnight
</body>
</html>
```



Marking Up Content

- The purpose of HTML is to add meaning and structure to the content. This is called **semantic markup**.
- It is **not** intended to describe how the content should look (its presentation).
- The way elements relate to one another forms an outline-like structure called the **DOM (Document Object Model)**.
- The DOM is the foundation on which you apply styles and scripts.

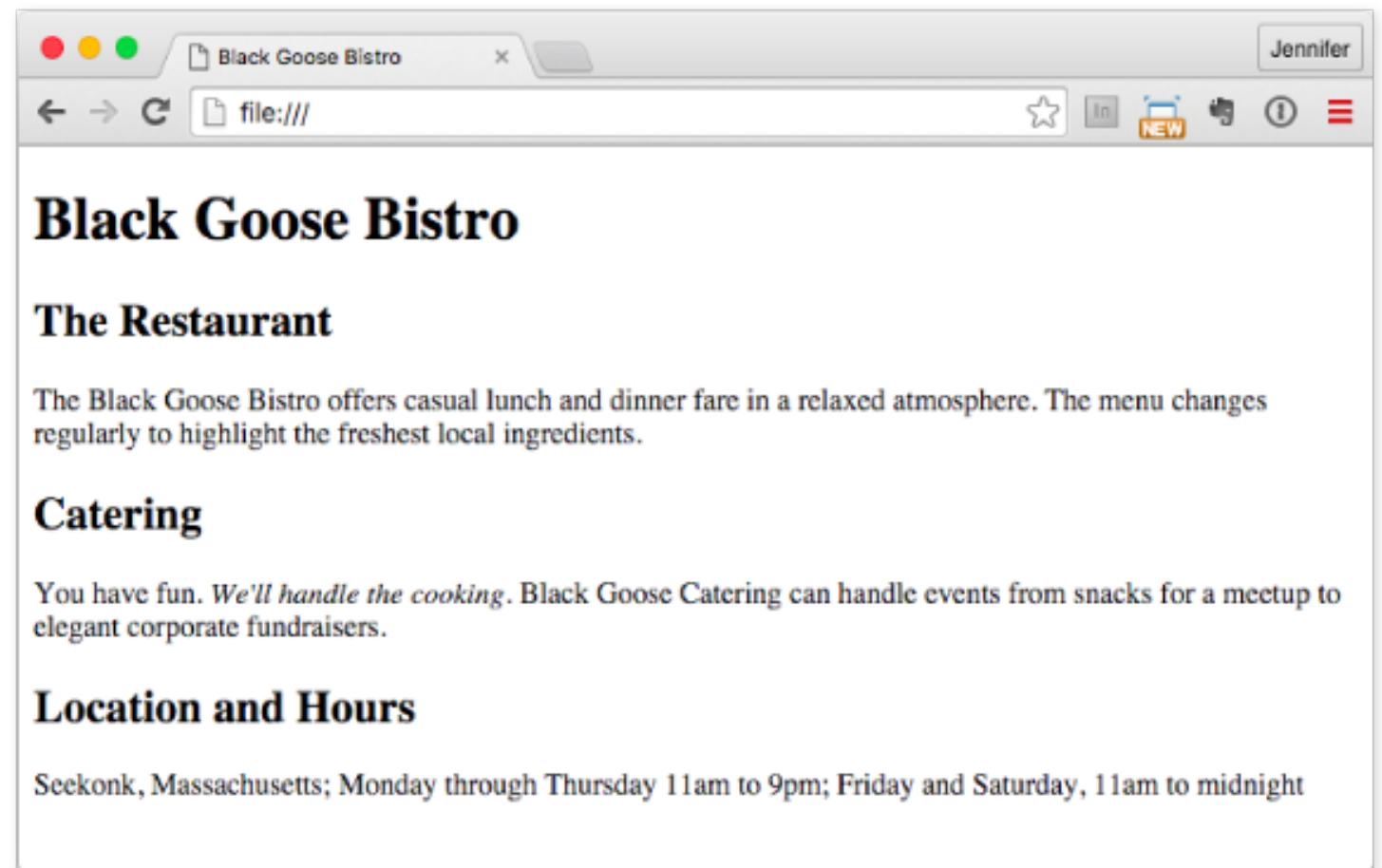
Basic Text Elements

With headings (<h1>) and paragraphs (<p>) identified, the browser can display the content appropriately:

```
...
<body>
<h1>Black Goose Bistro</h1>

<h2>The Restaurant</h2>
<p>The Black Goose Bistro
offers casual lunch and
dinner fare in a relaxed
atmosphere. The menu changes
regularly to highlight the
freshest local
ingredients.</p>

<!--more content-->
</body>
```



Block and Inline Elements

Block elements

Major components of the page that display like rectangular blocks stacking up on the page

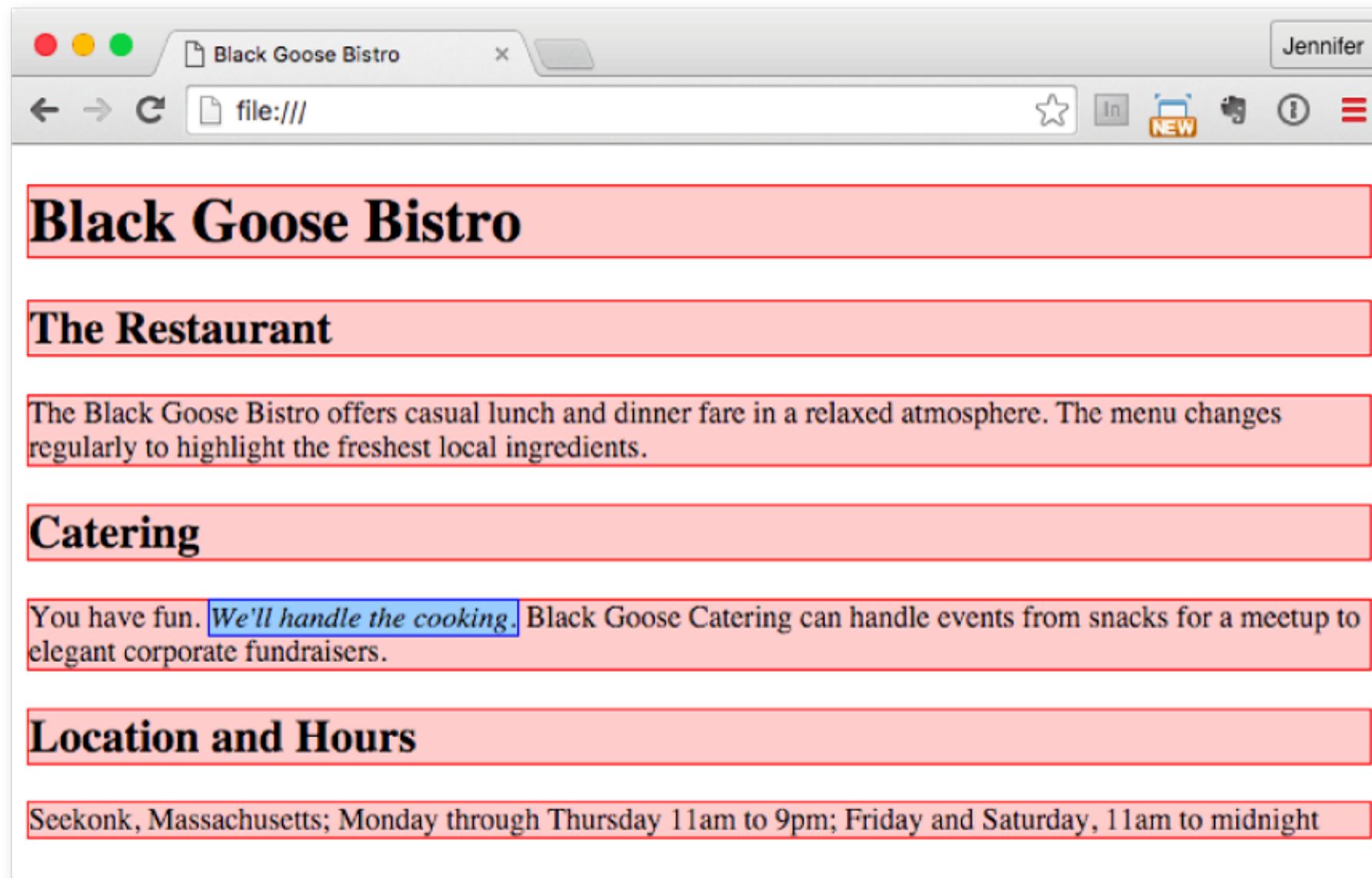
Example: headings, paragraphs, long quotations

Inline elements

Appear within the text flow of a block element

Example: emphasized text, links, abbreviations

Block and Inline Elements (cont'd)



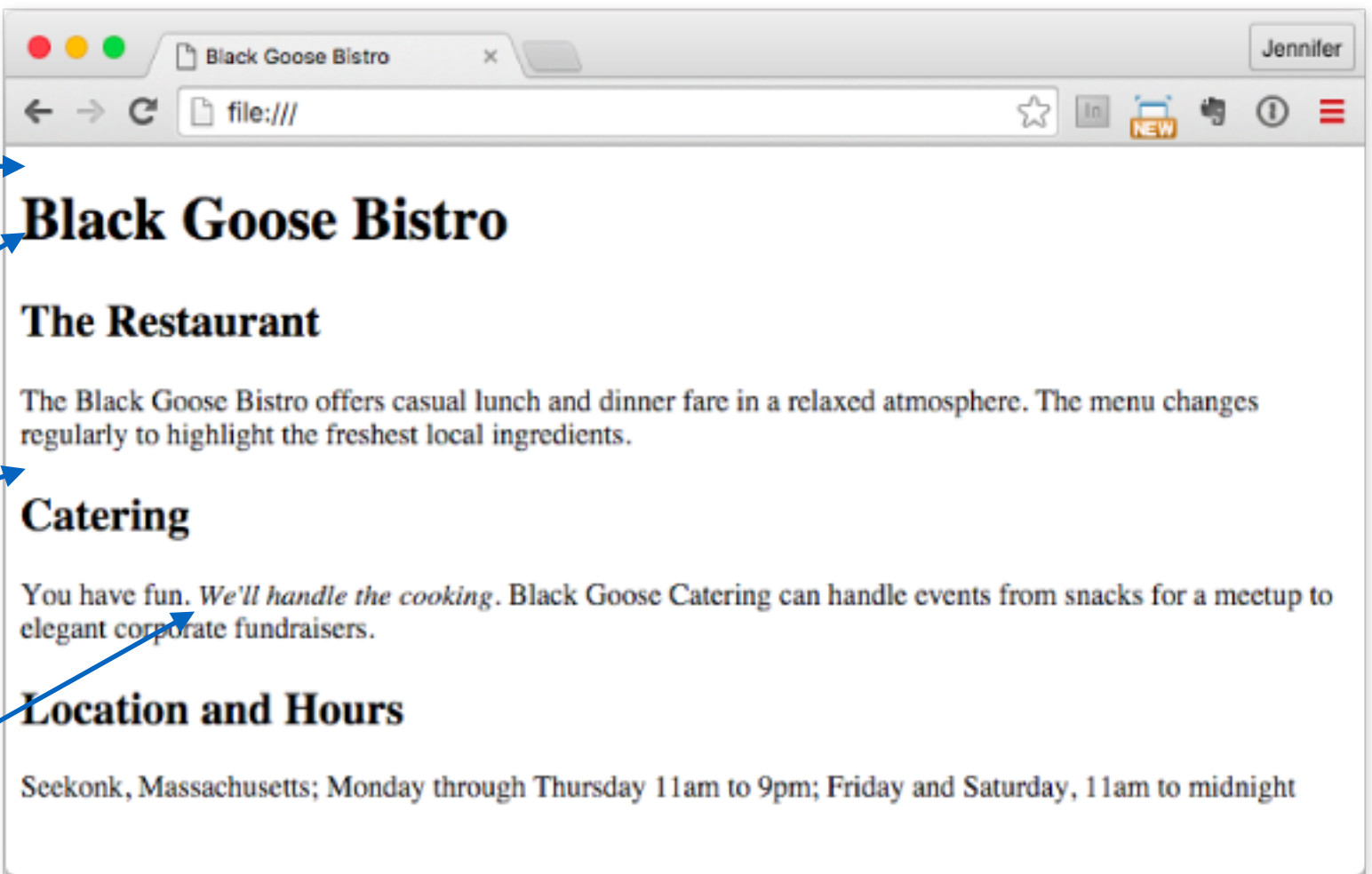
Block elements (headings, paragraphs) outlined in RED.
Inline element (emphasized text) outlined in BLUE.

Style Sheets

- HTML only describes structure, not presentation
- Presentation is controlled by style sheets (CSS)
- Browsers have their own style sheets (user agent style sheets) with default styles for HTML elements
- You can write your own styles to override the default styles

Style Sheets (cont'd)

The browser parsed the markup and used its built-in style sheet to format the text elements in the example:



The screenshot shows a web browser window with the title "Black Goose Bistro" and a single tab. The address bar shows "file:///". The page content includes a main heading "Black Goose Bistro", a subheading "The Restaurant", a paragraph of text, another subheading "Catering", a paragraph of text with italicized words, and a final subheading "Location and Hours" followed by a paragraph of text. Blue arrows point from text labels on the left to specific elements on the page: "Margin around page" points to the top margin, "Headings bold and large" points to the main heading, "Space added above block elements" points to the space above the "Catering" heading, and "Emphasized text in italic font" points to the italicized words in the "Catering" paragraph.

Margin around page

Headings bold and large

Space added above block elements

Emphasized text in italic font

Black Goose Bistro

The Restaurant

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

Catering

You have fun. *We'll handle the cooking.* Black Goose Catering can handle events from snacks for a meetup to elegant corporate fundraisers.

Location and Hours

Seekonk, Massachusetts; Monday through Thursday 11am to 9pm; Friday and Saturday, 11am to midnight

Troubleshooting HTML

Small mistakes and missing characters can cause HTML documents to “break.”

Common mishaps:

- Missing closing tag (or / in closing tag)
- Missing closing bracket in a tag
- Missing quotation mark around an attribute value
- Not saving your document before viewing changes in the browser

Troubleshooting (cont'd)

When a slash is omitted, the browser doesn't know when the element ends:

```
<h2>Catering</h2>  
<p>You have fun. <em>We'll handle the cooking.<em> Black Goose  
Catering can handle events from snacks for a meetup to elegant  
corporate fundraisers.</p>
```



g.

Catering

You have fun. *We'll handle the cooking. Black Goose Catering can handle events from snacks for a meetup to elegant corporate fundraisers.*

Location and Hours

*Seekonk, Massachusetts;
Monday through Thursday 11am to 9pm;
Friday and Saturday, 11am to midnight*

Troubleshooting (cont'd)

A missing end bracket makes the browser interpret all the following characters as part of the tag:

```
<h2The Restaurant</h2>  
<p>The Black Goose Bistro offers casual lunch and dinner fare  
in a relaxed atmosphere. The menu changes regularly to highlight  
the freshest local ingredients.</p>
```

<h2The

Missing subhead

Without the bracket, all the following characters are interpreted as part of the tag, and “The Restaurant” disappears from the page.

BLACK GOOSE

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

Catering

You have fun. *We'll handle the cooking.* Black Goose handles everything from a meetup to elegant corporate fundraisers.

Validating Your Documents

Validate a document to make sure that you have abided by the HTML rules and that there are no errors:

- Include the DOCTYPE declaration
- Indicate the character encoding
- Include required attributes
- Don't use non-standard elements
- Don't mismatch tags
- Nest elements correctly (no overlaps)
- Check for typos and other minor errors

Validating Your Documents

- Use a validator tool like the one at html5.validator.nu.
- Upload a document or provide a link, and the validator returns an error report.

(X)HTML5 validation results for ex4-1 index.html

Validator Input

File Upload no file selected

☐ Show Image Report

☐ Show Source

Group Messages

1. **Error:** The character encoding was not declared. Proceeding using windows-1252.
2. **Error:** Non-space characters found without seeing a doctype first. Expected <!DOCTYPE html>.
From line 1, column 1; to line 11, column 75
Black Goose Bistro↵↵The Restaurant↵↵The Black Goose Bistro offers casual lunch and dinner fare in a relaxed atmosphere. The menu changes regularly to highlight the freshest local ingredients.↵↵Catering↵You have fun. We'll handle the cooking. Black Goose Catering can handle events from snacks for a meetup to elegant corporate fundraisers.↵↵Location and Hours↵Seekonk, Massachusetts;↵Monday through Thursday 11am to 9pm; Friday and Saturday, 11am to midnight↵↵
3. **Error:** Element `head` is missing a required instance of child element `title`.
From line 1, column 1; to line 11, column 75
Black Goose Bistro↵↵The Restaurant↵↵The Black Goose Bistro offers casual lunch and dinner fare in a relaxed atmosphere. The menu changes regularly to highlight the freshest local ingredients.↵↵Catering↵You have fun. We'll handle the cooking. Black Goose Catering can handle events from snacks for a meetup to elegant corporate fundraisers.↵↵Location and Hours↵Seekonk, Massachusetts;↵Monday through Thursday 11am to 9pm; Friday and Saturday, 11am to midnight↵↵
Content model for element `head`:
If the document is an [iframe srcdoc document](#) or if title information is available from a higher-level protocol: Zero or more elements of [metadata content](#), of which no more than one is a [title](#) element and no more than one is a [base](#) element.
Otherwise: One or more elements of [metadata content](#), of which exactly one is a [title](#) element and no more than one is a [base](#) element.
A `head` element's [start tag](#) can be omitted if the element is empty, or if the first thing inside the `head` element is an element.
A `head` element's [end tag](#) can be omitted if the `head` element is not immediately followed by a [space character](#) or a [comment](#).

There were errors. (Tried in the text/html mode.)

The Content-Type was text/html. Used the HTML parser.

Total execution time 2 milliseconds.

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