

Chapter 1

Introduction to web development

Objectives

Applied

1. Load a web page from the Internet or an intranet into a web browser.
2. View the source code for a web page in a web browser.

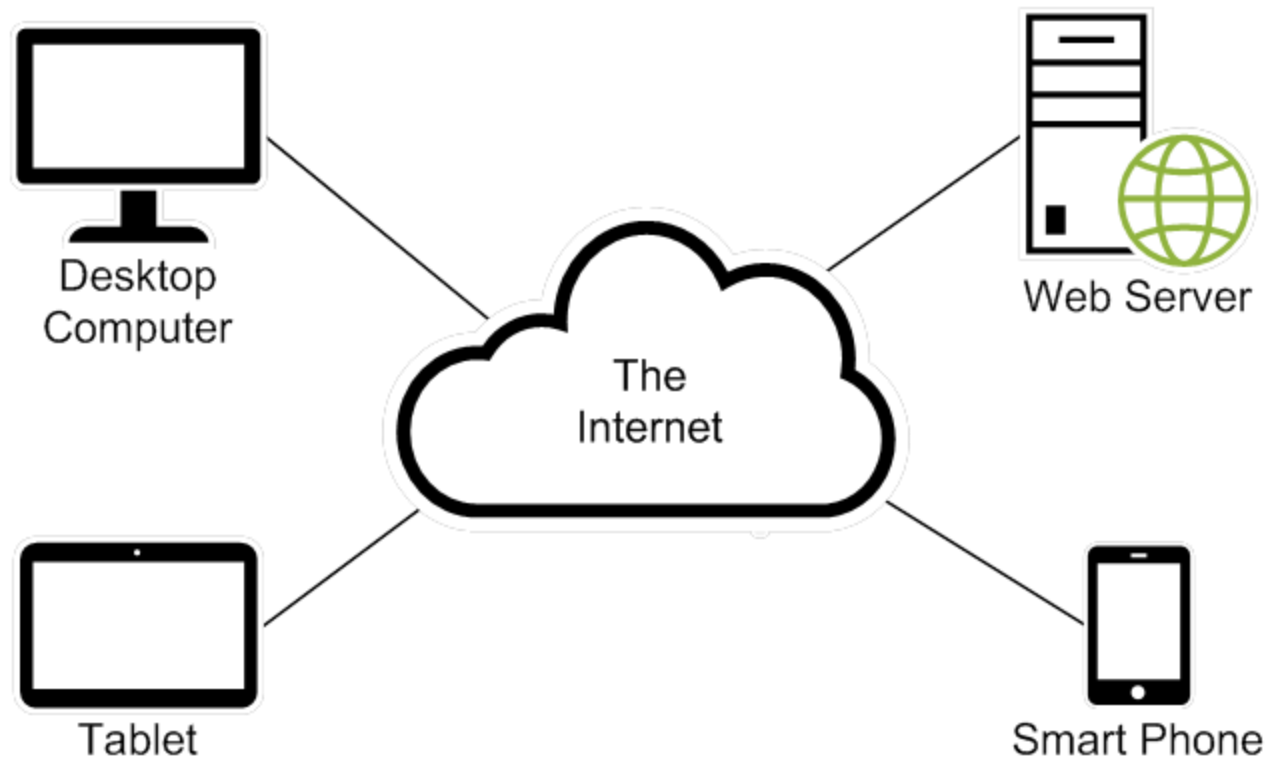
Knowledge

1. Describe the components of a web application.
2. Distinguish between the Internet and an intranet.
3. Describe HTTP requests and responses.
4. Distinguish between the way a web server processes static web pages and dynamic web pages.
5. Name the five major web browsers.
6. Describe the use of JavaScript.
7. Distinguish between HTML and CSS.

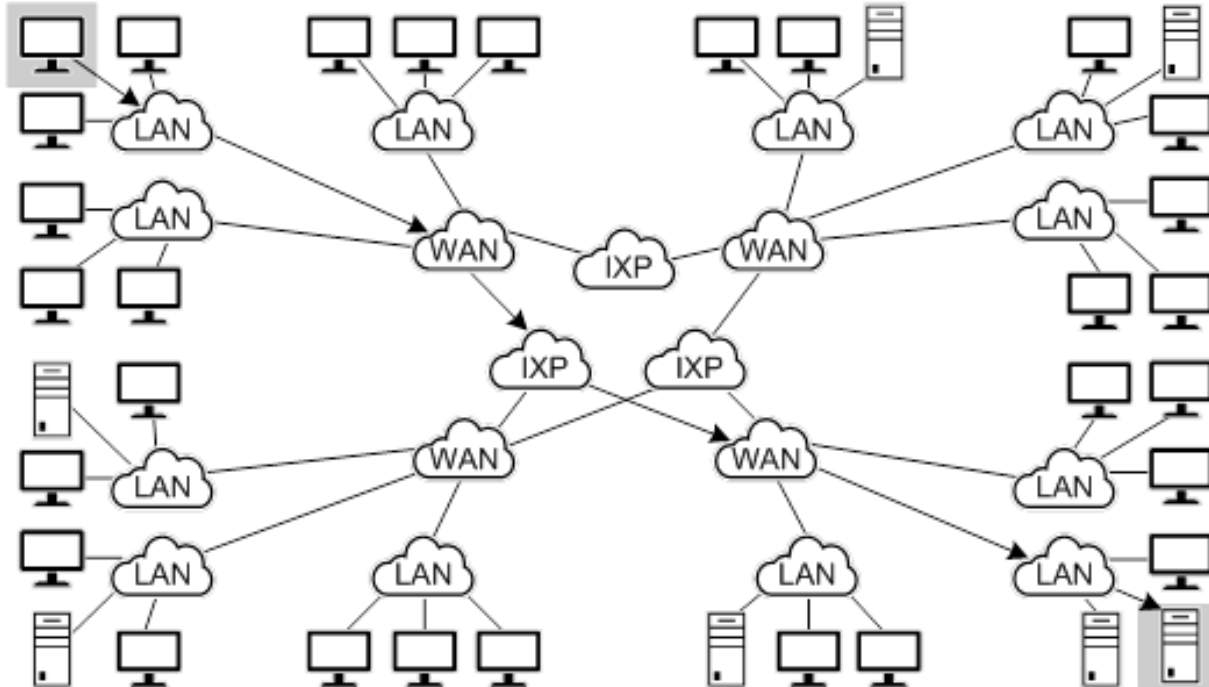
Objectives (cont.)

8. Explain how you deploy a website on the Internet.
9. Describe the components of an HTTP URL.
10. Describe these five web development issues: usability, cross-browser compatibility, user accessibility, search engine optimization, and Responsive Web Design.

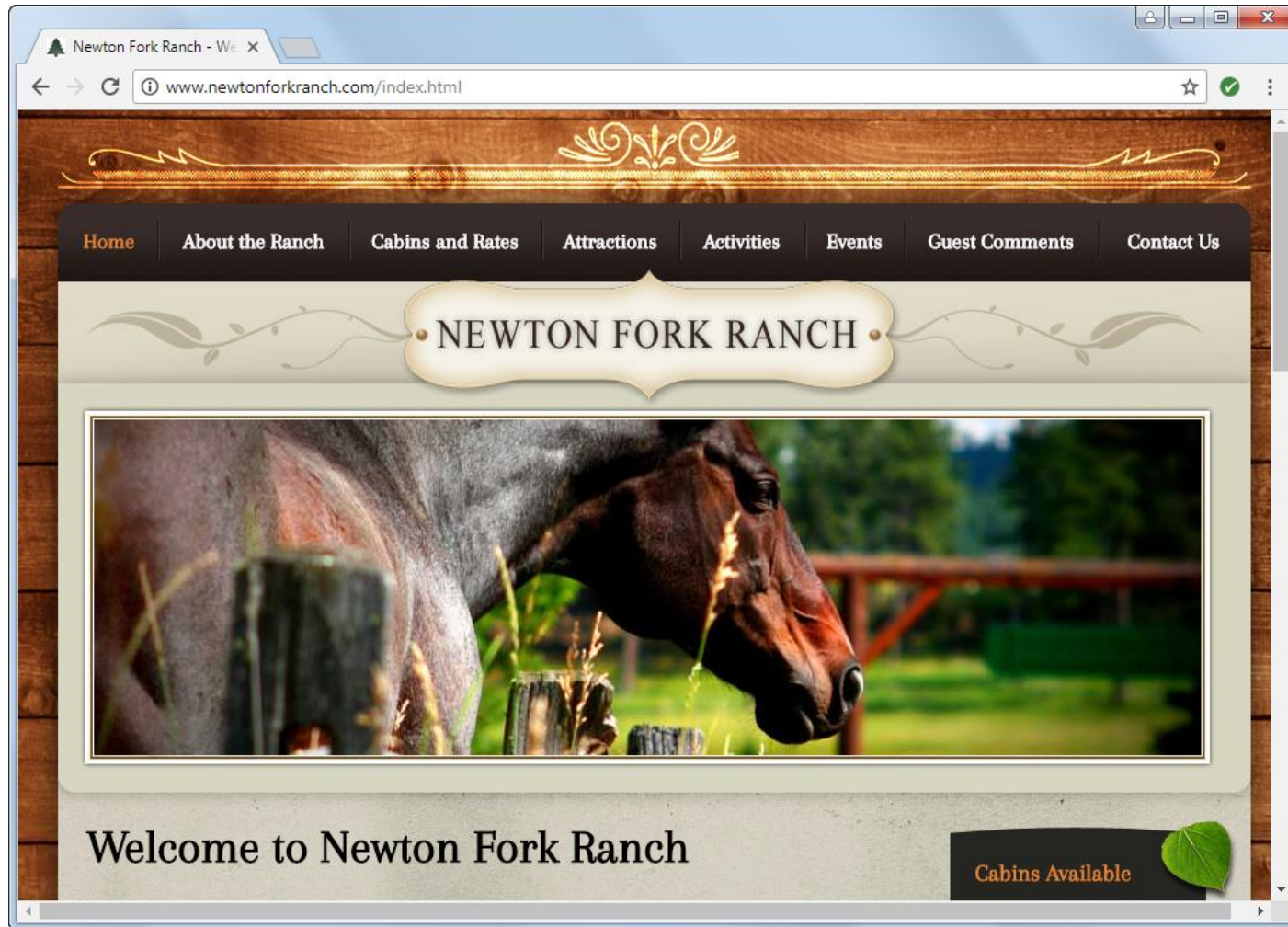
The components of a web application



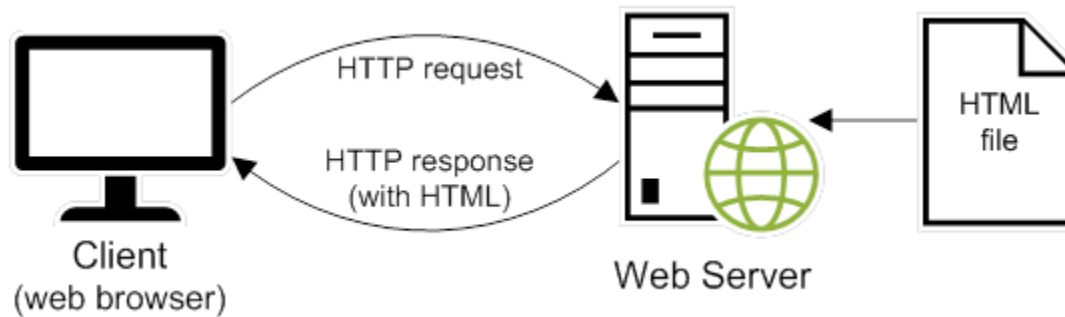
The architecture of the Internet



A static web page



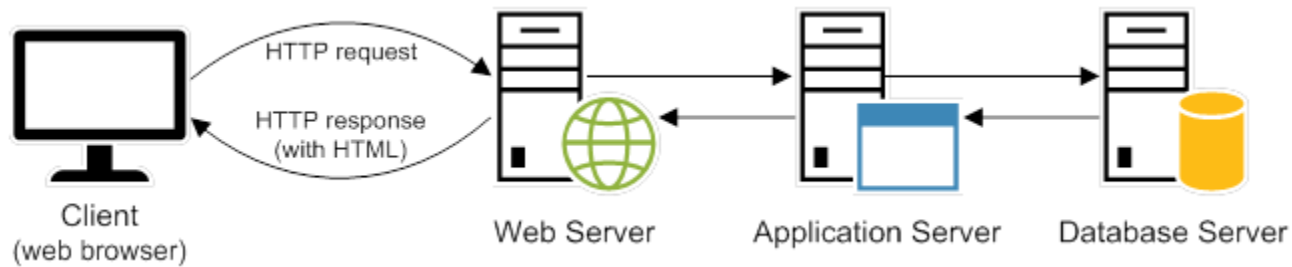
How a web server processes a static web page



A dynamic web page at amazon.com



How a web server processes a dynamic web page



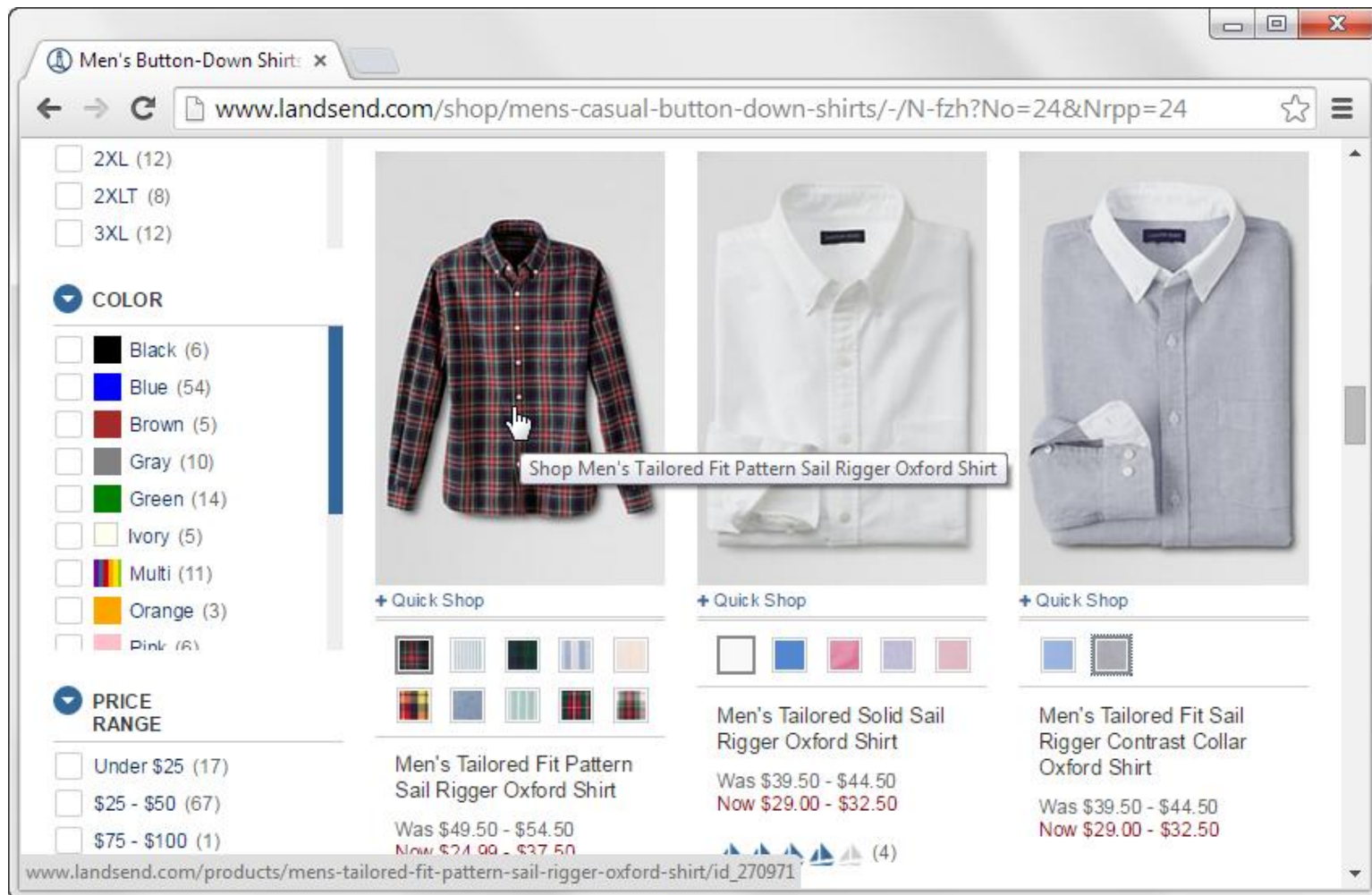
Web browsers

- Chrome
- Firefox
- Edge
- Internet Explorer
- Safari
- Opera

Server-side scripting languages

- C# and Visual Basic
- Java
- PHP
- Ruby
- Perl
- Python

A web page with image swaps and rollovers



How JavaScript fits into this architecture



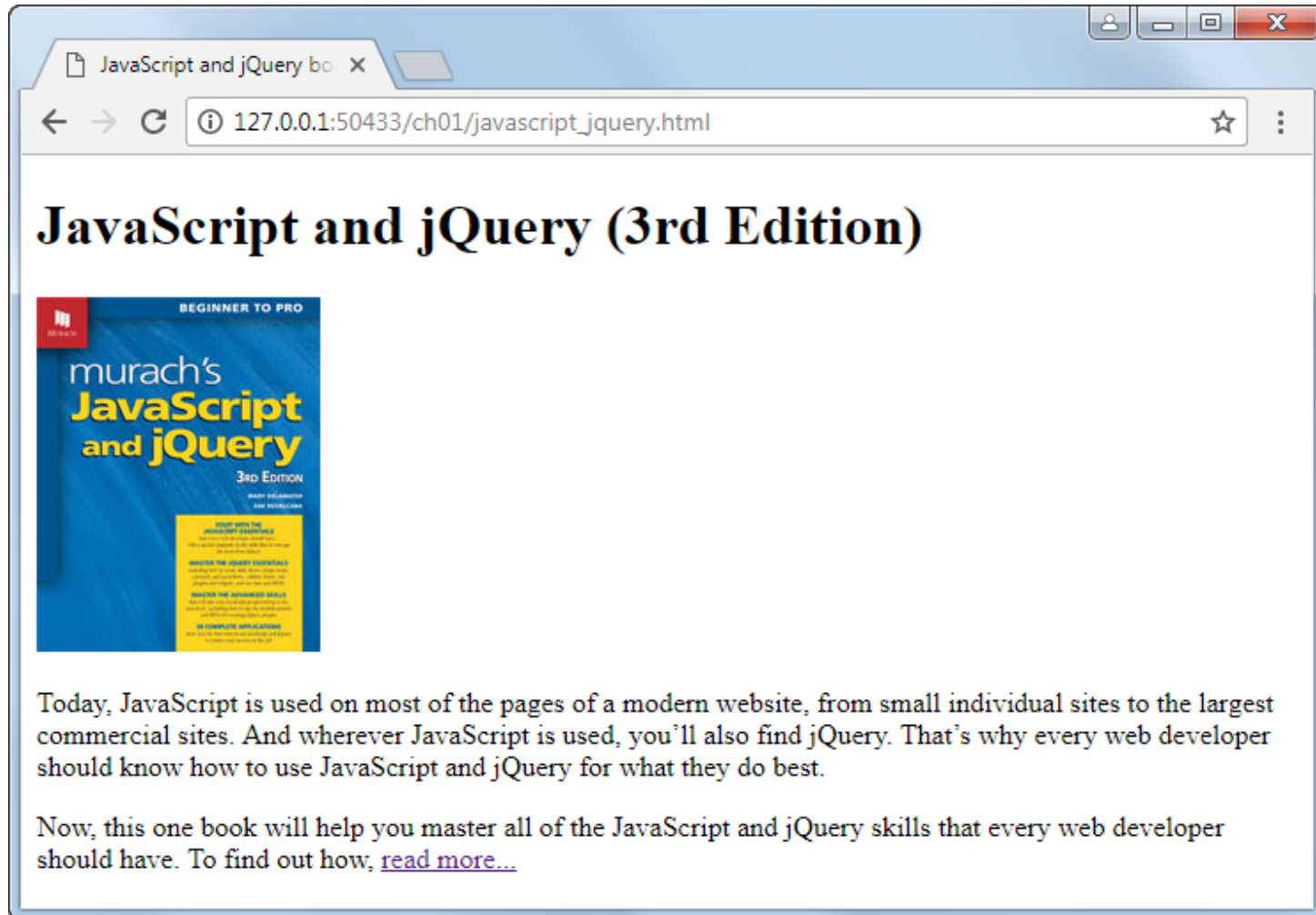
Three of the common uses of JavaScript

- Data validation
- Image swaps and rollovers
- Accordions

The code for an HTML file

```
<!doctype html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <title>JavaScript and jQuery book</title>
  </head>
  <body>
    <h1>JavaScript and jQuery (3rd Edition)</h1>
    
    <p>Today, ... does best.</p>
    <p>Now, ... <a href="">read more...</a></p>
  </body>
</html>
```

The HTML displayed in a web browser



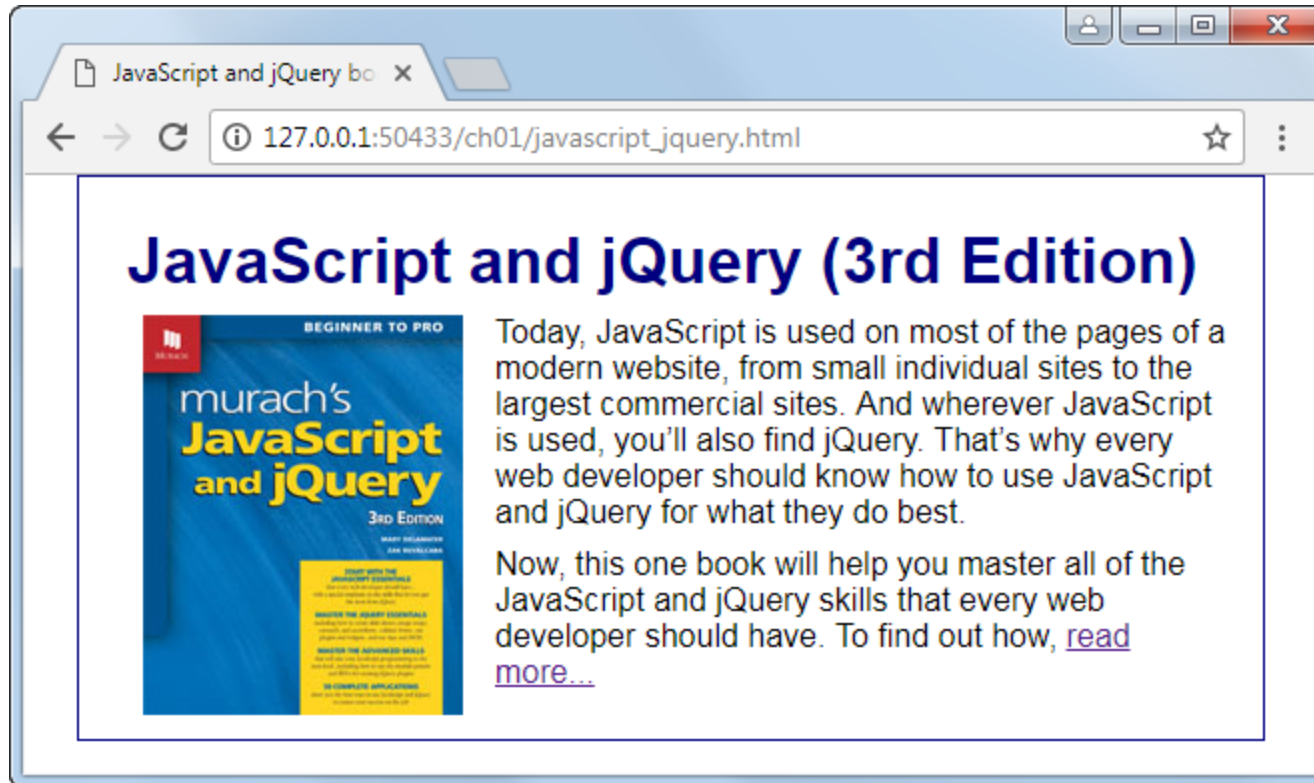
The link element for a CSS file

```
<link rel="stylesheet" href="book.css">
```

The code for the CSS file named book.css

```
body {
    font-family: Arial, Helvetica, sans-serif;
    font-size: 100%;
    width: 550px;
    margin: 0 auto;
    padding: 1em;
    border: 1px solid navy;
}
h1 {
    margin: 0;
    padding: .25em;
    font-size: 200%;
    color: navy;
}
img {
    float: left;
    margin: 0 1em 1 em 1em; }
p {
    margin: 0;
    padding-bottom: .5em; }
```

The web page displayed in a web browser



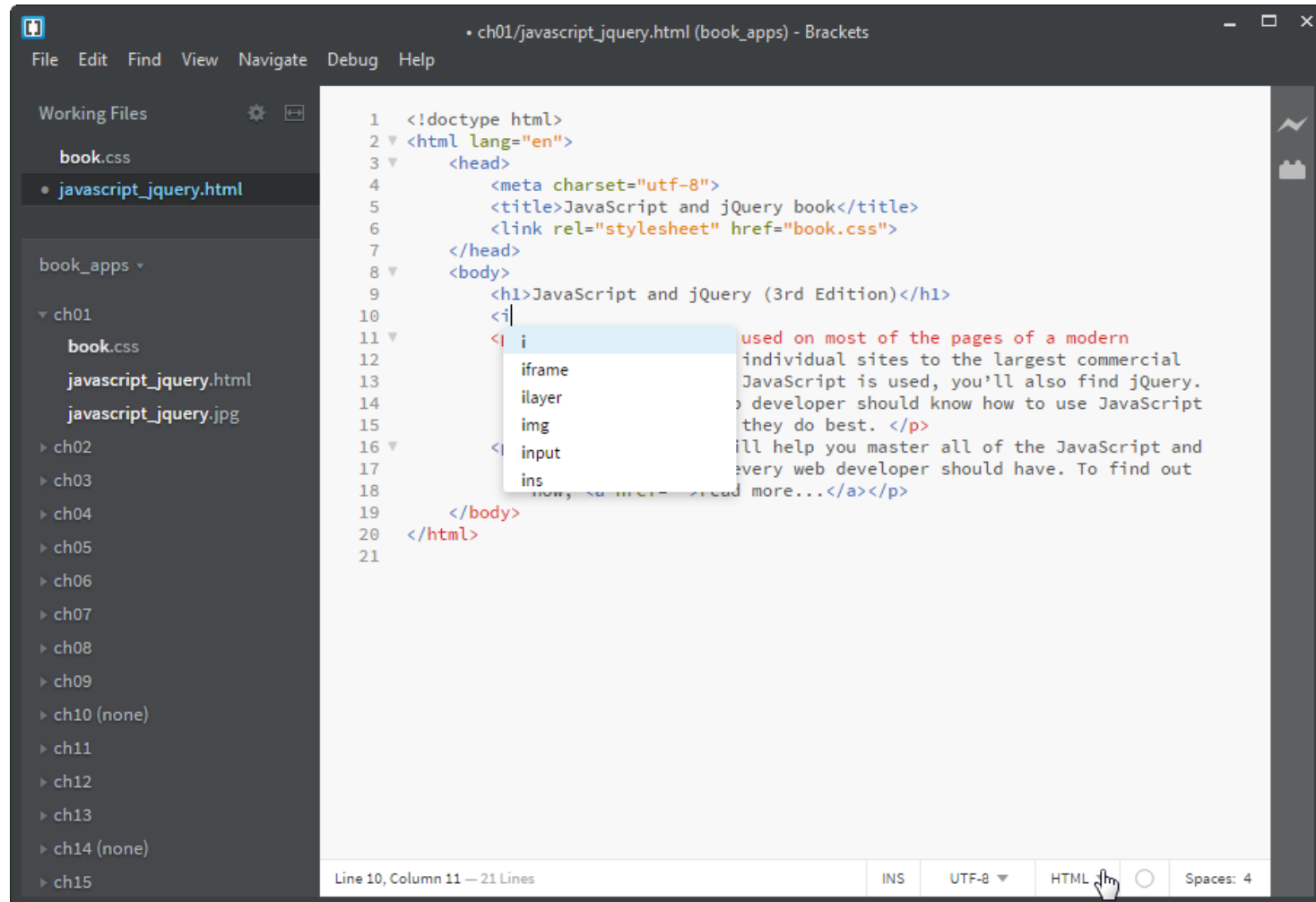
Two websites to become familiar with

- World Wide Web Consortium (W3C):
www.w3.org
- Web Hypertext Application Technology Working Group (WHATWG):
www.whatwg.org

Five free text editors

- Brackets
- Atom 1
- Visual Studio Code
- Notepad++
- TextMate

Brackets and its auto-completion feature



Popular IDEs for web development

- Adobe Dreamweaver CC
- Microsoft Visual Studio
- WebStorm
- Eclipse
- NetBeans
- Aptana Studio 3
- Cloud9

Some popular FTP programs

- FileZilla
- FTP Voyager
- CuteFTP
- Fetch

The components of an HTTP URL

`http://www.modulemedia.com/ourwork/index.html`

The diagram illustrates the components of the URL `http://www.modulemedia.com/ourwork/index.html`. A horizontal line with four vertical tick marks divides the URL into four segments. Below each segment is a label: 'protocol' for 'http:', 'domain name' for 'www.modulemedia.com', 'path' for '/ourwork/', and 'filename' for 'index.html'.

What happens if you omit parts of a URL

- If you omit the protocol, the default of `http://` will be used.
- If you omit the filename, the default document name for the web server will be used.

Two ways to access a web page on the Internet

- Enter the URL of a web page into the browser's address bar.
- Click on a link in the current web page to load the next web page.

Three ways to access a web page on your own server or computer

- Use the features of your text editor or IDE.
- Find the file in File Explorer or Finder. Then, double-click on it to open it in your default browser. Or, right-click on it and use the Open With command to select the browser.
- If your browser has a menu bar, use the File→Open or File→Open File command.

Naming recommendations for folders and files

- Create names for folders and files that consist of lowercase letters, numbers, underscores or hyphens, and the period.
- Use filenames that clearly indicate what a page contains. This is good for search engine optimization.

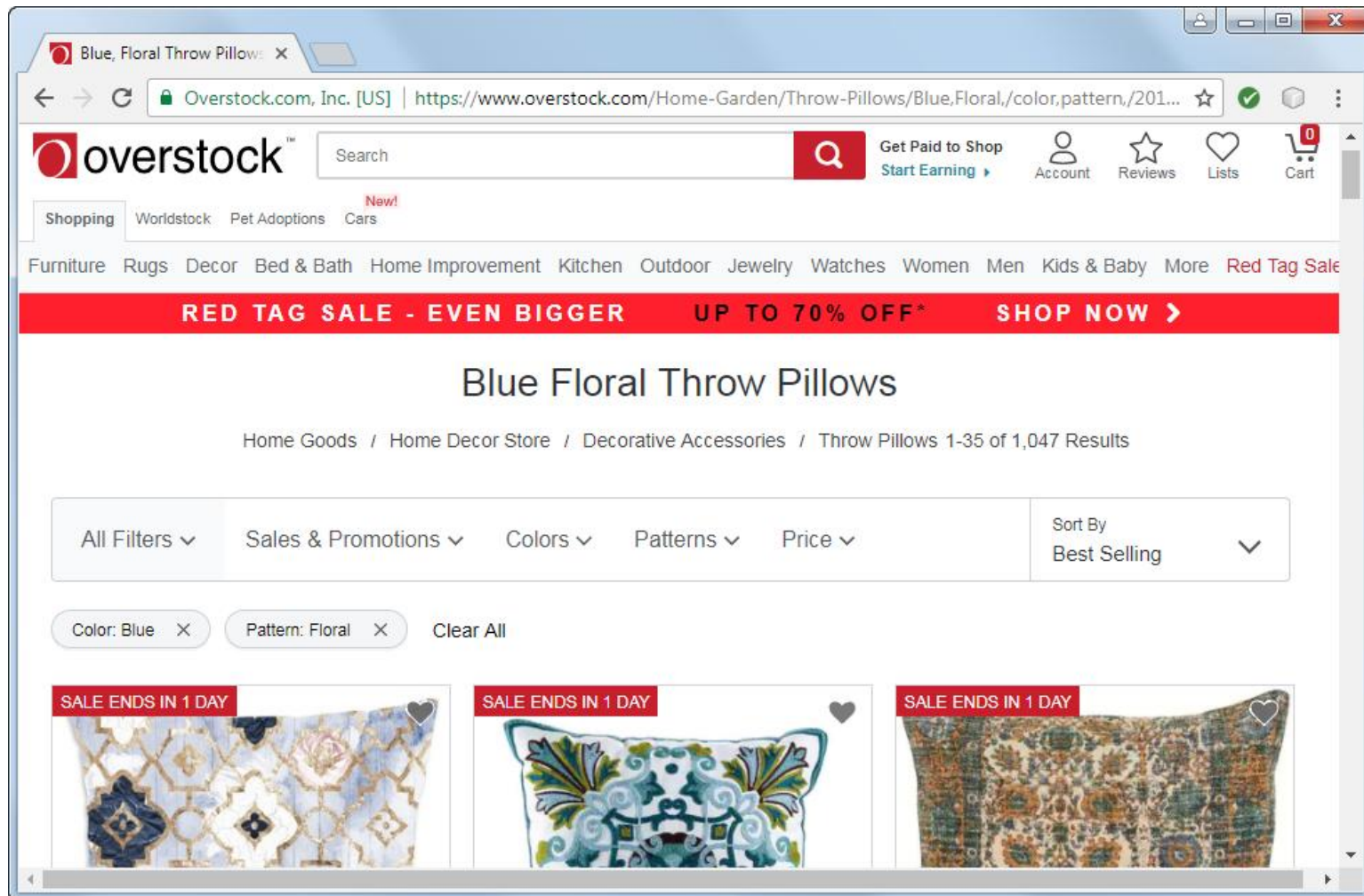
How to view the source code for a web page

- In Chrome, right-click the page and select the View Page Source command.
- In Internet Explorer or Edge, right-click the page and select the View Source command.
- In Chrome or Internet Explorer, the source code is displayed in a new browser tab or a separate window.
- In Edge, the source code is displayed in the Debugger tab of the Developer Tools.

How to view the CSS code in an external CSS file

- In Chrome, click on the link that refers to the CSS file.
- In Edge, hold down the Ctrl key and click on the link that refers to the CSS file.
- In Internet Explorer, enter the URL for the CSS file in the address bar of your web browser.

A website that is easy to use (Overstock.com)



What website users is usability

- To find what they're looking for as quickly and easily as possible
- To get information or do a task as quickly and easily as possible

How website users use a web page

- They scan the page to find what they're looking for or a link to what they're looking for, and they don't like to scroll. If they get frustrated, they leave.
- They often click on links and buttons with the hope of finding what they're looking for, and they frequently click on the Back button when they don't find it.

Four guidelines for improving usability

- Present as much critical information as possible “above the fold”.
- Group related items and limit the number of groups on each page.
- Include a header that identifies the site and provides a navigation bar and links to utilities.
- Use current navigation conventions, like including a logo that goes to your home page when clicked and a cart icon that goes to your shopping cart when clicked.

Guidelines for cross-browser compatibility

- Test your web pages on all of the major browsers, including older versions of Internet Explorer that are still in common use.
- Use the features of HTML5 and CSS3 that are supported by all modern browsers. But use the workarounds so those features will work in older browsers too.

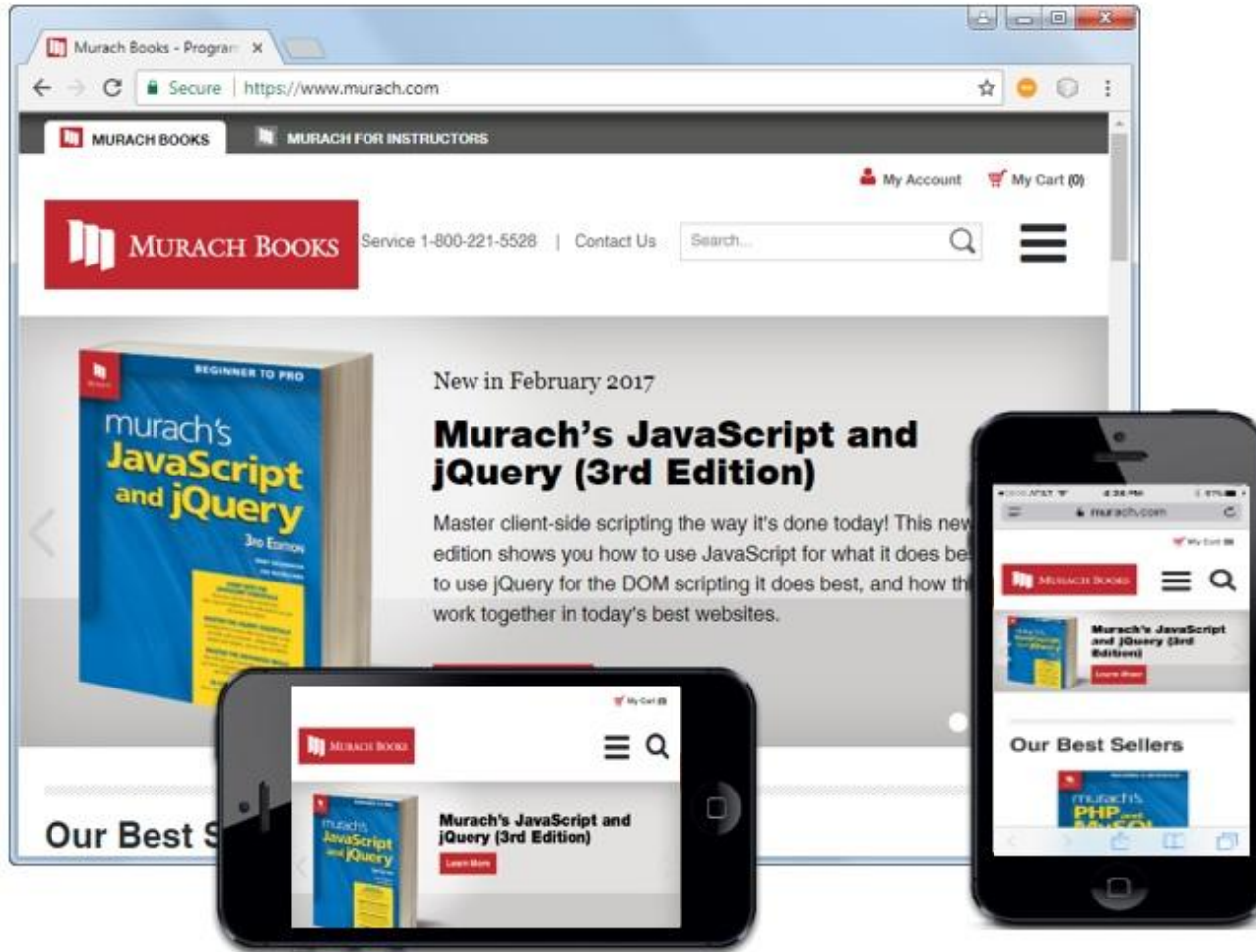
Accessibility laws that you should be aware of

- The Accessibility for Ontarians with Disability Act (AODA).
- Web Content Accessibility Guidelines (WCAG 2.0)

Types of disabilities

- Visual
- Hearing
- Motor
- Cognitive

The Murach Books website on different devices



What is Responsive Web Design?

- Responsive Web Design refers to websites that are designed to adapt gracefully to the screen size.
- Typically, the overall look-and-feel of a website will remain consistent from one screen size to the next.
- Media queries, scalable images, and flexible layouts are the backbone of Responsive Web Design.