

# HTML & CSS

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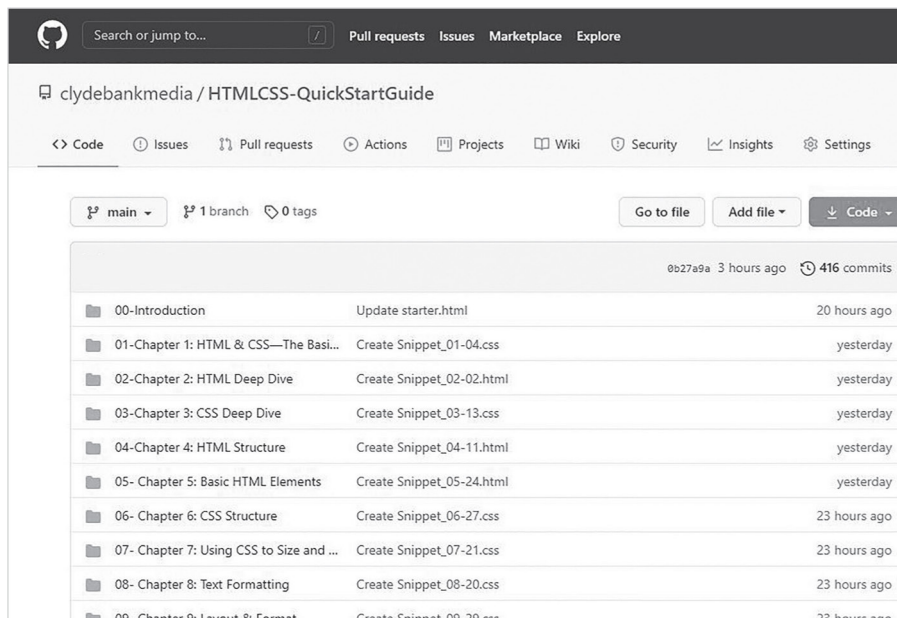
# Introduction

fig. 1



Source: Illustration by Audrey Hardenburg

fig. 2



Use our `htmlcss-quickstartguide` repository on GitHub to easily copy and paste any code featured in this book.

fig. 3



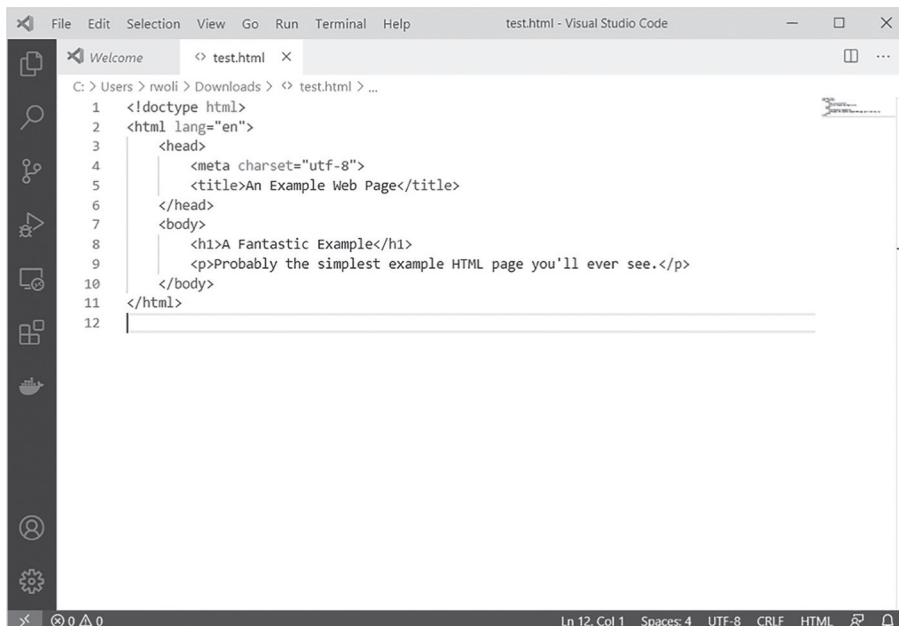
An HTML file, CSS folder, and image folder

fig. 4



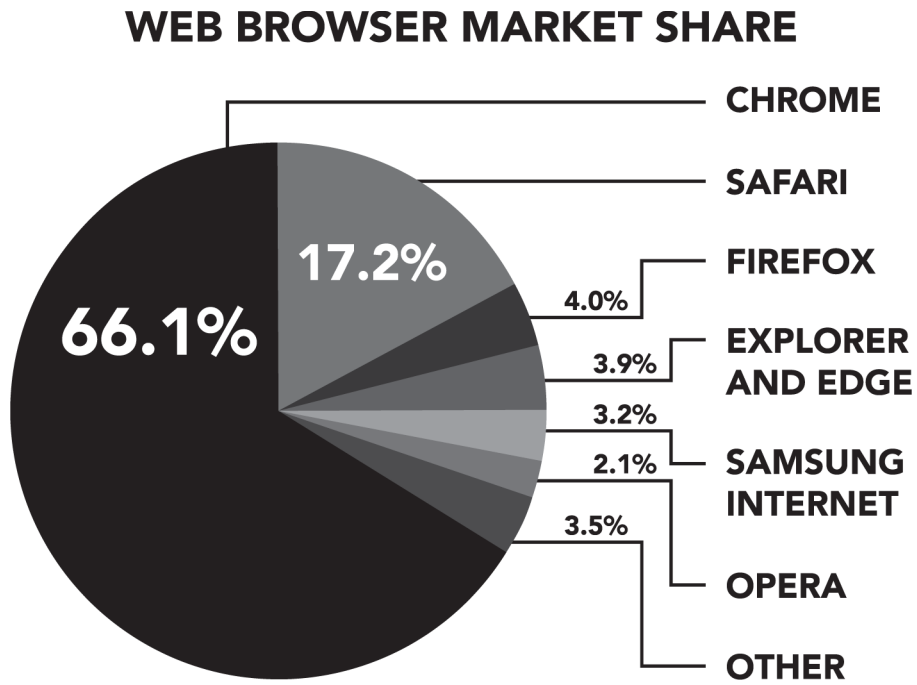
Windows Notepad with a simple HTML file

fig. 5



Visual Studio Code with the same HTML file as in figure 4. Note the file browser tabs, syntax highlighting, and other advanced features not found in Windows Notepad.

fig. 6



Browser market share as of October 2020

Source: gs.statcounter.com

fig. 7



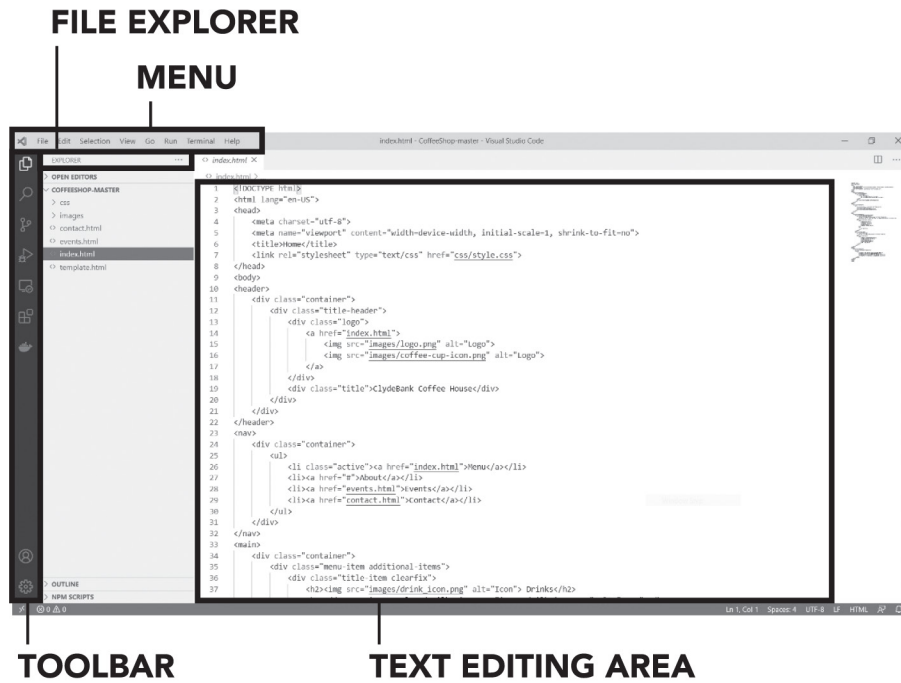
The images used on the website and the .css files are placed in their own directories. Note that your browser icons may be different if Chrome is not your default browser.

fig. 8



Your essential toolkit: a file explorer, text editor, web browser, and your copy of this book

fig. 9



The Visual Studio Code editor



# CHAPTER 1

## The Basics and the Bigger Picture

fig. 10



fig. 11

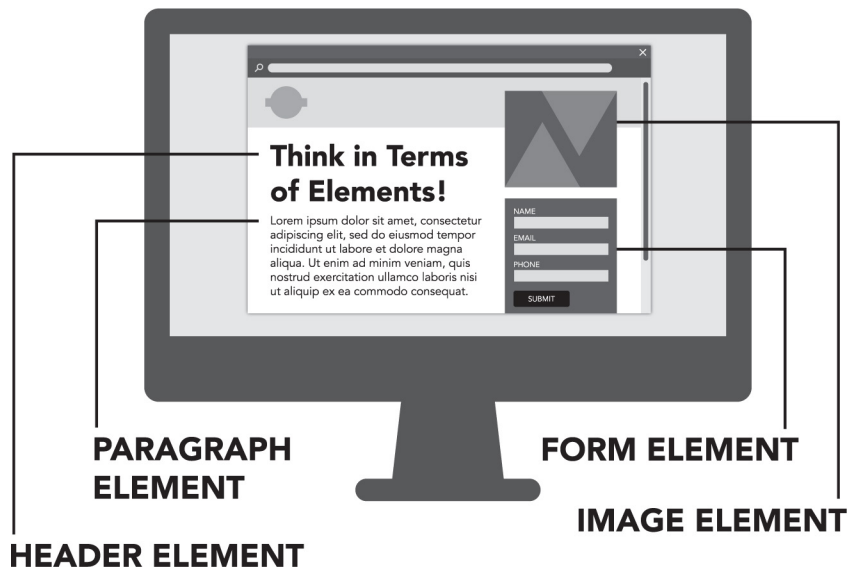
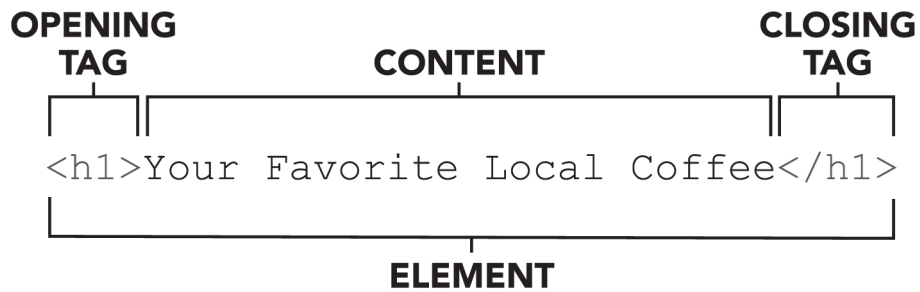


fig. 12



The basic structure of an HTML element

fig. 13



fig. 14

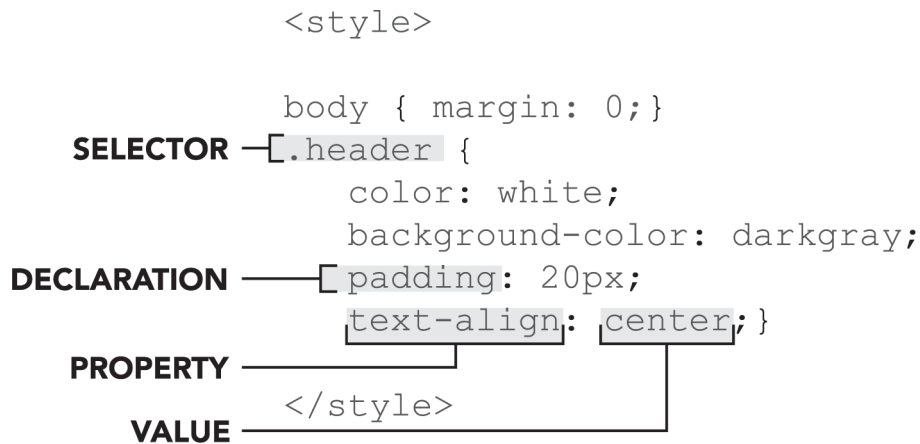


fig. 15



Existing websites can be viewed with all CSS turned off. This demonstrates the vast improvements CSS brings to web page design.

fig. 16

## FRONTEND LANGUAGES

## BACKEND LANGUAGES



HTML, CSS, Javascript

PHP, Java, C++, Python, Node.js, Go, Ruby

fig. 17

WEBSITE	BACKEND (SERVER SIDE)
Facebook.com	Hack, PHP (HHVM), Python, C++, Java, Erlang, D, XHP, Haskell
YouTube.com	C, C++, Python, Java, Go
Yahoo.com	PHP
Amazon.com	Java, C++, Perl

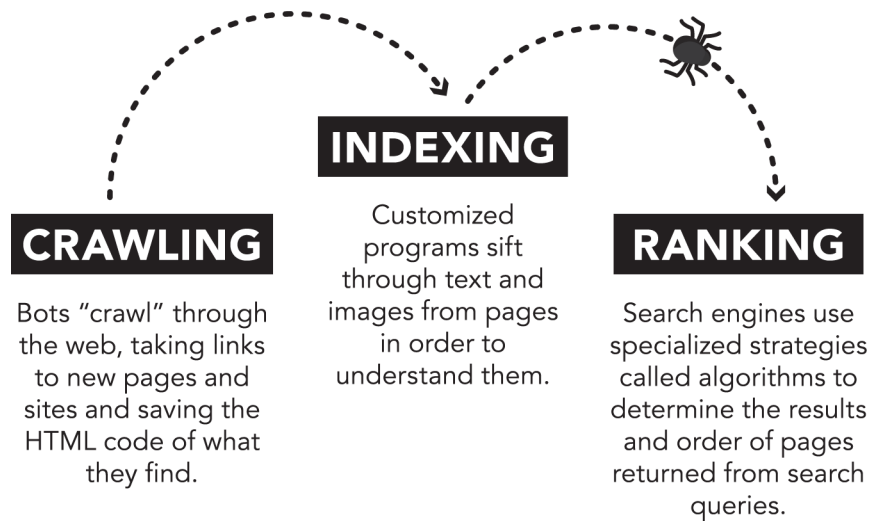
A table of popular websites and their backend technologies

fig. 18



Popular content management systems

fig. 19



## CHAPTER 2

### HTML Deep Dive

---

fig. 20

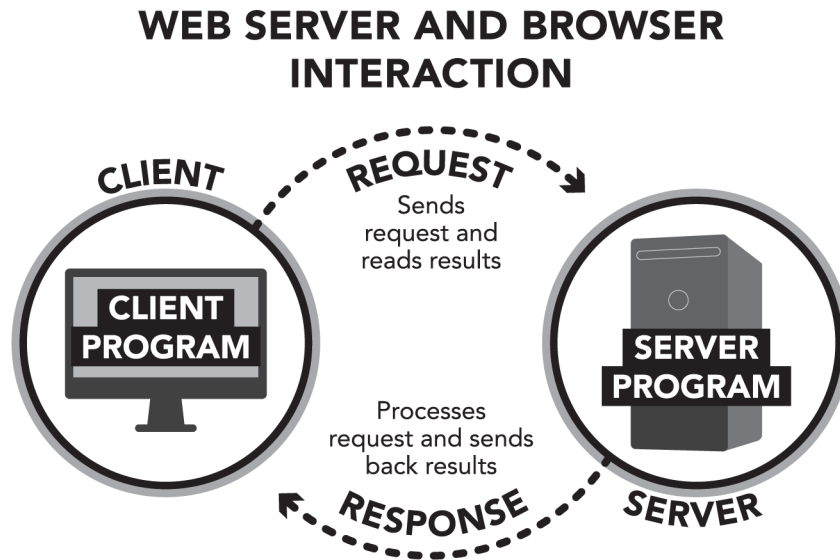


fig. 21

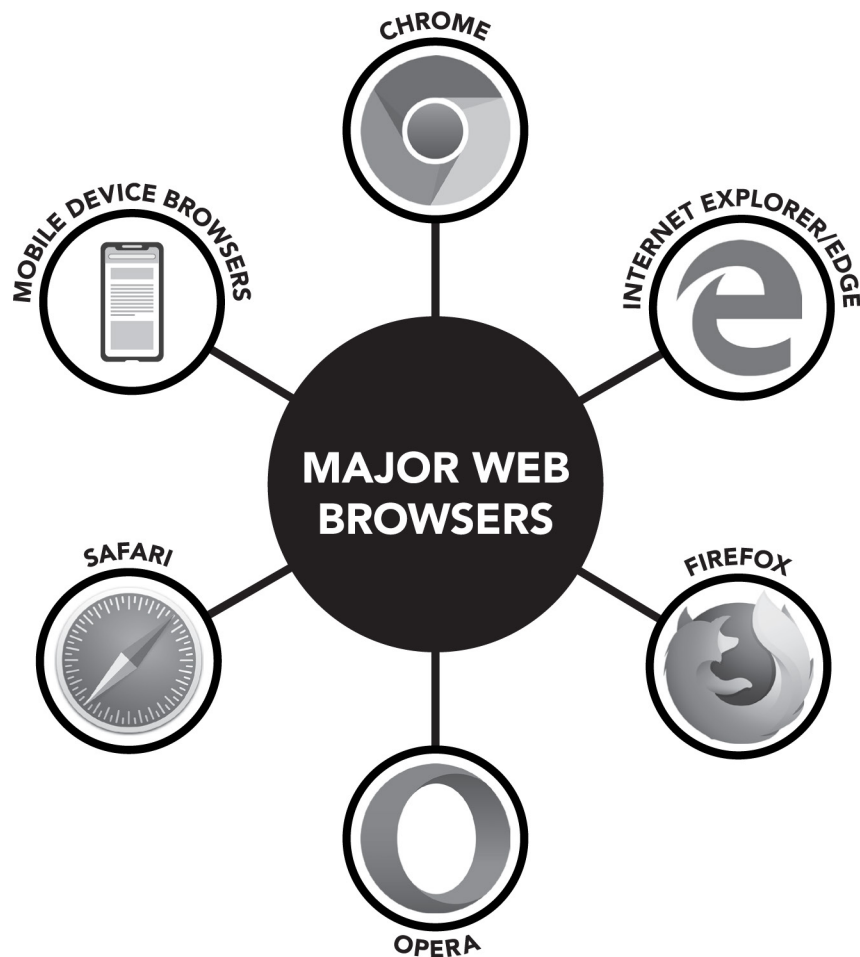


fig. 22

# WORLD WIDE WEB CONSORTIUM (W3C) TIMELINE

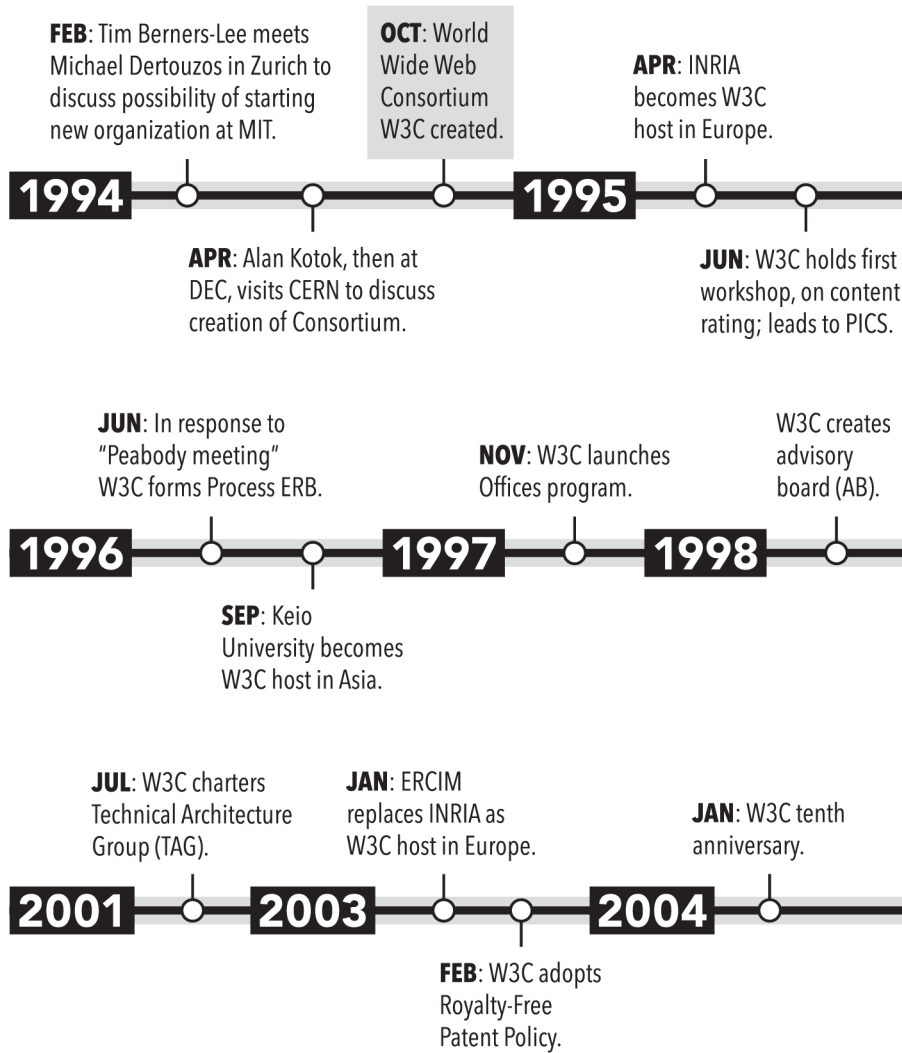


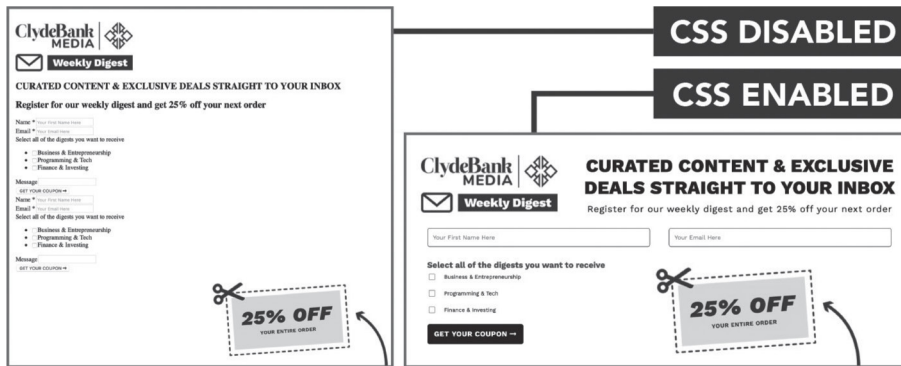
fig. 23

TYPICAL HTML4	TYPICAL HTML5
<div id="header">	<header>
<div id="menu">	<nav>
<div id="content">	<section>
<div id="article">	<article>
<div id="footer">	<footer>

# CHAPTER 3

## CSS Deep Dive

fig. 24



A portion of the ClydeBank Media website with CSS disabled (left) and enabled (right)

fig. 25

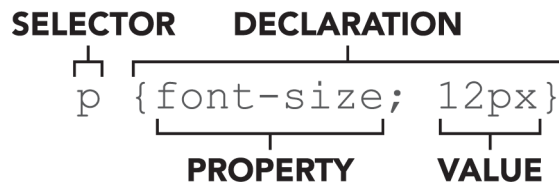


fig. 26

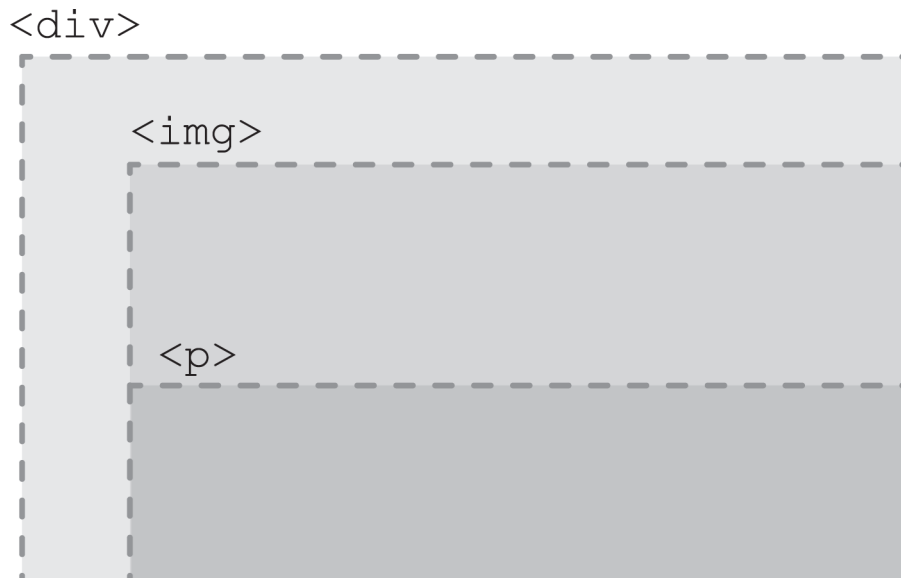


fig. 27

```
<!DOCTYPE html>
<html>
<body>

<h1 style="color:darkgrey;font-size:50px;text-align:center;">This is a heading with inline CSS</h1>
<p style="color:black;font-size:20px;text-align:center;">This is a paragraph with inline CSS.</p>

  <h2>This is a heading without inline CSS</h2.>
  <p>This is a paragraph with plain html and no inline CSS.</p>

</body>
</html>
```

**This is a heading with inline CSS**

This is a paragraph with inline CSS.

**This is a heading without inline CSS**

This is a paragraph with plain html and no inline CSS.

Inline CSS affects only the HTML element it inhabits.

fig. 28

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
background-color: grey;
}

h1 {
color: white;
Text-align:center;
}
</style>
</head>
<body>

<h1">The style for h1 is defined in the style header</h1>
<p>This is a paragraph</p>

</body>
</html>
```

**The style for h1 is defined in the style header**

This is a paragraph

Internal CSS is placed in the <style> element within the HTML page.

fig. 29

**This style for H1 is defined via CSS in the head.**

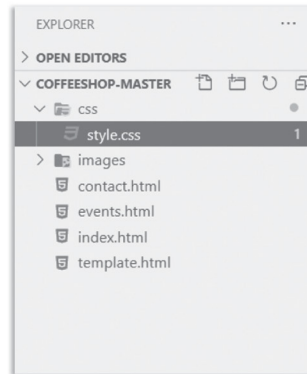
Example paragraph.

fig. 30



External CSS is placed in its own style sheet that is then referenced in the HTML page.

fig. 31



The style.css file in the CSS folder on the explorer pane of Visual Studio Code

fig. 32

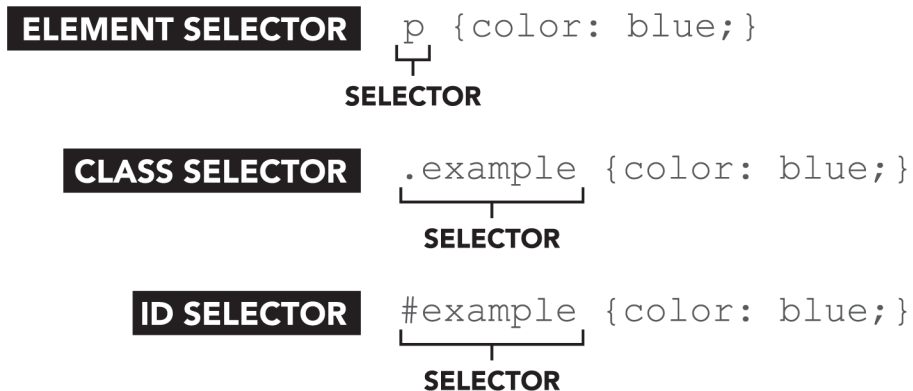




fig. 33

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean commodo ligula eget dolor. Aenean massa. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Donec quam felis, ultricies nec, pellentesque eu, pretium quis, sem.

*Etiam rhoncus. Maecenas tempus, tellus eget condimentum rhoncus, sem quam semper libero, sit amet adipiscing sem neque sed ipsum. Nam quam nunc, blandit vel, luctus pulvinar, hendrerit id, lorem. Maecenas nec odio et ante tincidunt tempus.*

Nam pretium turpis et arcu. Duis arcu tortor, suscipit eget, imperdiet nec, imperdiet iaculis, ipsum. Sed aliquam ultrices mauris. Integer ante arcu, accumsan a, consectetur eget, posuere ut, mauris. Praesent adipiscing. Phasellus ullamcorper ipsum rutrum nunc. Nunc nonummy metus.

*Etiam rhoncus. Maecenas tempus, tellus eget condimentum rhoncus, sem quam semper libero, sit amet adipiscing sem neque sed ipsum. Nam quam nunc, blandit vel, luctus pulvinar, hendrerit id, lorem. Maecenas nec odio et ante tincidunt tempus.*

fig. 34

```
p {  
    color: ■ black;  
}
```

The color preview feature of Visual Studio Code

fig. 35

BROWSER	RENDERING ENGINE
Lunascape	Gecko, Trident, WebKit
Internet Explorer	Trident
Firefox	Gecko
Google Chrome	WebKit (Blink)
Safari	WebKit
Opera v.15+	WebKit (Blink)

# CHAPTER 4

## HTML Structure

---

fig. 36

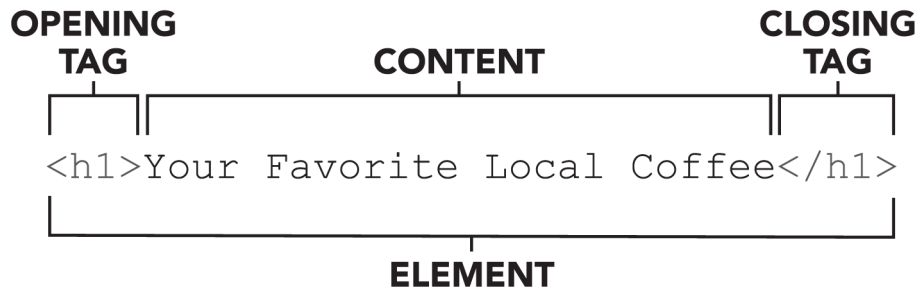


fig. 37

The screenshot shows a code editor on the left with HTML code and a browser window on the right showing the rendered output. The code includes a DOCTYPE declaration, an html tag, a body tag, an h1 heading, a paragraph, a section tag, an h2 heading, another paragraph, and closing tags for section, body, and html. The rendered output shows a heading "This is a Heading", a paragraph "And this is a paragraph of text.", a section heading "Here is a Section Heading", and a paragraph "And here is a paragraph within a section."

```
<!DOCTYPE html>
<html>
  <body>
    <h1>This is a Heading</h1>
    <p>And this is a paragraph of text.</p>
    <section>
      <h2>Here is a Section Heading</h2>
      <p>And here is a paragraph within a section.</p>
    </section>
  </body>
</html>
```

fig. 38

```
<!DOCTYPE html>
<html>
  <body>
    <h1>This is a Heading</h1>
    <p>And this is a paragraph of text.</p>
    <section>
      <h2>Here is a Section Heading</h2>
      <p>And here is a paragraph within a section.</p>
    </section>
  </body>
</html>
```

fig. 39

The screenshot shows a web browser window with the title "Title: Lorem Ipsum". The address bar shows the file path "C:/xampp/htdocs/htmlbook/dummy.html". The page content includes a heading "Header Lorem" followed by three paragraphs of Lorem Ipsum text.

# CHAPTER 5

## Basic HTML Elements

---

fig. 40

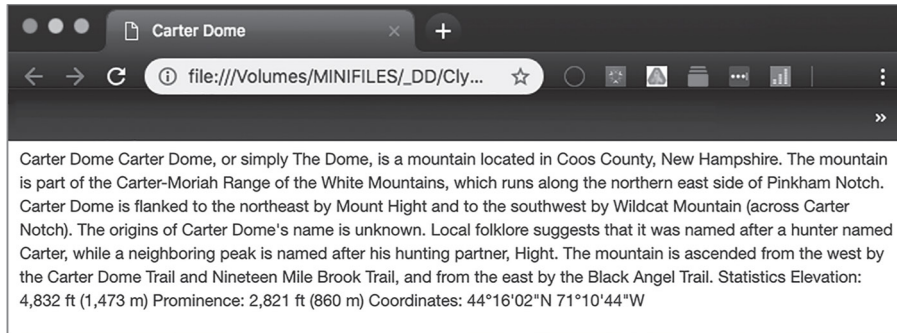


fig. 41

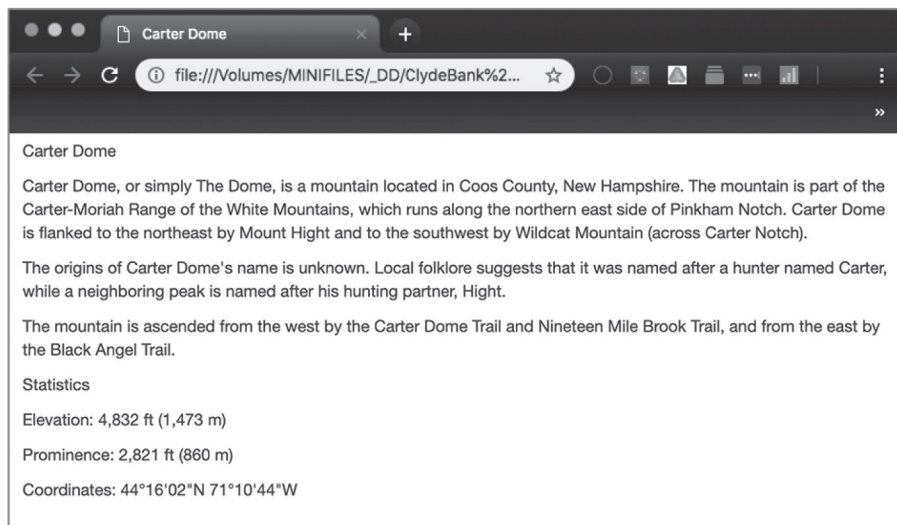
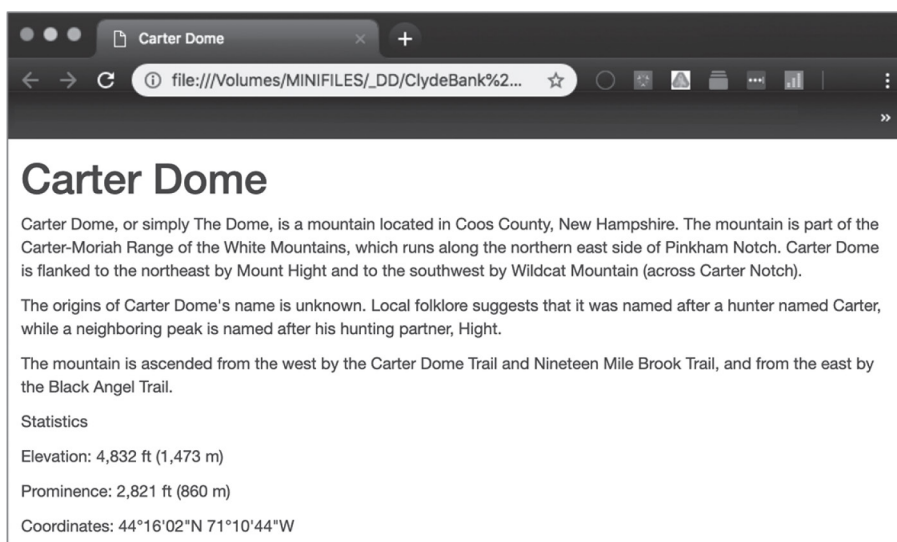


fig. 42



Now let's wrap the "Statistics" heading inside h2 tags, like so:

fig. 43

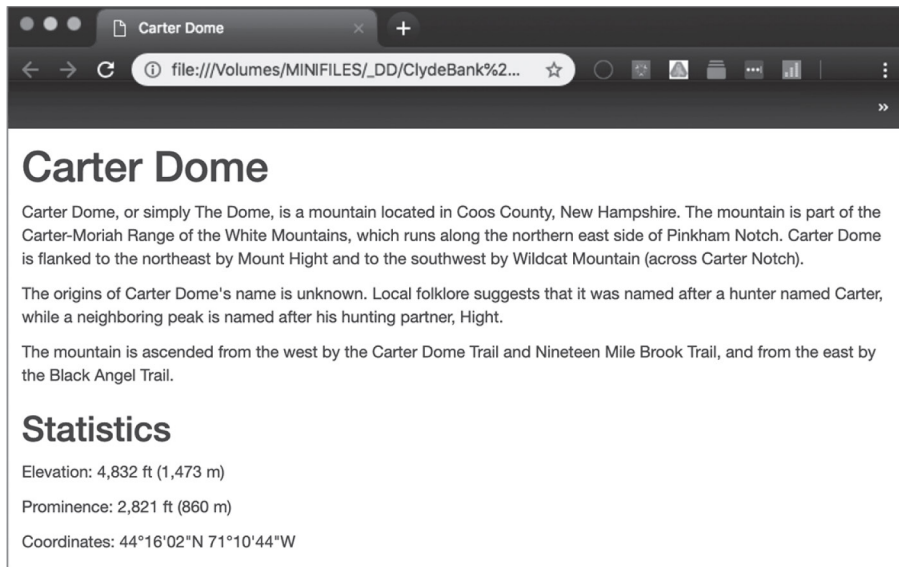


fig. 44

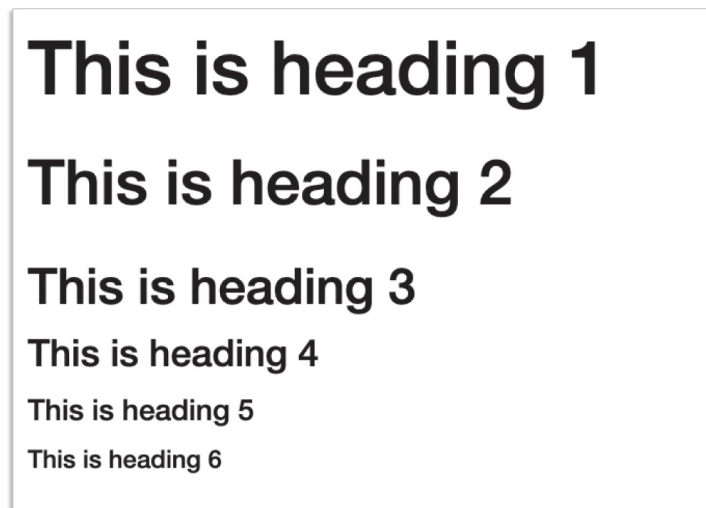


fig. 45

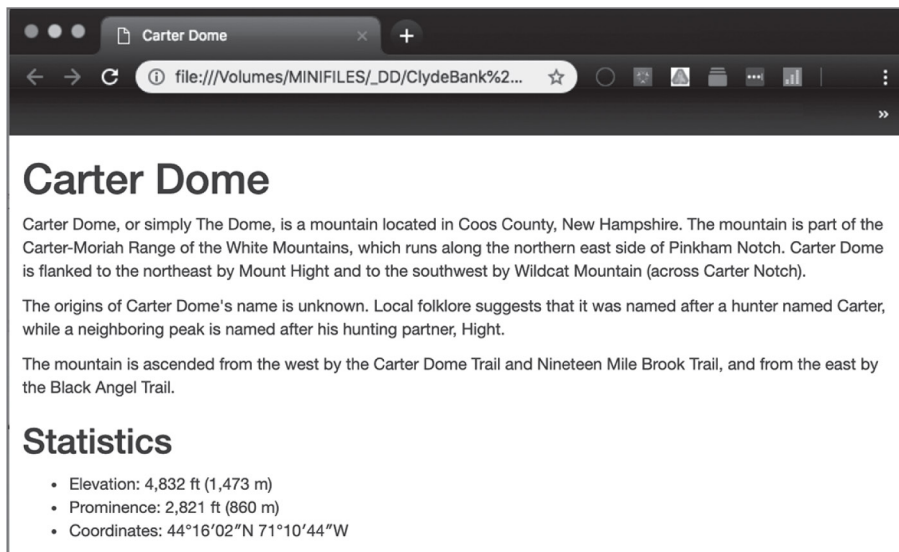


fig. 46

## Statistics

1. Elevation: 4,832 ft (1,473 m)
2. Prominence: 2,821 ft (860 m)
3. Coordinates: 44°16'02"N 71°10'44"W

fig. 47

MOST COMMON HTTP STATUS CODES		
CODE	STATUS	MEANING
200	OK	The request was successful.
301	Moved Permanently	The requested URL has changed. The new URL is provided in the response and the browser is directed to the new page.
302	Found	The requested URL has been temporarily changed. The browser is redirected to the new page.
304	Not Modified	This status informs the browser that the page hasn't been modified, so requesting a new copy of it isn't necessary. This saves time and bandwidth.
403	Forbidden	The visitor doesn't have the permissions necessary to access this content.
404	Not Found	The requested page couldn't be found on the server.
500	Internal Server Error	A problem in the website's backend code is preventing the page from being served to the browser.
503	Service Unavailable	This indicates that the server is overloaded or the backend functionality is offline.

fig. 48

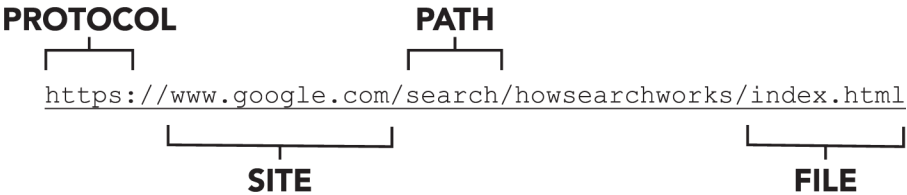


fig. 49

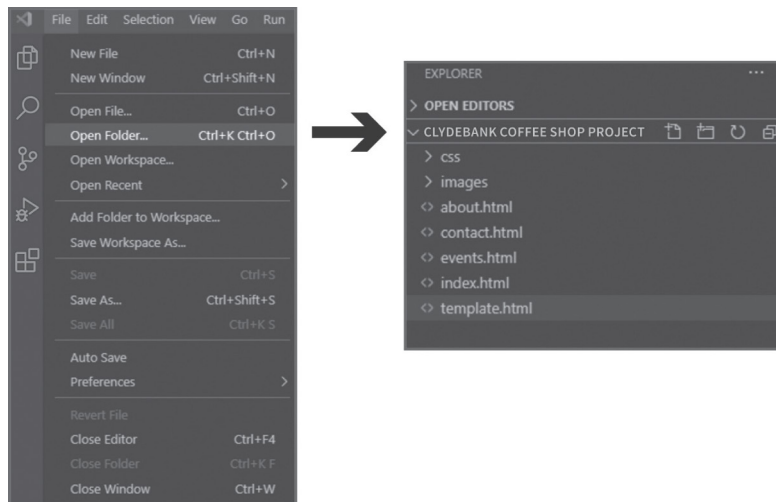
## DIVs vs SPANs

The div element provides a way to identify a block of content that can be styled by CSS specified in the style element. Without the style element, a div would be indistinguishable from a paragraph within the body of an HTML document. However, paragraphs like this aren't automatically styled unless specified in the style element.

Spans are not blocks of text, so they remain inline without wrapping like DIVs

You can even put a span inside of a div if there is something inside requiring special styling

fig. 50



# CHAPTER 6

## CSS Structure

---

fig. 51

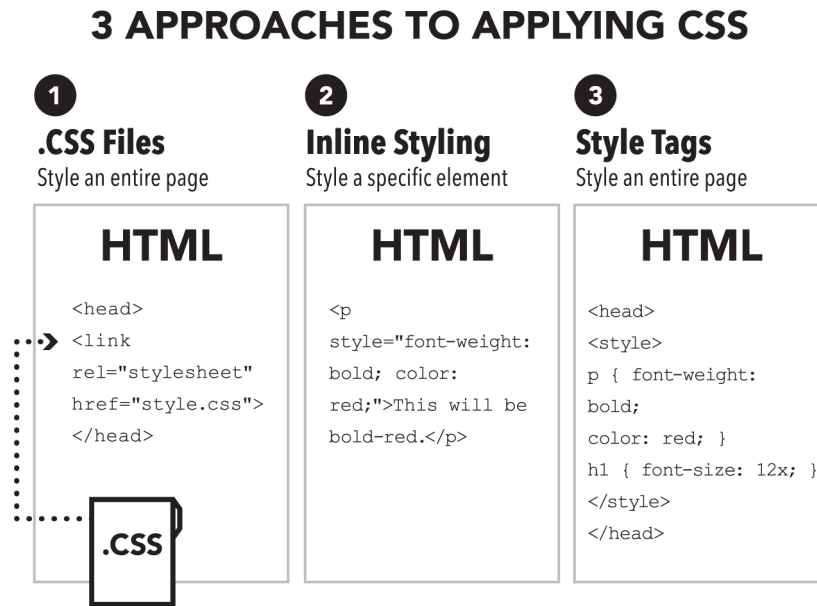
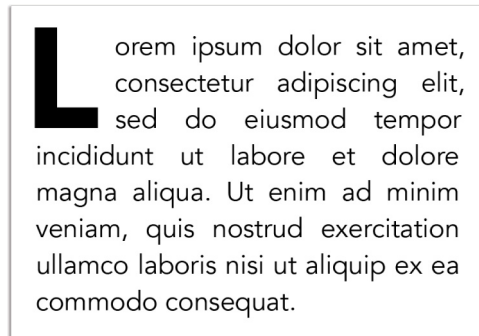



fig. 52



Decorative styling of the first letter of a paragraph

fig. 53

### Carter Dome



See statistics or find additional reading on Carter Dome.

Carter Dome, or simply The Dome, is a mountain located in Coos County, New Hampshire. The mountain is part of the Carter-Moriah Range of the White Mountains, which runs along the northern east side of Pinkham Notch. Carter Dome is flanked to the northeast by Mount Hight and to the southwest by Wildcat Mountain (across Carter Notch).

The origins of Carter Dome's name are unknown. Local folklore suggests that it was named after a hunter named Carter, while a neighboring peak is named after his hunting partner, Hight.

The mountain is ascended from the west by the Carter Dome Trail and Nineteen Mile Brook Trail, and from the east by the Black Angel Trail.

---

#### Statistics

- Elevation: 4,832 ft (1,473 m)
- Prominence: 2,821 ft (860 m)
- Coordinates: 44°16'02"N 71°10'44"W

---

#### Additional Reading

For more information, please see the Wikipedia article on Carter Dome

---

Can you beat this?



# CHAPTER 7

## Using CSS to Size and Space Elements

---

fig. 54

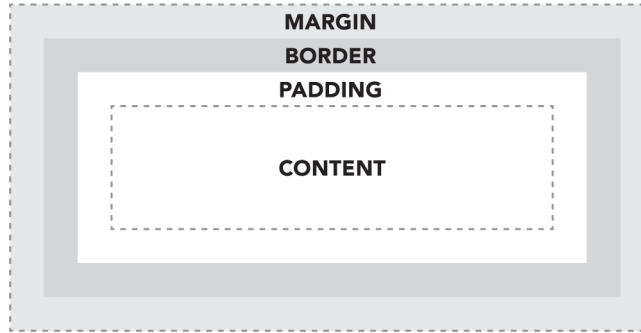


fig. 55

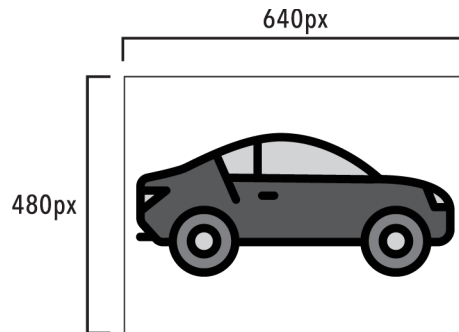
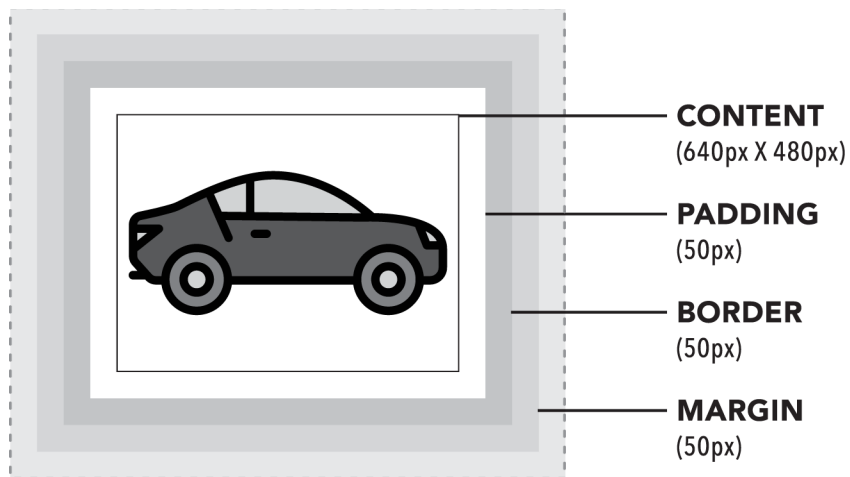


fig. 56



The car, dimensions 640x480, surrounded by padding, border, and margin

fig. 57

## MIN-WIDTH VS. MAX-WIDTH

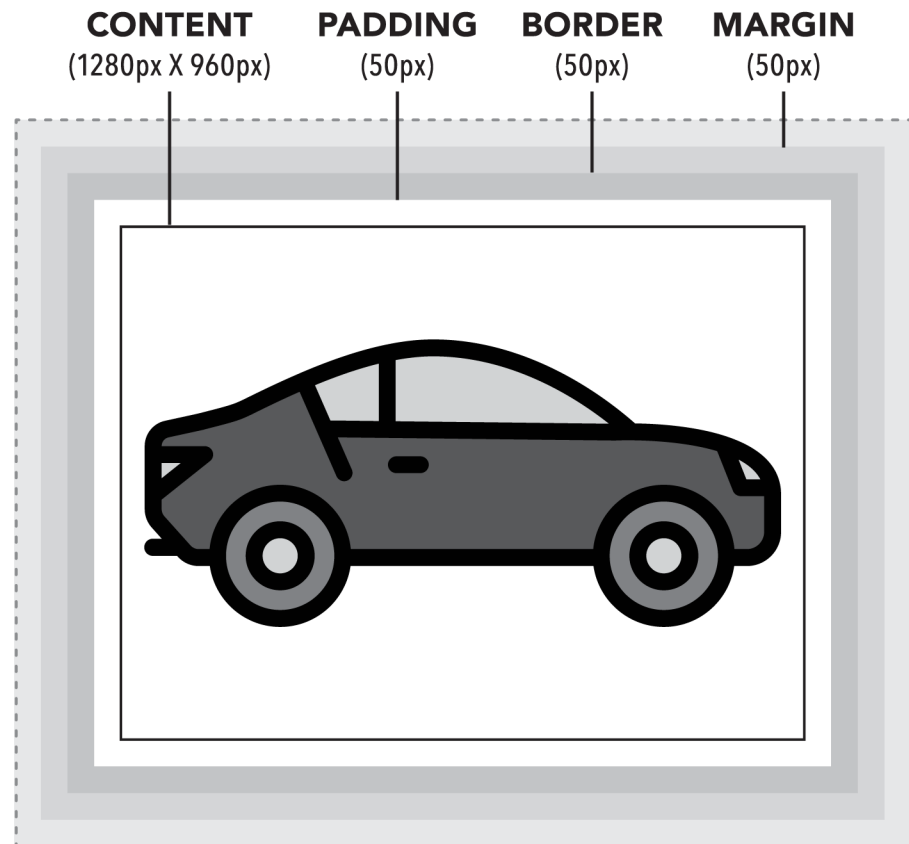
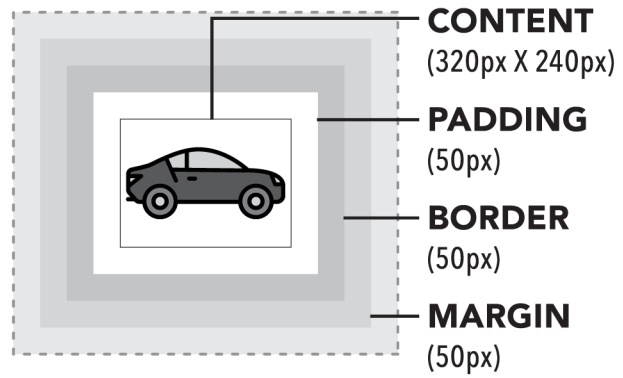


fig. 58

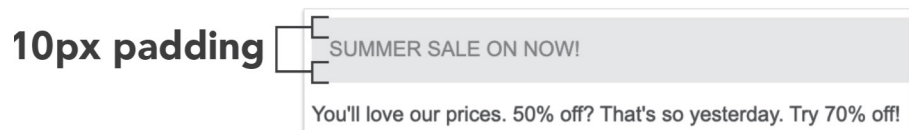


fig. 59

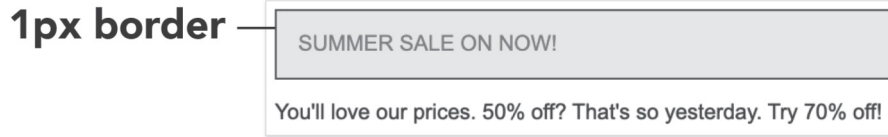


fig. 60

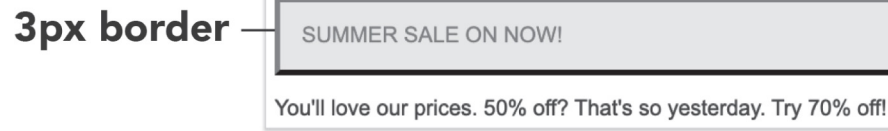


fig. 61

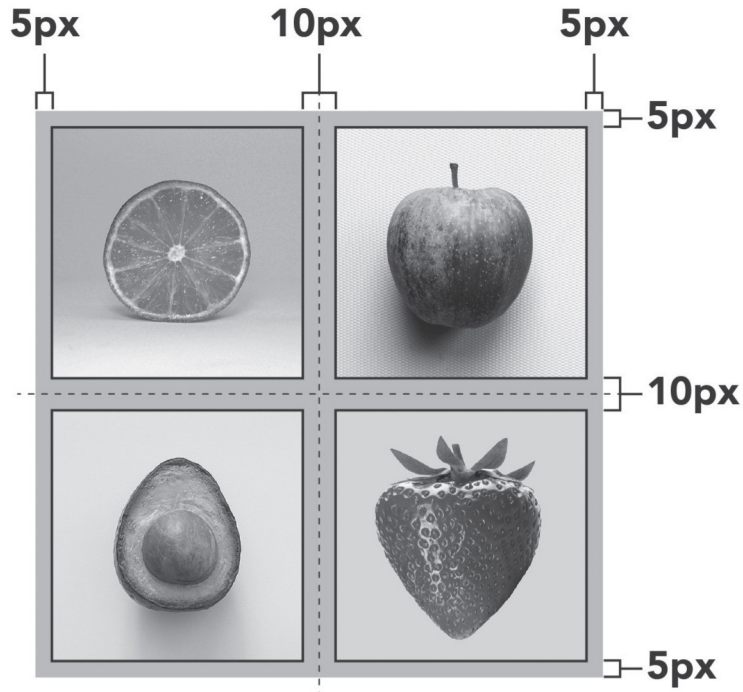
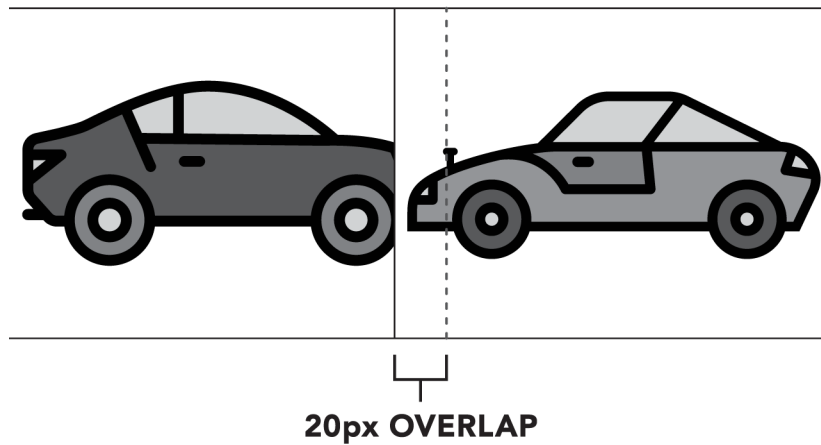


fig. 62



# CHAPTER 8

## Text Formatting

---

fig. 63



fig. 64

px	Pixels (devices have different pixel density, so sizes will vary)
em	Value is relative to default size of element (1.5 em = 1.5 times current size)
rem	Value is relative to root element (html)
mm	Millimeters
in	Inches
cm	Centimeters

fig. 65

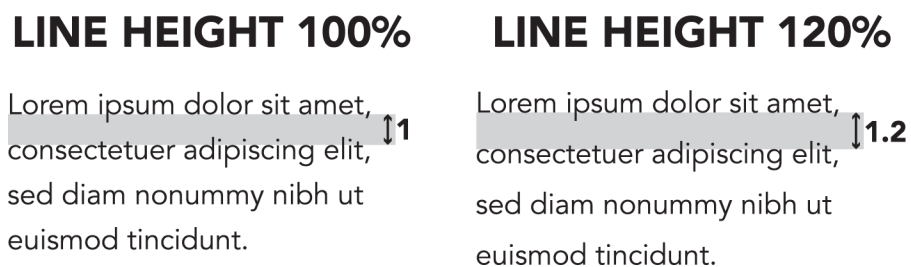


fig. 66

This header has an extra 2px between its letters

fig. 67

**ON SALE NOW!**

Text shadow is not supported in some older web browsers.

# CHAPTER 9

## Layout/Format

---

fig. 68

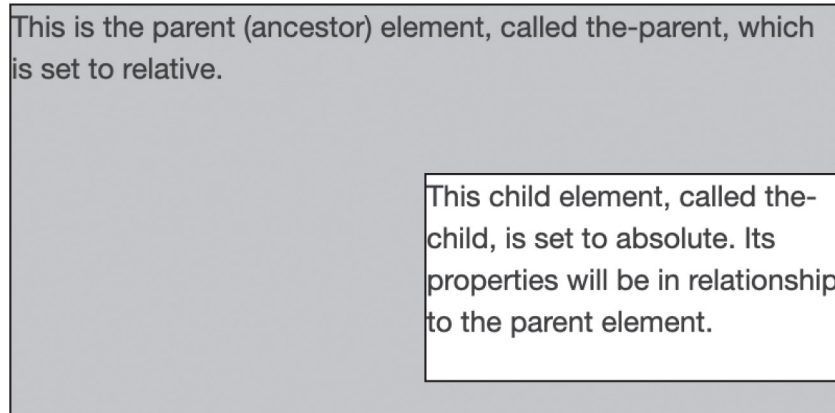


fig. 69

**A Floating Home**

Excerpt from: A Floating Home by Cyril Ionides & J. B. Atkins

One winter I made up my mind that it was necessary to live in some sort of vessel afloat instead of in a house on the land. This decision was the result, at last pressed on me by circumstances, of vague dreams which had held my imagination for many years.

These dreams were not, I believe, peculiar to myself. The child, young or old, whose fancy is captive to water, builds for castles in Spain houseboats wherein he may spend his life floating in his element. His fancy at some time or other has played with the thought of possessing almost every type of craft for his home—a three-decker with a glorious gallery, a Thames houseboat all ready to step into, a disused schooner, a bluff-bowed old brig. He will moor her in some delectable water, and when his restlessness falls upon him he will have her removed to another place. Civilization shall never rule him. As though to prove it he will live free of rates, and weigh his anchor and move on if the matter should ever happen to come under dispute. Nor will he pay rent resentfully to a grasping landlord. For a mere song he will pick up the old vessel that shall contain his happiness. Her walls will be stout enough to shelter him for a lifetime, though Lloyd's agent may have condemned her, according to the exacting tests that take count of sailors' lives, as unfit to sail the deep seas.

The complex block for figure 69 is enclosed in a thin black border. It features a title 'A Floating Home' in bold. To the right of the title is a small box containing the source information: 'Excerpt from: A Floating Home by Cyril Ionides & J. B. Atkins'. Below the title and source box is the main body of text, which is a paragraph followed by a longer paragraph.

fig. 70

Excerpt from: A Floating Home by Cyril Ionides & J. B. Atkins

**A Floating Home**

One winter I made up my mind that it was necessary to live in some sort of vessel afloat instead of in a house on the land. This decision was the result, at last pressed on me by circumstances, of vague dreams which had held my imagination for many years.

These dreams were not, I believe, peculiar to myself. The child, young or old, whose fancy is captive to water, builds for castles in Spain houseboats wherein he may spend his life floating in his element. His fancy at some time or other has played with the thought of possessing almost every type of craft for his home—a three-decker with a glorious gallery, a Thames houseboat all ready to step into, a disused schooner, a bluff-bowed old brig. He will moor her in some delectable water, and when his restlessness falls upon him he will have her removed to another place. Civilization shall never rule him. As though to prove it he will live free of rates, and weigh his anchor and move on if the matter should ever happen to come under dispute. Nor will he pay rent resentfully to a grasping landlord. For a mere song he will pick up the old vessel that shall contain his happiness. Her walls will be stout enough to shelter him for a lifetime, though Lloyd's agent may have condemned her, according to the exacting tests that take count of sailors' lives, as unfit to sail the deep seas.

The complex block for figure 70 is enclosed in a thin black border. It features a source box at the top right: 'Excerpt from: A Floating Home by Cyril Ionides & J. B. Atkins'. Below this is the title 'A Floating Home' in bold. The main body of text follows, consisting of a paragraph and a longer paragraph, identical to the one in figure 69.

fig. 71

CLEAR VALUES	
<b>none</b>	the default setting, allowing elements to float on either side
<b>left</b>	no elements can float to the left
<b>right</b>	no elements can float to the right
<b>both</b>	no floating elements will appear on either side of the specified element
<b>inherit</b>	the element will inherit the clear value from its containing element

fig. 72



fig. 73



fig. 74

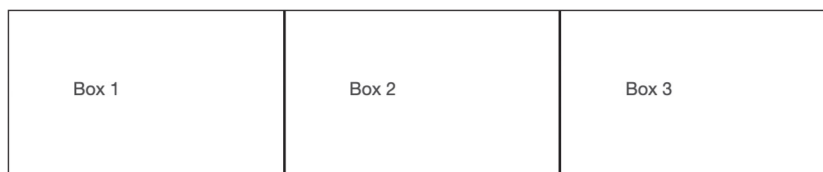


fig. 75

This is some text. This is a paragraph. And here is some more text

fig. 76

This is some text.  
This is a paragraph.  
And here is some more text

fig. 77

This is a paragraph.  
This is some text. It has a line break, but is still part of this block And here is some more text

fig. 78

- Home
- About
- Learn More
- Contact

fig. 79

Home About Learn More Contact

fig. 80



fig. 81

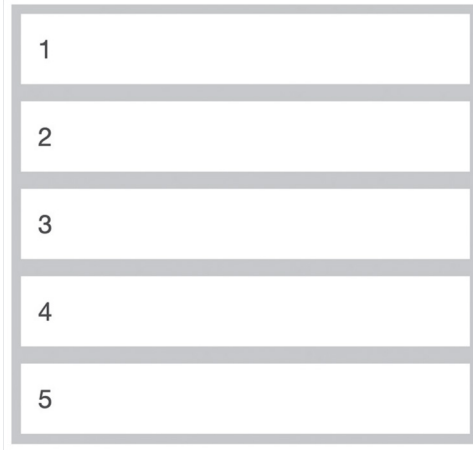


fig. 82





# CHAPTER 10

## HTML Junk Drawer

---

fig. 83

The quick brown fox jumped over the lazy red dog. The quick brown fox <sup>jumped</sup> over the lazy red dog. The quick brown fox jumped over the lazy red dog. The quick brown fox jumped over the <sub>lazy red</sub> dog.

The sup (superscript) and sub (subscript) elements in action

fig. 84

The quick brown fox jumped over the LRD. The quick brown fox jumped over the lazy red dog. The quick brown fox jumped over the lazy red dog. The quick brown fox jumped over the **Lazy Red Dog**.

The `abbr` element underlines and defines the LRD abbreviation.

fig. 85

The quick brown fox jumped over the lazy red dog. The quick brown fox jumped over the lazy red dog. The quick brown fox jumped over the lazy red dog. The quick brown fox jumped over the lazy red dog.

"The quick silver fox jumped over the lazy yellow dog. The quick silver fox jumped over the lazy yellow dog. The quick silver fox jumped over the lazy yellow dog."

The quick brown fox jumped over the lazy red dog. The quick brown fox jumped over the lazy red dog. The quick brown fox jumped over the lazy red dog. The quick brown fox jumped over the lazy red dog.

*Mr. Fox, The Quick Silver Anthology, 1999*

The second paragraph is contained within the block quote element.

fig. 86

```
This is an example of computer code.
```

Using the pre element

fig. 87

```
Enter dir on the command line to see a list of files.
```

Using the code element

fig. 88

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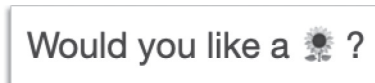
---

The covpright symbol in action

fig. 89

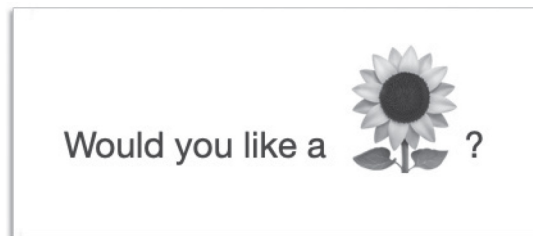
SYMBOL	NAME	HTML ENTITY CODE
©	Copyright	&copy;
™	Trademark	&trade;
®	Registered Trademark	&reg;
€	Euro Currency	&euro;
←	Left Arrow	&larr;
→	Right Arrow	&rarr;
↑	Up Arrow	&uarr;
↓	Down Arrow	&darr;
N/A	Non-Breaking Space	&nbsp;

fig. 90



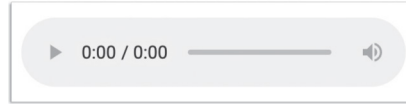
The rendered display of the flower emoji

fig. 91



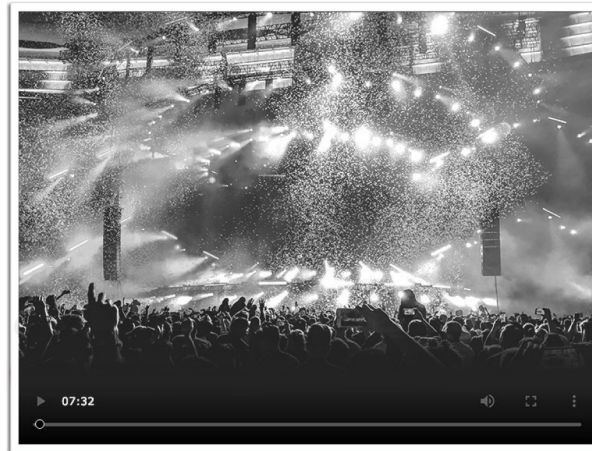
The flower, rendered in a 50-pixel font size

fig. 92



An audio control

fig. 93



A video control

fig. 94

Year	Shirts	Shoes	Pants
2017	\$420,392	\$18,304	\$34,912
2018	\$480,221	\$17,952	\$36,112
2019	\$491,919	\$16,844	\$46,924
2020	\$501,029	\$15,124	\$39,947

A table made with Microsoft Excel

fig. 95

Year	Shirts	Shoes	Pants
2017	\$420,392	\$18,304	\$34,912
2018	\$480,221		\$36,112
2019	\$491,919	\$16,844	\$46,924
2020	\$501,029	\$15,124	\$39,947

A table styled with CSS demonstrating alternating row highlighting and a `colspan="2"` on the 2018 row

# CHAPTER 11

## HTML Forms

---

fig. 96

**Send Us The Details**  
and let one of our trained professionals get right back to you...

Name \*

Email \*

Phone

Preferred Contact Method...

Domain

Subject \*

Comments \*

An example contact form, styled with CSS

fig. 97

Subject:

A text input box

fig. 98

Subject:

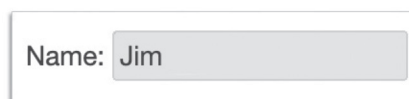
A text input box named “subject” filled in with the text “A Summer Day”

fig. 99

VARIOUS INPUT TYPES	
TEXT	
<b>text</b>	Generic text
<b>number</b>	Generic number (no letters allowed)
<b>email</b>	Email address
<b>tel</b>	Phone number
<b>url</b>	Website address (URL)
<b>search</b>	Search input (behaves like text)
<b>password</b>	Behaves like text but obscures characters for more secure entry
DATE AND TIME	
<b>month</b>	Provides for month and year input
<b>week</b>	Provides for week and year input
<b>time</b>	Provides for time input in <code>hh:mm:ss AM/PM</code>
<b>date</b>	Provides for <code>mm/dd/yyyy</code> input, adjusting for localized international variants
<b>datetime-local</b>	Provides for <code>mm/dd/yyyy</code> date and <code>hh:mm:ss AM/PM</code> time input, adjusting for localized international variants
MULTIPLE CHOICE / CHECK	
<b>radio</b>	Displays circular buttons to select from multiple options. Text for options is supplied via a <code>&lt;label&gt;</code> element. If selected by user, <i>value</i> attribute is sent to server. To force selection among multiple elements, give each input radio element the same <i>name</i> attribute.
<b>checkbox</b>	Displays a checkbox the user can toggle on and off. Text for the option is supplied via a <code>&lt;label&gt;</code> element, and the value is specified via the <i>value</i> attribute.

SUBMISSION	
<b>button</b>	Displays a button. The <i>value</i> attribute is displayed as the button text. By itself, it doesn't do anything, but when paired with JavaScript it can trigger action on the page.
<b>reset</b>	Displays a button that resets all input elements to their default or preselected values. Text on the button is taken from the <i>value</i> attribute. Use this element with caution on long forms, as accidentally clearing a long form can raise a user's blood pressure to dangerous levels.
<b>submit</b>	Displays a submit button, allowing for submission of the form given the <i>action</i> and <i>method</i> values.
<b>image</b>	Same as submit but the <i>src</i> attribute of the input element is used to specify the URL of an image to use instead of the submit button. You need to specify <i>width</i> and <i>height</i> attributes of the image.
SPECIAL PURPOSE	
<b>range</b>	Displays a slider allowing for a range of numbers. Requires <i>min</i> and <i>max</i> input attributes to be set with a minimum and a maximum number.
<b>color</b>	Provides a color selection box, allowing the user to specify a particular color. Value becomes the hex color code of the user-selected color.
<b>file</b>	Displays a file upload box, allowing the user to upload a file. Parsing of the file must be done by backend server code.
<b>hidden</b>	This input element is not displayed on the page. Instead, the <i>name</i> and <i>value</i> attributes are used to pass a variable to the processing page.

fig. 100



Name:

A disabled input text box

fig. 101



Name:

An input text box with a placeholder

fig. 102

**Personal Details**

---

Name:

Age:

**Company Details**

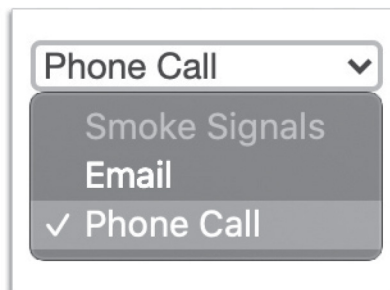
---

Company Name:

---

Two groups of input elements separated by fieldsets with legends

fig. 103



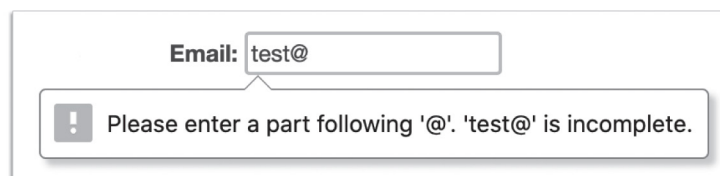
A select box with a “selected” default value

fig. 104



Google Chrome displays this graphic pointing to the invalid field.

fig. 105



On an email field, Google Chrome will prompt the user to enter a valid email address.

# CHAPTER 12

## Cool Tricks

---

fig. 106

### LINEAR GRADIENT TOP TO BOTTOM



fig. 107

### LINEAR GRADIENT LEFT TO RIGHT



fig. 108

### RADIAL GRADIENT



fig. 109



An image composed of sprite images as used in the ClydeBank Coffee Shop

fig. 110





# CHAPTER 13

## Media Queries

fig. 111



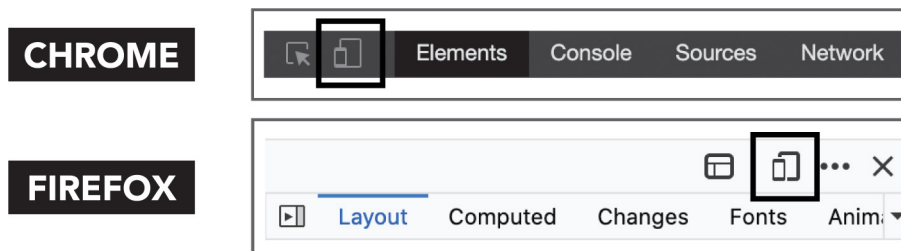
The difference between a responsive site and an unresponsive site

fig. 112



The hamburger menu

fig. 113



The toggle icon for the device toolbar in both Chrome and Firefox. (The design of this icon may change in future browser versions.)

fig. 114



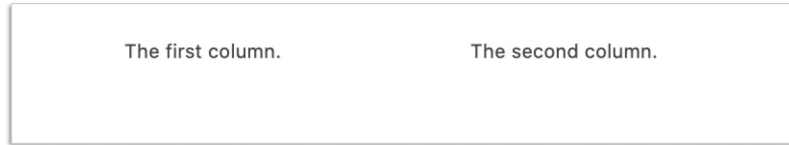
The responsive toolbar and view in Chrome

# CHAPTER 14

## Bootstrap

---

fig. 115



Web browser display of the container, row, and column layout

fig. 116



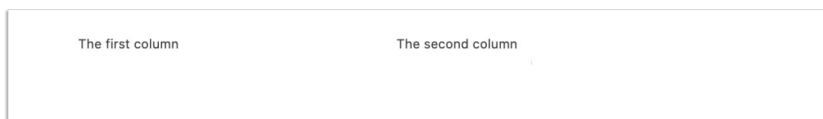
Columns will stack vertically when shown on a smaller screen.

fig. 117



Two Bootstrap rows, the first with two columns, the second with three

fig. 118



A Bootstrap row with two columns sized with numbers

fig. 119

	MAX CONTAINER WIDTH	CLASS PREFIX	OTHER
<b>EXTRA SMALL</b> <576px	None (auto)	<code>.col-</code>	<b>GUTTER WIDTH:</b> 30 px (15px on each side of column)
<b>SMALL</b> ≥576px	540px	<code>.col-sm-</code>	
<b>MEDIUM</b> ≥768px	720px	<code>.col-md-</code>	—
<b>LARGE</b> ≥992px	960px	<code>.col-lg-</code>	<b>NUMBER OF COLUMNS:</b> 12
<b>EXTRA LARGE</b> ≥1200px	1140px	<code>.col-xl-</code>	

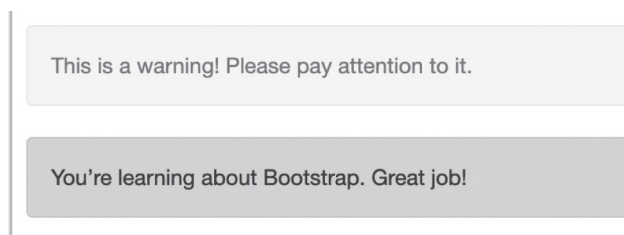
Bootstrap layout grid column classes

fig. 120

COLOR SCHEME	BACKGROUND	FOREGROUND	USE CASE
Primary	Blue	White	Brings attention to primary elements. Default buttons are often styled with the btn-primary class.
Secondary	Gray	White	Often used to visually deemphasize elements.
Success	Green	White	Denotes a successful operation. Commonly used with alerts via the alert-success class.
Danger	Red	White	Indicates something failed or is of great importance. Commonly used with alerts via the alert-danger class.
Warning	Yellow	Black	Warns the user about a potential issue.
Info	Cyan	White	Informs the user.
Light	Light Gray	Dark Gray	Provides a pleasing, softer palette for general information.
Dark	Dark Gray	Near White	Often used to provide a "dark" theme to an element.
White	White	Black	Provides a default color scheme.

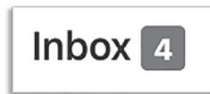
Bootstrap color schemes

fig. 121



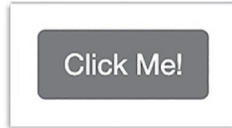
A warning alert and a success alert in Bootstrap

fig. 122



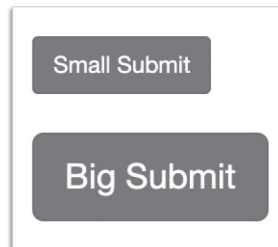
A badge used within an H4 tag. In this example, the badge will render with white text on a red background.

fig. 123



A primary-styled Bootstrap button

fig. 124



A `btn-sm` and a `btn-lg` button

fig. 125



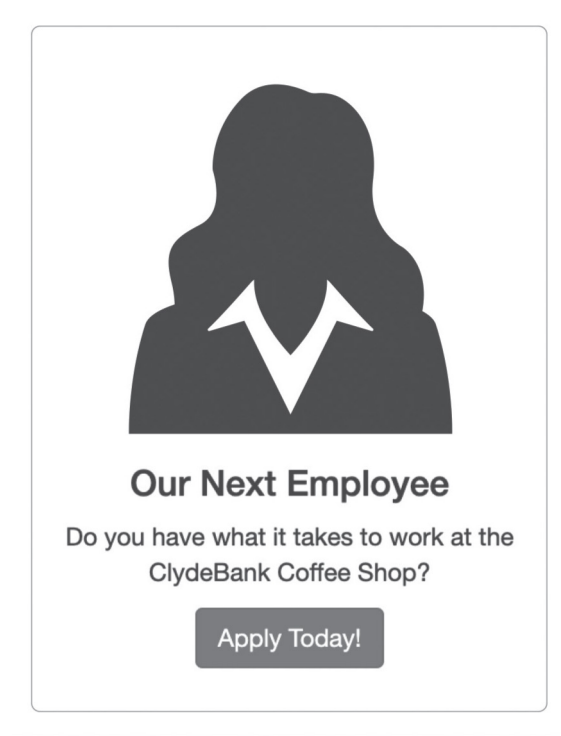
A `btn-outline` button styled with the primary color scheme

fig. 126



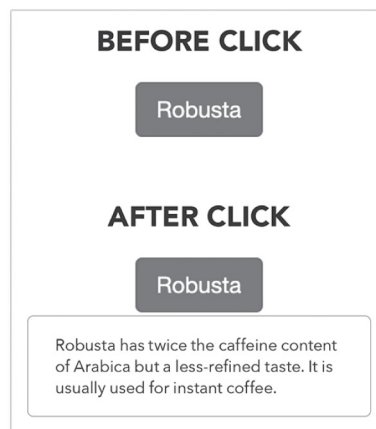
A simple example of the card component

fig. 127



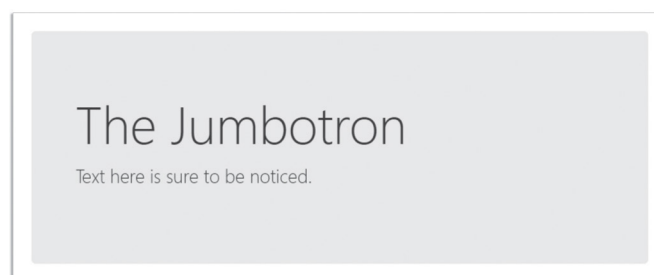
A card featuring an image, title, text, and button

fig. 128



The collapse component is applied to a button and is used to toggle the display of a card.

fig. 129



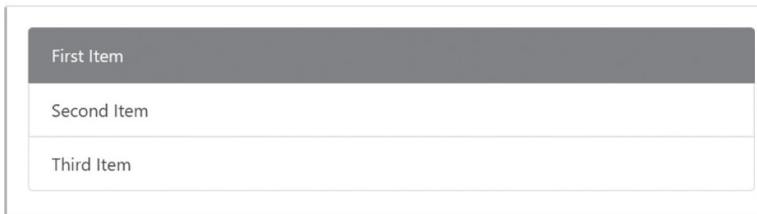
The jumbotron—a big sign your visitors won't miss

fig. 130



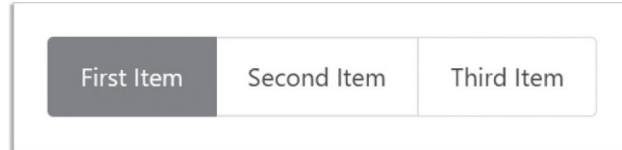
A basic list component example

fig. 131



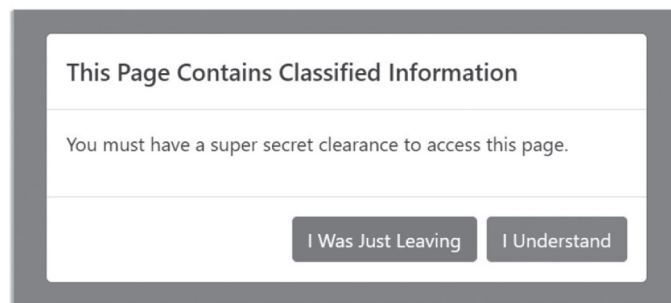
A list component example with an active item

fig. 132



A list component example with an active item displayed horizontally

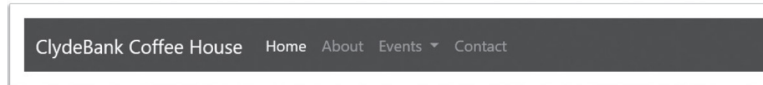
fig. 133



The modal dialog box that appears when the button is clicked

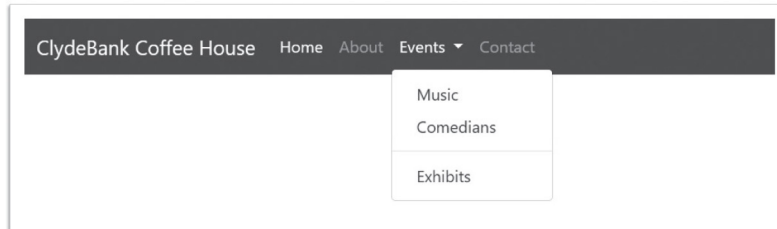


fig. 134



The Bootstrap navigation bar in desktop/laptop mode

fig. 135



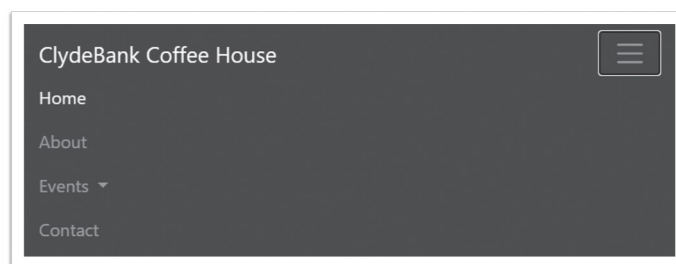
The Bootstrap navigation bar in desktop/laptop mode after the events menu is opened

fig. 136



The Bootstrap navigation bar in mobile mode

fig. 137



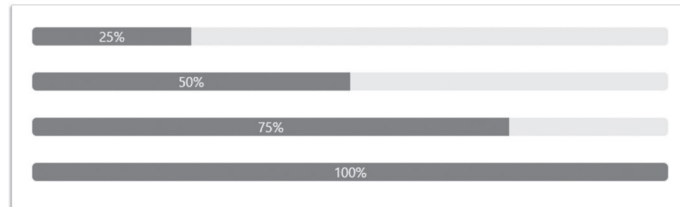
The Bootstrap navigation bar in mobile mode after the hamburger menu is clicked

fig. 138



The Bootstrap pagination component

fig. 139



Various scroll bar components

fig. 140

Year	Shirts	Shoes	Pants
2017	\$420,392	\$18,304	\$34,912
2018	\$480,221	\$17,952	\$36,112
2019	\$491,919	\$16,844	\$46,924
2020	\$501,029	\$15,124	\$39,947

The sales figure table from chapter 10 styled with the `table` class

fig. 141



An `img` element with the `rounded-circle` class

fig. 142

A simple Bootstrap contact form. It consists of three vertically stacked input fields: "Name", "Email", and "Message". Below the "Message" field is a dark gray "Submit" button.

A simple Bootstrap contact form

fig. 143

An inline Bootstrap form. It features two input fields, "First Name" and "Last Name", followed by a dark gray "Submit" button, all contained within a single horizontal container.

An inline Bootstrap form

fig. 144

A contact form with help text below the email field. It includes "Name", "Email", and "Message" fields, and a "Submit" button. Below the "Email" field, there is a line of help text: "We will never share your email address with anyone!".

A contact form with help text below the email field

fig. 145

A list of Bootstrap headings from h1 to h6, demonstrating their visual hierarchy and font sizes. The text is in a slightly softened black color.

- h1. This is a Bootstrap heading.**
- h2. This is a Bootstrap heading.**
- h3. This is a Bootstrap heading.**
- h4. This is a Bootstrap heading.**
- h5. This is a Bootstrap heading.**
- h6. This is a Bootstrap heading.**

Bootstrap headings. It's difficult to tell in the image, but the text isn't exactly black—it's a slightly softened version of black.

fig. 146

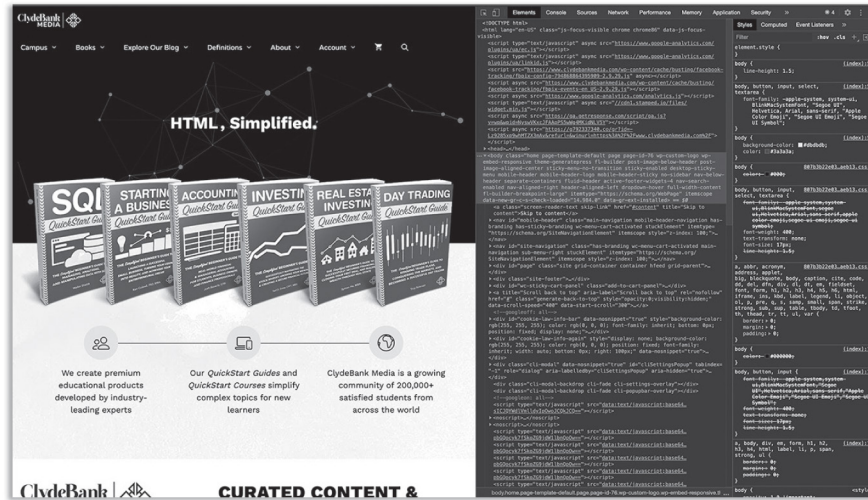
```
This is a sample of code.  
This is a sample of preformatted text.
```

Bootstrap's enhanced `code` and `pre` elements.

# CHAPTER 15

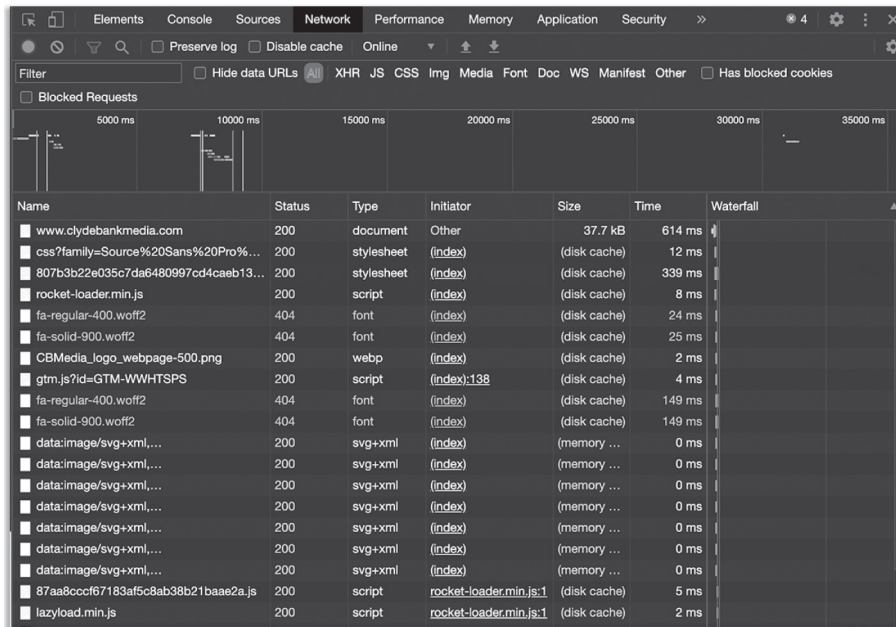
## Workflow

fig. 147



The Chrome inspector/development tools for debugging the ClydeBank Media home page

fig. 148



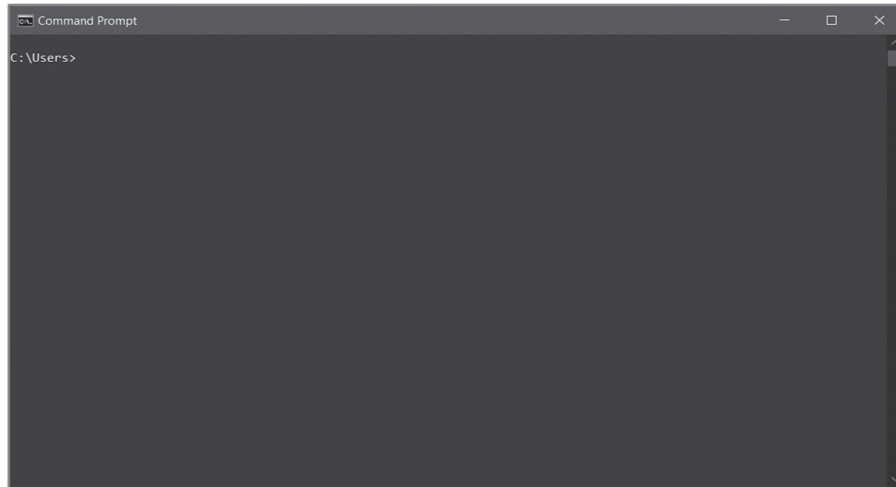
The Chrome inspector/development tools with the Network tab selected

# CHAPTER 16

## Git

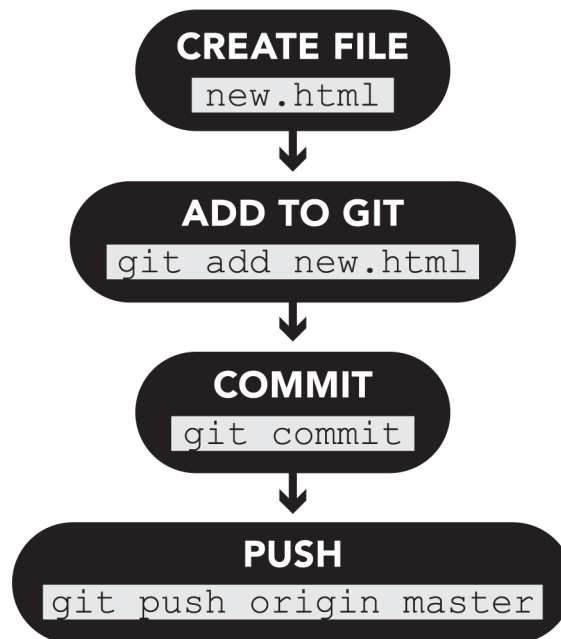
---

fig. 149



The Command Prompt window on Windows

fig. 150



# Appendix I

fig. 151

PERSONAL HOSTING	<b>BEST VALUE</b> PREFERRED HOSTING BEST SELLER	BUSINESS HOSTING
<b>\$1.99</b> /mo	<b>\$5.99</b> /mo	<b>\$6.99</b> /mo
<ul style="list-style-type: none"><li>✓ 1 Website</li><li>✓ 1000 GB Bandwidth</li><li>✓ 1 Database</li></ul>	<ul style="list-style-type: none"><li>✓ Unlimited Websites</li><li>✓ 3000 GB Bandwidth</li><li>✓ Unlimited Databases</li><li>✓ Free Domain</li><li>✓ Unlimited 10 GB Emails</li></ul>	<ul style="list-style-type: none"><li>✓ Unlimited Websites</li><li>✓ Unlimited Bandwidth</li><li>✓ Unlimited Databases</li><li>✓ Free Domain</li><li>✓ Free Setup</li><li>✓ Unlimited 10 GB Emails</li></ul>
<b>BUY NOW</b>	<b>BUY NOW</b>	<b>BUY NOW</b>

A sample comparative feature list for a website hosting service

fig. 152

### EXAMPLE OF BANDWIDTH

**MED SIZE BUSINESS** | 175 GB OF BANDWIDTH PER MONTH | **SERVERS** (Data, websites, etc.)

**SMALL BUSINESS** | 11 GB OF BANDWIDTH PER MONTH | **SERVERS** (Data, websites, etc.)

DAILY VISITORS: 3,000 | AVG. PAGE SIZE: 1 MB | AVG. PAGE VIEWS PER VISITOR: 2

DAILY VISITORS: 500 | AVG. PAGE SIZE: 400 KB | AVG. PAGE VIEWS PER VISITOR: 2

Source: <https://tools.pingdom.com/>

fig. 153

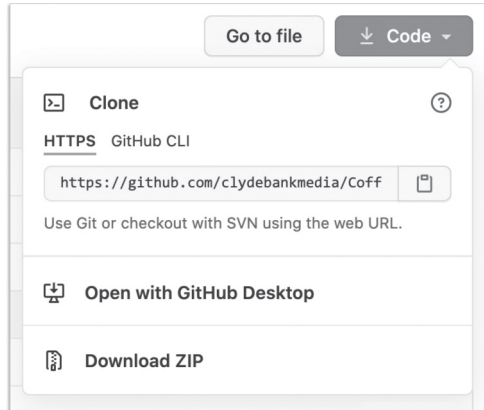
<b>UPTIME GUARANTEE</b>	<b>DAILY MAX</b>	<b>WEEKLY MAX</b>	<b>MONTHLY MAX</b>	<b>YEARLY MAX</b>
<b>99%</b>	14m 24.0s	1h 40m 48.0s	7h 18m 17.5s	3d 15h 39m 29.5s
<b>99.5%</b>	7m 12.0s	50m 24.0s	3h 39m 17.5s	1d 19h 49m 44.8s
<b>99.9%</b>	1m 26.4s	10m 4.8s	43m 49.7s	8h 45m 57.0s



# Appendix V

---

fig. 154



The GitHub code download dialog

# GLOSSARY

---

## **10-K**

Annual financial report that is required of publicly traded companies.

## **10-Q**

Quarterly financial report that supplements the 10-K.

## **Ask price**

The stock price at which a market maker can guarantee a transaction for a buyer. Think of an ask price as the amount someone is willing to immediately accept in order to buy a stock.

## **Bid price**

The stock price at which a market maker can guarantee a transaction for a seller. Think of a bid price as the amount someone is willing to immediately accept in order to sell a stock.

## **Bond**

An IOU issued by a government or private enterprise in exchange for cash. Bondholders (buyers) are paid interest at fixed intervals and rates and are repaid the bond's full principal amount at a future maturity date.

## **Bubble**

When the price of stocks or other securities becomes inflated due to herd behavior and overzealous investor confidence not rooted in sound fundamental analysis.

## **Call option**

An options contract that guarantees the option "owner" the right to purchase a stock at a specified price (strike price) before a specified expiration date.

## **Capital gain**

A profit resulting from an investor's ownership in a stock or other investment that has increased in value and can be sold at a price higher than its original purchase price.

## **Capital structure**

The way in which a company secures capital. The issuance of debt (bonds) and equity (stocks) are the primary methods of securing capital.

## **Corporate governance**

The layout and functioning of a corporation's management, including a system of rules, control hierarchies, policies, values, shareholder interests, community, and other factors.

## **Correlation**

The similar response of certain stocks to various outside factors, scored on a range from -1 to +1. Two stocks are perfectly correlated if they have a correlation value of +1. They are perfectly non-correlated if they have a correlation value of -1.

## **Cost basis**

The cost basis for a stock is the original cost of obtaining the stock adjusted for income obtained through the stock, such as dividends, capital distribution, and any income gained from selling options on the stock.

## **Covered call**

When a trader selling a call option owns the requisite shares in the underlying asset and is therefore able to readily produce the shares if the option is "called in."

## **Debt-to-asset ratio**

Also known as "debt ratio," a ratio used to quantify the percentage of a company's assets that are financed by creditors.

## **Debt-to-equity ratio**

A comparative measurement of the claims on a company's value exerted by creditors vs. the claims exerted by equity holders (shareholders).

## **Deflation**

When fewer units of currency have the power to purchase more goods and services. Deflation results from a decline in available money supply.

## **Derivative**

A security that derives its price from the price of other assets. Examples of derivative securities include options and commodities futures contracts.

## **Dividend**

Cash payment issued by a company to its stockholders on a regular basis, usually quarterly.

## **Due diligence**

The mandated inspection of a security by brokerages that must take place before the broker brings the security to market.

## **Earnings per share (EPS)**

Total company profit divided by total outstanding shares.

## **Efficient market hypothesis (EMH)**

The theory that all available information about a stock is reflected in its current price.

## **Equity**

A party's ownership percentage in a business, corporation, or other property.

## **ETF (exchange traded fund)**

ETFs are a pre-diversified, tradable security, but unlike mutual funds, ETF prices can fluctuate throughout the day. ETFs operate on the market in essentially the same manner as a stock.

## **Expense ratio**

An annual fee charged by the managers of mutual funds or ETFs. Expense ratios account for administrative overhead and other fixed costs of managing the fund or ETF.

## **Foreign tax withholding**

Taxes applied to investment income earned by nonresident investors.

## **Fundamental analysis**

The evaluation of core quantitative and qualitative attributes defining the financial vitality of a security's underlying assets. In the case of stocks, the subject of a fundamental analysis would be the corporation or business that is issuing the stock.

## **Growth investing**

Investing on the basis of a great story, inspired by companies that are making big splashes in relevant market sectors. Growth investors are open to investing in companies with higher levels of debt, higher P/E ratios, and lower earnings per share (EPS). Compare with "value investing."

## **Growth stock**

A stock that may not have particularly competitive financials but is eagerly sought by the market nonetheless on the basis of anticipated growth rather than dividend income.

## **GTC limit order**

A limit order that is “good till canceled.” A GTC, unlike a regular limit order (see definition below) does not expire at the end of the trading day. GTC limit orders expire only after a specified period of days has elapsed or after the investor cancels them. A 60-day GTC limit order, for example, is good for 60 days or until canceled.

## **Hedge fund**

Speculative, actively managed fund aimed at high-net-worth individuals. Hedge fund managers pursue aggressive growth through the use of derivative securities, short positions, and other forms of complex investment strategies.

## **Index fund**

A mutual fund comprised of stocks that reflect the composition of a specific market index.

## **Index investing**

Investing in a mutual fund or ETF comprised of stocks that reflect the composition of a specific market index.

## **Inflation**

The decline of a currency’s purchasing power.

## **Initial Public Offering (IPO)**

The first open-market offering of equity shares in a newly public company.

## **Leverage**

The application of borrowed capital for the purpose of acquiring investments for a greater return potential, albeit with a greater risk. Leverage can enhance returns and exacerbate losses.

## **Limit order**

An order placed to buy or sell a stock if and only if the stock reaches a specified price. Limit orders are distinct from market orders in that there is no guarantee that the transaction will be executed. Unless the limit order is “GTC” (see definition above) it expires at the end of the current trading day.

## **Liquidity**

A measure of how fast a stock or other asset can be turned into cash.

## **Long position**

An investment whereby a return is realized if the purchased security gains value over time.

## **Long-term capital gain**

Profit made from purchasing a security and holding it for at least a year before selling it for a gain. Long-term capital gains are taxed at the capital gains tax rate, which is generally favorable relative to the standard income tax paid on short-term capital gains.

## **Marketability**

The ability to trade a stock or other asset at a given price at a given volume.

## **Market capitalization**

Stock price multiplied by total shares outstanding. Market capitalization is used as a measurement of a company’s overall size and total value.

## **Market correction**

A sudden downturn in the market due to inflated stock prices and general overestimations of the market’s strength.

## **Market maker**

A firm that publicly quotes stock prices to the public. In order to ensure liquidity, market makers must be willing to buy and sell stock at the prices they quote.

## **Market order**

An order to buy or sell stock whereby the broker commits to an immediate transaction at an available market price. Market orders are used when investors prioritize the immediate execution of a trade over the exact price of a trade.

## **Mutual fund**

A professionally managed investment vehicle divided into shares and powered by investments in stocks, bonds, or other securities, and funded by shareholders.

## **Mutual fund load**

The commission paid to an advisor or broker for researching and selecting a mutual fund on a client’s behalf.

## **NAV (net asset value)**

Used to measure the value of a mutual fund. NAV is the aggregate per-share value of all securities that comprise a mutual fund, minus expenses. NAV values do not fluctuate throughout the day like stock values but instead are priced once at the end of each business day to reflect the day’s valuation change.

## **New York Stock Exchange**

The largest stock exchange in the world, as determined by the combined total market capitalization values of the securities represented on the exchange.

## **Normal yield curve**

The standard relationship between a bond’s term and its yield. In a normal yield curve, the longer the bond’s term (the more time allowed to pass before the bond’s face value is returned to the investor) the higher its yield.

## **Over-the-counter (OTC) market**

Trading venues that are networks of dealers. OTC markets are subject to fewer standards and regulations compared to centralized exchange markets but tend to be fair in transacting securities trades.

## **Part B prospectus**

A secondary component of a mutual fund’s prospectus that often includes important variable expense information and other data not found in the general prospectus. Part B prospectuses are usually not issued automatically. They often must be explicitly requested by the investor.

## **P/E (price-earnings) ratio**

A stock evaluation metric that is calculated by dividing a stock’s price by its earnings per share. Stocks with lower P/Es are considered “cheap.” Stocks with higher P/Es are considered more expensive.

## **Prospectus**

A report issued on behalf of a mutual fund disclosing the fund’s strategy, goals, fixed expenses, and risks.

## **Put option**

An options contract that guarantees the option “owner” the right to sell a stock at a certain price (strike price) before a specified expiration date.

## **Realized capital gain**

When an investor sells out of an investment position at a profit: receiving more cash than what he originally paid to buy into the position. Also known as a “realized gain.”

## **Rebalancing**

The investor’s periodic portfolio checkup, ensuring that asset ownership is proportioned evenly with no undue risk resulting from an over- or underabundance of one asset type or another.

**REIT (real estate investment trust)**

REITs are funds devoted to the acquisition and management of real estate assets for profit. REITs allow investors to own pieces of properties without having to hire a property management company or self-manage.

**SEC (Securities & Exchange Commission)**

The federal regulatory agency that oversees the buying, selling, and marketing of stocks, bonds, and other financial securities.

**Security**

A stock, bond, mutual fund, ETF, or other financial instrument that confers financial value to an extent determined by the market's demand.

**Settlement date**

Regarding the purchase or sale of a stock, the settlement date refers to the date on which the transfer of cash and legal stock ownership actually takes place.

**Short position**

An investment transaction whereby a gain is realized if the security loses value over time.

**Short-term capital gain**

Profit made from purchasing a security and then selling it for a gain within a year's time. Short-term capital gains are taxed at your standard income tax rate.

**Slippage cost**

The difference between an investor's expected price when buying or selling a stock and the actual price paid or received for the stock. Slippage is the result of swift market changes that may transpire between the investor's placement of an order and the broker's execution of that order. Instances of slippage are usually witnessed following the execution of a market or stop-loss order.

**Socially responsible investing**

The selection of investments on the basis of moral values and/or positive civic, humanitarian, or environmental implications, in addition to financial return potential.

**Stock**

Equity shares issued by a business or corporation in exchange for capital to further fund business development and growth.

**Stock market index**

A measurement based on certain attributes of a qualified assortment of stocks. Stock market indexes are used to track the overall performance of various sections of the market. Examples include the Dow Jones Industrial Average, the Nasdaq, and the S&P 500.

**Stock split**

When a company divides its shares so that each outstanding share is suddenly worth two shares, three shares, or some other multiple. Theoretically, the stock's price will decrease in proportion to the split, but oftentimes the market will try to buoy the stock back toward its pre-split price.

**Stop-limit orders**

An order to buy or sell a stock in the event that it drops below (or climbs above) a specified price (known as the "stop price"). Stop-limit orders trigger a limit order (see definition) when the stop price is reached.

**Stop-loss order**

An order to buy or sell a stock in the event that it drops below (or climbs above) a specified price (known as the "stop price"). Stop-loss orders trigger a market order (see definition) when the stop price is reached.

**Tax-loss harvesting**

Refers to selling a security at a loss in order to offset income and/or capital gains from the sale of other securities.

**Technical analysis**

Distinct from fundamental analysis, technical analysis is the evaluation of a stock or other security on the basis of its behavior in the market. Technical analysis concentrates on the perceived trends and patterns that affect a stock's price, whereas fundamental analysis is immediately focused on the vitality (financial and otherwise) of the company itself using financial statements and other reported financial data of the company.

**Term**

A specified period of time that a bondholder must wait until the bond's principal (face value) is returned. The bondholder is paid interest throughout the term. (Also known as "maturity date")

**Trading volume**

The total quantity of stock shares being traded during a given time interval.

**Unrealized capital gain**

Also known as an "unrealized gain," an investment position that has appreciated in value and is still being held by the investor. An "unrealized gain" becomes a "realized gain" when the investor sells out of the position in exchange for cash.

**Value investing**

Investing on the basis of sound financial fundamentals. Value investors invest in companies that consistently turn profits, pay dividends, have low debt, and are undervalued compared to competitors in the same industry.

**Value stock**

Stock whose valuation will hold up amid the scrutiny of fundamental analysis (see definition above). Value stocks have low P/E ratios, competitive yield, and reasonable debt levels. And they are undervalued compared to competitors in the same industry.

**Volatility**

The degree to which a stock or other asset's price is subject to fluctuation. Measurements of volatility may also be applied to markets as a whole. Volatility encompasses not only downside market movement but upward movement as well.