



HTML and CSS

8th Edition

Chapter 9: Defining Selectors



Objectives

- Create selectors for CSS style rules.
- Select elements by name, class, id, context, pseudo-class, pseudo-element, attributes, and values.
- Differentiate pseudo-class from pseudo-element.
- Select the first line or first letter of an element.
- Format links based on their current states.
- Specify groups of elements.



Defining Selectors

- **Selector** is the part of a CSS style rule that determines which elements will receive formatting.
 - Simplest selectors format all elements of a given type.
 - More complex selectors apply formatting rules to elements based on class, id, etc.

h1 {color: red;}
Name of desired element



Constructing Selectors

- A selector can define five different criteria for choosing elements to format:
 - The type or name of the element.
 - The context in which the element is found.
 - The class or id of an element.
 - The pseudo-class or pseudo-element of an element.
 - Whether or not an element has certain attributes and values.
- Selectors can include any combination of these criteria in order to pinpoint desired elements.



Selecting Elements by Name

- Choosing elements to format based on the element's name.

h1 {color: red;}
└── Name of desired element



Selecting Elements by Context

- Choosing elements to format based on the element's context.

`h1 em {color: red;}`

└─ Name of desired element

└─ Context



Selecting Elements by Class or ID

- You can apply formatting to only those elements that are labeled with a class(.) or an id(#).

Diagram illustrating CSS selectors:

- `em.very`: `em` is the Name of desired element, `.very` is the Class.
- `div#gaudi`: `div` is the Name of desired element, `#gaudi` is the ID.

```
em.very {color: red;}  
div#gaudi {color: red;}
```

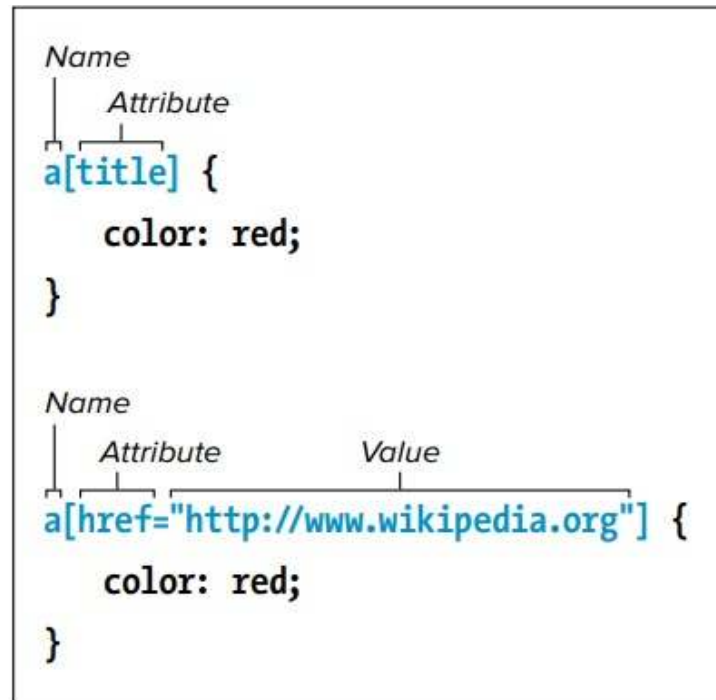


Class Selectors vs. ID Selectors

- Use class selectors instead of id selectors.
 - You can reuse class selectors.
- Two issues that id selectors introduce:
 - Associated styles can't be reused on other elements.
 - id may appear on only one element in a page.
 - Leads to repeating styles, rather than sharing them via a class.
 - Makes CSS longer and more complicated than necessary.



Selecting Elements by Attributes and Values



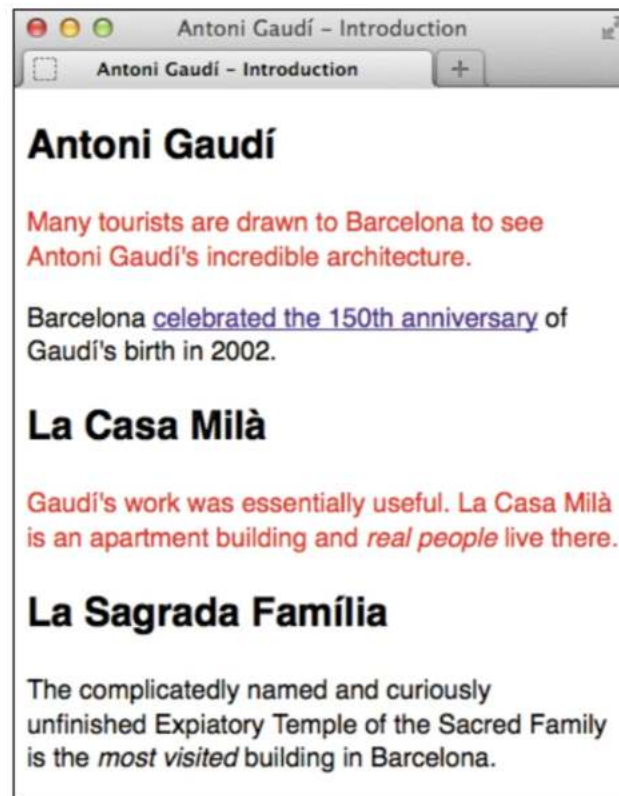
You can use the square brackets to add to a selector information about the desired element's attributes (or attributes and values). The first example targets all **a** elements with a **title** attribute, and the second targets only those that point to Wikipedia.



Selecting Elements by Attributes and Values

```
p[class] {  
  color: red;  
}
```

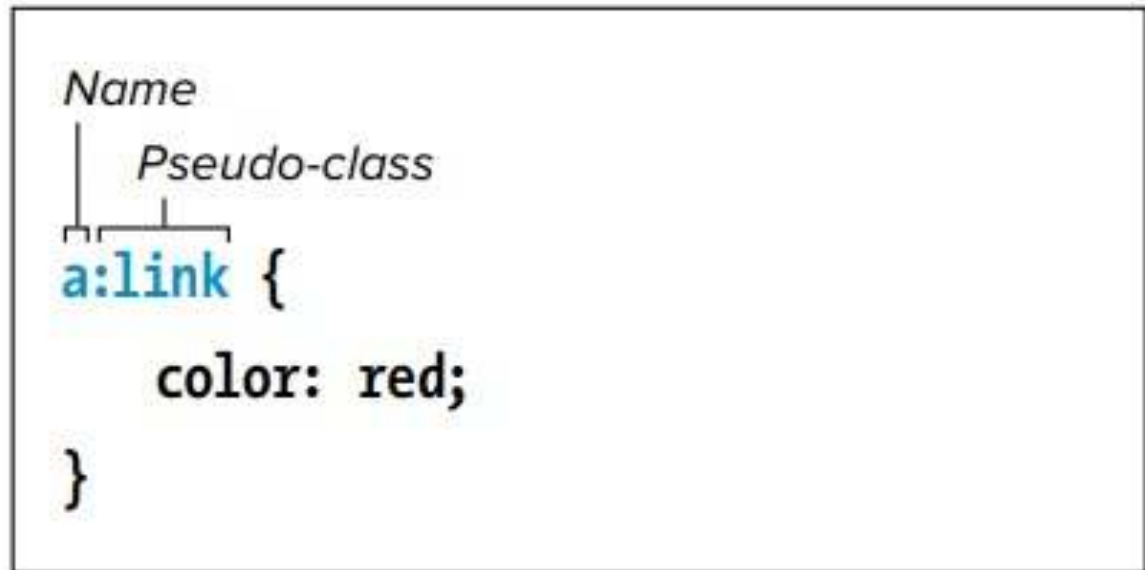
```
...  
<article class="architect">  
  <h1>Antoni Gaudí</h1>  
  
  <p class="intro">Many tourists are  
  → drawn to Barcelona to see Antoni  
  → Gaudí's incredible architecture.</p>  
  
  <p>Barcelona <a href="http://www.  
  → gaudi2002.bcn.es/english/" rel=  
  → "external">celebrated the 150th  
  → anniversary</a> of Gaudí's birth  
  → in 2002.</p>  
  
  <h2 lang="es">La Casa Milà</h2>  
  <p class="highlight">Gaudí's work was  
  → essentially useful. <span lang="es">La  
  → Casa Milà</span> is an apartment  
  → building and <em>real people</em> live  
  → there.</p>  
  
  <h2 lang="es">La Sagrada Família</h2>  
  <p>The complicatedly named and curiously  
  → unfinished Expiatory Temple of the  
  → Sacred Family is the <em>most visited  
  → </em> building in Barcelona.</p>  
</article>  
...
```





Selecting Elements By Pseudo-class

- Pseudo-classes are used to define a special state of an element.



E In this example, the selector chooses **a** elements that belong to the **link** pseudo-class (that is, the links on your page that haven't yet been visited).



Selecting Elements by Psuedo-elements

```
<!DOCTYPE html>
<html>
<head>
<style>
p::first-letter {
  color: #ff0000;
  font-size: xx-large;
}
</style>
</head>
<body>

<p>You can use the ::first-letter pseudo-element to add a
special effect to the first character of a text!</p>

</body>
</html>
```

You can use the ::first-letter pseudo-element to add a special effect to the first character of a text!



Pseudo-Elements, Pseudo-Classes

- **Pseudo-elements:** used to style specified parts of an element. It doesn't exist as an element in the HTML.
 - syntax adds double colon instead of single colon (::first-line and ::first-letter).
 - Distinguishes the pseudo-elements from pseudo-classes.
- **Pseudo-class** does apply to an HTML element.
 - :first-child, :link, and :hover



Selecting Links Based on Their State

- Pseudo-classes apply formatting to links based on their current state.
- **To select links to format based on their state:**
 - Type *a* (the name of the element for links).
 - Type **:** (a colon).
 - To change link's appearance, type:
 - *link* for links that haven't yet been activated or pointed to.
 - *visited* to change links that have been activated.
 - *focus*, if link was selected via keyboard and is ready to activate.
 - *hover* to change the appearance of links when pointed to.
 - *active* to change the appearance of links when activated.

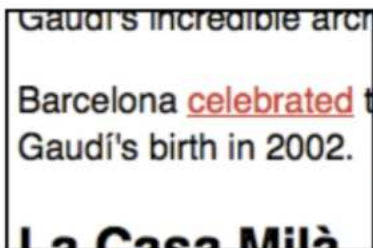


Selecting links based on their state

```
a:link {  
    color: red;  
}  
  
a:visited {  
    color: orange;  
}  
  
a:focus {  
    color: purple;  
}  
  
a:hover {  
    color: green;  
}  
  
a:active {  
    color: blue;  
}
```



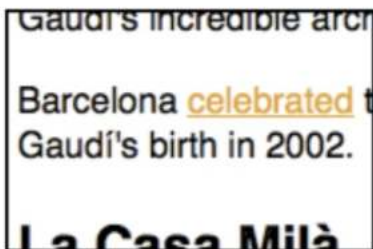
Formatted Links Based on Current State



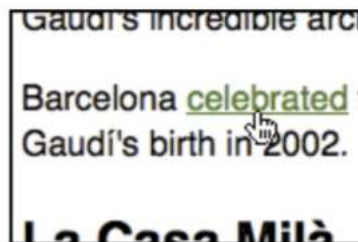
Links will be red when new and not visited.



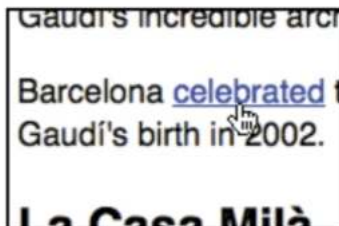
If the link gets the focus (such as with the Tab key), it is purple.



Once the link has been visited, it turns orange.



When the visitor hovers over the link with the pointer, it is green.



As the visitor activates the link, it turns blue.



Specifying Groups of Elements

- Apply the same style rules to more than one element:
 - Combine selectors and apply the rules in one CSS rule.
- **To apply styles to groups of elements:**
 - Type *selector1*
 - *Selector1* is the first element affected by the style rule.
 - Type , (a comma).
 - Type *selector2*
 - *Selector2* is the next tag affected by the style rule.
 - Repeat steps for each additional element.



HTML and CSS

8th Edition

Chapter 10: Formatting Text with Styles



Objectives

- Format text with CSS styles.
- Choose a font family.
- Specify alternate fonts.
- Apply italics and bold formatting.
- Set the font size and the line height.
- Set all font values at once.
- Set the text color and change the text's background.
- Control spacing with tracking and kerning.
- Add indents and set white space properties.



Formatting Text with Styles

- With CSS, you can:
 - Change font, size, weight, slant, line height.
 - Change foreground and background color.
 - Change spacing and alignment of text.
 - Decide whether to underline or strike through text.
 - Convert text to all uppercase, all lowercase, or small caps.
 - Apply changes to entire document or entire site in just a handful of lines of code.



Before and After

Barcelona's Architect

Antoni Gaudí's incredible buildings bring millions of tourists to Barcelona each year.

Gaudí's non-conformity, already visible in his teenage years, coupled with his quiet but firm devotion to the church, made a unique foundation for his thoughts and ideas. His search for simplicity, based on his careful observations of nature, is quite apparent in his work, from the [Park Guell](#) and its incredible sculptures and mosaics, to the Church of the [Sacred Family](#) and its organic, bulbous towers.

La Sagrada Família



The complicatedly named and curiously unfinished masterpiece that is the Expiatory Temple of the Sacred Family is the most visited building in Barcelona. In it, Gaudí combines his vision of nature and architecture with his devotion to his faith. His focus on this project was so intense that he shunned all other projects, slept in an apartment at the work site surrounded by plans and drawings, and so completely ignored his disheveled appearance that when, in 1926, he was struck by a streetcar in front of the church, he was mistaken for an indigent and brought to a hospital for the poor where he died soon thereafter.

The Sagrada Família attracts even the non-religious to its doors in large part due to this tragic story and its still unfinished state, of which the everpresent scaffolding and cranes are permanent reminders. But there is something more. In the Sagrada Família, Gaudí again brings nature and architecture together—the soaring spires look something like rising stalagmites in an underground cave—this time in reverence.

Park Guell



The Park Guell always reminds me of the character Howard Roark in Ayn Rand's [The Fountainhead](#). Gaudí's project in the Park Guell was to build a residential community whose residents would love where they lived. It was never finished.

Perhaps that is for the best, since now we *all* get to enjoy it. The Park Guell is set on a hill overlooking practically all of Barcelona. Its beautiful and even comfortable serpentine bench is filled with foreigners and locals alike every day of the week. Its mosaic lizard has become synonymous with the city itself.

BARCELONA'S ARCHITECT

Antoni Gaudí's incredible buildings bring millions of tourists to Barcelona each year.

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LA SAGRADA FAMÍLIA



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PARK GUELL



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Choosing a Font Family

- Choose a font for the body and headlines on your site.
 - Not every system supports the same fonts by default, so you define alternate fonts as fallbacks.
- **To set the font family:**
 - After the desired selector in your style sheet, type **font-family: *name***
 - *Name* is your first choice of font.



Fonts and Operating Systems

Geneva and Gill Sans on OS X



Times New Roman is the default for Windows





To Specify Alternate Fonts

```
body {  
    font-family: Geneva, Tahoma, Verdana,  
    → sans-serif;  
}  
  
h1,  
h2 {  
    font-family: "Gill Sans", "Gill Sans MT",  
    → Calibri, sans-serif;  
}
```




Creating Italics

```
p {
```

```
font-style: italic;
```

```
}
```



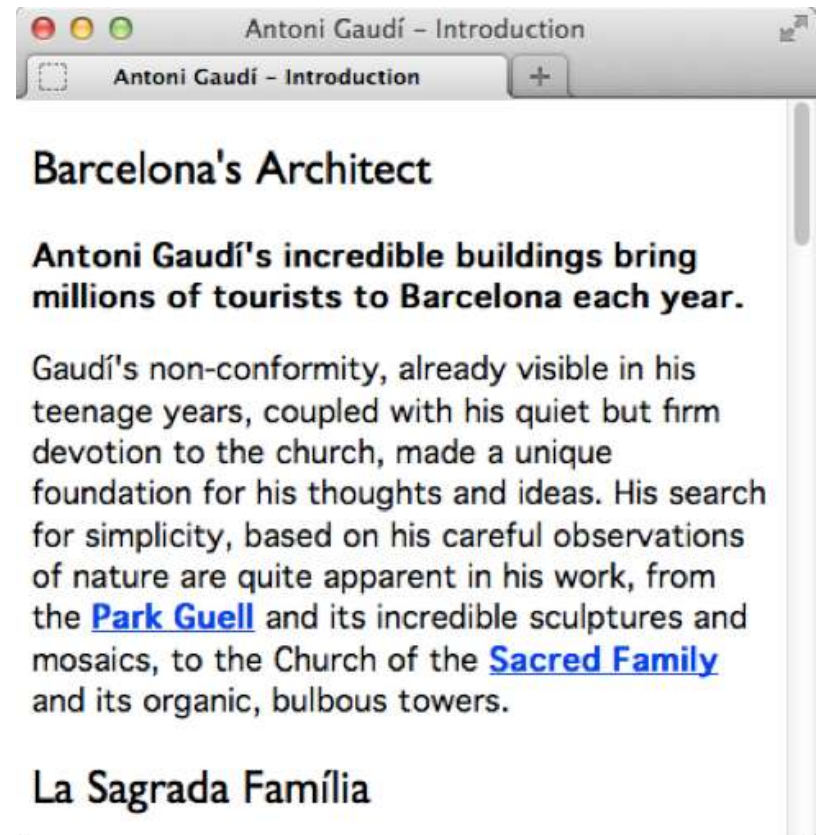


Applying Bold Formatting

```
body {
  font-family: Geneva, Tahoma, Verdana,
  → sans-serif;
}

h1,
h2 {
  font-family: "Gill Sans", "Gill Sans MT",
  → Calibri, sans-serif;
  font-weight: normal;
}

em,
a:link,
.intro .subhead {
  font-weight: bold;
}
```





Setting the Font Size

- Two basic ways to set the font size for text in webpage:
 - Mandate that a specific size be used.
 - Have size be relative to element's parent font size by using percentage, em, or rem values.
 - Relative units have become even more valuable with the explosion of devices of various sizes.



Understanding em and Percentage Font Sizes

- With relative font sizes, establish a **baseline** on the body element, by declaring `body { font-size: 100%; }`
- To figure out what em values to specify:
 - 1em is equal to default size, in this case 16px (on most systems).
 - Determine the em (or percentage) values via division.
 - $\text{Desired size} / \text{parent's size} = \text{value}$
- If user overrides default in browser settings, your page respects this and sizes the rest of the text accordingly (2.18em means make text 2.18 times as large as parent text)



Specifying font size in em unit

```
body {
  font-family: Geneva, Tahoma, Verdana,
  → sans-serif;
  font-size: 100%; /* 16px */
}

h1,
h2 {
  font-family: "Gill Sans", "Gill Sans MT",
  → Calibri, sans-serif;
  font-weight: normal;
}

h1 {
  font-size: 2.1875em; /* 35px/16px */
}

h2 {
  font-size: 1.75em; /* 28px/16px */
}

em,
a:link,
.intro .subhead {
  font-weight: bold;
}

.intro .subhead {
  font-size: 1.125em; /* 18px/16px */
}

.intro p {
  font-size: 1.0625em; /* 17px/16px */
}

.project p {
  font-size: .9375em; /* 15px/16px */
}
```

You can see the result
here:<https://www.htmlcssvqs.com/8ed/examples/chapter-10/font-size-ems.html>



To Mandate a Specific Font Size

- Type **font-size:**.
- Type a specific size after the colon (:).
- Or use a keyword to specify the size:
 - xx-small, x-small, small, medium, large, x-large, or xx-large.

```
h1 {  
    font-size: 35px;  
}  
  
h2 {  
    font-size: 28px;  
}
```





Setting the Line Height

- **Line height** refers to a paragraph's leading.
- **Leading** is the amount of space between each line in paragraph.
- Using a large line height can sometimes make body text easier to read.



To Set the Line Height

- Type **line-height:**.
- Type ***n***
 - Where *n* is a number to be multiplied by element's font size to obtain the desired line height. Most common approach, just a number with no unit.
- Or type ***a***, where *a* is a value in ems, pixels, or points.
 - Use points only for print.
- Or type ***p%***
 - Where *p%* is a percentage of the font size.



Spacing Lines with Line-Height

```
.intro {  
  line-height: 1.45;  
}  
  
.intro .subhead {  
  font-size: 1.125em;  
}  
  
.intro p {  
  font-size: 1.0625em;  
}  
  
.project p {  
  font-size: .9375em; /* 15px/16px */  
  line-height: 1.65; /* 15px*1.65 =  
  → 24.75px */  
}
```



- To Set All Font Values at Once (must include font size and family at a minimum)

For more examples:

```
body {
  font: 100% Geneva, Tahoma, Verdana,
  - sans-serif;
}

h1,
h2 {
  /* Can't combine these into
  font shorthand unless you include
  font size in the shorthand. */
  font-family: "Gill Sans", "Gill Sans MT",
  - Calibri, sans-serif;
  font-weight: normal;
}

h1 { font-size: 2.1875em; }
h2 { font-size: 1.75em; }

em,
a:link,
.intro .subhead {
  font-weight: bold;
}

.intro {
  line-height: 1.45;
}

.intro .subhead {
  font-size: 1.125em;
}

.intro p {
  font-size: 1.0625em;
}

.project p {
  /* Can't combine these into
  font shorthand unless you include
  font family in the shorthand. */
  font-size: .9375em;
  line-height: 1.65;
}
```



Setting the Color

- Can change the color of the elements on webpage.
- Use color names, hexadecimals, or RGB, HSL, RGBA, or HSLA values to define your colors.

Barcelona's Architect

Antoni Gaudí's incredible buildings bring millions of tourists to Barcelona each year.

Gaudí's non-conformity, already visible in his teenage years, coupled with his quiet but firm devotion to the church, made a unique foundation for his thoughts and ideas. His search for simplicity, based on his careful observations of nature are quite apparent in his work, from the **Park Guell** and its incredible sculptures and mosaics, to the Church of the **Sacred Family** and its organic, bulbous towers.

La Sagrada Família





To Set the Color

```
body {
  color: blue;
  font: 100% Geneva, Tahoma, Verdana,
  sans-serif;
}

...

h2 {
  color: #7d717c;
  font-size: 1.75em;
}

...

/* ::: Links ::: */
a:link {
  color: #e10000; /* a red */
}

a:visited {
  color: #b44f4f;
}

a:hover {
  color: #f00;
}

.intro a {
  color: #fdb09d; /* a little pinkish */
}

.intro a:hover {
  color: #fec4b6;
}
```



Setting the Background

- Set the background of individual elements, the whole page, or any combination of the two.
- You can change the background of just a few paragraphs or words, links in their different states, sections of content, and more.
- **To change the background color:**
 - Type `background-color:`
 - Type transparent or *color*
 - Where *color* is a color name or a hex, RGB, RGBA, HSL, or HSLA color value.

```
body {  
  background-color: #88b2d2;  
  font: 100% Geneva, Tahoma, Verdana,  
  sans-serif;  
}  
...  
h2 {  
  background-color: #eaebef;  
  color: #7d717c;  
  font-size: 1.75em;  
}  
...  
.intro {  
  background-color: #686a63;  
  color: #fff;  
  line-height: 1.45;  
}  
...  
...
```





To Use a Background Image

- Type background-image:
- Then type `url(image.png)`
 - *image.png* is the location and file name of the background image relative to location of style sheet.
 - Or type none to use no image at all.

```
body {  
  background-color: #ccc;  
  background-image: url(bg-pattern.png);  
  ...  
}
```





To Repeat a Background Image

- Type `background-repeat: direction`
 - *direction* is either `repeat` to tile the image both horizontally and vertically, **`repeat-x`** to tile the image only horizontally, **`repeat-y`** to tile the image only vertically, or **`no-repeat`** to not tile the image at all.



To Control Whether the Background Image is Attached

- Type background-attachment:
- Then type:
 - **fixed** to stick the background image to the browser window,
 - **scroll** to let it move when the visitor scrolls the whole page,
 - **local** so it scrolls only when the visitor scrolls its *element*.
 - **Leaving** out background-attachment defaults to scroll.



Background Properties

```
body {  
    background-color: #000;  
    background-image: url(sky.png);  
    background-repeat: repeat-x;  
    background-attachment: fixed;  
    background-position: left bottom;  
    ...  
}
```



To Change All the Background Properties at Once

- Type background:
- Specify any of the accepted background property values in any order.

```
body {  
  background: #004 url(../img/ufo.png)  
  no-repeat 170px 20px;  
  color: greenyellow;  
  ...  
}
```



Controlling Spacing

- **Tracking:** Add or reduce spacing between words.
- **To specify tracking:**
 - Type **word-spacing:** *length*
 - Where *length* is a number with units, as in 0.4em or 5px.
- **Kerning:** Add or reduces spacing between letters.
- **To specify kerning:**
 - Type **letter-spacing:** *length*
 - Where *length* is a number with units, as in 0.4em or 5px.



Spacing

- The letters in all headings now have more space between them.

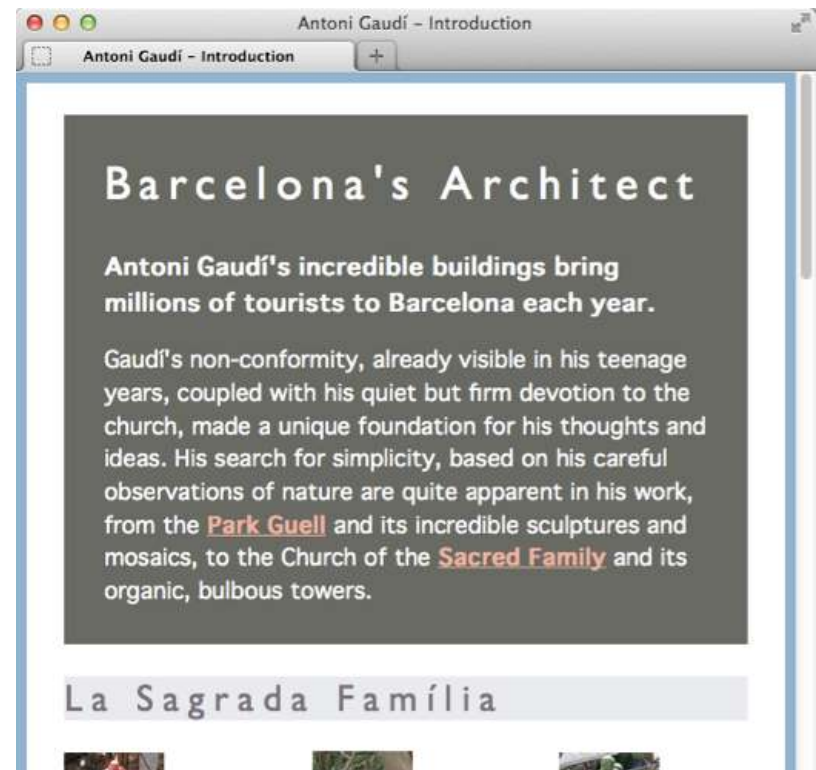
```
body {
  background-color: #88b2d2;
  font: 100% Geneva, Tahoma, Verdana,
  → sans-serif;
}

h1,
h2 {
  font-family: "Gill Sans", "Gill Sans MT",
  → Calibri, sans-serif;
  font-weight: normal;

  /* temporary for demo purposes */
  letter-spacing: 7px;
}

h1 {
  font-size: 2.1875em;
}

... rest of CSS ...
```





Adding Indents

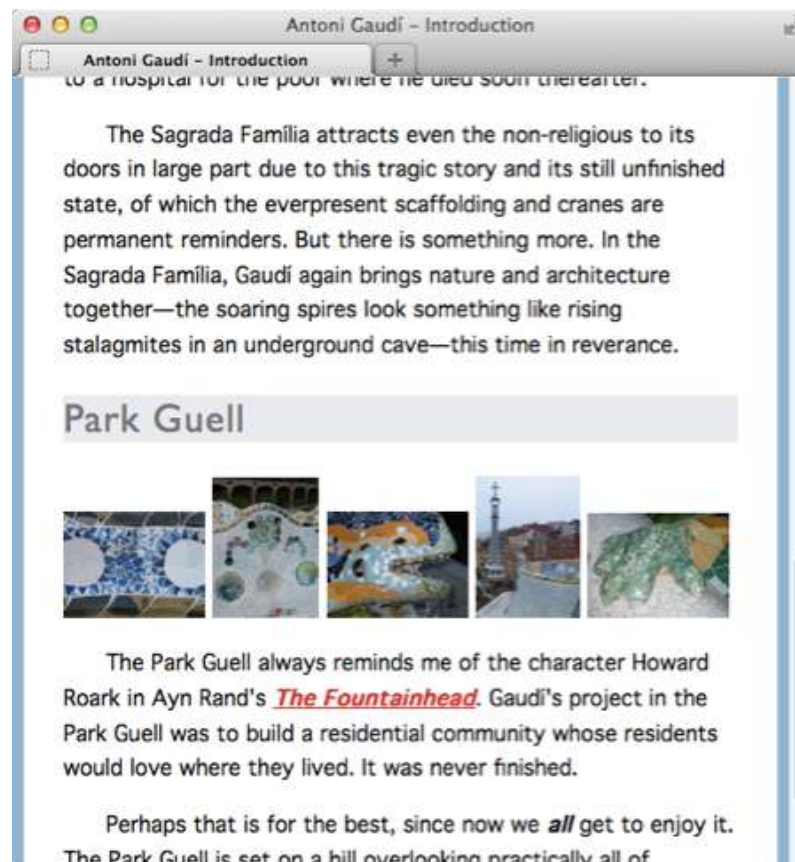
- **Text-indent property** determines how much space should precede the first line of a paragraph.
- **To add indents:**
 - Type **text-indent: *length***.
 - Where *length* is a number with units.



Indenting Our Page

- The first line in each paragraph is indented 30 pixels.

```
.project p {  
  font-size: .9375em; /* 15px/16px */  
  line-height: 1.65;  
  text-indent: 2em; /* 30px */  
}  
  
... rest of CSS ...
```





Aligning Text

- Set text to always aligns right, left, center, or justified, as desired.
- **To align text:**
 - Type **text-align:**
 - Type **left** to align the text to the left.
 - Or type **right** to align the text to the right.
 - Or type **center** to center the text in the middle of the screen.
 - Or type **justify** to align the text on both the right and the left.



Aligning Text in Page

```
...  
  
h1, h2 {  
    font-family: "Gill Sans", "Gill Sans MT",  
    → Calibri, sans-serif;  
    font-weight: normal;  
    letter-spacing: 1px;  
    text-align: center;  
}  
  
...  
  
p {  
    text-align: justify;  
}  
  
.intro .subhead {  
    font-size: 1.125em;  
    text-align: center;  
}  
  
... rest of CSS ...
```




Using Small Caps

- Many fonts have a small caps variant that includes uppercase versions of the letters proportionately reduced to small caps size.
- Invoke small caps variant with font-variant property.
 - Don't forget the hyphen in both font-variant and small-caps.
- Rendering small caps may vary a tiny bit from browser to browser.



Using and Removing a Small Caps Font

- **To use a small caps font:**
 - Type **font-variant: small-caps.**
- **To remove small caps:**
 - Type **font-variant: none.**

LA SAGRADA FAMÍLIA



Decorating Text

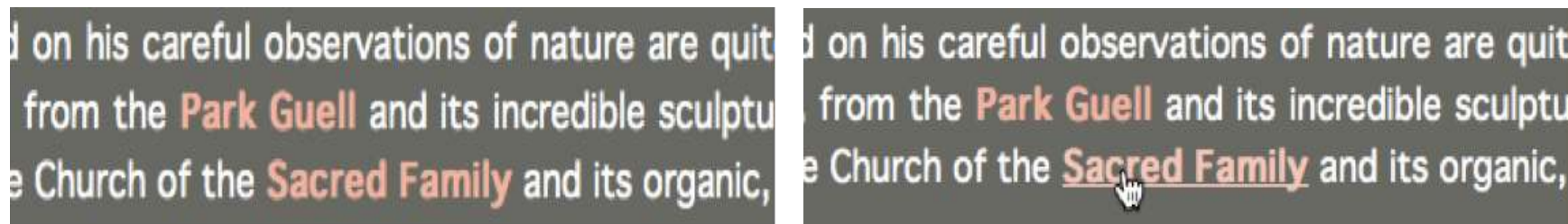
- **Text-decoration property** lets you adorn text with underlines and other types of lines.
 - Most common use is for styling link states.
- **To decorate text:**
 - Type **text-decoration:**
 - Type **underline** after the colon (:) to underline text.
 - Or type **overline** for a line above the text.
 - Or type **line-through** to strike out the text.
- **To get rid of decorations:**
 - Type **text-decoration: none;**



Decorating Text

No underline in default state.

Link is underlined when hovered over.



```
a:link {
  color: #e10000;
  text-decoration: none;
}

a:visited { color: #b44f4f; }

a:hover {
  color: #f00;
  text-decoration: underline;
}

.intro a { color: #fdb09d; }
.intro a:hover { color: #fec4b6; }
```



Setting White Space Properties

- **White-space property** displays extra spaces and returns.
 - By default, multiple spaces and returns in HTML document are either displayed as a single space or ignored.
- **To set white space properties:**
 - Type **white-space:**.
 - Type **pre** to have browsers display all the spaces and returns in the original text.
 - Or type **nowrap** to treat all spaces as non-breaking.
 - Or type **normal** to treat white space as usual.



A Horizontal Scrollbar Appears

```
...  
  
.intro {  
  background-color: #686a63;  
  color: #fff;  
  line-height: 1.45;  
  padding: 1px 1.875em .7em;  
}  
  
.intro .subhead {  
  font-size: 1.125em;  
  
  /* temporary for demo only */  
  color: lime;  
  text-shadow: 3px 2px 2px black;  
  white-space: nowrap;  
}  
  
... rest of CSS ...
```

