

Chapter 8 — CSS Positioning and Background Images

CSS allows for many different ways to arrange elements on a page. This chapter will show how to float elements allowing other elements to wrap themselves around and how to absolutely position an element on the page at exactly the location you want it.

Learning Outcomes for this Chapter

Upon completion of the reading of this chapter and assignments found at the end, a student should be able to:

- float elements to the right or left margin,
- use the clear style to postpone display of an element until the current floats complete,
- use absolute positioning to place an element at an exact location on the page,
- explain the z order of elements of a page and use it to create layered element,
- add a background image to a page or a specific element,
- use various options to cause a background image to tile, stretch, and scroll.

Floating Elements

By this point in the book you should be familiar with the HTML structure and how flow and phrasing elements organize themselves on a webpage. Each element has default style they follow to display on a screen. It is possible, however to overwrite and manipulate these rules using float in CSS.⁹⁵

Floating an element in CSS means that you are manually telling the element to change its position on a webpage. Doing so will only affect the element and those that come after, never before. You may float an element horizontally to the right or left margin using `float:right;` or `float:left;`.

If you float an element that usually expands to the entire width of the page, you will need to assign it a width using the `width: dimension;` style.

In the following example there are three floats:

1. the page title is floated to the left and the remainder of the article that follows wraps around it;
2. the aside in the article floats to the right and the second and third paragraph wrap around it;
3. and the copyright message floats to the right of the footer.

⁹⁵ <https://developer.mozilla.org/en-US/docs/Web/CSS/float>



Floating an element on a page can complicate positioning for those elements that come after it. In these cases, you can use the `clear:right;`, `clear:left;`, or `clear:both;` commands. These commands will communicate to the browser to not display the element until the right, left, or both sides of the element are clear from floated objects on the same line.

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <title>Showing Floats</title>
    <link href="float.css" rel="stylesheet" type="text/css">
  </head>
  <body>
    <h1>This Page's Title</h1>
    <section>
      <h2>Title of the Section</h2>
      <p>This is the first paragraph. Redim dierac
        sonen tet gelir peco ecolok esac sa, he
        citerov rupa etaro. Asecuso aqu cegir ulerena mitadad ganacel
        eripey cacelef. Lihu mefetas irenilus teqih dapuno cieri
        dodatin fadasar.</p>
      <aside>
        <h3>Floating Box Aside</h3>
        <ul>
          <li>First thing: Ga reto nierico reynosac!</li>
          <li>Second thing: Pa pigi ipesu cegucat upegas zacin
            temey!</li>
          <li>Another thing: Rosie esonanev taralor pebon
            nudohe.</li>
        </ul>
      </aside>
      <p>Second paragraph. Renuv enikoyi cane libeti roheri nito go
        naret; yese ragop
        erenusi gilire ciseh sicip cesopet tol acas! Pasetes konec
        nucit. Manam ba la fenefob umetel re cikuc periyu.</p>
      <p>Third paragraph. Cet men xin hesid tisigied ahaceyi: Be
        temeteh iyiqi cad te. Wetu lat edema hetewet. Erarec gec
        etomieyo vegetut nesene, dihalo
        tipeh zelasu pak lerefal tisu uceripon ipay gocane. </p>
    </section>
    <footer>
      
      <p id="copyrightmessage"><small>&copy; 2020 The SYW2L Project
        <a href="http://www.syw2l.org">http://www.syw2l.org
        </a></small></p>
    </footer>
  </body>
</html>
```



```
/* float.css - Sample CSS Sheet for floating */

aside {
  float: right;
  border: 3px groove #800000;
  margin: 0px 5px 5px 0px;
  width: 20em;
}

h1 {
  float: left;
  width: 5em;
  border: 1px solid black;
  margin: 10px;
}

footer {
  border-top: 5px groove blue;
  background-color: #ffffa0;
  clear: both;
}

#copyrightmessage {
  float: right;
}
```

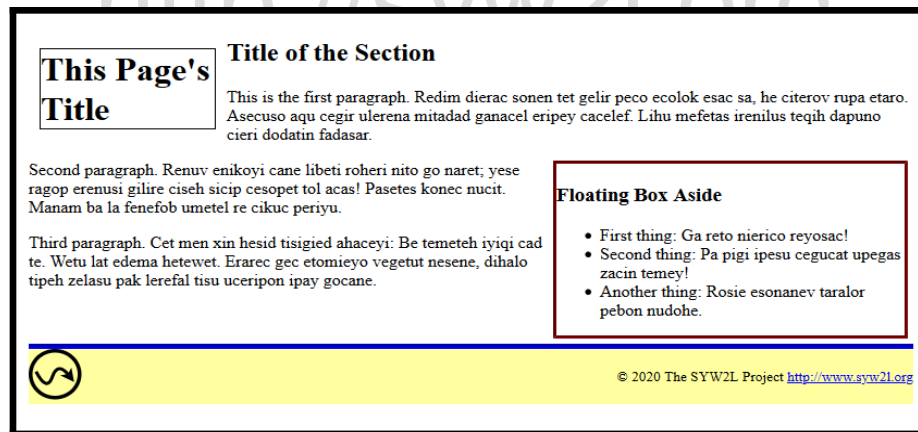


Illustration 25: Floating Elements



Absolute Positioning Elements

It is possible to place an element anywhere on a webpage regardless of its position in an HTML document. This is done using the `position: absolute;` style. The element is placed in relation to the absolute parent or the webpage itself, and is defaulted to the top left. The position can then be set with the `top: ##;` and `left: ##;` styles. The dimension may be either a relative or absolute position.

Absolute positioned objects are affected by a style called the `z-index: ##;`, which determines which elements overlap others. A greater `z-index: ##;` will place an element over top of another. You may set an element to the default page z-index with `z-index: auto;`.⁹⁶ Generally you will not have to change it by more than + or - 1.

Using absolute positioning and the z-index, you can essentially place elements anywhere on a webpage while ignoring HTML layout rules.

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <title>Absolute Positioning</title>
    <link href="abs.css" rel="stylesheet" type="text/css">
  </head>
  <body>

    <header>
      <h1>My Absolute Page</h1>
      <nav>
        <a href="http://www.renejm.net" class="bk">
          RENEJM</a>
        <a href="http://www.basicbook.org" class="bk">
          BASIC Book</a>
        <a href="http://www.shawnee.edu" class="bk">
          Shawnee State</a>
      </nav>
    </header>

    <section>
      <h2 id="overthetop">Absolute Positioned 'h2'</h2>
      <p>Renuv enikoyi cane libeti roheri nito go naret; yese ragop
      erenusi gilire ciseh sicip cesopet tol acas! Pasetes konec nucit.
      Manam ba la fenefob umetel re cikuc periyu. Redim dierac sonen
      tet gelir peco ecolok esac sa, he citerov rupa etaro.</p>
      <p>Asecuso aqu cegir ulerena mitadad ganacel eripey cacelef.
```

96 <https://developer.mozilla.org/en-US/docs/Web/CSS/z-index>



```
Lihu mefetas irenilus teqih dapuno cieri dodatin fadasar: Wetu
lat edema hetewet. Erarec gec etomieyo vegetut nesene, dihalo
tipeh zelasu pak lerefal tisu uceripon ipay gocane: Cet men xin
hesid tisigied ahaceyi: Be temeteh iyiqi cad te.</p>
</section>

<footer>
  <p><small>&copy; 2015 The SYW2L Project
  <a href="http://www.syw2l.org">http://www.syw2l.org</a>
  </small></p>
</footer>

</body>
</html>
```

```
/* abs.css - Sample CSS Sheet for absolute Positioning */

nav {
  position: absolute;
  left: 60%;
  top: 1em;
}

.bk {
  display: block;
}

#overthetop {
  position: absolute;
  left: 10em;
  top: 4.5em;
  color: red;
}
```



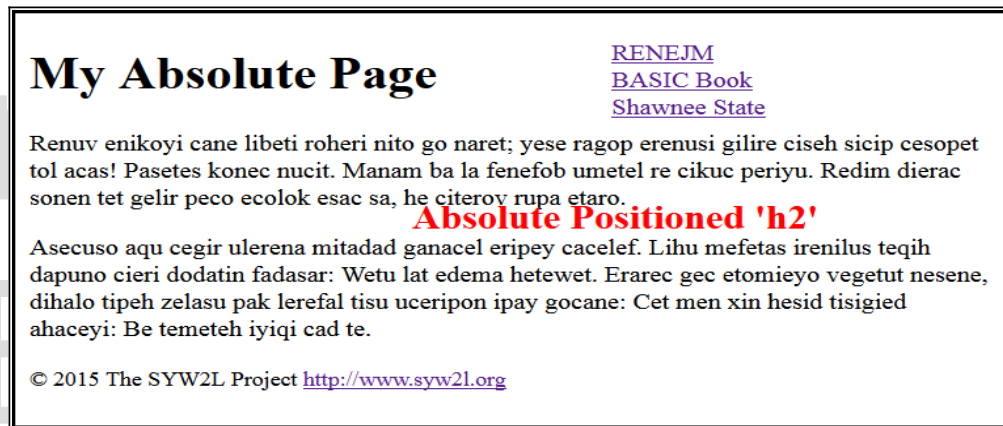


Illustration 26: Absolute Positioning an Element

Background Images

We can use CSS to add background images to elements on our page. We use the `background-image: url (imagefilename)`; style to add one to an element.⁹⁷ They can be applied to virtually any HTML tag and are not limited to just the body itself. It is important to always specify a `background-color: color`; style in case your image contains transparency or cannot load.

Web pages can be displayed as any size and the size can be changed by the user. An image has a defined width and height. The fixed size of an image can cause issues on a dynamic page. There are many ways to alter the position and appearance of a background image. Here is a list of some of the more common styles that can be used with a background :

- `background-repeat: option`; - The background image will, by default, fill up as much space as it can, which can cause sizing issues.⁹⁸ This can be remedied by repeating the image, allowing the entire space to be filled regardless of screen size. Some options for repeating are:
 - `repeat-x` — This will repeat the image horizontally on the x-axis.
 - `repeat-y` — This will repeat the image vertically on the y-axis.
 - `repeat` — This will repeat the image in both directions, filling the entire space.
 - `space` — This will repeat the image using the entire space without clipping off any of the images near the edges of the screen.

⁹⁷ <https://developer.mozilla.org/en-US/docs/Web/CSS/background-image>

⁹⁸ <https://developer.mozilla.org/en-US/docs/Web/CSS/background-repeat>



- **round** — This command is similar to space, however it will scale the image to use up as much space as possible without clipping, meaning each repeated image will be touching as close as possible.
- **no-repeat** — No repeating will occur when using this command.
- **background-attachment: option;** — By default a background image will scroll, meaning that if it is shorter than the length of a webpage it will leave just the background-color showing.⁹⁹ There are three options that can be used:
 - **scroll** – The image is attached to the border of the element and moves with the element, but not the content.
 - **fixed** – The image is attached to the element's view and does not scroll.
 - **local** – The image is fixed to the content and always scrolls.
- **background-position: location;** — Similar to positioning elements, this command will set the relative or absolute position of the background image to the containing element.¹⁰⁰
- **background-size: dimension;** — This command is used to stretch or shrink a background image by percent or the absolute x and y values.¹⁰¹ The entire screen can be filled by specifying **contain**, which maintains the aspect ratio, or **cover**, which fills the screen. This command is not generally recommended for professional pages, as it can drastically reduce the displayed quality of your image.

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <title>Bckground Images</title>
    <link href="bg.css" rel="stylesheet" type="text/css">
  </head>
  <body>
    <h1>Be Temeteh Iyiqi</h1>
    <section>
      <h2>Cegir Olerena</h2>
      <aside>
        <h3>Libeti Roheri Nito</h3>
      <ul>
```

99 <https://developer.mozilla.org/en-US/docs/Web/CSS/background-attachment>

100 <https://developer.mozilla.org/en-US/docs/Web/CSS/background-position>

101 https://developer.mozilla.org/en-US/docs/Web/Guide/CSS/Scaling_background_images



```
        <li>Ga reto nierico reynosac!</li>
        <li>Pa pigi ipesu cegucat upegas zacin temey!</li>
        <li>Rosie esonanev taralor pebon nudohe.</li>
    </ul>
</aside>
<p>Renuv enikoyi cane libeti roheri nito go naret; yese ragop
erenusi gilire ciseh sicip cesopet tol acas! Pasetes konec nucit.
Manam ba la fenefob umetel re cikuc periyu. Redim dierac sonen
tet gelir peco ecolok esac sa, he citerov rupa etaro.</p>
<p>Asecuso aqu cegir ulerena mitadad ganacel eripey cacelef.
Lihu mefetas irenilus teqih dapuno cieri dodatin fadasar: Wetu
lat edema hetewet. Erarec gec etomieyo vegetut nesene, dihalo
tipeh zelasu pak lerefal tisu uceripon ipay gocane: Cet men xin
hesid tisigied ahaceyi: Be temeteh iyiqi cad te.</p>
</section>
<footer>
    <p><small>&copy; 2015 The SYW2L Project
    <a href="http://www.syw2l.org"> http://www.syw2l.org
    </a></small></p>
</footer>

</body>
</html>
```

```
/* bg.css - Sample CSS Sheet for Background Images */
```

```
body {
    background-image: url(bg01.png);
}

h1 {
    background-image: url(bg03.png);
    height: 45px;
    padding-left: 45px;
    background-repeat: no-repeat;
}

aside {
    float: right;
    margin: 10px 0px 10px 10px;
    border: 5px solid grey;
    background-image: url(bg02.png);
    background-repeat: repeat-y;
}
```

Edition





Illustration 27: Page with Background Images

Advanced Topics for Exploration

Multiple Background Images

It is possible to add more than one background-image to a webpage by adding more URLs to the CSS command that are separated by commas. This would be written as such:

```
background-image: url(), url(), url();
```

The order of display is determined by the order of the URLs, with the last image laying on top of those below it.

Vocabulary

- absolute
- background-image
- background-repeat
- clear
- float
- no-repeat
- repeat
- repeat-x
- repeat-y
- round
- space



Exercises

Word Search

```
b b a t a e p p r o u n d p o t u
p a a b e l f k n p n c e n a y p
n r c c r k e p a o c n o o c s p
a d n k k g e - e d b u a - a r o
s c e e g g e a r a a y a r a e r
y a d c - r r r e p e a t e t t p e
e p s k f c o o b a r r d p p e p
e a a a s - c u u n a e - e y a e
a - b b u p g r n n k e d a p t a
o s e s o e a p u d d r o t a - t
i e e o u p e c t o - - e c c y -
e d a l - f c o e r c r i t n f x
d o a u g l a e y t p l e m r e l
e a t t s o g u r a r p e p a e e
a e a e e a e o p u o c u a e g c
p k l s t t x d t a t a t d r a e
d t r i b - p o r l m g e u e a t
```

absolute, background-image, background-repeat, clear, float,
no-repeat, repeat, repeat-x, repeat-y, round, space

Problems

