Data visualization

COSC 480B

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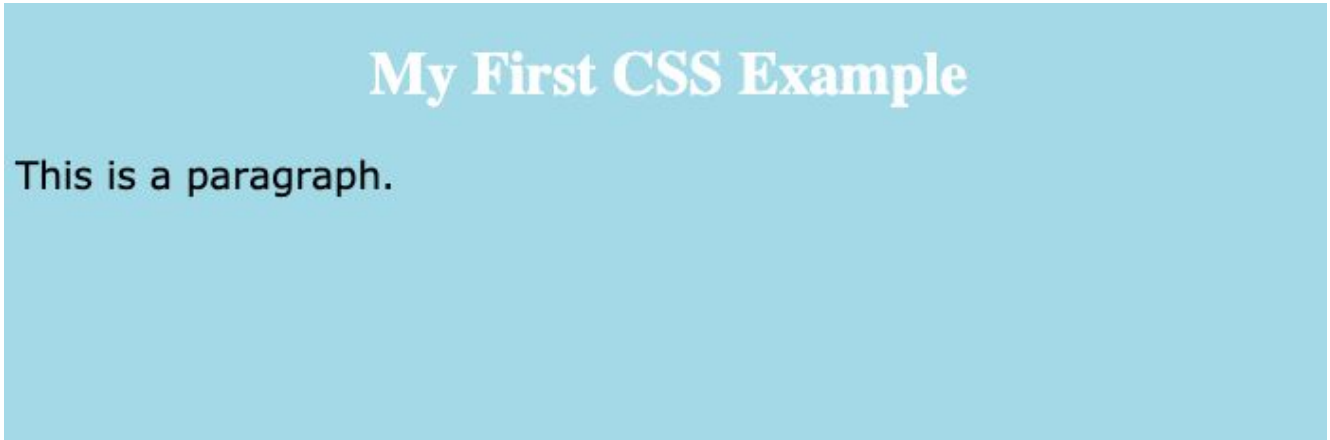
Lecture 3

CSS basics

CSS

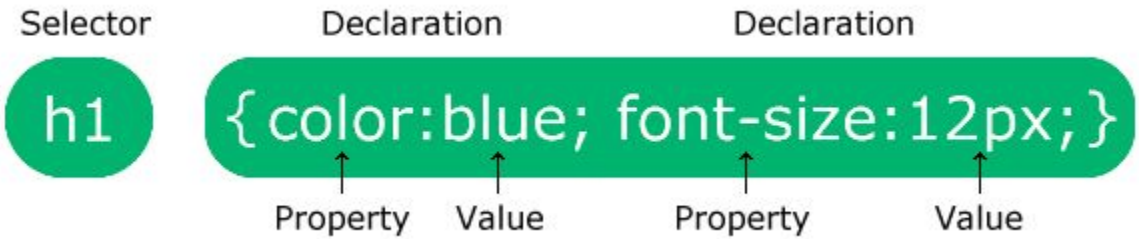
```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background-color: lightblue;
}

h1 {
  color: white;
  text-align: center;
}

p {
  font-family: verdana;
  font-size: 20px;
}
</style>
</head>
<body>

<h1>My First CSS Example</h1>
<p>This is a paragraph.</p>

</body>
</html>
```



CSS

- Why do we need it?
- Can’t we just use some attributes in the HTML tags?
- First of all, HTML was never designed for fancy styles
- There are some styling possible, but it is mostly designed for plain text
- Even if we use attributes in the HTML, we need to add a lot of thing in every HTML page
- A typical web module may have hundreds of pages, if you change the style in one page, then you have to do it for hundreds of other pages!
- CSS was designed to get rid of the styling from the text content
- It modularized the text and style

CSS


Selector
Declaration
Declaration
h1
{color:blue; font-size:12px;}
Property
Value
Property
Value

CSS

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
  color: red;
  text-align: center;
}
</style>
</head>
<body>

<p>Hello World!</p>
<p>These paragraphs are styled with CSS.</p>

</body>
</html>
```

Hello World!

These paragraphs are styled with CSS.

CSS Selectors

```
<!DOCTYPE html>
<html>
<head>
<style>
#para1 {
  text-align: center;
  color: red;
}
</style>
</head>
<body>

<p id="para1">Hello World!</p>
<p>This paragraph is not affected by the style.</p>

</body>
</html>
```

Hello World!

This paragraph is not affected by the style.

CSS Selectors

```
<!DOCTYPE html>
<html>
<head>
<style>
.center {
  text-align: center;
  color: red;
}
</style>
</head>
<body>

<h1 class="center">Red and center-aligned heading</h1>
<p class="center">Red and center-aligned paragraph.</p>

</body>
</html>
```

CSS Selectors

```
<!DOCTYPE html>
<html>
<head>
<style>
p.center {
  text-align: center;
  color: red;
}
</style>
</head>
<body>

<h1 class="center">This heading will not be affected</h1>
<p class="center">This paragraph will be red and center-aligned.</p>

</body>
</html>
```

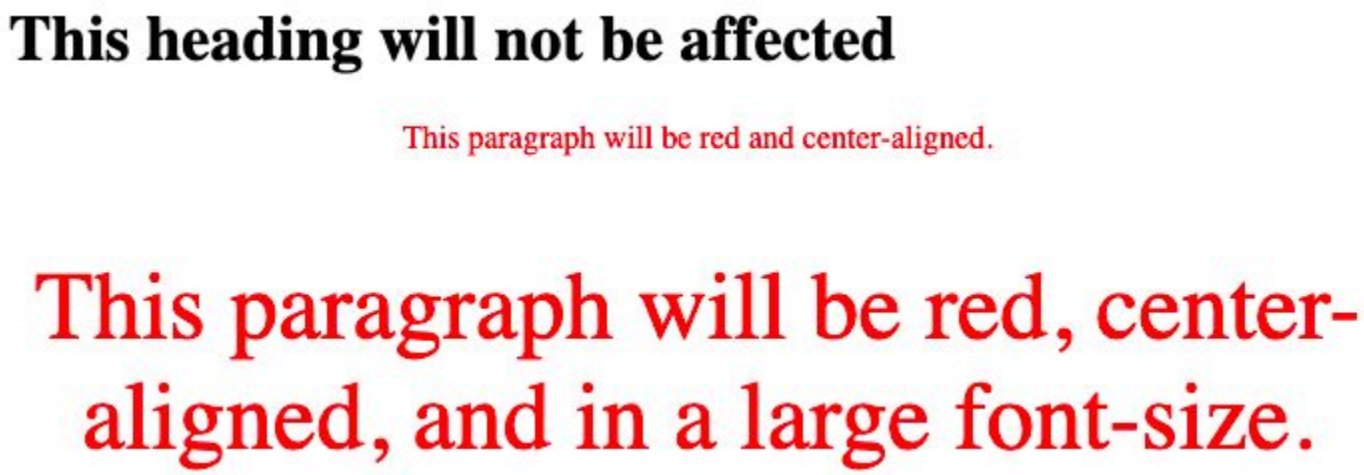
This heading will not be affected

This paragraph will be red and center-aligned.

CSS Selectors

```
<!DOCTYPE html>
<html>
<head>
<style>
p.center {
  text-align: center;
  color: red;
}

p.large {
  font-size: 300%;
}
</style>
</head>
<body>

<h1 class="center">This heading will not be affected</h1>
<p class="center">This paragraph will be red and center-aligned.</p>
<p class="center large">This paragraph will be red, center-aligned, and in a
large font-size.</p>

</body>
</html>
```

CSS Selectors



CSS Selectors

```
<style>
* {
  text-align: center;
  color: blue;
}
</style>
</head>
<body>

<h1>Hello world!</h1>

<p>Every element on the page will be affected by the style.</p>
<p id="para1">Me too!</p>
<p>And me!</p>
```

Hello world!

Every element on the page will be affected by the style.

Me too!

And me!

CSS Selectors

```css
h1 {
  text-align: center;
  color: red;
}

h2 {
  text-align: center;
  color: red;
}

p {
  text-align: center;
  color: red;
}
```

```css
h1, h2, p {
  text-align: center;
  color: red;
}
```

CSS

```
<head>
<link rel="stylesheet" href="mystyle.css">
</head>
```

```
body {
  background-color: lightblue;
}

h1 {
  color: navy;
  margin-left: 20px;
}
```

CSS

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

<h1 style="color:blue;text-align:center;">This is a heading</h1>
<p style="color:red;">This is a paragraph.</p>

</body>
</html>
```

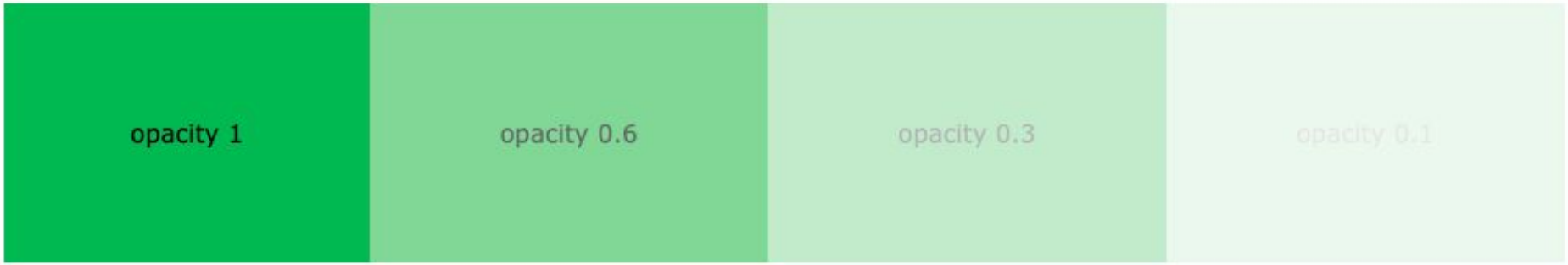
CSS

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
  color: red; /* Set text color to red */
}
</style>
</head>
<body>

<h2>My Heading</h2>

<!-- These paragraphs will be red -->
<p>Hello World!</p>
<p>This paragraph is styled with CSS.</p>
<p>CSS comments are not shown in the output.</p>

</body>
</html>
```

CSS

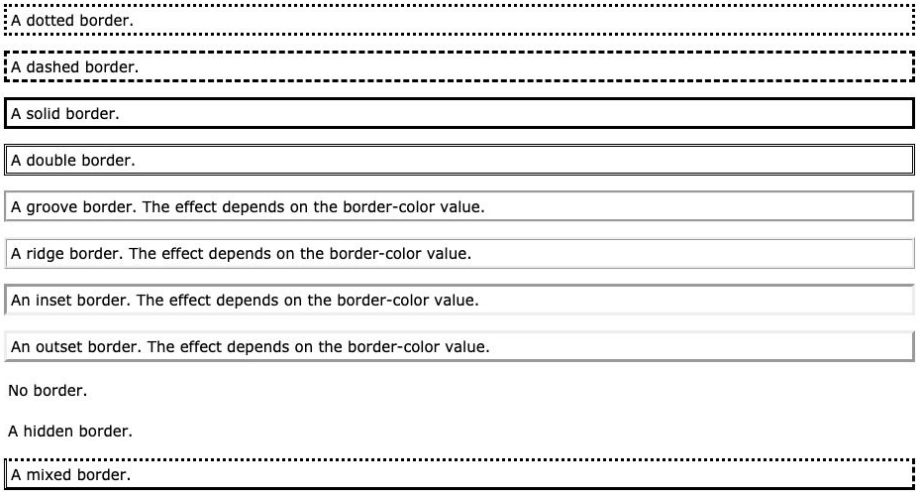
```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background-color: lightblue;
}
</style>
</head>
<body>

<h1>Hello World!</h1>

<p>This page has a light blue background color!</p>

</body>
</html>
```

CSS



CSS Borders

```
p.dotted {border-style: dotted;}
p.dashed {border-style: dashed;}
p.solid {border-style: solid;}
p.double {border-style: double;}
p.groove {border-style: groove;}
p.ridge {border-style: ridge;}
p.inset {border-style: inset;}
p.outset {border-style: outset;}
p.none {border-style: none;}
p.hidden {border-style: hidden;}
p.mix {border-style: dotted dashed solid double;}
```



CSS Margin

```
div {
  border: 1px solid black;
  margin-top: 100px;
  margin-bottom: 100px;
  margin-right: 150px;
  margin-left: 80px;
  background-color: lightblue;
}
</style>
</head>
<body>

<h2>Using individual margin properties</h2>

<div>This div element has a top margin of 100px, a right margin of 150px, a
bottom margin of 100px, and a left margin of 80px.</div>
```

CSS Margin

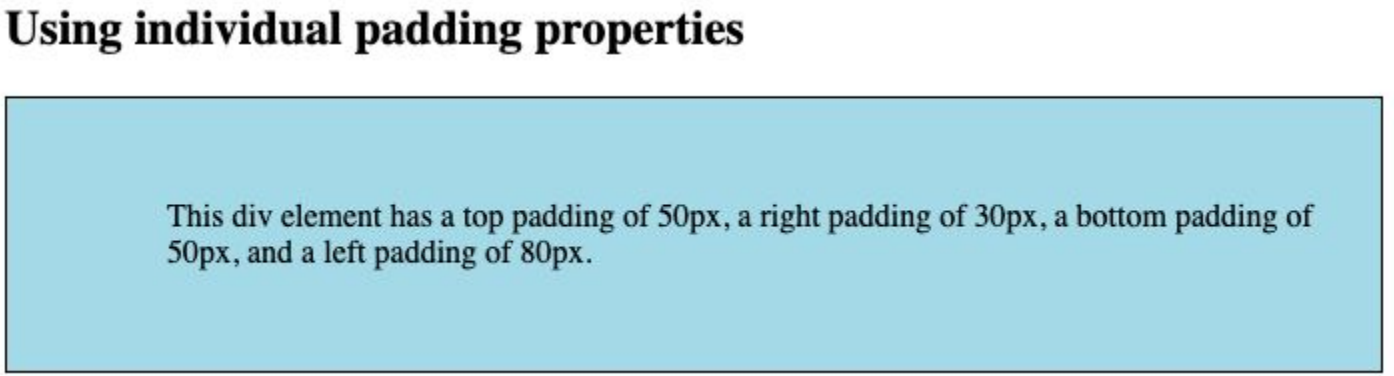
Using individual margin properties

This div element has a top margin of 100px, a right margin of 150px, a bottom margin of 100px, and a left margin of 80px.

CSS Padding

```
<style>
div {
  border: 1px solid black;
  background-color: lightblue;
  padding-top: 50px;
  padding-right: 30px;
  padding-bottom: 50px;
  padding-left: 80px;
}
</style>
</head>
<body>

<h2>Using individual padding properties</h2>

<div>This div element has a top padding of 50px, a right padding of 30px, a
bottom padding of 50px, and a left padding of 80px.</div>
```

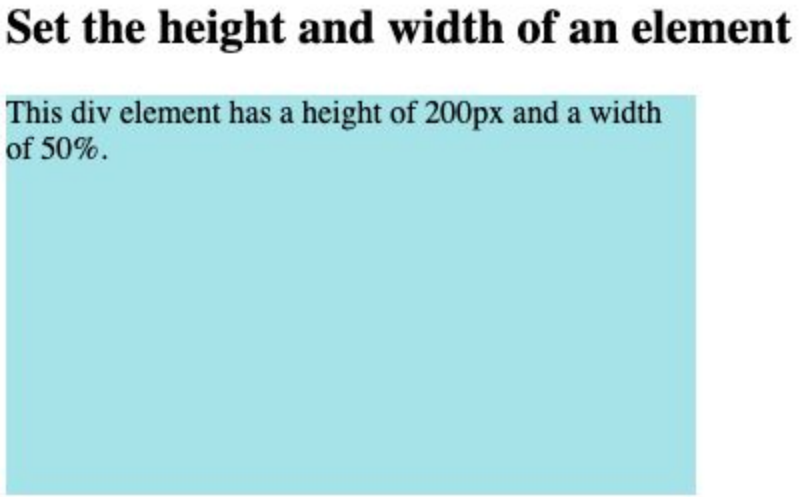
CSS Padding


Using individual padding properties
This div element has a top padding of 50px, a right padding of 30px, a bottom padding of 50px, and a left padding of 80px.

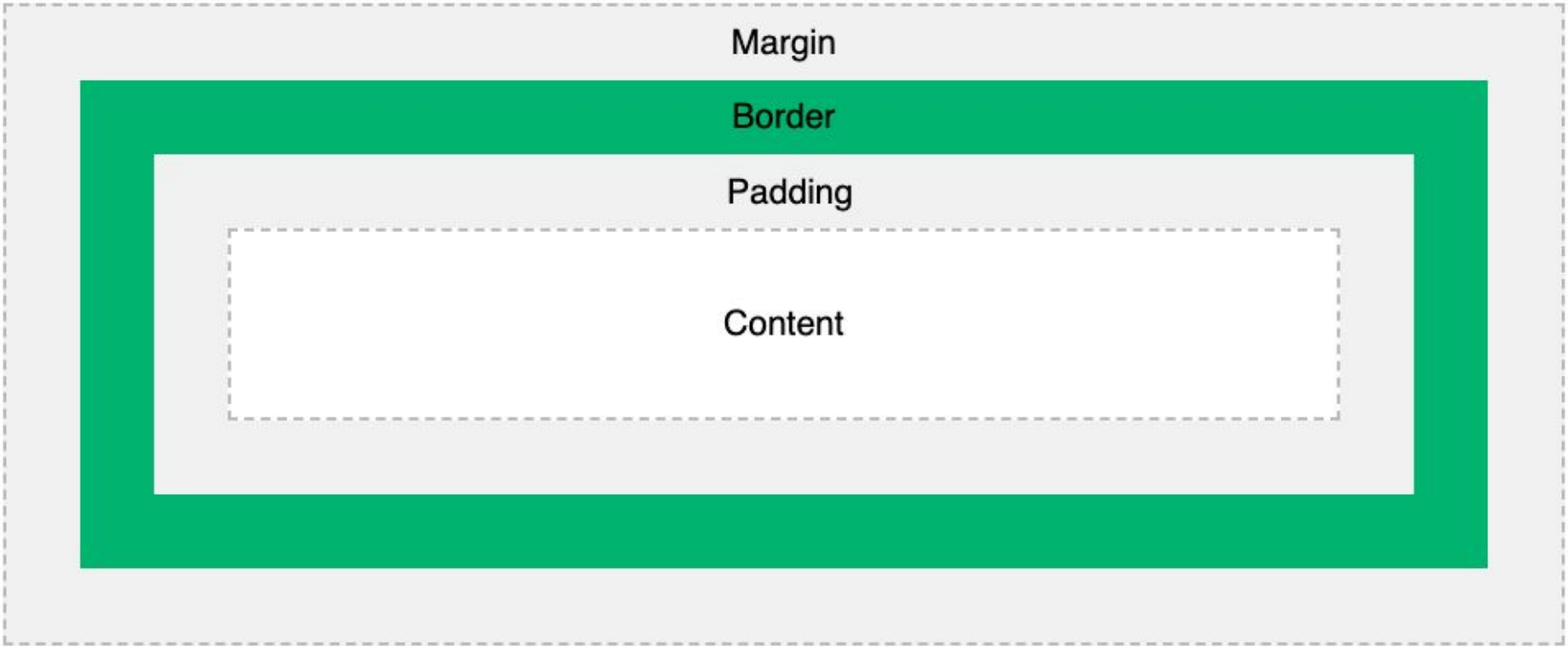
CSS Height and Width

```
<style>
div {
  height: 200px;
  width: 50%;
  background-color: powderblue;
}
</style>
</head>
<body>

<h2>Set the height and width of an element</h2>

<div>This div element has a height of 200px and a width of 50%.</div>
```

CSS Height and Width



CSS Structure



CSS Text

```
h1 {
  text-align: center;
}

h2 {
  text-align: left;
}

h3 {
  text-align: right;
}
```

Heading 1 (center)

Heading 2 (left)

Heading 3 (right)

CSS Text

Generic Font Family	Examples of Font Names
Serif	Times New Roman Georgia Garamond
Sans-serif	Arial Verdana Helvetica
Monospace	Courier New Lucida Console Monaco
Cursive	Brush Script MT Lucida Handwriting
Fantasy	COPPERPLATE Papyrus

CSS Links

```
<style>
/* unvisited link */
a:link {
  color: red;
}

/* visited link */
a:visited {
  color: green;
}

/* mouse over link */
a:hover {
  color: hotpink;
}

/* selected link */
a:active {
  color: blue;
}
</style>
```

This is a link

This is a link

This is a link

CSS List

Unordered Lists:

- Coffee
- Tea
- Coca Cola

- Coffee
- Tea
- Coca Cola

Ordered Lists:

1. Coffee
2. Tea
3. Coca Cola

I. Coffee
II. Tea
III. Coca Cola

CSS List

```css
ul.a {
  list-style-type: circle;
}

ul.b {
  list-style-type: square;
}

ol.c {
  list-style-type: upper-roman;
}

ol.d {
  list-style-type: lower-alpha;
}
```

CSS Position

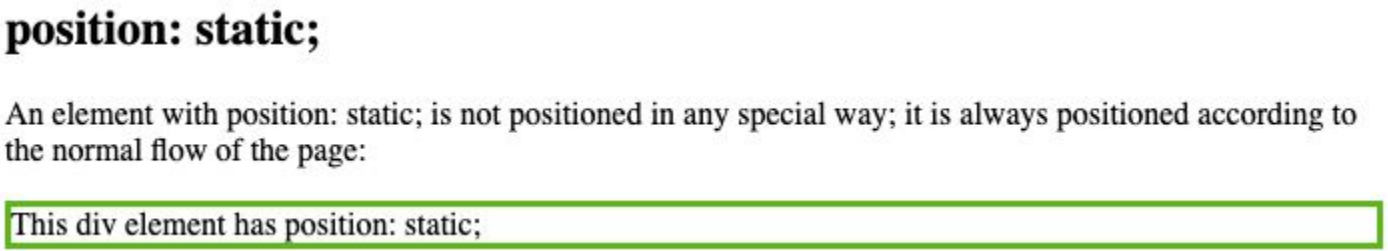
There are five different position values:

- `static`
- `relative`
- `fixed`
- `absolute`
- `sticky`

CSS Position

```
<style>
div.static {
  position: static;
  border: 3px solid #73AD21;
}
</style>
</head>
<body>

<h2>position: static;</h2>

<p>An element with position: static; is not positioned in any special way;
it is
always positioned according to the normal flow of the page:</p>

<div class="static">
  This div element has position: static;
</div>
```

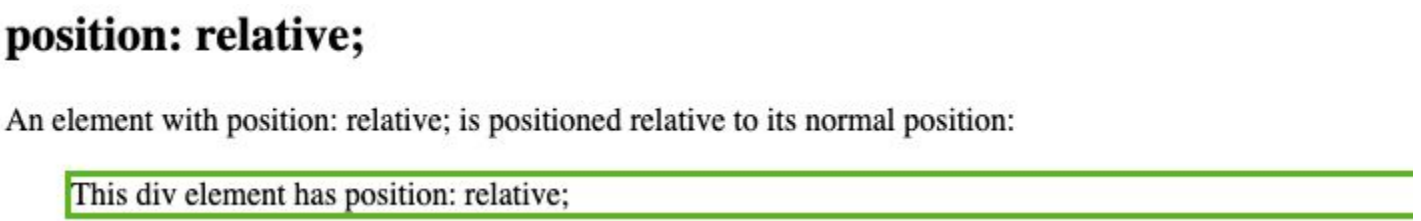
CSS Position



CSS Position

```
<style>
div.relative {
  position: relative;
  left: 30px;
  border: 3px solid #73AD21;
}
</style>
</head>
<body>

<h2>position: relative;</h2>

<p>An element with position: relative; is positioned relative to its normal
position:</p>

<div class="relative">
This div element has position: relative;
</div>
```

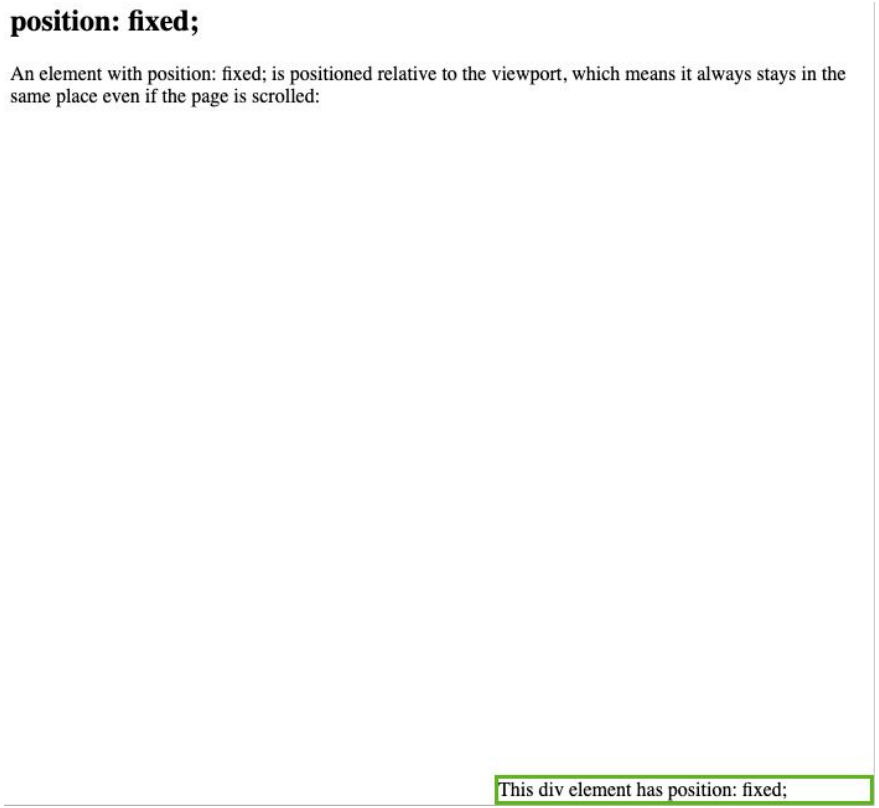
CSS Position



CSS Position

```
<style>
div.fixed {
  position: fixed;
  bottom: 0;
  right: 0;
  width: 300px;
  border: 3px solid #73AD21;
}
</style>
</head>
<body>

<h2>position: fixed;</h2>

<p>An element with position: fixed; is positioned relative to the viewport,
which means it always stays in the same place even if the page is scrolled:
</p>

<div class="fixed">
This div element has position: fixed;
</div>
```

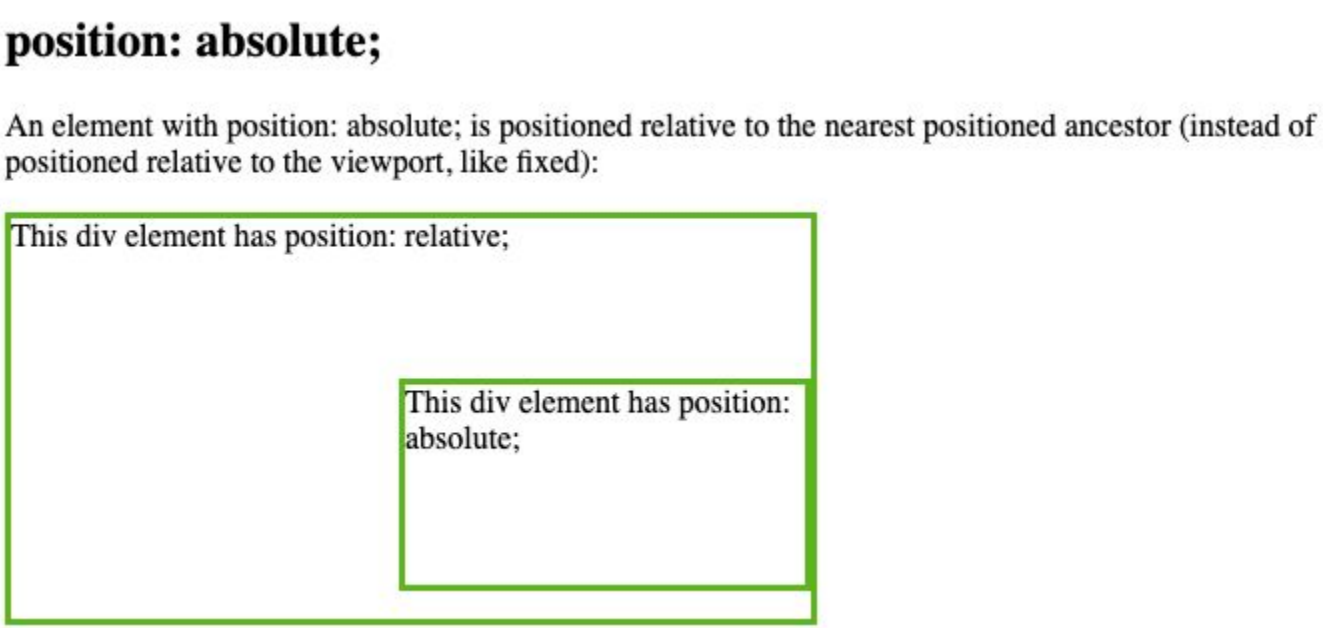
CSS Position



CSS Position

```
<style>
div.relative {
  position: relative;
  width: 400px;
  height: 200px;
  border: 3px solid #73AD21;
}

div.absolute {
  position: absolute;
  top: 80px;
  right: 0;
  width: 200px;
  height: 100px;
  border: 3px solid #73AD21;
}
</style>
</head>
<body>

<h2>position: absolute;</h2>

<p>An element with position: absolute; is positioned relative to the nearest
positioned ancestor (instead of positioned relative to the viewport, like
fixed):</p>

<div class="relative">This div element has position: relative;
  <div class="absolute">This div element has position: absolute;</div>
</div>
```

CSS Position



CSS Position

```
<style>
div.sticky {
  position: -webkit-sticky;
  position: sticky;
  top: 0;
  padding: 5px;
  background-color: #cae8ca;
  border: 2px solid #4CAF50;
}
</style>
</head>
<body>

<p>Try to <b>scroll</b> inside this frame to understand how sticky
positioning works.</p>

<div class="sticky">I am sticky!</div>

<div style="padding-bottom:2000px">
  <p>In this example, the sticky element sticks to the top of the page (top:
0), when you reach its scroll position.</p>
  <p>Scroll back up to remove the stickyness.</p>
  <p>Some text to enable scrolling.. Lorem ipsum dolor sit amet, illum
definitiones no quo, maluisset concludaturque et eum, altera fabulas ut quo.
Atqui causae gloriatur ius te, id agam omnis evertitur eum. Affert laboramus
repudiandae nec et. Inciderint efficiantur his ad. Eum no molestiae
voluptatibus.</p>
  <p>Some text to enable scrolling.. Lorem ipsum dolor sit amet, illum
definitiones no quo, maluisset concludaturque et eum, altera fabulas ut quo.
Atqui causae gloriatur ius te, id agam omnis evertitur eum. Affert laboramus
repudiandae nec et. Inciderint efficiantur his ad. Eum no molestiae
voluptatibus.</p>
</div>
```

CSS Position