CSS: Layout

Up here

Block & Inline Elements

There are two types of elements in the CSS world: "inline" and "block".

A browser generally renders a new line after any "block" elements in the HTML.

Examples:

- inline: `INPUT, A, IMG, BR,` a few others...
- block: `P, H1, UL, LI, TABLE,` almost everything else...

Grouping Elements

A grouping element lets you style multiple elements as a whole.

SPAN creates an inline element.

```
<span> Hello <a href="world.com">World </a>! </span>
```

DIV creates a block element.

```
<div> <p>Hello</p> <p>World</p> </div>
```

```
<div> Hello <a href="world.com">World </a>! </div>
```

Width & Height

The `width` and `height` properties can be used to resize block level elements and `IMG` elements.

A narrow div:

```
<div style="width:30px;">Hello World!</div>
```

Hello
World!

A distorted image:

```
<img style="width:100px; height: 30px;" url="fox.jpg">
```

Overflow

The `overflow` property specifies what happens when content overflows the specified dimensions. The default is "visible", which means it flows outside.

```
<div style="height: 25px; ">Hi!</div>
```

Hi!

The "hidden" value will trim the content at the border:

```
<div style="height: 25px; overflow:hidden;">Hi!</div>
```

Hi!

Overflow: Auto

The "auto" value can be used to tell the browser add scrollbars *if* the content overflows.

```
<div style="overflow: auto; width: 60px; height: 25px;  ">
  Hello World</div>
```

Hello
Worl

The overflow-y and overflow-x properties can be used to specify different settings for each direction.

```
<div style="overflow-x: auto; overflow-y: hidden;
  width: 60px; height: 25px;"> Hello World</div>
```

Hello
Worl

Exercise Time

Exercise #1: Grouping Elements

Box Model

The Box Model

All elements are treated as boxes by the browser's rendering engine (either "inline" or "block" boxes).

A box consists of content, padding, border, and margin:

Margin

The margin is a transparent area around the box - the background of the box does not apply to it. It separates the box from other elements.

15 pixels on all sides:

```
margin: 15px;
```

10px on top, 5px right, 3px bottom, 20px left:

```
margin: 10px 5px 3px 20px;
```

10px on top:

```
margin-top: 10px;
```

Auto Margin

If the margin is set to "auto" on a box that has a width, it will take up as much space as possible.

A centered box:

```
<div style="margin:auto; width:300px;">Hi</div>
```

Hi

A flush-right box:

```
<div style="margin-left:auto; margin-right:5px;
  width:300px;"> Hi</div>
```

Hi

Border

The `border` property styles the edge around the box and is specified as "thickness style color".

A solid red border:

```
border: 1px solid #ff0000;
```

A thick dotted black top border:

```
border-top: 4px dotted #000000;
```

2 different border styles:

```
border-top: 4px dotted #000000;
border-bottom: 1px solid #ff0000;
```

Border Thickness

Border thickness can also be specified with `border-width` property and can be different on each side (like margin).

10px on all sides:

```
border-width: 10px;
```

10px on top, 5px right, 3px bottom, 20px left:

```
border-width: 10px 5px 3px 20px;
```

Border Style

Border style can also be specified using the `border-style` property.

```
border-style:dashed;
```

```
border-style:double;
```

```
border-style:groove;
```

```
border-style:outset;
```

```
border-style:inset;
```

```
border-style:ridge;
```

Border Color

Border color can also be specified with `border-color` property.

Green on all sides:

```
border-color: rgb(0, 240, 0);
```

White on top, black right, red bottom, green left:

```
border-color: #fff black #ff0000 #00ff00;
```

Padding

The `padding` property specifies whitespace between the border and the content.

15px on all sides:

```
padding: 15px;
```

10px on top, 5px right, 3px bottom, 20px left:

```
 padding: 10px 5px 3px 20px;
```

10px on top:

```
padding-top: 10px;
```

Exercise Time

Exercise #2: Box Model

Position

Position: Normal

The `position` property is used to specify a positioning scheme for an element. The default is "static" which puts the element in the "normal" flow.

In normal flow, inline boxes flow from left to right, wrapping to next line when needed.

```
<img src="logo.png"><img src="logo.png"><img src="logo.png">
```

Position: Normal

In normal flow, block boxes flow from top to bottom, making a new line after every box.

```
<h1 style="border:1px solid black">Greetings</h1>
<p style="border:1px solid red">Hola, novato</p>
<div style="border:1px solid black"> Hey, dude>!</div>
```

Greetings

Hola, novato

Hey, dude

Position: Relative

The "relative" value will still put the element in the normal flow, but then offset it according to top/left/right/bottom properties.

```
<div style="position: relative; left: 80px; top: 20px;
  height: 100px; background-color: yellow;">
  Hello, hi!
</div>
```

Hello, hi!

Position: Absolute

The "absolute" value will take the element out of the normal flow and position it in relation to the window (or the closest non-static element).

```
<div style="position: absolute; top: 10px; right: 10px;
  background-color: yellow">
 Up here
</div>

<div style="position: absolute; bottom: 10px; left:60px;
  background-color: green">
 Down here
</div>
```

z-Index

The `z-index` property specifies the stack order of positioned elements, in the case that they are overlapping. The element with highest z-index goes on top.

```
<div style="position: absolute; bottom: 10px; left:60px;
  background-color: green"> Bottom </div>
<div style="position: absolute; bottom: 15px; left:60px;
  background-color: green; z-index: 2;"> Top </div>
```

Float

The `float` property is used to float boxes on the sides of other boxes, allowing other content to flow around it. First used to wrap text around images.

```
<div style="border:1px solid black">
  <img style="float:right" src="fox.jpg">
  Pamela Fox has worked in ....
</div>
```

Pamela Fox has worked in the Developer Programs group at Google for the last 2 years. She dedicates most of her time to supporting the Google Maps API, but spends her free time mashing up other APIs and developer tools. Before that, she graduated from the University of Southern California (USC), where she majored in Computer Science, minored in Linguistics and 3d animation, and helped grow the video games department.

Float

The `float` property can also be used to float non-IMG elements, but make sure to specify a width for the floated element.

```
<div>
  <div style="float:left; width:50px; background-color:yellow; ">
    H<br>O<br>M<br>E
  </div>
  Hi, this is my personal website, where you'll find out everything about my inner desires, hopes, dreams, and incredibly exciting daily life.
</div>
<div>Contact me for more info.</div>
```

H
O
Hi, this is my personal website, where you'll find out everything about my inner desires, hopes, dreams, and incredibly exciting daily life.
Contact me for more info.

M
E

Clear

The `clear` property can be used to specify that an element should *not* wrap around floated elements above it.

```
<div style="float:left; width:50px; background-color:yellow; ">
  H<br>O<br>M<br>E
</div>
<div>
  Hi, this is my personal website, where you'll find out everything about my inner desires, hopes, dreams, and incredibly exciting daily life.
</div>
<div style="clear:both">Contact me for more info.</div>
```

H
O
M
E
Hi, this is my personal website, where you'll find out everything about my inner desires, hopes, dreams, and incredibly exciting daily life.

Contact me for more info.

Page Layouts

With all these CSS properties combined, you can create nice looking non-linear page layouts.

- One-column, Fixed layout
- One-column, Liquid layout
- Two-column, Liquid layout
- Three-column, Fixed layout

More sample layouts

Exercise Time

Exercise 1: Average Layout

Top

Bottom