

Web Development

BSc Applied Computing / Forensics / Entertainment Systems/ IOT

Produced
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Waterford Institute of Technology
INSTITIÚID TEICNEOLAÍOCHTA PHORT LÁIRGE



CSS: The Box Model

Web Development

Agenda

- Box Model
 - Box Model: Content, Padding, Border & Margin
 - Background images
 - Border Styles, Width, Colour
- Layout
 - The DOM, HTML Parsing & Rendering
 - Box Model Revisited
 - Formatting Concepts in CSS
 - Multicolumn layout worked example



Welcome to the Head First Lounge

The Head First Lounge is, no doubt, the biggest trendsetter in Webville. Stop in to sample the eclectic offering of elixirs, teas, and coffees, or, stay a bit longer and enjoy the multicultural culinary menu that combines a harmony of taste, texture, and color with the best in fresh and healthy ingredients.

During your stay at the lounge, you'll enjoy a smooth mixture of ambient and mystic sounds, filling the lounge and adding an extra dimension to your dining experience. The decor surrounds you with the relaxing sentiments of sights from eras past. And, don't forget, the lounge offers free wireless access to the Internet, so bring your laptop.

But that's not all; at night, join us in the backroom as our resident DJ spins a choice selection of trance and drum&bass beats across our spacious tiki-themed dance floor. Or just hang out in one of our comfy white vinyl booths at the dance bar. You can have your elixirs delivered from the main lounge right to the dance floor. If you've had enough of the beat, just head back to the lounge area to relax. And, no matter where you find yourself in the lounge, you'll always be connected with our wireless Internet access.

Now that you've experienced the lounge *virtually*, isn't it time to check us out *for real*? We're located right in the heart of Webville, and we've created some [detailed directions](#) to get you here in record time. No reservations necessary; come and join us anytime.

Weekly Elixir Specials



Lemon Breeze

The ultimate healthy drink, this elixir combines herbal botanicals, minerals, and vitamins with a twist of lemon into a smooth citrus wonder that will keep your immune system going all day and all night.



Chai Chiller



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Our guarantee: at the lounge, we're committed to providing you, our guest, with an exceptional experience every time you visit. Whether you're just stopping by to check in on email over an elixir, or are here for an out-of-the-ordinary dinner, you'll find our knowledgeable service staff pay attention to every detail. If you're not fully satisfied, have a Blueberry Bliss Elixir on us.

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Not your traditional chai, this elixir mixes maté with chai spices and adds an extra chocolate kick for a caffeinated taste sensation on ice.



Black Brain Brew

Want to boost your memory? Try our Black Brain Brew elixir, made with black oolong tea and just a touch of espresso. Your brain will thank you for the boost.

Join us any evening for these and all our other wonderful [elixirs](#).

```
body {  
    font-size:    small;  
    font-family:  Verdana, Helvetica, Arial, sans-serif;  
}  
  
h1, h2 {  
    color: #007e7e;  
}  
  
h1 {  
    font-size: 150%;  
}  
  
h2 {  
    font-size: 130%;  
}
```

Here's the default font size for the page.

We're going to go with a sans-serif font-family for the lounge. We've picked a few font alternatives, and ended the declaration with the generic sans-serif font.

We're going to set the color of the <h1> and <h2> elements to an aquamarine to match the glass in the logo.

Now let's get some reasonable heading sizes for <h1> and <h2>. Since we're setting two different sizes for these, we need separate rules and can't add them to the combined rule for <h1> and <h2>.



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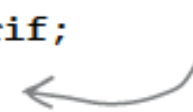


line-height

- Increasing the line height of your text can improve readability. It also gives you another way to provide contrast between different parts of your page.

```
body {  
  font-size:    small;  
  font-family:  Verdana, Helvetica, Arial, sans-serif;  
  line-height:  1.6em;  
}
```

Here we're changing the space between each line to 1.6em,
in other words, 1.6 times the font size.



- Fonts can be measured in absolute for relative terms:
- Absolute:
 - px - Pixels, absolute, screen oriented
 - pt - Points, absolute, print oriented
- Relative
 - em - “width of an ‘m’”, 1 = current font width
 - % - 100% = current font size



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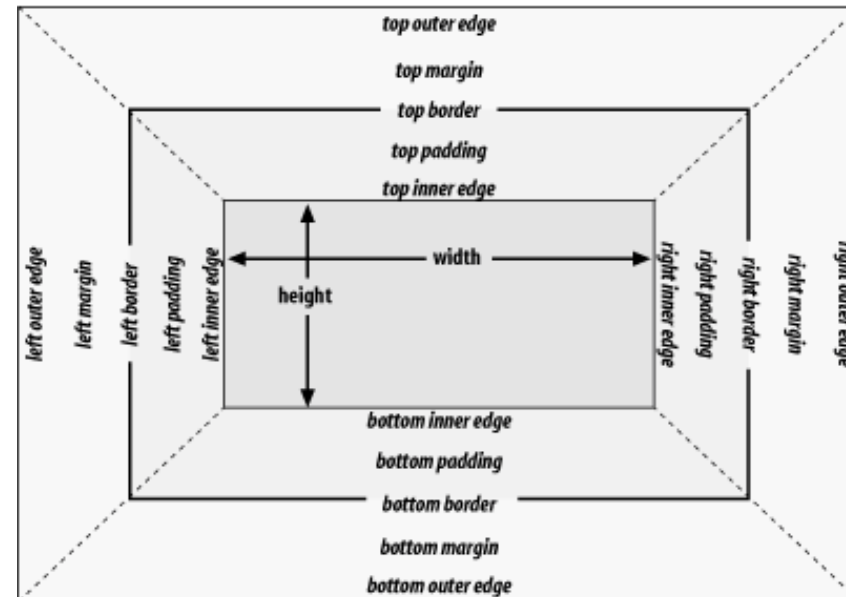
Chai Chiller

CSS Box Model

- So far, your CSS has focussed on changing simple properties of elements, like size, color, and decorations. For effective layout control, you have got to move on to the box model.
- The **box model** is how CSS sees elements.
- CSS treats every single element as if it were represented by a box.
- All elements are treated as boxes: paragraphs, headings, block quotes, lists, list items, and so on. Even inline elements like `` and links are treated by CSS as boxes

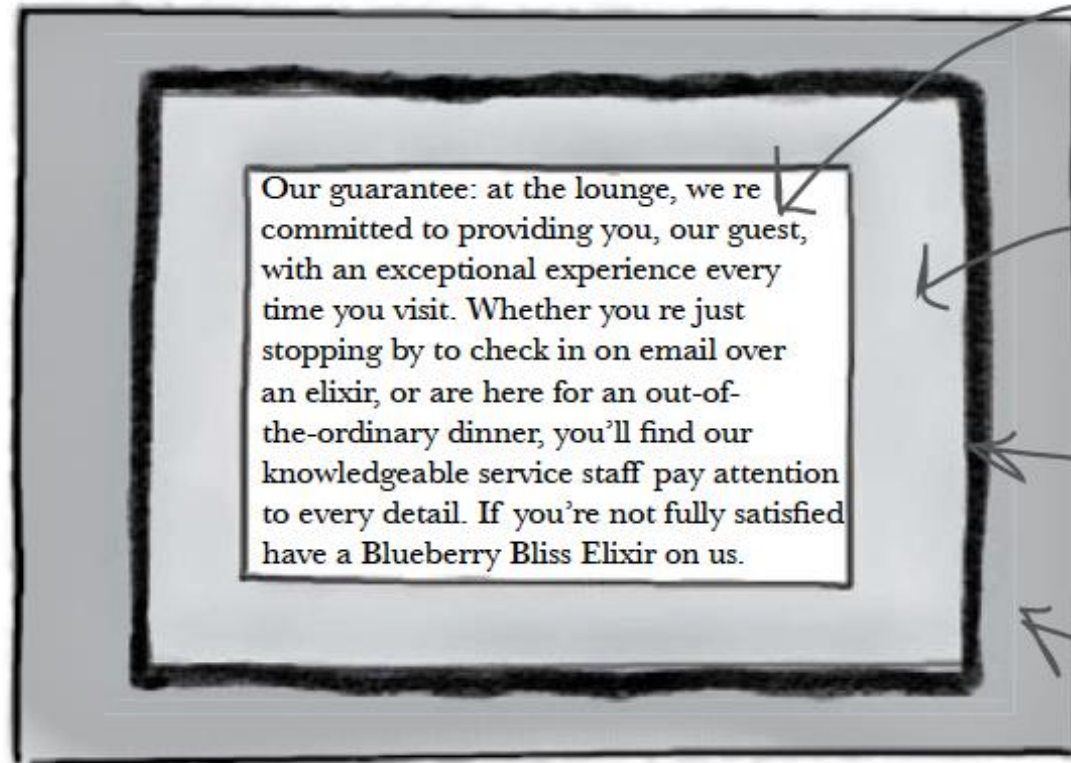
- Boxes consist of:

- Content
- Padding
- Border
- Margin



From the perspective of CSS, every element is a box.

Every box is made up of a content area along with optional padding, border, and margins.



The content area, which holds the content (text or an image, for instance).

The content area is surrounded by optional transparent padding.

An optional border can be placed around the padding.

And finally, an optional transparent margin surrounds everything.

Content Area

- Every element starts with some content, like text or an image, and this content is placed inside a box that is just big enough to contain it.
- The content area has no whitespace between the content and the edge of the box

The content area holds the element's content. It's typically just big enough to hold the content.



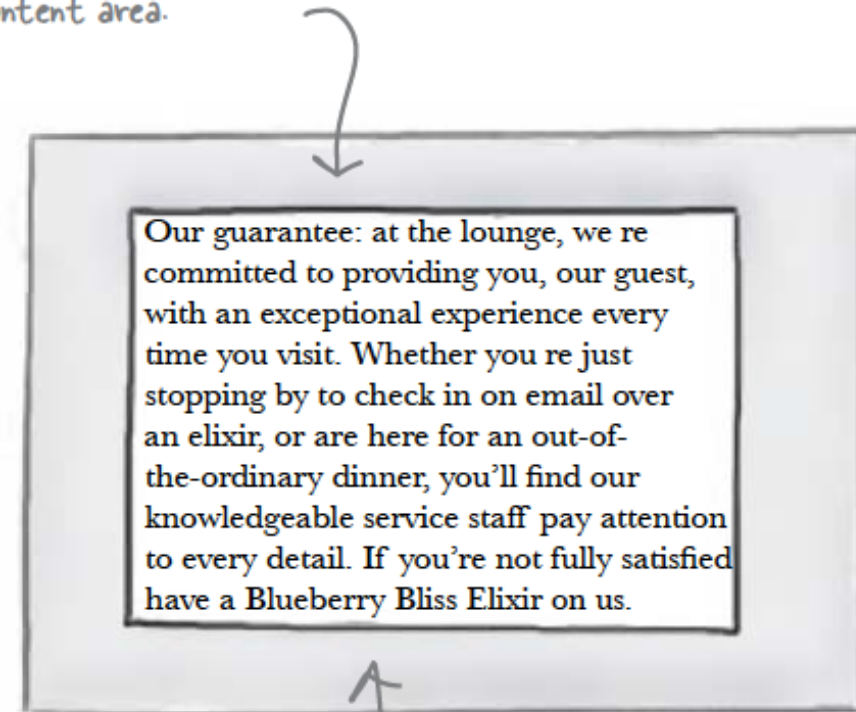
Our guarantee: at the lounge, we re committed to providing you, our guest, with an exceptional experience every time you visit. Whether you re just stopping by to check in on email over an elixir, or are here for an out-of-the-ordinary dinner, you'll find our knowledgeable service staff pay attention to every detail. If you're not fully satisfied have a Blueberry Bliss Elixir on us.

We've drawn an edge around the content area just so you know how big it is. But in a browser there is never a visible edge around the content area.

Padding

- Any box can have a layer of padding around the content area.
- Padding is optional, so you don't have to have it, but you can use padding to create visual whitespace between the content and the border of the box.
- The padding is transparent and has no color or decoration of its own.

The browser adds optional padding around the content area.



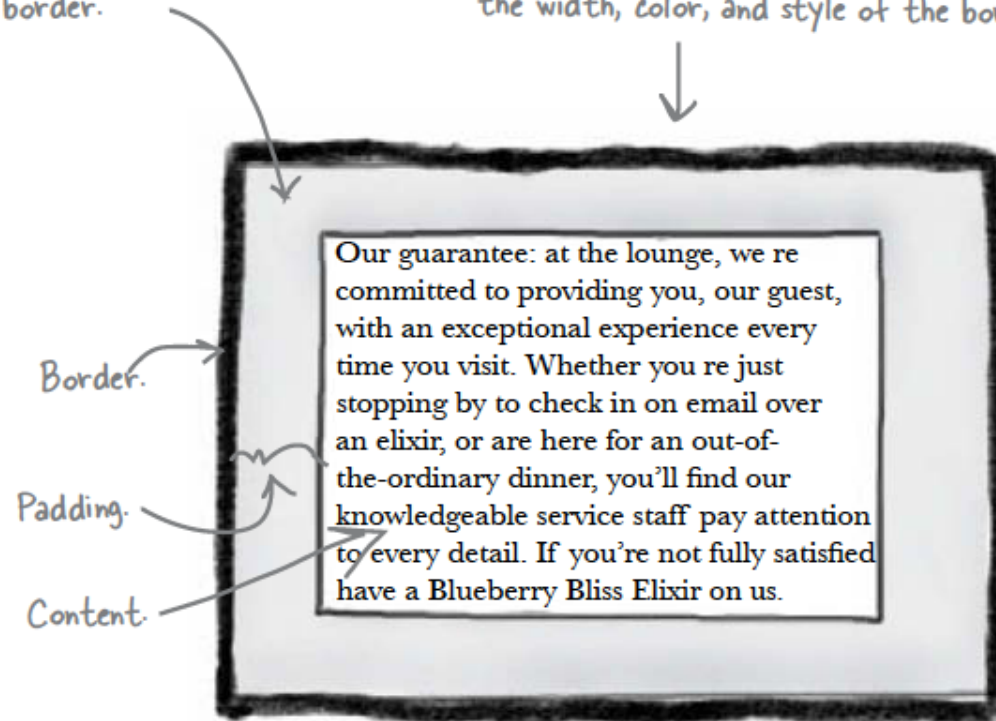
Using CSS, you're going to be able to control the width of the padding around the entire content area, or even control the padding on any one side (top, right, bottom, or left).

Border

- Elements can have an optional border around them
- The border surrounds the padding and because it takes the form of a line around the content, borders provide visual separation between content and other elements on the same page
- Borders can be various widths, colors and styles

Notice that the padding separates the content area from the border.

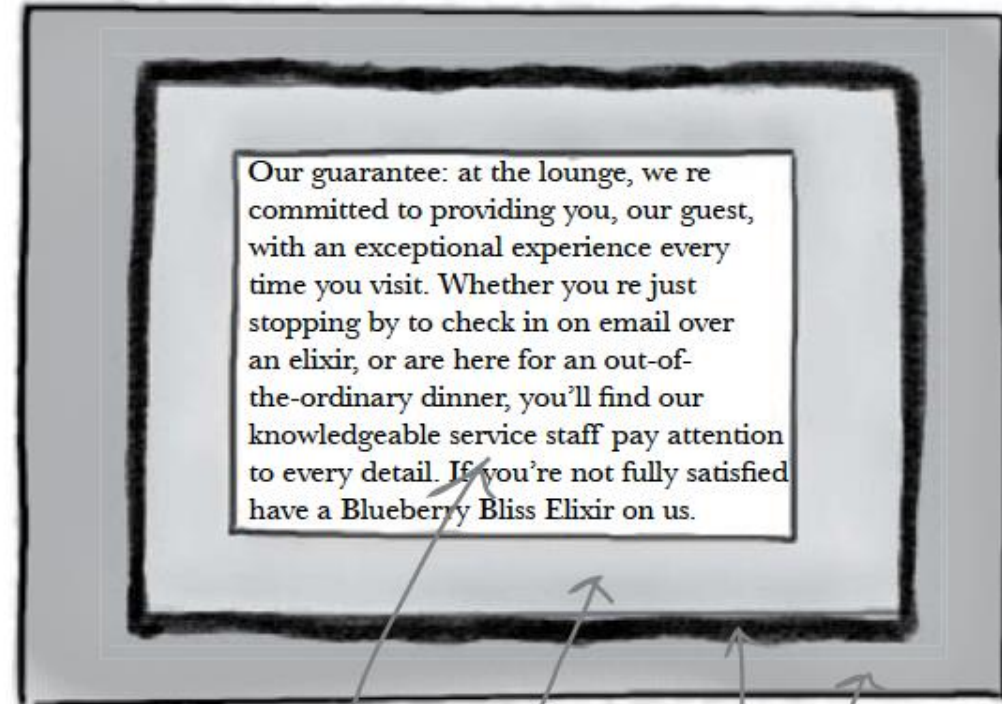
Using CSS, you're going to be able to control the width, color, and style of the border.



Margin

- The margin is also optional and surrounds the border.
- The margin gives you a way to add space between your element and other elements on the same page.
- If two boxes are next to each other, the margins act as the space in between them.
- Like padding, margins are transparent and have no color or decoration of their own.

Using CSS, you're going to be able to control the width of the entire margin, or of any particular side (top, right, bottom, or left).



This is the entire element. We have a content area, surrounded by optional padding, surrounded by an optional border, surrounded by an optional margin.

Content.

Padding.

Border.

Margin.

Variations: Boxes

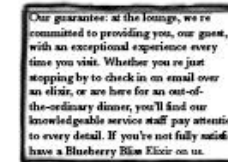
- The box model may look simple with just the content, some padding, a border, and margins.
- But when you combine these all together there are endless ways you can determine the layout of an element with its internal spacing (padding) and the spacing around it (margins).



You can style a box to have padding, a border, and a margin.



Or, just padding and a border.



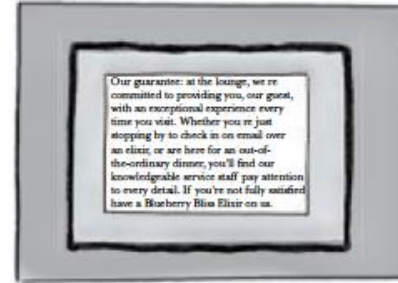
Or just a border.



Or a margin with no border and no padding.

Variations: Borders

You can have solid borders, thick or thin.



Or no border at all.



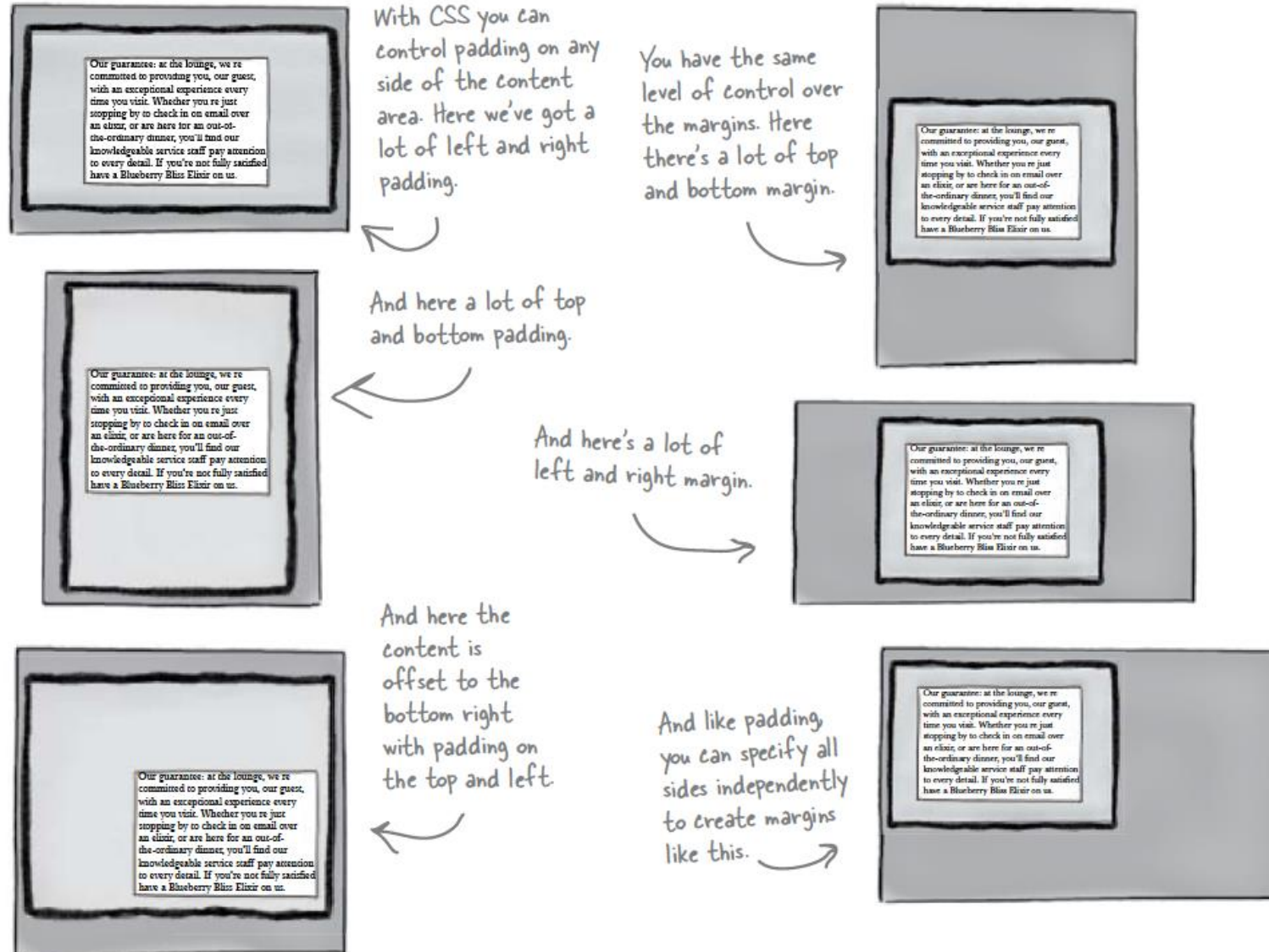
Or choose from eight different styles of borders, like dashed.



Or even color your borders.



Variations: Padding & Margins



Variations: Content

