CSS for Designers
Capabilities to Know & Pitfalls to Avoid

R. Scott Granneman

Jans Carton

1.1

Notes & URLs for this presentation can be found...

» underneath the link to this slide on granneman.com
» at files.granneman.com/presentations/webdev/CSS-for-Designers.txt

Boxes!
It's All Boxes!

Everything on a webpage is laid out with boxes (& boxes within boxes, & boxes within boxes within boxes...)

TECHNOLOGY

4 COMMENTS

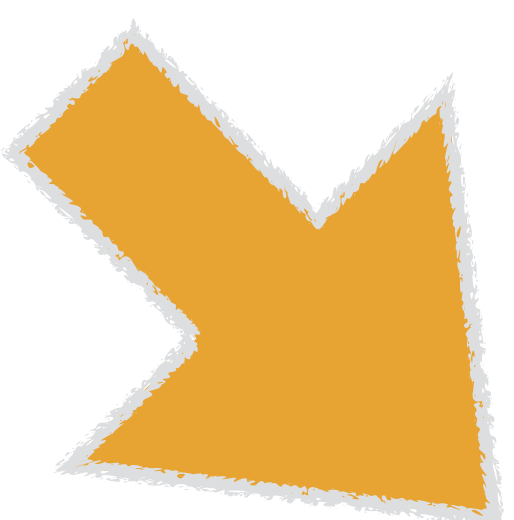# Simplifying the Bull: How Picasso Helps to Teach Apple's Style

Inside Apple's Internal Training Program

By BRIAN X. CHEN   AUG. 10, 2014

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MORE

CUPERTINO, Calif. — Apple may well be the only tech company on the planet that would dare compare itself to Picasso.

In a class at the company's internal training program, the so-called Apple University, the instructor likened the 11 lithographs that make up Picasso's "The Bull" to the way Apple builds its smartphones and other devices. The idea: Apple designers strive for simplicity just as Picasso eliminated details to create a great work of art.

× | | | ⚙ | ❯ Console | 🖵 Inspector | ⏸ Debugger | 📝 Style Editor | ⏱ Profiler | ☰ Network | ⬀ | ▭ | ⬛ | ▦

☐ Pick an element from the page

Style Editor

☑ Toggle split console

☐ Show original sources

☑ Responsive Design Mode

☑ Autocomplete CSS

☐ Highlight painted area

JavaScript Profiler

☑ 3D View

☐ Show Gecko platform data

☐ Scratchpad

Advanced settings

☐ Grab a color from the page

☐ Disable Cache *

* Not supported for current toolbox target

☐ Disable JavaScript *

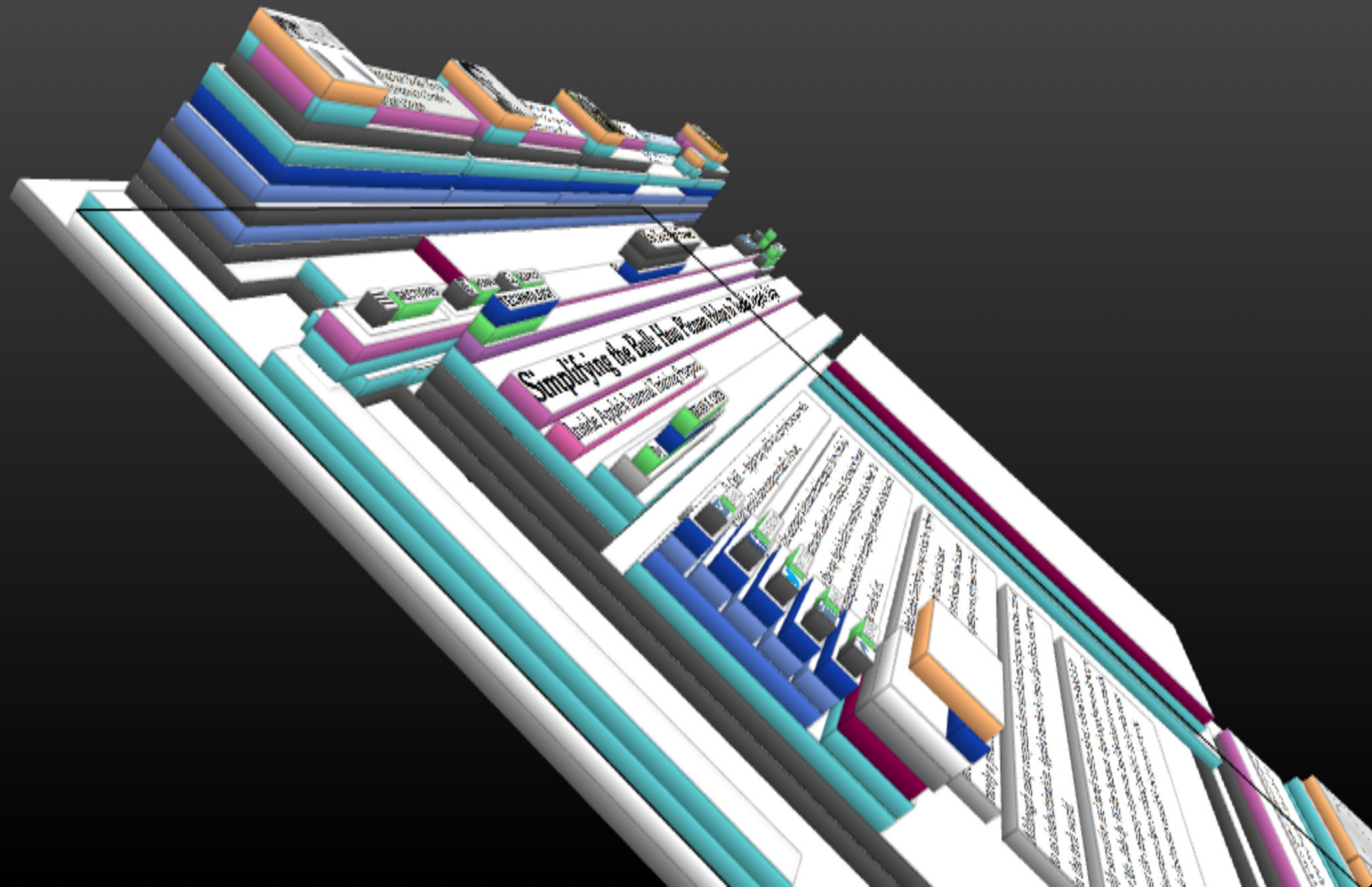# Simplifying the Bull: How Picasso Helps to Teach Apple's Style

CUPERTINO, Calif. — Apple may well be the only tech company on the planet that would dare compare itself to Picasso.
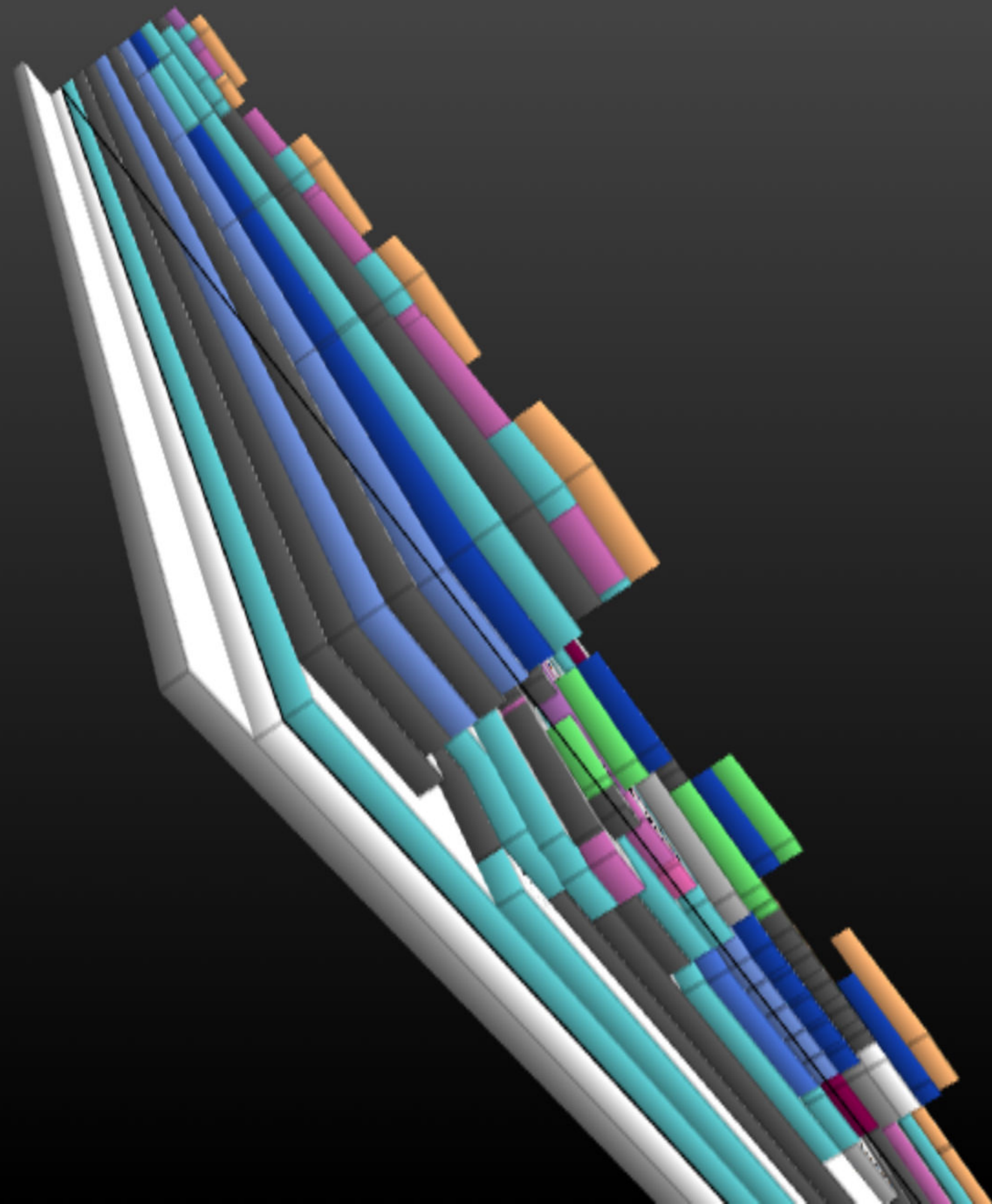
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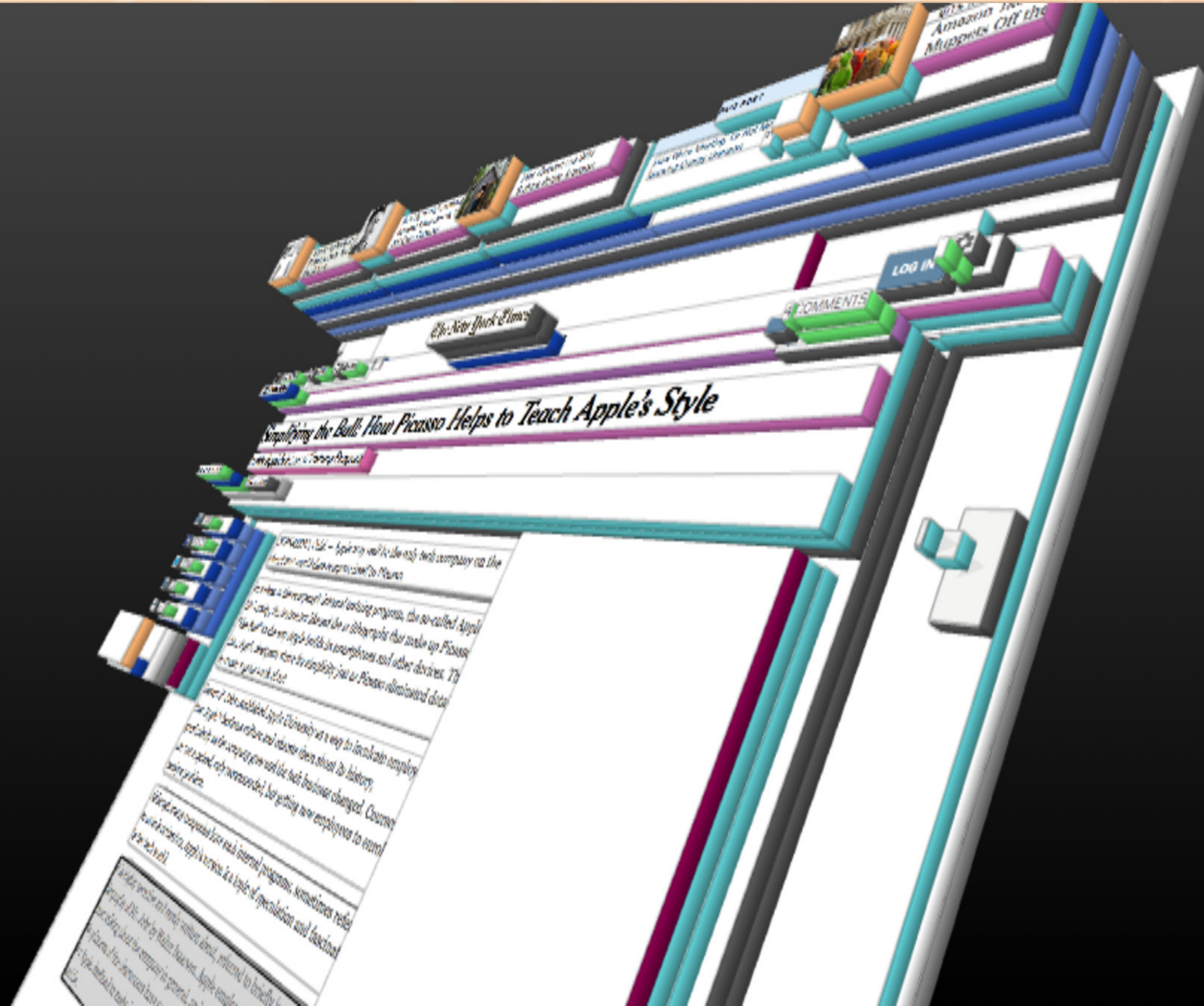
Steven P. Jobs established Apple University as a way to inculcate employees into Apple's business culture and educate them about its history, particularly as the company grew and the tech business changed. Courses are not required, only recommended, but getting new employees to enroll is rarely a problem.

Although many companies have such internal programs, sometimes referred to as indoctrination, Apple's version is a topic of speculation and fascination in the tech world.

It is highly secretive and rarely written about, referred to briefly in the

Simplifying the Build: How Power Works...

The New York Times

Simplifying the Bull: How Picasso Helps to Teach Apple's Style

LOG IN

COMMENTS

Amazon Te...
Muppets Off the...

Box Model

You buy a Chinese vase as a present...

To protect it, you put it in a box with peanuts...

...& then wrap it with festive paper

Margin

Border

Padding

Content

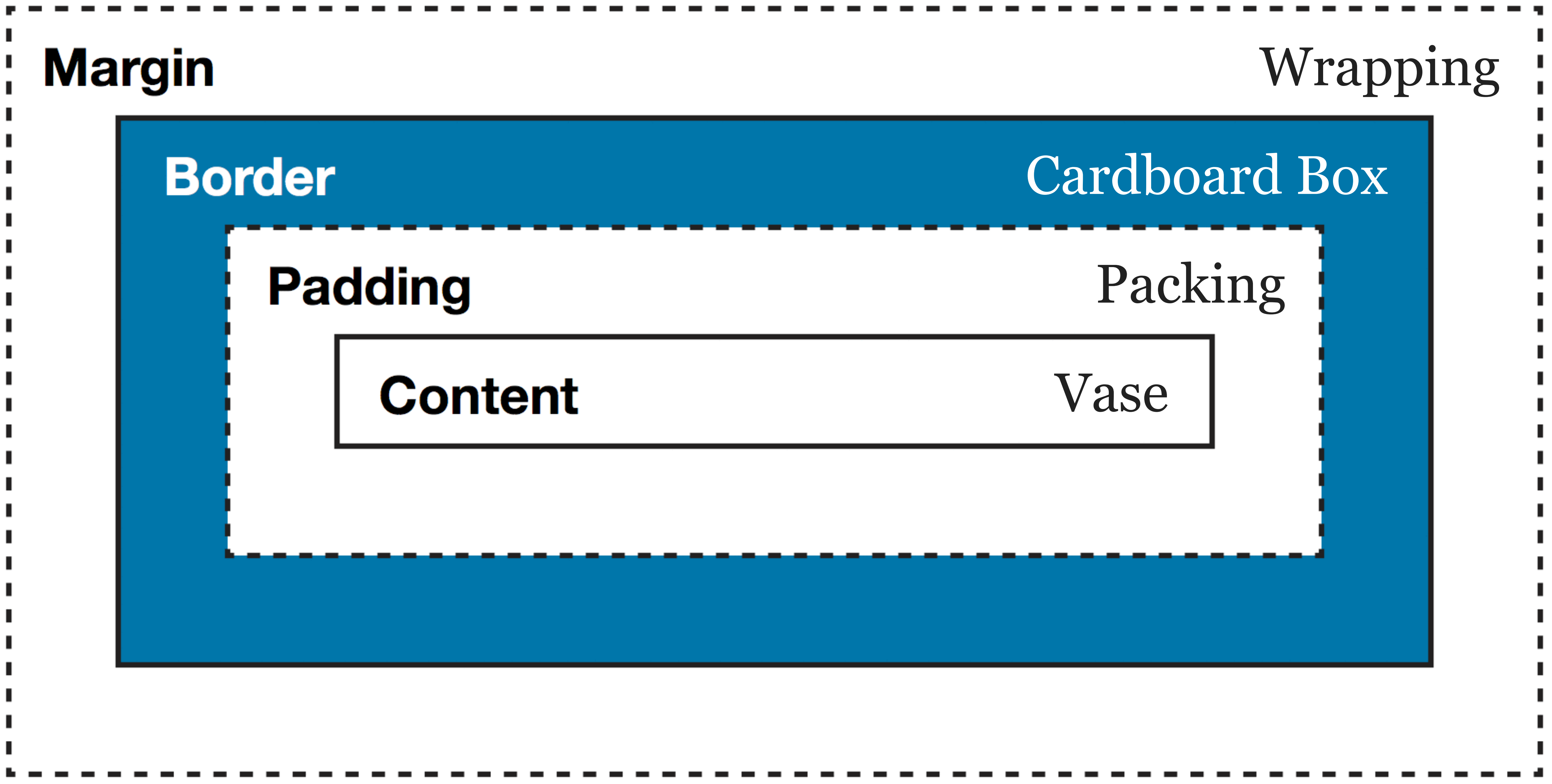**Margin** Wrapping

Border Cardboard Box

Padding Packing
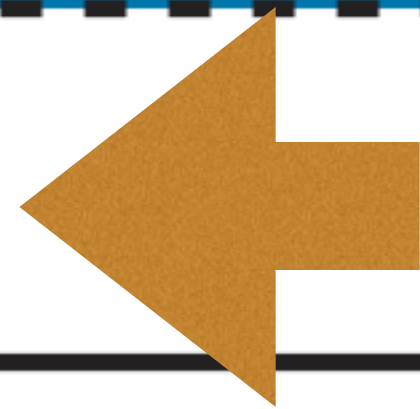
Content Vase

Margin
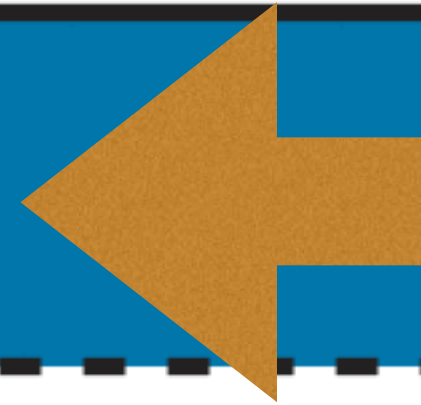
Border

Padding

Content

Padding is on the *inside* of the border
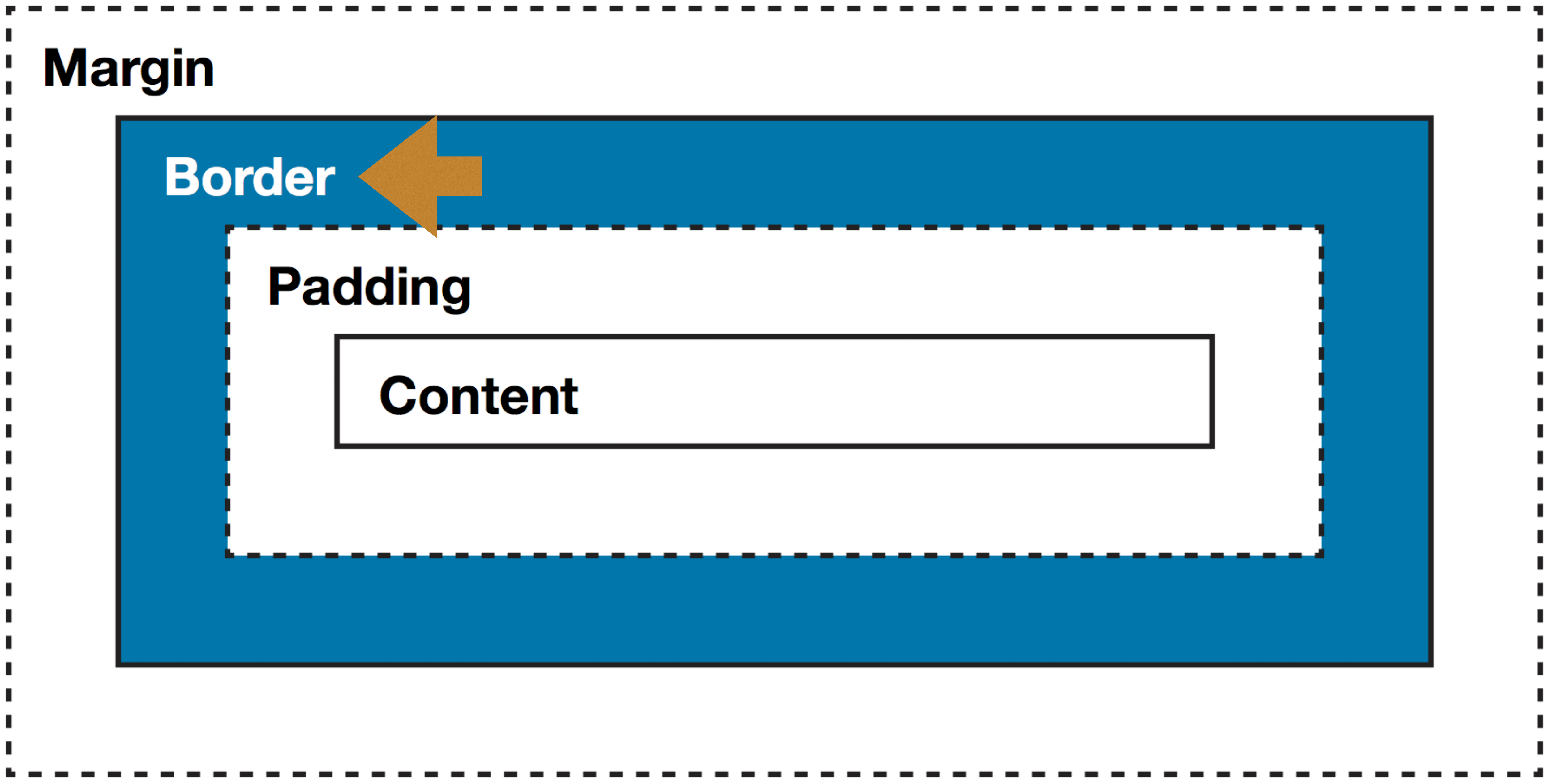
Padding is transparent, so you cannot change its color

Margin

Border

Padding

Content

Border styles

» `none`: no border shows, & computed `border-width` is 0
» `hidden`: same as `none`, even in table cells with `border-collapse: collapse` (unlike `none`, which shows the border)
» `dotted`: • • • • • •
» `dashed`: - - - - - -
» `solid`: ——————
» `double`: ═════
» `groove`: 3D effect going in
» `ridge`: 3D effect going out
» `inset`: makes box appear embedded
» `outset`: 3D effect that makes box appear embossed

Margin

Border

Padding

Content

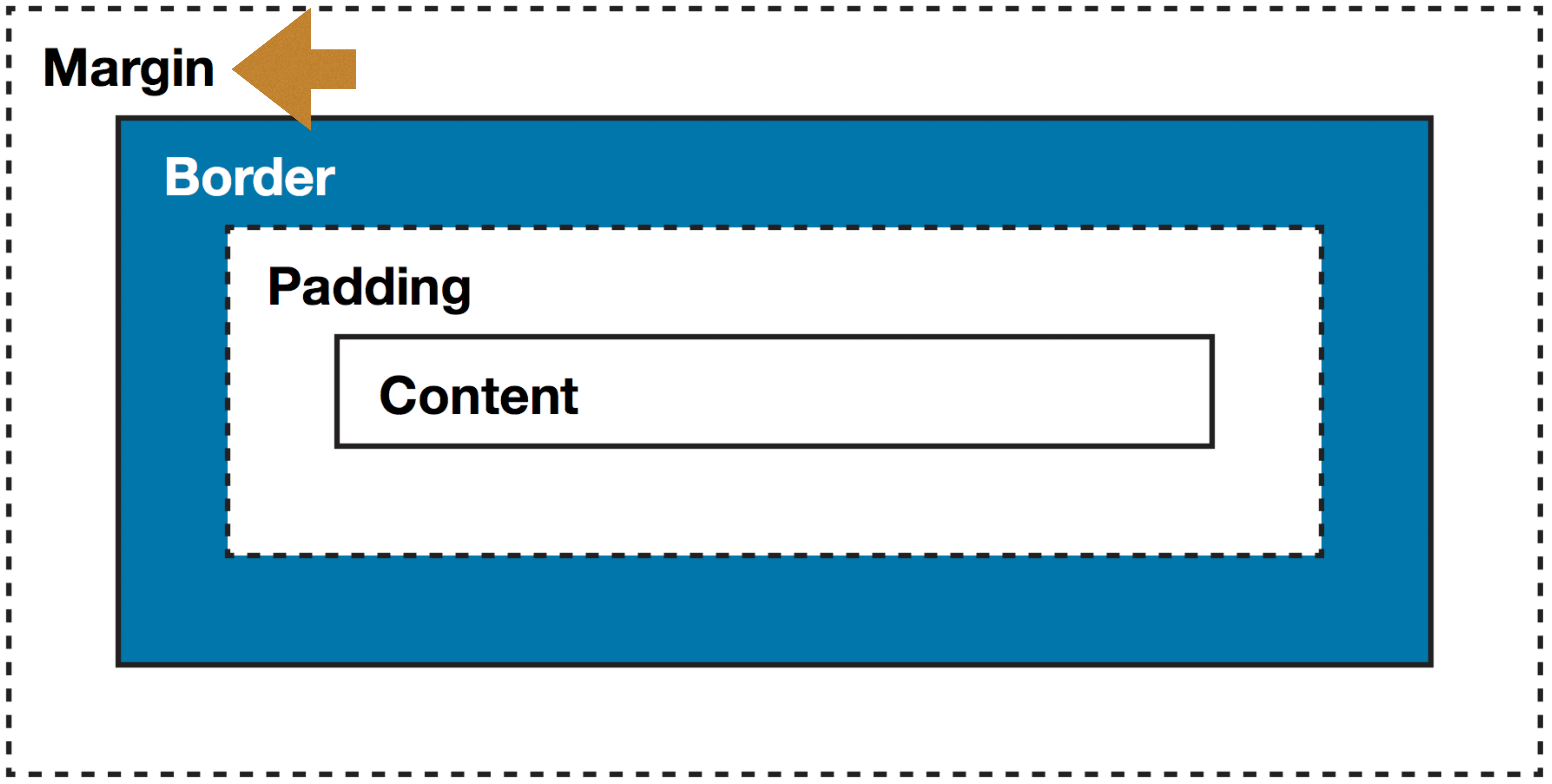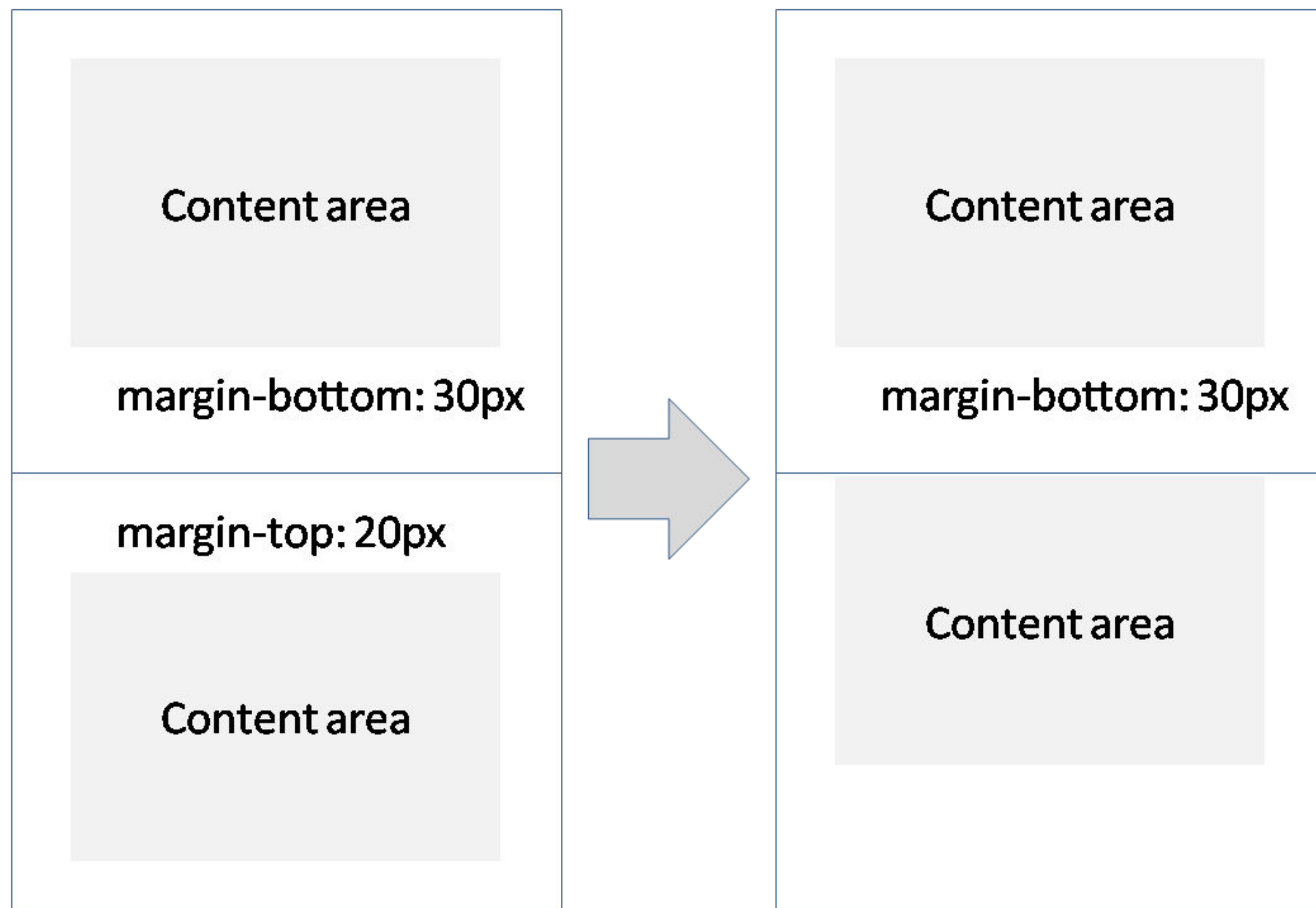Margins are on the *outside* of the border (the opposite of padding, which is on the inside)

Always transparent

Margin collapsing

Top and bottom margins of blocks are sometimes combined (collapsed) into a single margin whose size is the largest of the margins combined into it

Content area

margin-bottom: 30px

margin-top: 20px

Content area

Content area

margin-bottom: 30px

Content area

`overflow`

On a block-level element, what to do if content overflows its box

`overflow: visible`
Display overflow content (default)

`overflow: hidden`
Clip content

`overflow: scroll`
Render scroll bars all the time

`overflow: auto`
Show scroll bars only if content overflows

Floats

`float`

Element taken out of normal flow & *placed along left or right side of its container*, where text & inline elements will *wrap* around it

HTML

```html
      whether they danced often upon
      Lerion; but the farmer and his wile
      would only make the Elder Sign and
      tell him the way to Nir and Ulthar.
  </p>
  <img
src="https://upload.wikimedia.org/wikip
edia/commons/0/02/Elder_sign.jpg"
alt="Elder Sign">
  <p>
      At noon he walked through the one
      broad high street of Nir, which he
      had once visited and which marked his
      farthest former travels in this
      direction; and soon afterward he came
```

CSS

```css
img {
  float: left;
}

/* Beautification (not part of lesson)*/

img {
  margin: .2em 1em .5em .5em;
}
```

JS

Carter detoured at the proper place, and heard behind him the frightened fluttering of some of the more timid Zoogs. He had known they would follow him, so he was not disturbed; for one grows accustomed to the anomalies of these prying creatures. It was twilight when he came to the edge of the wood, and the strengthening glow told him it was the twilight of morning. Over fertile plains rolling down to the Skai he saw the smoke of cottage chimneys, and on every hand were the hedges and ploughed fields and thatched roofs of a peaceful land. Once he stopped at a farmhouse well for a cup of water, and all the dogs barked affrightedly at the inconspicuous Zoogs that crept through the grass behind. At another house, where people were stirring, he asked questions about the gods, and whether they danced often upon Lerion; but the farmer and his wile would only make the Elder Sign and tell him the way to Nir and Ulthar.

At noon he walked through the one broad high street of Nir, which he had once visited and which marked his farthest former travels in this direction; and soon afterward he came to the great stone bridge across the Skai, into whose central piece the masons had sealed a living human sacrifice when they built it thirteen-hundred years before. Once on the other side, the frequent presence of cats (who all arched their backs at the trailing Zoogs) revealed the near neighborhood of Ulthar; for in Ulthar, according to an ancient and significant law, no man may kill a cat. Very pleasant were the suburbs of Ulthar, with their little green cottages and neatly fenced farms; and still pleasanter was the quaint town itself, with its old peaked roofs and overhanging upper stories and numberless chimney-pots and narrow hill streets where one can see old cobbles whenever the graceful cats afford space enough. Carter, the cats being somewhat dispersed by the half-seen Zoogs, picked his way directly to the modest Temple of the Elder Ones where the priests and old records were said to be; and once within that venerable circular tower of ivied stone—which crowns Ulthar's highest hill—he sought out the patriarch Atal, who had been up the forbidden peak Hatheg-Kia in the stony desert and had come down again alive.

Atal, seated on an ivory dais in a festooned shrine at the top of the temple, was fully three centuries old; but still very keen of mind and memory. From him Carter learned many things about the gods, but mainly that they are indeed only Earth's gods, ruling feebly our own dreamland and having no power or habitation elsewhere. They might, Atal said, heed a man's prayer if in good humour; but one must not think of climbing to their onyx stronghold atop Kadath in the cold waste. It was lucky that no man knew where Kadath towers, for the fruits of ascending it would be very grave. Atal's companion Banni the Wise had been drawn screaming into the sky for climbing merely the known peak of Hatheg-Kia. With unknown Kadath, if ever found, matters would be much worse; for although Earth's gods may sometimes be surpassed by a wise mortal, they are protected by the Other Gods from Outside, whom it is better not to discuss. At least twice in the world's history the Other Gods set their seal upon Earth's primal granite; once

Floats are used to create multi-column layouts, but it was never intended for that purpose (& there will soon be better ways to do that: `flexbox` & `grid`)

Backgrounds

Backgrounds are complex

Lots of properties

Can be *layered*: multiple background layers

Difficult concepts

SHANGHAI

Welcome to Shanghai –the city that never sleeps.

GOTOCHINA

INTRODUCTION
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SHANGHAI

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2 CSS declarations create that effect:

```
background-position: center
background-size: cover
```

	IE	Safari	Chrome	Firefox	Android	iOS
background-position	4	1	1	1	Y	Y
Multiple backgrounds	9	1.3	1	3.6	2.3	6.1
4-value syntax	9	>7	25	13	—	—

background-size	9	4.1	3	4	2.3	5.1
contain & cover	9	4.1	3	3.6	–	–
SVG	?	?	?	8	?	?

`background-attachment`

Specifies if & how background images *scroll*

Values
» `scroll`: scrolls with the page (default)
» `fixed`: fixed within the viewport & does not scroll
» `local`: scrolls with the content of its container

	IE	Safari	Chrome	Firefox	Android	iOS
background-attachment	4	1	1	1	2.1	3.2
Multiple backgrounds	9	1.3	1	3.6	2.1	3.2
local	9	5	4	25	?	?

Background Layers

Every background layer can have every background property except `background-color`

Only the bottom layer can use `background-color`

Background layers do not have a `z-index` property

They stack in the order they appear in the style sheet

1st background layer in CSS is rendered as top layer in the browser

Last background layer in CSS is rendered as bottom layer in the browser

Gradients

`<gradient>`

A CSS `<image>` made from a *progressive transition* between 2 or more colors

2 types of gradients
» *linear*: progresses in a single direction
» *radial*: radiates outward from a point

Both can repeat

Linear

Radial

	IE	Safari	Chrome	Firefox	Android	iOS
linear-gradient*	10	>7	26	10	2.3 (-webkit) 4.4	6.1 (-webkit) 7.1
radial-gradient*	10	7	25	10	2.3 (-webkit) 4.4	6.1 (-webkit) 7.1

* Using correct finalized syntax

Border Effects

`border-image`

Draws an *image on the borders* of elements

Don't use it

	IE	Safari	Chrome	Firefox	Android	iOS
border-image	11	6	16	15	2.1*	3.2*

* Requires vendor prefix

`border-radius`

Rounds corners or turns *boxes into circles*

```css
1  div {
2    border-radius: 2%;
3  }
4
5  div {
6    margin: 30px;
7    border: 30px solid hsla(0, 100%, 50%,
   .5);
8    padding: 30px;
9    width: 300px;
10   height: 300px;
11   background-color: lightskyblue;
12   text-align: justify;
13 }
```

It is said that in Ulthar, which lies beyond the river Skai, no man may kill a cat; and this I can verily believe as I gaze upon him who sitteth purring before the fire. For the cat is cryptic, and close to strange things which men cannot see. He is the soul of antique Aegyptus, and bearer of tales from forgotten cities in Meroe and Ophir. He is the kin of the jungle's lords, and heir to the secrets of hoary and sinister Africa. The Sphinx is his cousin, and he speaks her language; but he is more ancient than the Sphinx, and remembers that which she hath forgotten.

```html
1 <div class="circle"></div>
2
3 <div class="oval"></div>
```

```css
1  .circle {
2    width: 100px;
3    height: 100px;
4    border-radius: 50%; /* or 50px */
5  }
6
7  .oval {
8    width: 200px;
9    height: 100px;
10   border-radius: 100px / 50%;
11 }
12
13 /* Uninteresting stuff below here */
14
15 div {
```

May 1981: Steve Jobs & crew are developing the Macintosh

"Steve suddenly got more intense. 'Rectangles with rounded corners are everywhere! Just look around this room!'. And sure enough, there were lots of them, like the whiteboard and some of the desks and tables. Then he pointed out the window. 'And look outside, there's even more, practically everywhere you look!'. He even persuaded Bill to take a quick walk around the block with him, pointing out every rectangle with rounded corners that he could find. ... Over the next few months, roundrects worked their way into various parts of the user interface, and soon became indispensable."

	IE	Safari	Chrome	Firefox	Android	iOS
`border-radius`	9	5	5	4	2.1*	3.2*
Elliptical borders	Y	Y	Y	3.5	?	?
4 values for 4 corners	Y	5	4	Y	?	?
Percentages	9	5.1	5	4	3	4.1

* Requires vendor prefix

`box-shadow`

Creates attractive *shadow effects* on elements

```
1 <div>1</div>
2 <div>2</div>
3 <div>3</div>
4 <div>4</div>
5 <div>5</div>
6 <div>6</div>
7 <div>7</div>
```
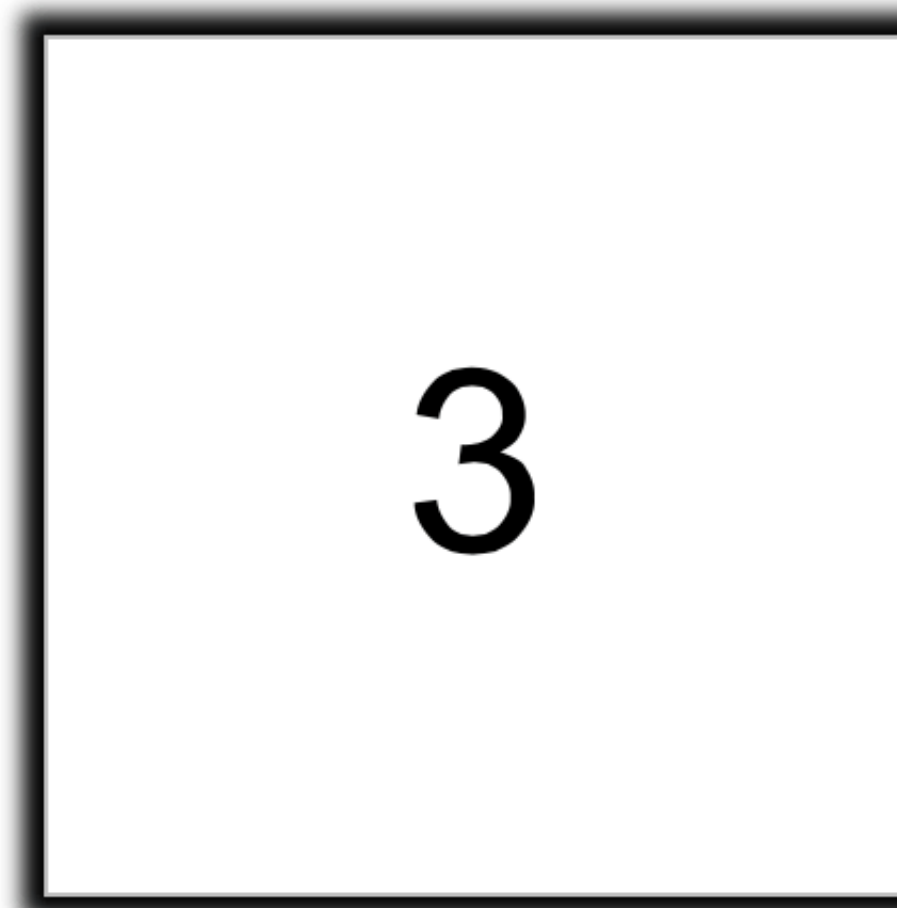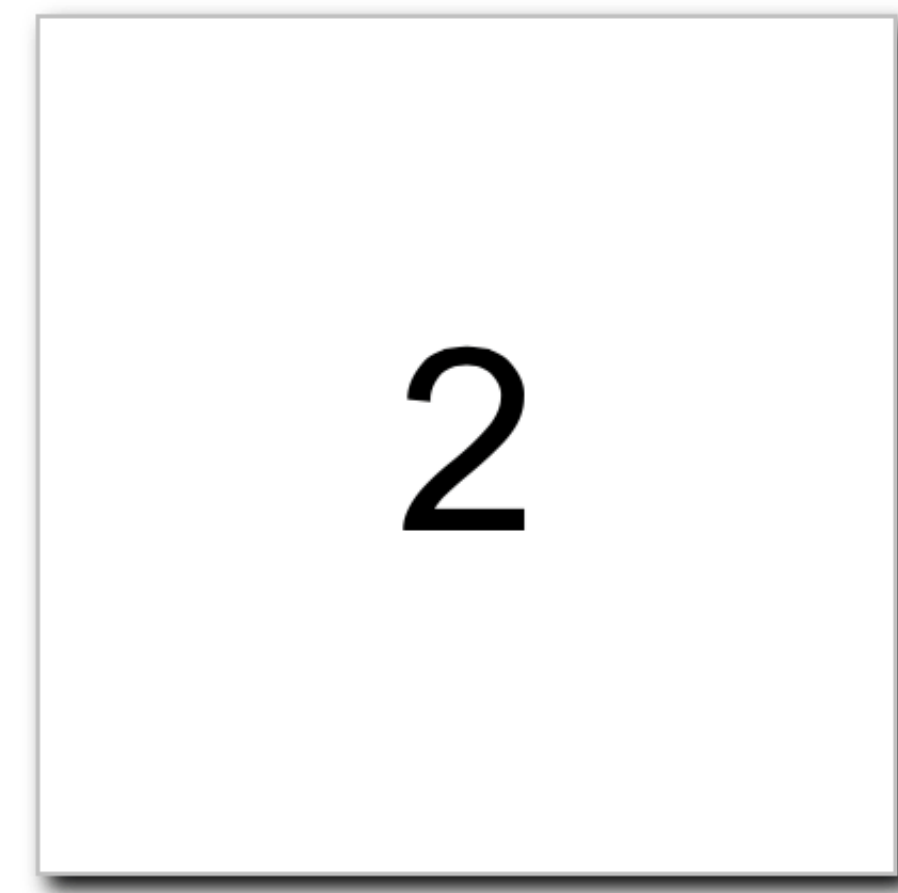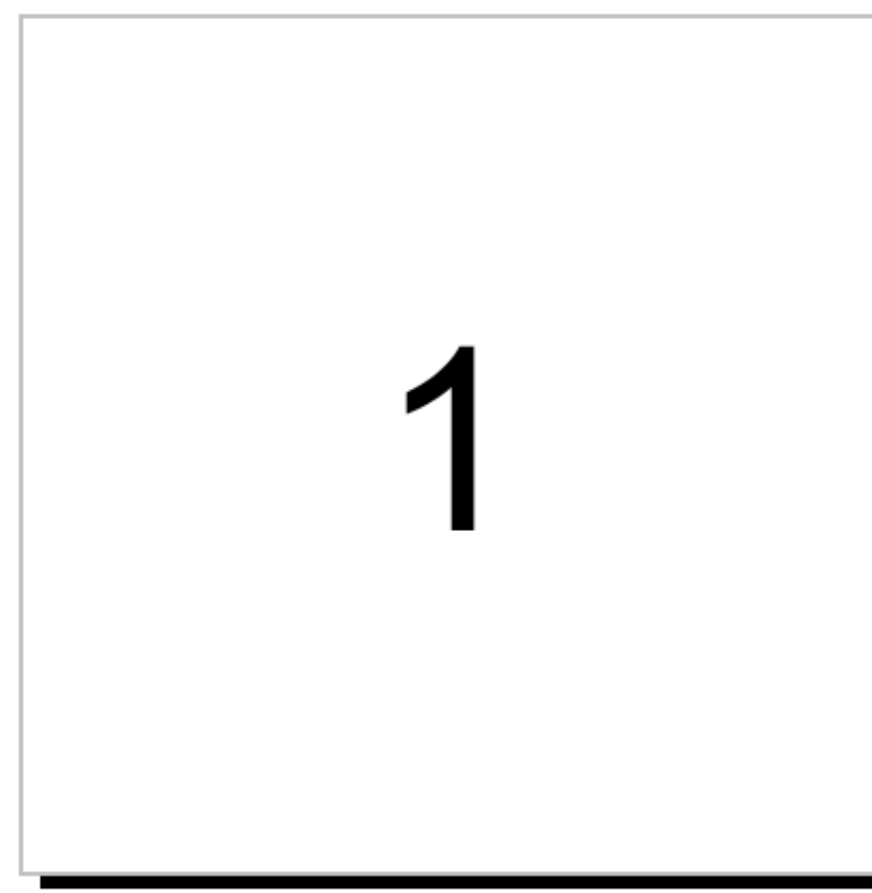
```
1  /*  <offset-x> <offset-y> <color> */
2
3  div:nth-of-type(1) {
4    box-shadow: 5px 3px black;
5  }
6
7  /* <offset-x> <offset-y> <blur-radius>
   <color> */
8
9  div:nth-of-type(2) {
10    box-shadow: 3px 3px 5px black;
11 }
```

	IE	Safari	Chrome	Firefox	Android	iOS
`box-shadow`	9	5.1	10	4	2.2*	5
Multiple shadows	9	5.1	10	4	?	5
`inset`	9	5.1	10	4	?	5
Spread radius	9	5.1	10	4	?	5

* Requires vendor prefix

opacity

`opacity`

Uses opacity to make an element & everything it contains *transparent*

Value is a `<number>` between `0` & `1`

HTML

```html
        from what seemed a well-drilled chorus
        of hoarse voices would rise in sing-
        song chant that hideous phrase or
        ritual:
3  </p>
4  <div>
5    "Ph'nglui mglw'nafh Cthulhu R'lyeh
     wgah'nagl fhtagn."
6  </div>
7  <p>
8    Then the men, having reached a spot
     where the trees were thinner, came
     suddenly in sight of the spectacle
     itself. Four of them reeled, one
     fainted, and two were shaken into a
```

CSS

```css
1  div {
2    opacity: 0;
3    opacity: .3;
4    opacity: 1;
5  }
6
7  /* Uninteresting stuff below here */
8
9  div {
10   margin: 2em;
11   border: 2em solid hsla(0, 100%, 50%,
       1);
```

Only poetry or madness could do justice to the noises heard by Legrasse's men as they ploughed on through the black morass toward the red glare and muffled tom-toms. There are vocal qualities peculiar to men, and vocal qualities peculiar to beasts; and it is terrible to hear the one when the source should yield the other. Animal fury and license here whipped themselves to daemoniac heights by howls and squawking ecstacies that tore and reverberated through those nighted woods like pestilential tempests from the gulfs of hell. Now and then the less organized ululation would cease, and from what seemed a well-drilled chorus of hoarse voices would rise in sing-song chant that hideous phrase or ritual:

"Ph'nglui mglw'nafh Cthulhu R'lyeh wgah'nagl fhtagn."

Then the men, having reached a spot where the trees were thinner, came suddenly in sight of the spectacle itself. Four of them reeled, one fainted, and two were shaken into a frantic cry which the mad cacophony fortunately deadened. Legrasse dashed swamp water on the face of the fainting man, and all stood trembling and nearly hypnotised with horror.

HTML

```html
from what seemed a well-drilled chorus
    of hoarse voices would rise in sing-
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    ritual:
</p>
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    "Ph'nglui mglw'nafh Cthulhu R'lyeh
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</div>
<p>
    Then the men, having reached a spot
    where the trees were thinner, came
    suddenly in sight of the spectacle
    itself. Four of them reeled, one
    fainted, and two were shaken into a
```

CSS

```css
div {
  opacity: .3;
  opacity: 1;
  opacity: 0;
}

/* Uninteresting stuff below here */

div {
  margin: 2em;
  border: 2em solid hsla(0, 100%, 50%,
  1);
```

Only poetry or madness could do justice to the noises heard by Legrasse's men as they ploughed on through the black morass toward the red glare and muffled tom-toms. There are vocal qualities peculiar to men, and vocal qualities peculiar to beasts; and it is terrible to hear the one when the source should yield the other. Animal fury and license here whipped themselves to daemoniac heights by howls and squawking ecstacies that tore and reverberated through those nighted woods like pestilential tempests from the gulfs of hell. Now and then the less organized ululation would cease, and from what seemed a well-drilled chorus of hoarse voices would rise in sing-song chant that hideous phrase or ritual:

Then the men, having reached a spot where the trees were thinner, came suddenly in sight of the spectacle itself. Four of them reeled, one fainted, and two were shaken into a frantic cry which the mad cacophony fortunately deadened. Legrasse dashed swamp water on the face of the fainting man, and all stood trembling and nearly hypnotised with horror.

HTML

```
      from what seemed a well-drilled chorus
      of hoarse voices would rise in sing-
      song chant that hideous phrase or
      ritual:
 3 </p>
 4 <div>
 5    "Ph'nglui mglw'nafh Cthulhu R'lyeh
      wgah'nagl fhtagn."
 6 </div>
 7 <p>
 8    Then the men, having reached a spot
      where the trees were thinner, came
      suddenly in sight of the spectacle
      itself. Four of them reeled, one
```

CSS

```
 1  div {
 2    opacity: 1;
 3    opacity: 0;
 4    opacity: .3;
 5  }
 6
 7  /* Uninteresting stuff below here */
 8
 9  div {
10    margin: 2em;
11    border: 2em solid hsla(0, 100%, 50%,
      1);
```

Only poetry or madness could do justice to the noises heard by Legrasse's men as they ploughed on through the black morass toward the red glare and muffled tom-toms. There are vocal qualities peculiar to men, and vocal qualities peculiar to beasts; and it is terrible to hear the one when the source should yield the other. Animal fury and license here whipped themselves to daemoniac heights by howls and squawking ecstacies that tore and reverberated through those nighted woods like pestilential tempests from the gulfs of hell. Now and then the less organized ululation would cease, and from what seemed a well-drilled chorus of hoarse voices would rise in sing-song chant that hideous phrase or ritual:

"Ph'nglui mglw'nafh Cthulhu R'lyeh wgah'nagl fhtagn."

Then the men, having reached a spot where the trees were thinner, came suddenly in sight of the spectacle itself. Four of them reeled, one fainted, and two were shaken into a frantic cry which the mad cacophony fortunately deadened. Legrasse dashed swamp water on the face of the fainting man, and all stood trembling and nearly hypnotised with horror.

Blending

`<blend-mode>`

Method for *blending overlapping images or colors* (as in Photoshop or Illustrator)

Not yet supported

color	hard-light	overlay
color-burn	hue	saturation
color-dodge	lighten	screen
darken	luminosity	soft-light
difference	multiply	
exclusion	normal	

`<blend-mode>`

Animation

Can really add polish & impact

Less is more (& the lesser, the better)

Have a (good) purpose

Hover.css v2

A collection of CSS3 powered hover effects to be applied to links, buttons, logos, SVG, featured images and so on. Easily apply to your own elements, modify or just use for inspiration. Available in CSS, Sass, and LESS.

Download on GitHub

Read Tutorial →

2D Transitions

Grow	Shrink	Pulse	Pulse Grow	Pulse Shrink	Push	Pop

Bounce In	Bounce Out	Rotate	Grow Rotate	Float	Sink	Bob

Media-Specific CSS

CSS allows you to change how content is presented on different media without having to change the content itself or code

Media Queries Level 4* defines 4 media types

» `all`: all media type devices (default)
» `print`: printers & Print Preview
» `speech`: screenreaders (was `aural`)
» `screen`: "all devices that aren't matched by print or speech"

* Working Draft as of June 3, 2014

A webpage should not look the same on a desktop & on a phone

Likewise, a webpage should not look the same on a screen & on paper (& it was never intended to!)

The Web Standards Project is a grassroots coalition fighting for standards which ensure simple, affordable access to web technologies for all.

Frequently Asked Questions (FAQ)

What are web standards and why should I use them?

1 Introduction

2 What are the standards?
2.1 W3C Standards
2.1.1 What is the W3C
2.1.2 What does it do?
2.1.3 What are the W3C standards?

2.1.3.1 HTML 4.0
2.1.3.2 XML 1.0
2.1.3.3 XHTML 1.0, 1.1, XHTML Modularization
2.1.3.4 CSS – Cascading Stylesheets
2.1.3.5 DOM
2.2 ECMA Standards
2.2.1 What is the ECMA?
2.2.2 What does it do?
2.2.3 What are the ECMA standards?
2.2.3.1 ECMAScript

3 What are the advantages of using Standards?
3.1 Accessibility
3.1.1 To software/machines
3.1.2 To people

Frequently Asked Questions (FAQ)

What are web standards and why should I use them?

1. Introduction

Tim Berners-Lee's dream for his invention, the World Wide Web, is a common space where users can share information to work together, to play, and to socialize ([The World Wide Web, A very short personal history](#)). As web developers, creating business, social, and educational sites, we turn this dream into reality.

But in this period of tremendous growth, the Web needs guidance to realize its full potential. Web standards are this guidance. These standards help ensure that everyone has access to the information we are providing, and also make web development faster and more enjoyable.

Standards compliance makes it easier for people with special needs to use the Web. Blind people may have their computer read web pages to them. People with poor eyesight may have pages rearranged and magnified for

Asian Elephant

ANIMALS

Geographical Range	India, Sri Lanka, Southeast Asia
Habitat	Scrub forests, adjoining grasslands, jungles where remaining
Scientific Name	Elephas maximus
Conservation Status	Endangered

Elephants and Us

Asian elephants have long been important to humans. Whether it's their key role in the Hindu religion and culture, their longstanding use as beasts of burden, their slaughter for the ivory trade, or their current conflicts with the exploding human population -- elephants have always fascinated us.

Elephants have been domesticated in Asia for centuries, bred to move people

It's a Girl!

An Asian elephant calf Priya was born at the Saint Louis Zoo on Friday, April 26, 2013, at 10:57 p.m.! See more.

We Care About Elephants

Want to know more about how the Saint Louis Zoo takes care of Asian elephants?
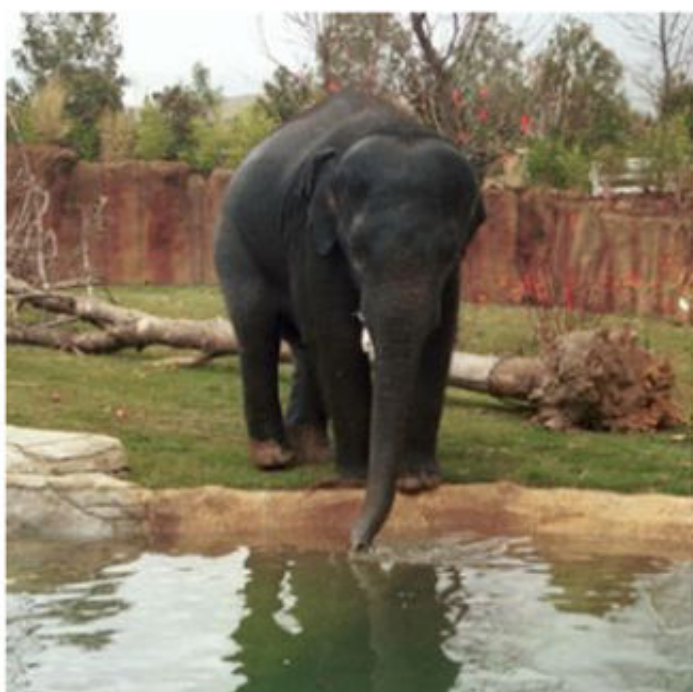
We Care About Elephants

Missouri House Commends Elephant Care

Saint Louis Zoo

ANIMALS

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Elephants and Us

Asian elephants have long been important to humans. Whether it's their key role in the Hindu religion and culture, their longstanding use as beasts of burden, their slaughter for the ivory trade, or their current conflicts with the

It's a Girl!

An Asian elephant calf Priya was born at the Saint Louis Zoo on Friday, April 26, 2013, at 10:57 p.m.! See more (/animals/abouttheanimals/mamm girl-asian-elephant-calf-born-april-26-2013/).

We Care About Elephants

	IE	Safari	Chrome	Firefox	Android	iOS
@media	9	1.3	1	1	1	3.1
Media Features	9	4	21	3.5	2.1	3.2

DANGER

Thank you!

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CSS for Designers
Capabilities to Know & Pitfalls to Avoid

R. Scott Granneman

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1.1

Changelog

2015-01-16 1.1: Added margin collapsing; fixed Saint Louis Zoo print image; added Blending; updated compatibility chart in Media-Specific CSS
2015-01-15 1.0: Created presentation from other presentations; added new content

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