

GYMNASIUM

CODING FOR DESIGNERS

Lesson 1 Handout

How Web Design Is Different Than Print Design

ABOUT THIS HANDOUT

This handout includes the following:

- A list of the core concepts covered in this lesson.
- The assignment(s) for this lesson.
- A list of readings and resources for this lesson including books, articles and websites mentioned in the videos by the instructor, plus bonus readings and resources hand-picked by the instructor.
- A transcript of the lecture videos for this lesson

ASSIGNMENTS

Find a website that takes a traditional print design paradigm and turns it on its head, ignores it, or otherwise changes it. In other words, a website that's more than just visually pleasing. This is an intentionally wide net, and could include things like:

- A website that uses the scroll bar or scrolling in an interesting way
- A website that uses search (which is impossible in print) in an interesting way
- A website that contains animation in some useful or brand-promoting way
- A particular part or detail of a website that has an interesting way of interacting

Write a brief critique of the website or the specific part of the website and post it to the Forum. Your critique should be in the following format:

FORUM MESSAGE SUBJECT: "Critique: [Website name]"

FORUM MESSAGE BODY:

Website name: [Website name]

Address: [Website URL]

WEBSITE'S PURPOSE: [Write a one-sentence description of the website's reason for being. Example: "This is the portfolio site for a New York web designer."]

How it breaks a print paradigm: [Write a short description of what the site does that's innovative or interesting. Example: "The site is just one long scrolling page, instead of many different pages."]

ONE THING IT DOES WELL: [Something that helps extend the brand or message, or helps the user achieve a goal. Example: “It’s really easy to see her portfolio work, because it’s all right there without having to click.”]

ONE THING IT COULD DO BETTER: [Something that’s hard to use, visually unappealing, or detracts from the brand or message. Example: “The navigation text is too small and hard to read. It looks great but it’s not legible.”]

Stuck? Can’t find any websites? Try the hint...

ASSIGNMENT HINTS

Can’t find any websites to critique? Here are some starting places to look:

- [Curated gallery of innovative interaction design](#)
- [Roundup of single-page websites](#)
- [Analysis of navigation in portfolio sites](#)

EXTRA CREDIT

A great way to keep up on interesting design developments, whether it’s graphic design, print design, web design, typography, illustration, or code, is through Twitter. Your optional assignment is to sign up for an account and start following interesting designers and firms. Let it be a daily (or weekly, or hourly) “recommended reading” list for the duration of this course and beyond.

If you’re new to Twitter: you don’t have to post anything or make anything public, if you don’t want to. You don’t even have to use your real name, and your email address isn’t made public. Other users are represented with an @ sign. (I’m @jimwebb, for instance. Uppercase and lowercase don’t matter.) “Tweets” are very short messages posted by users, a few sentences each. Sometimes those messages are about personal things like TV shows and pets, but what we care about are users who are tweeting messages that are relevant and interesting to our profession. You can “follow” any user you like, and you’ll start seeing their tweets when you log in or check Twitter on your desktop, phone, or table.

RESOURCES

READING/VIEWING

- [Ira Glass, on starting new things](#)
- [How designers can help developers](#)
- [Should you learn to code?](#)
- [One firm’s approach to having designers learn code](#)
- [Why Silicon Valley wants web designers who can code](#)
- [Designers who can code \(a response\)](#)

FOLKS WORTH FOLLOWING

- Vitamin T ([@vitamintalent](#)) - regular articles and updates on web design. Note: Vitamin T is a sponsor of this class.
- Erik Spiekermann ([@espiekermann](#)) - typographer responsible for Berliner Grotesk, Officina, FF Meta.
- Luke Wroblewski ([@lukew](#)) - expert on mobile and responsive web design.
- Print Magazine ([@printmag](#)) - official twitter feed of the print design magazine.
- Webdesigner Depot ([@DesignerDepot](#)) - web design trends, tutorials, and articles.
- Hoefler & Frere-Jones ([@HoeflerCo](#)) - type foundry responsible for Archer, Gotham, Hoefler Text.
- Smashing Magazine ([@smashingmag](#)) - an online web design and development magazine. Can get technical.

INTRODUCTION

(Note: This is an edited transcript of the Coding for Designers lecture videos. Some students work better with written material than by watching videos alone, so we're offering this to you as an optional, helpful resource. Some elements of the instruction, like live coding, can't be recreated in a document like this one.)

Welcome to Coding for Designers, an online course developed by Aquent. Coding for Designers, or “How To Be the Kind of Web Designer that Developers Love.” This is Lesson 1.

Today, we're going to talk about a couple of important questions. First, should web designers know how to code? Very reasonable, and a logical question. And the answer might surprise you.

Second: the top seven mistakes that new web designers make. We're going to talk more about what those are, and we're going to help you avoid them if you are a new web designer.

Today's session will be quick. It'll be useful. And you'll have homework after it's done. We're in school, folks! You've got to have homework.

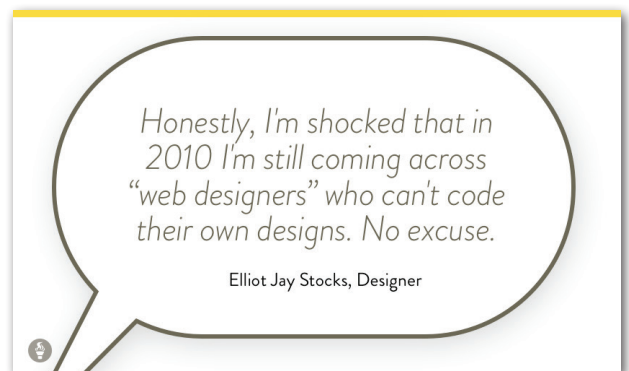
However, there's not going to be any code today.

My name's Jim. I'm a web designer, developer, and teacher here in Washington, DC. And I'm glad to have you.

SHOULD WEB DESIGNERS KNOW HOW TO CODE?

This is a reasonable question. And if you ask a group of seasoned professionals, print designers and web designers — if you get a room full of them together and you ask them this question, well, that room is going to part like the Red Sea. And you're going to have folks on either side arguing vehemently for their particular opinion.

You're going to have folks like Elliot Jay Stocks, a designer in the UK, who said this in 2010, “Honestly, I'm shocked that in 2010 I'm still coming across ‘web designers’ who can't code their own designs. No excuse.” This is a common and valid point. And what Elliot Jay Stocks is saying here, a little bit snarkily, but what he's saying is that the craft of web design involves code. It involves HTML and CSS. That's the stuff that websites are made of. And if you're designing websites, and you can't work in that stuff, then you're not as good a web designer. That's what he's saying.



But there are valid counter points, like this one from Jenifer Tidwell, the author of a fantastic book called *Designing Interfaces*. She says, it takes years to learn it well—she’s talking about code here—it takes years to learn code well, and this is what a lot of good software engineers do for 50+ hours per week. Hey, designer, can you afford to invest those years? That’s also a totally valid point.

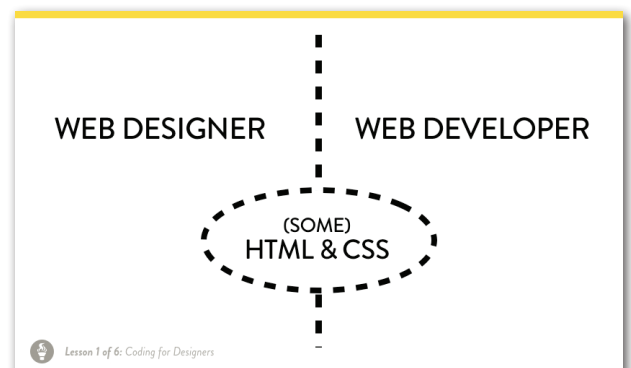
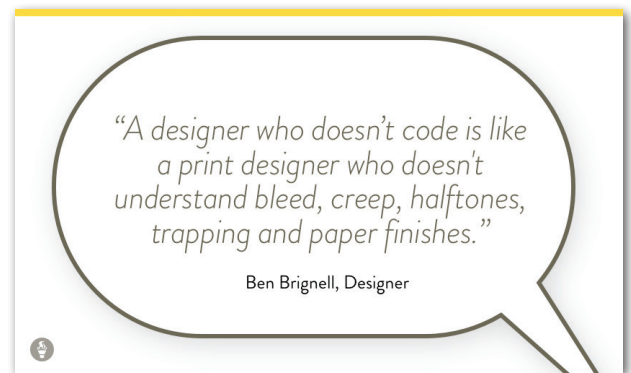
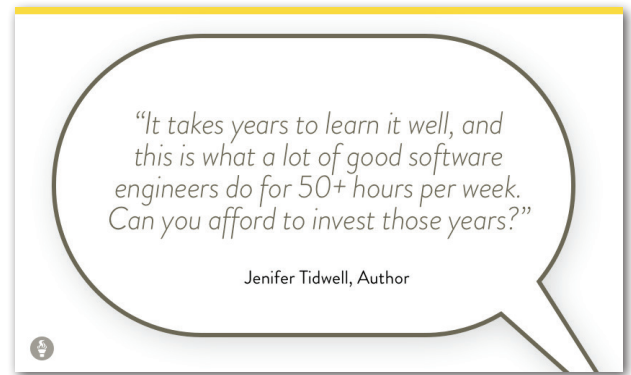
You are a web designer or a print designer. You’re a visual communicator. That’s your job. You’re not a coder. That’s not what you want to do. Trying to fit these two personality types into one person is like trying to combine a sports car and a pickup truck. It just doesn’t work, all the time.

So the answer to, should web designers know how to code? It’s a complex answer, but, honestly, and the surprising thing may be that the answer is not going to be decided by you or me. It’s going to be decided by your next hiring manager, the person who gives you your next job. And increasingly, hiring managers are saying things like this, a web designer who doesn’t code “is like a print designer who doesn’t understand bleed, creep, halftones, trapping, and paper finishes.”

For those of you who aren’t print designers, they’re talking here about prepress. They’re talking about a print designer needing to understand the craft of what happens when ink hits paper. And if they don’t understand that, then they are limited in their skills, ability, and knowledge as a print designer. And I think this is an apt analogy, that prepress is a core skill of a seasoned, experienced, print designer, and, in the same away, code, meaning HTML and CSS, is a lot like prepress. Knowing how things appear on press is important. But let me emphasize this, if you’re a print designer and you know prepress, you’re not a press operator. You won’t know everything about how things work on press. These two jobs are specific and distinct jobs. The overlap is prepress.

The same thing is true in web design. These two jobs, web designer and web developer, are two specific, distinct jobs, and don’t let anybody tell you differently. However, there is overlap. And the overlap, like prepress, in web design, is HTML and CSS. And it’s not everything having to do with HTML and CSS, but it’s some things. That’s what this class is about, is that overlap.

Now, I’m going to make a couple of assumptions, as your professor, about you, my student. And I hope I get these right. But these are my assumptions. My assumptions are that if you’re here you, are a skilled designer. You had to pass a quiz to get into this class, so we could keep



out folks that aren't already skilled and knowledgeable designers. My second assumption is that you care about what you do. Otherwise, you wouldn't be here, and you wouldn't be trying to learn more. I'm also assuming you don't have a whole lot of free time. That's why I'm very focused on making these sessions clear, direct, efficient, and quick.

Finally, I don't think you want to be a developer. I think you want to stay a designer. It's just that you want to learn more of the craft of web design. And I do not want to teach you to be a developer. If you decide to pick that up on your own, fantastic. I'd love more developers in the world. That's a great thing. But that's not what this class is about.

This course is Web Design for Designers. It's the tools and the craft of web design, meaning HTML and CSS. Moreover, it's not everything having to do with code. It's enough code for you to be empowered as a designer, to be able to express your ideas and thoughts in the language of actual web pages. And it's enough code to be dangerous.

We're going to do this class with a couple of fun projects. That's how we're going to express this code. You're going to build a mobile site over our six session course. You're going to learn about grid systems and complex page layouts. And my intention is that you'll be able to put these pieces in your portfolio. Now, you can only do that if the pieces are actually good. And I can't enforce that. I can give you assignments, and I can give you assignments upon which you can build things. But the ability for them to be in your portfolio, if they rise to that level of quality, is entirely up to you.

Why do I want you to be able to put them in your portfolio, though? I want you to be able to move ahead in the web design field. I want you to advance to bigger and better things and get mo' money, mo' money, mo' money. (Mo' money not guaranteed.) However, you will not become a developer at the end of this six session class. It's not going to happen. This class is about you as a designer being able to prototype your comps and being the kind of designers that developers love.

That's my introduction. If you have questions before, during, or after this class, or about the assignment, or really about anything at all, hit the forum. However, the forums here in the classroom. You can see the link here. However, know that we, as a staff, are few. And you are many. So do your part, please, and try to answer each other's questions as well, because we are a limited resource and may not be able to get everybody immediately.

**YOU DON'T
WANT TO BE A
DEVELOPER.**

 Lesson 1 of 6: Coding for Designers

**ENOUGH CODE TO
BE EMPOWERED**

 Lesson 1 of 6: Coding for Designers

THE SEVEN THINGS NEW WEB DESIGNERS NEED TO KNOW

Let's start with the top seven mistakes that new web designers make. I don't want you to make these. I want you to come into the field, if you're new, not making the same mistakes that I made when I first started, and that lots of other folks made when they first started. However, I'm going to change the wording of this a little bit because I want to stay optimistic, and glass half full and the sunny side of life and that sort of stuff, and I'm going to say that these are the top seven things that new web designers need to know.

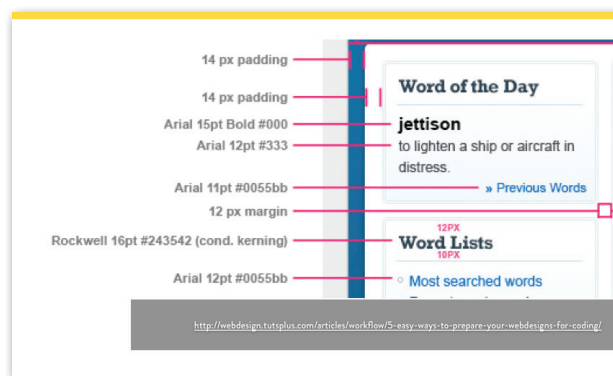
These top seven are great for web designers who are new, and they're especially great, for those of you who are coming from print design. So I'm going to talk to you all, especially, as well.

#7

MANY OF THE DIFFERENCES ARE IN THE DETAILS.

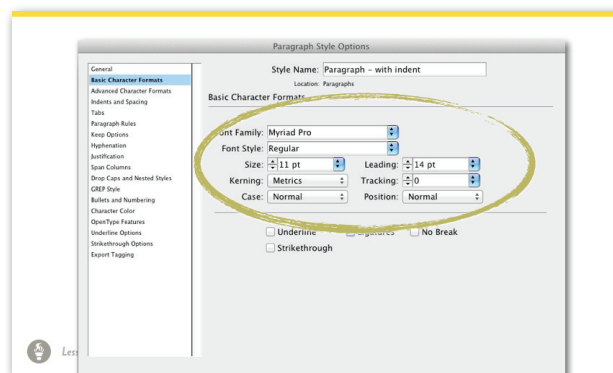
Many of the differences between web design and print design are in the details. What do I mean? Let me first say, between print design and web design, that visual design is the same. That's not a difference. You still need to be able to work with line, shape, color, balance, texture, contrast, and flow—all the things that make visual design important. These and many others. Say you're designing a identity across packaging and print design products and then extending it to a website, the principles of visual design remain the same.

Another thing that remains the same between print and web design, if that's the world you're coming from, is the designer's obsessive attention to detail. If you're obsessive/compulsive like me, then you're in good company if you're getting into the web. In print, that obsession comes with making sure that things are specified properly for the printer and making sure that things look perfect, not only close up but far away. On the web, that same attention to detail is necessary, it just looks a little bit different.



Instead of caring about inks and trapping, we care about pixel-perfect precision—making sure that the layout of your page is specified precisely so that the person who's building it, whether that's you or whether that's your developer, knows exactly where things go and that they go there in a consistent manner. The attention to detail remains the same.

Another thing that remains the same—paragraph styles. Attention to detail, it extends to typography. And typography in web design is very similar to InDesign's paragraph styles. If you don't know about paragraph styles, this is what they look like. So you can spec and say that a particular style for typography, in this case, is 11 points on 14 points, Myriad Pro, right? Well, you could do this in print, and you do the same thing on the web, except on the web it's called CSS. Paragraph styles in InDesign are the same thing as CSS on the web.



So if you spec in InDesign a paragraph like this, 11 on 14, Myriad—that’s regular type, not bold or italics or anything else—this is how you do it in InDesign. You do the same thing in CSS. It’s just they don’t have these cool drop-down menus in this little window. You have to type it out. This is the same type spec in CSS instead of InDesign.

It says font-family is Myriad. The style is normal, not bold or italics or oblique. It’s 11 pixels. It’s not points. We measure web typography, generally speaking, in pixels instead of points. There are other measurements, too, but pixels is a perfectly reasonable valid measurement on the web.

There’s line-height and letter-spacing. What’s line-height? What do you think that is? Yep, if you guessed leading, that’s right. Line-height is leading. It’s the same thing. It’s just called something different on the web. (Actually, it’s almost the same thing. There’s a little teeny bit of a difference between line-height and leading, but for most intents and purposes, they are the same thing.)

Likewise, letter-spacing —what do you think that is? Yep, it’s tracking. It’s consistent spacing between different letters in a chunk of text. So CSS is the same thing as InDesign’s paragraph styles. The big stuff is the same, but the details are different.

Another place where details are different: in print, if you want to make sure that a piece is going to look right, you do a press check. On the web, you do a browser check. You make sure that it looks right on a Mac and a PC. You make sure it looks right on a phone and on a tablet. And even on those particular computers, you make sure it looks right in different web browsers, like Internet Explorer or Google Chrome or Safari or Firefox. That’s the equivalent of a press check.

In print, CMYK is how you spec your colors and how you work with color generally. On the web, same idea, but the detail’s different. It’s RGB.

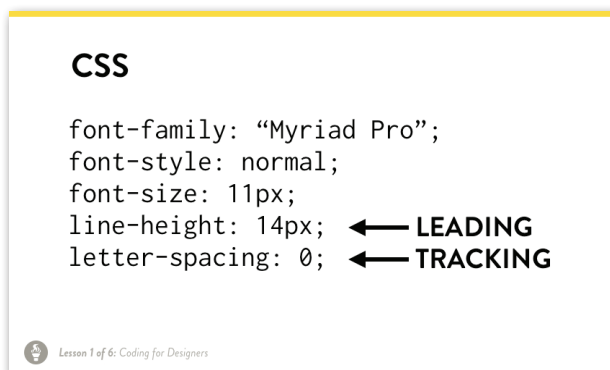
In print, your units of measurement are points, picas, and inches, depending on the context and what it is that you’re trying to measure. On the web, generally speaking, it’s pixels. There are some other weirder, esoteric measurement units on the web, too, but pixels is, by and large, the biggest and the most popular, especially for layout. So many of the differences between web design and print design are in the details, but a lot of the principles, a lot of the big stuff, is the same.

#6

USE PHOTOSHOP TO COMP YOUR WEB PAGES, BUT DON’T COMPLETELY TRUST IT.

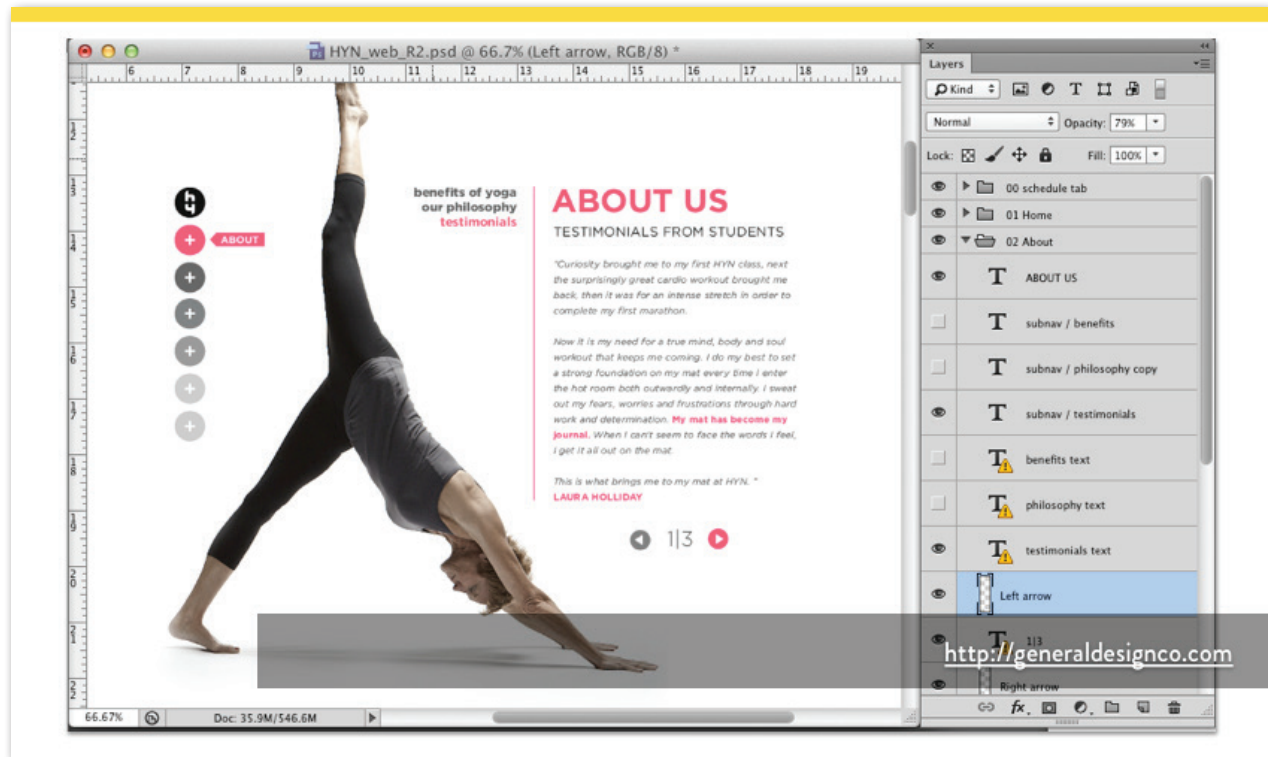
If you’re an experienced visual designer or a graphic designer working on computers, you’re going to know the big three: InDesign, Photoshop, and Illustrator. They each have their place: InDesign for page layout, Photoshop for manipulating photographs, and Illustrator for drawings.

However, in web design, generally speaking, you don’t tend to use InDesign or Illustrator, even for page layout. You use Photoshop. So this is very strange to experienced print designers, especially because they’re



accustomed to using Photoshop for one thing and one thing only—photographs—for manipulating, color correcting, and working in photographs.

They're not used to using it to comp pages, including the layout of pages, including typography for those pages, and things like rollover elements. You see here in this example how things are very carefully organized in the layers on the right-hand side, and they're carefully labeled. Another thing that many print designers, especially, are accustomed to doing with Photoshop.



So why do I say that Photoshop is what you use to comp things for websites? One reason and one reason only—pixels. Pixels are the lingua franca of the web. If you're developing something like, say, this icon or this logo to go on a website, it needs to be pixel perfect because that's how it's going to be displayed on a website.

The web is a raster medium. The pixels in a monitor are what's used to display web pages. Photoshop works in pixels. So whether it's for an icon or a logo, or it's for a page layout that's carefully specified out like this one is in terms of pixels, Photoshop is the tool of choice for laying those things out and making it as consistent as possible with how it would actually appear on a web page.

InDesign and Illustrator are not as well suited for that. Illustrator can do it. It's got the Pixel Preview setting, so you can force Illustrator to work pixel by pixel. InDesign has much poorer pixel support. And it's possible to do it, and certainly some designers do create page layouts in InDesign. But Photoshop is, generally speaking, a better tool for laying out web pages.

Now what I said you might think is a little bombastic. You might say, well, what about Fireworks or what about Illustrator? “I use Illustrator all the time. My developer doesn’t have a problem with it.” Or what about (insert other tool here)? That’s completely fine. Your situation might vary. And if you are a designer, and the developer that you’re working with likes Illustrator files, great. Use Illustrator. That’s cool. Got no problem with it at all.

I’m just saying that the emerging industry standard seems to be, in 2013, if you are going to comp web pages and not do it directly in HTML and CSS, but doing it in some sort of visual design program, Photoshop is, by and large, the program of choice accepted by designers and developers everywhere. That’s the emerging standard.

However, if you’re going to use Photoshop, you can’t trust the way it looks completely. Comps in Photoshop end up looking a little bit different when you actually get them to a web page. This is normal. It happens all the time. It does not have anything to do with the quality of the developer or the quality of the code or the quality of the comp. Stuff just looks a little different.

Let me give you an example. This is not the only example, but it’s a good one, and that’s typography. How Photoshop sets and renders type is different than how the web sets and renders type. Here’s a difference. If these two headlines, which I’m zoomed in here, they’re the same spec. And you can see that some things are the same. Like the x-height’s the same. Generally speaking, the size of the glyphs are the same.



However, the edge treatment is radically different. The kerning is very different, and that's normal. Moreover, it's different between different browsers. So the version on the bottom here is on a PC browser. The version on the top is Photoshop. But a Mac browser might look different. And on a phone, it might look slightly different than that.

So you can't trust that how Photoshop renders type, and how Photoshop renders things generally, is exactly, precisely, how it's going to look on a web page. You have to go look at the actual web page, and make tweaks from there to make it perfect.

So the number 6 thing that new web designers need to know is that you use Photoshop, generally speaking, to comp web pages, but you don't completely trust the way that comp looks in Photoshop.

#5

YOU, AS A WEB DESIGNER, DO NOT CONTROL THE PAGE SIZE.

This is really tough for print designers, who are accustomed to something different. If I'm a designer who's designing the print version of The Washington Post, say, I know that this story here in the middle, "Going Against the Gun Culture," takes up about this much space (13 inches by 19 inches), right? And I've got three columns, and I can strip my photograph across the top, and I can work my heads out. I know how it's going to look.

This is that same story from The Washington Post on The Washington Post version on their website. It's the website version of that story. You can see that already it looks really different because you've got the navigation strip at the top, and you've an ad at the top that you don't have in the print version of this story.

Moreover, the size of the canvas here, the size of the page, is as big as the screen. So here on this laptop, I know that this is going to be 13 inches across. But I can look at this same story on an iPad, and that's only seven inches across. Or I could look at the same story on a phone. But heck, that's only two inches across. You do not get to control the page size. You just don't.

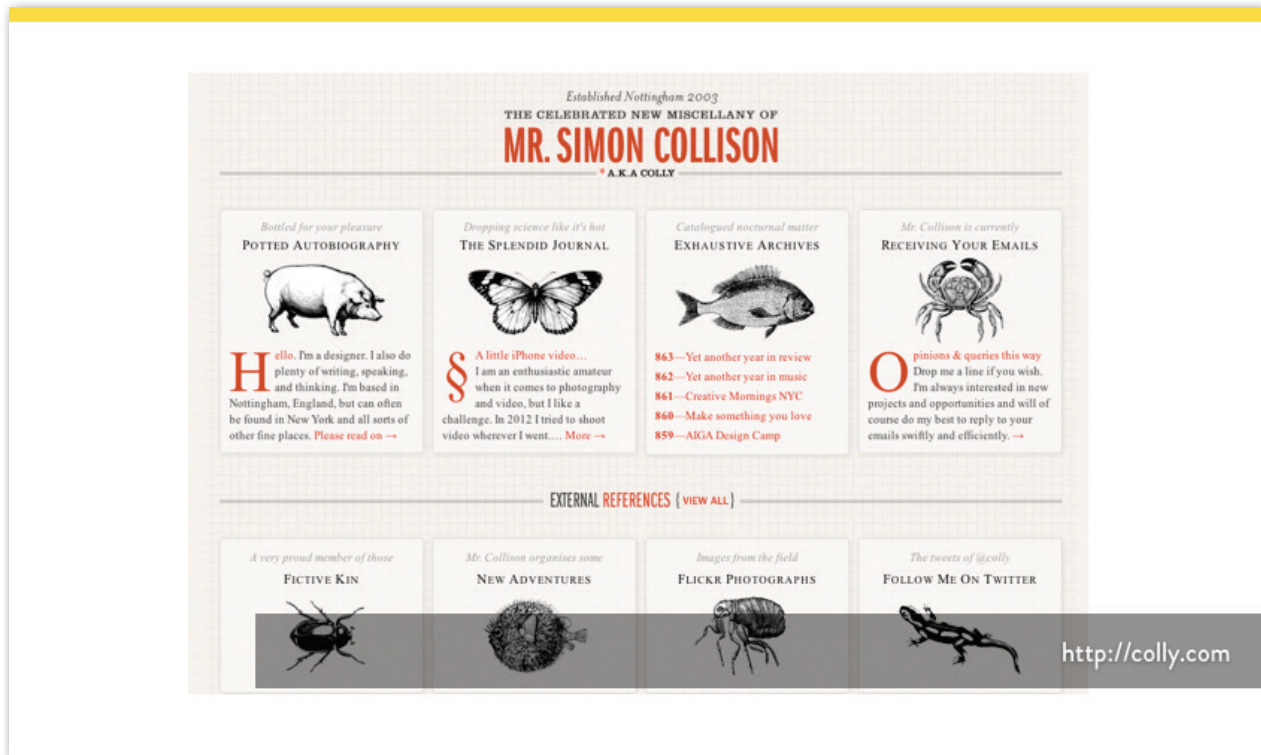
So you have to make designs that can work on a variety of different page sizes. Sometimes this is called responsive design, and that's something that you can learn about. But that's not just the only way to think about it. Responsive design is not a cure-all. The important thing is that you know that you can't have complete control over the size of the page like you do in print.



#4

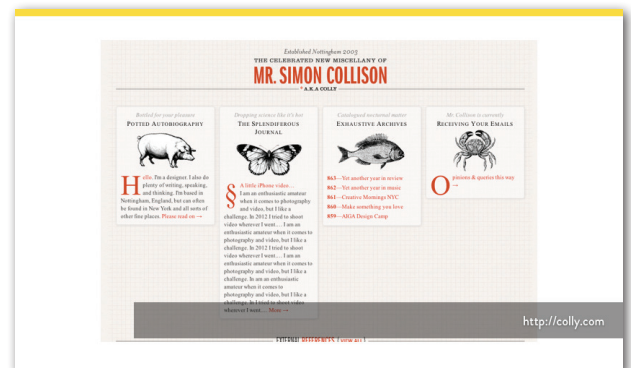
YOU'RE BUILDING TEMPLATES, NOT PAGES.

Let's take, for an example, the page of Simon Collison, who's an excellent UK web designer and illustrator.



This is his page. It's an actual screen shot of what his home page looks like. Beautiful layout here, and you see you've got the four columns stripped across. You notice how the height of these four columns is exactly the same so they come up in this nice grid system? It would be very doable in print, obviously. And this is an actual website. Looks great on the web. And Simon Collison can do this because this is his personal website, and he has complete control over the content that goes in those four boxes that strip across the top.

However, if Simon Collison were to give this page to a client, and if this were client work rather than a personal portfolio, how much do you want to bet that about two months after it launched, it'd end up looking like this? Because clients, and rightly so, will put content into pages, and you may not have complete control over it as a designer. This is natural and normal in web design. And the pages that you build might get flexed a bunch of different ways.



So part of your job as a visual designer is making sure that the systems that you're building can flex with different amounts of content, and in some cases, no content at all. You're building systems of pages and systems of layout, rather than a specific page with a specific amount of content that will never change. You're building templates. You're not building just pages.

#3

WEBSITES ARE USED, NOT CONSUMED.

A book is consumed in a specific way that's not likely to change. You read a book, generally speaking, from beginning to end, especially if it's not a reference book. But even if it is a reference book, you have a table of contents. You've got an index. You've got some fairly well-established ways of getting at that information. And generally speaking, how a book is used, the way that you flip the pages, the way that a book is structured, is the same from book to book.

It's not the same on a website. Navigation can vary wildly from website to website. And people have specific goals when they go to websites. They might want to buy a book. They might want to find out where a coffee shop is. They might want to get food from a retailer or have food delivered rather. They might want to book a trip on an airline. People have specific goals when they go to websites, even if that website is not complex. Maybe it's just about getting to know a business and finding out what they offer. But they have specific goals. That's different than a book.



Harry Potter and the Sorcerer's Stone (Book 1) [Paperback]

[J.K. Rowling](#) (Author), [Mary GrandPré](#) (Illustrator)

★★★★★ (6,816 customer reviews)

List Price: ~~\$40.99~~

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Garlic Nan (Dinner Only)	\$4.00	Palak Paneer Dinner
Tikka Dinner	\$16.00	Lamb Masala Dinner
Salmon Vindaloo Dinner	\$19.00	Aloo Gobhi Dinner
Baked Nan (Dinner Only)	\$3.00	Lamb Vindaloo Dinne

Starbucks more info

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Falls Church, VA 22046
Broadale Village Shopping Center
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9 reviews

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Chain Bridge Forest
Glebe
Old Glebe
Lee Hwy
Tara - Leeway Heights
Washington Blvd
East Falls Church
Falls Church
Shirley Rd
Idylwood

Round-trip One-way Multi-city

From

Washington, DC - Reagan-National (DCA)

☐ add nearby airports [airport map](#)

Make my dates flexible

Moreover, and this part, I think, is exciting for web designers, is that web designers get to see how people use their site, and they get to see it in tremendous detail. You get to know how many people have used the thing that you have designed. You get to know where those people came from and how they got to the website. You even get to know how much money the website makes, if your website is the kind that makes money. You get to know this in fantastic detail, which gives you feedback on how easy to use your website is.

Now the thing that's new for many new web designers is: a site that looks good is not necessarily a site that makes money or is easy to use. Designing something that looks good and designing something that's easy to use are two very different things. The web designer needs to be right in the middle. That's tough, and that's new for many graphic designers who are moving in to web design.

By the way, spoiler alert. You want to know how you do this? You want to know how you make web pages that are easy to use as well as look good? The “look-good” part, that's on you. You can take care of that because you are a competent visual designer. The “easy-to-use” part? That's a little tougher. But the way to do it is to watch people use your designs. It's amazingly simple and amazingly effective.

Let people sit in front of your websites or your comps or your pencil sketches. Don't tell them what to do. Ask them to show you how the website works, or the fake website that you've jiggled up out of comps. You will learn very quickly what is easy to use and what's not easy to use.

That's tip number three. That websites, unlike print products, are used. They're not consumed.

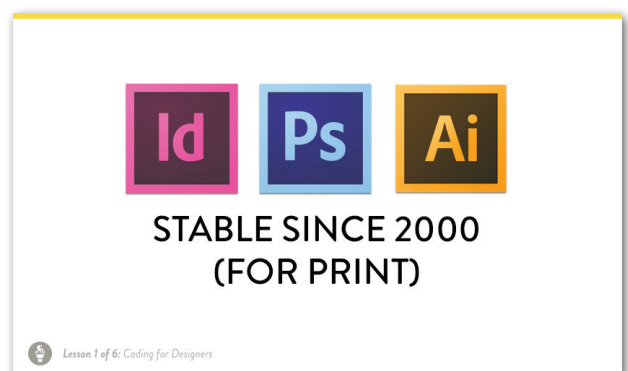
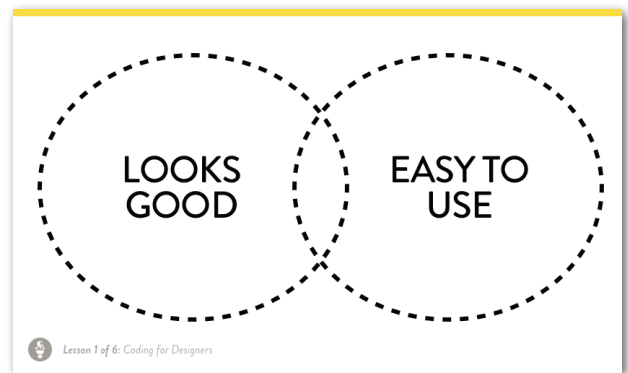
#2

THE TOOLS USED FOR WEB DESIGN AREN'T MATURE.

What do I mean by this? I've talked about the big three. The big three for visual design, especially for print design—InDesign, Photoshop, and Illustrator—have been stable tools since about 2000.

Now, Quark was around in the 2000-2010 era. Quark was a page layout tool that was pretty prominent, and that seems to have mostly gone by the wayside. Now, InDesign's the industry leader. This situation is pretty stable. The same is not true of web design tools. It's not even true of Dreamweaver, which you may be familiar with, if you're familiar with those other tools because it's part of the Adobe Suite.

Dreamweaver is not the industry-leading tool for building web pages or for designing web pages. That's because there is no industry-leading tool. There are a million different tools, and they're all good at different things. Dreamweaver has its place, but it's not what everybody uses, and there a lot of people that don't like it at all.



There are other tools, like these. Coda is a Dreamweaver-like tool made by a little studio. It does some great stuff. Sublime Text is a text editor. It's kind of like TextPad on steroids or Notepad on steroids. GitHub is a tool that's used increasingly by designers and developers to share their things with each other and to collaborate on websites and on coding.

And Chrome, the web browser, this is a tool that's used to surf the internet, but some designers are using it to help with the design process.

Adobe is also coming out with a whole slew of new web tools, like Dreamweaver, that handle specific niches.

However, none of these tools, not a single one of them, is the industry leader. There is no single tool that I can teach you for comping or for building web pages, except for Photoshop, which is just for comps. There is no single tool yet. And that's because web design is new. It's immature, and so the tools aren't completely mature.

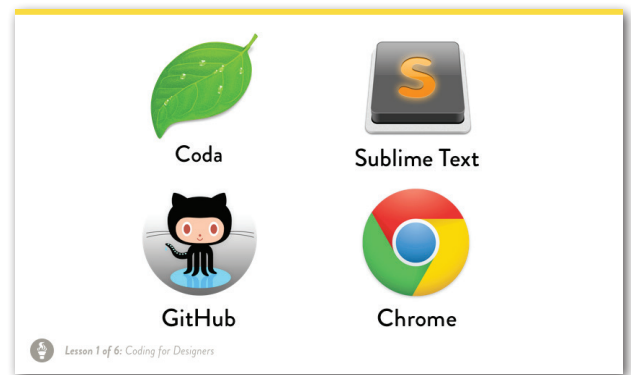
So the distressing thing is that I can't teach you one tool. The exciting thing is, no matter what tool you use, you can learn something. And what I'm teaching in this class you can apply to any of the tools that you end up deciding to use.

We'll talk more about tools in the next lesson.

#1

FIGHT THE FEAR.

You've got to fight the fear of learning new things. For some of you, working in code will feel like you're working in a Russian nuclear power plant. Working in code can make you go from feeling like the smartest person in the room to feeling like the dumbest. It can happen. I've seen it happen. It's happened to me. It's normal. It's natural. And you've got to fight it.





For those of you who are old enough to remember, back in 1989 the first series of computers came out that were powerful enough to run desktop publishing software, like this Tandy 5000 MC, attractively priced at \$8,500, which today would be about \$13,000. This computer did not include a monitor or a mouse, by the way.

But it did give you the ability to run PageMaker, which was the first product where you could do graphic design and page layout without doing it on sheets of paper with paste-up and rubylith and all the traditional ways of performing page layout. It was a revolution, and it was the future of desktop publishing and graphic design.

And a lot of folks were scared. A lot of folks said, I'm used to doing it my way. I don't want to learn the new way. These computers are scary and big and complicated, and I don't like them. I want to be a designer, not a computer operator. Well, we saw what happened to desktop publishing. Now all of us are computer operators. So don't be the person who is afraid to make the change. It's OK. You can do it.

You know how I know you can do it? Because 12-year-olds learned computer programming. Now, of course, 12-year-olds are going to learn faster and easier than we do—their brains are like sponges, right? But at the end of a three-day workshop in computer programming, the folks at MIT asked this class of 12-year-olds—hey, other people are going to take this class. Do you have any advice for them on learning computer programming?

They gave some amazing advice, and I'm going to share it with you now. Here they are. These are actual tips from 12-year-olds. They said:



START SIMPLE AND WORK ON THINGS THAT YOU LIKE. I'm not kidding. This is what they said.

IF YOU HAVE NO CLUE WHAT TO DO, FIDDLE AROUND. That's perfect advice for web design.

FIND A FRIEND TO WORK WITH AND SHARE IDEAS.

IT'S OK TO COPY STUFF TO GIVE YOU AN IDEA. Fantastic advice for learning code.

Ah, this is the best. **KEEP YOUR IDEAS IN A SKETCH BOOK.** I love it.

And my favorite of all: **LOTS OF THINGS CAN GO WRONG BUT STICK WITH IT.**

That's advice from 12-year-olds on how to fight the fear.

CONCLUSION AND ASSIGNMENT

In our next session, we're going to set up our tools and actually start building web pages in HTML and CSS. Right alongside that, we're going to start fixing problems. You're going to find out how things can get broken and how you can fix them.

You have some homework for this lesson. First one is a short quiz to help retain your knowledge and to help reinforce what we've talked about today. Your second assignment is to find a website that breaks some print paradigms. I'm going to give you some examples of what I'm looking for and some sample websites to look at. That's here in the classroom.

If you want extra credit, sort of a hacker version of this course, then I want you to get a Twitter account. If you don't already have one, sign up for one. You don't even have to use your real name. It's fine with me. And I want you to get a Twitter account not so you can share things about your life, but so that you can follow web designers and design firms that you're interested in, to get regular updates from them.

I'll give you a sampling of folks that you can follow. They include typographers. They include print designers. They include web designers. They include magazines and aggregators of interesting web design and print design content. It's like a news feed that comes straight to you of the stuff that you choose from the people who you're interested in. And I want you to do this because it's a great way to keep up in what's happening in web design and visual design trends generally.

I do it. Lots of folks do it. You should start doing it too. If you have questions, or you want to talk to any of us, we'll see you in the forum. I'm looking forward to seeing you there. And I'm looking forward to seeing you at our next session. Have a great rest of your day!

