



## Lessons - Web site basics

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### Web site basics

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### Lesson 1

[» View single page](#)

#### A page to call home

No Web site I've built could ever compare to my first: the "Delete Jar Jar Binks" home page. Soon after seeing *Star Wars Episode One: The Phantom Menace* on opening night with a bunch of people dressed like Jedis, I channeled my rage at the movie's animated star into a screed that I posted on the Web. Within hours, responses came pouring in. Some readers vehemently agreed with me, some vehemently disagreed, most told me to get a life. I found that my little joke (okay, I wasn't completely joking) touched a nerve with people, putting me in the midst of one of those Internet phenomena I had always read about but never truly participated in. For months and even a few years afterward, I still got e-mails about Jar Jar Binks. That's the power of the Web, and the thrill of publishing a Web site. You never know what sort of response you might get.

Why do you want to build a Web site? Why not? These days, having a Web site is one of those essentials in life you could do without, but wouldn't want to, like microwaves or reality television. Having a Web site is a great way to impart information cheaply, no matter if you want to promote your business, display a family album, express yourself in a new way or just keep up with the Joneses in your virtual neighborhood.

In this course, we'll stick to the basic information you'll need to get a Web site up and running. We'll discuss planning, preparing content, uploading the site, building in advanced features like multimedia and e-commerce, and ways to draw bigger audiences.

Don't worry; we won't force you to learn all the fine details of HTML (Hypertext Markup Language) coding. These days, you almost don't need to know anything about such Web building languages. Instead, we'll concern ourselves with the preparation and execution behind getting and keeping a Web site active.

If you get the hankering, HTML is fairly simple to learn. A quick hunt on a search engine like Google will yield plenty of Web sites that offer free online tutorials spanning the basics to advanced programming.

### Web sites: an introduction

So let's take it from the top. A Web site is a collection of Web pages. Every Web site has a home (or index) page that links to other pages ranging from a few to hundreds. Even a single-paged site requires careful thought and planning before it goes online.

Before we can go further, you need to ask yourself the following questions about your Web site:

- **Why are you creating this Web site?** You could be writing about your hobby, posting your company's press material, or showing off your kid, but the purpose of a Web site boils down to the same thing: disseminating information. Before you can create a site, you must figure out what you want to say and how you intend to say it. Search around the Web and see how other people handle your idea. Even if someone's already approached the same terrain in a fancy way, you'll want to stay simple for now, unless you have a dedicated staff of Web developers at your disposal.
- **Who is your intended audience?** Who's supposed to read your Web site affects its look, tone, and usability. Generally, the broader your intended audience, the simpler your site and its content should be. Figure 1-1 shows [The Fortean Times](#) Web site, who's audience is people who like news of the weird.



Figure 1-1: The Fortean Times.

[View a larger version of this image.](#)

- **What words and images will you put on the Web site and how will visitors navigate through them?** You wouldn't want to post naughty limericks at a Web site for kids, or put a full-size video file on a site your grandmother might access with her slow dial-up connection. Think about who'll be reading the site and post your content accordingly.

### Lines and circles

Now it's time to take concept to content: the words and images through which you convey your message or sell your widgets.

- **Images:** A newspaper page with no photos is called **gray**. A Web page with no photos is called **unreadable**. The Web is as much a visible medium as a written one, and readers are very likely to pass over pages without pictures. As you collect and scan images for your Web site, be sure to use sharp and appropriate pictures, keeping their file size as small as possible for faster downloading.
- **Text:** A good photo speaks for itself, but without a caption, it says a lot less. More so than with most forms of writing, the copy on your Web site should get to the point as soon as possible -- even readers who surf for hours on end probably find it more comfortable to read on a paper than a computer screen, so don't lose them with too much text.
- **Style:** Then there's the matter of style. You may prefer an informal approach for your personal Web site, but if you're pulling together a commercial or business-oriented site, keep the words as concise, spell-checked, and grammatically correct as you would in a brochure.

Speaking of brochures, if you want to post already-existing company literature or any other previously-written text but don't feel like entering it by hand, scan it in a scanner equipped with OCR (optical character recognition), which converts published text into editable copy on your computer.

Before considering what content to put on your Web site, research the competition. Taking a look at other like-minded sites will give you ideas about what they don't have that your site could offer to set it apart.

Say you're building a site devoted to breakfast cereals. You obviously want your site to be the best source on the Web for information about cereal and/or cereal merchandise, but you won't know how until you see what else is out there. Type **breakfast cereals** into [Google](#). Of the sites returned, the most intriguing entry appears about five sites down: [The Empty Bowl](#), shown in Figure 1-2.

Following the link to Empty Bowl, you'll see that it's a well-developed "webzine devoted to serving the cereal eating community."



Figure 1-2: The Empty Bowl, for all your cereal-eating needs.

[View a larger version of this image.](#)

You can't build a Web site like Empty Bowl overnight, with its archives of articles, surveys, discussion board, reviews, links to other retail and nonretail sites. But you may notice that the site doesn't actually sell cereal. Nor does it contain images of cereal boxes. Say, for that matter, it doesn't even play a cereal theme song, like the Cocoa Puffs jingle.

You can either consider this an opportunity to add such features to your site, or look into possible reasons Empty Bowl doesn't utilize them. Is it too much of a pain to set up a cereal store? Do cereal boxes and their companion theme songs have copyright protection? It can't hurt to find out, especially if it'll save you a lawsuit.

Remember that Web sites like The Empty Bowl are professional (or at least, semiprofessional in this case) endeavors with dedicated staffs and designers. If you have none of these things, don't despair -- on the Web, most visitors appreciate creativity and passion for a subject over flashy graphics any day.

### Up a tree

To save yourself lots of **Edit > Undo-ing**, draw a site map: an organization tree that shows how each page on your Web site links to each other. Although you may eventually want to post it on your site, there's no need to get fancy with it for now. Sketch it on a napkin if you like, just get your conception of the site's layout on paper.

### Why are you here?

There's nothing like peer support in a learning environment. If you ever belonged to a study group in

But first, create a list of the separate pages you think you'll need for your Web site. Once they're all down, group them together in sections. Now you're ready to diagram. As your site's introduction, table of contents, and gateway to other pages, the home page deserves to be placed on top. Branch out from there, connecting the pages as you intend them to flow on the site. Be prepared to erase and redo links as many times as possible.

A corkboard with string and 3 x 5 cards works well for this purpose. You can move the cards around until you get them organized the way you want.

Later, when you build the Web site, your site map can serve as an index of sorts to simplify navigation, as it does on [Apple's](#) site (follow the link that says site map at the bottom of the page under the search engine). Figure 1-3 shows the site map.

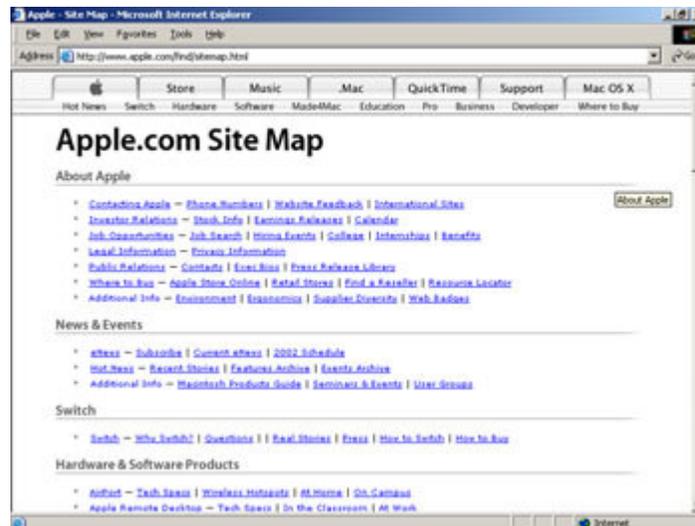


Figure 1-3: The Apple.com site map.

View a [larger version](#) of this image.

### Program that diagram

If you need help visualizing your Web site and paper's just not cutting it, seek software help. You could either use the diagramming functions in a professional program such as [Macromedia Dreamweaver](#), or search around on [Download.com](#) for freeware and shareware applications like Custo 2.0 (\$29 after

school, you'll remember the value of putting heads together to discuss the subject and work through solutions. The Message Board is your online study-group lounge, where you can meet your classmates, share your reasons for signing up for this class, and talk about your goals and dilemmas as you work through this course. You never know who has the answers you seek.

### Find the right PC for the job



#### » HP Pavilion desktop PCs

HP has a PC with the features and price range to meet your needs. Check out the latest selection today. HP Pavilion PCs provide the versatile technology you need to communicate, create and enjoy your world more.

trial period) that do the same thing. Search for **site map**, to see what all comes up. Figure 1-4 shows a site map in Microsoft's FrontPage application.

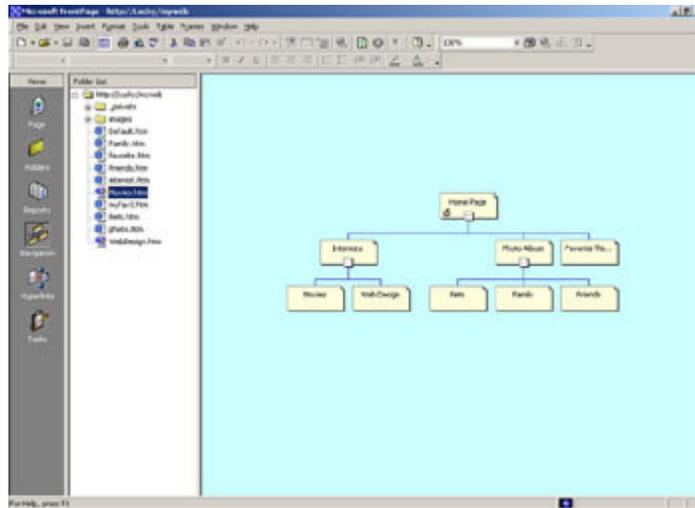


Figure 1-4: A Web site map shown in Microsoft FrontPage.

View a [larger version](#) of this image.

Some software titles, such as FrontPage, create blank pages as you add them to the Web site diagram to guarantee your links lead to the right pages when your site is built.

### Moving On

We've got the substance of your Web site down, now we'll move on to an equally important component -- its style. In the next lesson, you'll explore color and font schemes, how to use and obtain artwork, and other design issues.

Before you go, take a few minutes to complete the assignment and quiz. And feel free to peruse the Message Board and talk to your fellow students.

**Next steps >>**

**Congratulations on completing the lesson! Don't forget the following:**

- » [Assignment:Out of site, out of mind](#)
- » [Quiz:Lesson 1, quiz 1](#)
- » [Return to the lessons list to get a quick overview of the entire class](#)

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Assignments are designed to help you apply the information learned in the lessons.

### Out of site, out of mind

If you visited the [Apple](#) Web site map mentioned in the lesson, you may have noticed that it doesn't in any way resemble the tree you've created for your own Web site. The map is a very basic list of the content, broken into categories. It's the same idea as a tree, just without the boxes and lines. Many Web sites use this format to outline content without going into too much confusing detail.

For your assignment, browse the Web for more site maps, and see if you can find different formats. Most Web sites place the links to their site maps at the bottom of the home page.

**You have completed this assignment.**

[Next steps >>](#)



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### Quiz: Lesson 1, quiz 1

Quizzes are designed to give you a chance to test your knowledge.

Please feel free to take this quiz again. We will update your score.

#### 1. What's the first thing you should do when planning a Web site?

- A.  Stock up on beer and pizza - it's going to be a long night.
- B.  Find a spot where you think the spider can catch lots of bugs.
- C.  Determine your purpose, intended audience, and site layout.

#### 2. What's a site map?

- A.  An organizational chart that shows each of the Web site's pages and how to reach them.
- B.  A guide to buried treasure.
- C.  A complete representation of your Web site's colors, fonts, and images.

#### 3. True or false: You must know HTML, and possibly other languages, before you can build a Web site.

- A.  True
- B.  False

**Submit >>**

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### Lesson 2

[» View single page](#)

### Design language

You've got the hook for your Web site, now you need the look. If you've never designed anything before, don't worry: as long you keep things simple, Web design is hard to mess up if you just keep in mind a few simple pointers about layout, colors, fonts, images, and accessibility. Maybe that sounds more daunting than I intended, but it's not. Really.

### Clean your template

Web design starts with a template, the consistent look that runs throughout your Web site. By giving each page a similar look, templates ease the task of generating new pages for the designer and help viewers navigate a site by giving them familiar surroundings.

When making a template, creativity is all well and good, but it doesn't hold a card to **usability**, which is the ease with which visitors move around your Web site. After all, getting around a site shouldn't be a game of hide-and-seek. Even relatively new Web surfers expect to find certain elements in place, such as introductory text and/or an image. Let's take a closer look at two other essentials: the navigation bar and logo.

- **Navigation bar:** An interactive table of contents, the navigation bar contains the links to each section of your Web site. Generally, arranging it horizontally across the top or vertically along the left works best, though some sites get away with placing it along the bottom, under a central image, or down the right side. Some sites, mostly the info-heavy ones, use multiple navigation bars on their home pages, but this approach is rarely necessary.
- **Logo:** If it works for products, it will work for your Web site. Logos (or, on personal Web sites, some sort of recurring image, title or theme) brand your site, making it familiar and recognizable to users. Most sites place their logos on the top-left corner of each page, as

shown in Figure 2-1, a convention many users find familiar. Logos can also serve the helpful function of linking to your home page so visitors never have to look hard to find their way back.



Figure 2-1: The Onion keeps its simple navigation bar near its simple logo.

View a [larger version](#) of this image.

No matter how much you need to stray from the template, never alter the basic colors, fonts, and logos you've used throughout the Web site. Ditching those will make readers feel they've entered another site.

### Exceptions to the rule

Although you should give most of your site the same skeleton, certain pages will require slightly different looks to set them apart:

- **Home page:** As your visitors' first impression of the Web site, this page should stick as closely as possible to the template.
- **Commercial pages:** Pages for an online store may stray a bit from the template to accommodate multiple images or inventory-database output. To keep a potential buyer's focus on buying, you can reduce the number of internal links that lead to other sections and increase the links that will keep them shopping.
- **Feedback, shopping carts, and other forms:** Don't bog down these types of pages with too many links either. You'll want to keep users distraction-free so they'll buy stuff or enter the desired information, which means sticking as closely to the template as possible.

### Break the color barrier

Ever wonder whatever happened to the rainbow rule bars and hot-pink type on fluorescent-green backgrounds of the Web's early days? The answer is simple -- people got a clue that it looked horrible. See Figure 2-2 to see what we're talking about. This Web site from the [Molehill Group](#) actually tells you how to build annoying Web pages.

The rules of color usage are many, but the primary (no pun intended . . . okay, maybe it was intended) one you need to keep in mind for Web design is this: busy colors schemes distract from content. The Web may make it simpler than any medium to create intricate explosions of color on a Web page, but that doesn't mean you have to make them.

### See each color clearly



### » HP vs17 17" flat-panel LCD monitor

Make the most of today's colorful multimedia with the vs17 flat-panel monitor.



Figure 2-2: Argh! Put out that Web site! My eyes are burning from the color combo! Of course, that's the point this site is trying to make.

### Color me complementary

If a Web site is your virtual home on the Web (humor me here with this metaphor), you'll want to paint it the way you would a house. That means you don't just pick a color because it looks good in the can; you consider what will go with the furniture and the color in other rooms. Likewise, effective sites use colors that complement each other or contrast in visually effective ways.

Certain colors work together, both in soothing harmonious ways and in loud, attention-grabbing ways. Either approach can work for you, depending on the personality of your Web site. Gardening sites tend to use earthy tones geared to remind you of nature's majesty, whereas kid sites often stick to loud primary colors to draw the eye of the cereal-buzzed set. Sites loaded with color photos and multihued advertising read more easily with subtle template colors that don't get in the way. On the flip side, a dash of bright color in the template can spruce up a text-heavy site with few images.

You don't need to be a fashion expert on a makeover reality TV show to figure out color schemes. Just pick up the old reliable color wheel to see how colors relate to each other, as shown in Figure 2-3.

more viewing area than the 15" HP vs15 monitor. The vs17 has integrated speakers, which means you have two fewer things on your desk. And since it's got a detachable base, you can even mount it on the wall.

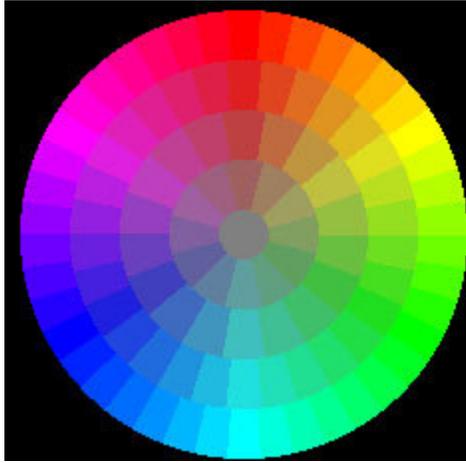


Figure 2-3: Behold, the awesome power of the color wheel.

For a handy run-down on the ins and outs of this miracle device, go to Skribbles ([www.scribbleskidsart.com](http://www.scribbleskidsart.com)), an art Web site for children.

### **Play it Web-safe**

**Web-safe colors** (a.k.a., **browser-safe palette**) were devised back when the Web was new and monitors couldn't support more than a few hundred colors. Today's monitors have advanced to handle just about any color you throw at them, but it's best to stick to the Web-safe colors for the sake of people surfing the Web on cell phones and other low-resolution devices.

### **A tone to pick**

Keeping in mind the message you want to convey with your Web site, use the wheel to pick two main colors and a few compatible accent colors for your template. If you're stumped, take a look at one of these helpful sites:

- [The Online Color Schemer](#) ; You pick a color, it offers up 16 others that complement it.
- [The Colormaker](#) : Lets you goof around with different background and text color combinations.
- [The Color Coordinator](#) : Lets you pick up to four complementary colors at once based on eight types of schemes like split complementary and monochromatic.
- [The Color Specifier](#) : If you feel tied down by the Web-safe

colors, sample the many exotic color options on this site.

Dabble with the template colors all you like, but don't forget that when it comes to the text, black letters on a white or light-colored background is the most readable.

### **Fonts of wisdom**

Tempted to go hog wild with all the gothic script and comic book fonts on your computer? Hey, I've been there; you're not alone. But I'm hear to tell you to put aside that temptation and follow these two essential rules for fonts:

- Readability, readability, readability: Okay, that's not a complete sentence, but you get the idea. The fonts you use must be easy to read. Web users have even less patience for typographical goofiness on the Web than they do in print. You can break other design rules, but if you don't present clear, readable text, you could well lose your reader.
- Stick to easy fonts: If users don't have your Web site's fonts installed on their computers, their browsers will substitute them with a default like Times or Helvetica. The only way to guarantee your site will accurately display an out-of-the-ordinary font is by making the text an image file. The drawback with this approach is that too many images bog down the time it takes for your site to download and it interferes with accessibility. It's easiest just to use the standard fonts that come with your computer. Figure 2-4 shows some wacky fonts.

*Lucida Blackletter*

*Mistral*

*Edwardian Script*

**BERTRAM LET**

HERCULANUM

Figure 2-4: Tempted to use these wacky fonts for your sites? Resist! Resist! A few other design pointers that may come in handy:

- **Avoid too much centered text:** Make sure most of your text aligns left, the easiest format to read.
- **Minimize italics and boldface:** Too much of either of these formats get annoying fast.
- **Avoid lots of underlined text:** Underlined text is typically reserved for hyperlinks on the Web and it's distracting to read.
- **Can it with all-caps:** Only capitalize every letter in a word or group of words if completely necessary.

Be sure to check your Web site on more than one browser as you build it to ensure it looks the similar in all browsers.

**Feet don't fail me now**

Like peanut butter and chocolate, serif fonts (those with extra decorative edges or **feet** , such as **Times** and **Palatino** ) and sans-serif fonts (those with no extra decor, such as **Helvetica** and **Arial** ) go well together -- one for headlines and captions, the other for body copy. Often, headlines and captions work best in sans-serif, and body text (especially when it runs long) usually comes off better in a serif. There's no iron-clad rule about which type of font to use for which type of word, but using both can make your Web site look a whole lot better. Figure 2-5 shows three common serif fonts.

Times

Courier

New York

Figure 2-5: Three common serif fonts.

Figure 2-6 shows three common sans-serif fonts.

Arial

Helvetica

Geneva

Figure 2-6: Three common sans-serif fonts.

Be sure your headers and navigation bars are distinctive from your body text and captions. They can be the same font, but you should make them stand out in some way, either by boosting the size or changing the background color.

### Say cheese

Yes, you could avoid messing with images altogether on your Web site and stick to just text, just like you could ride a bike to work or eat gruel for every meal. Before the Web, the Internet was merely the text equivalent of a ham radio network of computer professionals (note: I didn't say **geeks**) trading messages back and forth about the latest developments in the industry. The Web revolutionized these proceedings by adding a visual component to the Internet. If you don't take advantage of this evolutionary step, your site could end up looking like a throwback.

### Photo finish

You can use pictures that relate specifically to your Web site, or those that just set a mood (as rich men with surfboards do in financial services ads). Just use them.

### Icon and I will

Icons, those little images that represent something (men and woman cut-outs for public bathrooms, for instance) can also make your Web site more engaging and easier to navigate. After all, who doesn't recognize the question mark as a link to the **help** page? Icons also help international visitors penetrate the language barrier, or in the case of young children, the preliterate barrier.

Web sites such as [Travelocity](#) and [Nickelodeon](#), shown in Figure 2-7, put these little doohickeys to good use.

### Use your own images



#### » HP Scanjet 4850 photo scanner

What's the secret of impressive scans? Great dpi, for one thing. The Scanjet 4850 has that in its up to 4800 x 9600 dpi, plus this powerhouse supplies 48-bit color. You also get handy one-touch buttons, a built-in adapter for scanning 35 mm slides and negatives, and dust and scratch removal.



Figure 2-7: Nick.com lets preliterate visitors explore the site with

images.

### **Straighten up and copyright**

Remember those images you gathered in the first lesson? Well, there may be a catch with some of them: they could be copyrighted. The Web abounds with images that can be swiped with a simple mouse click, and you should always assume they belong to someone else and can't be reproduced without permission. No need to worry though, you can secure permission to use a protected image, find them for free, or create your own (more about that on the next page).

Copyright applies to any published image or text automatically, even before the owner applies for it. Though you may not see a copyright symbol beside an image, always assume it's copyrighted. If it turns out to belong to someone, using it will be a violation of the law.

However, never assume an image is off limits just because it's protected. Contact the owner of an image you feel you can't do without and see if he or she will sell it to you. Sometimes, the artist will even give it away in return for a photo credit.

### **The royalty-free route**

Forgoing their right to royalties each time their work gets used, artists, writers, composers, illustrators, and photographers may opt to designate their creations **royalty-free**. This means you only have to pay them for it once up front and never again. Just search on the Web for **royalty-free** or **copyright-free** art, or peruse [Comstock](#) or [Clipart.com](#) .

Beware those art-photo-and-icon-loaded CDs sold in computer stores: some of the images will cost you a whole extra fee on top of the price of the CD. Read the fine print first.

### **Free and cheesy**

And then there's always the free stuff. Free icons, drawings and photos are all over the Web and ripe for the (legal) taking. Your word processor probably even comes with a clip art collection, just as image-editing tools like PhotoShop include royalty-free photos with the package. Figure 2-8 shows some of the clip art available in Microsoft Word.



Figure 2-8: The wonderful world of the clip-art images in Microsoft Word.

A word of warning: too much clip art can look overly amateur (unless that's what you're intentionally going for).

### **Artistic discretion**

Just because you've obtained a lot of cool or costly images doesn't mean you have to flaunt them. The best-designed Web sites never overload a page with pictures; they give readers' eyes a break by breaking text up with pictures and **white space** (empty areas) to keep the message from getting lost in the clutter.

Also bear in mind the quality as well as the quantity of your images. Good-quality photographs present a more professional look, good for selling products or just letting folks know you're serious. Illustrations can be dicier -- they've got to look pretty darn good to compete with the professionalism of a photo, but even the most amateurish scrawl can add a lot of fun to the casual Web site.

How you mix and match photo and nonphoto images on your Web site is up to you . . . and your download time. Clog a Web page with too many large-size photos that take forever to load and people aren't going to wait around to see them finally appear.

## Let's play starving artist

When seeking out the images of others proves fruitless or just plain bothersome, you've got another option. Make your own.

## Snap to it

Digital cameras make photography a lot simpler by doing away with film and showing instant result on built-in view screens. Even better, many of these cameras import recent photos directly into an image manipulation program or layout application.

Always shoot at the highest resolution allowed by your digital camera. Although large, the file will have better quality, making it more malleable when you tinker with its look and size before placing it on the Web.

If you don't plan on giving up your film camera any time soon, no problem. Most film developers will digitize your pictures and send them back to you via e-mail, a CD-ROM, or through a photo downloading service such as [Snapfish](#), shown in Figure 2-9, or [Ofoto](#).

## Choose the right camera



### » HP Photosmart M527 digital camera

A 2" display on the back and designer editing tools lead off the Photosmart M527's list of coolest features. See and edit photos exceptionally clearly on the spacious display. Apply creative effects such as "slimming down" pictures of friends and adding borders. Who knew a camera could supply so much fun . . . not to mention take such good photos?

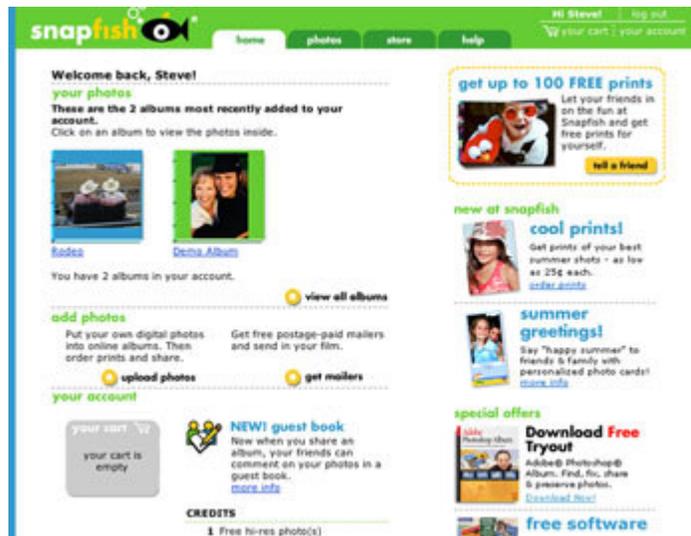


Figure 2-9: Instead of buying a digital photo, let your photo developer send them to you via Snapfish.

View a [larger version](#) of this image.

### Win, lose, or draw

You can also render your own illustrations by hand (and scan them in), or with the aid of an application. Microsoft Paint comes free with Windows, whereas the more upscale Adobe Illustrator and Macromedia Freehand offer trial periods before you decide to buy.

If your photo skills or graphics art abilities leave something to be desired, hire someone to do it. Any graphic designers who may possibly be on your employ will likely be able to help you in this area or know someone who can.

### Usability and accessibility

Form does indeed follow function. A Web site that confuses people is not well designed, no matter how good it looks. To this end, certain rules and procedures for producing friendlier Web sites have become the standards of **usability** and **accessibility**.

### Use it or lose it

Whether they realize it or not, everyone follows certain patterns when they visit a Web site for the first time -- their eyes start in the top-left corner of the Web page, they look at the pictures first, they save the text for last. Knowing some of these tendencies will help ensure your reader will react to your site the way you desire. Here are a few rules to follow:

- **Use simple speak:** So you want to make a cute navigator bar with funny terms like **Launch Pad** in lieu of **Home** and **Guilty as Charged** instead of **Bio** huh? I fear the laughs will be on you when visitors leave in droves because they can't figure out how to get around your Web site.
- **Color me easy to navigate:** Web sites with lots of categories should take a cue from parking garages and assign each section with different colors. Knowing News is red and Store is green helps visitors remember where to go.
- **Say it in black and white:** As I mentioned earlier, black text on a white background is the way to go when it comes to ease of reading. Put colored text on a colored background and you're pushing it, especially if color-blind visitors happen upon your Web site. Still, you can pursue other alternatives that bend these rules, like using a very light background with black text, or white text on a black

### Get connected



#### » **Wireless network cards**

An HP notebook with a wireless network card allows you to work from anywhere that has wireless access. Wireless cards are the key to your computing freedom.

background. San-serif fonts usually work best for such color combinations, especially if you've boosted their size.

The Web sites below mention more usability tips:

- [Usability First](#)
- [Uselt](#)
- [WebWord](#)

### **Access divine**

Architects and contractors have to keep people with disabilities in mind when making a building; so do you when making a Web site. The disabled use special tools to navigate the Web that the best sites accommodate.

For example, alt-text, those pop-up captions that appear over icons when a mouse pointer rolls over them. They aren't just for show: text reader applications read those words aloud to describe a Web site to a disabled person. Be sure to put text or alt-text in your navigation bar and wherever else you may use an image to represent a link.

To insert alt-text you simply use the `alt` attribute with the `<img>` tag in HTML. Here's an example: ``.

For more on accessibility, visit these Web sites:

- [Web Accessibility Initiative](#)
- [IBM Accessibility Center](#)
- [Knowbility Curriculum](#)

### **Moving on**

In this lesson, you learned the basics of color, images, and fonts for your Web site. Enough with the preliminaries already, let's get out of here and learn how to actually build your Web site. But first, please take a look at the assignment, quiz, and the latest celebrity gossip (just kidding) on the Message Board.

**Next steps >>**

**Congratulations on completing the lesson! Don't forget the following:**

- » [Assignment:Leaving the gate](#)
- » [Quiz:Lesson 2, quiz 1](#)
- » [Return to the lessons list to get a quick overview of the entire class](#)

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## A page to call home assignment

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- [» Your classes](#)
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Assignments are designed to help you apply the information learned in the lessons.

### Leaving the gate

Try out different color schemes at some of the color sites mentioned in this lesson, choosing two main colors and one accent color.

Now pick the fonts you'd like to use. For ideas, load some of your favorite Web sites (or your competitors Web sites as the case may be), view their source code ( **View > Source Code** in most browsers), and take a look at their `<font>` tags. Note that when fonts are designated, they usually include alternate choices like `<font="Times, Arial">`.

Finally, choose photos and other graphics by searching some of the sources mentioned in this lesson.

**You have completed this assignment.**

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## Lesson 2, quiz 1

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### Quiz: Lesson 2, quiz 1

Quizzes are designed to give you a chance to test your knowledge.

Please feel free to take this quiz again. We will update your score.

#### 1. Where should you place your navigation bars on a Web page?

- A.  Top or bottom of the page
- B.  Top or left side of the page
- C.  Right or left side of the page

#### 2. True or false: In Web design, always use contrasting colors (colors next to each other on the color wheel).

- A.  True
- B.  False

#### 3. What's royalty-free artwork?

- A.  Illegal images you're not allowed to use.
- B.  Art that hasn't been touched by a monarch's grubby hands.
- C.  Copyrighted images obtainable for free or with a flat purchase fee.

#### 4. True or false: You should stick with one font to avoid all that typeface clutter.

- A.  True

B.  False

5. Which technique will help an assistive technology read the images on your Web site?

- A.  Add alt text to <img> tags.
- B.  Embed explanations in the HTML code of every page.
- C.  Use sign language icons.

6. True or false: Digital photos can only be made with a digital camera.

- A.  True
- B.  False

**Submit >>**

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### Web site basics

- [» Lessons](#)
- [» Message board](#)
- [» Class materials](#)

Welcome to your lessons. Some lessons may have quizzes or assignments for additional learning. Don't forget to join your fellow classmates and instructor on the message board.

### Lesson 3

[» View single page](#)

### Gettin' WYSIWYG with it

Now that you've planned your Web site, you've got to build it. Don't worry though, in a lot of ways, the hard part's behind you. The Web abounds in sites made with **WYSIWYG** (What You See Is What You Get) tools for people who don't know a lick of HTML (Hypertext Markup Language). A few hundred bucks gets you a software package that can turn out professional-looking Web sites as easily as a word processing document. Or, if you're willing to work a little harder, you can make perfectly fine sites from scaled-down but free software of the same ilk.

Some free (or free if you already have the software) Web site builders you can choose from include the following:

- [Netscape Composer](#) : This nifty addition to Netscape Communicator comes fully functional with all the trimmings for making complex Web sites. Netscape Composer is shown in Figure 3-1.

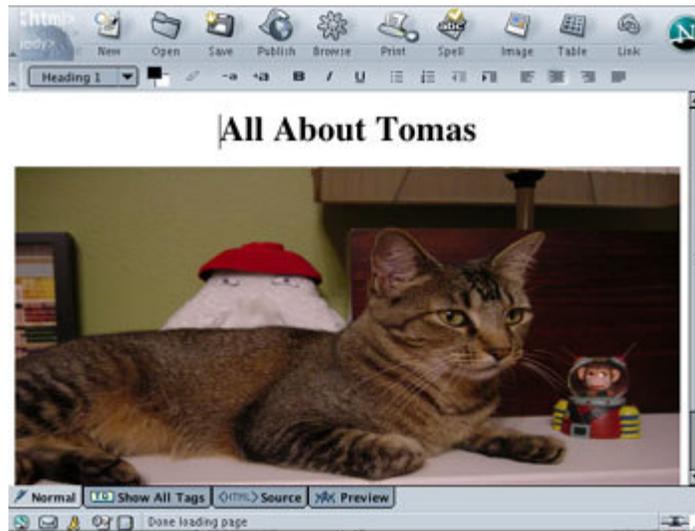


Figure 3-1: Netscape Composer.

- **Desktop publishing or presentation software:** Many layout applications, such as Quark and others, include options that let you save files as HTML.
- **Word processor:** Word processors that convert pages to HTML won't crank out the most advanced sites, but they're simple to use. Many include commands such as **File > Save As Web Page**, which perform the magical HTML conversion.

Other than the fact that you've already paid for them, the advantage of designing your Web site with a word processor or desktop publishing program is familiarity -- you already know the commands, you just have to apply them to a Web page.

The following are some price-tagged Web site builders:

- [Microsoft FrontPage](#) : Available with Microsoft Office Developer Suite or separately for less than \$200, this versatile tool handles complex and simple Web sites.
- [Macromedia Dreamweaver](#) : The biggest title in the WYSIWYG market. It rings for \$399, but lots of folks say it's worth the price.

Try trial versions of the packaged software to see if the dough is worth it.

### **Brush up your HTML**

So you know HTML? More power to you. That means you can take advantage of cheaper, more versatile programs built for people comfy with the language. Search around for an **HTML Editor** at

[Download.com](#) or [Shareware.com](#) and let the free and low-cost software (like the editor in [OpenOffice.org](#) /) rain down on you.

### Graphics: is the Web prejudiced?

The Web can be very picky about just what sorts of images it chooses to consort with. In other words, you've got to format your graphics just right to get the Web to recognize them.

To properly whip images into shape, you'll need some sort of graphics tool. [Adobe Photoshop](#) rules this market, but it costs somewhere in the neighborhood of \$600. Several cheaper alternatives exist out there, such as [Paint Shop Pro](#) and [GraphicConverter](#). You can also pull off limited image manipulation tricks with free software like iPhoto, which comes free in Macintosh computers, and similar programs that come with various PCs. Finally, HP offers a free image editing program called [Photosmart Essential](#).

You'll want two principal features out of any graphics software: the ability to both reduce an image's size and change its format. Without these functions, get ready to bang your head against your monitor, because your images won't work for the Web.

### Save it for the shrink

Smaller files load faster, which means a Web page loads faster, thus, visitors will stick around longer. Which means you'll want your image files as small as possible. Case closed.

I'm not talking about reducing all the pictures of you Web site to the size of postage stamps. I'm talking about three different approaches that can each significantly decrease an image's file size:

- **Reduce the resolution:** When scanning an image or tinkering with it in a graphics program, keep its resolution no larger than 72 dpi (dots-per-inch). They say most monitors display at 72 dpi anyway, so it's pointless to post a picture with a resolution larger than that. Your graphics software should come with a function similar to **Image > Resize**, shown in Figure 3-2, Paint Shop Pro that lets change the image's size.

### Work on your home page while away from home



#### » HP Pavilion notebook PCs

HP notebooks to help you discover, create and enjoy multimedia experiences at work and play. Organize, share, and protect your photos with HP Image Zone software.

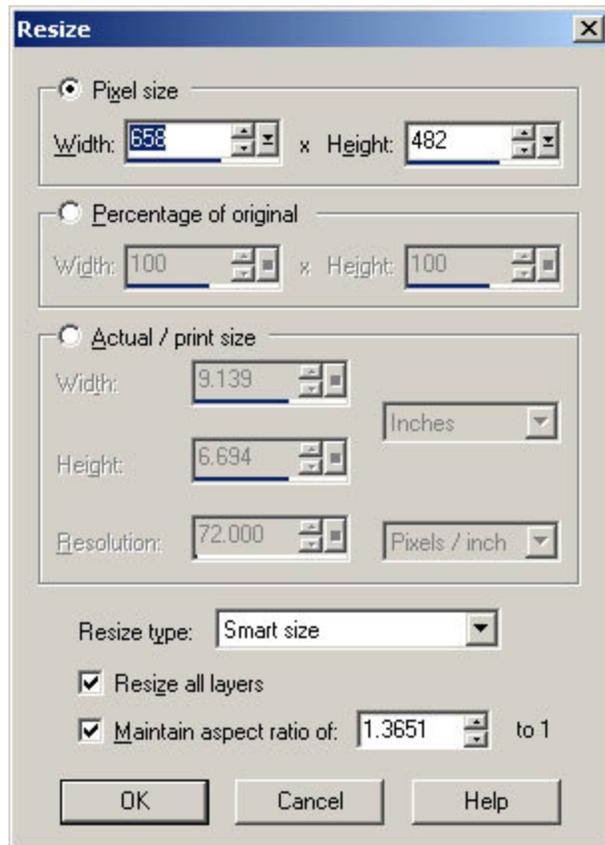


Figure 3-2: The Resize dialog box in Paint Shop Pro.

- **Ditto for height and width:** Adjusting the height and width of a picture -- which you'll likely want to do anyway to make it fit on the page better -- can also reduce file sizes dramatically. Most graphics tools let you make such adjustments with the same function that adjusts resolution. When resizing images in this way, always keep them in proportion both to your Web page (no image should look too big or too small) and to the image's dimensions -- that is, when you widen the top, you widen the sides by the same percentage, else you'll stretch the image.

Don't be frightened if you've got a digitized image too large to fit on your screen. With graphics, it's better to start big and shrink. Enlarging an image from a smaller size always

compromises quality.

- **Tend to your crops:** Cutting unnecessary fat from a picture -- say, an ugly background or an ex-partner -- helps reduce size and focus an image on the details you find most important. A cropping tool, standard with any graphic program, lets you remove these unwanted sections from an image. Figures 3-3a and 3-3b show cropping in action.



Figure 3-3: Uncropped photo of a rascally cat.



Figure 3-3: Cropped photo of a rascally cat.

Resizing Images in HTML won't cut it. You can resize large images with HTML and Web site building tools to fit on a page, but that won't change the image's file size, which could still take a long time to download. After you get the image to a size you like, reduce it with an image-editing program.

#### **Choosy designers choose GIF (and JPEG and PNG)**

The compressed image formats known as GIF (Graphic Interchange Format), JPEG (Joint Photographic Experts Group), and PNG (Portable Network Graphics) load faster and generally behave better online than larger image types such as TIFF (Tagged Image File Format).

Many graphics tools let you switch between the three with a **Save As** or **Convert** command. Here's a quick overview of each type of graphic:

- GIF shrinks image sizes by reducing their colors, so it's best for clip art and illustrations.
- JPEG maintains an image's color as it compresses other visual information from a file, making it best for photos.

Although JPEG photos aren't as crisp and clear as, say, TIFF photos, they get the point across well enough for Web viewing.

- PNG (pronounced PNG) was developed specifically for the Web. It compresses more effectively than GIF, and even better, it doesn't chuck out as much visual information as JPEG. However, it's still relatively new and hasn't fully caught on yet.

### Get graphic

We've already talked about those times you need to create your own images. When photos and existing clip art just won't do, it's graphics-creation tools to the rescue.

A number of programs let you do all manner of graphics magic for producing logos, navigation bars, and other images. Some of the big names in this category include [Adobe Photoshop and Illustrator](#) , [Macromedia Fireworks](#) , [Corel Painter](#) , and [Paint Shop Pro](#) , among countless others. These pricey applications can handle any imaging task you throw at them -- from removing red eye glares to adding special effects like lightning bolts. Of course, the more goodies, the pricier they get; not to mention harder to learn (you could spend all night just adding a special effect like a lightning bolt to a photo). Don't sweat which one to buy though -- this is the reason software companies created trial versions of software.

Many graphics programs today slice images directly into Web pages, generating the necessary HTML for you. Make sure any image software you buy has this feature.

Cheaper solutions lie in the category of freeware and shareware graphics tools made specifically for the Web.

A number of such programs out there do nothing but create and edit image maps, buttons, icons, ad banners, and other helpful doo-dads without all the extra stuff you don't need. Here are a few programs to consider:

- [2D&3D Animator](#) : Let's you create animated GIFs and fancy font and text tricks, plus 30 customizable templates for logos, buttons, and other decor.
- [Favicon.com](#) : A Web site that lets you create and add a customizable icon for your site that appears in the address bar and favorite sites page of browsers.
- [Buttonz & Tilez](#) : Nothin' but buttons and tiles for your Web site. You want buttons and tiles; they got buttons and tiles.

### Printing your photos



#### » **HP everyday photo paper, semi-gloss**

This sturdy photo paper with a semi-gloss finish is affordable and easy to use for printing images, whether you're at home, work, or school.

### Link of the possibilities

The Web wouldn't be world wide if its parts weren't connected. And its parts wouldn't be connected without links. Links are the circulatory system of the Web, found in between and within Web sites. Let's tap a vein, shall we?

### Internal links

Every time you click an image or underlined word to go to another section of a Web site, you're following an internal link. To add such a connection to your site's navigation bar, site map, or so on, simply open a page in your WYSIWYG Web development tool, highlight the text you want to link, click the program's linking function, and then choose the text or image you want the link to follow.

### External links

You don't want to drive visitors away from your Web site, but providing them with links to other pages can make a visit to your site a more enriching experience. It's standard Web practice to link words or phrases on one's site to others with more information on the topic, as well as listing favorite links or some variation thereof on a separate page or section of a page.

WYSIWYG tools let you create external links as easily as internal links. Just highlight the desired text or image, click the program's linking function and type the entire URL of the page to which you'd like to link. Figure 3-4 shows a linking in progress.

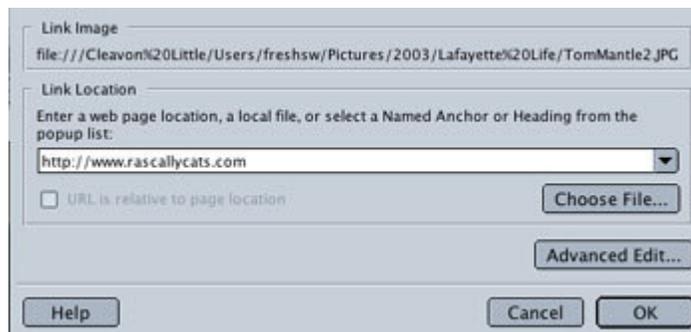


Figure 3-4: A linking in progress in Netscape Composer.

[View a larger version](#) of this image.

### Sneak a preview

No need to work in a vacuum when building your Web site. It's quite simple to preview your Net newborn before uploading it to the Web. Just follow these simple steps:

### Class participation

There's nothing like peer support in a learning

1. Make a new directory or folder for the project.
2. Save the Web site's files to the project directory or folder.
3. Open any of the files in your Web browser. For example, in Internet Explorer, choose **File > Open**, and click **Browse** to navigate to the appropriate directory, as shown in Figure 3-5.

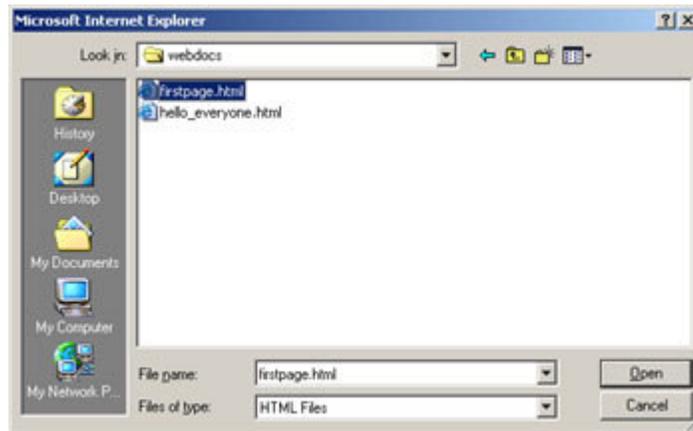


Figure 3-5: The Browse dialog box in Internet Explorer.

View a [larger version](#) of this image.

4. Select the file, and click **Open** to open the desired file.

Many WYSIWYG Web development programs come with preview tools that show Web pages as they develop.

### Rip it off

When you see some nifty design on a Web site and don't know how the designer pulled it off, go ahead and take a look under the hood. Either use your browser's **View > Source** option to see its HTML or download the page through the browser's **File > Save As** command. From there, you can view the source HTML either on the browser or in your Web-building program.

Figure 3-7 shows what the source of a Web page can look like.

environment. If you ever belonged to a study group in school, you'll remember the value of putting heads together to discuss the subject and work through solutions. The Message Board is your online study-group lounge, where you can meet your classmates, share your reasons for signing up for this class, and talk about your goals and dilemmas as you work through this course. You never know who has the answers you seek.

### Preview your site on paper



#### » HP Deskjet 6940 color inkjet printer

If you want fast, affordable, wired Ethernet printing, plus direct photo printing, check out the HP Deskjet 6940 color inkjet printer. You'll find it easily handles high-volume home office projects ranging from everyday black-and-white documents to large (up to 8.5 x 24"), borderless photos, brochures, presentations, and more.



[Next steps >>](#)

**Congratulations on completing the lesson! Don't forget the following:**

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- » [Quiz:Lesson 3, quiz 1](#)
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## Set your web site assignment

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Assignments are designed to help you apply the information learned in the lessons.

**Let's get it together**

1. Download [Netscape](#) , and open Netscape Composer via the command **Window > Composer**.
2. In Composer, design your Web site's framework -- its title or logo, navigation, and body elements. Add images using the image button on the toolbar.
3. Save the page, and preview it in Netscape Navigator by selecting **Window > Navigator** and **File > Open** . From there, tinker all you like. Let the rest of the class know about your progress.

**You have completed this assignment.**[Next steps>>](#)[Printable version](#)[» Bookmark HP Online classes](#)



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## Lesson 3, quiz 1

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### Quiz: Lesson 3, quiz 1

Quizzes are designed to give you a chance to test your knowledge.

Please feel free to take this quiz again. We will update your score.

#### 1. What does WYSIWYG stand for?

- A.  What You Say I Wash Your Gnu?
- B.  What You See Is What You Get
- C.  Wish You Saw Ingrid Wallop Your Grandpa

#### 2. Name three Web-friendly image formats.

- A.  MP3, CIA, and BUTT
- B.  MADD, NRA, and CSI
- C.  GIF, JPEG, and PNG

#### 3. What's the most common image format for photographs on the Web?

- A.  JPEG
- B.  Polaroid
- C.  Tintype

#### 4. To see what makes a Web site tick, how do you view its HTML code?

- A.  Hack into the Web site's server using daring yet illegal techniques.

- B.  Click **View > Source** on your browser.
- C.  Beg and plead with the Web site's administrator's until he or she relents.

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Welcome to your lessons. Some lessons may have quizzes or assignments for additional learning. Don't forget to join your fellow classmates and instructor on the message board.

### Lesson 4

[» View single page](#)

### A place in the fun

Why do we need ISPs (Internet Service Providers) and their overpriced fees, network crashes and sundry other problems, especially if we can get on the Internet ourselves? After all, it's possible to use basic Internet **protocols** (the languages that computer networks use to talk to each other) and the right software to connect your computer directly to the Internet. But it's not a good idea.

Getting your computer closer to one of the Internet's **backbones** -- its main thoroughfares for trafficking data -- could open it to hacker attacks, create slow download times for people visiting your Web site, and your ISP might not even allow it. That's why, however grudgingly at times, most people let their ISP or some other Web hosting service maintain their Web site on the Internet.

ISPs have fast, constant connections to the Internet and can handle large amounts of data traffic through large computers called **servers**. These servers store vast amounts of e-mail and Web pages and route Internet traffic from one place to another. ISPs, then, are not only your gateway to the Internet, but also your storage locker, post office, mail carrier, and gallery space rolled into one.

Figure 4-1 shows a sample map of what the Internet backbones of Europe look like.



Figure 4-1: The Internet Backbones of Europe.

### ISP SOS

You're more than likely hooked up with an ISP such as AOL, SBC, AT&T, Earthlink, or one of several others. You're probably also well aware of the services it provides and the rates it charges for them. Now it's time to double check what your ISP offers in terms of Web hosting -- a service that can make or break a customer/ISP relationship.

Signing up with an ISP's Web hosting service gets you access to its Web server, where you post the pages, images, and other files for your Web site. When people visit your Web site, their computers connect to that server. If the server shuts down, so does your site -- until the ISP fixes the problem or you move to another ISP with a more stable Web hosting service.

To make sure your ISP fulfills your Web hosting needs, ask yourself these questions:

- **Does my ISP fulfill my needs today and tomorrow?** Any ISP can handle a simple informational Web site, but if you eventually want to offer e-commerce (which we'll explore in Lesson 7), you'll want an ISP that provides features such

### Ink and photo paper deals



#### » Ink and photo paper value pack

Print professional-quality photos in the comfort in your home and save even more per print with these ink and photo paper value packs.

as a secure sever, shopping carts, and credit card processing. Make sure your ISP's services can grow along with your needs.

- **How far is my ISP from an Internet backbone?** You'll want an ISP linked as close as possible to an Internet backbone, preferably one **hop** , or connection, away. The more hops your page resides from a **backbone** , the longer it will take to download.
- **What am I willing to pay?** The thousands of ISPs out there offer a confusing array of services, features, and cost structures. Figure out what you need and do some comparison shopping. Among other things to look into, explore the quality of an ISP's support. Does it provide phone or e-mail support? What's its typical response turnaround time? Take a look at Internet message boards and forums to see what their past and present users have to say of the service they get or got.
- **What about the extras?** Unlimited e-mail addresses, functionality for auctions, chat and message boards -- the sky's the limit on what ISPs can offer above basic Web site hosting. Figure out what you want by perusing the premium services of the big ISPs. Then figure out what you're willing to pay for them.
- **Is the e-mail access direct?** It may sound crazy, but some of the cheaper ISPs don't directly handle your e-mail on their servers. Instead, they forward it to another account, making you pay extra to maintain another Internet account. Don't put up with this sort of nonsense -- get an ISP that takes care of your e-mail.

These Web sites may help your hunt for an ISP:

- [The List](#) : Like the name says, this Web site lists a ton of ISPs around the country, as well as in your area. All are searchable by area code or state, with pricing information to boot (though you'd be wise to double check its information).
- [WebHosters.com](#) : Information on different hosting companies in 12 different categories.



Figure 4-2: Figure out who hosts what at WebHosters.com.

- [HostReview.com](#) : The skinny on several hosting companies, searchable by price range, space provided, and operating system.

### The minimum

At the very least, you want these features from your ISP:

- **At least 20 MB of disk space:** Those images, HTML files, and other content add up in size after a while, so you'll want plenty of room.
- **At least a GB of monthly data transfers:** Big Brother is watching. ISPs track the amount of data transferred when a visitor downloads your Web pages and associated images or files. You'll want an ISP that allows at least a GB (or a billion bytes) a month, because, as I said earlier, the size of those files start to add up. An ISP could either charge you for additional bytes transferred over the limit or temporarily shut down your Web site.
- **FTP access:** FTP (File Transfer Protocol) is the means by which you **upload** content from your computer to a server. We discuss it more a little later.
- **E-mail:** Make sure the ISP includes e-mail that you can pick up directly from its mail server and that it offers as many e-mail addresses as possible. You may only need one now, but as your family or business grow, new e-mail addresses will come in handy.

**Think twice about freebies. Companies that offer free Web space often entangle the deal with lots of strings, such as giving you a long, complicated domain name. These services can be great for personal Web pages and free Web-page practice, but for professional work, you'll want the freedom and flexibility that comes with paying cash.**

### The name says it all

When it comes to the Web sites, the name says it all. The URL provided by ISPs tends to be long and garbled, like `http://www.cheapsites.com/rascallycats/home.html`. That's fine for personal Web sites, but if you're going pro with this baby, or just want it to feel that way, you need to pay to get a URL that trips off the tongue as smoothly as `www.rascallycats.com`. So let's explore Web site naming.

### What's in a name?

When thinking up a name for your Web site, first identify your audience. Teens? Suits? Sportos? Then figure out a name that would appeal to them. Consider one of these general approaches to domain naming:

- **The Subject Name:** URLs that refer to the Web site's market or topic, like `www.rascallycats.com`, are easy for users to remember and find. The downside: most of the obvious and not-so obvious ones are already taken.
- **The Company Name:** URLs composed of your company's or organization's name in full, like `www.rascallycatenterprises.com`, are easy for users to remember and find.
- **The Attention-Grabbing Name:** URLs that don't necessarily relate to a Web site's topic, but draw a response anyway. What does `Amazon.com` have to do with legendary women warriors? Is `Yahoo!` a Web site about yahoos? The right unusual name can get instant notice; the wrong one could get promptly ignored.

Just like real estate property, owning a piece of the Web via a URL comes with rules and restrictions. Keep these in mind as you think of a name: Although **.com** is the most familiar URL suffix, it's not the only one available. Your Web site could be better served with **.org** for not-for-profit organizations, **.net** for Internet infrastructure companies (like ISPs), foreign country abbreviations (**.uk**, **.jp**, **.au**), and a bunch of others (**.biz** or **.info**, anyone?).

### Domain delay

Once purchased, your new domain name may not be available for up to 72 hours as your ISP gets everything set up. In the meantime, you can get immediate access to your Web site through the IP address (a set of numbers along the lines of 209.54.64.31) your ISP should give you.

You have to prove affiliation with the government to use .gov or with an educational institution for .edu.

Here are some other things to remember when pondering domain names:

- URLs may only be composed of letters, numbers or hyphens (-).
- A URL cannot begin or end with a hyphen.
- A URL must never exceed 63 characters, not including the **.com** suffix.

After you've narrowed down a choice, type it, and variations on it into your Web browser: **rascallycats.com**, **rascallycats.org**, **rascallycats.net**, and so on. You'll know instantly if it's already taken, but if a Web site offering the URL for sale or a "server could not be found" message pop up, you may have a shot at getting that name.

### **Master of your domain**

If your initial research shows that your chosen URL may be available, spend a few minutes searching for it on one of the domain registry Web sites.

InterNic, a Web site managed by [Network Solutions](#), used to be the only game in town for domain name registration. Today, a number of Web sites offer the service, all of them overseen by Network Solution's replacement for InterNic: ICANN (Internet Corporation for Assigned Names and Numbers). Network Solutions offers a nifty tool called MyNameFinder that makes name searching a snap. However, when it comes to registering a URL, shop around. Registration Web sites charge varying registration fees.

Go ahead and visit Network Solutions and see if `www.rascallycats.com` is taken. Type in **rascallycats** in the search window. Hit **search**, and you'll find not only `www.rascallycats.com` available, but `rascallycats.net`, `rascallycats.org`, `rascallycats.biz`, `rascallycats.info`, `rascallycats.us`, `rascallycats.cc`, `rascallycats.bz`, and `rascallycats.tv`, as shown in Figure 4-3. The Web site even lists **similar names**, my favorite being **rougishcats.com**.

## DOMAIN NAME SEARCH RESULTS

Good news - the domain name you want to use is available.  
Just check the box next to the domain name(s) you would like and click "Continue".

**RESULTS OF YOUR SEARCH**

**rascallycats.com** is available.

**CONTINUE**

**VARIATIONS OF YOUR SEARCH**

Registering a domain with [more extensions](#) or [similar names](#) can be a smart way to ensure that no other domain names are too close to your registered domain name. The following are some idea for multiple domain names or if the original domain name(s) you wanted is not available.

MORE EXTENSIONS	SIMILAR NAMES
<input type="checkbox"/> rascallycats.net	<input type="checkbox"/> rascally-cats.com
<input type="checkbox"/> rascallycats.org	<input type="checkbox"/> roguishcats.com
<input type="checkbox"/> rascallycats.biz	<input type="checkbox"/> roguish-cats.com
<input type="checkbox"/> rascallycats.info	<input type="checkbox"/> rascallycat.com
<input type="checkbox"/> rascallycats.us	<input type="checkbox"/> rascally-cat.com
<input type="checkbox"/> rascallycats.cc	
<input type="checkbox"/> rascallycats.bz	
<input type="checkbox"/> rascallycats.tv	

**CONTINUE**

Figure 4-3: Eureka! www.rascallycats.com is available. No stopping us now!

### Taking it all the way

You want that name and you want it so badly, no other will do. See if the owner will sell it to you. People do it all the time, sometimes via auctions. Hopefully you won't have to go to that extreme to get your name. Just do a quick [WHOIS](#) search on the Network Solutions Web site. Typing in a domain name in use yields the name and address of the owner.

For a little brainstorming help on the perfect domain name, visit [www.deleteddomains.com](http://www.deleteddomains.com), which keeps track of domain names people have allowed to expire.

### FTP A-OK

Some ISPs offer tools to help inexperienced Web site owners upload their pages to their servers. Since the actual ease of use of these utilities can vary greatly, it's best to pick up a working knowledge of how to do it the old fashioned way -- via FTP (File Transfer Protocol).

To learn this not-really-so-daunting-as-it-sounds skill, download a utility, such CuteFTP (<http://www.cuteftp.com/>) for Windows and Mac.

### Back up your images



#### » HP desktop storage

Whether you want to back up your personal media and

After installing the FTP program and opening it, it will eventually ask you for your host name. This is the server address your ISP should have provided you with already. If it didn't, call tech support and raise a ruckus. It should resemble something along the lines of **ftp.rascallycats.com** . Subsequent screens will ask you for your username and password, as shown in Figure 4-4, which also should have come from the ISP.

clear up your hard drive to make space, look to HP for your storage needs.

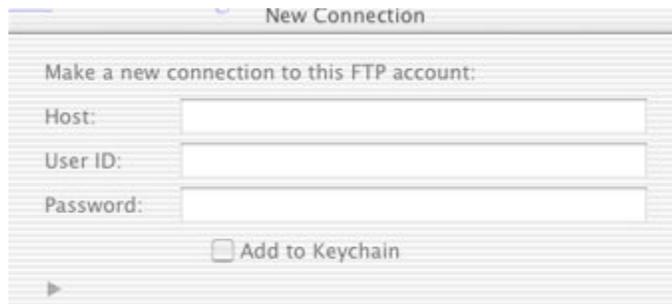


Figure 4-4: An FTP program, asking for the basics.

Once you've entered this information, you should be connected. Find the directory on the server with a name like **public\_html** , **www**, **wwwroot**, or **web** . This is where you'll want to put your files. Your FTP tool will likely let you both drag the files from your computer to the server, or let you do it through a command like **Transfer > Upload**.

### Test drive

Before going live, before even exiting your FTP program, you should fully test every page and every link of your Web site. Open your Web browser to see how things turned out, and then jump back to your FTP application to upload anew the necessary files to fix any problems. No one creates a perfect Web site the first time out of the gate. In fact, you're highly likely to encounter any of these problems:

- **Missing images:** You forgot to upload the image file that belongs to a Web page, or linked it incorrectly.
- **Badly formatted Text:** You coded your copy the wrong way.
- **Bad spacing of text or objects:** You misaligned something or excluded a paragraph or line break.
- **Broken hyperlinks:** You fubbed a link or didn't upload the page it links to.

Figure 4-5 details one such case.



Figure 4-5: This Web site needs a little work if you ask me.

Take a look at your Web site in both Internet Explorer and Netscape Navigator. The two browsers tend to handle pages a little differently sometimes, so it's good to see them in both.

### Moving on

So we've covered the workings of the Internet and ISPs, registering domain names, and FTP transfers. Welcome to the Web. Take a stab at the assignment and the quiz, and then we'll move on to more advanced topics that will take your Web site to the next level. Don't forget to slip on into the Message Board to see what other students are up to.

[Next steps >>](#)

### Congratulations on completing the lesson! Don't forget the following:

- » Assignment: Stake a claim on the Web
- » Quiz: Lesson 4, quiz 1
- » Return to the lessons list to get a quick overview of the entire class

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invent

## Homesteading your Web site assignment

[» Home & Home Office](#)[View your shopping cart](#)

Hello, Truitt

- [» Edit profile](#)
- [» Sign out](#)

[» Online classes](#)

- [» Your classes](#)
- [» Contact us](#)
- [» FAQ](#)

- [» Digital Photography](#)
- [» Everyday Printing](#)
- [» Everyday Computing](#)
- [» Digital Entertainment](#)
- [» Activity Center](#)

**Browse & Buy**

- [» Home & Home Office Store](#)
- [» Rebate Center](#)

**Product Support**

- [» Support & troubleshooting](#)
- [» Software & Drivers](#)
- [» Warranties & services](#)
- [» Register your product](#)

Assignments are designed to help you apply the information learned in the lessons.

**Stake a claim on the Web**

This lesson's assignment is simple enough: follow the lesson's instructions on posting a Web site. After you've got it up, share the URL with the Message Board so we can all pick over it (just kidding). Seriously, feel free to share and ask any questions about Web site mechanics you may not have ironed out yet.

**Assignment Completed >>**[Printable version](#)[» Bookmark HP Online classes](#)



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Search:

 Home & Home Office  All of HP United States

## Lesson 4, quiz 1

[» Home & Home Office](#)[View your shopping cart](#)

Hello, Truitt

- [» Edit profile](#)
- [» Sign out](#)

### Quiz: Lesson 4, quiz 1

Quizzes are designed to give you a chance to test your knowledge.

[» Online classes](#)

- [» Your classes](#)
- [» Contact us](#)
- [» FAQ](#)

- [» Digital Photography](#)
- [» Everyday Printing](#)
- [» Everyday Computing](#)
- [» Digital Entertainment](#)
- [» Activity Center](#)

**Browse & Buy**

- [» Home & Home Office Store](#)
- [» Rebate Center](#)

**Product Support**

- [» Support & troubleshooting](#)
- [» Software & Drivers](#)
- [» Warranties & services](#)
- [» Register your product](#)

### 1. What does FTP stand for when talking about Web sites and the Internet?

- A.  Forgot the Pizza?
- B.  File Transfer Protocol
- C.  Fight the Power
- D.  File Transfer Process

### 2. Which of the following online tools identifies the owner of an Internet domain name?

- A.  eBay
- B.  Napster
- C.  WHOIS

### 3. Which of the following allows you to access your Web site in lieu of a domain name?

- A.  The IP address
- B.  The Keymaster

### 4. When would you have occasion to end your domain name in.org?

- A.  Government Web sites
- B.  Not-for-profit organizations
- C.  Web sites made for and designed by pets

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## Lessons - Web site basics

### » Home & Home Office

Hello, Truitt  
» [Edit profile](#)  
» [Sign out](#)

### » Online classes

» [Your classes](#)  
» [Contact us](#)  
» [FAQ](#)

» [Digital Photography](#)  
» [Everyday Printing](#)  
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» [Digital Entertainment](#)  
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### Product Support

» [Support & troubleshooting](#)  
» [Software & Drivers](#)  
» [Warranties & services](#)  
» [Register your product](#)

[View your shopping cart](#)

### Web site basics

» [Lessons](#)  
» [Message board](#)  
» [Class materials](#)

Welcome to your lessons. Some lessons may have quizzes or assignments for additional learning. Don't forget to join your fellow classmates and instructor on the message board.

### Lesson 5

» [View single page](#)

### Mull over multimedia

Ever gone to a Web site and been driven away by a computerized version of *Wind Beneath My Wings* that sounds like it was composed on an old Speak 'N Spell? That's the peril of using audio and video on your Web site. Sometimes a little song and dance can accentuate a Web site and the message it conveys. Other times it does just the opposite.

Keep the following points in mind before posting a two-hour full-screen movie of your cat with *Barry Manilow's Greatest Hits* as the soundtrack:

- The purpose of your Web site
- The readers of your Web site
- The limitations of the Web and the computers of people visiting your Web site

If you sell yachts, a video clip of a boat's interior on your Web site may appeal to rich male customers who probably have a connection fast enough to view it. If you sell vacation packages for seniors, an elderly clientele may not have the setup to watch a film, but they may appreciate a jingle.

Know your reader, and plan around their technological limitations (or strengths) accordingly. If you're building for the young and

### Photo lab quality at home



### » HP Photosmart D7360 printer

What makes the HP Photosmart D7360 photo printer a standout? Its innovative touch-screen display and large 3.4" size, which make viewing, editing, and printing photos a cinch. Plus you'll get your lab-quality photos super fast--in as little time as 12 seconds!

wired, or another group that you know has access to high-speed Internet connections, load up your Web site with bandwidth-chomping extras. Otherwise, build with slower machines in mind.

As a general rule, it's best to design a Web site that can be handled by a 56 Kps modem; these days, it's hard to get lower than that speed. This doesn't mean you have to dump all the video and music on your hard drive in the trash. Instead, let the viewers decide. You can always design separate versions of the same page -- a simple version that provides low-bandwidth alternatives, such as still-frame images in lieu of video clips and another with all the bells and whistles. Visit [Veer](#) , shown in Figure 5-1, for an example of a Web site with lots of bells and whistles.

It's the latter type of Web site that we'll explore in the following pages of this lesson.

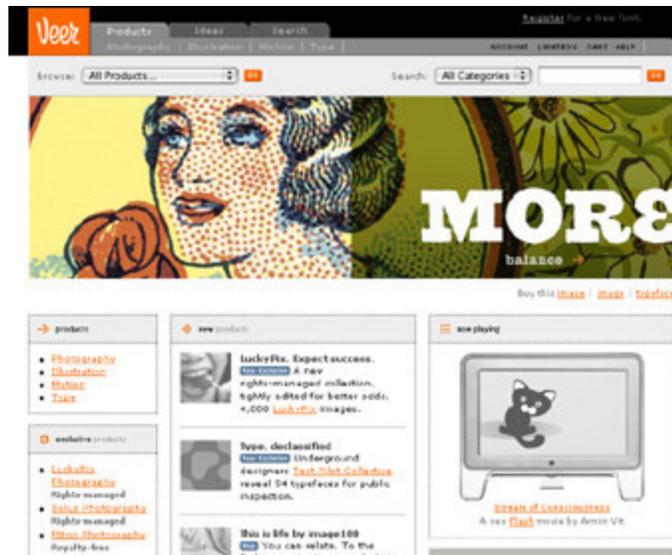


Figure 5-1: Veer knows its audience -- people with the bandwidth to watch lots of videos online.

### Sound thinking

Web pages access sound from audio files in much the same way that they get pictures from an image file. The code is slightly different (more on that in a moment), but it plops right in wherever you want it. The trick with audio files is not getting them in a page, but choosing which types to use in a page. Just as GIF (Graphic Interchange Format), JPEG (Joint Photographic Experts Group), and PNG (Portable Network Graphics) formats work best for images, certain sound files work better than others for different effects, as discussed in the following sections.

## WAV format

Used by Windows (Macs use AIFF, but it's pretty much the same thing), this CD-quality format takes up a lot of space, to the tune (as always, forgive the pun) of 10 MB per minute of sound. That means a 40-minute song would take about 90 minutes to download with a 56 Kps modem. Fortunately, WAVs are shrinkable in a few different ways. Using sound-editing software such as [Acoustica](#) for Windows or [iTunes](#) for Mac, try one or all of these options:

- **Make it Mono:** This will undoubtedly worsen the sound quality of a WAV file, but it cuts the size by half. Still, for a four-minute song, that's still a whopping 20 MB.
- **Reduce the Sampling Rate:** Whittling down the sampling rate, which measures the audio quality, can cut file size further. Though again, you lose audio quality in return. Cutting the rate from standard 44 khz CD-quality to 22 khz phonograph quality may not be worth the resulting sound you get.

## MP3

**MP3** (Moving Picture Experts Group Layer-3 Audio) files are compressed sound files solve the WAV size reduction problem by removing unnecessary information you wouldn't notice anyway during playback. The files end up 10 times smaller than WAVs with no apparent change in quality. MP3s have become so universal, most any music program produces them automatically when you import WAVs into your computer from a CD.

Sample rate reductions, monoconversions and MP3 compression may reduce a 40 MB file to under 4 MB, but these options still leave you in the lurch when you want to share a whole concert or other lengthy audio through your Web site. For this type of job, turn to **streaming**. When an audio file streams, a link on a Web page plays it as it downloads, instead of playing it once the download has finished. This way, downloading seems to go a lot faster. It's simpler for the viewer, but more difficult for you. To stream a file, first you have to convert it to the streamable .rm format. [Helix Producer](#) will do the trick. Once that's done, find a home for the file on a streaming server. If your ISP doesn't offer streaming capabilities, no sweat -- a Web site such as [RealServer](#), can take over from here and host the file on its servers.

## MIDI

**MIDIs** (Musical Instrument Digital Interface) files -- those typically simple yet strangely endearing sound makers I mocked with the *Wind Beneath My Wings* joke at the beginning of this lesson -- are like sheet music for player pianos. They don't contain sound; they just tell the computer how to make sound. And, suffice it to say, computers weren't made to be musical instruments. Although you can sometimes get decent sound from a MIDI file, they'll never approach MP3 in sound quality. However, they've got every other format licked in the size department. Because they're little more than instructions, MIDIs take up considerably less space than other sound formats, rarely bigger than 15 KB for most standard-length songs. Because they're so small and their quality so puny, lots of Web sites around the Web give MIDIs away for free. Go on a MIDI hunt at a Web site such as [Ifni MIDI](#) and see what you can find.

**As with pictures, using a copyrighted song on a Web site can be illegal without**

**permission, so look into the legalities.**

### **Make a joyful noise**

With a cheap microphone from a computer or electronics store, you can stop worrying about all these audio formats and make your own sounds for your Web site. Simply call up the Windows Sound Recorder Utility or the Mac's Sound Control Panel and get noisy.

Both work like conventional tape recorders, with record, stop and play buttons, as well as sound level monitors. Sound Recorder even comes with limited sound editing and sound effect functions. However, for more thorough sound editing, it may be worth shelling out the dough for an application like Syntrillium Software's [Cool Edit](#) and Macromedia's [Sound Edit](#) .

### **Tack on the tunes**

Putting those sound files we just learned about into your Web site isn't hard, but you may have to fake your through some HTML (Hyper Text Markup Language) if you don't know it already to ensure you get it right. Some Web building software packages let you add audio files easily enough, but they can bungle the process from time to time. To guarantee a Web site plays music the way you want it, view the HTML coding of your pages and follow one of these methods:

- **The Sound File Link:** Creating a link that lets visitors hear a sound file when they click it is simple as establishing any other link. Just slip in this bit of code wherever you'd like the link to appear:

```
<a href="yoursonghere.wav">Play This Song!</a>
```

- **The Auto-Loading Sound File:** Setting up a WAV file so that it plays as soon as a page loads takes a few extra lines.

```
<embed src="happy_birthday.wav" width="144" height="60"
      autostart="true" loop="true"> <bgsound src="happy_birthday.wav"
      autostart="true" loop="infinite">
```

Yes, these are two separate lines of code. That's because Explorer and Navigator use slightly different HTML commands for some functions. Putting both versions in your HTML assures that both browsers will read the right one and ignore the other. **Height** and **width** in the code adjust the appearance of the sound bar, shown in Figure 5-2, displayed when the music kicks in. **Loop** tells the browser to play the sound over and over again (you sure you want to put your Web site's visitor's through this?).



Figure 5-2: The unassuming sound bar that pops up when you load a MIDI song.

### Screening movies

It just keeps getting easier to make and edit video on your desktop computer. Easier, that is, if you've got the equipment to handle it. To make your own movies, you'll need:

- **Processor power, lots of RAM and hard drive space:** If your computer's a few years old and you're serious about desktop movie making, it may be time to upgrade to a machine that has all three of these elements in spades.
- **A Digital Video Camera:** These can get pricey, but they're going down in price. You can also consider alternatives -- a growing number of devices can make movies these days. Along with still shots, my digital camera and plenty others like it can take 30-second video clips, which, surprisingly, are often long enough to capture the small slices of life I like to string together with my movie-making software. Of course, if you're trying to record a school play or wedding, you'll need longer-lasting firepower.
- **A Video Capture Card or FireWire (a.k.a. IEEE 1394):** You'll need either of these to pump video from your camera to your computer. FireWire, an easy-to-use connection technology, lets you simply plug your camera to your computer. From there, your video software records the input to your hard drive. Video cards tend to be a little harder to use, but they operate on the same principle.

### Cinematizing your Web site

As with audio files, HTML gives you the option to link to a video file you've uploaded to the server or embed it to the Web page. Use the following code to pull off this bit of magic:

```
<embed width="100%" height = "100%" fullscreen="yes"
        src="welcome.mov">
```

Visitors need a plug-in for their browsers to play video, so be sure to link to the Web site for such plug-ins as [Apple's QuickTime](#) , [Real Network's RealPlayer](#) , or [Microsoft Windows Media Player](#) to help

### Technology for digital enthusiasts



#### » HP Media Center PCs

The next generation of home entertainment; access TV, movies, music and photos, when and how you want.

them see it. Once in place, it should look something like Figure 5-3.



Figure 5-3: A video of Leonard Nimoy singing an ode to Hobbits.

### **The streaming solution**

Add up the number of colors, image sizes and frames in just one minute of compressed video and you've got yourself a file with a download time that dwarfs that of audio files. Though that single minute of footage fits into a Web site just as easily as an audio file, it can take 148 minutes to download on a 56 Kbps modem, enough time to drive to the video store, pick out a movie, come back, freshen up in the bathroom as you make popcorn, and watch the rental.

How to get around this massive problem? Why, streaming, of course. The technology we covered above for audio works just as well and just the same for video. After converting the file in the .rm format, figure out if your ISP can stream. If not, try a streaming service like Real Networks.

### **Alternate animations**

If the thought of dealing with super-sized video files gives you a headache, you'll appreciate the manageability of animation. Byte for byte, the three main forms of Web animation can't be beaten for entertainment value, as discussed in the following sections.

## Animated GIFs

Sequences of images strung together in a single file and played as a loop are made with a GIF assembler, such as [GIF Construction Set](#) . The good news is you can plop them right in the Web site the same way you would a regular GIF: `` (or just let your Web site builder handle it). The bad news is the more images they animate, the larger they become and longer they take to download.

## Shockwave

Shockwave creates animations with interactive graphics, text, and sound, making it a popular format for cheap and easy throwaway games, like the one shown in Figure 5-4. Viewers need a plug-in to play Shockwave files, but most browsers come equipped with it these days. Given that Macromedia Director, which makes Shockwave files, costs \$1,000 and takes some time to learn, you may just want to tide yourself over with downloading free and legal Shockwave files to run on your Web site from such sources as [Shockwave.com](#) .

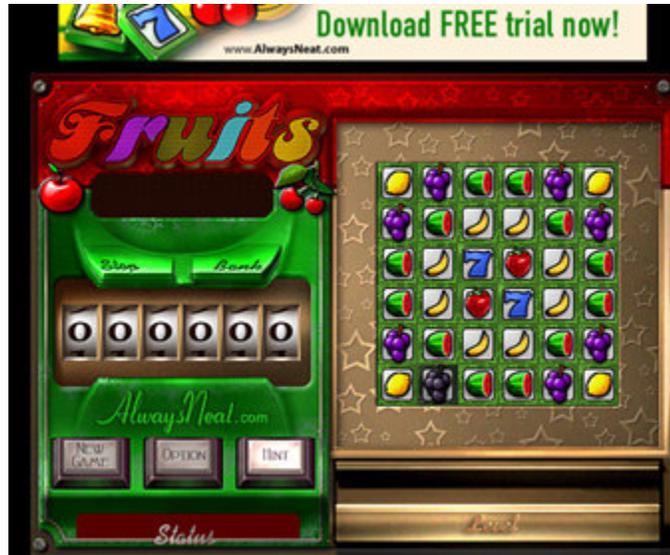


Figure 5-4: Fruits, a shockwave game on FreeArcade.

To embed a Shockwave file (which is saved in the `.dcr` format) on a Web page, plop in this code:

```
<embed src="myfile.dcr" width="300" height="300">
```

For Internet Explorer, use this longer bit of code:

```
<object classid= "clsid:166B1BCA-3F9C-11CF-8075-444553540000"  
        codebase= "http://active.macromedia.com/director/cabs/sw.cab">
```

```
width="300" height="300" name="shocked"
id="swmovie1"> <param name="src"
value="yourfile.dcr"> <embed src="yourfile.dcr" width="300"
height="300"> </object>
```

## Flash

A simpler form of animation, and for a far simpler price. **Flash**, also by Macromedia, costs \$300 and isn't as hard to learn as Shockwave. Its file sizes often turn out smaller than Shockwave files to boot.

Try this code to put Flash in your Web site:

```
<object codebase= "http://download.macromedia.com/pub/shockwave/cabs/
flash/swflash.cab#version=4,0,2,0" id="abc" width="500" height="143">

<param name="movie" value="images/flash.swf"> <param
name="quality value="high"> <param name="loop" value="true">
<param name="bgcolor" value="#ffffff">

<embed src="images/flash.swf" swLiveConnect="FALSE"
width="500" height="143" quality="high" bgcolor="#ffffff"
type="application/x-shockwave-flash"
pluginspage= "http://www.macromedia.com/shockwave/download/
index.cgi?P1_Prod_Version="ShockwaveFlash"></
embed> </object>
```

## What's your PowerPoint?

One of the oldest forms of multimedia, the slide show, still thrives on the Web, thanks in large part to presentation software such as Microsoft PowerPoint. This program provides an Internet assistant that turns presentations into HTML pages that look no different than they do in the program.

Converting PowerPoint presentations into HTML files is a breeze. Simply open the presentation and choose **File > Save as HTML**. From there, follow the Internet Assistant's instructions.

Figure 5-5 shows a screenshot of a PowerPoint presentation that's been saved as a Web page.

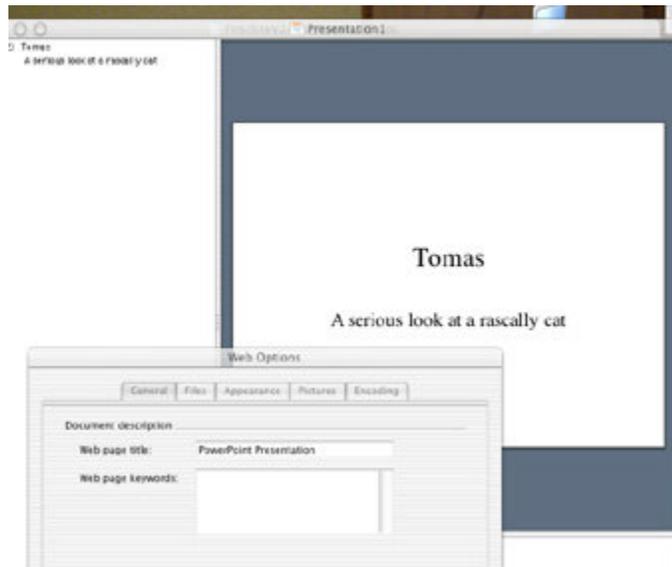


Figure 5-5: Using the Internet assistant to convert a PowerPoint presentation into a Web page.

And that's that. From there, you can upload the slide show so it plays as a page or create links to it. Be warned, though, that presentations with lots of animations and sound can take a while to download. Although you may find it convenient to load an existing PowerPoint file on the Web, your visitors may not. Turning the images and animations of your Web site into separate Web pages that users can peruse as easily as they could a PowerPoint document will save them time and grief.

### PDF-Fort

PDF (Portable Document Format) is the online standard for documents, a universal format for duplicating word processor and desktop publishing files that can be read by everyone who has a copy of the free and widespread Acrobat Reader application. The universality of this format makes it perfect for forms to be printed and filled out or large documents too bulky to read over the Web, since all users (regardless of their computer platform or ownership of a particular word processor) have easy access to it.

Putting PDFs on your Web site is a simple matter of uploading them and linking to them as you would any other page. Creating them is the tricky part. Well, not really. Most any document-producing application has a PDF function, like the **Create Adobe PDF** button in Microsoft Word. A handy [article](#) from Adobe details instructions for many of them.

### Moving on

You have a lot of multimedia-related goofing off ahead of you. I won't stand in your way, but I will ask that you eventually do the assignment, take the quiz, and visit the Message Board. Then I'll catch your act in Lesson 6.

[Next steps >>](#)

**Congratulations on completing the lesson! Don't forget the following:**

- » [Assignment:Mull over multimedia](#)
- » [Quiz:Lesson 5, quiz 1](#)
- » [Return to the lessons list to get a quick overview of the entire class](#)

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- [» Your classes](#)
- [» Contact us](#)
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- [» Digital Photography](#)
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**Product Support**

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- [» Register your product](#)

Assignments are designed to help you apply the information learned in the lessons.

**Mull over multimedia**

Multimedia doesn't belong on everyone's Web site. If you can't find a reason to include audio, video, and/or other multimedia on your Web site, don't both putting it there. And if you have thought up a use for any of these features, make sure you've thought carefully. Ask yourself if the content will keep users sticking around your site.

So that's your assignment this time around. Sit down and think up what multimedia you could put on your Web site and whether the site would be better off for it.

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## Lesson 5, quiz 1

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Hello, Truitt

- [» Edit profile](#)
- [» Sign out](#)

### Quiz: Lesson 5, quiz 1

Quizzes are designed to give you a chance to test your knowledge.

[» Online classes](#)

- [» Your classes](#)
- [» Contact us](#)
- [» FAQ](#)

#### 1. True or false: WAV is a video format.

- A.  True
- B.  False

- [» Digital Photography](#)
- [» Everyday Printing](#)
- [» Everyday Computing](#)
- [» Digital Entertainment](#)
- [» Activity Center](#)

#### 2. When does a streaming media file begin to play?

- A.  The computer has scanned, sniffed, shaken and stirred it
- B.  As soon as it starts downloading
- C.  When pigs fly

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#### 3. True or false: Believe me, the last thing you want to do is provide links to Web sites with plug-ins. You don't want those getting in the wrong hands.

- A.  True
- B.  False

**Product Support**

- [» Support & troubleshooting](#)
- [» Software & Drivers](#)
- [» Warranties & services](#)
- [» Register your product](#)

#### 4. Which solution will get a word processing document or desktop publishing file on the Web in a format all computers can read?

- A.  Put it in Adobe's PDF.
- B.  Contact an illegal document converter who will do the job for you in his underground lab.
- C.  Pray it all works out.

[Submit >>](#)

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» [Sign out](#)

### » Online classes

» [Your classes](#)  
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### Product Support

» [Support & troubleshooting](#)  
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[View your shopping cart](#)

### Web site basics

» [Lessons](#)  
» [Message board](#)  
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Welcome to your lessons. Some lessons may have quizzes or assignments for additional learning. Don't forget to join your fellow classmates and instructor on the message board.

### Lesson 6

» [View single page](#)

### About search engines and directories

The Web site's done. It's posted on the Web. So why is nobody (beyond friends, customers, or family who you've shown it to) stopping by? Because you haven't listed it with the major search engines and directories.

### A search by any other name

Search engine is one of those terms that people often misuse, like Frisbee for flying disc or Coke for soda. Once and for all, let me set the record straight:

- **Search engine:** A database of Web sites already found and categorized with a **spider** (see below). It may look like the engine is searching the entire Web when you enter a phrase in the keyword field, but in reality, it's scanning its databases for matches.
- **Spider :** An application that combs through the Web looking for your desired information. It browses as a human does, only far faster and more thoroughly, gathering information on a page then following all the links it finds there to new pages, where it gathered still more links.
- **Directory:** A listing of Web sites ranked and rated by humans. A few examples, include [Looksmart](#) , [Open](#)

### Great add-ons



### » Desktop PC accessories

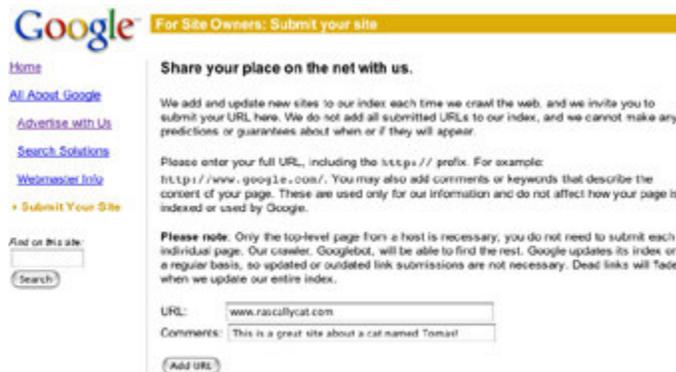
From software and storage to cables, mice, and keyboards, all the accessories you need for your HP desktop PC are available to make your desktop experience more personal, powerful, and attuned to your specific needs.

[Directory](#) (used by the likes of [AOL Search](#) , [Google](#) , [Lycos](#) , and [Netscape Search](#) ), and [Yahoo! Directory](#) .

## Web Site submissions

Although a spider would theoretically get to your Web site in due course, when you consider the millions of pages it has the comb through, you can see how it might take a while. Because spiders use links to conduct their searches, one way to boost your Web site's visibility is to crank up the number of links per page. A simpler and faster approach is to alert the major search engines, which will index your Web site, placing it in the spider's radar.

Figure 6-1 demonstrates how to submit to [Google](#) .



Google™ For Site Owners: Submit your site

Home  
[All About Google](#)  
[Advertise with Us](#)  
[Search Solutions](#)  
[Webmaster Info](#)  
+ [Submit Your Site](#)

Find on this site:

**Share your place on the net with us.**

We add and update new sites to our index each time we crawl the web, and we invite you to submit your URL here. We do not add all submitted URLs to our index, and we cannot make any predictions or guarantees about when or if they will appear.

Please enter your full URL, including the `http://` prefix. For example: `http://www.google.com/`. You may also add comments or keywords that describe the content of your page. These are used only for our information and do not affect how your page is indexed or used by Google.

**Please note:** Only the top-level page from a host is necessary; you do not need to submit each individual page. Our crawler, Googlebot, will be able to find the rest. Google updates its index on a regular basis, so updated or outdated link submissions are not necessary. Dead links will fade when we update our entire index.

URL:

Comments:

Figure 6-1: Go global by submitting that URL to Google.

You'll follow a similar procedure for the other major search engine Web sites. Just look for the **Submit Your Site** link. Among the other search engines to try:

- [AllTheWeb.com](#)
- [Teoma.com](#)
- [AltaVista](#)
- [MSN Search](#)

Submit your Web site map to a search engine -- its many links will make your site ever more visible on the Web.

Some directories, such as Looksmart and Yahoo! Directory, charge a fee for the privilege of submitting to them. Others, namely Open Directory, charge nothing, but don't guarantee a listing. You submit to either type of directory the same way you do

to a search engine. Go to [Open Directory](#) (since it's free, after all), navigate to the category that best fits your Web site, select **Add URL** in the upper-left corner of the page, and then fill out the form that asks for your URL, title, and description. And you're done.

Following the sign up instructions of any search engine or directory increases your Web site's chances of inclusion.

### **Search engine submission scam?**

So few search engines and directories operate these days, you can easily submit your Web site to the major ones in under an hour. Search engine submission services such as [SubmitIt.com](#) do the same work for a fee, although they can be worth the money -- many will finagle better placement on search engines than you could muster simply by submitting a Web site yourself. Think of them as agents, middlemen who broker you a better deal.

Then again, with a little extra work, you can save that money and vastly improve your site's ranking with Web sites through the miracle of meta data, the subject of the next section.

### **Miraculous metadata**

When simply listing your Web site with a search engine and directory doesn't give it the attention and traffic you crave, it's time to turn to **metadata**. Like human DNA, the HTML **meta tags** that hold metadata remain unseen to the casual viewer, but they hold vital information about the range of topics covered in the Web site.

### **Meta-controlling your Web site's search engine listing**

How about an example? BookPeople is a great independent bookstore in Austin, Texas, with a Web site that happens to use meta tags very successfully, as Figure 6-2 demonstrates.



Figure 6-2: Lurking beneath this innocent Web site is some powerful metadata.

Visit [BookPeople](http://BookPeople) and use the **View Source** command on your Web browser to see the following:

```
<HEAD> <TITLE>BookPeople | The Largest Bookstore
in Texas</TITLE>
```

```
<META NAME="keywords" CONTENT="bookpeople, bookstore,
coffeeshop, books, book, newspaper, newspapers, magazines, magazine,
read, reading, writing, write, bookkid, bookkids, publisher, publishing,
publishers, author, authors, children books, austin, texas, tx,
lamar, independent bookstore, books to read, story, stories, tales,
hardcover, papercover, hardback, softback, bookreader, bookreaders,
bookmark, gifts, accessories, herbs, coffee, store, health, title,
titles, subject, subjects, new age, religion, philosophy, science,
psychology, computer, computers, occult, bible, web, internet, crafts,
jewelry, stationary cards, card, cards, nonfiction, fiction, science
fiction, self-help, help, imports, audiotapes, books on tape, regional
titles, local, gifts, religions, drinks, aroma, research, study,
paperbacks, hardbacks, paperback, hardback, articles"> <META
NAME="description" CONTENT="BookPeople is an independent 4 stories
40,000 square feet bookstore located in Austin, Texas. It sells
books, magazines, books-on-tape, cards and stationary, jewelry,
and arts and crafts from around the world.">
```

Both the `keywords` and `description` attributes of the meta tag can make a huge difference in your Web site's search engine placement. You can dump as many terms as you like in the `keywords` -- whatever it takes to get noticed. The `description` can also help draw people your way, as a search for **bookpeople** on Google will

demonstrate. Figure 6-3 shows the results.

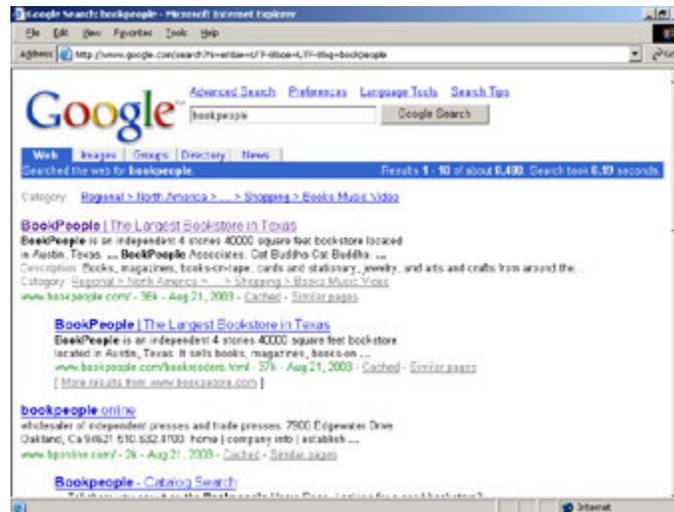


Figure 6-3: The results of searching for bookpeople on Google.

Does that text look familiar? The top line is the information listed in the <TITLE> tag, which also appears at the top of the window when you open the page. The second line has been taken directly from the description tag, giving readers an instant explanation of what the Web site's all about.

When a search engine returns results on a site, it lists what it finds in the <TITLE> tag and meta description tags. Both of these tags, then, are essential to making a good first impression.

If you've got the time, add meta tags to all your Web site's pages as time permits.

### Keywords are key

And don't forget the keywords part of the meta tag. Listing words or phrases relevant to your Web site help a search engine's spider categorize your site as it includes all the text and meta data it finds there. A site about rascally cats may never explicitly mention rascally cats, but if its metadata does, it goes straight to the top of the rascally cat heap. The more words -- no matter how obvious -- in meta tags, the better a site's placement in search engines. In other words, meta tags ensure your site gets listed the way you prefer.

**You should list any and every word remotely related to your Web site, even the obvious ones; however, using misleading keywords can get you in trouble. Although throwing in the names of your competitors may draw readers, the practice could get you kicked off a search engine.**

It's all in the promotion

Way back when, Web sites had the cash to promote themselves through Superbowl ads, blimp placements, and even sock puppets. Now they've turned to cheaper methods, some of which could be right for you.

- [Google AdWords](#) : The Web's leading search engine sells placement on its well-trafficked Web site, but wisely keeps the **sponsored links** clearly marked that way so as not to harm its integrity and lose its audience. Note in Figure 6-4 how the sponsored link up top is a **Premium Listing** . Premium Listings cost the most. Those links off to the right have been purchased through the more reasonable **Google AdWords**. This program charges you only when someone clicks your ad. After attracting a set number of clicks within your budget, Google pulls the link until you pay for another round.



Figure 6-4: A Google search turns up clearly demarcated sponsored links.

- **Link Swaps:** In this proven promotional technique, Web sites simply swap links, essentially recommending each other's sites to their readers. The approach works best for sites that complement each other but don't directly compete. To set up a swap, simply contact the site administrator (listed on the site) and ask. If the site wants you to post a link fancier than text, like a logo or button, ask for the same treatment in return. Link swaps will improve your Web site's traffic beyond the recommendations send its way. As mentioned above, search engines not only follow links to conduct their searches, some even rank sites based on the number links leading back to them, a better-than-nothing indicator of how worthwhile a site is to visit.
- **Constant Communication:** When promoting your Web site, sometimes word of mouth is the best way of gaining new customers. And how to get good word of mouth? Why, through good customer service, of course. Customers appreciate hearing from Web sites about where

## Digital photo, scanner and projector accessories



### » Digital camera cases and kits

Digital camera cases keep your camera safe as well as provide storage for memory cards and batteries.

their product is shipping and when it should arrive, as well as package tracking information. Clients of service sites appreciate status reports. Even readers of content sites that aren't selling anything like to get an update about new site content every now and again. Keeping folks in the loop keeps them coming back to your Web site and recommending it to friends.

### **This just in . . .**

The Web isn't static. It's constantly changing, growing, and shedding, and to be taken seriously on it, your Web site has to do the same right along with it. If you don't replace old content and spruce up your site in other ways every now and again, people will get bored with it and stop coming back. Even more distressing, some search engines may drop you if they don't detect any new activity over a period of time.

If you don't have much in the way of new material to add to your Web site, don't sweat it. You have other options for keeping things current:

- Monthly newsletters about your company, industry, field of interest, or, in the case of a personal Web site, family and friends.
- Monthly contests that entice readers back by playing on their greed.
- Bulletin boards or live chat areas that keep visitors coming back to keep up with discussions.
- Free giveaways if you're really desperate.

### **Syndication all right**

Rather than make you own content, let someone else do it for you. Various services out there provide syndicated text, photos, multimedia, and other content that you can run on your Web site for a fee. A few, like [FreeSticky](#), offer its wares from over 1,000 sources for free. Once you sign up and plop its code in your Web site, the content will start flowing in.

### **Affiliation**

To give the illusion of staying current and to make some green on the side, sign up with an affiliate program. Doing this allows you to offer an ever-changing catalog of products from a larger e-commerce site. Bonus: you get a cut of the take every time you send business to the site. When someone follows a link from, say, [rascallycats.com](#), to an exotic cat food supplier, the supplier gets the sale but you get a small percentage.

Look over some of the affiliate programs out there with a visit to [Linkshare](#), featured in Figure 6-4.

<p>Clients</p> <hr/> <p>Selected Client List</p> <hr/> <p>Extended Client List</p>	<p>LinkShare supports the broadest client base in the industry. Over 600 premiere online Merchants use LinkShare to build, manage and track the success of their pay for performance marketing programs.</p> <hr/> <p>Selected merchants in our network:</p> <hr/> <div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="text-align: center; margin: 5px;">  </div> <div style="text-align: center; margin: 5px;">  </div> <div style="text-align: center; margin: 5px;">  </div> <div style="text-align: center; margin: 5px;">  </div> <div style="text-align: center; margin: 5px;">  </div> <div style="text-align: center; margin: 5px;">  </div> <div style="text-align: center; margin: 5px;">  </div> <div style="text-align: center; margin: 5px;">  </div> <div style="text-align: center; margin: 5px;">  </div> <div style="text-align: center; margin: 5px;">  </div> <div style="text-align: center; margin: 5px;">  </div> <div style="text-align: center; margin: 5px;">  </div> <div style="text-align: center; margin: 5px;">  </div> <div style="text-align: center; margin: 5px;">  </div> </div>
--	--

Figure 6-5: A world of affiliate programs awaits through Linkshare.com.

**Affiliate with caution. Your visitors may appreciate finding products related to your industry or field of interest on your Web site. Then again, they may treat the affiliate link as crass advertising. Figure out what your audience can tolerate regarding affiliate advertising before adding it to your Web site.**

### Moving on

Proclaiming your Web site's greatness through these methods is one thing, but people won't keep coming back unless you've put your content where your mouth is. Next up, we'll learn how to keep their interest through interactivity . . . after the assignment, quiz, and a Message Board visit.

**Next steps >>**

**Congratulations on completing the lesson! Don't forget the following:**

- » Assignment: Keywords are key
- » Quiz: Lesson 6, quiz 1
- » Return to the lessons list to get a quick overview of the entire class

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Assignments are designed to help you apply the information learned in the lessons.

**Keywords are key**

1. Hunt down five Web sites that complement but don't compete with your Web site and collect their contact information to ask about link swaps.
2. Enter your Web site's title and description at the beginning of its HTML code.
3. In the **keyword** section of your HTML code, think up 25 to 40 keywords relevant to your Web site.
4. Cut and past these meta tags on every Web page.

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## Lesson 6, quiz 1

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### Quiz: Lesson 6, quiz 1

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### 1. What's a search engine?

- A.  A search engine searches for Web sites from a database compiled with a spider program.
- B.  An amazing technology scientists hope will eventually replace the combustible engine.
- C.  The thing that keeps hunting parties going until they've found what they're looking for.

### 2. True or false: Meta tags are essential for every Web site.

- A.  True
- B.  False

### 3. Which of the following is a good way to build a community of loyal customers for your Web site? (Check all that apply.)

- A.  Great customer service
- B.  Adding a bulletin board or chat feature
- C.  Bad customer service
- D.  Adding an affiliate program

### 4. True or false: There's no better way to get your Web site noticed than to pay a search engine submission service to do the work for you.

True

A.

B.  False

**Submit >>**

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Welcome to your lessons. Some lessons may have quizzes or assignments for additional learning. Don't forget to join your fellow classmates and instructor on the message board.

### Lesson 7

» [View single page](#)

#### A brief history of Web interactivity

Clicking links, the Web's "Gimme That" option for computer users, is the earliest and most basic form of online interactivity. But it wasn't enough. Though an extremely important and useful form of interactivity, Web site developers soon needed a way to get more information from visitors and do more with it.

HTML (Hypertext Markup Language) forms and CGI (Common Gateway Interface) came to the rescue just in time. Words, pictures, and sound are great, but regular HTML and multimedia can't handle some of the more useful Web services such as search engines, e-commerce (electronic commerce), Web-based e-mail, and instant polls. These helpful functions wouldn't exist without HTML forms and CGI.

#### CGI defined

CGI, or Common Gateway Interface, allows a Web server to send data to, and receive data from, other programs. When you fill out and submit an HTML comment form on a Web site, the data goes to the Web server, which could pass it along to, say, an e-mailing program, which in turn passes your message on to the owner of the Web site, which in turn tells the Web server to tell you that your comments have been sent. Figure 7-1 shows this process.

#### Upload your pictures in a snap



#### » HP Photosmart M-series dock

Want to make it easier to transfer photos and video clips to your PC from your camera, print them, and pass them along via e-mail? The HP Photosmart M-series dock is the answer.

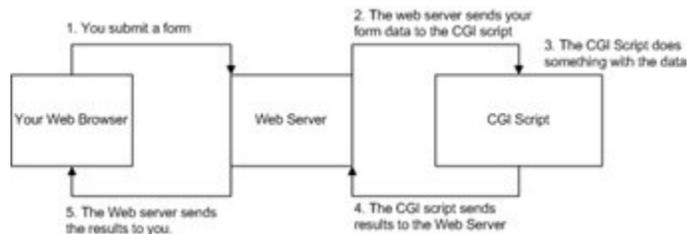


Figure 7-1: CGI Makes interactivity possible.

Programs that can talk to a Web server are often called CGI scripts. Web servers store them in special areas. UNIX servers store CGI scripts in a special directory called the **cgi-bin**.

### Where can I get some CGI scripts?

You can create CGI Scripts, download them, buy them, or, if you're lucky, use or adapt those provided by your ISP. However you get your CGI scripts, your ISP must allow them to be run on the Web server. In some cases, that's a simple matter of the ISP giving you access to the **cgi-bin** directory. In others, the ISP's tech support staff gives you the permission you need to include CGI scripts within the hierarchy of your Web site. Finally, to use CGI scripts, you need to learn how to link them to your Web pages, and build forms and other HTML-based items that connect to the CGI scripts you want to use. We'll explore that as we move on.

### Add a counter to your Web site

When it comes to CGI scripts, perhaps the most simple and ubiquitous is the common counter, keeping tabs on how many people have visited a Web site. Hundreds of scripts have been written to perform this task, but the basic functionality is always the same, as are the instructions they follow:

1. When someone visits this Web page, wake up and open the count file.
2. Read the number in the count file. This is the number of visitors prior to this visit.
3. Add 1 to the number from the count file.
4. Write the new number to the count file and save it.
5. Show the new number to the visitor.

To find out about and compare various counters, just Google the term "free Web counter." Counters are so simple and widely available that you can put them on your Web site in a number of ways. Some of these methods don't require anything more complex than cutting and pasting a few lines of HTML into a Web page. In these cases, the actual CGI script is hosted on a separate server so you needn't worry about contacting your ISP about it.

## Install a CGI Script the hard way

But just to be on the safe side, let's cover how to install a CGI script on a UNIX server (the most common type of server) the old-fashioned way.

The basic process for installing most CGI scripts (including this one) on a UNIX server (provided that you have access to the cgi-bin) is as follows:

1. Open any files that the instructions indicate require customization and make the necessary modifications.
2. Upload the files to the places on the server that the installation (or README) file indicates.
3. Set file permissions as indicated in the script's installation instructions. File permissions are set on UNIX servers using the **chmod** command. You'll often see permission expressed as a three-digit number (755, for example). Your FTP (File Transfer Protocol) program can help you with setting file permissions.

Setting file permissions on a Windows server requires administrative access to the server and cannot be done through an FTP program. If your Web site is on a Windows server, talk to your server administrator or your ISP's technical support department to get help with configuring and installing CGI scripts.

2. If you've done everything right, your script should work. If not, double-check everything.

Installing CGI scripts can be frustrating, but give it enough time and you'll be fine.

One of the most common errors that people make when installing CGI scripts is to upload text data as binary data. Because of the difference between how text and binary data (such as images) are transferred over the Internet, FTPing text data as binary will make the file unreadable to the server. Script files, such as those that end in .pl or .cgi, should always be uploaded in text (also known as ASCII) mode.

## Everybody's talking

Counters may be useful tools and all, but it's hardly the sort of thing to draw the masses and bring them back repeatedly to your Web site. A much more effective way to gain and retain visitors is by making your site the nexus for a community. People like to talk to other people (some even prefer to do their talking through the safety of a keyboard and monitor). If your Web site gets a good conversation going, people will return.

A **message board** lets visitors engage in discussions. You've probably visited and even chatted in a few of them, but you may not be away that two different types of this medium exist: linear

**Preserve, transport and share**



» **HP dvd840e super multi DVD writer**

and threaded. Let's take a look at each.

- **The threaded message board:** This type of message board, shown in Figure 7-4, organizes messages in outline form, dividing the posts into topics and subtopics, followed by responses to the subtopics.

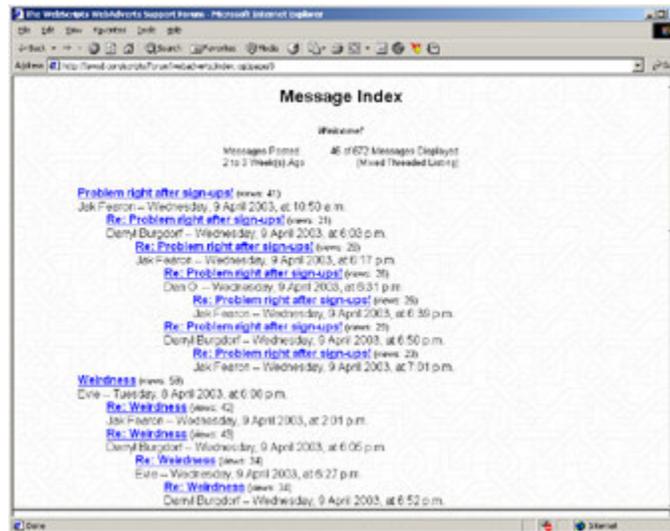


Figure 7-4: A threaded message board.

Threaded message boards have gone out of favor in recent years, maybe because most people just don't naturally think or hold conversations in such an organized way.

- **The linear message board:** This type of message board, shown in 7-5, displays messages in chronological order, making a perusal of posts feel like a natural conversation. The drawback here is that discussions never seem to get too in depth.

share up to 8.5GB of video, photos, and multimedia presentations on one double-layer disc -- and quickly store, back up, and transport files on DVDs and CDs. This external, high-speed Super Multi drive features DVD±R/±RW and DVD-RAM read/write, plus ±R double-layer capability. And the dvd840e has a newly upgraded version (1.2) of LightScribe direct disc labeling!

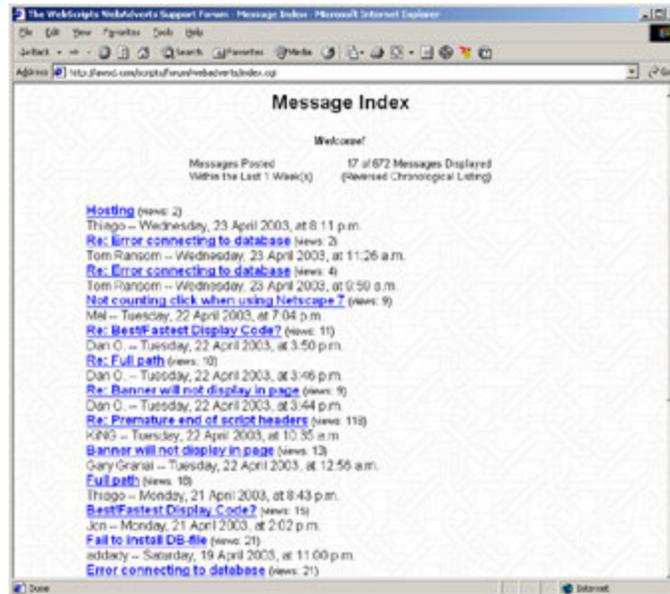


Figure 7-5: A linear message board.

### How to install a message board

We had it easy installing counter scripts -- hooking up a message board is a bit more complicated, though some are simpler than others. One particularly easy-to-install message board is [AnyBoard](#). Not only is AnyBoard free, it provides an online installer. Simply download the **Download anyboard\_free.zip script** and unzip it with WinZip or some other program. In the folder that appears, open **install.txt** and follow its instructions.

### Feedback: guestbooks and forms

People put guestbooks on their Web sites for the same reason they set them out at weddings: it serves no real function, but it's nice to hear from people. Unlike message boards, guestbooks don't have usually topics. Hence, the postings aren't quite as well thought out, as the example guestbook in Figure 7-6 demonstrates.

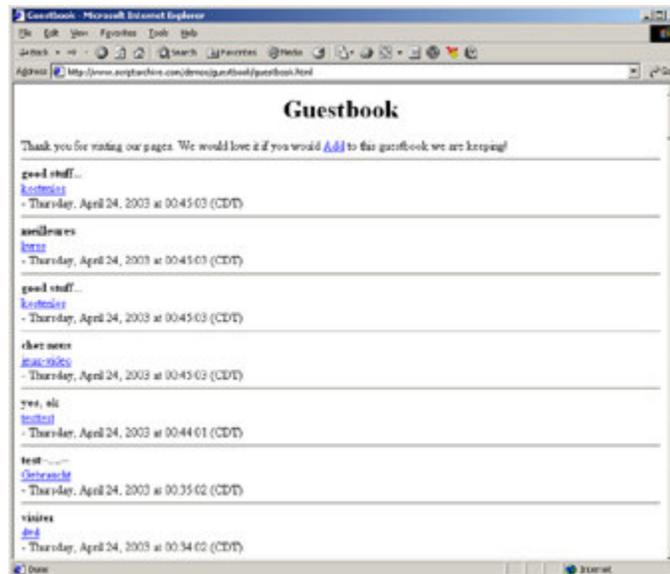
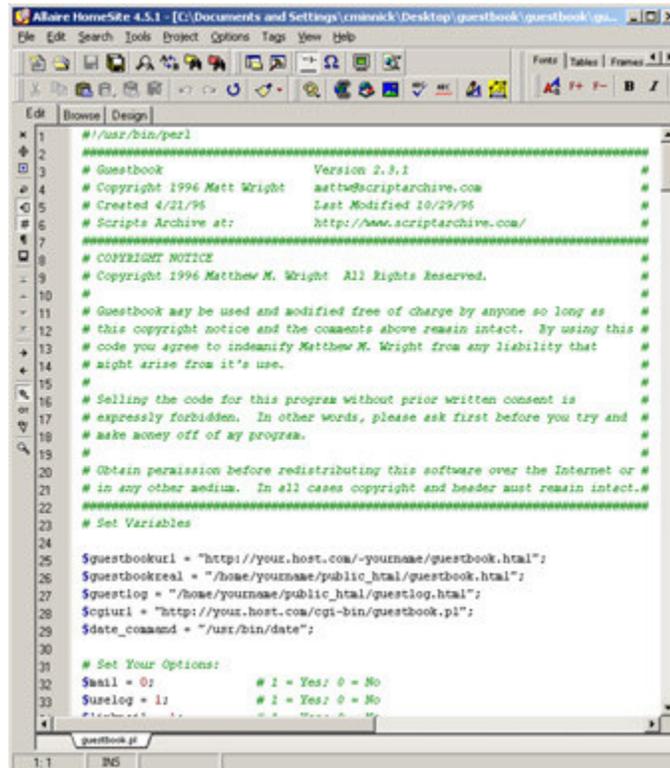


Figure 7-6: A guestbook.

[View a larger version](#) of this image.

The [Script Archive](#) contains not only guestbook files to download, but also complete working instructions for implementing them on your own Web site. In addition to the three HTML files you'll need to start a guestbook, you'll need another type of file, **Guestbook.pl**. The PL extension stands for **Perl**, a scripting language; the nitty gritty of which is shown in Figure 7-7.



```
Altaire HomeSite 4.5.1 - [C:\Documents and Settings\cmanick\Desktop\guestbook\guestbook\perl...
File Edit Search Tools Project Options Tags View Help
Format Tables Frames
Edit Browse Design
1 #!/usr/bin/perl
2 #####
3 # Guestbook Version 2.3.1
4 # Copyright 1996 Matt Wright mattw@scriptarchive.com
5 # Created 4/21/96 Last Modified 10/29/96
6 # Scripts Archive at: http://www.scriptarchive.com/
7 #####
8 # COPYRIGHT NOTICE
9 # Copyright 1996 Matthew M. Wright All Rights Reserved.
10 #
11 # Guestbook may be used and modified free of charge by anyone so long as
12 # this copyright notice and the comments above remain intact. By using this
13 # code you agree to indemnify Matthew M. Wright from any liability that
14 # might arise from it's use.
15 #
16 # Selling the code for this program without prior written consent is
17 # expressly forbidden. In other words, please ask first before you try and
18 # make money off of my program.
19 #
20 # Obtain permission before redistributing this software over the Internet or
21 # in any other medium. In all cases copyright and header must remain intact.
22 #####
23 # Set Variables
24
25 $guestbookurl = "http://your.host.com/~yourname/guestbook.html";
26 $guestbookreal = "/home/yourname/public_html/guestbook.html";
27 $guestlog = "/home/yourname/public_html/guestlog.html";
28 $cgiurl = "http://your.host.com/cgi-bin/guestbook.pl";
29 $date_command = "/usr/bin/date";
30
31 # Set Your Options:
32 $mail = 0; # 1 = Yes; 0 = No
33 $uselogs = 1; # 1 = Yes; 0 = No
34 #####
```

Figure 7-7: The guestbook.pl Perl script.

To set up the guestbook on your Web site, follow these steps:

1. Download all files from the [Script Archive](#) Web site.
2. In a word processor or Web authoring application, edit the HTML files to suit your requirements.
3. Alter the Perl file to point to your Web directory, following the instructions in the README file.
4. Upload the HTML files to your Web site directory.
5. Upload the Perl file to your **cgi-bin** directory.
6. Set the file permissions as specified in the **README** file (using **chmod**).

Once a visitor types something into the guestbook and hits the Submit button, the Perl script takes the input and stores it in the **guestbook.html** file.

If you don't have the time or inclination to learn to set up or customize CGI scripts yourself, your ISP may be able to do it for you.

### Database of operations

If you're building a Web site that uses large amounts of organized data (a business directory, for example), you should consider using a database. A number of these helpful doo-hickeys are available out there, ranging from the simple and cheap to the complicated and pricey. Before we get into the particulars of using them, let's cover some database basics.

### I can relate

Most Web sites use **relational** databases, a type of database that organizes information by dividing it into sets that relate to one another. For example, you decide to create a database for an online store. The information you want to capture is:

- Customer information
- Product information
- Order information

In a relational database, each of these types of information would be stored in a separate table. A **table** stores data in a tabular form -- like a spreadsheet. The rows in a database table are called **records** and the columns are called **fields**.

The Customer table, then, might have the following fields:

- CompanyName
- ContactName
- ContactTitle
- Address
- City
- PostalCode

Each customer has a unique row, or record in the table, as shown in Figure 7-8.

### Keep track with your handheld



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Take your favorite songs, videos, and Web sites everywhere you go. The versatile HP iPAQ hx2495 Pocket PC offers just the right mix of performance, security, connectivity, and expandability.

CustomerID	Company Name	Contact Name	Contact Title	Address	City	Region	Postal Code
ALFKY	Alfreds Futterkette	Hanna Anders	Sales Representative	Obere Str. 57	Berlin	<NULL>	12209
ANATR	Ana Traktors Langene	Ana Trujillo	Owner	Avda. de la Constit. Mexico 3 P.	Mexico D.F.	<NULL>	06021
ARCTC	Arctic Mountain Tr	Antonio Moreno	Owner	Padreslos 2332	Madrid	<NULL>	28023
ARCTI	Arctic Iceberg	Thomas Hardy	Sales Representative	120 Harbour St.	London	<NULL>	WA1 1DP
BOLID	Berglunds snabbkop	Christina Berglund	Order Administrator	Bergsgatan 8	Luleå	<NULL>	S-951 22
BOLID	Blaug See Delikatessen	Hanna Pösch	Sales Representative	Pöschstr. 57	Mannheim	<NULL>	68306
BONAP	Bonaparte's pörre	Frédérique Citeaux	Marketing Manager	24, place Kléber	Strasbourg	<NULL>	67000
BOLID	Bólido Comidas exót	Marta Zommer	Owner	C/ Alvarez, 67	Madrid	<NULL>	28002
BONAP	Bon Appetit	Lauraanne Lehtinen	Owner	12, rue des Saussa	Montréal	<NULL>	13006
BOTTN	Boston-Ödalar	Mark Elizabeth Lincoln	Accounting Manager	23 Tavastrevägen Blvd	Toronto	BC	T2P 0W4
BSBEV	B's Beverages	Victoria Ashworth	Sales Representative	Fauntleroy Circus	London	<NULL>	EC2 2NT
CACTI	Caixa Condeixa de	Patrício Simões	Sales Agent	Centro 312	Buenos Aires	<NULL>	1218
CHOP	Centro comercial	Antonio Chang	Marketing Manager	Yusen de Szwarc	Mexico D.F.	<NULL>	06022
CHOPS	Chop-quey Cheeses	Kiang Wang	Owner	Hauptstr. 28	Bonn	<NULL>	53112
COMP3	Comércio Mineiro	Pedro Afonso	Sales Associate	Av. dos Lulistas, 1	Sao Paulo	SP	05132-043
CONSO	Consultores Madri	Díaz del Bernal	Sales Representative	Berkeley Gardens 1	London	<NULL>	W6J 8ET
CRACK	Cracknell Ltd	Sven Ottob	Order Administrator	Waterloo 21	Aachen	<NULL>	52066
CRJOK	Crunchyroll	Jurina Lubrano	Owner	40, rue des Grands	Paris	<NULL>	75009
CRSTC	Eastern Connector	Alex Deven	Sales Agent	35 King Street	London	<NULL>	W52 0EW
FRNKR	Franz Handel	Rolfred Wendel	Sales Manager	Königsplatz 6	Graz	<NULL>	8018
FAMIA	Familia Argentina	Ana Cruz	Marketing Associate	Rua Oscar, 47	Sao Paulo	SP	05442-033
FISMA	FISSA Fabrics	Yoko Degu Tsui	Accounting Manager	C/ Peribarras, 96	Madrid	<NULL>	28004
FOLSI	Folies gourmandes	Martine Rayet	Assistant Sales Ag	124, boulevard de	Lille	<NULL>	59000
FRUIT	Fruit of the Loom	Helen Lysson	Owner	Åsögatan 24	Stockholm	<NULL>	S-141 461

Figure 7-8: A customer table.

View a [larger version](#) of this image.

Each customer in the Customers table might be associated with, or related to, multiple orders in the Orders table. Each order might contain multiple products. You could also say that products might be associated with multiple orders. Or, in other words, more than one customer can order any one product. At this point, you're probably completely confused. That's why it's helpful to carefully plan any database and use diagrams. Figure 7-9 shows a simple diagram of our store database.

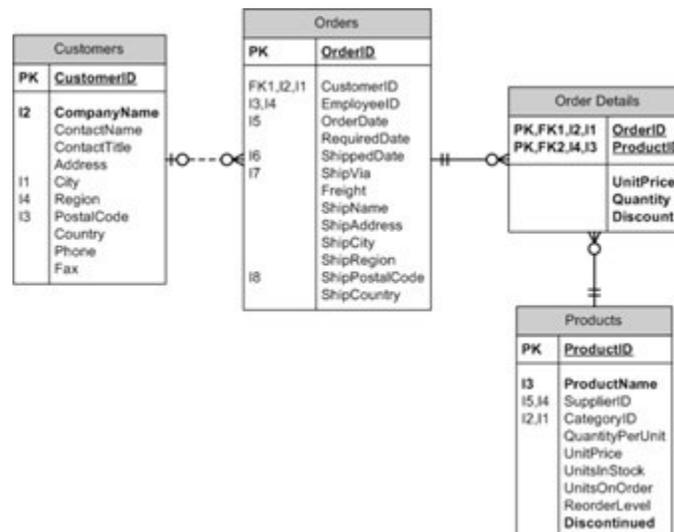


Figure 7-9: A simple diagram of our store database.

View a [larger version](#) of this image.

In this diagram, we added a table called Order Details, which serves as a connector between products and orders. This allows the Orders records to store information about just the order, such as when the order was placed and where it will be shipped. A unique piece of information called a **key** identifies information from one table when it appears in another. For example, each customer has a CustomerID, and each Order has an OrderID. When you want to associate an order with a customer, you only need to put the Customer's CustomerID in the order record. Therein lies the magic of relational databases.

In the real world, database contents and relationships are far more complicated than this simple example. Trained experts, known as database administrators, know all the tricks and techniques of making relational databases tick.

### **How are databases used on the Web?**

Most Web databases are invisible to the user, but critical to the Web site owner. Even before you scan a site for movie or restaurant listings, you'll interact with the database that makes the site possible. The stories and blurbs you see are stored in records within a database and assembled behind the scenes on the Web server to create the page you see in your browser.

### **From simple to complex**

Adding databases to a Web site isn't easy. It's a complex and costly process requiring a programmer or database expert who can not only create the database, but also build the **front-end** interface, the links between the database and the Web server viewed by a site's visitor.

Don't skip this lesson on that account. With a little work, you can give your Web site visitors access to information stored in a database without building a full-blown database on the Web.

Many database applications have let users publish database information on the Web through a simple **Save As HTML** command.

Databases built in Microsoft Office are translated into HTML tables easily enough the **File > Export** option, as shown in Figure7-10. (It's not pretty, but it can be customized.)

ID	Name	Description	Price	Image URL
1001	Chocolate City Milk	Chocolate City Milk Description	\$2.00	/apple/images/vb05.gif
1002	Devil Brand 2% Milk	Devil Brand 2% Milk Description	\$1.19	/apple/images/vb01.gif
1003	Fruity Farms Milk	Fruity Farms Whole Milk Description	\$1.29	/apple/images/vb04.gif
2001	Fruity Pops	Fruity Pops Description	\$4.07	/apple/images/vb07.gif
2002	C.F.O.s Cereal	C.F.O.s Cereal Description	\$3.34	/apple/images/vb02.gif
2003	Healthy Green Cereal	Healthy Green Cereal Description	\$3.79	/apple/images/vb03.gif
2004	Sweet Sugar Sticks	Sweet Sugar Sticks Description	\$4.17	/apple/images/vb06.gif
3001	Purple Rais	Brown Raisin Raisin Description	\$1.19	/apple/images/vb04.gif
3002	Extreme Orange	Extreme Cola Description	\$0.89	/apple/images/vb04.gif
3003	Evil Don Cola	Sweet Don Cola Description	\$1.19	/apple/images/vb07.gif
3004	Fizzy Fizzing Drink	Evil Don Cola Description	\$1.05	/apple/images/vb04.gif
1000	Mangold Whole Milk	Mangold Whole Milk Description	\$1.39	/apple/images/vb05.gif

Figure 7-10: Converting Access data to HTML.

View a [larger version](#) of this image.

### Live data integration

Giving visitors access to your database is all well and good, but that's not really interactive, and that's what this lesson is about, no? To set up a database visitors can add and extract information from, you'll need a database application

As you go database shopping, ask yourself these questions:

- What's my budget for the database?** Professional database applications such as Oracle and Sybase aren't cheap, either to purchase or to maintain. In most cases, you'll need to hire a professional DBA (database administrator) to manage database systems of this variety. Fortunately, most small businesses don't need an Oracle-sized solution. Microsoft Access and FileMaker Inc.'s FileMaker Pro are both easier solutions better suited to us mere mortals -- and cheaper, too. Both have friendly interfaces and export easily to the Web.
- Where will I run the database?** To make database content available on your Web site, the database must be hosted on a Web server. Many business-oriented ISPs provide the access and tools you need to make this happen, but at a price. In some cases, access to the **cgi-bin** directory may be enough. But if you're creating a high-end database, you need more direct access to the Internet

-- either via your own Web server, or through your ISP.  
When you're ready to add a database to your Web site, get your ISP to tell you how much you'll have to pay.

- **What platform do I want to use for the database?** Since your Web server will be hosting the database, they must be compatible with each other, which means they must use the same operating system. Most high-end relational databases are available for Windows NT, UNIX, and Linux, Access runs on modern Windows operating systems (since Windows 95) and FileMaker comes in Windows and Mac OS versions.

### Moving on

Of all the possible uses for CGI scripts and Web forms, few have proven so successful as e-commerce, the subject of our next lesson. Before we explore how the Web can you convince your Web site's visitors to part with their money, do the assignment, take the quiz, and peruse the Message Board.

[Next steps >>](#)

### Congratulations on completing the lesson! Don't forget the following:

- » [Assignment:Let's get interactive](#)
- » [Quiz:Lesson 7, quiz 1](#)
- » [Return to the lessons list to get a quick overview of the entire class](#)

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- [» Your classes](#)
- [» Contact us](#)
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- [» Digital Photography](#)
- [» Everyday Printing](#)
- [» Everyday Computing](#)
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- [» Activity Center](#)

[Browse & Buy](#)

- [» Home & Home Office Store](#)
- [» Rebate Center](#)

[Product Support](#)

- [» Support & troubleshooting](#)
- [» Software & Drivers](#)
- [» Warranties & services](#)
- [» Register your product](#)

Assignments are designed to help you apply the information learned in the lessons.

### Let's get interactive

Not to sound discouraging by any means, but most anything you want to do on your Web site has probably already been done somewhere before. The great thing about the Web is that everyone on it learns new tricks from everyone else. As a result, many programmers openly share their work with other programmers for no charge. Once you've tackled the basics of installing CGI scripts, there's no end to what you can accomplish.

Your assignment is to visit [Script Search](#) and browse through the Perl scripts. If you're using a Windows server, browse the ASP scripts. Find some free scripts that sound interesting, download them, and try installing them on your Web site. Be sure to read the instructions carefully.

If you get stuck, don't be afraid to seek out help on the Message Board or elsewhere on the Web. Programmers are by and large a friendly and helpful bunch and don't mind helping others, especially if it gives them a chance to talk ad nauseum about computers.

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## Lesson 7, quiz 1

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### Quiz: Lesson 7, quiz 1

Quizzes are designed to give you a chance to test your knowledge.

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- [» Your classes](#)
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- [» FAQ](#)

#### 1. What two things make interactivity possible on the Web?

- A.  E-mail and message boards
- B.  A modem connection and lots of coffee
- C.  Forms and CGI

- [» Digital Photography](#)
- [» Everyday Printing](#)
- [» Everyday Computing](#)
- [» Digital Entertainment](#)
- [» Activity Center](#)

#### 2. What's Perl?

- A.  One of those grunge bands from Seattle
- B.  A programming language
- C.  A hilarious new sitcom about a brassy mother of three dealing with life in today's mixed up world

**Browse & Buy**

- [» Home & Home Office Store](#)
- [» Rebate Center](#)

#### 3. True or false: Linear Message boards organize messages by topic.

- A.  True
- B.  False

**Product Support**

- [» Support & troubleshooting](#)
- [» Software & Drivers](#)
- [» Warranties & services](#)
- [» Register your product](#)

#### 4. True or false: Counter scripts typically use relational databases and installing one requires the services of a database consultant.

- A.  True
- B.  False

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### Web site basics

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Welcome to your lessons. Some lessons may have quizzes or assignments for additional learning. Don't forget to join your fellow classmates and instructor on the message board.

### Lesson 8

[» View single page](#)

### E-commerce essentials

E-commerce, the buying and selling of things online, has turned into a regular part of the business world. Small and large businesses alike have brought capitalism to the Web, and they won't be leaving any time soon. In this lesson, you'll learn how to get your piece of the pie.

### Types of e-commerce

E-commerce comes in three flavors:

- **B2C (Business to Consumer):** Web sites set up by a business to sell products directly to consumers, like [Powell's City of Books](#) in Figure 8-1.
- **B2B (Business to Business):** Web sites built by a business to sell goods to another business. [Dell's](#) site has a B2B area alongside its a B2C section.
- **C2C (Consumer to Consumer):** Web sites in which consumers sell to other consumers, like [eBay](#) and [Amazon Marketplace](#). The C2C Web site itself is typically a business that makes money off commissions or listing fees.



Figure 8-1: Powells.com is a B2C Web site.

View a [larger version](#) of this image.

We'll be focusing on B2C (and a little B2B for good measure).

### Your e-commerce plan

Before taking your Web site into the land of e-commerce, consider the following:

- **What you're going to sell:** If you own a small business, you know this already. If not, think of something. Remember that the same market forces of the brick-and-mortar world apply to the Web. Do some research to find out what sells.
- **Know your competition:** While you're researching the market, take a look at your competitors. Can you beat an established online retailer like Powells at its own game? You might if you can figure out a particular niche, or a way to offer better prices or speedier delivery. Whatever you do, make sure you have an edge.
- **Get access to the products you want to sell:** If you don't already have a business, you may not know where to get the products you want to sell at wholesale prices. You can track down several manufacturers and distributors at [Thomas Register](#) .
- **Promote your Web site:** Real-world retail has the Web licked when it comes to foot traffic, a.k.a. **walk-ins** . Human beings are much more likely to wander into a store than a Web site. No one will come to your store unless they know about it through the promotion techniques covered in Lesson 6.

These Web sites cover e-commerce -- perfect for boning up on the industry:

- [E-Commerce Times](#)
- [E-Commerce News from Internet.com](#)

- [Business 2.0's E-Commerce News](#)

### Online selling strategies

You won't succeed selling online unless you treat your e-commerce Web site as you would a shop on Main Street. Many of the same methods behind running a real-world store apply -- in translated form -- online.

### Present your products

Unless you already have all of your product data in a database, you may want to only sell a subset of your product line on the Web. Otherwise, you'll be in store for a lot of typing. Figure out which of your wares would sell best online.

Once you've figured that out, photograph the goods. Potential customers want to see what they're buying, especially when ordering online. A digital camera will come in handy here, but be sure to take the time to set up the lighting and layout for the photo so it looks as professional as possible. Or just hire a photographer.

### The customer is always right

Like we covered in Lesson 6, you'll never go wrong with good customer service. That's especially true when it comes to e-commerce, where other, more responsive Web sites are mere clicks away.

A few customer service essentials to remember:

- **E-mail communication:** You should set up your Web site to generate a confirmation e-mail for each order placed. This lets the customers know the order has been received and is being processed. Subsequent e-mails should let them know when their order has shipped, when to expect it, and how to track the package online. When you first start out, you can send these e-mails yourself. But, as business picks up, setting up a program to do it automatically will ease your life considerably.
- **Help and/or FAQ pages:** Include an obvious link to a Help or FAQ (Frequently Asked Questions) page, or both. These should contain instructions for using every aspect of your online store and contact information (preferably both e-mail and phone number, if you can provide phone support).
- **Shipping options:** Give your customers as many shipping options as possible to suit their needs and budgets. Major

### Space-saving flexibility



#### » **HP Officejet 7310 all-in-one**

Want the ability to do it all? The HP Officejet 7310 has all the functionality you need, including networking, reviewing and "fixing" photos on its 2.5" color display, printing on a wide range of paper sizes, automatically printing on both sides, and even printing from a wireless camera phone.

shippers will discount shipment fees for businesses that send a lot of volume, and you can pass these savings on to your customer.

- **Save room to ramp up:** Be prepared for sudden changes, such as a rapid increase in Web site traffic and sales. Also have a plan for hiring extra warehouse workers and shipping clerks, even temporarily, as business demands. And last but not least, choose an ISP with the technical resources to grow with you from the get-go.

Your Web site has the potential to be seen by the world, so consider how to handle International orders. Some U.S. retailers limit online sales to North America, a logical approach, but one that can prove limiting. You may find participating in the global economy worth the extra effort.

### The miracle of shopping carts

Before you can see anything on your Web site, you'll need shopping cart software for your potential shoppers.

As in the real world, online **shopping carts** let customers store products they've chosen until they're ready to complete the transaction. They also make it easy to set the quantity of items to be purchased and handle calculating the shipping charges and tax, as well as payment verification.

### Step-by-step shopping

Here's how a shopping cart works:

1. The customer visits a Web site, searches or browses for products, and views a page displaying a product in detail. In Figure 8-2, Powells.com is selling a book. Notice the **Add to Cart** button below the price listed in the box next to the picture of the product.

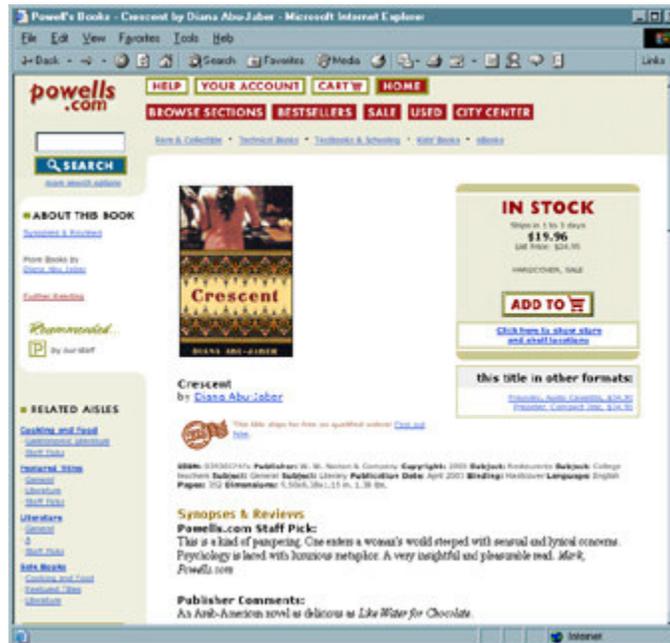


Figure 8-2: A typical e-commerce product Web page: Powells.com.

View a larger version of this image.

2. After the shopper adds the product to his cart, a summary page appears, as shown in Figure 8-3. Here the shopper can change quantities or delete one or more items. Once the shopper moves to the checkout section of the Web site, the transaction activity takes place. The shopper enters contact information and that all-important method of payment. At each step in the process, the shopper can cancel the order or buy later.
3. Finally, the order is completed. Most retailers send e-mail confirmation of the order, as well as customer service information in case something goes wrong.

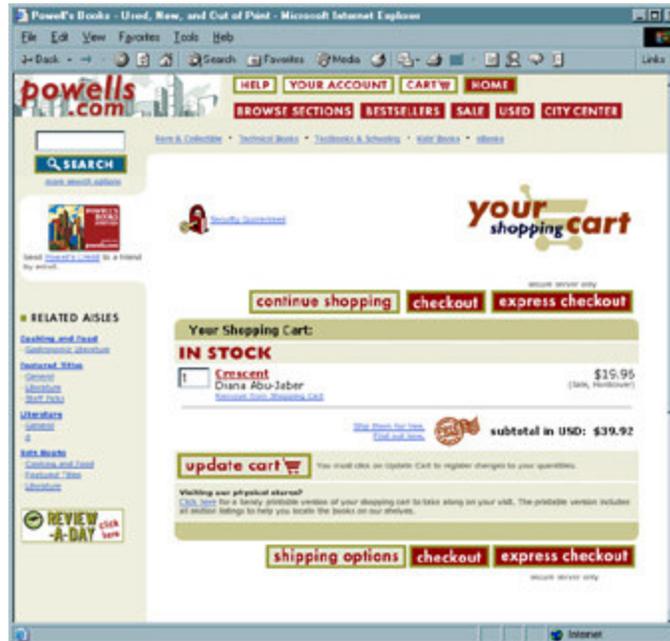


Figure 8-3: The shopping cart on Powells.com.

View a [larger version](#) of this image.

### Let your software do the selling

Does e-commerce suddenly sound daunting? It won't once you get a decent e-commerce software package. These applications install right on your Web server and, through a lot of complex, database-driven number crunching, create instant stores on your Web site that automate the selling process. Any e-commerce software you consider should:

- Keep a database of products you can update.
- Determine whether a selected item is available. If it is, the software should let customers proceed with their orders. If it isn't, the shopper should be notified the item is backordered and given the option to cancel.
- Keep track of the items in a cart and the resulting subtotals.
- Communicate with the product database. When a customer chooses a product, its information should be transferred from the database to the customer's shopping cart.
- Notify the store owner and send a receipt to the customer after an order is placed and payment has been received.

Just a few of the available e-commerce software packages include:

- [iHTML Merchant](#)

- [Shopzone](#) (offers both standalone software and store hosting)
- [Mercantec](#)
- [AbleCommerce](#)
- [MonsterCommerce](#)
- [iNetStore](#)

All that stuff I said about choosing your ISP carefully in Lesson 4 still applies when it comes to e-commerce. Many ISPs offer e-commerce packages that they'll run for you off their servers. Though more convenient and less expensive than creating your own e-commerce set-up, letting an ISP handle your e-commerce gives you no say in which e-commerce software your Web site can use. Then again, considering the technical support an ISP would provide for this added functionality, the tradeoff could be worth it.

Most ISPs offer some sort of e-commerce capability. Shop around to find the best price and the implementation that is most suited to the type and volume of product you plan to sell.

### Getting paid

While you're going to so much effort to take care of your customer, don't forget to look out for number one. Selling through the Internet means receiving payment through the Internet, and that involves a bit of slightly tricky programming. Don't be daunted though, it's not too difficult to set up.

### Processing plastic

Credit cards have become the easiest and most common means of taking payments online. They require two main ingredients to work on a Web site:

- **Software that authorizes transactions:** ISPs that offer e-commerce packages can process credit card information as easily as those little boxes with the card slots in stores that send it over phone wires. If you're handling your own e-commerce independent of an ISP, try a credit-card processing service such as [WorldPay](#) and [Authorize.Net](#).
- **An online merchant account:** Along with processing and fraud check, the e-commerce packages of most ISPs include a merchant account. If you're handling your own e-commerce, look into companies such as [GlobalMerchant](#), [1stCommerce](#), and [Charge.com](#) provide online. Shop around and get recommendation before committing.

If your company is already established and takes credit cards, you need to find out whether your bank or third-party processing company (companies that are not banks, but get you set up with a bank and do the processing for you) is Web-ready.

### Accepting checks

Some customers don't like to use credit cards online, so you should offer them the option of paying by check. [PayByCheck.com](#) provides nifty check processing functionality that can be incorporated into your Web site. For a small setup fee and per-check charge, the service lets you take digital checks without any special hardware or software. All that shoppers have to do is enter the information

from one of their checks into a form on your Web site that links to PayByCheck, which handles all the rest.

### Digital cash

A third type of payment, **digital cash**, involves services in which a person creates an account with a service, puts money into that account, and then authorizes a certain amount to be transferred to a Web site electronically. [PayPal](#) dominates this market. To receive PayPal payments, you need merely to set up an account with the service and tell your customers you accept it as a valid payment option.

PayPal is often used in C2C e-commerce.

### POs and CODs

B2B e-commerce Web sites sometimes use **POs** (purchase orders). This means that you ship the goods and bill your customers, and they pay you within a certain amount of time (Net 30, for example). This works well if the company you're dealing with is a large, established business or a company that you have done business with before.

And then there's always the time-honored **COD** (cash on delivery). You can set this up easily enough with most major shippers. It works like this:

1. You ship the goods.
2. They deliver the goods and collect payment at the time of delivery.
3. The check is then sent to you, usually overnight.

There is, of course, a fee for handling COD transactions.

### Store in a box

One way to simplify the set-up of an e-commerce Web site and save money is to outsource to a Web-based e-commerce service. Your store essentially becomes a part of a larger e-commerce site while retaining its own identity and look.

[Yahoo! Stores](#) exemplifies this store in a box concept. For a flat hosting fee, a small per item fee, and a small transaction fee, the Yahoo! servers will host your online store, providing a shopping cart, secure credit card transaction processing, an order tracking system, and include Web site traffic analysis tools to boot. It even helps you get a merchant account. As an added bonus, the service lists your products alongside those of other Yahoo! Stores Web sites at [Yahoo! Shopping](#), giving you a built-in audience.

However, there are disadvantages:

**Simple, economical,  
portable**



» **HP Photosmart A716  
compact photo printer**

A spacious, adjustable display (2.5") makes previewing photos easy on the Photosmart A716 compact photo printer. You'll

- **Limited control over Web site layout:** You can design your own Web site using the service's online layout tools, but you're limited to one of a few layout designs. Color and font choices are typically quite broad, however, and you can use your own logo and other custom graphics.
- **It's not at your regular Web site:** Because your e-commerce Web site is a part of a larger e-commerce site, it will have a URL like **http://store.yahoo.com/yourstore**. If you have an existing Web site, visitors will have to leave your site to shop. Most services will host your domain name for an additional fee, so you can move your entire site over to the service if it's feasible. This works best if your entire site is devoted to e-commerce. Another option is to link product listings on your current Web site to the new e-commerce site.

times as fast as 39 seconds-  
-and you can even store up  
to 4,000 photos on the 4GB  
hard drive!

### Weigh your options

Consider these points when choosing a service to outsource your e-commerce Web site:

- **Price:** Most services are quite affordable.
- **Free trial:** Use the free trial period to determine if the service is for you.
- **24/7 tech support:** When you have a problem you want it resolved within hours, not days.
- **References:** Find out who else is using this service and contact them to find out how happy they are with the service.
- **Tax calculation:** As with catalog purchases, an e-commerce store must have a physical location in the same state as a customer for tax to be charged. But this may change, so stay aware. The service should be capable of calculating tax if needed.
- **Order management:** You should be able to view and manage orders online and download order info as needed.
- **Shipping and handling fees:** Many merchants calculate shipping charges based on the weight and/or destination of an order. The service you use should be able to calculate shipping charges based on these or other variables you want to accommodate. It should also be able to use one or more popular shippers' actual rate tables.

Besides Yahoo! Stores, some other Web-based e-commerce outsourcing services include:

- [MerchandiZer.com](http://MerchandiZer.com)
- [BigStep Store](http://BigStep Store)
- [ShoppingCartsPlus.com](http://ShoppingCartsPlus.com)
- [CityMax.com](http://CityMax.com)

## Moving on

In this course, you've learned to design an effective Web site, use a WYSIWYG or HTML Web authoring tool to develop it, find an appropriate ISP to host it, use multimedia and interactivity to spice it up, effectively promote your site, and set up an online store. Congrats. Even if you don't have a Web site up and running yet, pat yourself on the back anyway. You've earned it.

One way to do well on the Web is to stay informed about the industry. To that end, here's a list of Web sites to keep up with your reading:

- [The Industry Standard](#)
- [Internet World](#)
- [InternetWeek](#)
- [TechWeb.com](#)
- [E-Commerce Times](#)
- [ZDNet](#)
- [E-Commerce Guide from Internet.com](#)
- [CNET News.com](#)
- [Wired Magazine News](#)

But before you go -- and this is the last time I'll have to say this -- take a look at the assignment and the Message Board. I'll let you off easy by omitting the quiz for this lesson. Good luck with your Web site!

**Next steps >>**

## Congratulations on completing the lesson! Don't forget the following:

- » Assignment: E-commerce for everybody
- » Return to the lessons list to get a quick overview of the entire class

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## E-commerce for everybody assignment

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**Product Support**

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- [» Software & Drivers](#)
- [» Warranties & services](#)
- [» Register your product](#)

Assignments are designed to help you apply the information learned in the lessons.

### E-commerce for everybody

Decide whether your particular Web project calls for e-commerce. If you're a business selling a product, the answer is probably yes. Remember that even nonprofit Web sites need e-commerce tools (such as shopping carts, credit card capabilities, and secure server) to sell a host of wares promoting the cause (T-shirts, bumper stickers, and publications) as well as to collect donations.

If you're planning on implementing e-commerce, do some research on your own and find an ISP that provides great service, e-commerce, and credit card processing services. Check its references and get its prices. Share your research with the class.

If you're so inclined, sign up for a free trial at Yahoo! Stores and try setting up a store. What do you think about this store-in-a-box service? Share your experience and opinions with the class in the Message Board.

**Assignment Completed >>**[Printable version](#)[» Bookmark HP Online classes](#)

