

Lesson 10: Search Engine Optimization

Welcome back!

Did you know there are more than 5 billion indexed pages on the World Wide Web, and the number is growing all the time? With so many pages available, the odds of someone stumbling across your page by chance, or finding it immediately in a search, are pretty slim.



In this lesson, we'll discuss things you can do to help promote your site and make it easier for people to find. In other words, we'll be discussing how you can generate traffic (visitors) to your site, and maximize your sites visibility with ***Search Engine Optimization (SEO)***.

While CSS and HTML are your tools for creating webpages, ***search engines*** and ***meta tags*** are your tools for marketing and promoting them. You probably know that people use search engines to search the Web, but what is a search engine and how does it work? Meta tags are key words or phrases that add to your webpage to provide information about the content within the page to ***user agents*** (like indexing bots). This allows the search engine to comb through the web and find pages that key words or phrases that a user is looking for.

While there's no guarantee you'll get the top position in anyone's search results page (without buying that position), there are things you can do to promote your site and make it easier for people to find. So, let's get started by learning about search engines.

What is a Search Engine?

A search engine is a website uses complex computer programs user agents called ***Web crawling infobots*** (or just ***bots***, ***crawlers***, or ***spiders*** for short) to analyze sites and add them to the search engine's ***search index***. This search index is kind of like the index you see in a recipe book.



In a recipe book, the recipes are grouped by type (such as soups) or even specific ingredients (such as potatoes). These types or ingredients (words) from the recipe are listed alphabetically in the index, and then the related recipes are listed below them along with the page numbers. Some recipe books are even sectioned by recipe type, with tabs that stick out so you can easily leaf through to different sections. Either way the goal is for you to be able to quickly and easily find recipes in the book.

Of course, the Internet doesn't organize information into sections or reference page numbers. Instead, each page on the Web has meta tags (keywords or phrases) and a unique ***URL*** (or ***Web address***), and that's what's in the search index. However, unlike the index in a recipe book, a search engine doesn't have a place where you can see a huge long list of alphabetized keywords or phrases to choose from. That's because the list would be millions of words long, and nobody would have time scroll through it as a reference.

Using a Search Engine

To use a search engine you *type* the keyword (or phrase) you're looking for and the it looks through the search index. Based on the words you entered, the search engine then displays information about webpages from its index. The webpages that best match your search are listed at the top and you can click on links to look at the pages it finds.



There are quite a few search engines out there. You're probably familiar with at least one. These three are probably the best known:

- [Google](https://www.google.com/) (<https://www.google.com/>).
- [Bing](https://www.bing.com/) (<https://www.bing.com/>).
- [Yahoo](https://www.search.yahoo.com/) (<https://www.search.yahoo.com/>).

Again, you've probably used Google or some other search engine, but let's go ahead and try each of them out. It's always interesting to see the difference between the results in each search engine. We're going to work through an example here, so you can observe what's happening with a more critical eye.

Here are the Steps

1. Let's say you suddenly get an overwhelming urge for an old-time candy named *Chuckles*, and you'd like to find out if you can still buy it.
2. Go to [Google.com](https://www.google.com/) (<https://www.google.com/>) to start your search.
3. Type *chuckles candy* in the search box.
4. Then hit the **ENTER** key or click the **Search** (magnifying glass) button.

In almost no time at all, you get some search results. Exactly what you see, will depend on a number of factors and it changes over time. But that's not important. What's important is that you'll see a summary of your search results.

The screenshot shows a Google search for "chuckles candy". At the top, the search bar contains "chuckles candy" and the results count is "About 9,940,000 results (0.76 seconds)". Below the search bar, there are navigation links for "All", "Images", "Shopping", "News", "Videos", "More", "Settings", and "Tools".

The first result is an advertisement from "www.nuts.com/chuckles+candy" titled "Chuckles Candy - From Our Family To Yours." It describes the company's history and offers. Below the ad, there are links for "About Us", "Immunity-Boosters", "Raw", and "Pantry Staples".

The main search results section shows a grid of images of Chuckles candy. Below the images, the text reads: "Chuckles candy. **Chuckles** are jelly **candies** coated with a light layer of sugar. They come in five flavors: cherry, lemon, lime, orange, and licorice. Each package of **Chuckles** contains one piece of each flavor. ... The **Chuckles** brand was first produced in 1921 by Fred W. Amend." The source is cited as "en.wikipedia.org > wiki > Chuckles".

On the right side, there is a section titled "Ads · chuckles candy" showing several product listings with images, titles, prices, and ratings. The listings include:

- Chuckles Original Jelly... \$16.92 Amazon.com
- Gourmet Fruit Slices - 1... \$6.99 Nuts.com (197 reviews)
- Chuckles Jelly Candy Packs,... \$16.92 Walmart (80 reviews)
- Chuckles Original Bulk... \$26.18 CandyFavorites (3 reviews)
- Chuckles Jelly Candy bar, 24... \$16.92 Amazon.com
- Rainbow Circus Peanu... \$5.99 Nuts.com (26 reviews)

- **Short Summary:** Near the top of the page, you might see a short summary of your search (such as *About 8,330.000 results (0.73 seconds)*). This means that there are about 8.3 million pages on the Web that contain the words *chuckles* or *candy*, and it took about 73/100 of a second for Google to find that out for you.
- **Ads:** Slightly below that (still near the top of the page), you might notice the word *Ad* (or *Ads*). As the word implies, those links are paid advertisements. They get top position in the search results because the people who own the sites that the links point to paid for those top positions. Exactly how much depends on the search words and how much competition there is. Unless you have a huge advertising budget at your disposal, there's probably no need to be thinking paying for ads right now.
- **Organic Search Results:** Below that are the *organic search results* which are the regular search results that aren't paid-for ads.

Deciphering Search Results

The one thing that all the organic search results have in common is a **title** (which is also a link you can click to visit the site) and a **description**.

You'll also notice that the results have the keywords "chuckles" and "candy" or the phrase "chuckles candy" (or some slight variation) bolded in their title and/or description. They should also appear in abundance in the title and description. That's because when you do a search from Google, it looks through the pages to match the keywords or phrases you searched for. It's goal is to find pages that provide the information you're looking for. One way it does that is by finding pages that have those words in the title and description (and elsewhere on the page).

So if you want to increase the chances of people finding *your* pages when they do a search, you need to be thinking about what you'll put in your pages' titles and descriptions. We'll explain how next!

How Meta Tags Work

You may recall that most HTML5 pages contain at least the following HTML tags to indicate major sections of the page:

```
<!DOCTYPE html>
<html>
<head>
<title></title>
</head>
<body>
</body>
</html>
```

The Web-crawling infobots that create the search indexes assume all pages contain those tags. You that a search engine uses the keyword or phrase you type to generate a list of titles and descriptions (and links) for sites that contain them.

- The title you see in the search results is the text between the <title>...</title> tags.
- The description is either the first few sentences under the <body> tag, or you can provide a description of your own choosing using meta tags.

Typically, it's best to provide your own description, because you can craft it to better describe your page. The titles and descriptions that appear in the search results serve as the first impression for your website. People read these before clicking a link to visit a webpage, so you want them to be accurate and inviting. The way you provide a description is with a ***meta tag***.

What is a Meta Tag?

A *meta tag* is a word or phrase that you use to help bots properly categorize the content of your webpage. So, why is it called a meta tag?

- It defines ***metadata***, which is information *about* the webpage rather than information *within* the webpage.
- It lives in the metadata section of the page, between the <head>...</head> tags.
- It tags (or labels) the webpage with a snippet of text that helps categorize the page content.

The meta tag syntax is:

```
<meta name="x" content="y" />
```

Here *x* is the *type of metadata* being provided (e.g. description, author, or keywords), and *y* is the specific text that you want to apply.

Common Meta Tags

The Description Meta Tag

It's not required, but it's a good idea to put a ***description meta tag*** in your pages, because Google and other search engines display this content in the search results.

To create your own page description, you want to place the following code between the <head>...</head> tags:

```
<meta name="description" content="Your page description here" />
```

Of course, you'll want to replace *Your page description here* with an actual description of the current page.



Tips

Here are a few tips:

- **Keep the Title and Description Together:** Most people will put this under the <title>...</title> tags. This is a great idea because if you ever have to update the information that is displayed by the search engine, they are right there together.
- **Keep it brief.** Many search engines will cut off anything beyond 155 characters.
- **Keep it coherent.** Be sure to type it as an actual sentence or two, not just a random collection of words. It has to make sense to your visitor too!

Outmoded Meta Tags

If you learned HTML in the early 1990s and are taking this course as a refresher, you may be familiar with other meta tags. If you're a beginner, you may come across other meta tags as you continue your education beyond this course. So let's take a moment to discuss what those are.


Remember

Keep in mind that meta tags are always optional, never required.



Text equivalent start.

Topic	Information

Topic	Information
The author meta tag.	<p>The author meta tag has its roots in the early days of the Web when it was all about publishing scientific and academic papers. Here's the syntax:</p> <div><pre><meta name="author" content="your name or company here" /></pre></div> <p>Of course, you'd replace <i>your name or company here</i> with your actual name or the name of your company. An author meta tag doesn't always make sense, so don't feel you must include such a tag. If the site is about a business or organization it's best to use the name of the company, but you're welcome to use your own name for anything you've authored yourself. It's a way to give yourself credit for writing the page.</p> <div><h3>Note</h3><p>The author name you provide won't show up in the browser, but the search engine indexing bots will catalog it. That's because meta tags are for metadata about the page, and metadata never shows up in a Web browser. However, once the site has been online for a while, people will be able to find the page by author name.</p></div>

Topic	Information
The keywords meta tag.	<p>The keywords meta tag is another popular one. Here's the syntax:</p> <pre><meta name="keywords" content="keyword1,keyword2,keyword3,..." /></pre> <p>In your page, you would replace <i>keyword1</i>, <i>keyword2</i>, <i>keyword3</i>,.. with a list of keywords and phrases separated by commas. Those keywords and phrases should be words you think someone searching for your site might type into the search engine's search box. You don't have to exhaust yourself coming up with a list of keywords for that tag. Because the truth is, the tag is likely to have no effect at all on search engines.</p>
The robots meta tag.	<p>Once your site is live on the Web, you don't have to do anything to get your published pages indexed by the search engines. That will happen automatically. If, however, you don't want people to find your site, then that's when you'd use a robots meta tag.</p> <p>The robots meta tag is designed to tell the Web crawling infobots to go away and mind their own business. That might be the case if the site is still under construction, or if it's just intended for a private group of people. The most common use of the robots meta tag is this:</p> <pre><meta name="robots" content="noindex, nofollow" /></pre> <p>The indexing bot looks at the code in your site's home page, and indexes it. Then, it looks at links to other pages within your site, follows those links, and indexes those pages too. If you add that robots meta tag between the <head> and </head> tag of your site's home page, <i>noindex</i> tells the indexer "do not index this page" and <i>nofollow</i> tells the indexer "do not follow links or index other pages in this site".</p>

Topic	Information
The charset meta tag.	<p>The word <i>charset</i> is short for <i>character set</i>. This meta tag gets into some technical stuff. Basically, there used to be different character sets for different languages, based on their alphabets. If your native language is English, when you see text written in Chinese or Japanese or Farsi it's really difficult to make any sense of it. This is partly because these languages don't use the same letters as English. The most common character set you will see is this:</p> <div><pre><meta charset="UTF-8" /></pre></div> <p>While in the beginning of the Web it was necessary to define the character set of a page, these days the UTF-8 character set is so vast, it pretty much works for every language. It stands <i>for Unicode Transformation Format - 8-bit</i> and has become the standard for web pages now. In fact, UTF-8 is so widely used that even if you don't put a <code><meta charset="UTF-8" /></code> tag on your page, the browser will <i>default</i> to that character set anyway. In other words, if you don't specify a charset at all, the browser will automatically use UTF-8. That's why we haven't had to both with that tag in the pages we've created so far.</p>

Topic	Information
The viewport meta tag.	<p>Finally, here is another tag you might see often between the <head>...</head> tags of a page:</p> <div><pre><meta name="viewport" content="width=device-width, initial-scale=1.0" /></pre></div> <p>The viewport meta tag is mainly a way to control the quality of the display on cell phones:</p> <ul style="list-style-type: none">• The <i>width=device-width</i> sets the width of the page to adjust to the width of the natural pixel width of the phone screen.• The <i>initial-scale=1.0</i> sets the initial zoom level to "normal" so the page isn't zoomed in or out when first shown on the page. <p>While it's not necessary with newer devices, it's a good idea to include this tag on your pages, just to ensure your page looks its best on even the oldest phones.</p>
Read the topic in the first column. Then read the second column for the information.	

Text equivalent stop.

You may be wondering, why we’ve bothered to cover meta tags that are no longer necessary. Well, the fact of the matter is that even though they are no longer necessary you may still see them milling about, and they help to give you a better understanding of how the underpinning of the Web works.

The Keywords Meta Tag Controversy

In the early days of the Web, it didn't take long for developers to figure out that when people used a search engine, it was usually to find celebrity gossip or other popular topics. As we’ve already discussed, the process of getting your page found in the search engine is daunting given the number of webpages out there, so developers started adding celebrity names and other popular search words to their keywords meta tag to boost their pages visibility.

Basically, sites were piggybacking on the popularity of certain keywords. The keywords were unrelated to the actual content of the sites. It didn't matter what the site was really about. The site could be about taking out the garbage or changing the oil in your car. The goal of the developers was just to help the search rankings of their sites by putting whatever words people most often searched for. Kind of like free advertising. This business of tricking search engines even has a name—it's called **keyword spamming**.

Well, the folks who started Google knew this was going on and that it was producing inaccurate search results. Think about it, if you were searching for a pair of skis and you kept being bombarded with sites selling watches or socks it would not only be irritating—but it would undermine your faith in the accuracy of the search engine. So, right from the start Google decided to ignore the keywords meta tag and index only the actual visible words between the <body>...</body> tags.

This turned out to be an excellent decision, because when Google first came out, people noticed their search results were better than most. Word about that got around quickly, and even though they were a little late to the game, it didn't take long for Google to become the premier search engine on the Internet. That kind of success breeds imitation and nowadays, no search engines use the keywords meta tag.

Are you meta tagged out? Stick with us for a minute. We'll discuss ways you can use search engines and meta tags to increase the chances that people will notice your site on the vast expanse of the World Wide Web!

Identifying Keywords and Keyphrases

After learning how search engines work, the first question many beginning developers ask is this: "How do I get my page to the top of the search results list?" Good question! Unfortunately, there's no magic formula for getting your site to the top of the search results, unless you have a huge advertising budget and can buy that top spot. But regardless of your financial situation, there are things you can do to improve your site's chances of being found.



Build a Collection of Keywords and Keyphrases

A **keyword** or **keyphrase** is a word or phrase that somebody searching for your site, or a site with similar content, would be most likely to type into a search engine. Developing a list of keywords and keyphrases isn't difficult. You just need to ask yourself the following questions:

- ***What words would people type into a search engine to find my site? These tend to be more general. For instance, if you had a website selling paint, you'd want "paint" to be one of your keywords.***

- ***What phrases would people type into a search engine to find my site?*** This is where you can get a bit more specific. For example, if your paint was for painting exteriors, you might want the phrase “exterior paint”.

Here are some ideas to get you started:

- Your name or the name of your organization.
- Words and phrases describing the types of products or services you provide.
- Words and phrases describing the information on the page.

If you're building a site for an organization, ask them to come up with three or four words or phrases that describe the organization, its mission, and the products, information, or services it provides. It can help to identify the questions that are most frequently asked about the organization. All of these keywords and keyphrases are important!

Grab a pen and paper.

Pretend that you're a person who is looking for the kind of information, products, or service your site offers. Write a list of words and phrases that such a person might search for. Leave no stone unturned, and write down everything you can think of.



If your organization only serves a specific region (perhaps a country, state, province, town or village), be sure to include that region in your keyword and keyphrase list. People are often looking for goods, services, or organizations in their local area. So, if your site provides for a certain region rather than the world at large, make sure you identify it.

Examine the Competition’s Keywords and Keyphrases

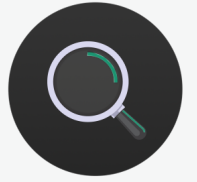
Consider the keywords and keyphrases that are being used by your rivals or other sites similar to yours. With your keyword and keyphrase list in hand, hop on the Internet and visit each of the following search engines:

- [Google](https://www.google.com/) (<https://www.google.com/>).
- [Bing](https://www.bing.com/) (<https://www.bing.com/>).
- [Yahoo](https://www.search.yahoo.com/) (<https://www.search.yahoo.com/>).

Type in a few of your keywords and keyphrases in each search engine and see what the results look like. Many of the listed sites will probably be similar to your own and many may be direct competitors of yours.

Take a Closer Look

Look at the words they use within their titles, descriptions, and pages. Do you see any patterns? Are there any words that they use that would also apply to your site? See if you can come up with any more words people might use to search for sites like your own.



Integrating Keywords and Keyphrases

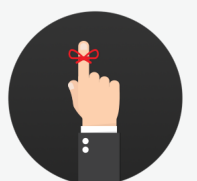
Incorporate Keywords into Your Title

If the top keyword or keyphrase a search engine user would use to find your site happens to appear in your title, some search engines will give your Web page a big boost in the listings. Therefore, you'll want to make sure your title includes your top keywords or keyphrases.

We're talking about the title text you type between the `<title>...</title>` tags here. So, whatever you type needs to make sense as a title—it can't be a random collection of words.

Remember

The words you put between the `<title>...</title>` tags show up as the title in the search results and in the browser program window.



You want to try to be specific and use words that people might actually search for. As an example, this would be a good, specific title:

```
<title>Acme Trampoline Springs and Covers</title>
```

While this probably isn't so good, unless you think people would be specifically searching for that brand:

```
<title>Acme Web Site</title>
```

Try to keep your title to eight or fewer words. This should be a quick sentence that describe the page. Don't be too verbose—some search engines will snip a few characters from the end of your title if it exceeds 70 characters (including spaces).

Create Distinct Titles for Each Page

You can improve your chances of your website being listed by creating a different title for each page on your site. This is assuming, of course, that your website consists of more than one page. If any one of the titles you use contains the keyword a person happens to be searching for, at least one page from your site (the page containing that title) will have a better chance of being listed in that person's search results.



Incorporate Keywords into Your Description

Sprinkling a few well-chosen keywords (or a keyphrase) to your *description meta* tag could help boost your page's rankings each time someone searches for those keywords or keyphrases. Again, you want to keep it succinct, some search engines stop reading descriptions after 150 or so characters. So be sure to try to get your most important keywords near the beginning if you need to go past that.

Write Your Description Like a Sales Professional

When writing your description, keep in mind that many people will read it in the search results page before deciding whether to click the link to your site. That description offers you an opportunity to make your site look more attractive than the competition's, so take advantage! Use the opportunity to sell yourself. Try to convince the user they really want to click that link to see your site.



Incorporate Keywords into Your Content

Whatever keywords or keyphrases you come up with, it's important to use them in the content that people actually see when they view your page. The search engines give precedence to those words, and if it can confirm that the keywords being searched for are in your content it will boost you in the rankings. However, be sure to use keywords in ways that makes sense, rather than for the sake of using a keyword. People will be reading whatever text you put into the body of your pages, so you can't just throw words in there willy-nilly. Here are a few ideas:

- Use keywords and phrases in headings (the kind you make with heading tags (such as h1, h2, and such).
- Use keywords and phrases in tables, lists, paragraphs, and other page content.
- Use keywords and phrases in your file names. (e.g. rather than something generic like paint1.png, use carbonblack.png)
- Use keywords in places that aren't so obvious, like the alt= attribute of an img tag.

Many people believe that repetition is the key to success, and they'll repeat the same small group of keywords over and over. But its really about making sure that the keywords accurately describe the company, goods, services, or information presented on each page.



Avoid Search Engine Spamming

Some people think that they can boost their page's visibility if they repeat keywords in the alt= attribute of an img tag, or even in a paragraph of text that's colored to match the background so it's invisible to the person viewing the page in a browser, like this:

```
<p style="color: white">red stapler, red stapler, red  stapler, red stapler, red stapler, red  
stapler, red stapler, red stapler, red  stapler, red stapler, red stapler, red stapler,  
red stapler, red  stapler, red stapler, red stapler, red stapler, red stapler</p>
```

However, it's important to understand that search engines are a multibillion dollar business where success depends on getting people the best and most accurate results for search efforts. The companies running these search engine sites each have their own indexing algorithms written by experts, and they spend a lot of time and money fine-tuning those algorithms to get the best indexes possible.

Trying to trick the search engines into giving you better rankings through any dishonest means is called ***search engine spamming***. It's best avoided because the programmers who write the indexing algorithms already know every trick in the book. Those algorithms can detect and punish any spamming attempts by lowering your rankings (or even banning your site from the search results). Don't take that risk!

Incorporate Keywords into Your URLs

The ***domain name*** you choose for your site is a significant part of the URL that people will type to get to your website. So, it's a good idea to make sure your domain name makes sense for the purpose of your site. Search engines will often give a high ranking to a site that has the keywords or keyphrase right in the URL.

Apple.com

Apple manufactures electronics, such as iPhones and iMac computers, and their domain name is *apple.com*. That makes sense, it's the name of their company after all. So, the URL for their home page is <https://www.apple.com/> (<https://www.apple.com/iphone/>) but if you look at some of their other pages you'll notice that the each page has a custom URL that makes sense for the content of the page. This URL is for a page that displays information on iPhones: <https://www.apple.com/iphone/> (<https://www.apple.com/iphone/>). As you can see, the page name is named for the product, which is also a logical keyword.



Note

It's hard to get a good domain name these days, so you might want to start jotting down some possibilities now. That way, if your choices of names are taken, you have others you can try.



Cultivating Backlinks

Once your site is complete and published for the world to see, the next step is promotion. Many search engines base their rankings, at least in part, on a site's popularity. If many other sites link to your site, your site content must be good, right? Similarly, the more that people click on a link to your site, the easier it is to assume that the keywords and your content match. These links are called ***backlinks***. Which means that visitors are getting what they are looking for.

Provide Valuable Content

When you first publish your site you likely won't have other sites referencing back to yours. You need to establish a web presence. This involves marketing and promotion, as well as a little public relations legwork. To do this you need to give folks a reason to want to spread the word about your site—by delivering content they want or need.

Put yourself in the shoes of the person who will be linking to you. Why on earth would they want to direct people away from their site and to over to yours? Depending on the purpose of you site, you can do this by providing:

- useful tools or handy tutorials
- humorous photos or commentary
- access to a useful reference work or newsworthy articles

Be creative! The goal is to provide content that meets whatever niche you're looking to tap into that others won't be able to resist sending people your way. Once you have something compelling for others to link to, start spreading the word—preferably to sites that are already well known.

Perform Research and Outreach

Use the search engines to find sites that are complementary to your own, sites that attract the same demographic you're trying to reach. Then, find a way to get in touch with a real person by phone or email—or by press release.

Participate in relevant popular blogs and news sites. Network with the movers and shakers, and make yourself known as a humble, yet likable and knowledgeable contributor. The more influential people and organizations you can interest in linking to your site, the better you'll do.

Get Noticed on Social Media

Some search engines also like to see links from popular and fast-growing social media, social linking, and social networking sites. Links from these sorts of cutting-edge sources may seem to indicate that your site is more up-to-date, and therefore more likely to be relevant, than your less Web-savvy rivals. Examples of such sites include facebook.com, twitter.com, youtube.com, wikipedia.org, and stumbleupon.com.

Encouraging others to link to you pays off in more ways than one: Not only does it improve your search engine position, it also gives people more ways to reach your site!

Let's head over to Chapter 5 now and wrap things up.

Lesson 10 Review

While CSS and HTML are your tools for creating your webpage, search engines and meta tags are your tools for marketing and promoting it. Here's a quick review of what you learned:

- Search engines index webpages on the Web, and allow people to perform keyword searches to find what they are looking for.
- Incorporating keywords and keyphrases into your site content and meta tags can help boost your pages visibility with user agents (like indexing bots). While there's no guarantee you'll get the top position in anyone's search results page (without buying that position), there are things you can do to improve your site's credibility with the search engine algorithms.
- Not surprisingly, the success of your site depends in part on self-promotion. The more people link to you site, the more valuable your content will be in the eyes of the search engine and the easier it will be for people to find your site.

In the next lesson, we'll discuss Web publishing, which is how you get your web site out onto the Internet where anyone with an Internet connection and web browser can view it. Don't worry if your site isn't together enough to publish just yet. There is no deadline and the skills you learn there will still be good whenever you are ready to publish.

Learning Check

Words to Know



Loading flashcards...

