



Search Engine Optimization NOTES

Disclaimer

- ☞ The data in the tutorials is supposed to be one for reference.
- ☞ We have made sure that maximum errors have been rectified. In spite of that, we (ECTI and the authors) take no responsibility in any errors in the data.
- ☞ The notes are theoretical concepts only.
- ☞ These are the Basics of Search Engine and Search Engine Optimizing
- ☞ The data in these tutorials is correct as of 01 January 2022

What is a Search Engine?

- ☞ The science of improving a website's visibility across results from various search engines.
- ☞ If a website is not visible in search results, it defeats the purpose of having a website in the first place. Therefore, it is extremely important to ensure that your website is easy for search engines to access.
- ☞ SEO is a methodology used to gain traffic by making your website visible in search engine results via organic or paid techniques.

How does a Search Engine Work?

Search engines perform several activities in order to deliver search results.

🔗 **Crawling** - Process of fetching all the web pages linked to a website. This task is performed by a software called a crawler or a spider (or Googlebot, in case of Google).

🔗 **Indexing** - Process of creating index for all the fetched web pages and keeping them into a giant database from where it can later be retrieved. Essentially, the process of indexing is identifying the words and expressions that best describe the page and assigning the page to particular keywords.

🔗 **Processing** - When a search request comes, the search engine processes it, i.e., it compares the search string in the search request with the indexed pages in the database.

🔗 **Calculating Relevancy** - It is likely that more than one page contains the search string, so the search engine starts calculating the relevancy of each of the pages in its index to the search string.

🔗 **Retrieving Results** - The last step in search engine activities is retrieving the best matched results. Basically, it is nothing more than simply displaying them in the browser.

Search Engine Processes and Components:

Modern search engines perform the following processes:

- 🔗 Web crawling
- 🔗 Indexing
- 🔗 Searching

Web crawling

- ☞ Web crawlers or web spiders are internet bots that help search engines update their content or index of the web content of various websites.
- ☞ They visit websites on a list of URLs (also called seeds) and copy all the hyperlinks on those sites.
- ☞ Some crawlers visit pages where content is updated on a regular basis.
- ☞ Crawlers identify themselves to web servers. This identification process is required, and website administrators can provide complete or limited access by defining a robots.txt file that educates the web server about pages that can be indexed as well as pages that should not be accessed.

Indexing

- ☞ Indexing methodologies vary from engine to engine. Search-engine owners do not disclose what types of algorithms are used to facilitate information retrieval using indexing.
- ☞ Usually, sorting is done by using forward and inverted indexes. Forward indexing involves storing a list of words for each document.
- ☞ During indexing, search engines find web pages and collect, parse, and store data so that users can retrieve information quickly and effectively.
- ☞ Information such as tags, attributes, and image alt attributes are stored during indexing.

Searching

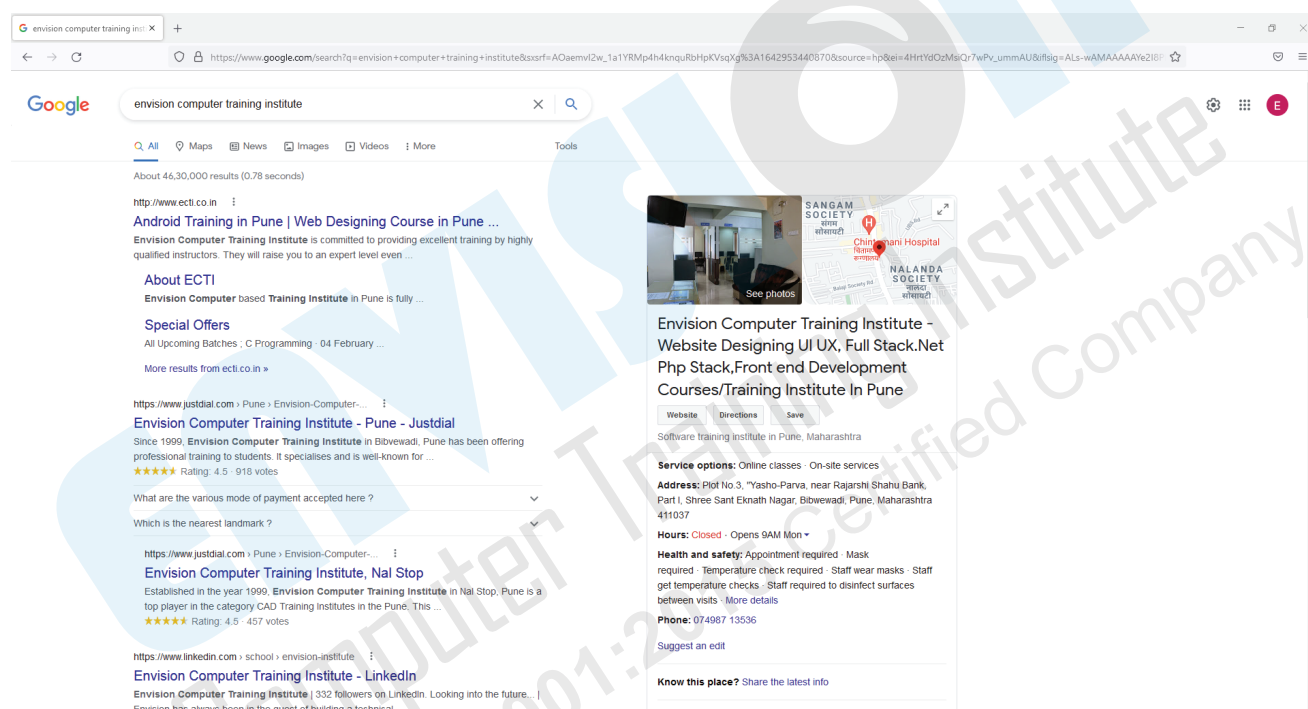
- ☞ A user enters a relevant word or a string of words to get information. What the user enters in the search box is called a search query.
- ☞ Common types of search queries:
 - Navigation,
 - Informational, and
 - Transactional

Navigational Search Queries

☞ These types of queries have predetermined results, because users already know the website they want to access.

☞ Because the user already knows the destination to be accessed, this falls under the heading of a navigational query.

Example:

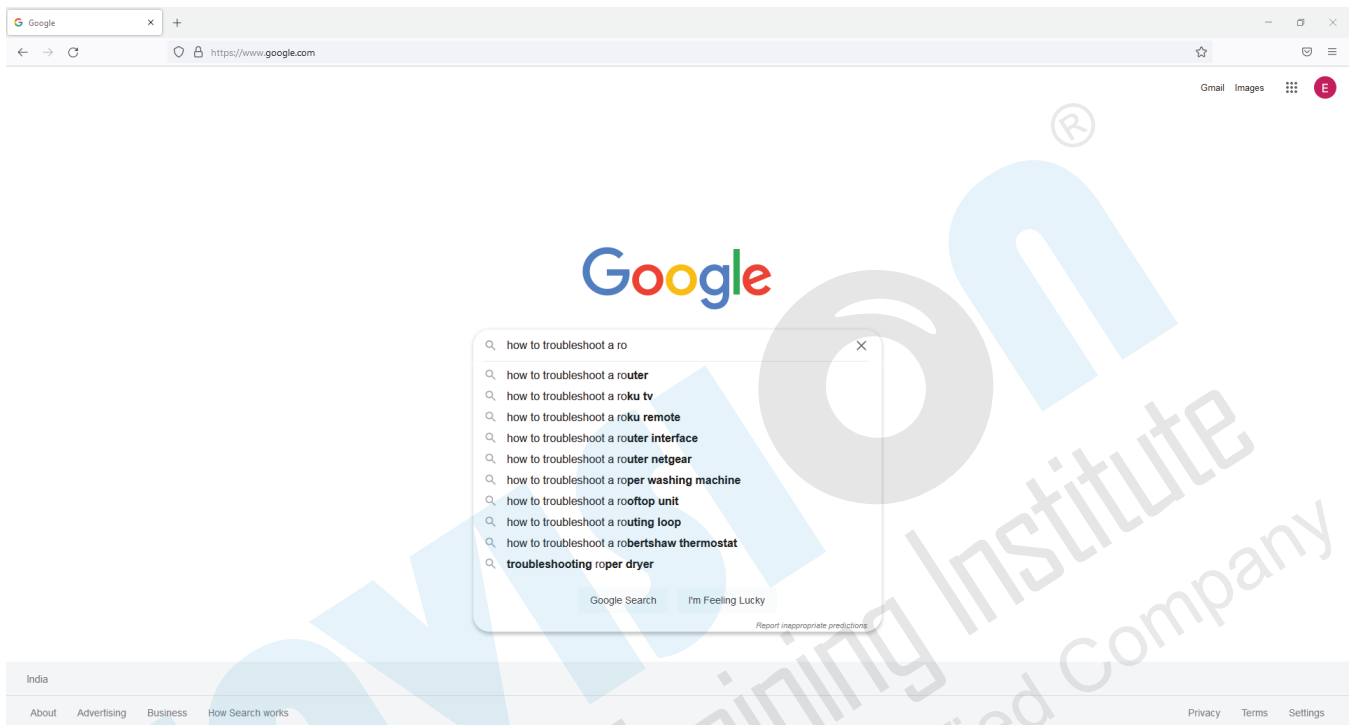


Informational Search Queries

☞ Informational search queries involve finding information about a broad topic and are more generic in nature.

☞ Users generally type in real-time words to research or expand their knowledge about a topic.

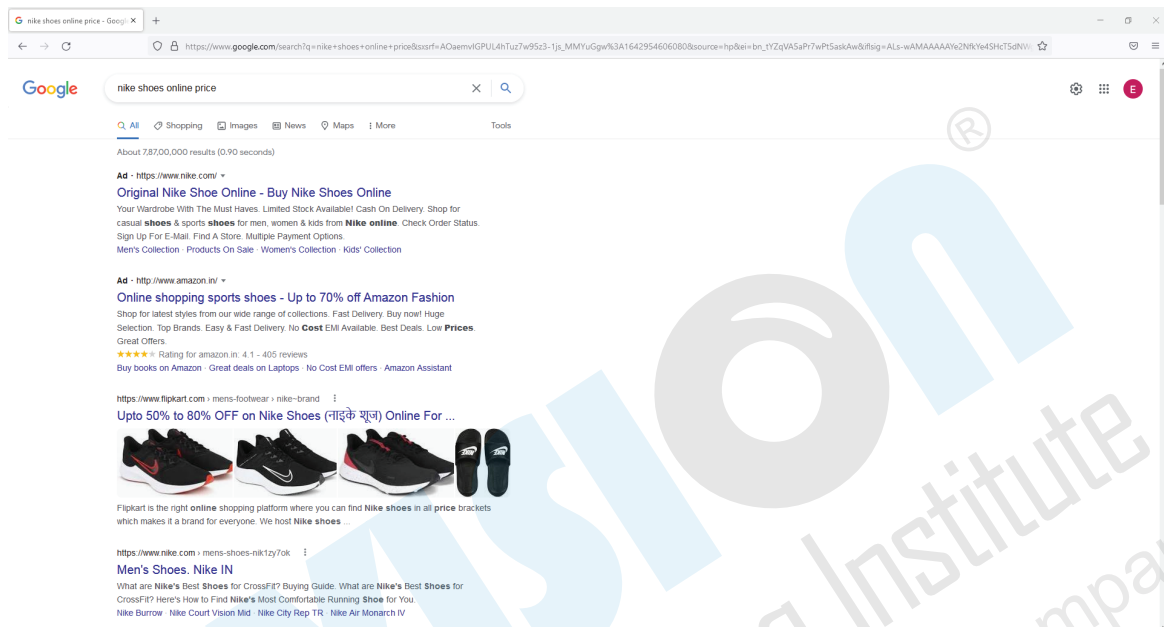
Example:



Transactional Search Queries

- ☞ In this type of query, the user's intent is focused on a transaction, which may be generic or specific.
- ☞ The user knows the brand they want to buy, and in this example the search is related to making a purchase.
- ☞ However, not all transactional search queries are purchase-based; they can also involve the user wanting to take some sort of action, such as signing up for a portal.

How Web Works?



Types of SEO

- ☞ White Hat SEO
- ☞ Black Hat SEO
- ☞ Gray Hat SEO

White Hat SEO

- ☞ White hat SEO utilizes techniques and methods to improve the search engine rankings of a website which don't run afoul of search engine (mainly Google) guidelines.
- ☞ **Some techniques:** high quality content development, website HTML optimization and restructuring, link acquisition campaigns supported by high quality content and manual research and outreach.
- ☞ **Outcomes:** Steady, gradual, but lasting growth in rankings

Black Hat SEO

- ☞ Black Hat SEO exploits weaknesses in the search engine algorithms to obtain high rankings for a website.
- ☞ Such techniques and methods are in direct conflict with search engine guidelines.
- ☞ **Some techniques include:** link spam, keyword stuffing, cloaking, hidden text, and hidden links.
- ☞ **Outcomes:** Quick, unpredictable, and short-lasting growth in rankings

Gray Hat SEO

- ☞ This kind of a SEO is a kind of a SEO which is neither black nor white.
- ☞ This is a technique that does not fully use the black hat SEO and rather combines both.
- ☞ This is a transformation from black to white and from white to black.
- ☞ Whether it is due to pressure from the website or company or to deliver better results, some SEO companies may practice Grey hat SEO to some extent.
- ☞ They may not cross the line to black hat SEO.

Ranking in SEO

There are three techniques:

- ☞ on-page,
- ☞ on-site, and
- ☞ off-page

On-Page SEO

On-page optimization is related to factors controlled by you or your code that have an effect on your site's rankings in search results.

Title tags

Meta keywords and meta descriptions

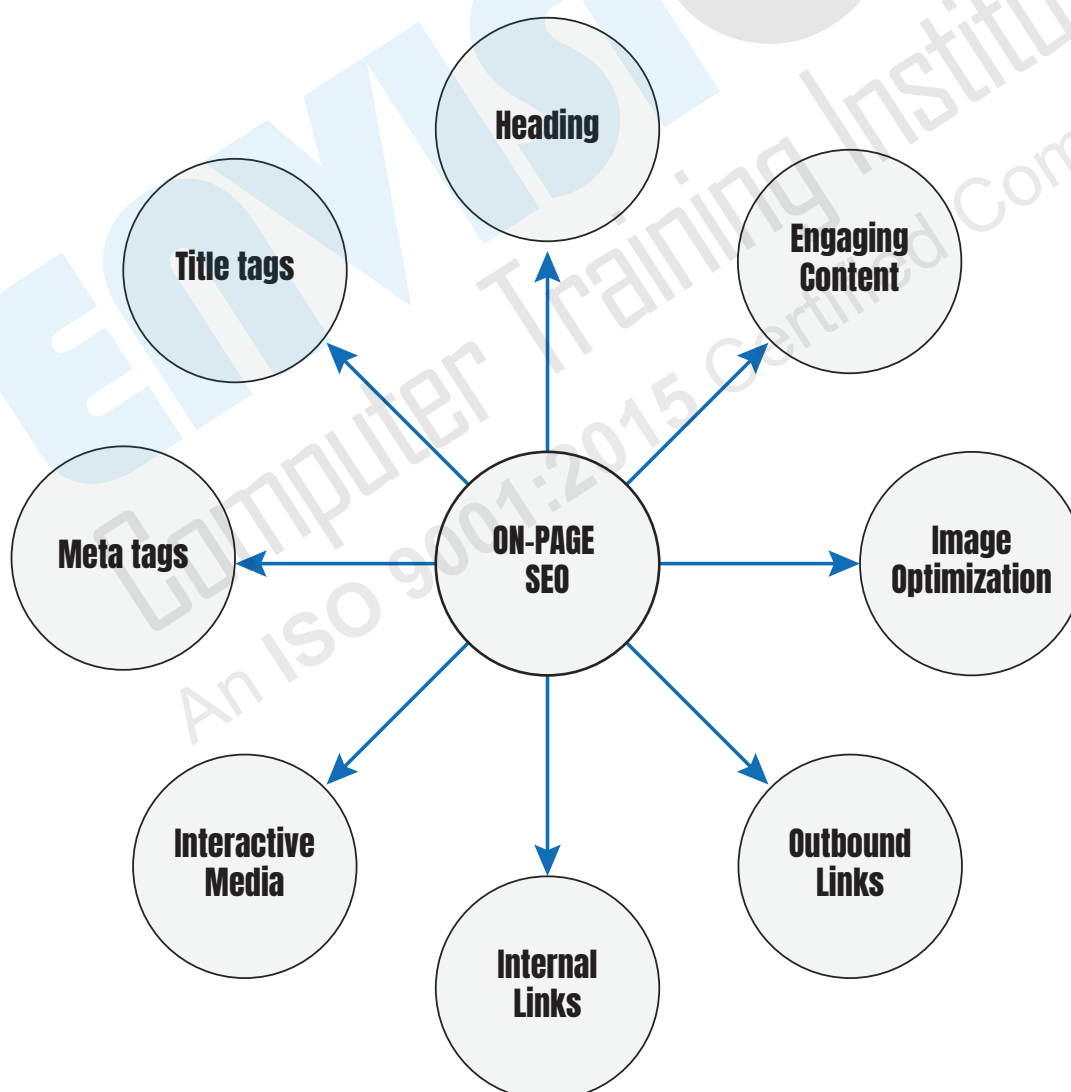
Headings

Engaging content

Image optimization

Interactive media

Outbound and internal links



Title Tag Optimization

- ☞ **Length:** It should be a maximum of 60 characters long
- ☞ **Keyword placement:** Place the targeted keyword at the start of your title and keep the least important words at the end
- ☞ **Keyword separation:** Use vertical lines or pipes to separate targeted keywords and phrases
- ☞ **Don't repeat title tags:** Write different titles for different pages.
- ☞ **Simple:** Your targeted keyword or phrases should be simple and short.
- ☞ **Website or company name:** Don't use website or company name in the title tag unless it is very popular or part of your important keywords.

<http://www.ecti.co.in> :

Android Training in Pune | Web Designing Course in Pune ...

Envision Computer Training Institute is committed to providing excellent training by highly qualified instructors. They will raise you to an expert level even ...

Meta Descriptions

- ☞ **Keywords:** Incorporate the most important keywords in your meta description
- ☞ **Readability:** It should be simple and relevant, i.e. it should read like a human-written sentence and keyword stuffing should be avoided
- ☞ **Compelling:** It should be as compelling as possible, i.e. it should clearly describe the content of the page
- ☞ **Length:** It should be up to 150 to 160 characters long else search engine will truncate it, so keep the important keywords in the first or second line of the description
- ☞ **Don't repeat:** Write different meta descriptions for different pages else search engine may penalize you for repeating the same description on different pages

Meta Keywords

- ☞ Use a maximum of ten to fifteen meta keywords for a single page
- ☞ Use a comma to separate the meta keywords
- ☞ Don't repeat any meta keyword or phrase
- ☞ Incorporate most important words at the beginning of your meta keyword list
- ☞ They should be specific and relevant to the page, i.e. they should accurately reflect what you are talking about on the page

```
<meta name="description" content="this is meta description example upto 155 characters">  
<meta name="keywords" content="keyword1, keyword2, keyword3, ..., keywordN">
```

Heading Tags (h1, h2, h3, h4, h5, and h6)

- ☞ Heading tags are an important on-page factor.
- ☞ The <h1> (heading 1) tag is crucial and must be relevant to the topic discussed on the web page. Never miss the H1 tag on a page as the search spiders tend to look for h1 tags to get the idea about the content of the page. Don't overuse H1 tag, i.e. it should be only one for each page
- ☞ Avoid skipping heading levels on a web page.
- ☞ <h1> should be followed by <h2>, which in turn may have a <h3>, and so on. You may have multiple <h2> tags or subsequent tags, if needed.
- ☞ Your web page must display a systematic pattern or consistency.
- ☞ Use targeted keywords or phrases in the headings; avoid words that are not relevant to the page
- ☞ Use targeted keywords in the beginning of the headings

Engaging Content

- ☞ Using meaningful and pertinent content in the body section of the site is vital.
- ☞ Relevant content is king.
- ☞ The content should not be irrelevant or stuffed with keywords — the search engines may penalize you for it.
- ☞ The content should be informative and engage the user, encouraging them to return to check out the site regularly.
- ☞ It is a good practice to update the content (such as technology topics) at least every six months.
- ☞ Always spell-check and proofread your content, because incorrect grammar or spelling errors can reflect negatively on your site.
- ☞ You cannot use a keywords 3 times in 140 characters — that is keyword stuffing.
- ☞ Remember, less is more, because quality is more important than quantity.
- ☞ Bounce rate reflects the number of users who visit a web page and then leave.
- ☞ It doesn't matter how much time they spend on the page; it focuses on whether users leave the site after viewing just one page.
- ☞ Low-quality content results in higher bounce rates and will eventually affect the site's visibility.
- ☞ Do not copy content from another website or use boilerplate content.
- ☞ Google search engines have been known to penalize sites that use duplicate content.
- ☞ Focus on user satisfaction and not on fooling the search engines.
- ☞ You can resolve these issues by using either a canonical tag or a 301 direct.
- ☞ A 301 redirect is a permanent redirect from one URL to another that helps users reach the new address.
- ☞ It can also be used for "404 Page not found" errors where content has been moved to a different web page.

☞ A canonical tag is an alternative where you apply a rel=canonical attribute to tell search engines the original or preferred content and the URL to be indexed for display in SERPs.

☞ For example, suppose these two websites have the same content:

<http://example97653.com> and <http://example234.com/seo12345/56473>.

☞ The first URL is the original, getting the maximum number of hits. You want this site address to be indexed.

☞ To implement the canonical tag, you go the HTML code for the second URL and, in the <head> element, add the following:

```
<link rel="canonical" href="http://example97653.com"/>
```

☞ You use the canonical attribute in the head element of the HTML markup for the URL containing the duplicate content and link it to the original or preferred URL.

Image Optimization and Interactive Media

☞ Earlier SEO was text-based, but this has changed significantly.

☞ You should use interactive media such as audio, video, images, and infographics to connect with your users.

☞ Use captions and alternate text for media, and build relevant content around these media.

☞ You can use a single key phrase in the alt text if it is relevant to that image.

☞ You can interchange images based on the screen size, with heavy-duty images for desktop sites and lightweight images for mobile sites.

☞ Try to limit the image file size to less than 80–90 KB for optimal page-loading time.

☞ Use PNG or JPEG image formats wherever possible, because they are robust and have more visual properties.

☞ Using videos explaining a product or marketing a certain entity is a good practice.

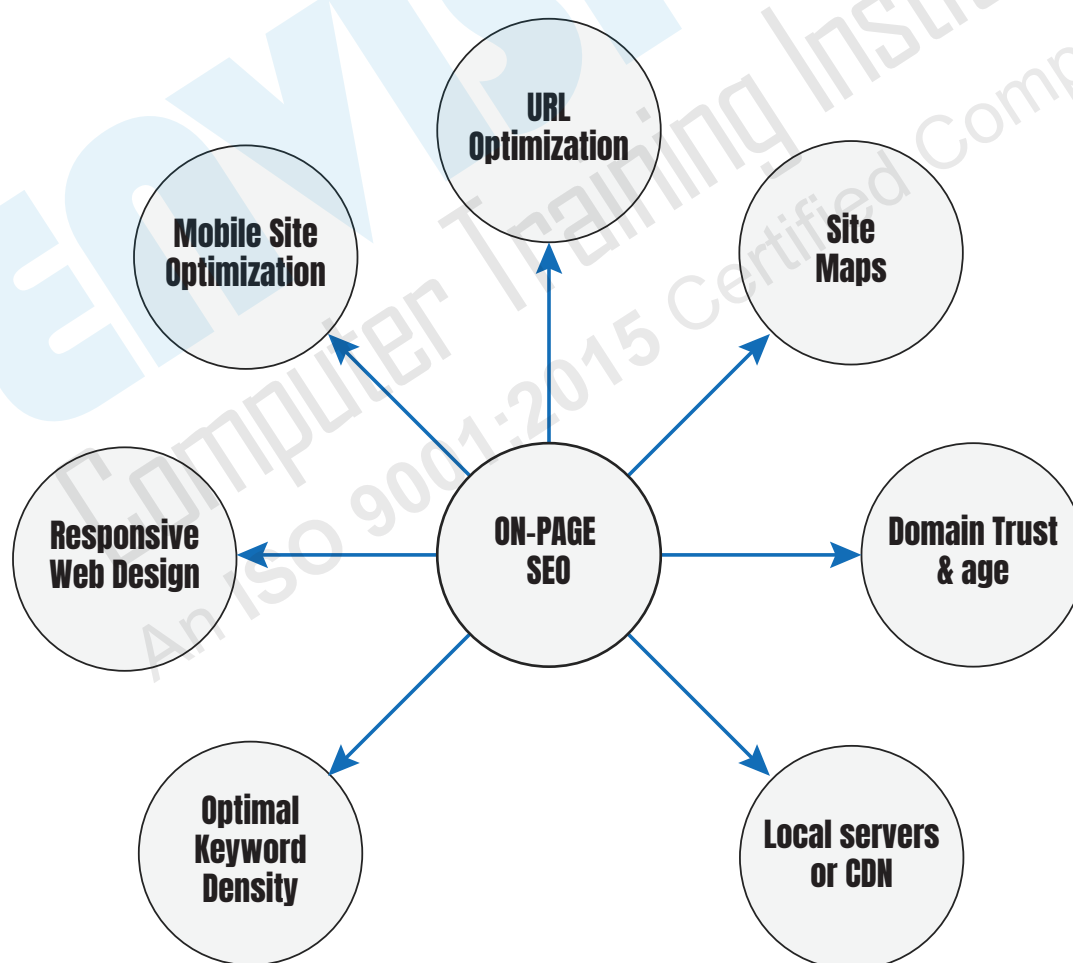
Outbound and Internal Links

- ☞ Internal links are a key feature of SEO.
- ☞ These are links on web pages that point to another page in the site or domain.
- ☞ SEO-related research suggests that no page on your website should be more than three clicks from the home page, meaning all pages should be easily accessible.
- ☞ You can use relevant anchor text to point to different pages on your site.
- ☞ Breadcrumbs are an efficient way to provide site navigation using links.
- ☞ Having a good link structure makes it easy for search engines to crawl your entire website, and easy accessibility also leads to an awesome UX.
- ☞ Outbound links point to another domain or site.
- ☞ They are a good feature for informative or niche topics.
- ☞ Sometimes a page includes jargon or topic-specific terms; instead of wasting time explaining supplementary information on the page, you can use URLs or anchor text as outbound links to locations that explain the information in depth.
- ☞ For example, suppose you are explaining web servers, and you use the word server in your content.
- ☞ Instead of explaining what a server is, you can use the word as anchor text to link to a wiki site that explains the meaning and use of servers.
- ☞ Linking specific terms to wiki sites such as Wikipedia and Webopedia may boost your SEO process.
- ☞ Not only is doing so relevant, but it also lends a certain amount of trust and credibility to your site.
- ☞ You can use outbound links to social media sites or blogs to help reach out to a larger audience.
- ☞ Just be sure you do not link to spammy or illegal sites. because search engines will penalize your site.
- ☞ Also do not link to sites that are not relevant to the topic, because two way linking or link farming can be detrimental.

On-Site SEO

Whereas on-page SEO is relevant to individual pages, onsite features affect your SEO process on the website as a whole. This section explains the following:

- 🔗 URL optimization
- 🔗 Site maps
- 🔗 Domain trust
- 🔗 Localization
- 🔗 Mobile site optimization and responsive websites
- 🔗 Site-loading speed or page-load time



URL Optimization

- ☞ URLs play an important role in SEO, and you need to plan holistically for making your URLs as SEO-friendly as possible.
- ☞ Each URL should be human-readable and not consist of a bunch of special characters or numbers mixed with words.
- ☞ It should be meaningful and should reflect what the site is about.
- ☞ Using hyphens (-) instead of underscores is a good practice recommended by Google.
- ☞ SEO experts advocate the use of canonical tags or 301 redirects for duplicate pages or pages with similar content; otherwise the value of the content may be negated, because as ranking signals may split it across the multiple URLs.
- ☞ For “404 Page not found” errors, you need to use 301 redirects to guide users to a working URL for that content.
- ☞ Using a robots.txt file helps inform search engines about pages to be ignored while crawling the site.
- ☞ You can also indicate broken links and 404 pages in the robots.txt file.
- ☞ SEO experts advocate the user of a favicon on the title bar next to the URL, because it lends credibility and helps with effective branding.
- ☞ It helps users recognize your site and improves trustworthiness significantly.
- ☞ Although there are no direct benefits from favicons from a SEO perspective, they enhance usability.
- ☞ Bookmarks in the Google Chrome browser send out signals to the Google search engine that maps bookmarks for sites on the Web.
- ☞ This it is not a major factor, but it certainly helps from a user perspective.

Site Maps

- ☞ There are two types of site maps: XML site maps, which are tailored to search engines; and HTML site maps, which are directed toward users. An XML site map contains a machine-readable list of pages on your site that you want search engines to index for SEO purposes.
- ☞ It contains information for crawlers such as the last update, its relevance or importance, alterations, and related data.
- ☞ XML site maps are domain-related and help spiders perform a deep search of web pages.
- ☞ An HTML site map is tailored to your website's users and helps users locate different pages.
- ☞ It streamlines the user experience by making users familiar with your website and provides better semantics. UX is a vital aspect of SEO, so it is a good practice to include both XML and HTML site maps in your process.
- ☞ Make sure your XML site maps for search engines are exhaustive; on the other hand, HTML site maps should be more concise so users can navigate them more easily.

Domain Trust and Local Domains

- ☞ Your domain can be a key ranking factor because it creates trust and credibility for site users.
- ☞ Studies suggest that domains registered for two years or longer were considered more trustworthy than new domains.
- ☞ Use the .com domain extension, because it is more common than .org and other extensions.
- ☞ Domain localization—catering to a specific country or city—may prove to be a game changer.
- ☞ For example, .co.in caters to the India and is more specific to users in that region and those with business links to the India.
- ☞ Choosing a domain with a good reputation is helpful.

- ☞ If the domain has been assessed some kind of penalty, it can be detrimental to your business due to lack of credibility.
- ☞ Using keywords in a domain name may be useful; however, given all the keywords that have already been used by websites, you may not be able to have the domain name of your choice.
- ☞ Your domain name is crucial, because it indicates what your site is all about. Opt for a simpler, unique, relevant domain name rather than a sensational name, to help users connect with your site.
- ☞ You can use an online dictionary to check words related to your service or product.

Mobile Site Optimization and Responsive Websites

- ☞ Designers used to create a desktop version and then remove heavy-duty elements to create a watered-down version for mobile devices.
- ☞ Studies suggest that most internet traffic comes through mobile phones and tablets—they have largely surpassed desktop websites.
- ☞ Even web design frameworks such as Bootstrap and Foundation use the mobile-first approach, because the target audience has undergone a major shift from desktop users to mobile users.
- ☞ Until recently, designers created two sites: one optimized for mobiles and the other for desktops. It is essential to focus more on mobile site optimization than the desktop version.
- ☞ Enter responsive web design: an excellent alternative that uses a single URL for both the mobile and desktop sites. Responsiveness is rated highly by Google.
- ☞ All the features and content of a desktop site are present on the mobile version, meaning there is no compromise on content display; the site is user friendly and ensures an optimal UX.
- ☞ The bounce rate will be lower, because users can get the same information on mobiles as well as desktops. Because there is only one URL, there is no redirect, resulting in faster page loading times.
- ☞ Because Google highly recommends this approach, responsive web design is here to stay.

Site-Loading Speed

- ☞ Site- or page- loading speed is an important attribute, because Google and other search engines penalize sites that take a long time to load.
- ☞ An optimal page-load time leads to better conversion and improves the salability of your products.
- ☞ Pages that take a long time to load may frustrate users and cause negative UX, leading to higher bounce rates.
- ☞ Loss of internet traffic or a bad user experience can damage the site's reputation.
- ☞ Pages that take a long time to load may frustrate users and cause negative UX, leading to higher bounce rates. Loss of internet traffic or a bad user experience can damage the site's reputation.
- ☞ There are several ways you can improve your page-load speed:
 - ➔ Minifying CSS, JavaScript, and other files
 - ➔ Minimizing HTTP requests
 - ➔ Using an efficient server configuration and good bandwidth
 - ➔ Archiving redundant data in the database, and cleaning out trash and spam
 - ➔ Using fewer plug-ins and third-party utilities
 - ➔ Interchanging data and images, depending on the screen size
Avoiding inline styles, and keeping presentation separate from markup
 - ➔ Using a content delivery network (CDN)

Introduction to Off-Page SEO

☞ Whereas on-page SEO and on-site SEO factors are based on the elements and content on your web page or site, off-page SEO factors are external and help you rank higher in Search Engine Results Pages (SERP).

☞ They are not design or code related and are more like promotional concepts.

- ➔ Social media
- ➔ Blogging
- ➔ Localization and local citations
- ➔ Inbound links

Learn UI/UX Development from Experts

Call Now: +91 7498713536

ENVISION[®]

Computer Training Institute

An ISO 9001:2015 Certified Company

Thank You