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SEARCH ENGINE OPTIMIZATION FOR THE VISIBILITY AND ACCESSIBILITY OF LIBRARY WEBPAGE

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Abstract *The websites of the libraries at universities and other educational institutions are crucial. The World Wide Web is a crucial communication tool in the age of information and communication technologies. The library's web pages and related materials convey the institution's vision and mission while also offering basic information about libraries. It reveals the caliber of the library's services and resources. With more information generation comes increased information saturation, making it harder to deliver accurate information. In this environment, library webpages are crucial. The working of SEO (search engine optimization) for the visible and accessible of the library website/webpage or portal is described in this study. We introduce the work flow, newsfeed, and search engine optimization for the library website. The tools used for the SEO also mentioned.*

Keywords: *Search Engine, Indexing, Web Crawler, PageRank, Newsfeed, Optimization*

INTRODUCTION

Social media platforms and websites use the internet and are crucial for informing their consumers. Websites for libraries serve as information hubs for their users and meet their information demands. Therefore, it is crucial for any university library to regularly update the content on their website and present all information in an organized manner to assist all users. The websites for libraries should be engaging and appealing so that those looking for information may find resources quickly. The modern library patron is technologically sophisticated and expects interactive features like Web OPAC, Remote Access, online E-Books, E-Journals, virtual video libraries, online messaging systems, chat services, etc. With the proliferation of information and the usage of ICT in the library sector, blogs are a highly useful tool for informing users (Lata & Somvir, 2014). A search engine is typically the first place online people go to discover information. The World Wide Web's fundamental infrastructure does not include search engines, despite the fact that the first one ("Archie") was introduced in 1990. The majority of users' preferred search engines are for-profit businesses financed by advertising. Search engines needed tools for programming algorithms sorting search results in a user-friendly fashion due to the exponential development in the number of websites (Ziakis et al., 2019). A method that works on improving or updating a website so that it appears at the top of search engine results pages (SERPs) increases the likelihood that people will view a website. This process is known as SEO (Kritzinger & Weideman, 2013; Hatab, 2014, Ahmad et al., 2020).

Online marketers employ search engine optimization (SEO) as a tactic to make websites and documents easier to find in search engines. For years, commercial websites have used SEO extensively. Academic search engine optimization (ASEO), which refers specifically to academic texts, aims to help authors improve the visibility of their own publications in search engines and databases while also giving researchers the best support possible in finding results that are pertinent to their search queries. The language of the title and abstract, the selection of keywords, and the inclusion of rich information are all elements that need to be "optimized" (Schilhan, 2021).

LITERATURE REVIEW

Hanumappa et al., looked at the presence of FOSS in the DL software category, specifically DSpace, Eprint, and GSDL, and in the ILMS area, specifically Koha and Newgenlib (2014). Institutions have recently shown a great deal of interest in the migration or adoption of FOSS among Indian libraries as the advantages to the library become more well acknowledged. However, there are obstacles to the adoption of FOSS. The planning and steps for the digital library were described by Rathee and Kaushik in 2019. The challenges to digitization at Pakistan's central university libraries were investigated by Rafiq et al. (2018). They conducted their investigation using a combination of quantitative and qualitative methodologies. Develop a multiple-criteria decision analysis was the title of a study that Rathee et

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al. (2020) conducted and reported. Kokila et al. (2018) examined the problems with online usability and suggested a fuzzy-based methodology for measuring and assessing it, particularly for library websites. The results of the expert evaluations, survey, statistical analysis, and elicitation of usability criteria led to a thorough list of seven usability characteristics and 20 measuring items, which served as the foundation for the assessment framework known as UNSCALE. The study's findings suggest that the suggested framework can help librarians create websites for their libraries that are more valuable to users. On the other hand, it will give scholars and researchers crucial information to better evaluate the effects of website usability.

Nusairat et al. (2021) examined how the Internet of Things (IoT) affects search engine optimization (SEO) while taking into account how user behavior mediates this effect. A conceptual research model was created in accordance with the UTAUT and is the result of an extensive review of the body of prior research. The performance of the top twenty library websites of Indian higher education institutions was analyzed by Wasan and Chakravarty (2018). The study had assessed some library websites' Ahrefs Rank, Referring Pages, Referring Domain, Back Links, and Crawled Pages. The study has taken into consideration the web analyzer Ahrefs. In order to expose the results in line with the desired objectives, the Ahrefs data was evaluated and tallied. For statistical analysis, Spearman's RHO Correlation and ANOVA were utilized.

SEARCH ENGINE OPTIMIZATION TOOLS

There are a lot of SEO tools are available. Some of the tools are free, some paid and some tools are free for limited time and their premium service is paid. SEO tools are used for evaluate / analysis the website or webpage and help to improve the website for better result in search engine. The SEO tools help for the Analytics, Keyword Research, Links, Local SEO, Mobile SEO, On-page SEO, Research, Rank Checking, Site Speed and WordPress SEO.

There are four type SEO tools.

- On-Page SEO (on-site SEO): SEO Keyword Research, Quality SEO Content, Internal Linking For SEO, Metadata SEO Optimization and Image SEO Optimization.
- Off-Page SEO (off-site SEO): Guest blogging, H.A.R.O, Competitor Research and Analysis, Internet ads and Press Distribution.
- Technical SEO: Site Load Time, Mobile-Friendliness, Crawl Error Identification, Keyword Cannibalization Audit and Duplicate Content Audit.
- Local SEO

SEARCH ENGINE PROCESS

The two fundamental procedures used by all search engines are as follows:

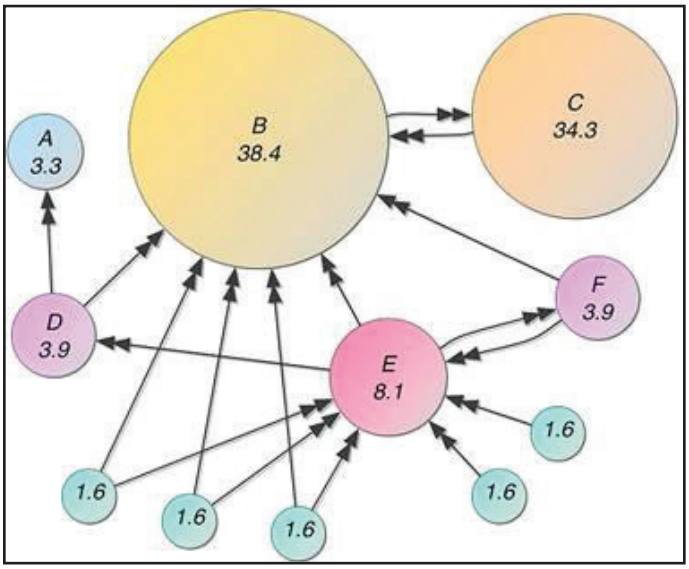
Web Crawling for content collection and updating. A computer software called a Web Crawler (also known as a web spider) browses the World Wide Web methodically and automatically:

- Every link on a page is followed,
- The resources they point to are stored, and
- All of the links inside those resources are followed.

The site administrator may specify that specific resources should not be scanned or that the links in those resources should not be followed, and there may be a cap on the number of links the crawler can follow.

Indexing to speed up searches (without an index all the documents that are collected would have to be scanned for each search). A list of words and links to each document where a term appears are created by indexing text files.

Most search engines also employ additional intelligence, such as stemming, which only indexes a verb's stem, or proximity, which measures how closely a word is related to other words. The application of all this semantic intelligence across various languages makes the process rather difficult. Users would prefer to have the most significant results at the top of the page because the amount of results for many queries is greater than anyone can browse through due to the size of the web. Search engines employ a method commonly known as PageRank for that aim. In a sense, the search line of a Web page is a vote, and the PageRank can be best compared to a popularity vote.



With seven links, B, which is the largest, is referenced. Despite E receiving six linkages, it is substantially bigger than E. B receives more links from websites that have also

got links, which is the cause. The weight of a site's votes increases with the number of votes it receives. For instance, C only gets one link and one vote. However, that vote is the only one that B casts and it comes from B, the most visited site. C becomes the second-largest circle as a result. Since the entire Web is obviously considerably larger, the calculation will inevitably become more difficult. The Web is dynamic, and the pagerank is continually updated.

SEARCH ENGINE OPTIMIZATION (SEO)

One method for search engine optimization is the creation of sitemaps. In general, search engine optimization is to make sure that web crawlers can find the things on the site and raise their ranking in search engine results. Due to how crucial this is in business settings, search engine optimization has grown to be a sizable industry. Search engine optimization comes in two different types:

The Black Hat Method: This makes several attempts to deceive search engines. Black hat SEO is discouraged by search engines, and those sites that use it risk having their listings removed.

The Black hat method may involve:

- By employing particular tags in the source or making the font colour match the background colour, cloaking exposes different material to web crawlers than it does to human visitors.
- Link farms build phone links to products in an effort to boost their pagerank.

There are instances of respectable businesses that have been penalised in this manner (although it is has been repaired quickly after apologies from those firms). Therefore, it is preferable to avoid this strategy, and if a consultant approaches us to boost performance in search engines, be sure to carefully inquire as to how this will be accomplished.

The White Hat Method: This functions with "transparent" and search engine-approved search engine accessibility. There are several strategies that are advised for White hat website optimization. The crucial ones are as follows:

- Consideration should be given to the search terms that we want users to use to find our page. Verify that the page that these words go to actually exists.
- Make sure that page names are clear because it is what users click in search engine results. Technically speaking, the title in the web page's header.
- Ensure that a static link can be used to access each item. There will be issues with dynamic links (links with a question mark in the URL). Technically speaking, dynamic links are those that call an external application (like a database administration tool) instead of directing the user to a static HTML page. A question mark is typically present in their URL. Links created by Java scripts on a page should likewise be handled with caution.
- Search engines should be able to crawl sites that use the Content Management System (CMS) that is chosen if we want to manage our website.

The greatest advice is to collaborate with peer sites that specialise in the same field and link to each other's pages when appropriate in order to raise the ranking of pages.

NEWSFEEDS AND AGGREGATORS

Another way to promote the content of a library portal outside of its own website is through feeds.

A feed is a frequently updated overview of content that includes metadata about the source and the contents, such as blog entries, news headlines, publications, and multimedia. Links to the complete versions of those contents at their originating sites are also included.

Feeds are frequently referred to as newsfeeds because news media (newspapers, television networks) started offering them when they first gained popularity.

A feed is a type of data format that content creators use to deliver constantly updated content to users. It enables the publisher to simultaneously "syndicate" their material to numerous sources. Producers of material might offer certain pieces of their work or the entirety of their catalogue as feeds.

From the standpoint of the user, feeds provide a mechanism to selectively track, subscribe to, and maybe personalise web content into a service. Such feeds can also be reposted on webmasters' websites.

RSS feeds are a common name for feeds (acronym for Really Simple Syndication or RDF [Resource Description Framework] Site Summary).

What all feed standards have in common is that they are all in XML format, and sometimes feeds on a website are indicated by a button like this...

can also find a button like this...


Most recently the makers of popular Internet browsers (Internet Explorer, Mozilla have agreed to use this button.

RSS and Atom standards

Different RSS standards, such as RSS 0.91, RSS 1.0, and RSS 2.0, are used to distribute feeds. These versions were created by various teams of people and are significantly different technically. It was decided to continue working on the new standard, Atom, in order to clear up the confusion. This standard may also be used for the delivery of feeds. All

of this may seem very complex, but feed providers need not worry because feed management software can handle all versions. By subscribing to various feeds, users can build their own menu of dynamic content.We refer to this process as aggregation. Any type of consumer (person or service) can choose to have particular feeds presented in a special application called a feed reader.

Subscribing to an RSS Feed Reader

Initial Steps

It's simple to subscribe to an RSS feed.

Get an RSS feed here: Look for the RSS link on the page (it is typically a small icon with the letters "RSS," "Atom," or "XML" or a link on the page...) on the website of interest with dynamic material (information that is constantly changed, added to, or updated), such as a blog or a news site.

The RSS indicator may also show up in some browsers' address bars next to the website address.

Reading Feeds with a Web Browser

If a web browser is being used as a feed reader, clicking the RSS link will prompt you to add the feed to your bookmarks. Once you've done that, clicking the newly added link will display a list of the most recent headlines that were taken from the feed you subscribed to.

Utilising a Feed Reader Programme

The feed URL can be added as a New Subscription in a feed reader client (or copy and paste it from web browser address bar). The next time fresh content is posted online, feed reader software will begin syncing with it.

Once subscribe, will notice that feed reader shows the post in different formats:

- As headlines only - for when want to go quickly over a large amount of information;
- As summary of the posts - for when not interested in the details or following links, but want to have a general idea of what the content is about;
- As entire posts - for when want to read the complete text and follow links;
- As links to the original posts on the web - for when want to visit the posts on their original formats as they are posted by the author on their website.

News Aggregation Services

Websites that collect news are known as news aggregation services or websites. Either the site's owner chooses the feeds or the feed owners register them. AgriFeeds and Google News are two examples of news aggregation services. Feeds may now frequently be handled by email clients and web browsers as well. These choices are also provided by websites, and webmasters have capabilities to use feeds (from their own website or from others) as dynamic material on their website. Specialized news aggregator services exist, and they can be linked to search engines. Additional specialised aggregator services exist.

Although news items are frequently included in feeds, they are also a great way of:

updating website and repository visitors on the most recent changes. Feeds are also quite helpful in areas with limited bandwidth. Unless they are informed that there is something new, users do not need to connect to a website; and letting other services re-publish content

Providing Newsfeeds for Document Collections

When providing newsfeeds for document collections we will need to:

- Select what feeds want to provide - one general feed (latest from the repository) or specialized feeds on different subject areas.
- Decide how to present these feeds to users (using the icons).
- Go into the technicalities of producing newsfeeds. If a CMS used or a library system it may very well have that option so it is worth checking.

NEWSFEEDS FROM DOCUMENT COLLECTIONS

If library portal platform does not provide with the option to produce feeds, we can:

- As a temporary fix, keep up a blog with recent additions to your library portal, possibly by hand copying and pasting. There are public venues where bloggers can launch their blogs as well as specialist blogging software. The ability to provide an RSS or Atom feed is available for blogs.
- As a long-term solution, the creator may decide to create and integrate feed production as a function of the library platform; this will necessitate the involvement of programmers with XML experience. XML-experienced programmers should familiarise themselves with RSS/Atom requirements. They would be wise to use third-party programming libraries with routines like Rome (https://rome.dev.java.net/) or Feedcreator (http://feedcreator.org).

SUMMARY

Webcrawlers are used by search engines to systematically scan the web and index pages in order to make them searchable. They assess the relative importance of pages using methods similar to Google's PageRank and display

the most significant pages at the top. There are various SEO tactics that may be used to improve a website's accessibility for web crawlers and give search engines relevant terms to index. Sitemap files can be submitted to search engines by owners in order to highlight electronic documents from digital libraries and repositories or library portal/webpage. Avoid using black hat techniques, which try to give the search engine information different from what is provided to the human user. Users can build their own collections of dynamic content using newsfeeds, and information providers can syndicate the same content over many channels. They present a significant chance to highlight the most recent additions to a library website.

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