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RESEARCH ARTICLE

Productive User Navigation through Website Structure Improvement

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Abstract: Due to the rapid growth of Internet applications Now days, the use of Internet applications, a wide range of increase, which is to become a well-designed site structure is a challenge. Design a well-structured site, there are different techniques and methods used, but these have failed to provide effective navigation to the user. By minimizing the change to solve efficient user navigation to the user. In order to provide efficient navigation to the user, which uses mathematical optimization? By the mathematical optimization imply a change should be easy for the user to understand. By increasing the number of micro-session it minimizes the path. Thus, the user can navigate by minimizing change to the actual page to be improved. As a final result, we found that heftily ponderous users are more liable to benefit from disorientation to amend the structure of less than disorienting users.

Key words: Mathematical Optimization, User Navigation, a Degree

INTRODUCTION:

Advantage of the Internet has been for everyone to access and explore information provides an unrivaled platform. In 2014, all the world's Internet users (280 million) within the past seventy-fifth (2.1 billion) reach the top of more than twenty countries. The remaining twenty fifth (0.7 billion), distributed among 178 across the country, each representing, but one hundred and twenty fifth total users. China, the majority of users (642 million in 2014) of countries, representing a total of nearly twenty seconds, and there are more users than the next highest sum over twenty three countries (the United States, India and Japan) in country, the Republic of India is one of very cheap presentation: 19 years of growth, the highest annual growth. Completion of the United States differs in other's .The populations in Germany, France, Britain and Canada countries more than 80% have an Internet connection. Amend the site design is very paramount.

Poor website design, increasing the complexity of the user browsing. The site is designed entirely dependent on Web developers so the most frequent users of the website cannot find what they want. This will be a difficult [1] to find their data for

the user. However, the site is user productivity so that users can find the minimum number of clicks they want satisfaction information.

This article addresses the efficient user navigation, so that they can easily find their desired user data. There are different studies providing easy navigation to the user; these technologies change network technology using a single Web-based user behavior personalization technologies. Most of the technical requirements for the transformation of the restructuring of the entire site. Recombinant [2] led to understand the complexity of the sites often use.

Website First of restructuring some of the problems; some common items changing its position. Second; because the user can not change the reorganization to analyze [3]. Therefore, restructuring is not a perfect solution, in order to provide efficient user navigation. In this paper, mathematical optimization model to improve navigation. This model implies that the minimum number of alterations to the site.

LITERATURE SURVEY:

Site navigation has emerged as the primary essential style options in a number of areas, as well as finance, commerce, entertainment, education, government, health care [4] (Zhang et al., 2000). The website style standards were studied from the qualitative and quantitative perspective each [5]. In literature, the website style is close to completely different aspects. It \ 'have long been seen as a hypermedia system, or database management system}. From reading, network engineering and ideal engineering purposes, taking into account the modeling and sweet thought of a complete image. From human interaction laptop, interface, and graphical style, layout style and practicality analysis website jointly play an important role in style. System style and the style of hardware, programming on site performance caching effects. In addition, architectural style, as well as hyperlinks configuration and data structure, site navigation features on a good result.

EXISTING SYSTEM

The main explanation for the poor style of the site is to be structured net between developers and users, however, a distinction should understand Internet sites [6] [7]. These changes will lead to a new downside, because the user can not simply find the specified data at extremely website. These problems per unit, because the network space development units cannot accurately predict the user's preferences stylish devices common. However, the effectiveness of the site is thought to measure the user's performance, rather than the designer. Therefore, the site can be forced to be organized in an extremely generally refers to an associate's degree in line with the user's normal, but the page has been organized.

A. Relevant Work

In order to improve the user's navigation knowledge from which can be divided into two kinds of ways online journal collection, which the net personalization and transformation.
Personalized web [8] the individual user. This product line log data. The log file contains user browsing data. Personalized premise is tacit knowledge. For example: In e-commerce site, infinite knowledge {|} Information stored information is hard to find accurate data you want. It entirely depends on the user navigation behavior.

Network transformation [9] relates to knowledge restructuring. Reconstruction including online sites that can provide the required data to the user with less redesign clicks varieties to improve the navigation. This method uses a complete Internet site redesign. It instead of re-style the entire Internet website the best answer.

There square measure change between network transformation and personalization. First, the transformation of restructuring the entire Internet site to all users, while personalization think individual users and restructuring. Second, personalization might be a way of taking the time to improve navigation and as a result think about the individual user, it can be transformed think restructuring the entire website.

Transformation requires a reconstruction of the online site. This concludes the data on the quality of the user looking for. Thus mathematical optimization is introduced into the supply and efficient user navigation to the user.

Mathematical optimization includes three steps.

1. MO model [10] to create an alternate link, square measures to improve.

2. Use the log file to increase contacts and common candidates would be increased to get \ 'S, variety in a very small mini-conference session method.

3. If there is any link candidate matching links mean that it recently adopted a new path, so it \ 'LL Once all nodes remove the power node, the line in addition to the destination node.

This article discusses a website in paperback transmuting its structure in order to ameliorate the utilizer's query navigation. It enhances links restructuring methods cited in the reconstruction of centralized internet sites. With this outcome, our model is the opportune site for the maintenance and can be used during a customary substratum.

B. Improved Navigation- Benefit Analysis

Navigation effectiveness depends on the level of styles, namely in the world, the top or the primary level and at the page level. Global Style summarized by the .NET application works and mainframe requirements. In - Page Style adhere to a computer program pointer appearance and display the relevant quantity. Net primary-style usage mining analysis given priority. Customization and transformation, but because of two basic rules, most viewed performance. In the last one, the transformation of the priority given to the smallest site structure; but the site is essential restructuring logical style, in addition, to meet the needs of users.

C. For the production of navigation Metric

Our goal is to improve the effect of changes in navigation and tokens of internet sites. Thus, the main question is, given an Internet website, a method to determine the effect of its navigation. Marsico and Levial di [11] showed that the data to be useful only it desired process to maintain the target user's method of giving '. Palmer [12] showed that the prospective site is easy to navigate the Internet need to allow users to approximate the desired information, and will not get lost or overturned. We have a tendency to follow these concepts and decided to support the effects of site navigation, but continuous data organization associated with the user's expectations.

The easiest way for well-structured website is users expect differences in its structure and the structure between reduced. Because users typically targeted website details some of the information [13], that is, they 're looking for some specific data, you will need to pass the information to the user before he tried number of times. Our metric explains the concept of data within the framework of the hunt scent theory developed data. Data hunt theoretical model of exploitation of animals metaphor human operator to seek food and seek knowledge and technology can solve on-line, an honest to accept the price structure theory.

When the information refers to the proximal scent cues (for example, text graphic link associated fragment), which allows the user to estimate the "distal" objective knowledge and verify a suitable path. Measures disloyalty user side purposeful decision on every page; they used to send to the efforts and the blameless life like cover, through every aspect of the possibility to reach their goals and establish navigation selection result information. Thus, the user is assumed to follow seems about to lead him to the trail objectives.

This indicates that the user can return to the association already visited pages to traverse from starting page to target page, if he cannot find the current path of the target page. So we have a dip in the number of methods used to achieve a number of users has been running live near to times the user has tried to find a goal as a target. We have a tendency to use backtracking to identify prospective user has gone the way, regardless of return is written as user back a antecedently browse the web. Intuition is, the user can return back, if they do not, where they think it noted page.

Therefore, a utilizer access path is indited as a sequence, rather than the back page, a concept that is virtually kindred to the height of the forward reference discloses spp. The main purport is that each back cessation of the path. Therefore, supplemental mode, the utilizer has passed through goals, extra inconsistently erratic situating structure is expected from the utilizer.

PROBLEM DESCRIPTION

The quandary is that most of the clients navigate the report triggered an Internet website to give up and switch to rival [14] down results. Under mundane circumstances, has gone through a plethora of ways to ascertain a target designates that the utilizer will additionally have experienced navigation quandaries. Therefore, webmasters can ascertain efficient utilizer navigation through the structure of the situation,to avail users achieve their goals more expeditious. It will be paramount that the consequential commercial sites, to facilitate site navigation on the company results will have a positive perspective, and to stimulate the line, and has a low availability of the site is not possible to draw in and retain customers.

Our model allows network administrators to specify user navigation target. The goal is alleged individual landing pages and published. But allows very little during the conference to achieve this goal is the most important page of the selection result. We have a tendency to often call this target threshold temporary trail entire article. Among the words, which won the user navigation target, the Web site structure has been changed very terrible show, but need to improve the structure of the search for the target of such an amount not greater than the threshold of the path.

EVALUATION OF PROCEDURE

Due to the new and improved links to create faith, the required profit is often understood as the edge of our model, the best thing. However, we may claim to improve and recently added links can direct utilizer to search their landing pages be more efficient way, to some extent. This is often because: 1) we have ways to build an economical method to focus on website optimization not visit the website before, and 2) our method shows that the rise of contact, which will cause a user's destination page and Efficiency, however, difficult for users to understand (because they do not understand what these links will lead to), so that the additional economic navigate often accelerated. Since our analysis is based on a true simulation primarily related to user usability studies may help to strengthen our findings deserve more study. However, we note that the availability of such studies are usually expensive extra time and site assessment of the range of [15] fierce, so the AR small sites generally performed. In distinction, the simulation is often simple to implement and quickly carried out different parameter settings, and in a large scale test.

A. Improve navigation efficiency

Navigation effectiveness depends on the style on many levels, namely at the global level, continuous level, and page navigation. Style at the global level by the online application employment and central processor requirements outlined. On page style stick interface pointer to find and display the contents of the relevant quantity. Less in the transformation of the attention given to a maximum structural information processing systems; however, the reorganization of the information processing system is consistent with the nature and guide fashion, to meet the user's desire

B. Small conferences and object recognition

Here it counts spend maximum time on the page is used to seem to the user's destination and differentiate into mini sessions longer assume the user destination page. The maximum time Page is also used as a page or document presenter good communication in various studies [16] Users typically accurate method. Web mining, the maximum time spent on the page model, and with a total of completely different time-oriented method is widely used even to the edge of the measured values change very economical session identification unit.

C. Illustrative Examples

Let the matrix represents the connectivity of a website that has 4 pages. A value in a matrix indicates connectivity between two pages. For example, if there is a link exists between two pages, then it indicates 1 in connectivity matrix.

Example:

$$\begin{bmatrix} 1 & 1 & 1 & 0 \\ 0 & 1 & 1 & 1 \\ 0 & 0 & 0 & 1 \\ 1 & 0 & 0 & 1 \end{bmatrix}$$

In the above connectivity matrix, (1,1), (1,2) (1,3) are having values as 1 that means, those are having connection between pages. The value 0 indicates there is no link exist between pages.

TABLE: 1

An Example of Mini Sessions

ID	Mini Sessions
S1	{{2,1}.{4}}
S2	{{4,1},{3},{2}}
S3	{{1,3,2},{4}}
S4	{{3,1},{2,4}}

Table:1 Displays a set of mini sessions, each session has one or more paths. For example mini session S1 has 2 paths target as 4. The user starts from 2 and back tracks to 1 and moves to target 4. In table 2, we had given candidate links set those can be used to improve the web page and helps the user to reach faster with in all mini sessions.

TABLE : 2

The set of All Candidate Links

ID	Relevant Candidate Links
S1	{{2,4}.{1,4}}
S2	{{4,2},{1,2},{3,2}}
S3	{{1,4},{3,4},{2,4}}
S4	{{3,4},{1,4}}

Table 2 Displays all set of candidate links from all mini sessions. From the above candidate links we can eliminate frequent mini sessions.

TABLE: 3

Relevant Candidate Links

ID	Relevant Candidate Links
S1	{{2,4},{1,4}}
S2	{{4,2},{1,2},{3,2}}
S3	{{1,4},{3,4}}

SESSION SEARCH

A. *Browsing session*

Searching session, users search for certain specific information. This search, there are some specific goals. However, some users simple search. This user is no specific targets. Assessment is not a need for this type of conversation. Therefore, we can eliminate the browsing session. In this paper, it is mainly concentrated in the search session, in order to provide efficient navigation to the user. Browsing is simply one site to another or from one page to another scan the World Wide Web.

On the other hand, in search session users to find specific price information. Some users have a specific target those who are searching [17], and some users may only browse common data. Although access to the information from the observation of the blog anonymous users to ensure that quality would help differentiate between 2 meetings. There \ development to our information, in order to distinguish 2nd species, further studies on this issue are not normal algorithm program is required.

B. *Path beginning*

Path started it targets the user to traverse the model must be forced to perform an impromptu and in various ways during this time to achieve. Series of works analysis file, which contains all the users will be the first to build it accomplishable seen, once the guests leave before the Internet site to identify the destination. An honest analysis path realistic choice. This analysis to help guide the user perceived expectations and build path starting value reasonable pick. For example due care associate, if a sample survey of the tourists generally provide four ways voyage, so we tend to be able to set the path AR start to five years or less. Third, the company [18] have gathered a large number of client Web usage information in a decent selection of internet sites. Path analysis of knowledge and information in this regard could lead to cost-effective manner in which the species in which the selected sites beginning value.

C. *The threshold*

Page will generally fall into two categories: the index pages and content pages. Deputy index page is designed to avail users amend browsing and will embrace many links and data users interested in the content page contains not a few links. Thus, for a page out of the threshold by the destination page is, therefore, the site is extremely striking. Typically, the threshold for the index page of contents page should be more than [19] large. As an example, a square quantifying degree threshold is set to 30 and 10 to the index and contents pages, and it gets in the experiment, since the optimal threshold checking out side out of the context-dependent and tissue-dependent quantifications, behavioral and experimental studies threshold set for the sundry measures require square. In general, the threshold can be set once a diminutive low most pages have relatively little contact, and as an incipient link-square measure auxiliary edge will increment bit by bit..Please note that due to our model does not improve the internal structure of the exhaust restrictions imposed as a Web page, it \ less from the alternatives the threshold of the literature with respect to torture.

EVALUATION RESULTS

The real data set was collected from VNRVJIET website (www.vnrvjiet.ac.in) and contained six thousand requests observed in a span of two months.

Before analysis I've used pre processing steps to filter unused information from user log files and I've considered time out method and threshold value to identify user destination.

TABLE: 4

Path Characteristics of mini Sessions

Number of paths	Number of Mini Sessions		
	T=1 Min	T=2 Min	T=5 Min
2	13,130	12,127	8,127
3	2,217	2,129	2,097
4	720	989	897
5	310	302	299
6	105	212	198
7	29	27	23
>7	9	7	6

Time taken for producing solution varies from 0.1 to 0.9 seconds which denotes this model is very efficacious for authentic-world websites.

TABLE: 5

Results from the real Data Set

Time Threshold	Multiplier of penalty Term	Path Threshold	Out-Degree Threshold (C) =6			
			No. of new links	No. of links to be ameliorated/Improved	No. of Excessive links	Time (Sec)
1 Min	0	1	312	112	219	0.289
		2	57	37	43	0.319
		3	9	8	6	0.193
	1	1	312	109	208	0.284
		2	58	38	40	0.412
		3	10	9	6	0.392
2 Min	0	1	167	67	138	0.024
		2	45	23	36	0.298
		3	15	4	6	0.246
	1	1	169	100	120	0.245
		2	61	40	56	0.319
		3	18	20	12	0.299

CONCLUSION

In this article, we have a tendency to put forward a mathematical model to improve the site's structure, in which the minimum effective user navigation. We have a tendency to recommend the deputy care it provides a set of links may be re-linked to enhance the algorithm rule the site structure. This method may be higher than redesigning the whole answer Internet sites. This rule algorithm is the most suitable site and basically static content. This model is often extended to enhance the dynamic websites network.

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