ORGANISING USER SEARCH HISTORY

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Abstract—**People search complex tasks such as making travel arrangements, managing finances or planning purchases on web. When the user wants to retrieve the previous information or past history from the web, the search history helps him. The tracking of the queries and the clicks is done by the search engine. This will be useful to the user and provides a very good support in retrieval of their past search history. In this paper, we deal with the problem of how to organize a search query history of a user into various categories or groups in a dynamic and automated fashion. Each and every group consists of the information that belongs to the same category searched by the same user. This approach is advanced than the approaches which depend on time thresholds or textual similarity and influences search query logs very effectively.[1]**

INTRODUCTION

People accessing the online information in a search engine through keyword queries are a most significant way. All the complex tasks such as planning purchases should be divided into multiple mutually dependent steps with in a time period. Let us consider an example of a user first looking for probable purpose, timeline and events, etc. The user can search easily for air tickets, lodging, food etc., once he decides when and where to go. One or more queries are needed for every step and clicking one or more times on relevant pages are the results of each query.

The capability of identifying and grouping the related queries together helps the users in searching complex search queries online. Using "Search history" feature, users can track their searches performed online. All the queries and clicks are recorded by this feature of search engine. The figure below demonstrates a part of a "user's search history".[2]

User's Search History

Time	Query
09:12:24	New balance shoes
10:15:34	Lakme
10:19:50	Adidas shoes
11:12:14	Claires
11:16:24	Maybelline
12:13:56	Samsung Grand

Query Groups

Lakme
Claires
Maybelline
Adidas
New balance
Samsung Grand

Here, the user searched for New balance shoes, Adidas shoes, Lakme, Maybelline, Claires and Samsung Grand. Now all of these are stored in different categories. Adidas and New balance are different shoes. So they are stored in shoes section. Lakme, Claires and Maybelline are cosmetics. So they are stored in a different section. Samsung Grand is a phone. So it is stored in a different category. This helps the user to retrieve the previous searched information very easily.

In this paper, we explain how to organize historic search queries of a user into various categories or sets in a dynamic and automated fashion. Each and every group consists of the information that belongs to the same category searched by the same user. Arrangement of query groups from search history of user is the key aim. Each and every cluster of query contains one or more related query and their subsequent click. Every search group relates to a atomic data that might necessitate a little amount of questions and clicks identified with the identical pursuit objective. Recognizing related query groups has applications past serving the users to bode well and stay informed concerning queries and clicks in their search history. Above all else, grouping of queries permits the web index to comprehend the session of the user and possibly alter the experience of the user's hunt as per his requirements. When a collection of questions have been distinguished, web crawlers have an illustration of an inquiry setting which is present behind the current search utilizing

inquiries and gets on as a part of the relating question group.[3]

New query groups are created when the dynamic updation of new queries is done. Here, we do not depend completely on textual or the temporal properties of the query to make the system efficient and helpful.

As an alternative inside a search engine's log, we can we can force search behavioral data. Other users can be assisted by query grouping in the promotion of task-level collaborative search. Case in point, when an arrangement of question groups are structured by users who are experts, a choice can be made from the one preceding vital to the current user's movement of query and recommend them to him. Express shared inquiry can likewise be carried out by permitting users in a group which is trusted to discover and combine applicable group of questions to carry out huge, long haul assignments on Web.[4]

Excluding the disturbances of the already present user-defined groups of query assures a good performance. Grouping has to be done in a similar way, the present query has to be placed first and that clicks onto a single group of query "sc = {qc, clkc}", which is compared with each and every group of query that is already existing in the history of the user. It is necessary to group the already present query groups which are related to sc. Groups of query having the maximum similarity above or equivalent to threshold must be combined with sc, else sc is placed as a single group of query and inserted into S.[5]

MODULES

- Search History

This module includes the browsing history of a user which is a list of web pages a user has visited recently and associated data such as page title and time of visit.

- Query Group

A query group is an ordered list of queries, together with the corresponding set of clicked URLs, clk_i of q_i. A query group is denoted as $s = h\{q_1, clk_1\}, . . . , \{q_k, clk_k\}$. Evaluating the relation between two queries is core of the solution.

There is a necessity to measure the relay on time or text and alternatively propose an evaluation that is based on signals from the search logs.

- Query Relevance using Search Logs

Relevance measure involves capturing two major relevant query properties:

(a) Queries which appear frequently as reformulations.

(b) Queries which induce the users to click on same sets of pages.

- Dynamic Query Grouping

All the queries in search history of a user should be treated individually as a singleton query group. All the singleton query groups should be merged iteratively.

CONCLUSION & FUTURE SCOPE

In this report, we show how the user search histories are organized into query groups with the help of search information. Query Grouping helps the users to search the data easily which they have searched previously. The search can be performed directly in the group to which the Query may belong and the exact information is known without performing any reformulations. This reduces the user overhead of searching the entire browser search history. As future work, we can use these query groups in various applications such as providing query suggestions and biasing the ranking of search results and the search results in one system can be accessed from other systems.[6]

REFERENCES

1   Heasoo, H., et al., *Organizing User Search Histories.* Knowledge and Data Engineering, IEEE Transactions on, 2012. 24(5): p. 912-925.

2   Gaurkhede, A.R. and D.R. Dhotre. *A survey on user specific search using organized search history.* in *Power, Automation and Communication (INPAC), 2014 International Conference on.* 2014.

3   Jinarat, S., C. Haruechaiyasak, and A. Rungsawang. *Improving web search result categorization using knowledge from web taxonomy.* in *Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology, 2009. ECTI-CON 2009. 6th International Conference on.* 2009.

4   Kan, L., Y. Fenglan, and L. Ruipeng. *An online clustering algorithm.* in *Fuzzy Systems and Knowledge Discovery (FSKD), 2011 Eighth International Conference on.* 2011.

5   Speretta, M. and S. Gauch. *Personalized search based on user search histories.* in *Web Intelligence, 2005. Proceedings. The 2005 IEEE/WIC/ACM International Conference on.* 2005.

6   Jun, L., et al., *Online clustering algorithms for radar emitter classification.* Pattern Analysis and Machine Intelligence, IEEE Transactions on, 2005. 27(8): p. 1185-1196.