

Service Oriented application based search Engine for Mobile Users



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Abstract: Optimizing the search engines in mobile phones is still an important research issue in the field of knowledge and data engineering, even though various approaches are available, performance and time complexity issues are the primary factors while implementation of the search engines. We are proposing an efficient personalized mobile search engine with efficient features of Mining, Ranking and Cache implementation over the service web services.

INTRODUCTION

Searching for user interested query results is always complex task even though satisfying the user search goals because of various reasons. Billions of information available over internet, retrieval of relevant information from billions of documents is sometimes fails because of search mechanism implemented in the search engine.

Some of the users may come with misspelled keywords as input query, search engine should initially correct the keyword and forward the corrected candidate to the search process for the generation of rank oriented search results.

Web search engines[1] have made many contributions to the web users and society and they make finding required information on the web easy and in efficient manner to end user. General search always work with some basic principles of string transformation, semantic comparisons and ranking of the documents for input queries.

Approaches like "Leveinstein" distance works with edit distance there it compares with dictionary of keywords and checks minimum number of edit operations, swap operations and delete operations required to convert source string to destination string and query reformulation gives the reformulation like "NY", it searches for NEW York, but these approaches fails when exact index based keyword not found.

Even though various search engines available worldwide, end user have specific requirement to use such search engine. It can be general search engine, it can be text based, voice based or it can be image search engine. Every search engine follows basic rules and features while searching the require information like string transformation, Localization, Globalization, semantic comparison. Query reformulation gives optimal comparison when we are using short form of the keyword. User information needs may change

over time. Indeed, users will have different needs at different times based on current circumstances.

RELATED WORK

Various Search engines developed from so many Year of research from various researchers. But they still have the vulnerabilities in optimization, Specifically in personalized mobile search engines. Only the mining of results may not give the optimal results to the user search query. Time complexity and space complexity are also the factors while implementing mobile search engines[7,8].

- Round trip should be performed for each search.
- Lack of language interoperability.
- Increases the redundancy and malfunctioning of business logic.
- Less performance.

The order of the words is taken to consideration. For instance, the term "computer science" is store as it is in that order[9]. If a user type "science computer" then a new entry will be create to capture these new terms. Each of the terms, be it a single word or several words, will be associated with a weight that records the frequency that the terms have been used. The second factor to be defined is the keyword to Webpage popularity. After the search engine returns, the search results to the user, the user will select Web pages for viewing. The relationships between the search keywords and the selected Web pages will be recorded[10].

Most of the traditional approaches works with regular client server architectures. It leads to major issue while a latest technology changes required in future because if we need to understand the existing technology. Service oriented applications resolve those issues.

Here, we introduce a new way to define the Web page popularity by counting the number of popular keywords

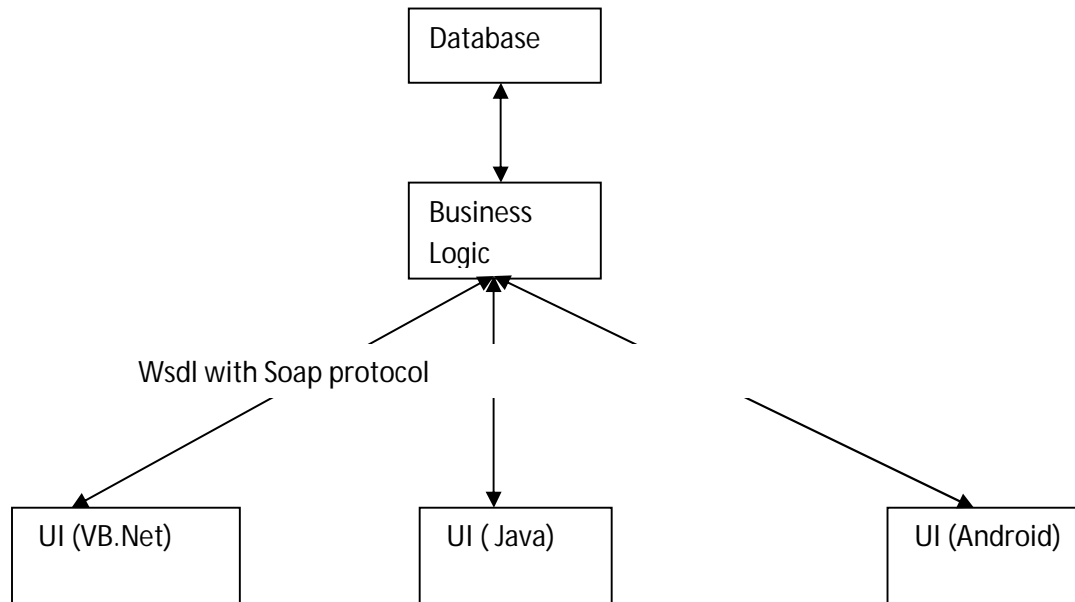
contained in the page. The idea is that if a Web page contains a large number of popular keywords, then it should be considered as more popular. All these ways of defining the Web page popularity can be combined to form a comprehensive one.

PROPOSED WORK

We are proposing an empirical model of personalized mobile search engine with efficient features to fulfill the user requirements in optimal manner, by the approaches of mining the previous search results based on the location of the search result for the user relevant query. Ranking the user search query results and the Cache implementation for the frequently accessed previous search results to improve the performance of

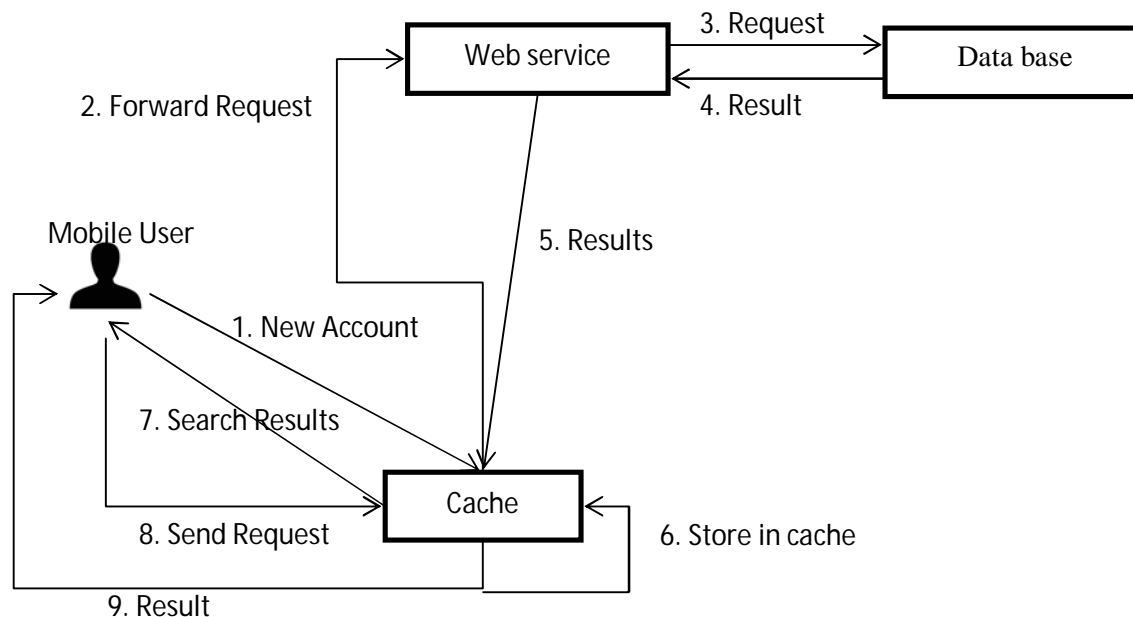
the both ends. It was found that a significant number of queries were location queries focusing on location information. In order to handle the queries that focus on location information, number of location-based search systems designed for location queries have been proposed. Proposed system provides language interoperability through service oriented application. Reduces the chances of redundancy and malfunctioning and improves the mobile performance by implementing the simple cache and rank oriented results can be retrieved.

Web services are the technology to create service oriented applications. It reduces the redundancy by maintaining the business logic at single location. The main objective of the web services is language interoperability and reduces the chances of malfunctioning from the user end



Cache is the mechanism which stores the frequently accessed information i.e. round trips over the request and responses during the user query. If a user makes the same query which is searched previously, then there is no need to process a round trip again, because once results retrieved from the server it can be stored in the cache, second time onwards query results retrieved from cache.

Initially it computes the file relevance score in terms of term frequency and inverse document frequency, Term frequency (Tf) gives the number of occurrences of the keyword in a document and Inverse document frequency gives the number of occurrences of the keyword in all the documents then file relevance score can be calculated as follows:



Sequential Steps for Rank oriented results from Web service as follows

Step1: Initially user makes a request with input keyword from Mobile.

Step2: It reaches to cache and checks whether it is retrieved previously, if available in cache then returns from cache else forwards the request to service.

Step3: Service retrieves rank oriented results based on term frequency from the data base.

$$F_Score = TF * IDF$$

F_{Score} = file relevance score.

TF = term frequency.

IDF = Inverse document frequency.

Step4: Retrieved results stored in Cache for future purpose.

Step5: Finally rank oriented results can be forwarded to mobile User.

For experimental analysis we implemented service oriented application in Dot Net and Android. Business logic can be maintained in Dot net web service, client end or user interface can be android emulator. Input query can be

passed through Android Mobile and logical computation can be done at service oriented application.

CONCLUSION

We are concluding our research work with efficient Ranking oriented results approach through service oriented application in mobile applications. Cache Implementation increases the performance by reducing the response time or execution time if a query is processed previously, our experimental results shows efficient results than the traditional approaches.

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BIOGRAOHIES



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