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A Study for Friend Recommendation based on User Behavior

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Abstract

Recommender systems have made significant utility in daily routing life. Social Networking Sites and Friends connection are very important part of life. It may help for business intelligence, innovation or building new team. It is an online platform that is used by people to build social networks or social relations with other people who share similar personal or career interests, activities, backgrounds or real-life connections. Now days, people want to do beyond the box and always demand for something extra ordinary.

Social networking sites are varied and they incorporate a range new information and communication tools such as availability on desktop and laptops, mobile devices such as tablet computers and smart phones, digital photo/video/sharing. The main types of social networking services are those that contain category places (such as former school year or classmates), means to connect with friends (usually with self-description pages), and a recommendation system linked to trust. The objective behind this project is to explore the lifestyle of user from their daily activity and transactions of user and recommend more relevant and useful friend suggestions beyond their thinking.

This project work proposed to develop a unique solution to derive most relevant friend suggestions as per user input and recommend more connected friend group or social activity club from same. The complete project will interlinked data mining concept with latest user issue to refine most optimum solution. Java Technology will be used to develop and evaluate the same.

1. INTRODUCTION

The growing internet world and hectic schedule of daily life create so much difficulty for internet Users to find desired information. This situation becomes worse when user try to search information and get irrelevant information. Inadequate knowledge of search tool and large amount of data gives poor performance to retrieve or extract desire information. Recommendation systems offer intellectual practice based on user preference. Recommendation systems offer separate and specialized set of information. In recent years, Web personalization has received much attention to help Internet users with the problem of information overload.

The complete study concludes that "An extensive application or tool that involves user preference or self collected knowledge for predicting user desire and explores the best possibility of relevancy among information is known Recommendation System." or it can be state that "Recommendation System is tool that provides pre

specified knowledge based information". Recommendation System may useful in various fields such as Friends, marking, shopping, product search etc. Friends recommendation system offers collection of relevant Friends, articles, and suggestions based on user interest. They may offers Friends based on Friends popularity and visits. Friends ranking, priority, area, impact etc may be the core logic behind any Friends recommendation system according to

1. Suggesting new friends to active user based on a prediction of users interests.
2. Explore user lifestyle for offering customers of on-line retailer suggestions about what they might like to buy based on their past history of purchases and/or product searches.
3. Recommending relevant friends and active clubs

A recommendation system can be classified according to their technique behind knowledge mapping and recommendation taught. They are explained as follows;

1. Knowledge based recommendation system
2. Content-based recommendation system
3. Collaborative-based recommendation system
4. Demographic recommender

1. Knowledge based recommendation system

Knowledge systems recommend suggestions or solution by generating manually or automatically a number of conclusions and decision rules. It emphasizes on explicit field knowledge about the requirements and user preference.

On the other hand, manually generated decision rules or drawn conclusions may be biased and not suitable for personalized systems. This system associated with different drawbacks such as bottleneck problem during knowledge processing and inherit problem during user profile creation and linking with existing information. A automatic knowledge based system is recommended where input of data may be subjective and can vary according to requirement.

2. Content based recommendation system

Traditional Content based recommendation system based on user preference and content exist at data source. It compares and extracts the information from web pages and data sources and match with user preference. It also uses popularity calculations and frequent uses to find most used and most demanding content. It uses this concept to evaluate and sort content according to demand and popularity. Generally, it observes the description associated with items or existing content and compare with user preference.

In many Web-based personalized applications such as e-commerce and e-learning sites, several techniques for document modeling, information filtering, and techniques for deriving information from the pages content are proposed. In such application, user profiles are generally described as vectors so that every entry of vectors represents a weight or an interest degree of each item in the Web pages.

3. Collaborative based recommendation system

Collaborative-based or so called social-based are an alternative approach to the previous approaches, aiming to improve the limitations of content-based approach. It exploits the other user's profiles in the same community and recommends new items not previously rated or seen by the user based on the assumption that similar users have similar interests in the same community. Therefore, recommendations take places based on the user similarity and recommend items from the interesting list of other people in the same community.

4. Demographic based recommendation system

A demographic recommender system provides recommendations based on a user's demographic profile which involves user's demographic data such as gender, age, date of birth, education, and other personal features

2. Related Work

Kacchi & Deorankar[1] address that lifestyle is one of the major and important part of social networking websites. To address their need and overcome the existing solution, they developed a solution model based on filtering and recommendation system. Proposed solution is based on data collection and analysis method with friend matching graph and ranking steps. The proposed system will work like a client-server application where the user which is requesting the query acts as a client. Life documents of each user are collected from the client with the help of browser. In this phase, these collected data will be stored into a file either in semi-structured or structured format accordingly. The life styles of users are extracted by using either Hadoop technology or SQL depending on the type of file as input to it. Then the concept of reverse indexing is used for easy retrieval of the desired data. Then with the help of graph data structure we can represent the relationship between users. As recommendation is based on different priorities like similar interest, similar blood group, nearby location, ranking is also one of the factor. So, the ranks of users are calculated using the pseudocodes mentioned in this paper. Finally, client/user sends a query and server will respond a list of friends to the user/client (browser) accordingly. A block representation of proposed solution is shown in figure 2.1.

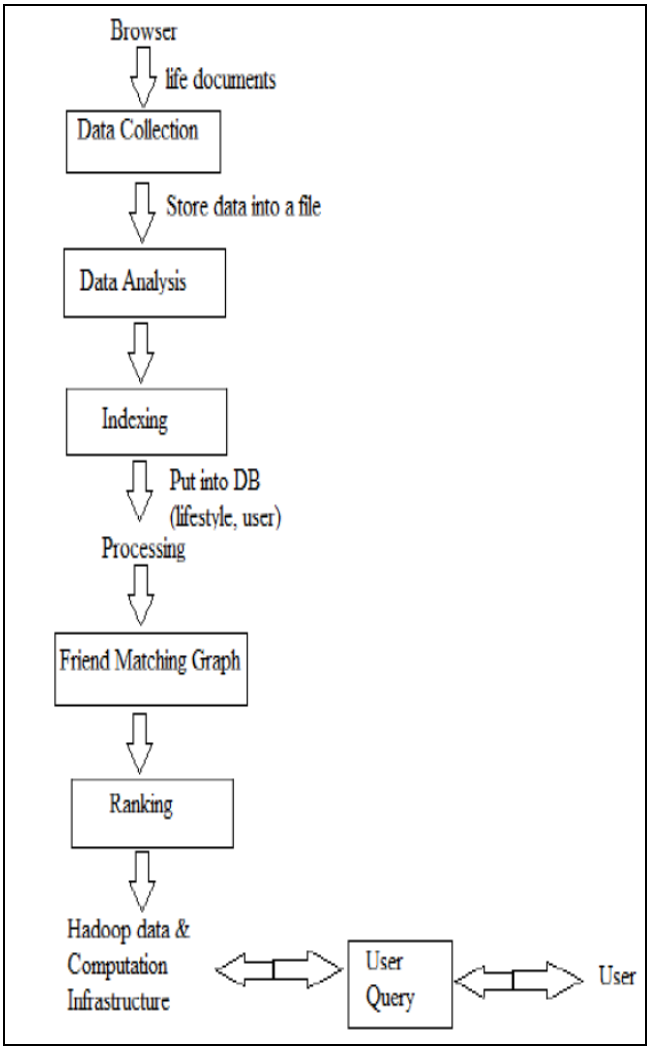

Figure 2.1: Friend Recommendation System

3. PROBLEM DOMAIN

The information overloading and irrelevant information extraction is major problem of today. Information portals and renowned sources consists large quantity of data uploaded for various Subjects. Hectic schedule and poor knowledge of technology exhaust the user during information searching and information retrieval. It becomes pathetic when user recently joins any social networking sites. Initially, user account start with zero friend and user may find it worthless and boring. Here, finding the old friend from huge user list and not be possible to send friend request. Subsequently, user may want to connect across the world people who match their lifestyle and can help in their problem. Lifestyle and activity are the two most common factors which can be used for friend recommendation. It may help to meet user searching and effective friend connection.

Everyone has difference perceptions and different reading liking. It may vary as per user preference and job requirement. Popularity of content and impact of information is also important for user search. Exploring

the particular lifestyle from the user is the essential phenomena to recommend relevant friends. This problem becomes more sensitive and crucial when we try to extract current affairs and Friends from large online sources.

A Friends suggestion can be explored from various sections like city, sports, editorial, international, national, entertainment etc. All this sections have equal importance and different user followers. Some time there may be possibility that, they may consist relevant information but in different sections and different Friends papers. Friends Recommendation System can overcome this problem and suggest relevant Friends according to user preference and popularity factor.

A lifestyle based friend recommendation has been suggested by few authors which are discussed in related work section.

The complete study concludes that there is need to develop popularity and uses based recommendation tool to gather popular and important relevant Friends at one place.

4. SOLUTION DOMAIN

Web mining is the application of data mining techniques to extract knowledge from Web data, i.e. Web Content, Web Structure and Web Usage data. Web content mining extract knowledge according to users' content preference and content usage. Content-based systems examine properties of the substance recommended. In a recommendation-system application there are two classes of entities, which we shall refer to as users and items. Users have preferences for certain items, and these preferences must be teased out of the data. Here, User preference will be section selection or keyword to be searched into Friends content and item will be Friends and user information and articles/ activity or lifestyle.

The proposed recommendation system adopts the concept of content web mining and integrates popularity and demand factor to extract effective and relevant Friends content. The proposed model will consider a Friends data set as input and classify the information on basis of heading (title), place, Friends agency, highlights, keywords, content and section. Recommendation will be based on user keyword preference and popularity of article. Article ranking may used for Friends sorting and information extraction. Association rules can be developed to make decision rules and extract relevant Friends article from Friends portal. A block representation of proposed solution is shown in figure 3.1.

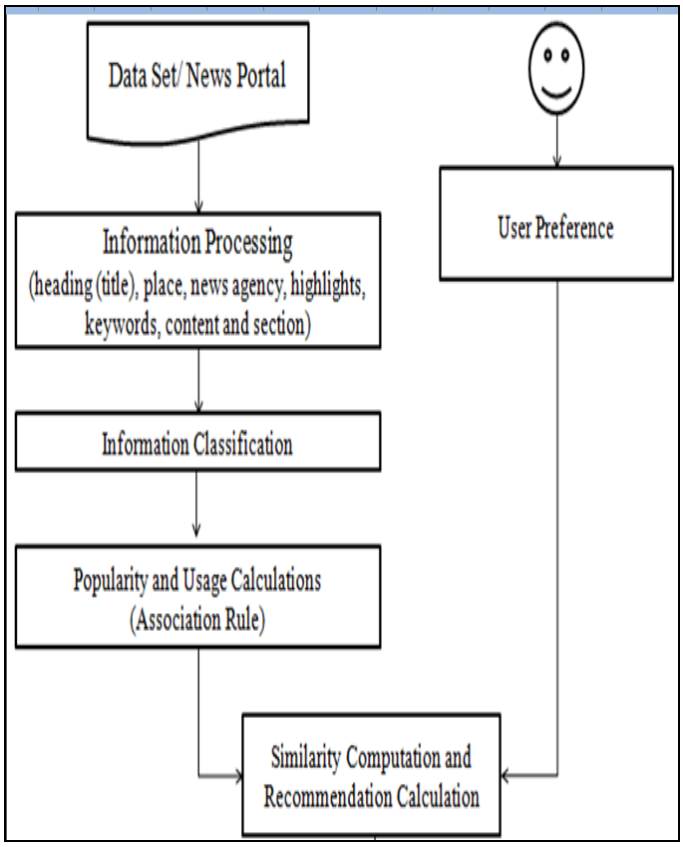

Figure 3.1: Proposed Solution

7. Conclusion

Recommender systems have made significant progress in recent years and many techniques have been proposed to improve the recommendation quality. However, in most cases, new techniques are designed to improve the accuracy of recommendations, whereas the recommendation diversity has often been overlooked. Proposed system will not only observe the Friends content on user preference or popularity basis but also refine article on priority and impact basis. Proposed system will help to refine popular and effective Friends content according to user desire.

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