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An Online Secure Social Networking with Friend Discovery System

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ABSTRACT: Now a day's people are inattentive with their busy work life so they do not have any time to spare for themselves. However, they have to restore to a platform like social networking for staying in touch with their dear ones. Social networking is the most effective and convenient way for interacting with the people around the whole world with the help of social networking services, people can communicate interact with the others who are away from them.Friend discovery system is a social networking service to help people make new friends.The existing social networking service recommends a friends base on their lifestyle and geographical locations, which may not be the suitable to that user's preference. For selection of friends, so in the given paper we proposed a friend suggestion system which is supported on an user's profile, user's lifestyle,ratings and comments given by friends and also contains user's nature and behavior we also implement a security in social networking.

KEYWORDS: Friend recommendation, socialnetworks, life style,ratings, comments,security

I. INTRODUCTION

Friendship is most beautiful part of our life , but making friends are not as easy because people have different opinion or thinking and different lifestyle, so it is difficult for us to find similar friends related to our lifestyle, thinking and nature.Few years back, people typically made friends with other who work or live together. Human beings are differing from person to person. Most of the social network provides recommendation system for making friends. The suggestion provided in this friend discovery system, such as location, where our lives, as interest what songs to be listening or what news to read.. The most important thing in a friend discovery system to identify the user choice and analyzing the user interest on his/her behavior to generate the personalized friend discovery system.The existing system recommends a friend to a user's accordingly to their lifestyle and location, but it may not be appropriate because the existing system calculated lifestyle which is submitted by users. It is not necessary that all users will specify similar English word for same activities, if users used different words to denote the same activity every time, it will be impossible for a recommendation system to find out friends with a similar lifestyle because of mismatch data. We proposed a new friend recommendation technique in which user will specify their day to day lifestyle activities in a predefined form and we also provided a security using AES algorithm here we used a secrete key and document keys . A secrete key is used for download data and documents key is used for physical encryption

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II. RELATED WORK

Zhibo Wang, et al.[1] proposed a friend recommendation system for social networks by modelling recommendation system using collaborative filtering (CF).The author used life style activities of users day to day activities like reading, walking, etc.By Collecting this data author extracted appropriate data and using pattern matching algorithms he recommends relevant friends to the user, also author used recommendation system as location wise using GPS system they suggest friends.The author represented the similarity between their life styles activities by using friend matching graph.

Friend suggestion systems that use to recommend items to users have become most popularin years. In the exiting paper, Netflix and Rotten Tomatoes suggested films to a user,by using the user's previously givenratings and their watchingpattern[1] Author discovers life styles activities of users from user centric sensor data which is stored in server and according to this it compute the resemblance of life styles between users,with the help of formsubmitted from users,it recommends friends to users if their life styles have high resemblance. Impressed by given text analytics, it model a user's day to day activities asdocuments, from which his or her life styles are derived by using the LDA algorithm.

Alink analysis technique is used to assess the relationship between the given nodes. Link analysis is mostly used for web mining.Page ranking is an algorithm ,which is used to grade their websites in search engine results [2]. This technique work by computing the number of links to a page to determine a rough calculation of how crucial the website is. Techniques which are used in incremental computations to study the change in graph structure over time which is depend on underlying knowledge model.

Facebook app allows users to list their interests, likes and links to friends.In the existing system BahmanBahmani, AbdurChowdhury proposes fast incremental page ranking.The given system uses Monte Carlo methods for fast incremental computations of page rank [2]. The given technique is a large class of computational algorithms that depend on replicated random sampling to obtain results.

David M. Blei, Michael I. Jordan describe LDA,Which is a generating model for collections of differentdata [3]. Latent Dirichlet Allocation is mainly used by natural language processing [1]. In this method, it uses model that allows set of observations to be explained but unobserved groups that explained why some parts of the data are same.

KatayounFarrahi,DanielGatica-perez proposed system which is based on location for recommending users [4][5].This methoddiscovers dailylocation which contained in a large scale real -life human dataset collected by mobile phone networks. It describes data collection from mobile phone and it can be used to uncover the regular rules and structure in the behavior of both individuals and Organizations.

III.EXISTING SYSTEM

According to given existing system, it presented the design and execution of Friendbook, a semantic based friend suggestion system for social networking. Apart from the friend suggestion mechanism,it depend on graphs structure of social in their social networking services, it derived their life style activities from user centric data collected from sensors on the mobile and suggests friends to users if they allocated similar life styles. It rules to gather people together include: style of living; financial status. Possibly, tastes and people are the main factors designed by existing suggestion systems. Life style of users, is not generallyused because user's life styles are problematic, if not relevant, to capture through web actions. Relatively, life styles activities are closely correlated with day to day activities. Therefore, if it could collect data on user's day to day activities, it can considerlifestyle of users and suggest friends to another user depend on their same style of living.

The given existing friend suggestion mechanism rely on pre-existing user relationships to pick friend criterias. For example, social application facebookdependon a social link analysis among those who already have common friends and suggests similar users as friends. The following order are used to group people together:

1) Tendency of users
2) Style of living

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3) Thinking
4) Financial status

A. *Disadvantages of Existing System*

1) The existing system does not fulfill the user's requirement
2) The existing system not suitable method to recommend friends and it does not provide that much security.

IV. PROPOSED SYSTEM

In previous existing system,Recommendation of friend is done on the basis of user's manner of living and location, life style of user will be calculated by determining the life style activities from submitted documents and there is less security maintained. However in proposed system, only life style will not play big role in friend discovery, this paper proposed various techniques for friend recommendation. Eg. life style, behavior (nature), ratings, profile etc.,in this paper new friend recommendation technique in which user will specify their day to day life style activities in predefined forms and Secure document storage using AES encryption algorithm.The propose system is also adapted by the latest advances in smartphones, which have become most popular in people's life. A smartphone is not only communication device, but also a powerful Virtual reality medium from which we can acquiredrich context and content-aware details. From this point of view, smartphones serve as the ideal medium for sensing day to day activities from which people's style of living could be developed.

After receiving a request, Friend discovery system present a list of user with the highest suggestion result to the query which is asked by user. Ultimately,Friend discovery system implementa feedback system to enhance the suggestion efficiency.The results of this systemdisplay the suggestion accurately that follow the preferences of users in selecting friends.

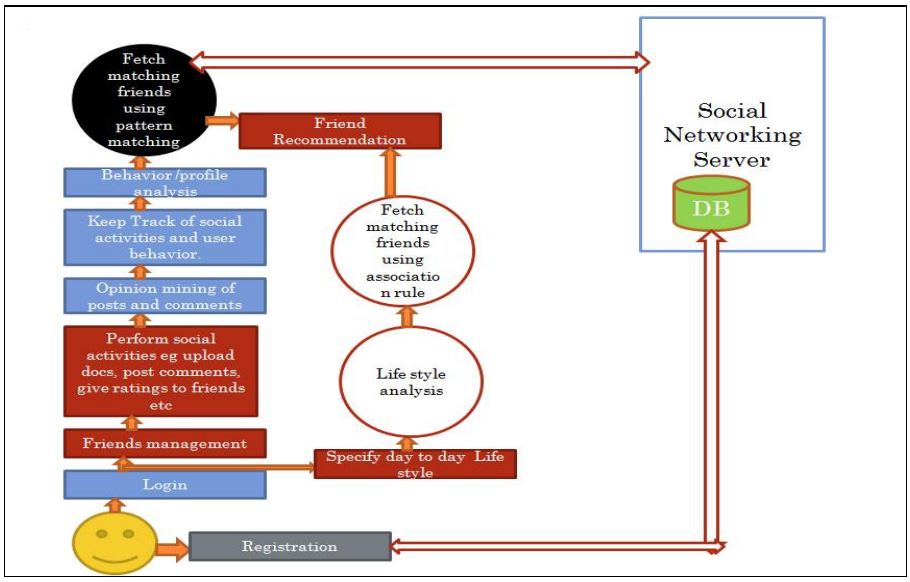

Fig.1- System Architecture of friendbook

As seen in the above fig.1, the system architecture has following working:

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1) User shall make their registration which will store in social networking Data base server.
2) After registration, whenever user shall login in social networking site, user shall update their day to day activity on social networking site.
3) Social networking site will fetch the data of users e.g. lifestyle of user and other activity carried out by day to day.
4) Through Friend management system, user will do other activities like Perform social activities e.g. upload docs, post comments, give ratings to friends etc., Opinion mining of posts and comments, Keep Track of social activities and user behavior and Behavior /profile analysis.
5) With help of pattern matching Algorithm, system will match the data of user with other users and recommended the friends having same lifestyle.

The Friend discovery system is a recommendation system, which recommends friends to social network users. The Fig. 1 show,brief the system architecture of a friend book system. It include two side i.e. client side and server side. The client side is a smart phone embedded with sensors. Firstly client need to register with the application and collect the raw sensor data and thensend it to server for pre-processing. The server side has a function for authenticating the registered user, data collection and pre-processing, activity recognition, calculate similarity and user feedback and query control. The server uses MySQL database system to store user information. The server performs median filtering on the raw data to remove outliers and also use K-Means algorithm for activity recognition. Activity recognition is use for extracting user's high level lifestyle information from low level sensor data. With the help text mining algorithm known as Latent Dirichlet Allocation is used for lifestyle modeling to extract lifestyles. Further, similarities are calculated using lifestyle information and are presented as a list of friends in social networking sites.

A.*Advantages of Proposed System:*

1) It isthe first friend suggestion system that explains a user's way of livingdetails.
2) Proposed system uses the algorithm like AES for security.

V. ALGORITHM

A.*AES Algorithm:*

The Advance Encryption Standard is symmetric encryption algorithm,which was developed by Vincent Rijmen and Joan Daemen.AES algorithm is repeated procedure which is based on substitution and permutation network.AES allows three different key lengths 128,192 and 256 bits.Encryption contains 10 rounds for 128 bit keys,12 rounds for 192 bit keys and 14 rounds for 256 bit keys. The nature of substitutions and permutations in AES allows fora fast software implementation of the algorithm.

Advance Encryption Standard algorithm information:

1. Expansions of Key - round keys are extracted from the cipher key using Rijndael's key schedule. AES requires a separate 128-bit round key block for each round plus one more.
2. Initial Round -Add Round Key- each byte of the state is combined with a block of the round key using bitwise xor.
3. Rounds
- SubBytes: for byte to byte substitution during the forward process
- ShiftRows:for shifting rows of the state array during forward process
- .MixColumns: for mixing up of the bytes in each column separately during the forward process
- AddRoundKey: for adding the round key to theoutput of the previous step during the forward process

4. Final Round
- SubBytes
- ShiftRow
- AddRoundKey

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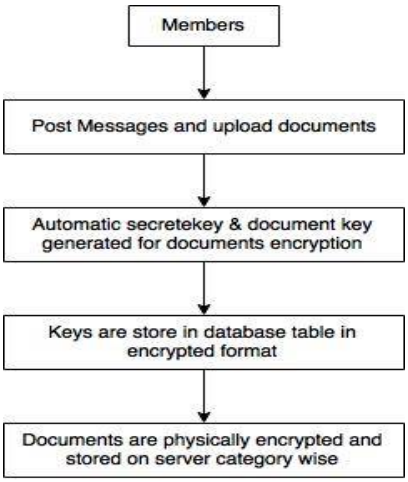

Fig 2: AES Flow Chart for AES Encryption

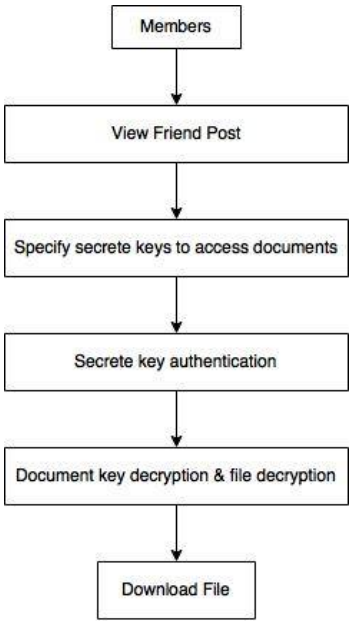

Fig 3: AES Flow Chart for AES Decryption

B.*Pattern Matching Algorithm:*

Pattern matching is an algorithm which isused for checking a given sequence of tokens for finding the presence of the part of some pattern. The patterns present in the form continuance structure. By using of pattern matching, it outputting section of a pattern within a token given order, outputting some part of the matched pattern, and then need to substitute the matching part with some other token sequence.

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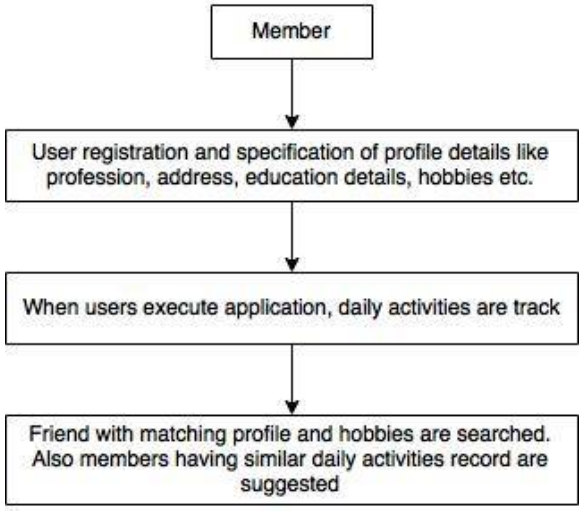

Fig 4: Pattern Matching Flow Chart

C.*Opinion Mining Algorithm:*

Opinion mining algorithm is an algorithm which is used to selects the relatedinformation from large amount of data opinions given by users of internet. Various opinion mining techinques have been proposed to extract and group aspects of a given product and predict their sentiments or their given ratings.. In opinion mining procedure, unorganizeddata and text data to characterize it into some results like positive, negative and neutral or good , bad and average so that we can conclude the product.

D.*Association rule mining algorithm:*

Association rule miningis an algorithm which is used asstatement that helps to exposed relationships between irrelevant data in a database,relational database information repository.Association rule miningisexplained the relationships between the objects which are used togetherFor example, if the customer buys pen then he mayalso buy book. If the customer buys mobile then he mayalso buy memory card.There are two basic conditions that association rules uses,support and .confidence. It identifies the relationships and rules generated through analyzing data for frequently used if/then patterns.

E.*Clustering algorithm:*

Clustering can be referred as important unsupervised learning process; so that each process of this kind, itdeals withseeking a structure in acollection of unlabeled data.Clustering could be “the procedure of organizing objects into groups in which there members are same in some way”.Every group, called cluster, containing object that are look like within the particular cluster and dissimilar to the objects of the other clusters. Clustering algorithms are also used for data compression too rather than the categorizing and organizing the data. An effective clustering algorithms aims in obtaining the effective clusters irrespective of their shapes and size of data. Most Commonly used algorithms in the clustering falls into any of the following categories as Hierarchical, Partitioning, Grid based, Density based, Model Based and Constraint based algorithms.

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VI.RESULT AND ANALYSIS

In existing system Friend suggestion is done by given adresses and their locations like city. However in this system not more than two or three friends are make. In the following diagram as it shows there is only two friends are matched according to similar city,therefore less choice of friends are available.This existingsystem is not suitable for Friend discovery system.

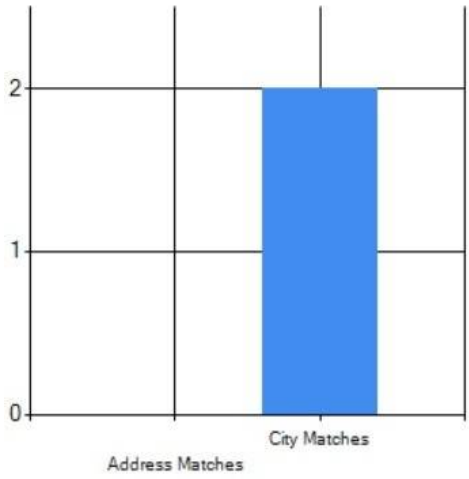

Fig 5: Existing System Friends Findings

In the proposed system,Friend suggestion is done by given adresses and their locations like city in addition to daily activities of personnels like listening music etc. Due to that the more friends are availble and sharing the thoughts.

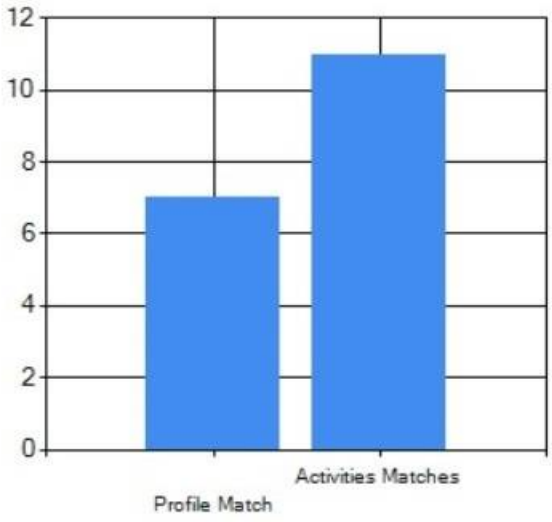

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Fig 6: Proposed System Friend findings

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VII. CONCLUSION

This paper elaborate theview of the friend discovery system which is useful in social networking for recommending friends to the users on the basis of their likes and dislikes and their daily activities .in the system log in page is created for user to log in the system and for new users sign up page is available on that user have to fill some basic information then confirmation of their account on the successful creation mail will be sent to their respective mail id. After that user will be redirected to the home screen on which various options are there user can sent friend request to other user and accept vice versa. Also user can share media or some files or status on the system and others can like or dislike the shared items. As compared to the existing recommendation methods, the proposed method searches the friends to satisfy a user's current contexts.

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