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A Secure Online Based Friend Recommendation System for Social Network

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Abstract: In this paper, we have presented aThe modern Activity based friend recommendationservices. Social networking sites imply friend recommendation Systems in contribution to providing better user experiences. Online friend recommendation is a rapid developing topic in web mining. Current social networking servicing recommend friends to users based on their social graphs and mutual friends , which may not be the most appropriate to reflect a user's taste on friend selection in real lifetime . In this paper propose a system that recommends friends based on the daily activities of users. Here a semantic based friend recommendation is done based on the users' life styles. By using text mining, we display a user's everyday life as life archives, from which his/her ways of life are separated by using the Latent Dirichlet Allocation algorithm. At that point we discover a similarity metric to quantify the similarity of life styles between users, and as certain users' effect as far as ways of life with a similarity matching diagram. At last, we incorporate a feedback component to further enhance the proposal precision.

Keywords: ActivityRecognition;Social Network, Data Mining ;Pattern Recognition;Secerte Sharing Scheme.

I. INTRODUCTION

In your everyday lifestyles, organic meats have a huge selection of pursuits, which in turn kind important sequences of which shape our lifestyles. With this paper, we all utilize phrase exercise to particularly consider the actions taken in this order connected with seconds, for example "sitting", "walking", or "typing", even though weall utilize term way of living to consider higher-level abstractions connected with everyday lifestyles, for example "office work"of"shopping". In particular, this "shopping" way of living mostly consists of this "walking" exercise, however might also secure the"standing" or this "sitting" pursuits. To style everyday lifestyles adequately, we all bring an analogy in between people's everyday lifestyles along with papers.Existing social networking services recommend friends to users based on their social graphs, which may not be the most appropriate to reflect a user's preferences on friend selection in real life. Prompted through this particular, likewise, we can address our everyday lifestyles (or lifestyle documents) seeing that a number of standards of living (or topics), along with every single way of living seeing that a number of pursuits (or words).Monitor herein essence, we all signify everyday lifestyles using "life documents", as their semantic explanations are generally shown by way of their matters, which are standards of living in your research. Much like terms work for the reason that time frame connected with papers, people's pursuits normally work for the reason that Primitive vocab of these lifestyle papers.Social networking sites are used intensively from last decade. According to the current survey, Social Networking sites have the largest data set of users. Each social networking site notes/records each and every activity of user (like: what user likes? what user is doing? what is user's hobby? Etc.).SocialNetworking site will prove to be largest domain in understanding the user behavior. One of the best examples of social networking is FACEBOOK. According to current news Facebook is trying to develop algorithm, to understand user behavior.

Social Networking sites can help us in getting important information of users, such as age, gender, location, language, actives, likes etc. our model takes into account these parameters of the user to recommend books. Most of the friend suggestions mechanism relies on pre-existing user relationships to pick friend candidates. For example, Facebook relies on asocial link analysis among those who already share common friends and recommendssymmetricalusersaspotential friends. The rules to group people together include:

1) Habits or life style
2) Attitudes
3) Tastes
4) Moral Standards
5) Economic level; and
6) People they already know.

Apparently, rule #3 and rule #6 are the mainstream factors Considered by existing recommendation systems.

II. RELATED WORK

In [2] authors used average residual battery level of the entire network and it was calculated by adding two fields to the RREQ packet header of a on-demand routing algorithm i) average residual battery energy of the nodes on the path ii) number of hops that the RREQ packet has passed through.According to their equation retransmission time is proportional to residual battery energy. Those nodes having more battery energy than the average energy will be selected because its retransmission time will be

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less. Small hop count is selected at the stage when most of the nodes have same retransmission time. Individual battery power of a node is considered as a metric to prolong the network lifetime in [3]. Authors used an optimization function which considers nature of the packet, size of the packet and distance between the nodes, number of hops and transmission time are also considered for optimization. In [4] initial population for Genetic Algorithm has been computed from the multicast group which has a set of paths from source to destination and the calculated lifetime of each path. Lifetime of the path is used as a fitness function. Fitness function will select the highest chromosomes which is having highest lifetime. Cross over and mutation operators are used to enhance the selection. In [5] authors improved AODV protocol by implementing a balanced energy consumption idea into route discovery process. RREQ message will be forwarded when the nodes have sufficient amount of energy to transmit the message otherwise message will be dropped. This condition will be checked with threshold value which is dynamically changing. It allows a node with over used battery to refuse to route the traffic in order to prolong the network life. In [6] Authors had modified the route table of AODV adding power factor field. Only active nodes can take part in rout selection and remaining nodes can be idle. The lifetime of a node is calculated and transmitted along with Hello packets. In [7] authors considered the individual battery power of the node and number of hops, as the large number of hops will help in reducing the range of the transmission power. Route discovery has been done in the same way as being done in on-demand routing algorithms. After packet has been reached to the destination, destination will wait for time δt and collects all the packets. After time δt it calls the optimization function to select the path and send RREP. Optimization function uses the individual node's battery energy; if node is having low energy level then optimization function will not use that node.

III.PROPOSED ALGORITHM

1.Fp-Growth Algorithm:

Mine frequent itemsets using an FP-tree by pattern fragment growth.

Input:

- D, a transaction database;
- min sup, the minimum support count threshold.

Output:

- The complete set of frequent patterns.

Method:

1.The FP-tree is constructed in the following steps:

(a) Scan the transaction database D once.Collect F,the set of frequent items, and their support counts.sort F in support count descending order as L, the list of frequent items.

(b) Create the root of an FP-tree, and label it as "null".For each transactionTrans in D do the following. Select and sort the frequent items in Trans according to the order of L.Let the sorted frequent item list in Trans be [p—P], where

p is the first element and P is the remaining list.Call insert tree([p—P],T), which is performed as follows.If T has a child N such that N.item-name=p.itemname, then increment N's count by 1;else create a new node N, and let its count

be 1, its parant link be linked to T, and its node-link to the nodes with the same item-name via the node-link via the node-link structure.If P is nonempty, call insert tree(P,N) recursively.

1. The FP-tree is mined by calling FP growth(FP tree, null), which is implementedas follows.

procedure FP-growth(Tree, alpha) 1.if Tree contains a single path P then

2. for each combination(denoted as beta) of the nodes in the path P
3. generate pattern beta union alpha with support count=minimun support countof nodes in beta;
4. else for each in the header of Tree f
5. generate pattern beta=aiU alpha with support count=ai.support count;
6. .construct beta's conditional pattern base and the beta's and then beta's conditionalFP tree Tree beta;
7. call FP-growth(Tree beta, beta);

}

2.AES Algorithm:

AES is short for Advanced Encryption Standard. AES is a symmetric encryption algorithm processing data in block of 128 bits. AES is symmetric since the same key is used for encryption and the reverse transformation, decryption. The only secret necessary to keep for security is the key. AES may configured to use different key-lengths, the standard defines 3 lengths and the resulting algorithms are named AES-128, AES-192 and AES-256 respectively to indicate the

length in bits of the This standard explicitly defines the allowed values for the key length (Nk), block size (Nb), and number of rounds (Nr).

Steps in AES Encryption:

- Sub Bytesa non-linear substitution step where each byte is replaced with another according to a lookup table.
- Shift Rowsa transposition step where each row of the state is shifted cyclically a certain number of steps.
- Mix Columnsa mixing operation which operates on the columns of the state, combining the four bytes in each column.
- Add Round Keyeach byte of the state is combined with the round key; each round key is derived from the cipher key using a key schedule

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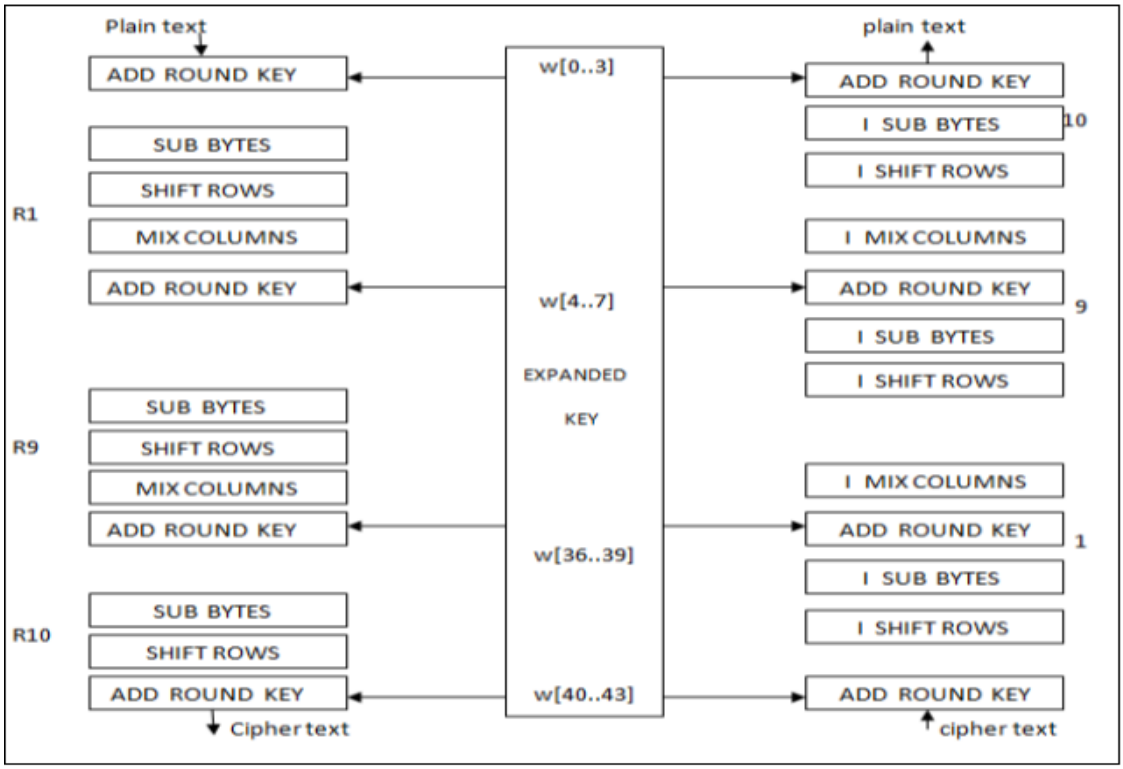

Figure A.1: General structure of AES algorithm.

IV. FRAMEWORK OFPROPOSE SYSTEM

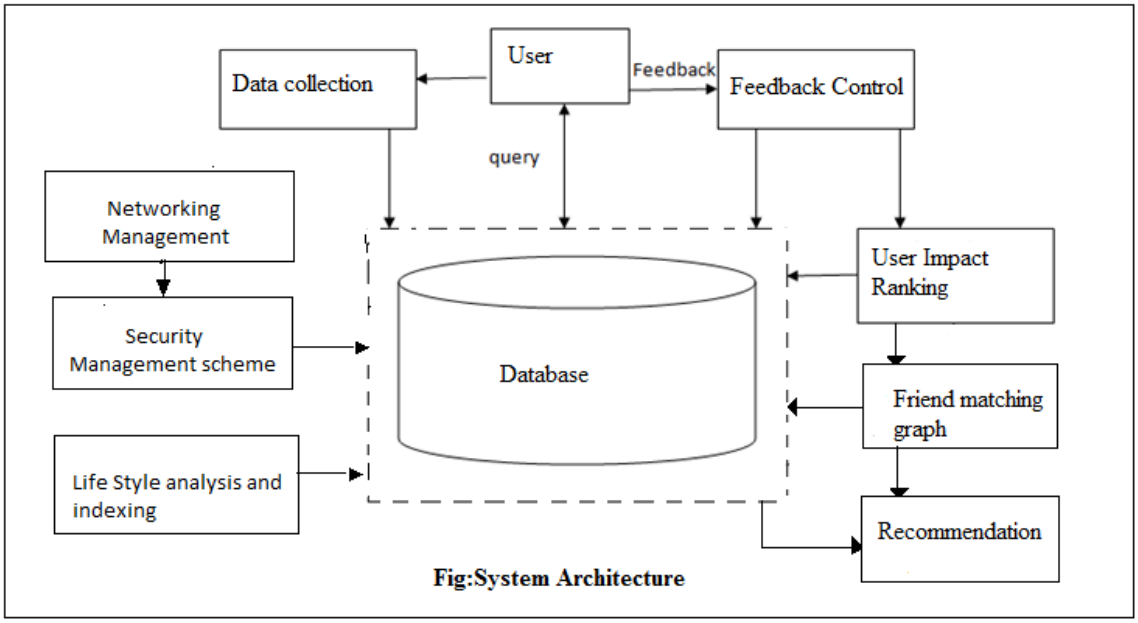

Figure. Framework of propose System

1.User:
In this framework user is initial acter.It is doing the all activity on network as like create account, update photo, search friend, send request to friend, accept friend request, like photo, like comments.It is fire the query as like enter the email id, mobile no.Update mobile no, update the name of user, delete the friend request.submit the information and save the information.

2.Data collection:
In this data collection box consist of user data collected.It collect the information to data update the dynamic data.

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3.Life style analysis and indexing:
It is store the user information like behaviour of user its like, dislike, interest, etc.Its all information analysis and indexing of users.

4.Friend matching graph:
It is store the information and drawing the friend matching graph as like one friend interset on singing song and other also then draw the friend matching graph.

5.User impact ranking:
It is give the impact of user by using threshold count.suppose threshold count is 4 then friend threshold count 4,5,6,7,3 then the ranking of friend recommendation as like 7,5,4,3.

6.Recommendation:
It is show the friend recommendation list.Its recommend the friend on intrest and same mentality.

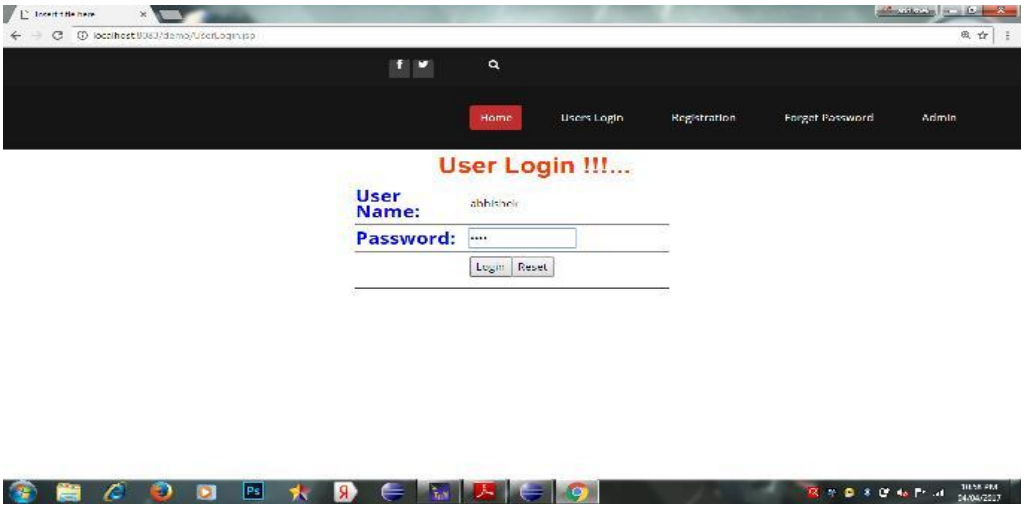
7.Database:
Database store the all information of user perform in network update the database dynamically.

8.Security management:
All the facebook database provide the security using AES and DES algorithm. Its provide security like plaintext to hypertext or supertext data provide the encryption and decryption.

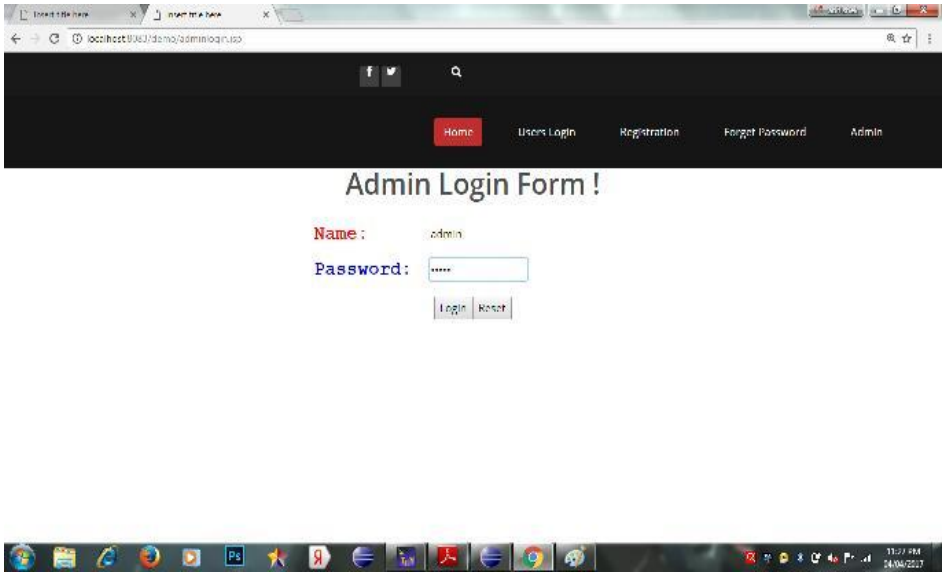
9.User feedback:
It is store the user feedback as like its benifical or not.

V. SIMULATION RESULTS

1.User login page:-



2.Admin login page:-



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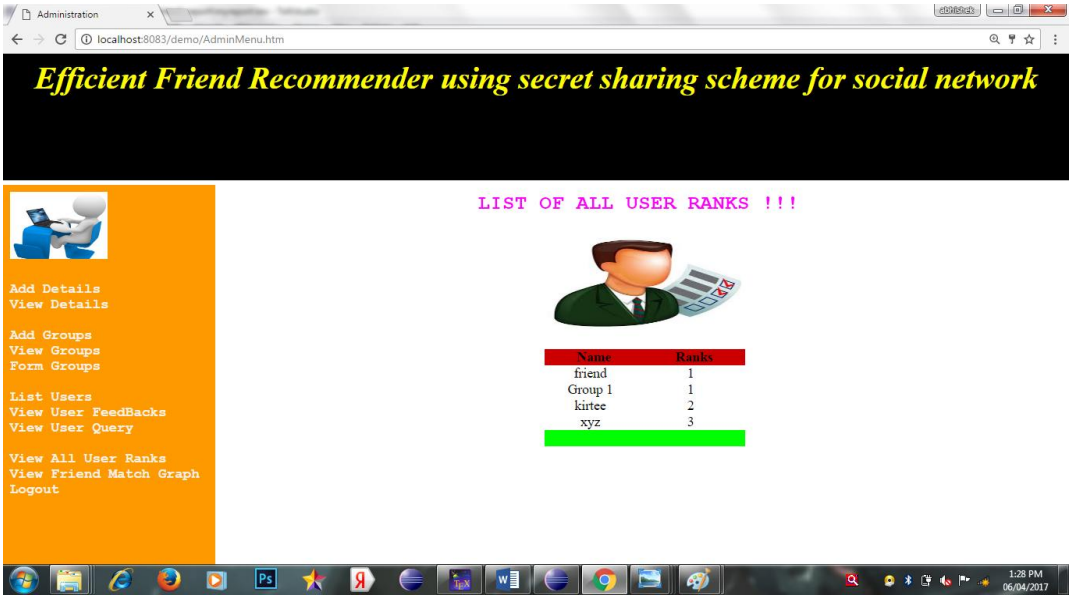
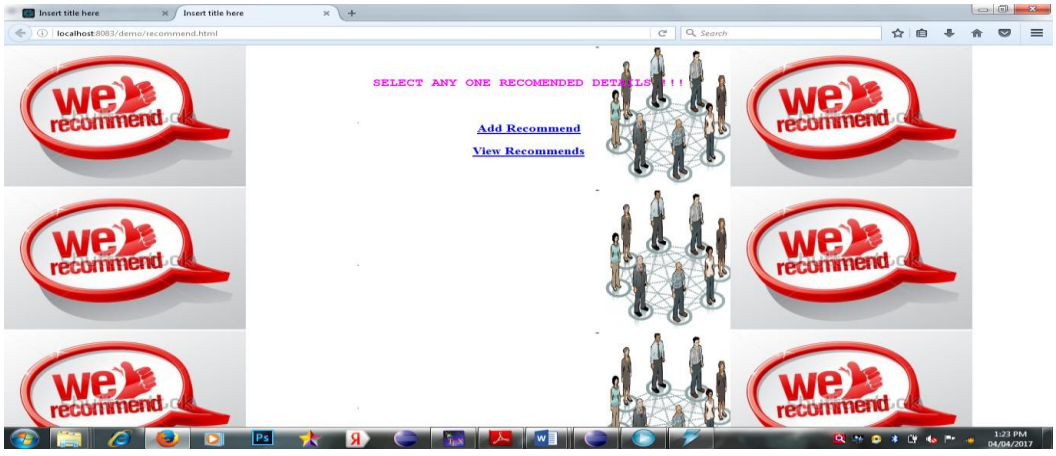
3.Users ranking depends on similairty matching:-



4.Friend matching graph:-

5.Recommendation:-



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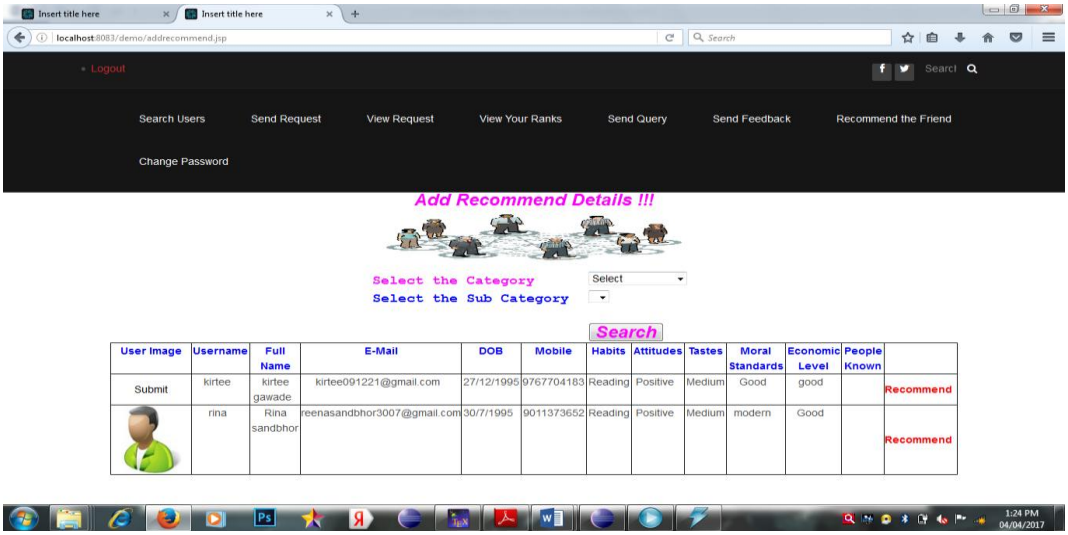
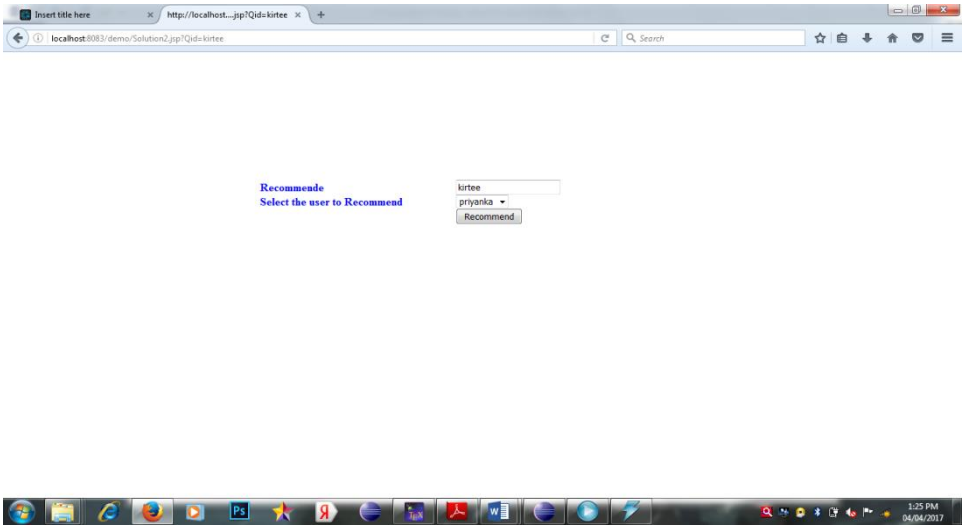
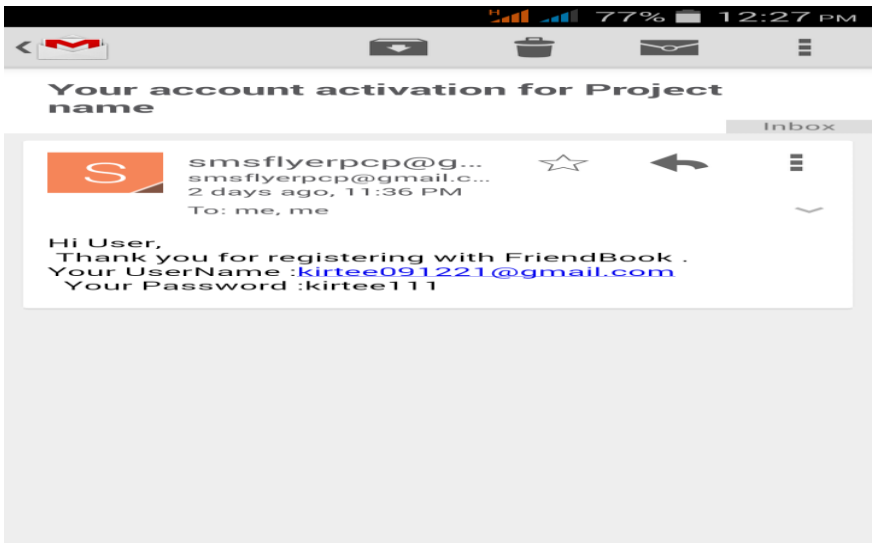
6.Add Recommendation :-



7.View recommendation:-



8.Mail for security and password purpose:-



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VI.CONCLUSION AND FUTURE WORK

In this project, we designed and implemented the Friendbook, a semantic-based friend recommendation system for social networks. Is is Different from the other friend recommendation mechanisms relying on social graphs in existing social networking services, where as this Friendbook extracted life styles from user-centric data collected from sensors on the Smartphone and recommended potential friends to users if they share similar life styles.

We implemented Friendbook on the Android-based Smartphone's, and evaluated its performance on both small scale experiments and large-scale simulations. The results showed that the recommendations accurately reflect the preferences of users in choosing friends. Beyond the current prototype, the future work can be four-fold. First, we would like to evaluate our system on large-scale field experiments. Second, we intend to implement the life style extraction using LDA and the iterative matrix-vector multiplication method in user impact ranking incrementally, so that Friendbook would be scalable to large-scale systems.

Third, the similarity threshold used for the friend-matching graph is fixed in our current prototype of Friendbook. It would be interesting to explore the adaption of the threshold for each edge and see whether it can better represent the similarity relationship on the friend-matching graph. At last, we plan to incorporate more sensors on the mobile phones into the system and also utilize the information from wearable equipments (e.g., Fitbit, iwatch, Google glass, Nike+, and Galaxy Gear) to discover more interesting and meaningful life styles).

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