Impact Factor (SJIF): 3.632

International Journal of Advance Research in Engineering, Science & Technology

e-ISSN: 2393-9877, p-ISSN: 2394-2444

Volume 3, Issue 6, June-2016

Hierarchical privacy policy presumption under uploaded images on content sharing sites

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Abstract -As the social media has increased, it has increased the uploading and downloading rate of images and text. The overall system is made busy with data sharing and post updating. The challenge of privacy preserving is seen under high end data protection. In the proposed system a dedicated technique of Adaptive Privacy policy Prediction (A3P) for user detection and sharing. The overall system is programmed to maintain the policies of shared content. The system is simulated under JAVA IDE for understanding the real-time scenario of technique and challenges. The proposed system has successfully achieved the objective and the results are archived in the thesis.

Keywords—Online information service, web-based service,A3P, web portal activation, privacy policy distribution.

I.INTRODUCTION

1.1 Online social network

Online Social Network is very familiar and this will build relation between each person. Now everyone familiar to face book, twitter, email etc. This will use full in many fields like to build a career, political use, write a blog, education purpose and also government sector. Through a face book people shares similar interest, activities, personal information everything. Mails will be having privacy security only own user can log in to their own e-mails but in face book and all he / she upload pictures video , audio then who all are mutual friends with end user all of them can see that and they can like , comment, and share same picture/video/audio to with other person. web based services that allow individual to create their own profile or public perceived profile.

1.2 History

The computer networking improved version is computer mediated social network, it was recommended earlier on to support social network via computer mediated communication were already made online service. Including user net, ARPANET, LISTSERV, and bulletin board services (BBS).

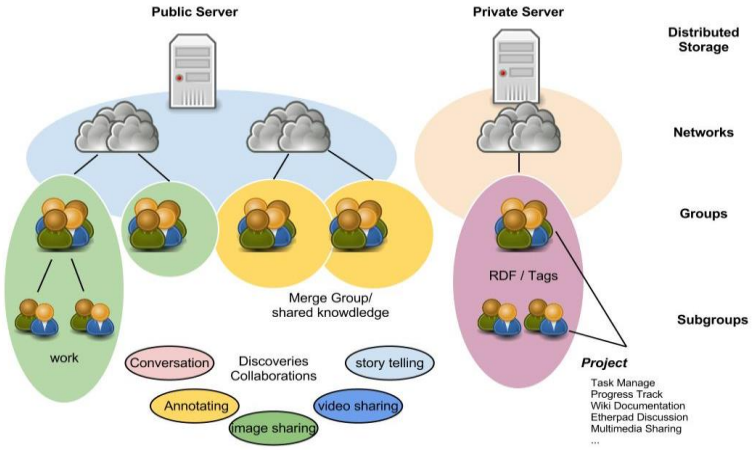


Fig 1: Social infrastructure connectivity

Many online services came to bringing and make a people together to interacting with each other via chat rooms that is user communicate and user to share personal information, activities and it is free web page or inexpensive. Computation of user model representation became central features of social network visits allowing user to compile lists of "friend" can search who shows interests. This social network developed on 1990s but in the newer generation committees started advance technology to manage friends through social network. Corporate are using media as a way to learn about latent quality employees, personality and behavior of employee.

1.3 Features

A. Typical features

Online social Networking sites sharing several kinds of technical features allow building public/semipublic profile articulate a list of other end user. This is visible profile with a list of "friends" .Some sites allow uploading pictures, adding multimedia content e.g. Facebook e-mails, twitter, blogs etc. This will use full in many fields like to build a career, political use, write a blog, education purpose and also government sector. Through a face book people shares similar interest, activities, personal information everything. user profile often has segment assigned for comments from friend or other user to shield user privacy social network that have control over to allow user to make wish who can view their profile.

B. Additional features

In new generation more interoperability between the social network and technologies make such own personal profile, making friends , to make part in chat rooms , making their own chat rooms , mobile phone users and its hold private conversation ,share photos, video , audio and also blogs .some companies having wireless services that allow employees to interact with other end user with their own mobile phones.

1.4 Application of OSN

A. Government applications

Social Networking is using in various government agencies. It is very easy way to interact with public and to keep their activity, opinion etc. This may come with significant abuse.

B. Business application

Online social networking services also using in business purpose. This is having a latent quality to connect people at lower cost it can be helpful for employees and small scale businesses looking forward to extend their contact base. To sell product and service entrepreneur uses online social network. And also it used to advertise company brands and promotion purpose. Since business operate globally to keep in touch with contacts around the world. Now business companies creating their own online site, brand networking. This is the way to build a relationship with connecting their consumers. Brand networking is .new way to make highly capital on social trend as a market research appliance.

C. Education application

ONS is also used for education purpose. Many students study via e-learning it gives much information about subject and can also ask quarries, discussion with other end user.

II.LITERATURE SURVEY

As discussed from the section I, the OSN has a wide user network with multiplying big data. This has made the researches propose many schemes for data hiding, privacy preserving and cybercrime reduction. Hence to start with we shall discuss privacy issues in the OSN.

A.*OSN v/s Privacy*

Many approaches has been claimed to showcase the privacy preserving issues on an OSN as it is forging the user attributes and ID's for fake profile creation. This is to model the privacy management of a shared data which has single hop connection under FoF scheme. This acts as a thread under the interference of user profile based on social relationships, which is considered a very intense attack on identifying a real identity of a user under a positive attribute set.

B. *Friend Content Sharing Scheme*

Consider AA and BB are two independent users sharing a common bond of friendship with CC. accordingly the attributes of each user matches with an personal relationship status such as joining same intermediate school or an graduated fellows from a YY university. Apparently, in a modern era intelligent OSN, an auto Content Sharing is been given to AA and CC to add BB among they friend circle as the attributes matches with the user. This FoF scheme is appended as it generally specifies the ratio of connectivity instead of trust and privacy management.

C. *Trust Based Friendship Content Sharing Scheme*

A TBFR Scheme deals with assigning a higher priority values for a close friend circle to make the communication proactive and protected. This scheme involves in assigning Multi Hop function on a level L= [H, €] where H is the Hop ratio of trust and € denotes the friend domain of trusted attribute sets. This scheme is preferred with a comparative of other scheme under an unprotected network from as to achieve a higher reacting performance rate.

D. *Privacy Preserving Anonymous Communication Scheme*

Under OSN an occasional chat is preferred among the users sharing a particular attributes but no bond of friendship. In such an occasion an area confidently is been assigned on the trust connection of a recommended or a mutual friend.

III.SYSTEM REQUIREMENT SPECIFICATION

Social media and OSN creates a platform for the users from different walks of life to get connected on a single platform to share they views, comments and social life such as feelings and updates. This platform connects the people on friend list via friend Content Sharing for the profile. The profile of an individual shall consist of private and public information's such as posts and personal information.

3.1 User Requirements

The users of the OSN is made mandatory to analyzed and depict the standards binding under the norms for activation and user account setting benefit implementation. The overall system is mode more reliable and thus the objective is to collect the basic user entity of identification.

A. Functional Requirements

The functional requirements are more detailed and hence the objective of the system is achieved. The functionality behavior includes the system configuration and settings in understanding the application behavior in progress. The system is more reliable under untrusted domain of operation.

B. Non Functional Requirements

- Usability: the project will be used in infrastructure wireless network, data analysis and management. This is developed for dynamic networks under internet

- Reliability: the architecture is reliable. It take care that the data sent is received and it includes the authorization and authentication methods to handle the data.
- Maintenance: the operation and development of the project for real time applications will be provided to the users.
- Portability: the project is simulated under JAVA environment uses web technologies and behind the web logic for programming which is large extent portable and can be accessed and used in specific operating system.
- Interoperability: the project works well with respect to the continuous sending and receiving of data between the remote clients, also from one network to other.

3.2 SPECIFICATIONS

A detailed overview is shown as below.

A. **Software Requirements**

Operating System: Windows 7|8.1|10
Technology: JDK 1.7
Framework: Net beans
Server: Mysql2008

B. Hardware Requirements

Processor: i3
Speed: 2.2 GHZ
RAM: 2GB
Disk Space: 5GB

3.3 SYSTEM ANALYSIS

A. Proposed System

The proposed system is designed and developed for maintaining privacy policy updates and scenarios for accessing profiles and shared content in social media. The purpose of proposed system is to retrieve an effective and most predominant approach for privacy preserving and content sharing. In this regard the design and development of this system is proposed. Under this approach a dual mode sharing and content visibility is monitored. On appending this system to the real time environment, the efficiency and reliability of the OSN network can be improved.

IV.SYSTEM DESIGN

In this chapter, an overview of system analysis and design is made and discussed with its architecture in the beginning and followed by data flow diagrams and sequence diagrams.

4.1 System Architecture

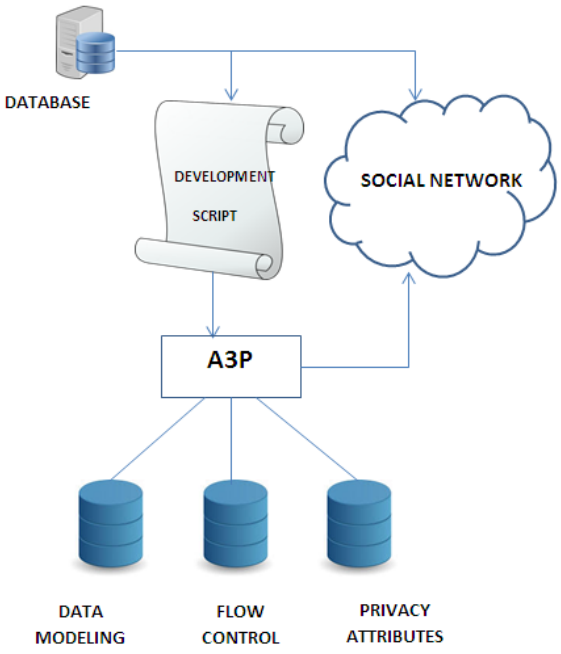


Fig 4.1: System Architecture

The system architecture consist of a front end data visibility unit and a backend data accessibly and monitoring unit. In this architecture of proposed system, the backend system is configured with policy preserving update via sensitive and non-sensitive data. The A3P protocol consists of Data Modeling, flow control and privacy attributes. Each unit is programmed for betterment of an individual purpose such as to maintain privacy and confidentiality of the system.

4.2 Data Flow Diagram

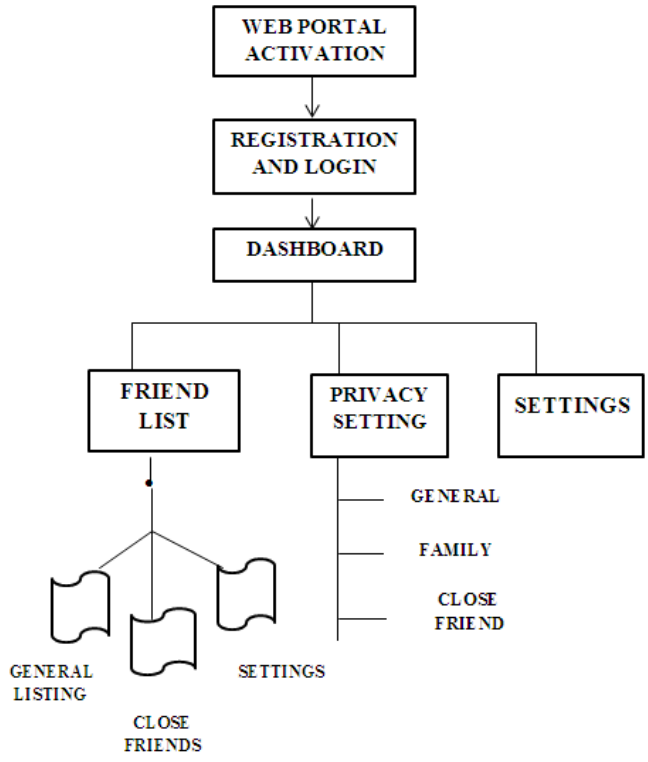


Fig 4.2.1: User Environment Login and Setup

This data flow diagram projects on data utilization and login under a cloud cum OSN (online Social Network) this unit is initiated with web portal activation (localhost: 8080) followed by registration for on first login or sign-up application. On successful login, the data requester shall lead the access towards Dashboard. Individually the operations of friend list analysis, privacy setting and general settings are privileged. Each friend in a friend list has a priority set under shared and unshared data for sensitivity and non-sensitivity analysis. The three lists are general friends, close friends and intermediate request set i.e., family and friends.

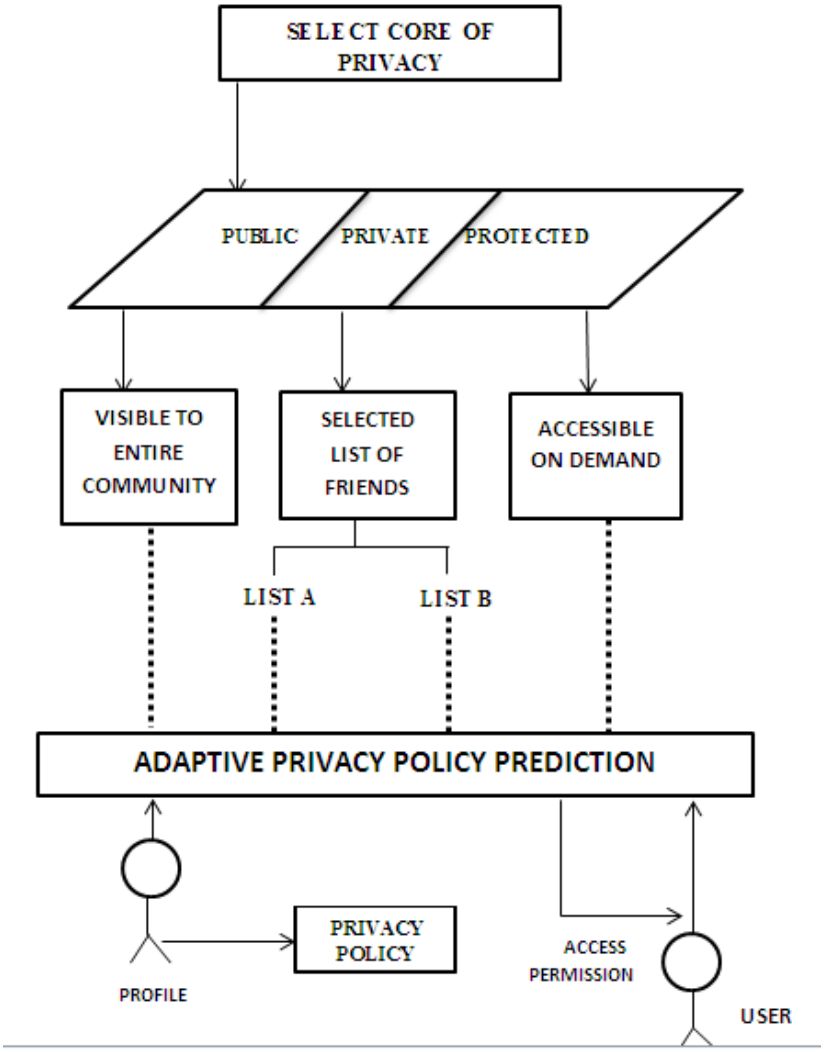


Fig 4.2.2: Privacy Setting Analysis

A3P system protocol is been designed and demonstrated under DFD in Fig 4.3, the system under this modulation is performing the operations as discussed in shown above. Each time a new user is added under a friend list, the system has to analyze a redundancy.

4.3 Sequence Diagram

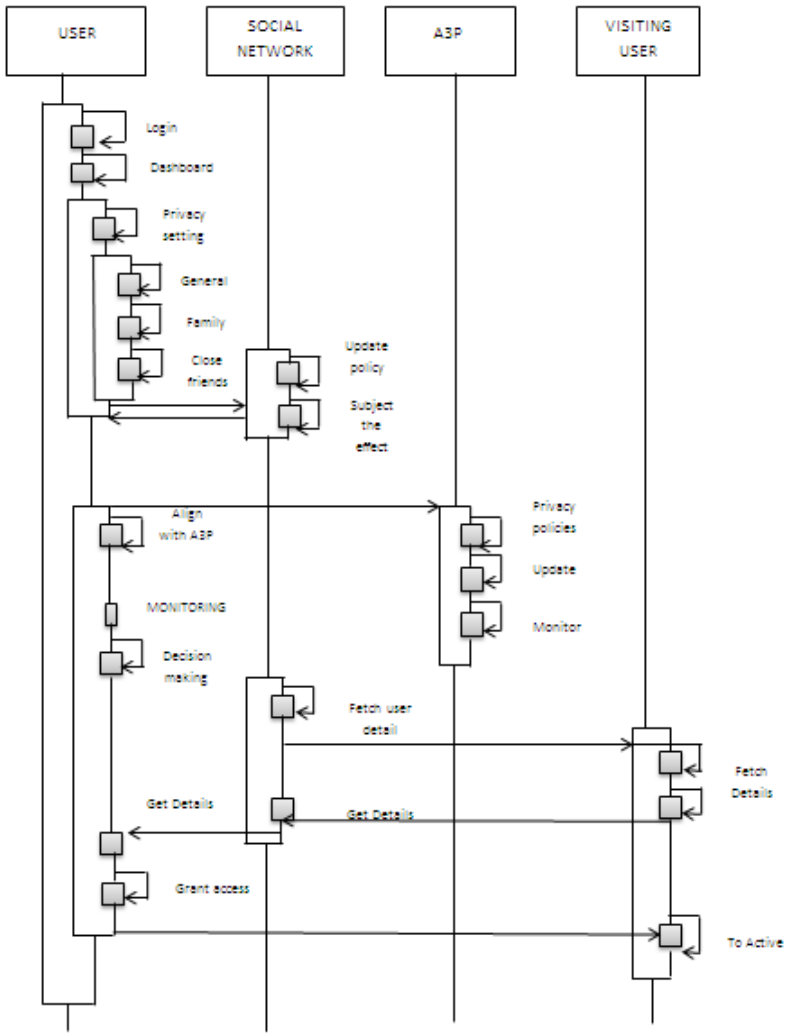


Fig 4.3: Sequence Diagram

V.IMPLEMENTATION

We present an A3P framework Adaptive Privacy Policy Prediction that means to provide clients a trouble free security settings encounter the experience via consequently creating modifying strategies. The framework A3P handles client transference pictures, and figures the appearing criteria that which influences one's own security settings of images: The effect of social context and individual attributes. Social setting of clients, for example, their profile data and links with others might give useful data in considering to user's security inclinations. For example, clients have enthusiasm on photography may get a kick out of communicate their photographs to other learner picture takers. The part of picture's substance and metadata. By and large, similar pictures frequently bring about comparable shield inclinations, especially when individuals show up in the pictures. For instance, one person may transport a few photographs of his children and specify that lone his relatives are given permission to view his specified photographs.

5.1 Modularity Design

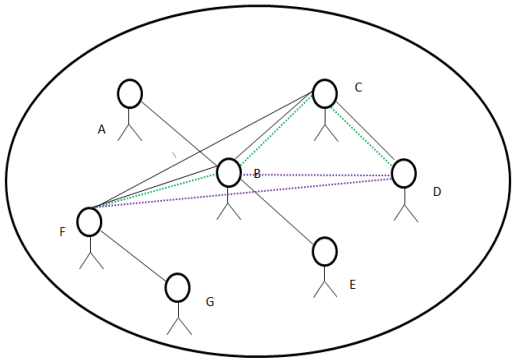
The proposed system with OSN layer integration for privacy policy under users for save browsing is discussed with following methodologies.

1. Environmental Setup and Analysis
2. Link and Bound Analysis
3. Privacy Policy Distribution

Detailed Description

1. **Environmental Setup and Analysis**
   The system is simulated under the active and protocol environment of system analysis. The system is simulated under the action environment of netbean. This system is aided with a browser based analysis and hence retrieves the overall system protocol behaviors for situation.
2. **Link and Bound Analysis**
   The links are established and analyzed under an active scheme of friend Content Sharing and post sharing. This system is simulated under zero error connectivity environments for easer and accurate performance gain. The connected strings of likes are name as the master and sub slave nodes where each master is a slave of its connected nodes.
3. **Privacy Policy Distribution**
   The proposed system has designed to achieve the system behavior of remitting the node information under the active zone of analysis. This is retrieved and fetched under the distributive pricy policy detection and masking. This module is primary used for analyzing the relationship between one user to another based on the principle constraint of relativity under section.
4. **Results and Outcome analysis**
   The system is simulated under the objected results and thus the results are symmetric and behave under normal active mode of activation at the general scenarios. Hence in the meantime of system modularly effect computed and analyzed. This is systematically reserved and approached for module analysis and maintained behavior under an active relationship status.

5.2 Mathematical modeling



- **STEP 1:** assumption

  B{A,C,E,F}

  B is male and is father to F

  B is husband to C

  and

  C is mother to D

FriendList(FL)={F}

Family ={FF}={FF1, FF2 ,FF3…… FFn/n<{FL } }

- **STEP 2:** generating policy table

$$Pi=\sum_{i=1}^{n} \{FLi/\ FFi\approx FLi\}$$

Extract(FFi)

add policy;

A=For all FFi ₌ Pi/p={0,1}

Where 0: out of private zone

1: in private zone.

- **STEP 3:** policy on action plans

  Ap={Download, View, tag, Comment}

  assign view policy

- **STEP 4:** Policy prediction

  Pi=mine(FL)

  sets={time-of-view, state, relationship-expected}

  append policy{pi}

- **STEP 5:** Look up table

$$Lk = \sum_{i=1}^{n} \text{assign in table.}$$

VI.TESTING

Testing is achieved under the normal and abnormal behavior of system design and development and processing the following test casea are added as follows

Table 1: Environment Deployment

Test Case ID	TC01
Name	Environment Deployment
Description	The system is simulated under the system environment of netbeans ant JAVA IDE JDK 7, the system is simulated.
Expected Output	Build Successfully
Remark	PASS

Table 2: Environment Deployment

Test Case ID	TC01

Name	Environment Deployment
Description	The system is simulated under the system environment of netbeans ant JAVA IDE JDK 7, the system is simulated.
Expected Output	Build Successfully
Remark	PASS

Table 3: User Interruption

Test Case ID	TC02
Name	User Interruption
Description	The system is collection of active users and thus the same is collected under a single unit of environment
Expected Output	User detected
Remark	PASS

Table 4: User Interruption

Test Case ID	TC02
Name	User Interruption
Description	The system is collection of active users and thus the same is collected under a single unit of environment
Expected Output	User detected
Remark	PASS

Table 5: User Registration

Test Case ID	TC03
Name	User Registration
Description	The users are login and the system new user should officially register of the system detection and activity participation
Expected Output	Registered Successfully

Remark	PASS

Table 6: Policy Setting

Test Case ID	TC05
Name	Policy Setting and Upgrading
Description	The system policy is upgraded and the status is realigned
Expected Output	Successfully Deployed
Remark	PASS

VII.RESULT ANALYSIS

The proposed system is a simulation and has successfully simulated under the NetBeans environment. Here in this approach a detailed walk through is done under this section. The simulated system is validate and verified.

7.1: User Registration and Profile Creation

The users profile is created and processed for activation under this snapshot. Here in this approach we have successfully designed a registration form for the user. The registration form typically includes the username, password, first name and sex and followed by data of birth.

Fig .S1 Registration for Design

On Filling the registration form is shown as in Fig S2 here the detailed application is completely filled and shown. This application is as follows

Fig S2: Registration Form (Filled)

Considering the regular input scenario of OSN media such as Facebook and twitter, the registration form attributes include the same number of attributes as shown in our proposed system, hence the overall simulation is successfully accepted under this scenario for OSN based analysis and mining.

7.2 Home Page:

The landing page since registration is the home page for independent profile. The overall system is as regular social networking system such as Facebook and others. In this regards, the home page is collectively displays the shared pictures and post with status updates of the interconnected friends and relatives. In this simulation, a trivial approach of Facebook is considered as an ideal social networking site. In Fig S3, we have shown the initial snapshot of the home page and in successive manners it includes the icon of home, profile and new post to be added. The home page also showcases the profile picture and a column of recent posts shared by the intermediate and common friends.

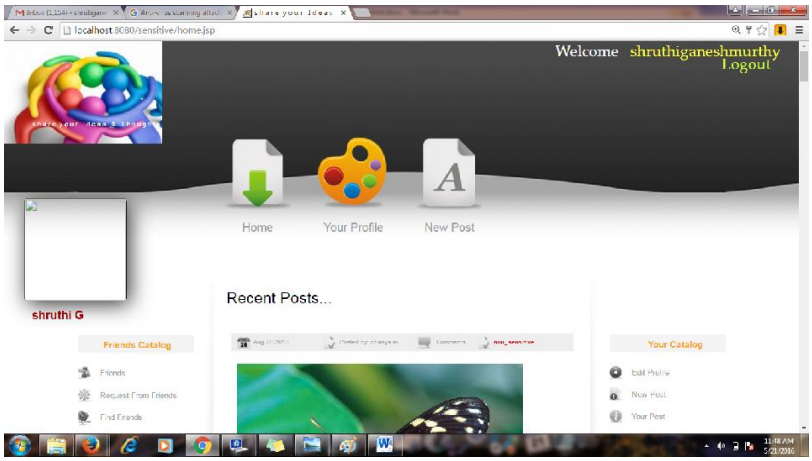


Fig S3: Home page of the independent profile

7.3 Privacy Policy Unit for file sharing

The proposed system is aided with the privacy policies and thus the same is high-lighted under this section, the images are uploaded and thus the same is reflected and shown back under the standards of uploading.

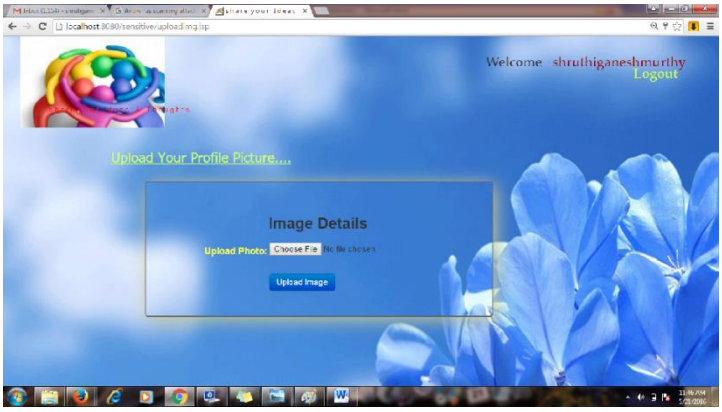


Fig S4: Uploading image to share

7.4 Viewing Friend List

Under the simulated environment, requesting friendship and accepting is permitted and hence here in Fig S5 we have shown the friend list of the independent profile. The list includes the friends in a circle and close friends. Under this page, a detailed overview can be seen and hence observed for the analysis and thus we can select the privacy as who can be our friends and who cannot.

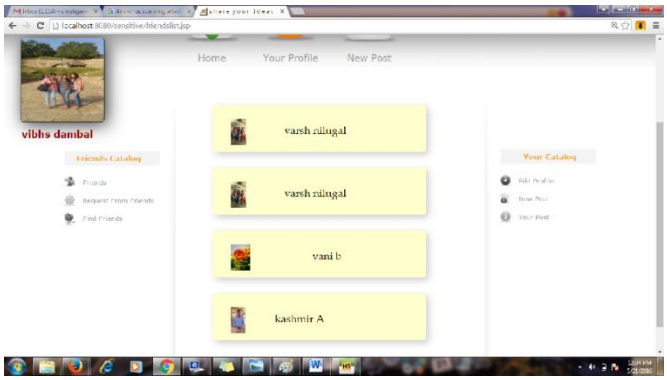


Fig S5: Friend list of Independent Profile

7.4 Finding Friends

Under this manner, we can find friends and send request. Hence to achieve this functionality, here in this fig S6 we shall demonstrate on finding friends. The overall active profiles in the network are shown for the matching results. Hence this approach is shown below.

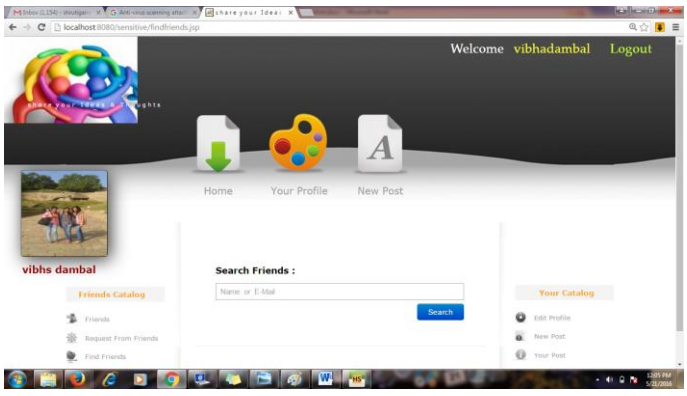


Fig S6: Finding Friends

7.5: Profile Editing

The flexibility is provided in editing the profile as that in the real time scenario. Under this simulation approach the profile name, username and also the password can be modified at any point of time under at most care and authentication.

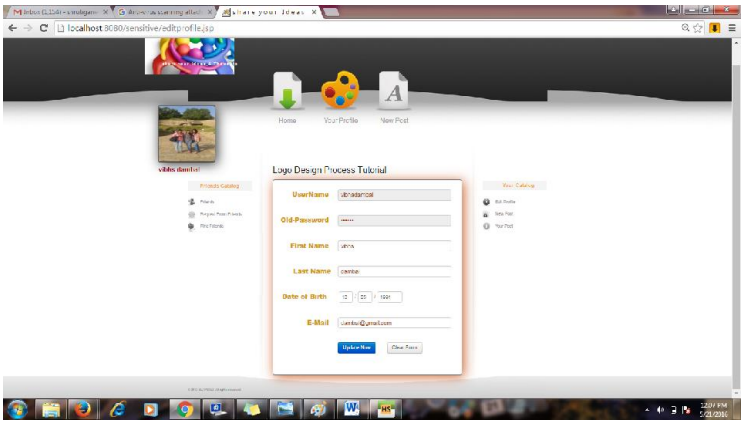


Fig S7: Profile Modification

7.6: Giving friend request

In the social media, its most common attribute is friend recommendation and thus in this fig S8 we have shown the friend recommendation and requesting unit for accessing and getting connected with the inter zonal friend circle.

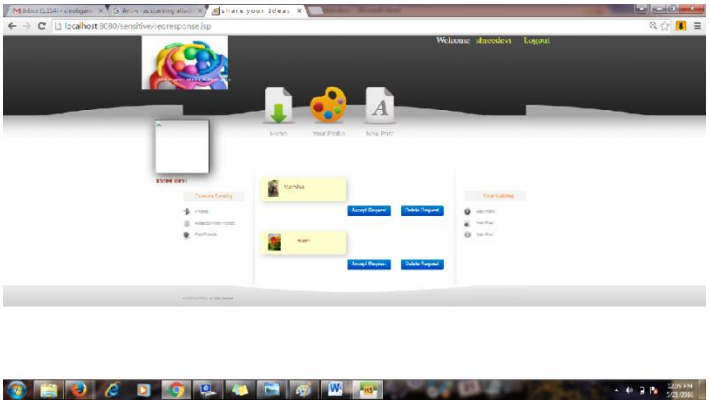


Fig S8: Friend Recommendation

VIII. CONCLUSION AND FUTURE ENHANCEMENT

The proposed system was dedicated for privacy preserving in an OSN environment for scale value analysis and user confidently. The proposed system has achieved a complete system environmental setup with results and observatory analysis. The model has been simulated under a JAVA background and thus the simulation of data security is highlighted and achieved. Under the proposed system, the aligned attributes are collected and the privacy of the active and unconnected users are monitored and thus the overall system is simulated under this respective environment, the overall behavioral model is achieved and retrieve from the system behavior and thus the system is applied.

The system can be moved and deployed under the cloud environment for faster and smoother accessing of data models. This model based interruption is increased and enhanced for the upcoming version.

ACKNOWLEDGEMENT

I am highly obliged to Department of computer science and engineering, UBDT College of engineering, Davanagere. I heartly thankful to my beloved parents and Husband for their valuable support.

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