

Managing Users in Social Networking Sites

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ABSTRACT

Users are concerned about their information and want to keep their information restricted. User management, a broad science of managing users in the system, deals with the various aspects of authentication. In this thesis, user management in a social network environment has been extensively studied. The focus was the login module. A simple login screen was implemented to manage users in a desktop environment using WAMP server which needs further investigation. Evaluation and comparison were made among two popular SNSs login modules and the test case. The findings revealed the fact that all the major SNS such as Facebook and Twitter use a simple login screen. By the advancement of the authentication, in the coming future many new login modules could be created and implemented which could be the topic for future dissertation.

Keywords: User management, Social Networking Sites (SNSs)

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ABBREVIATIONS

| | |
|---------|-------------------------------------|
| CLI | Command-Line Interface |
| SNS | Social Networking Sites |
| UMA | User Management and Authentication |
| ASP | Active Server Page |
| HTML | Hypertext Markup Language |
| SQL | Structured Query Language |
| URL | Uniform Resource Locator |
| PHP | Hypertext Preprocessor |
| WYSIWG | What You See Is What You Get |
| SDLC | Software Development Life Cycle |
| WAMP | Windows, Apache, MySQL, PHP |
| OS | Operating System |
| DBMS | Database Management System |
| GNU | GNU's Not UNIX |
| FreeBSD | Free Berkeley Software Distribution |
| SDK | Software development Kit |

1 INTRODUCTION

1.1 Background

The Internet has become the integrated part in the human civilization, accessing many aspects of peoples' daily life. Its capacity by enabling its users to quickly access information from sources all over the world, and also transferring the information in the similar manner had made the internet incredibly popular. Thousands of different Web sites from commercial, personal, educational, and entertainment websites to news websites are found on the internet. Users are most essential elements in any websites. The term "User" applies to anyone who visits the website. Without the number of users accessing the websites, no website will become popular. It is one thing to keep users in tact it is another to keep them coming to visit websites.

In any websites, users can be broadly categorized into two categories viz. Guest users and the registered users. Guests are the unauthenticated users who navigate the site in their own way. Guest users are free to browse all the content available on the site, also are restricted to a certain level of the sites which are accessible to the registered users. The availability and the restriction of the content of the site depend on how the website administrator has configured it. On the other hand there are users who get accessibility to the entire content of the site registers with the site to obtain a username and a password. This username and password permit registered users to log into the site, receiving special privileges which are not available to guests.

SNSs such as Facebook, MySpace among others are quite popular to manage and monitor user generated content. These social networking websites have millions of users accessing the content on a daily basis. The identities of unauthenticated users are anonymous whereas, the second type of user, authenticated is the one who logs in.

In order to access, the user must have already been registered and hence they are cited to a registered user. Registered users' identities are familiar with the host site so special permission is given to them to inspect or modify things that other guest

users cannot. All the sites do not have a compulsion to have registered users . It is optional. Websites whose content is freely available to all the visitors can also be designed. However, there is always one registered user i.e. the administrator.

1.2 Statement of Problem

In the present internet world, the site developers are aware of security concerns. They implement different forms of authentication and authorization for accessing network resources. This approach has the benefits like user permissions can be verified before letting the users to access to resources, and user activity can be supervised through various logging mechanisms. A methodology for developing information systems has been defined by Alison et al. (2003, 20):

“A collection of procedures, techniques, tools, and documentation aids which will help the system developers in their efforts to implement a new information system. A methodology will consist of phases, themselves consisting of sub-phases, which will guide the system developers in their choice of the techniques that might be appropriate at each stage of the project and also help them plan, manage, control and evaluate information systems projects.” /2/

However, it has also bounded by the limitations. Authentication and authorization deployments, administrators have various options existing with a view to how users are authenticated, but have limited control on the frequency of user authentication. The User Management logout ability also supplies more secure control over the status of users. User Management allows administrators to configure the user log out. Visibility into the active user sessions is an additional key advantage of User Management. Using the Management Console and the CLI, administrators are able to observe all active users and sort display data by user, IP address, or realm for easy observation. This is beneficial for identifying the general login status of users. In this thesis the research question is:

“How the user registration module is implemented, as a part of managing users in the social networking sites, using the best server available.”

1.3 Purpose

The objective of research in information systems is to acquire knowledge and understanding that enable the development and implementation of technology-based solutions to heretofore unsolved and important business problems. /3/

For my thesis, I have decided to build a user registration module using the programming language WAMP (Windows, Apache, MySQL, PHP) module and also implement a simple website for unauthenticated and authenticated users. In addition, I would make a comparison by doing qualitative research and discover different styles of managing users in a simple website. The result will be compared with top social networking websites and my own simple user registration module. Here are the lists of modules which I wish to implement throughout my thesis work.

- Design and implement user registration login module using a programming language in the WAMP server.
- Evaluation of methods and techniques useful for creation and managing users with pre-existing SNSs like Facebook and Twitter.
- Suggest for development of new methods and techniques for authenticating users in the websites.
- Testing the user registration login module and demonstration of the created module.

1.4 Disposition

This thesis will give a clear idea of the need of user registration and authentication in the present SNSs. User management is itself a broad concept of management tool. So I have limited my thesis within the login giving brief examples of popular social networks like Facebook, twitter etc. The focus is given in the login module. It will show how the authorization is done in those networks and comparison is made to give the reader a clear map of different user management tool used in various networks. This thesis is mainly categorized into three main chapters; social networking websites, user management and implementation of the

registration methodology in the networking sites. Chapter Social Networking Sites will give a slight overview of the SNS, the use of SNS, its features, history and the user management modules used in them. Chapter User management will be dealing with the, its use and current trends. In The implementation chapter I have given the concept of how we can implement a simple login module in user management. It has its scripts and its display message for desktop environment. The final is the conclusion where I will show my result of my study and implementation.

2 SOCIAL NETWORKING WEBSITES

2.1 Overview

Social networks have become the major prevailing fraction of the present Internet world. Social network sites allow individuals to join together to form particular groups, similar in a sense to small communities or a local subdivision. Users expend their enormous time on SNSs compared to any other sites. In broad sense it can be well defined as an as an internet or mobile-based social platform where people can connect, communicate, and create and share content with each others.

SNSs are: *“web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connections, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site.”* (Boyd & Ellison, 2007) /1/

Boyd and Ellison (Boyd & Ellison, 2007) further define SNS as having three common elements: a member profile (in their definition this is always a web page): *“the ability to add other members to a contact list (the names of your contacts vary – they might be called friends or buddies, for example); and supported interaction between members of contact lists (interaction varies greatly, and there will typically be some degree of interaction facilitated between people who are not named contacts).”*

A search of the literature (Livingstone, 2008), /7/, shows certain trends in the way SNSs are used:

“• Most contact on SNS is with people known to the user, or with whom there is a shared interest.

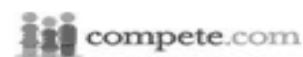
• There are some evidence that while SNSs are displacing certain forms of electronic communication such as emails and chat rooms, other forms of communication are being developed (such as instant messaging) although direct contact is still preferred.

- *The distinction between online and offline communications becomes less clear as technologies are increasingly incorporated into daily life.*
- *For young people such as teenagers, SNSs allow them to take 'safe' risks or to use the risks as opportunities to test various adolescent behaviors."*

"SNS allow users to manage, construct and represent their social networks online, generally made up of other individuals. Networks might also include the profiles of events, public figures institutions, including the political parties and issues. What makes social network sites unique is not that they allow individuals to meet strangers, but rather that they enable users to articulate and make visible their social networks. This can result in connections between individuals that would not otherwise be made, but that is often not the goal, and these meetings are frequently between 'latent ties'." says Haythornthwaite (Haythornthwaite, 2005), /8/.

Top 25 Social Networks Re-Rank

(Ranked by Monthly Visits, Jan '09)



| Rank | Site | UV | Monthly Visits | Previous Rank |
|------|-----------------|------------|----------------|---------------|
| 1 | facebook.com | 68,557,534 | 1,191,373,339 | 2 |
| 2 | myspace.com | 58,555,800 | 810,153,536 | 1 |
| 3 | twitter.com | 5,979,052 | 54,218,731 | 22 |
| 4 | fixster.com | 7,645,423 | 53,389,974 | 16 |
| 5 | linkedin.com | 11,274,160 | 42,744,438 | 9 |
| 6 | tagged.com | 4,448,915 | 39,630,927 | 10 |
| 7 | classmates.com | 17,296,524 | 35,219,210 | 3 |
| 8 | myyearbook.com | 3,312,898 | 33,121,821 | 4 |
| 9 | livejournal.com | 4,720,720 | 25,221,354 | 6 |
| 10 | imeem.com | 9,047,491 | 22,993,608 | 13 |
| 11 | reunion.com | 13,704,990 | 20,278,100 | 11 |
| 12 | ning.com | 5,673,549 | 19,511,682 | 23 |
| 13 | blackplanet.com | 1,530,329 | 10,173,342 | 7 |
| 14 | bebo.com | 2,997,929 | 9,849,137 | 5 |
| 15 | hi5.com | 2,398,323 | 9,416,265 | 8 |
| 16 | yuku.com | 1,317,551 | 9,358,966 | 21 |
| 17 | cafemom.com | 1,647,336 | 8,586,261 | 19 |
| 18 | friendster.com | 1,568,439 | 7,279,050 | 14 |
| 19 | xanga.com | 1,831,376 | 7,009,577 | 20 |
| 20 | 360.yahoo.com | 1,499,057 | 5,199,702 | 12 |
| 21 | orkut.com | 494,464 | 5,081,235 | 15 |
| 22 | urbanchat.com | 329,041 | 2,961,250 | 24 |
| 23 | fubar.com | 452,090 | 2,170,315 | 17 |
| 24 | asiantown.net | 81,245 | 1,118,245 | 25 |
| 25 | tickle.com | 96,155 | 109,492 | 18 |

Figure 2.1: Top 25 Social Networks Re-Ranked in 2009 (Complete.com), /10/

2.2 Features of social networking site

SNSs have a wide variety of technical features. An individual can make a request to any pre-existing user in that particular network to be a friend or just a simple online contact, or even, dealing with the agreement with both the users, they can ask for all or partial connections. Sometimes or often there might be an issue concerned with the restrictions. The users have visible profiles that display a list of Friends who are also users of the system. Profiles are unique pages where one can type oneself into being. /4/

During the registration process of SNS, an individual has to fill out forms where the user has to fulfill the questions relate to desired user name, age, sex, location, interest and something detailed in the basic information section. By applying the

answer to such questions a visible profile is thus created. Following the registration process the site leads the users to find out the other users in the network if they can find some relationship of friends or contacts or fans etc. Bi-directional confirmation is a must in order to confirm the relation between the two users. However, in case of fan page or the followers' page, only one directional confirmation will suffice.

Furthermore, SNSs also provide a mechanism for users to leave messages or comments on their friends' profiles. Private message is also in practice these days in almost all the SNSs. Beyond profiles, Friends, comments, and private messaging, SNSs vary greatly in their features and user base. Some have photo-sharing or video-sharing capabilities; others have built-in blogging and instant messaging technology. These days there are mobile-specific SNSs. There are even SNSs like Dogster for dogs and Caster for cats, where their owner manages their profiles. SNSs are designed to be widely accessible, many attract homogeneous populations initially, so it is not uncommon to find groups using the sites to segregate themselves by nationality, age, educational level, or other factors that typically segment society (Hargittai, this issue), even if that was not the intention of the designers. /4/

Now-a-days there are numerous of social networks available in different web or mobile based form. SNS, they have their own themes and values. They can be broadly categorized according to the information they share. As for example:

- Friend based Social Networks: These are the general social networks which do not focus on a particular topic. This permits the users to join groups and attach to people whose interests are alike hence also referred as the friends- based network. Some of the popular networks in this category are Facebook, MySpace, Hi5, Badoo, Bebo, Friendster, etc
- Music and Movie Social Networks: these kinds of networks focus on connecting people with similar interest in movies and music .For example LastFM, Flixter, iLike etc.
- Mobile Social Networks: Mobile Social Networks are specially focused for mobile users. Some Mobile Social Networks are Dodgeball, Loopt, and Mozes etc.

- **Pet Social Networks:** Social networking is not only limited within humans. Pet Social networks are also in practice. These kinds of networks help the pet owners to share information about their pets also connect the pet owners. Some Pet Social Networks are Catster, Dogster, MyDogSpace, MyCatSpace etc.
- **Business Social Networks:** Besides fun and entertainment, social networks also have jumped in the business field .People can use the networks to make a business contact and share information related to the job and business affairs. As for example LinkedIn, XING, Konnects etc.

In the recent years, Facebook has overcome the popularity of MySpace and has become the most popular social network. Facebook was originally considered a vanity site and a place for students to connect and trade stores, but it is growing fast now that anyone who wants to participate can join the site's community. Its professional power is growing with its ever-expanding audience. (Warner 2008, 277). Twitter, another biggest social network, has become so popular that news anchors read tweets while on the air. To find out the popularity of different social networks complete.com had made a survey about the top 25 social networks.

2.3 Privacy in social network sites

Through SNSs the users share personal identifying information about themselves as the basic purpose of online interaction and communication. But they are unaware of who will get access to their private information and in which limit. Information gets spreads geometrically in Social Network Sites. Information is vulnerable to be revealed to a group of people unpredictably as the digital information can be easily copied and stored indefinitely. It will be a threat to the users information is revealed through different ways, and gets in the hand of the untargeted people. Spear phishing, flaming, impersonation, harassment, outing social engineering, spoofing are the common web application attacks leading which attempts to steal a person's identity. Such attacks are often successful due to the assumption of being in a trusting environment social networks create.

Security and privacy related to SNSs are rather fundamental issues rather than technological. Most of the SNS have the feature of giving permissions which act as a significant role in most of the SNS. It provides the member and groups to control in allowing access to their profiles, information, connections and spaces. SNS's content should be escorted by secure handling to security and privacy issues in the design and implementation of the code. In addition, users should have enough knowledge at the level and controlling of the permission feature. The settings available in the SNSs must allow the users in keeping their information private, or making the information public to authenticated members only, to people on the contacts list, or to particular groups of service users. SNS's platforms have the combination of permission and privacy using which users can control their information to be shared to whom and to what extent of different online relationships online.

Launch Dates of Major Social Network Sites

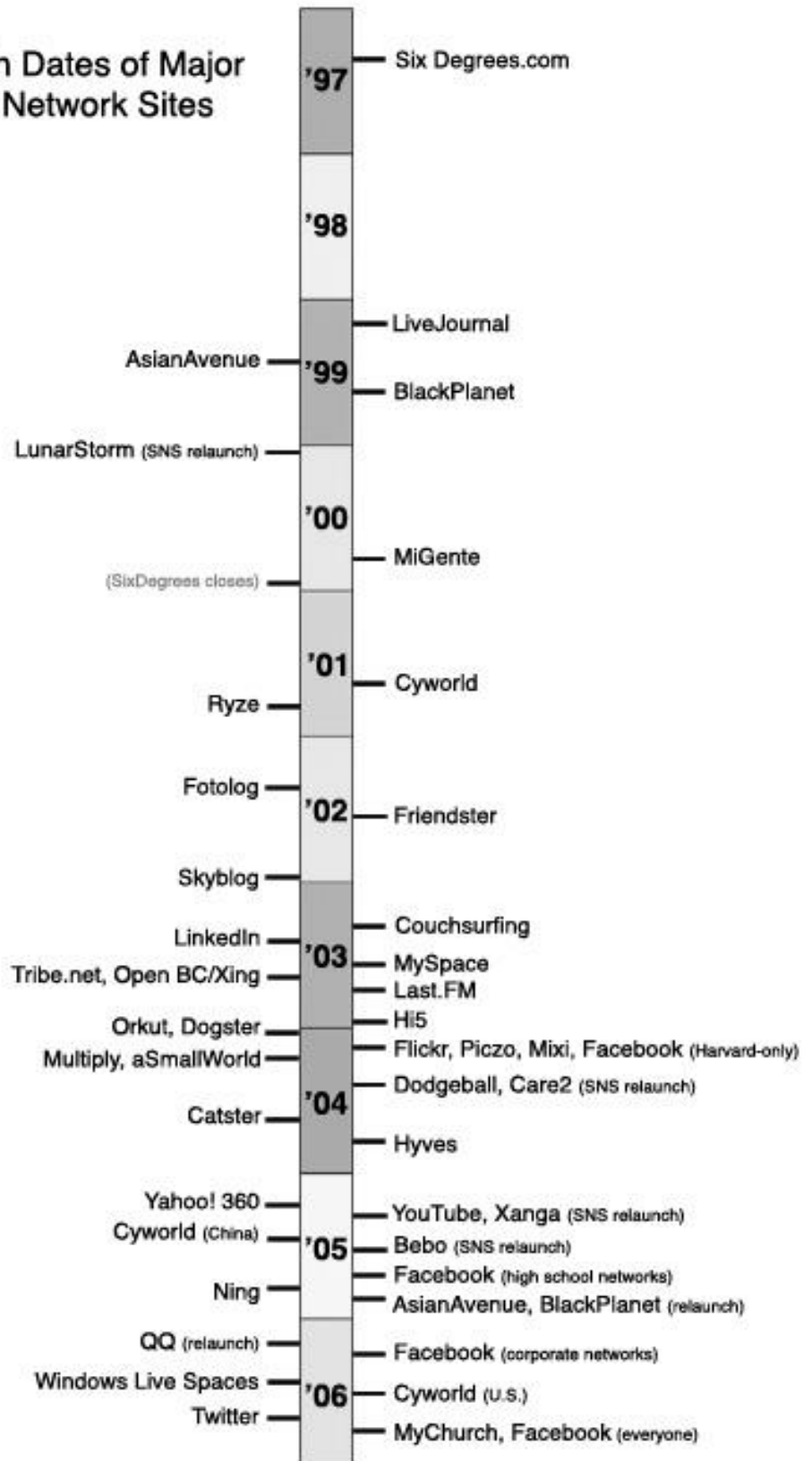
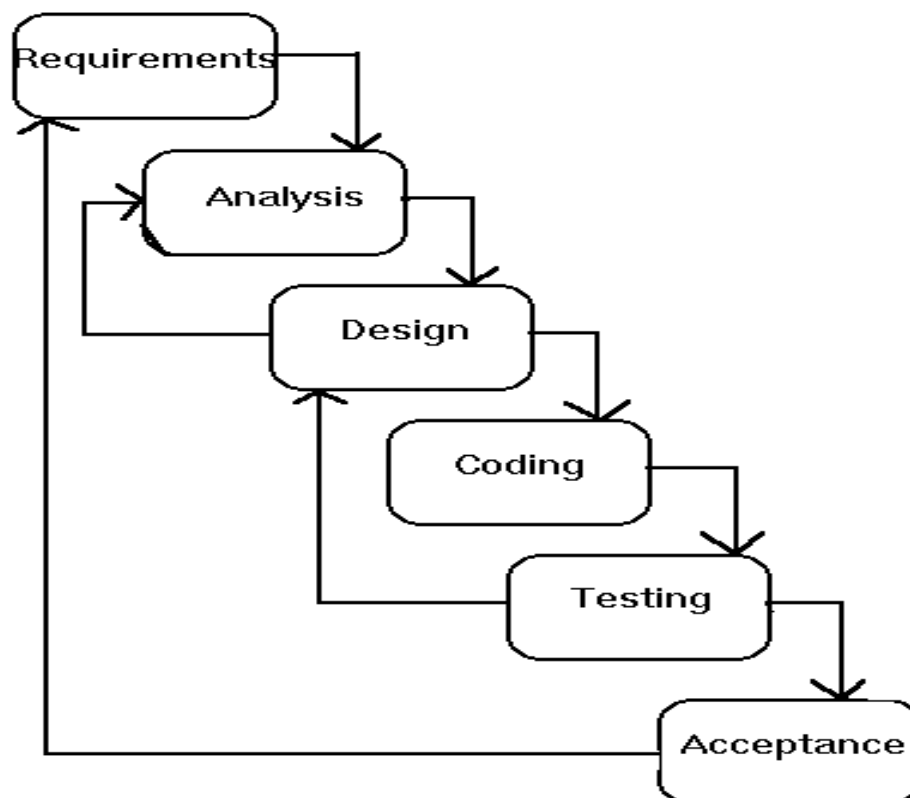


Figure 2.3: Timeline of the launch dates of many major SNSs and dates when community sites re-launched with the SNS feature. /1/

2.4 Development

The development of SNA follows SDLC .SDLC has different phases without which social networking sites cannot go through efficiently. Creating social network software and its application is complex and expensive, representing a major investment in many instances. Those complexities and expenses can be managed by the application of the SDLC. SDLC is the most well-known phase model which is still being practiced but rarely found in pure form. SDLC is well categorized into five to eight distinct phases. This methodology gives a logical description of the steps followed in the development of information systems. Investigation, developing specification, application analysis and design, application implementation and application publication, review and maintenance are the different phases of SDLC. There is a flow of progress from one phase to the next, which makes it similar to a waterfall that gives the model its name waterfall model.



The waterfall model (Systems Development Life Cycle)

Requirements analysis is the initial step in developing any system is gathering enough information about what the needs are and needs to be well defined in the clearest term. This phase is among the most important phase because the quality of the final product depends on the effectiveness of the requirements .Studies reveal that inadequate attention to Software Requirements Analysis at the beginning of a project is the projects that often do not deliver even on the basic tasks for which they were designed

Analysis is equally an important phase as the clients and their interests are brought into the procedure of shaping requirements. Analysis comprises understanding the customer's needs and the limitation. The outcomes of the analysis phase are typically gathered in a formal requirements specification, which acts as an input to the following phase.

As mentioned in Wikipedia, Design consists of "*defining the hardware and software architecture, components, modules, interfaces, and data to satisfy specified requirements.*" In order to determine what changes will be needed to integrate the user needs which are not met by the present system, the present system is revised in this phase. The specifications of the present system the user needs to get into defining the hardware and software architecture. The user interface design is addressed in this phase. The result of this stage is concerned with design specifications, which will be used on the implementation stage.

Implementation is all about constructing the product on the basis of the design specification(s) developed in the preceding step. A group of a development team involving programmers, interface designers and other specialists perform this phase by using development tools. Once the application is implemented and works technically it is regarded as a semi-finished product.

To ensure the product is error-free and meets the specified requirements testing is done. In this testing phase an independent assurance team defines a test case to find out if the outcome product fulfills the requirements and is bug free. In practice three types of testing take place: unit testing of individual code modules, system testing of the integrated product, and acceptance testing. After following

the testing procedure if defects and errors are found, they are logged to the implementation team to make a further correction. Product documentation such as preparing a user manual, reviewing and publishing is done at this stage.

After the through correction is made in the testing phase and the product is certified to use, the installation phase follows for the client to use. The developers have to be aware that the client can take full care of the software if an error will arise. Maintenance is followed after installation in order to make modifications to the system and improve the performance of the product. The modifications are made at the request of the client or unease in using the system or defects aroused during the use of the product.

After the application is published for some time, a review of the application and maintenance is necessary to be conducted to ensure the application does conform to the expectations laid out in the feasibility study and the continued efficient running of the application (Alison et al. 2003, 31), /1/. During maintenance, a series of methods can be used for gathering information from users including interview, questionnaire, observation, survey, and discussion with them (Faulkner 2000, 30), /2/.

3 USER MANAGEMENT

User Management is based on the concept of users logging in and logging. A login is the combination of a unique username and password. User Management also allows administrators to edit all user profiles. A user is considered logged in when first authenticated to the site. Management system includes Login, Logout, User Registration, Account Activation and Password Management modules which are the basis of all sites and applications that require secure user management.

User information is stored in a database. As illustrated in fig below the user logs into the site through the login page. The script will then verify to see if the user exists in the database and authenticate consequently. The users are forwarded to the home page if the user exists. If not then an error message is displayed as a result. The successive part is the registration. The registration process occurs when the users get on to the register link which follows the registration field where the user then fills in all the fields of the registration. And if the field is against the rule of registration the site has then an error message is displayed. The next part is the maintenance of the user's password. It has two scripts; one dealing with the forgotten password and the other enabling the user to change the password. The following are the scripts of all the system:

- login.php - authenticates a user by checking to see if the user exists in the database, and the user's account is active.
- logout.php - ends a user session and returns the user to the login page.
- register.php - registers new users to the system.
- activate.php - activates a newly registered user account.
- forgotten_password.php - generates a new password for a user, and then sends it to the user.
- changepass.php - enables a logged-in user to change his/her password.

USER VALIDATION DFD

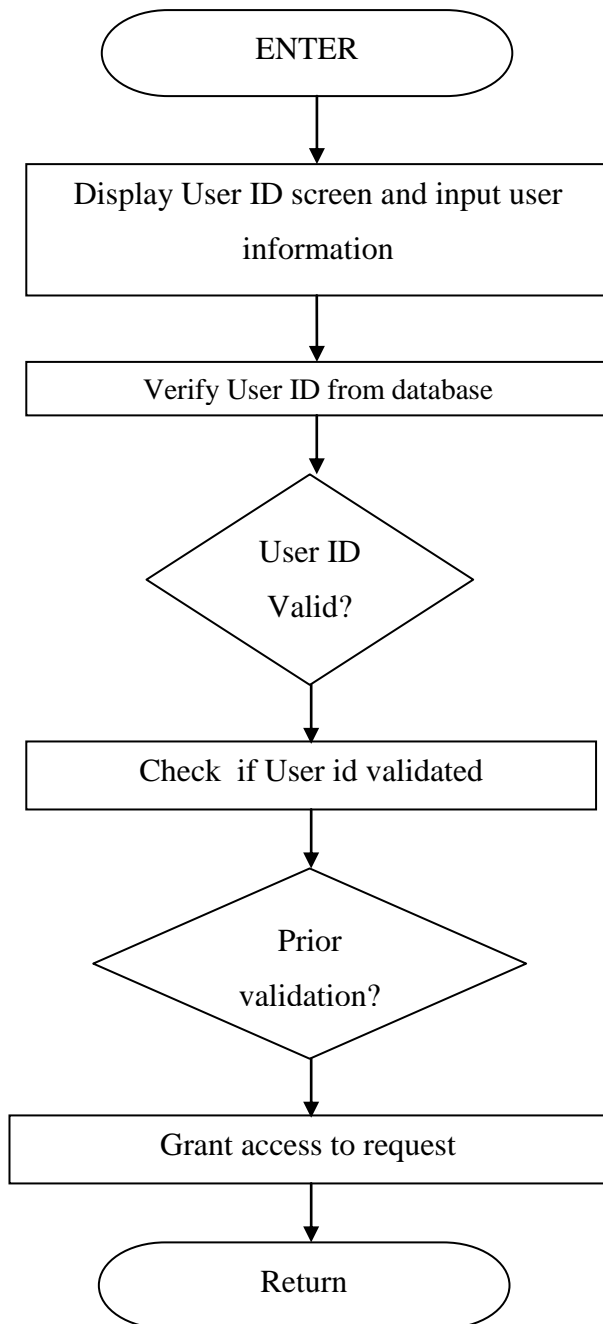


Figure 3: Steps of user validation of present user management system

4 DESIGN AND IMPLEMENTATION OF LOGIN MODULE USING WAMP

4.1 WAMP server development environment

In this thesis, the development environment will be a Windows Operating System to co-ordinate the entire application to put in place, there is a need to have a web server that responds to web browser request from clients and the Apache capable of handling this. Within this development environment, MySQL will be the database application software to store data needed by the web server (Apache). MySQL is an OS Database Management System (DBMS) which is the “*world’s most popular bit of database software with over six million active installations worldwide*” (David Mercer, 2008).

Advantages of WAMP Development/17/:

- Quick to install and easy to manage
- Can be installed on the flash drive
- Extensive support due to bundling of all popular technologies – Windows, Apache, PHP and MySQL
- A preferred technology by Internet programmers all across the world
- Total freeware other than the Microsoft Windows platform
- Smoothly installs on low configuration machines
- Compact yet powerful package
- Provides Administer privileges

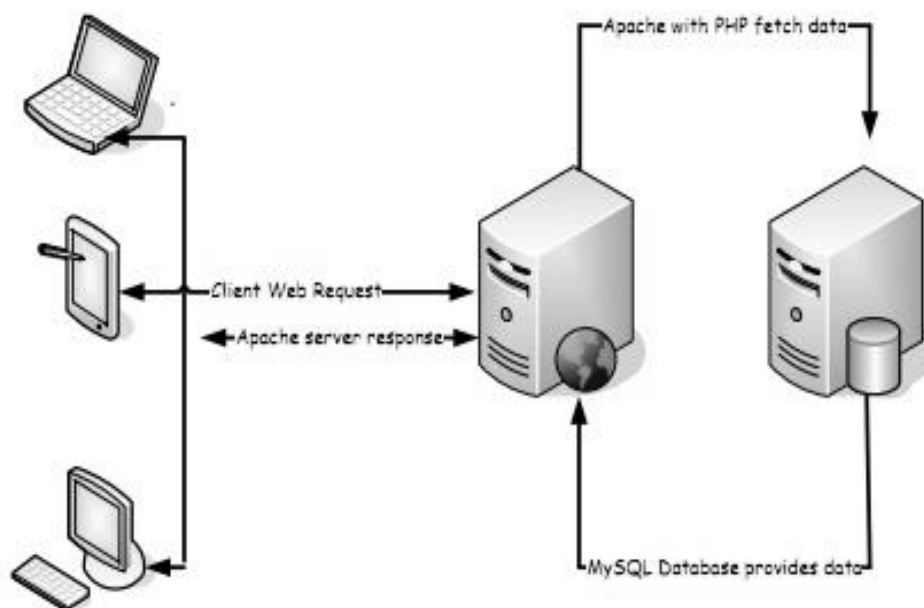


Figure 4.1: WAMP Server connectivity

- Apache

The Apache Http server is open source web server software which is an established standard in the online distribution of website services, which play a key role in the initial growth of the World Wide Web; it has been developed by an open source community. The server is aimed at serving a great deal of widely popular modern web platforms/operating systems, including UNIX, GNU, FreeBSD, Linux, Solaris, Novell NetWare, Mac OS X, and Microsoft Windows.

- Mysql

The MySQL database has consistent fast performance, high reliability and ease of use. So it has become the world's most popular open source database. It is used on every continent; by individual Web developers as well as many of the world's largest and fastest-growing organizations to save time and money powering their high-volume Web sites, business-critical systems and packaged software. /15/

- PHP

PHP is the most widely accepted and used programming language. That is especially suited for Web development and can be embedded into HTML. Its syntax draws upon C, Java, and Perl, and is easy to learn. The main goal of the language is to allow web developers to write dynamically generated web pages quickly. /14/

4.2 Downloading WAMP server

For my implementation part I downloaded WAMP Server which includes Apache 2.2.17, PHP 5.3.4 and MySQL 5.1.53. After running the installer it will be ready to use.

Starting the services, a small icon in the taskbar is seen. Left click on it (right clicking does not display the right menu) will lead to selecting “go online”. The icon will then make a little animation, and the services will be online. Homepage can be viewed by going to <http://localhost/>.

Now WAMP is running and is installed with the application. The public website directory is ‘**c:\wamp\www**’. Any directory created in this directory, shows up as a ‘project’ on the main index page.

4.3 Implementation

Implemented Code:

Implemented simple html table for the login screen

```
<table border="0" width="220" align="center">
  <tr>
    <td width="71"><span style="font-size:10pt;">Username:</span></td>
    <td width="139"><input type="text" name="username"></td>
  </tr>
  <tr>
    <td width="71"><span style="font-size:10pt;">Password:</span></td>
    <td width="139"><input type="password" name="password"></td>
  </tr>
  <tr>
    <td width="71">&nbsp;</td>
    <td width="139">
      <p align="right"><input type="submit" name="submit"
value="Submit"></p>
    </td>
  </tr>
</table>
```



The screenshot shows a login form with the following elements:

- Login** (Section Header)
- Username:
- Password:
-
- Not Registered? [Old](#)/[New](#)

Implemented simple MySQL database table for the login screen

```
//CODE
//Database Information

$dbhost = "";
$dbname = "dbname";
$dbuser = "suban";
$dbpass = "root";

//Connect to the database

mysql_connect($dbhost, $dbuser, $dbpass) or die("Could not connect:
".mysql_error());
mysql_select_db($dbname) or die(mysql_error());
// Check the database to make sure they are correct.
//CODE
session_start();
$username = $_POST['username'];
$password = md5($_POST['password']);
$query = "SELECT * FROM users where username='$username' and
password='$password'";
$result = mysql_query($query);
//If they don't match, display the error message
```

Implemented PHP validation for the login screen

```
session_start();
$username = $_POST['username'];
$password = md5($_POST['password']);
$query = "SELECT * FROM users where username='$username' and
password='$password'";
$result = mysql_query($query);
//If they do not match, display the error and the login form again.<em></em>
//CODE
if (mysql_num_rows($result)!= 1) {
$error = "Bad Login";
echo "Your username and password do not match !";
//echo "<a href='javascript:history.back(1);'>Back</a>";
    include "index.html";
//If they do match, begin the session and include the members page.
//CODE
}
else {
    $_SESSION['username'] = "$username";
        //echo "Welcome $username";
    include "memberloggedin.php";
}
```

A rectangular box with a thick black border containing the text "Your username and password do not match !". The text is centered and appears to be a message displayed on a web page.

Implemented simple registration table in html

```
<table border="0" width="282" align="center">

    <tr>
        <td width="116"><span style="font-size:10pt;">Name:</span></td>
        <td width="156"><input type="text" name="name"
maxlength="100"></td>
    </tr>

    <tr>
        <td width="116"><span style="font-size:10pt;">Email:</span></td>
        <td width="156"><input type="text" name="email"
maxlength="100"></td>
    </tr>

    <tr>
        <td width="116"><span style="font-size:10pt;">Country:</span></td>
        <td width="156"><input type="text" name="country"
maxlength="100"></td>
    </tr>

    <tr>
        <td width="116"><span style="font-size:10pt;">City:</span></td>
        <td width="156"><input type="text" name="city"
maxlength="100"></td>
    </tr>

    <tr>
        <td width="116"><span style="font-size:10pt;">Phone/Mobile
No:</span></td>
```

```
        <td width="156"><input type="text" name="phone"
maxlength="100"></td>
    </tr>

    <tr>
        <td width="116"><span style="font-size:10pt;">Date of
Birth:</span></td>
        <td width="156"><input type="text" name="dob"
maxlength="100"></td>
    </tr>

    <tr>
        <td width="116"><span style="font-
size:10pt;">Username:</span></td>
        <td width="156"><input type="text" name="username"></td>
    </tr>

    <tr>
        <td width="116"><span style="font-
size:10pt;">Password:</span></td>
        <td width="156"><input type="password" name="password"></td>
    </tr>

    <tr>
        <td width="116">&nbsp;</td>
        <td width="156">
            <p align="right"><input type="submit" name="submit"
value="Submit"></p>
        </td>
    </tr>
</table>
```

The image shows a registration form titled "Registration" enclosed in a thick black border. The form has a grey header bar with the title. Below the header, there are eight input fields, each with a label to its left: "Name:", "Email:", "Country:", "City:", "Phone/Mobile No:", "Date of Birth:", "Username:", and "Password:". Each label is followed by a white rectangular input box. At the bottom right of the form, there is a grey button with the text "Submit". The entire form is set against a white background.

Implemented PHP validation for registration

```
//CODE
$name = $_POST['name'];
$email = $_POST['email'];
$country=$_POST['country'];
$city=$_POST['city'];
$phone=$_POST['phone'];
$dob=$_POST['dob'];
$username = $_POST['username'];
$password = $_POST['password'];

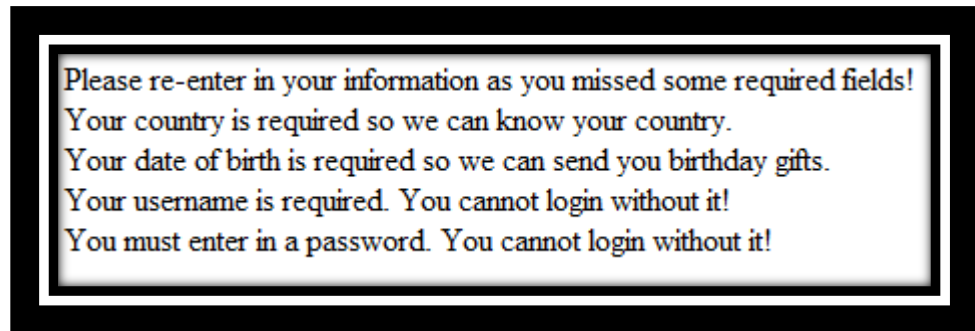
if((!$name) || (!$email) || (!$country) || (!$city)||(!$phone) || (!$dob)||
(!$username)|| (!$password)){
```

```
echo 'Please re-enter in your information as you missed some required fields! <br
/>';
if(!$name){
    echo "Your name is a required field.<br />";
}
if(!$email){
    echo "Your email is required so we can send you your registration
information.<br />";
}
if(!$country){
    echo "Your country is required so we can know your country.<br />";
}
if(!$phone){
    echo "Your phone/mobile phone is required so we can contact you when
necessary.<br />";
}
if(!$dob){
    echo "Your date of birth is required so we can send you birthday gifts.<br />";
}

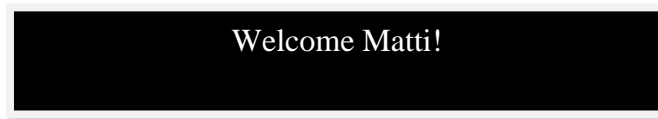
if(!$username){
    echo "Your username is required. You cannot login without it!<br />";
}
if(!$password){
    echo "You must enter in a password. You cannot login without it!<br />";
}

include 'registration.html';

exit();
}
```



When a user successfully, logs-in he is greeted by following welcoming message:



5 EVALUATION AND DISCUSSION

Different networking sites use a variety of services, tools, and programming languages to make up the core infrastructure. For any web application, the basic components viz. Programming language (script), server environment, and content are required. At the front end, they need a server to run the applications. Out of many server environments, LAMP and WAMP are in the mainstream. For this thesis, the test login module was created using those core components and hence implemented.

From the implementation of the user management module, we were able to compare the features with the pre-existing user management module. For the comparison, present popular social sites like Facebook and Twitter were taken into consideration.

Below are the login interfaces of the two popular sites:

A screenshot of the Facebook login interface. It features a dark blue background. On the left, there is a white input field labeled "Email". To its right is another white input field labeled "Password". Further to the right is a blue button with white text that says "Log In".

Fig: Login module in Facebook.

A screenshot of the Twitter login interface. It features a dark blue background. There are two white input fields side-by-side. The first is labeled "Username" and the second is labeled "Password". To the right of these fields is a white button with a dark blue border and dark blue text that says "Sign in".

Fig: Login module in Twitter.



Fig: Login Module in this Testing

The table below shows the comparison of those components among the networking site including the test module.

| | Facebook | Twitter | Test Case |
|-----------------------------|-----------------|--------------------|------------------|
| Programming Language | PHP | PHP | PHP |
| Environment | LAMP | Cold Fusion Server | WAMP |
| Content | HTML | CFML | HTML |

Table: Fundamental components of login module in different sites

The above table shows that the sites almost use the similar components to run their applications. PHP, at present is a good web programming language with extensive support, is used in all the sites and in the test case, as well it was preferred. It is an active developers' community and is excellent for rapid iteration and dynamically typed/interpreted scripting language.

Secondly, different sites have used different server environment. Facebook use LAMP as LAMP is an open source, very customizable, and good for security unlike WAMP. Whereas, Twitter uses a Cold Fusion Server, developed by Adobe Systems, compares to the scripting components of ASP, JSP, and PHP in purpose and features. In addition, in the test case, WAMP is used, which works in window environment. Finally, the content, almost all the sites uses HTML with different

version. However, twitter uses ColdFusion Markup Language (CFML), which closely resembles HTML.

6 CONCLUSION AND FUTURE WORKS

In this thesis, a simple login screen was created using a WAMP server module. User management in WAMP was studied. Users were kept in a MySQL database. Various literate studies in SNS such as Facebook, Twitter, and MySpace was considered. It was found from thesis that, all these SNS used simple mechanism to authenticate users. Users can easily access the host site. Particularly, this thesis will provide a roadmap towards a comprehensive login system in the near future.

Login acts a simple step of authentication, getting access to the site. In this thesis, a tradition login module is studied. Numbers of security authentication methodologies are in practice. Organizations pick and implement individual solutions. Users are always conscious about the security issues. In the future work, different kinds of login authentication system such as finger scanner, eye retina authentication, body scan and intelligent authentication methodologies could be studied. By the advancement of the authentication, many new login modules could be created and implemented which could be the topic of research in the future and we could find out the most secure and advanced methods and methodologies of secure logging in.

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