INTERNSHIP REPORT

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Introduction

This Report is an overview of what we learned and achieved during the 6 week internship from 20th June to 29th July 2011, that we undertook in HCL Infosystems, Ambattur, Chennai.

The report focuses primarily on the training (Trend Micro IWSS) and project (HCL Info Portal) that we completed and implemented successfully.

We hope that this report does justice to the 6 weeks of hard work that we put in to ensure that our project meets the high standards set by HCL throughout the world.

Acknowledgement

This internship would not have happened without the encouragement of Mr.Mohan, our well-wisher, who helped us to get in touch with HCL Infosystems.

Once in HCL, Mr.G.Godhanda Pani, General Manager, HCL Infosystems, provided us support and help whenever required and introduced us to our guide Mr.Dhilipan (System Maintenance).

This project would not have been possible in the limited time that was given without the guidance and technical knowledge that Mr.Dhilipan gladly shared with us.

We would also like to thank Mr.N.Selvaraj (HR Manager) in helping us to procure documents and files required for our smooth progress during the course of our internship.

Finally, we would like to thank our institute, IIITD&M Kancheepuram, for giving us the opportunity to pursue this internship.

1. Training - HCL Infosystems - Trend Micro IWSS (InterScan Web Security Suite)

HCL Infosystem uses Trend Micro IWSS at its Internet Gateway for enhanced protection.

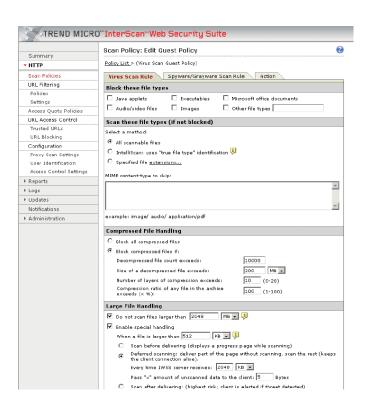
IWSS has the following features:

- Comprehensive Web Security
- ➤ Leading Virus Protection
- > Anti Phishing
- ➤ Anti Spyware
- > URL Filtering Module
- ➤ Scalable and Flexible Policies
- Centralized Management and Coordination

Proxy Server

- ➤ IWSS is installed in the server computer which is on one side connected to Internet while the other side is connected to all the computers (wired/wireless) present in the company.
- ➤ The proxy server provides improved protection to the pages requested by the users with the help of other modules present in IWSS.

Virus Protection



- ➤ The clients had to install client anti-virus software provided by them so as to receive updates and notifications from the main server directly without using Internet.
- The main server is responsible for updating the virus signature database up to date and either pushes it to user or the user pulls it from the server.
- ➤ Viruses which are scanned, found and quarantined/deleted are reported to the Administrator at the admin site. The admin receives an email at the end of the day stating the nature of virus, IP Address of the computer on which the virus was found and the full name of the file.

Anti - Phishing

- ➤ Users at HCL Infosystem are protected from phishing with the use of Anti Phishing module in Trend Micro IWSS.
- ➤ If a user clicks on a phishing link (say to a Fake Bank Website), the user even before the completion of the redirect is informed of the status of the website being a possible phishing link.
- ➤ Phishing Links are found out by referencing against the databases of phishing sites updated regularly by the IWSS. Also the Administrator can add possible phishing links to the list to ensure more security.
- ➤ The Users can opt out the page or they can carry on at their own risk if they are sure that they entered or clicked the correct and authenticated link.

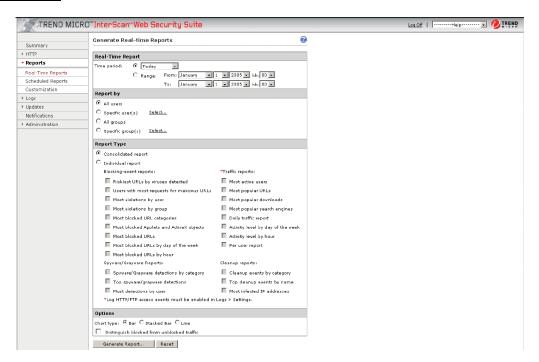
Anti – Spyware

- > Spyware are hard to detect because they run in a hidden mode collecting user personal data like Web Browser History, Pages Visited, Bookmarks made, installing additional software without users knowledge and also redirecting them to sites (mostly phishing sites) causing the users to give away sensitive data.
- ➤ Anti Spyware provided by IWSS scans the system for incoming and outgoing requests to identify the presence of spyware.
- ➤ If any spyware are detected the client is notified of it through the client antivirus software and removes/blocks the spyware.

URL Filtering Module:

- ➤ URL Filtering Module is one of the most important module of IWSS which improves network performance, reduces legal liability to the company and increases work productivity.
- ➤ Policies Settings grouped under a common name which determines the type of access to website, time and duration of access etc.
- ➤ For example Our Policy
 - Name Interns
 - Time Slots 9:00am 12:30pm (Work1) & 2:00pm 5:30pm (Work2).
 - Days of Week Monday, Tuesday, Wednesday, Thursday, Friday.
 - All sites are blocked during time slots other than Work1 and Work2.
 - Blocked Sites during Time Slots (Work1 and Work2)
 - o Company Prohibited Sites
 - Social Networking Sites (Facebook, Twitter, Google+ etc)
 - Video Sharing Sites (YouTube, Metacafe, Dailymotion etc)
 - o Movies, Songs Download Sites
 - o Sports, Entertainment, Gaming
 - Streaming Media
 - Torrent downloads
 - o and many more which reduces work productivity.
 - File downloads having extensions of executables (.exe), video (.avi, .mkv etc), music (.mp3 etc), torrent (.torrent) and many others too as defined by the policy "Interns".
 - The policy "Intern" is then applied to our computers by mentioning their static IP Address.

Reporting:



- Basic and Advanced Reporting Tools are provided by Trend Micro IWSS.
- ➤ Basic Reporting included reports of web traffic, most visited sites, time slots wise reporting, list of blocked sites accessed etc.
- Advanced Reporting includes reports on all users/ specific users/ specific group on most active users, most popular URLs, Daily traffic level, Most blocked URLs (by time also), Spyware, Riskiest URLs by viruses detected and many more as shown in the image.

2. Time Line

Week 1:

- Introduction to HCL Infosystems.
- Meeting with Mr.Dhilipan (our Guide for Training and Project)
- Familiarised with the HCL Management and Structure.
- Studied the working of the Proxy Server established in the HCL Infosystems using Trend Micro IWSS (InterScan Web Security Suite).

Week 2:

- Project Proposal HCL Infosystems Info Portal.
- Assessment of similar user portals available for learning purposes.
- Selection of tools to be used and platform on which the project is to be implemented.
- Beginning of Project. Learning of tools used like PHP, CSS etc.
- Installing and configuring XAMPP, Notepad++.

<u>Week 3:</u>

- Completed the Project Requirement Specification were finalised with Mr.Dhilipan's consent.
- Created the MySQL Database and Tables required using phpMyAdmin.

Week 4:

- Design of the website using CSS, JavaScript.
- Created the Login and protected pages for logged in users.

Week 5:

- Coding of the Notices pages (Add Notice, Display Notice).
- Creation of Forum pages (Add Posts, Display Posts).
- Creation of Comments adding to Posts.

Week 6:

- Coding of the Hiding/Showing of Comments, Change Password, Users page (Admin).
- Coding of Deletion of Notices, Posts (Admin).
- Testing of all features of the Info Portal.
- Preparation of the Project Report.

3. Project Requirements

- Existing User Portal of HCL has only features to view only profile of the users.
- Proposed Info Portal
 - > Creation of an Intranet Website.
 - ➤ All visitors can view the notices according to categories.
 - ➤ New notices will be indicated.
 - Notices can be added only by the Administrator (Admin).
 - Notices can be deleted only by the Admin.
 - ➤ HCL Forum Employees can discuss issues.
 - ➤ Logged in users should be able to create new posts in the HCL Forum.
 - Users can comment on any post.
 - Admin should have control over adding/deleting/editing users.
 - Admin can also remove posts if he/she finds it inappropriate.
 - Admin should be able to show/hide comments.
 - ➤ Users should be able to change their password.
 - All posts, notices, comment should have a timestamp and also indicate
 - The user who had added them (posts and comments only).

4. Tools Used

XAMPP:

- Apache 2.2.14 (IPv6 enabled)
- MySQL 5.1.41
- PHP 5.3.1
- phpMyAdmin 3.2.4

Hosted on a Windows Machine

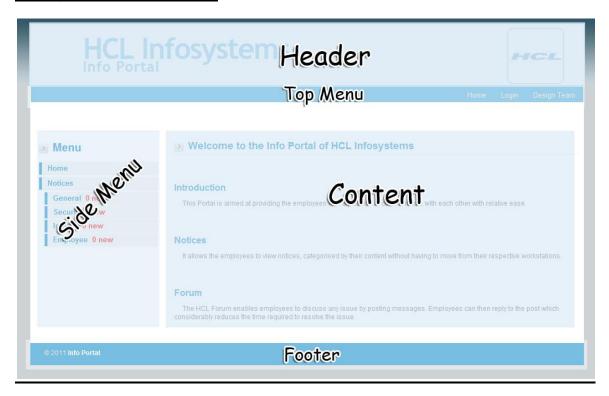
5. Resources Used

- > www.hcl.in
- > www.w3schools.com
- > www.tizag.com
- http://cyberwarez.info/forum
- www.wikipedia.org
- www.google.com (our life saver)
- ➤ Adobe Photoshop CS5

6. Technologies Used

- > HTML, CSS, JavaScript- Client Side
- > PHP Server Side

7. Layout of the website



- ➤ The colour scheme of the website was made Blue to reflect HCL's theme (which is also Blue).
- ➤ Header Title of the Company (HCL Infosystems) and the Project Name (Info Portal)
- ➤ Top Menu Links to Home, Login/Logout, Design Team
- > Side Menu
- ➤ All visitors Home, Notices (General, Security, Internal, Employee)
- ➤ Logged in users Home, Change Password, Notices (General, Security, Internal, Employee), Forum (Add a Post, General)
- Administrator Home, Change Password, Notices (Add a Notice, General, Security, Internal, Employee), Forum (Add a Post, General), Users
- > Content Depends on the page being accessed.
- ➤ Footer © Info Portal 2011

8. Tables Used

Database Name: portal

1) users

- <u>username</u> (Primary Key) varchar (50) Username/employee ID and is also stored as session variable at time of login.
- pass varchar (70) Password of the user stored as md5 of the original password. (**MD5 Message-Digest Algorithm** is a widely used cryptographic hash function that produces a 128-bit (16-byte) hash value.)
- name varchar (100) Name of the employee.
- department varchar (100) Department of the employee (Design, Manufacturing etc.).

2) notices

- <u>nid</u> (Primary Key) int ID unique to each notice.
- title varchar (100) Title of the notice.
- body text Body of the notice (with option of providing links to other pages).
- datetime timestamp Date and Time when the notice was added.
- type varchar (20) Categorises the notice. (General/Security/Internal/Employee Related).
- files varchar (100) Name of the file attached and stored in the uploads folder.

3) forum_posts

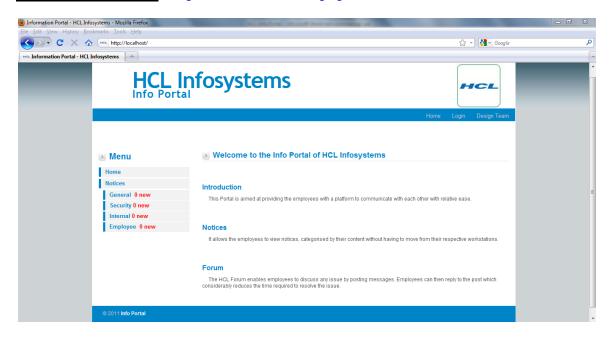
- <u>pid (Primary Key) int ID unique to each post.</u>
- title varchar (200) Title of the post.
- body text Body of the post (with option of providing links to others pages).
- datetime timestamp Date and Time when the post was added.
- type varchar (50) Categorises the post (separated by comma).
- username (Foreign Key) varchar(50) User (username) who added the post.

4) forum_comments

- <u>cid</u> (Primary Key) int ID unique of each comment.
- pid (Foreign Key) int ID of the post which has been commented upon.
- comment text The Comment.
- datetime timestamp Date and Time when the comment was made.
- username (Foreign Key) varchar (50) User (username) who added the comment.
- deleted tinyint (1) Indicates the status of the comment.
 - 0 Not Deleted
 - 1 Deleted

9. Description of each Page

9.01. Home Page (http://localhost/index.php)



- An introduction to the notices and forum in the Info Portal.
- Links to the Home Page, Login Page, Design Team Page (Top Menu)
- ➤ Links to Notices (General, Internal, Security, and Employee Related) with the count of the new notices in each category.

9.02. Header (http://localhost/header.php)

- Common page included in all other pages.
- ➤ Contains Connection to MySQL Database.
- > Definition of WWWROOT.
- Meta Data like Description, Keywords, Distribution and Authors.
- ➤ Title of all pages in common Information Portal HCL Infosystems.
- > Inclusion of favicon.ico file and main.css file.
- ➤ Header Logo Text and Slogan, HCL Logo Image on the right.
- ➤ Top Menu Links to Home, Login/Logout, Design Team.

9.03. Footer (http://locahost/footer.php)

- Common Page included in all pages.
- > Contains links to the Side Menu.
- ➤ The footer text © Info Portal.

9.04. Login Page (http://localhost/login.php)

Login	
Username:	
Password:	
	Submit

- ➤ The username and password are to be entered and posted to the same page. The Username and Password are escaped to avoid SQL Injection into the databases. The username and MD5 of the password are checked in the database.
- ➤ YES If username and password exist a new Session variable (hcl_user) is created with the value of the username and then redirected to http://localhost/disp_notice.php?type=General
- ➤ NO The corresponding error is shown if authentication fails. The errors possible are
 - Either username or/and password field is empty
 - Username and password entered is incorrect.

9.05. Logout Page (http://localhost/logout.php)



➤ Irrespective of whether the user is logged in or not, the session variable 'hcl_user' is unset (destroyed) and the visitor is redirected to the Home Page (http://locahost/index.php)

9.06. Change Password (http://localhost/change_pass.php)

Change Passw	Change Password			
Current Password				
New Password				
Confirm New Password	i			
Submit				

- ➤ The User is provided with a form asking for Current Password, New Password and Confirm New Password.
- ➤ CORRECT The correct details when entered notify the user as having successfully changed the password.
- ➤ INCORRECT The corresponding error is shown if password is not changed. The errors possible are
 - Either one or all the fields are empty.
 - The current password does not match the password in the database.
 - The New Password and Confirm New Password entered do not match.

9.07. Display Notice (http://localhost/disp_notice.php?type=value)



- Notices of the type 'value' is retrieved from the database and displayed in a table. If there are more than 10 notices of that type 'value', only the first 10 notices are shown and a "Next" link is provided to view the next 10 notices." Previous" link is provided to view the previous 10 notices.
- ➤ Details shown S.No., Title of the Notice, Date created, Body of the Notice, Link to the attached file (if any).
- ➤ Validation
 - Parameter type=value when passed with the wrong parameter, displays as "Page Not Found."

9.08. Display Post (http://localhost/disp_post.php?type=value)

General Posts

S.No	Post	
1	This is my first post in HCL Infosystems - 27 July, 2011 12:04 pm Posted by: ilam (llambharathi Kanniah) This post is done for testing purposes using multi	0 Comment(s)
2	This is a test post - 25 July, 2011 2:19 pm Posted by : sug (Suganth Krishna) This is a test body	1 Comment(s)
3	HCL Form - 21 July, 2011 11:47 am Posted by: sathish (SathishGP) I want the form	1 Comment(s)

- Posts of the type 'value' is retrieved from the database and displayed in a table. If there are more than 10 post of that type 'value', only the first 10 notices are shown and a "Next" link is provided to view the next 10 notices."Previous" link is provided to view the previous 10 notices.
- ➤ Details shown S.No., Title of the Notice with a link to the http://localhost/disp_details?pid=value, Date created, Posted by Username (and Name), Body of the Notice (showing only the first 50 characters or the entire body if number of characters is less than 50), the number of comments posted on the post is displayed on the right side of the table.
- > Validation
 - Parameter type=value when passed with the wrong parameter, displays as "Page Not Found."
 - If a user is not logged in, error is displayed as "You have tried to access a protected page. Please login to continue."

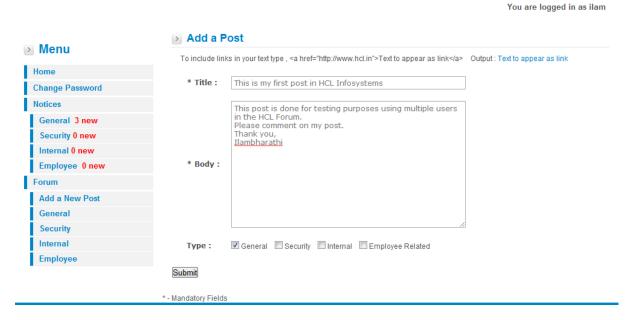
9.09. Add a Notice: For admin only (http://localhost/notice_add.php)

Add a Notice

To include links in	your text type , Text to appear as link Output: Text to appear as link
* Title :	Sample 3
* Body :	This is a General Notice showing the timestamp and hyperlinks HCL
Type:	General ▼
File upload:	Choose File No file chosen
Submit	
* - Mandatory Fields	

- ➤ The Admin is provided with a form consisting of Title (Textbox), Body (Text Area), Type (Dropdown Box), File to be uploaded (File Upload Box).
- > Title, Body, Type are mandatory fields.
- ➤ Body text can area have links to other pages by including the hyperlink text (For example : Google)
- ➤ When the form is submitted, the details are validated.
- ➤ CORRECT Notice is added successfully to the database with the current timestamp when adding the notice.
- > INCORRECT -
 - Either Title and/or Body are empty.
 - File exceeds the Maximum File Size Limit (approx 100MB) or File does not exist.

9.10. Add a Post: For logged in Users (http://localhost/forum_add.php)



- ➤ The User is provided with a form consisting of Title (Textbox), Body (Text Area), Type (Checkboxes) (General, Internal, Security, Employee Related).
- > Title and Body are mandatory fields.
- > Body text area can have links to other pages by including the hyperlink text
- ➤ If any option(s) other than General is/are selected, the General option is unchecked and vice versa.
- ➤ When the form is submitted, the details are validated.
- ➤ If no type category is selected, General option is selected.
- ➤ CORRECT Post is added successfully to the database.
- ➤ INCORRECT Either Title and/or Body are empty.

9.11. Add Comment: For logged in users



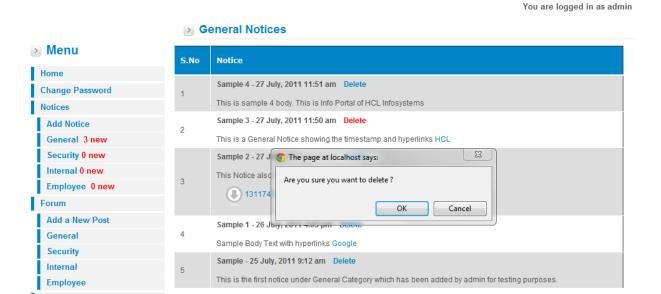
- ➤ Comments can be added by clicking the add comment button which posts to the same page.
- ➤ All comments are stored in a single table with each comment having its relevant post ID as a field.

9.12. Delete Comment: For admin only

You are logged in as admin The comment has been deleted. This is my first post in HCL Infosystems ILAM (ILAMBHARATHI KANNIAH) 27 JULY, 2011 12:04 PM This post is done for testing purposes using multiple users in the HCL Forum. Please comment on my post. Thank you, llambharathi Comments By: sug (Suganth Krishna) July 27, 2011 12:08 pm Delete This post is good. Sending this test comment from Conference Room By: ilam (llambharathi Kanniah) July 27, 2011 12:10 pm Delete Yes it is working da. By: sathish (SathishGP) July 27, 2011 12:11 pm Show The Administrator has deleted the comment. Add your comment Comment: Comment

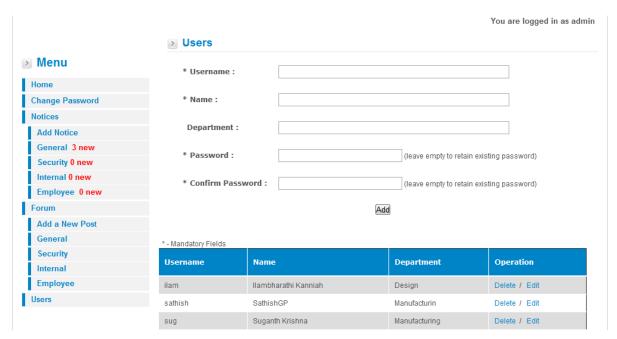
- ➤ The admin is able to remove comments by choosing the Delete link displayed next to each comment.
- ➤ The required details are then posted in GET form to the same page and validated.
- ➤ MD5 of the particular Comment ID is also posted to prevent direct access of the page by typing the address in the address bar or running malicious scripts.
- deleted field of the comment is set as 1 in the table forum_comments.
- ➤ Using this, a relevant message is displayed in place of the comment which is visible to all users. (*The Administrator has deleted the comment*)
- ➤ The admin can choose to redisplay the comment using the Show link which follows similar process as above.

9.13. Delete Notice: For admin only



- ➤ The admin is able to remove notices by choosing the Delete link displayed next to each notice.
- > The details are then posted in GET form to the same page and validated.
- ➤ MD5 of the particular notice ID is also posted to prevent direct access of the page by typing the address in the address bar or running malicious scripts.
- ➤ A confirmation message box is then displayed using JavaScript.
- ➤ If the admin chooses OK, the notice is removed from the database.

9.14. Add/Edit/Delete User: For admin only



9.14.1. Adding Users

- The admin is provided with a form asking for Username (varchar), name (varchar), Department (varchar), Password and Confirm Password (varchar).
- ➤ The Username, Name, Password and Confirm Password are mandatory fields.
- ➤ CORRECT The correct details when entered notify the admin as having successfully added the user.
- ➤ INCORRECT The following error is shown if user could not be added (empty field(s), passwords not matching etc.).
 - Error in the data.

9.14.2. Editing Users

- The admin has an edit option next to all users displayed below the form.
- ➤ He can choose to edit any of the fields.
- ➤ He can leave the password fields empty to retain the existing password.
- ➤ CORRECT The correct details when entered notify the admin as having successfully added the user.
- ➤ INCORRECT Error message is shown if user could not be added (empty field(s), passwords not matching etc.)

9.14.3. Deleting Users

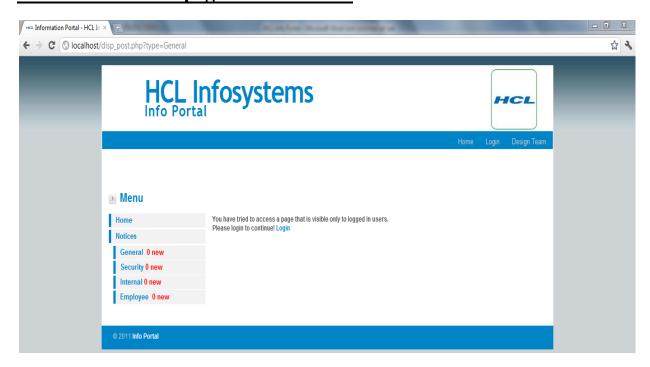
- Admin can delete users using the option provided next to each user.
- ➤ The required details are then posted in GET form to the same page and validated.
- ➤ MD5 of the particular user's password is also posted to prevent direct access of the page by typing the address in the address bar or running malicious scripts.
- A confirmation message box is then displayed using JavaScript.
- ➤ If the admin chooses OK, the notice is removed from the database.
- The user's details are then removed from the database.

9.15. Page Not Found



➤ The above page is displayed when the page requested is not found.

9.16. Unauthorised pages not accessible



➤ If any person tries to view a page which he/she should not access, they will be greeted by a message asking them to Login / Page showing that it is accessible only by the Administrator.

Conclusion

This internship enriched our knowledge and skills in the field of web design and development. During the course of the project we were required to learn various tools like HTML, PHP, CSS, JavaScript, Database Management (MySQL), Apache HTTP Server that we have now mastered.

We had a hands-on experience on how the Security Suites are setup in large companies.

So, through this internship, we are a step closer to becoming a successful Computer Engineer.