PeLSSB EVENT TRACKING SYSTEM

(WITH E-MAIL NOTIFICATION FEATURE)

By

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Dissertation submitted in partial fulfilment of

the requirements for the

Bachelor of Technology (Hons)

(Business Information System)

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CERTIFICATION OF APPROVAL

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A project dissertation submitted to the
Business Information Systems Programme
Universiti Teknologi PETRONAS
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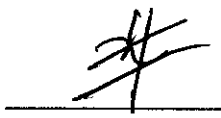

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CERTIFICATION OF ORIGINALITY

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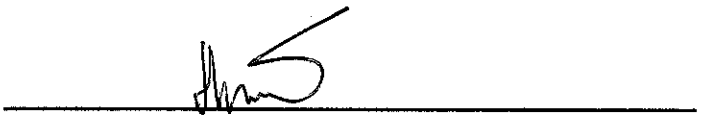

HING SOPHOAN

ABSTRACT

The purpose of this project is to develop a new enhanced system for PETRONAS eLearning Solutions (PeLSSB) company to keep track of event report. This new proposed system is a web-based application which comes with an ability to allow user to perform some several functions which are related to event report. It also allows user with high authority to perform extra functions which normal users do not have. The system also comes with an ability to notify recipients via e-mail when there are new events coming up. The default e-mail address that is used to send notification to recipient will be PETRONAS e-mail. As an option, user can choose to change to notify them by using default address or other preferable e-mail address.

Further in this project paper will be divided into 5 big chapters which are: INTRODUCTION which will introduce to a propose project with a problem statement and objectives of the project, LITERATURE REVIEW study that will show the significance and a study of its related works of the proposed system. METHODOLOGY of how to develop this project for the timeline given, RESULT and DISCUSSION of the finding from data that have been gathered then include with the analysis of those data to come up with a proper solution for a system development lifecycle, and lastly is CONCLUSION and RECOMMENDATION which will summarize the overall project work with a recommendation of future work enhancement.

ACKNOWLEDGEMENT

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First of all, I would like to express my gratefulness and sincere thank to PETRONAS Sdn Bhd for grating me a priceless scholarship. The scholarship has brought me a precious chance to approach and gain a huge amount of knowledge with all the needed facilities available in University Technology PETRONAS, Malaysia.

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ABBREVIATION AND NONMENCLATURES

AJAX	Asynchronous JavaScript and XML
HTML	Hypertext Markup Language
UTP	Universiti Teknologi PETRONAS
XML	Extensible Markup Language

CHAPTER 1
INTRODUCTION

This chapter contains brief information of the project which includes the background of study, problem statements, objectives and project scope.

1.1 Background Of Study

Nowadays business cannot just rely on manual work to stay in the high competency level in the local or global market. In order to stay in that level of competency business organization will need to apply new and advance technology to keep the growing of business competency meaning transfer from manual processing to computer base processing.

The project that will be discussed in this report is 'PeLSSB Event Tracking System' that will serve the requirement of organization competency growing. *PeLSSB Event Tracking System* is one of the proposed projects that is requested by PETRONAS e-Learning Solutions.

PETRONAS eLearning Solutions Sdn Bhd (PeLSSB) is Malaysia's national petroleum corporation's eLearning company which was established on 22 May 2004 which is wholly-owned by PETRONAS. It is positive planned progression after two years of successful trials, implementation and running of PETRONAS eLearning as project. PeLSSB existence was started when PETRONAS decided to embark on leveraging ICT as a tool to extend its corporate learning and growth development.

The company is vested with the online training and professional development of the corporate professional not only limited to PETRONAS but also covers the academic, public, government and other industries in Malaysia and the international market. It is entrusted with the responsibility of developing and adding value to these resources by utilizing technology and its proven standards and methodology.

PETRONAS eLearning is engaged in a wide spectrum of eLearning activities, including the offering of standalone and subscription based online Soft skills Courses, which includes Business and Professional Development Skills Course, IT and Desktop Course, Technical Oil and Gas courses, English Language and specially developed courses which developed and customized according to clients' needs.

Event Tracking System is a one stop database and system for any company or organization events. As the name of the system has described it, the system main function is to track all events that organization participated in. To get parallel with the system core function, several other sub functions have to be developed in order to support and perform as a valid and stable system. The functions should be able to capture event report where every reports created can be submitted through this system. The function of the system also should be able to capture event calendar where the viewer of the system can see what is happening around the date. This function too is vital as a reminder to person concerned where the event's actual date can be prompted two or three days prior to the event. In order for the system to be friendlier to users, the appearance of the information should be in birds eyes view. Here in this project, it will be an enhancement of development from the previous project which student been developed during her internship period. The author feels that this project is very good and give big contribution to her previous host company that is why she decided to enhance it into a fully useable system and hope to bring a lot benefit to the company.

1.2 Problem Statement

1.2.1 Problem Identification

This Problem Statement is intended to portray all points of view regarding the issues of staff's difficulty in daily activity of operating department in the company. Previously the company had conducted many events. In order to conduct each events staff need to prepare documents and write reports then manually submit to the head executive of the department or a person in charge. They all need to walk from desk to desk to inform each other 3 or 4 days before the event coming up. All the processes are done manually, therefore risk of losing data is easily occurred with a time consuming of all the manually process and communicating within the organization. These reasons push the author to come up with an idea to create one useful and valid system so call Event Tracking System to overcome all these problems.

1.3 Significance of the Project

This project is designed to help the company to:

1. To improve working process and reduce cost from manually process
2. To make ease in conducting the event and all the follow up works
3. To avoid from any miscommunication during the informing time among the staff in the company.
4. To avoid losing records/data of related events from time to time
5. To make use of the technology by allowing users to produce and submit any reports related to event online. If this system is successfully implemented, the organization will able to use to make organization in high level of competency.

1.4 Objectives and Scope of Study

1.3.1 Objectives

To develop an enhanced PeLSSB Event Tracking System, with the following objectives:

1. To develop one centralizes system to keep track all events procedure and store all related information.

2. To alert users if there is new event coming up by electronic notification via e-mail to recipients
    - PETRONAS email will be used as recipient default e-mail address because all the staff in the company have it. On the other hand, users have an option to change their e-mail address if they want system to notify them to other e-mail address.

3. Provide the flexibility control for system administrator to assign and set privilege to user in the company
    - There are 4 difference level of accesses involve in this system, which are super administrator, administrator, user1 and user2. In this system only the super administrator and administrators who have the authority to set the different accesses to the users in the system. For example: Super administrator can set staff number 1 in a category of user1 therefore he or she only has the authorization to add, edit, delete and view the report that they have uploaded into the system. For a future understanding please look through the Use Case diagram which provided in below Result and discussion part.

1.3.2 Scope of Study

After identifying the problem statements for current company issue and showing a clear view of project objectives, an author will develop a useful Event Tracking System to solve and clear out the current issue of manually processes.

This system will give a notification to the user by showing the alert message and list out the title of the event around the date in the calendar in order to make an ease to the users once they login to the system. The system itself allows the user to perform different functions according to user's role-based privilege. The system's functions should be able to capture event report and store it in the database. Add in new event reports, edit and delete function also included in the system functionality. Every reports created can be submitted through the system effectively. Reports can be viewed as monthly, quarterly and yearly in a proper form. The system has some additional features which will include the abilities to post documents such as PowerPoint briefs, word documents, PDF files, or picture related to each events. Personal contact information, an automated process to add summary of report after event gathering are also include in the system. These will help the organization to improve the working process a lot better than the previous time.

CHAPTER 2
LITERATURE REVIEW

In this literature review with the hope of gaining more idea to improve the development of system functions, the author will describe in details about propose technology which she going to use in her project. The author will brings up a few cases study of system with similar system functionalities to explain in this literature review and also some researches information which the author thinks that it can improve her system to become effectiveness and efficiency toward the organization in the future.

2.1 Proposed Technology

2.1.1 PHP: Hypertext Preprocessor

Because author has some experiences and familiarities with this PHP that is why she decided to chose PHP as a main scripting language in developing this project. Furthermore, PHP is an open sources product and can be run on all the major operating systems with most servers. The speed of development is also important. Because PHP allows the separation of HTML code from scripted elements, and there will be a significant decrease in development time on project. In many instances, it will be able to separate the coding stage of a project from the design and build stages. Not only can this make life easier for the author as a programmer, but it also can remove obstacles that stand in the way of effective and flexible design.

So what is PHP and how it works anyway?

It is a server-side scripting language usually written in an HTML context. Unlike an ordinary HTML page, a PHP script is not sent directly to a client by the server; instead, it is parsed by the PHP binary or module, which is server-side installed. HTML elements in the script are left alone, but PHP code is interpreted and executed. PHP code in a script can query databases, create images, read and write files, talk to remote servers - the possibilities is endless. The output from PHP code is combined with the HTML in the script and the result sent to the user's web-browser, therefore it can never tell the user whether the web-server uses PHP or not, because the entire browser sees is HTML. [1]

2.1.2 AJAX: Asynchronous JavaScript and XML

AJAX is nothing new in technology world, but it is new for the author and she hope that she will learn a lot from it. Since AJAX becoming very interesting and popular day-by-day that is why she decided to apply AJAX concept into this project.

In this project, author will use AJAX concept to develop a calendar, search function and other areas of function of system which can be developed by using this concept. By using AJAX in this project application, it will help the author project carries on its own some innovation features to improve the weaknesses, and to be better suit the environment implemented, particularly, organization.

What is AJAX and how it works?

AJAX is a group of inter-related web development techniques used for creating interactive web application. A primary characteristic is the increased responsiveness and interactivity of web pages achieved by exchanging small amounts of data with the server "behind the scenes" so that entire web pages do not have to be reloaded each time there is a need to fetch data from the server. This is intended to increase the web page's interactivity, speed, functionality and usability. It is a cross-platform technique usable on many different operation systems, computer architectures, and web browser

as it is based on open standards such as JavaScript and the DOM (Document Object Model). [2]

AJAX is a synchronous, in that extra data is requested from the server and loaded in the background without interfering with the display and behaviour of the existing page. JavaScript is the scripting language in which AJAX function call are usually made. Data is retrieved using the XMLHttpRequest object that is available to scripting languages run in modern browser or alternatively through the use of Remote Scripting in browsers that do not support XMLHttpRequest. In any case, it is not required that the asynchronous content be formatted in XML. [3]

The reason that the author comes up with the solution of using AJAX is to overcome the page loading requirement of HTML/HTTP-mediated web pages. Normal web pages usually require several applications to function. This creates a cumbersome operation in which users have to wait for the separate applications to refresh before interacting with the complete page. Being a quite "young" programming language, AJAX has been written with the aim to enhance page loading speed, and in turns, help make Internet more and more pervasive.

Another advantage of AJAX is a decrease in bandwidth use. Bandwidth in web hosting refers to the amount of data that can be communicated between user and server/website. In AJAX, bandwidth is used only to accomplish specific demands without requiring that the page be re-loaded which require bandwidth, every time a request is made. Contents are loaded on demand and HTML is produced locally from the browser. This technique significantly cuts down the bandwidth consumption for web applications. In addition AJAX works on the client and shares some work of the server, so reducing the server load.

AJAX also allows programmers to separate methods and forming for specific information delivery functions on the web. Programmers can use whatever languages or formats work for their specific goal. For example, raw data, usually obtained in XML from a server-side database is separated from the format or structure of the

webpage, which is usually structured in XHTML. This allows for dynamic handling of DOM. CSS use allows for the separating of style elements on the page, like fonts and picture placement. AJAX also separates the functionality of web pages by browser is combined with XMLHttp to enable communication between client and server browsers. Then any server-side program or scripting language allows the programmer to quickly respond to client requests in a language and format they are familiar with. [4]

2.2 Why Do We Need Event Tracking System?

The Event Tracking System (ETS) can be used to track virtually anything. An event can be any kind of situation: hardware maintenance or repair, software enhancements, fixes, procedures, we name it. The terminology may sound computer-related but hardware could just as easily refer to noisy brakes on your car as to the hard drive in our PC.

ETS provide powerful event logging and activity tracking capabilities. An event can be entered and then closed immediately, or referred to another group or person for further analysis and/or action. Detailed narrative can be entered at any time. Numerous reports and graphs make data analysis easy, backed up by industrial-strength database design. ETS users numerous tables to define events, activities, job functions, etc., and these are easily set up to reflect our specific business needs. An unmatched feature is the use of dynamically defined data, based on the event code, giving us unprecedented database flexibility. We can create literally millions of unique fields, all within the same database. As an added bonus, ETS comes bundled with an extensive set of powerful general-use utilities, providing capabilities far beyond normal functionality. All orders include free lifetime upgrades and enhancements.

Tracking System can help the organization to improve their working process, high in productivity and low turnover. It helps the organization to reduce workload of their employees in some certain departments that use any kind of tracking system.

Nowadays a lot of companies start interesting in tracking system which they can see through the benefit to their companies. But some are not aware of it too.

2.3 Examples of Similar Systems/Concepts

In the hope of gaining more idea to improve the development of system functions, the author has decided to bring up a few cases study some systems with similar system functionalities:

Example 1: NA-42 Event Tracking System (NETS)

The Oak Ridge Institute for Science and Education (ORISE) developed the *NA-42 Event Tracking System* (NETS) to help the U.S. Department of Energy (DOE) track exercises and operations in which the Emergency Response Assets participate.

The Emergency Response assets are the Federal government's primary resource to manage the technical response to nuclear or radiological incidents. These teams respond worldwide to reports of missing sources, accidents, and if required, act of terrorism. To maintain proficiency, the assets participate in over 75 drills and exercises per year. Additionally, in 2005 the teams conducted 24 real operations including planned support for National Special Security Events. [5]

How the system works: The System would able to captures information about the event such as date, time, location and what teams responded. It would capture the timeline for the response, Information about other agencies responding during the event and lastly it will capture the lessons learn during the exercise or operation. The NA-42 Event Tracking System additional feature will include the ability to post documents such as PowerPoint brief, Word documents, or picture related to each event. It is also including a library of relevant policies and reports, personal contact information, and an automated process to ensure Lessons Learned from past events are resolved and subsequently tested in future exercises. The system can be accessed by two difference accesses which are emergency response personnel at 12 national laboratories and DOE headquarters.

Example 2: JLab Web Based Event Tracking System

The ability to accurately track EH&S related findings from first encounter to closure is an important tool in the EH&S professional's arsenal. The DOE requires national lab management contractors to implement numerous programs related to EH&S Event tracking and reporting. Reports include annual self-assessments, accident and incident reports, operational readiness assessments, EH&S inspection program results, and trending. The lab management requires trend analysis and corrective action tracking to closure on all findings. The EH&S professional requires historical data related to incidents and inspections within a given area or related to a specific individual.

Items are tracked in order to identify trends and provide lessons learned. The intent is to prevent future occurrences of *events* with similar root causes. Any of the above may also produce information that can be used to develop just in time or topic specific training. Each kind of *event report* has seemingly disparate requirements depending on the intended audience. In fact, there are report tracking software packages available (at great expense), but these are customized for specific industries or tasks. The authors are not aware of integrated packages that provide the ability to enter and track all of the information needed for a comprehensive EH&S trending analysis. [6]

How the system works: The JLab EH&S *event tracking* system was originally developed as a tool to aid the EH&S Tracking, Trending, & Training (T3) office in the capture and reporting of periodic EH&S inspections. These inspections, along with their associated findings and corrective actions, had originally been entered in a paper logbook that was inaccessible to personnel affected by the finding. The initiative for ensuring a corrective action was closed fell on the line manager for the area. However, the line manager, and indeed the management chain, did not have ready access to the inspection findings. By the time data made its way to senior management in *weekly or monthly reports*, the *information* was highly *edited.* In addition, the inspection reports did not include data that was relevant to similar but a broader class of findings since they were single *event* driven.

At the same time that the initial inspection *event tracking system* was in the requirements development phase, it was observed that there was a similar strong need for tracking accident and incident investigations and corrective actions reports. Accident and incidents share many of the same attributes as inspections, but they also have a uniquely significant data subset.

The system should be implemented in a web-based, client-server environment over the JLab *intranet*. An overview of the functionality of the T3 tracking system starts with the home page. In addition to normal menu selection items, a set of links related to *event tracking report* is presented to the user. For quick reference there is also a bar graph of open items. Each page of the T3 system is 'built' by the server at the time the page is requested by the client web browser. Embedded within the HTML code that generates each page are calls to a server side scripting language known as PHP. The PHP scripts fill in variable data such as pull down menus with the most current data in the system database. This is a powerful tool that allows customization of the information contained in the web interface.

Example 3: Children & Youth Services Client Info - Event Tracking

Inventive Software Solutions appreciates the opportunity to assist you in developing and coordinating an efficient, manageable solution for calculating and tracking the complex reporting for DHS and other related reporting functions in regards to any social service requirements for children, family, and youth matters. The ClientInfo software that is used to manage Due Date *related events* for children and families.

How the system works: the ClientInfo client information management and billing system to provide an integrated solution. The result is an easy to use logical interface with a comprehensive information storage, calculation and reporting. The Due Date Calculations are dependent upon User Defined Rules. This provides you with the ability to adapt as your reporting requirements change. It also enables you to use the system for additional purposes, such as other County *event reporting* requirements or internal processes. A Rule Set is a combination of individual rules that can be based on any date field in the database. An individual rule is built for each item that is due.

It can be used to track county report filing requirements, medical (dental and physical) appointment requirements, medical immunization requirements, and consent and Certification requirements. [7]

2.4 Why PeLSSB Event Tracking System Notify via E-mail and not SMS to the User?

There may be a question mark why email is bring chosen to notify recipients for this system when nowadays SMS technology is more popular and more preferable for most users. The author has suggested to company to notify the user by sending an SMS but the company doesn't want it because of two certain reasons:

- The company stated that by notifying their staffs by e-mail is a virtually instantaneous, track able and staff can access e-mail almost anywhere, even when they are on vocation. Staff need only sign-up via the web to receive notification by e-mail.

- They also said that cost is one of the main points to consider when a system is being developed. Using SMS as a notification is a very good idea, but the point is that there will be a lot of cost hidden underneath it. Whereby using e-mail is free of charge as long as there is an e-mail service provided by Internet Service Provider. Therefore the company does not want the SMS function to be included in this PeLSSB Event Tracking System.

CHAPTER 3
METHODOLOGY

3.1 Methodology

In this chapter, the methodology used for the project development will be described briefly. In the consideration of time and quality of system, evolutionary and water fall methodology will be used. The evolutionary methodology will be used to gathering the user requirement, feasibility study and analysis of the system. Evolutionary model is mainly used in planning and analysis phase. In this phase prototype of the system will be presented to the client to clarify the user requirement. The requirement need to be proper documented to be used in the next phase of the system development life cycle.

After the planning and analysis phase, the next phase will be applied the water fall model. The consideration of applying waterfall model is because the user requirement would be already well defined during planning phase (evolutionary model).

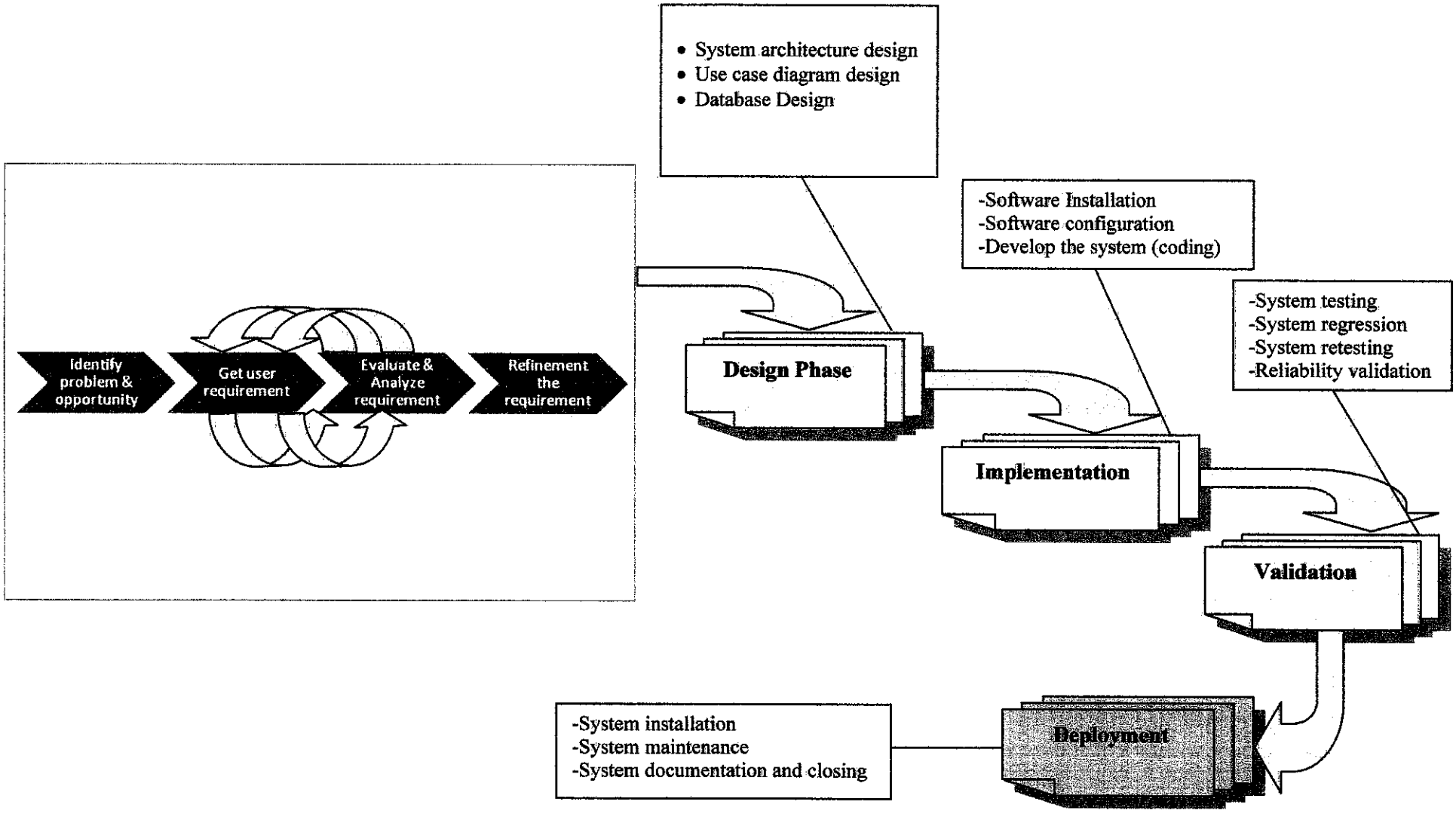

Figure 3.1: Prototyping methodology for the project development.

The major delivery of FYP is the system prototyping that need to be completed within duration of 2 semesters. To reach the completion of system prototyping, the following is the main phases with the assignment of duration and the gradual deliverables for each phase.

Major phases and deliverables:

i. Project initiation and proposal
    1. Further research and study project feasibility
    2. Project proposal
    3. User requirement study
    4. Preliminary report

ii. Planning and analysis
    1. Identify problem and opportunity
    2. Get user requirement
    3. Evaluate and analyze requirement
    4. Refinement the requirement

iii. Design phase
    1. System architecture design
    2. Database design

iv. Implementation and prototyping
    1. System installation and coding
    2. Implementation (coding).

3.2 GANTT Chart (For Final Year Project I)

Suggested Milestone for the First Semester of 2 -Semester Final Year Project

No.	Detail/ Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Selection of Project Topic	■	■												
2	Preliminary Research Work		■	■	■										
3	Submission of Preliminary Report				●										
4	Seminar 1 (optional)					■	■	■							
5	Project Work					■	■	■							
6	Submission of Progress Report								●						
7	Seminar 2 (compulsory)									■	■	■	■		
8	Project work continues								■	■	■	■	■		
9	Submission of Interim Report Final Draft													●	
10	Oral Presentation														●

Mid-semester break

● Suggested milestone

■ Process

Figure 3.2: FYP 1 Gantt Chart

3.3 GANTT Chart (For Final Year Project II)

Suggested Milestone for the Second Semester of 2-Semester Final Year Project

No.	Detail/ Week	1	2	3	4	5	6	7		8	9	10	11	12	13	14
1	Project Work Continue	■	■	■												
2	Submission of Progress Report 1				●											
3	Project Work Continue				■	■	■	■								
4	Submission of Progress Report 2									●						
5	Seminar (compulsory)										■	■	■			
5	Project work continue									■	■	■	■			
6	Poster Exhibition											●				
7	Submission of Dissertation (soft bound)													●		
8	Oral Presentation														●	
9	Submission of Project Dissertation (Hard Bound)															●

Mid-Semester Break

● Suggested milestone

■ Process

Figure 3.3: FYP 2 Gantt Chart

3.4 Development Tools

For the project development as well as project implementation, there are some hardware and software required necessarily as follows:

Development Hardware:

- Sony VAIO laptop
- Intel Core2 Duo Processor P8400 @ 2.26 HGz
- 3GB DDR@ RAM
- 200 GB Hard Disk

Development Software:

- Macromedia Dreamweaver Studio 8
- Adobe Photoshop CS2
- XAMP Server v 1.6.5:
  - PHP 5.2.5
  - Apache 2.2.4
  - MySQL v 5.0.51
  - phpMyAdmin

CHAPTER 4
RESULT AND DISCUSSION

In this chapter, all of the results and discussion will be briefly presented and discussed. The result to be included in this interim report will be the result from the survey questionnaires that I have conducted during system planning and analysis which allows me to come out with this system in order to help improve organization or Business Company which need the system.

4.1 SYSTEM PLANNING AND ANALYSIS

4.1.1 Data Gathering Techniques and Analysis

There are several techniques which have been using in order to get or collect data or information from users. For this system, I have decided to do questionnaire survey form both by manually filling in and online survey form. Users that I have to do survey form are lecturers in Universiti Teknologi PETRONAS as well as some students. The overall data from both survey form techniques is 115 which comprises of 30 forms which are from UTP lectures and another 85 forms which are from students.

From the survey questions, I have enough data to analyze based on their positions and working environments. What they gave feedbacks are that most of lectures have many events to attend almost every day and most of them they really need or set a reminder alarm on their own computer or mobile phone. And not all of the events that they have to

attend have been set alarm. So that there are some events that they had forgotten to attend or late for the event due to inefficient reminder.

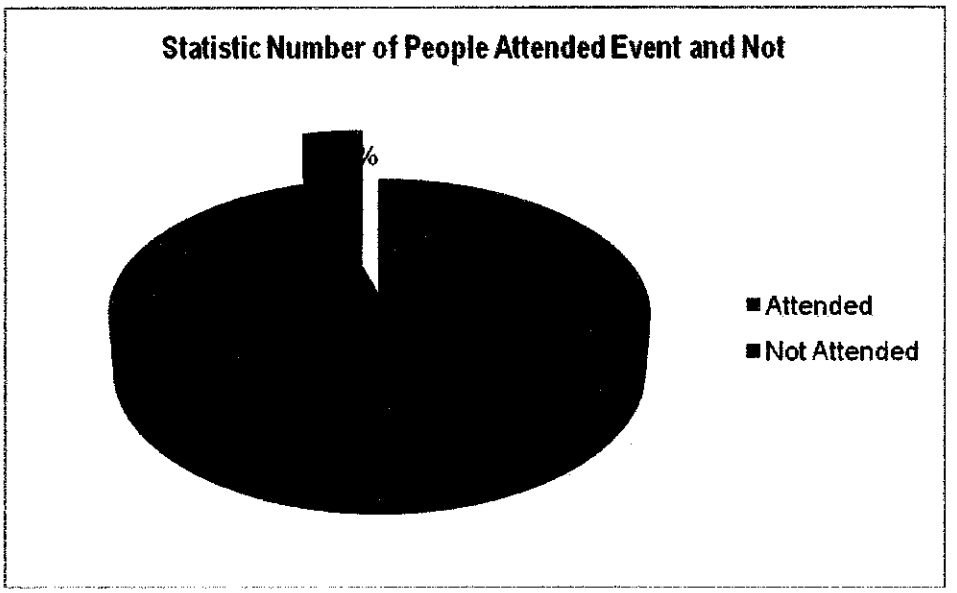

Figure 4.1: The number of lectures and students who have ever attended and never.

From the above graph, I can conclude that most of the students and lectures have attended event before and some of them may have attended many events which were conducted by their organization or company. This means to say that the Event Tracking System is really useful for them in term of helping manage events and distribute and make announcement of events.

According to the Pie Chart above, we see that the number of people who have attended events before is 95.65% while the rests are who have never attended any events before most of whom are students.

Besides, most of them said that currently, in their organization, there is no any Event Management Tracking System installed for them at all, instead, they are using an e-mail to alert users which is very time-consuming.

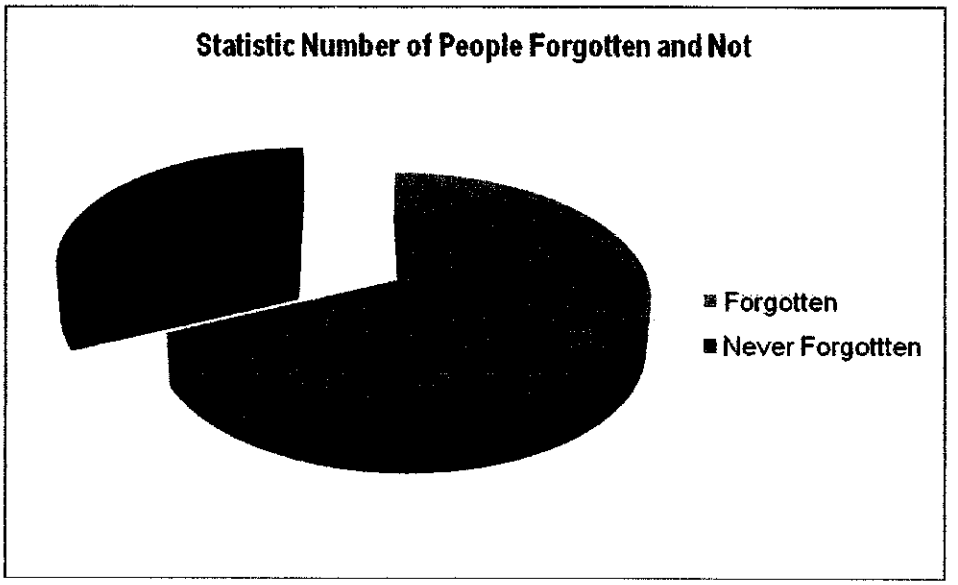

Figure 4.2: Shows the number of people who have and have not forgotten their event.

This Pie Chart describes the number of people who had forgotten o attend their events due to some reasons such as no Event Notification System, no proper Event Management System, others said the event management system is not good at all. As a result, they tended to forget to attend. The chart shows that 68% of them had forgotten.

Other the other hand, there are only 32% of them who had never forgotten their event or meeting at all. Some of them may have good Event Management System or they may use other means such as mobile phone alert or stick-note on board.

From this statistic values, we can say that by having the system installed on their organization or company it will help improve in event management a lot and they will not

forget to attend any event anymore and they no need to use stick-note on the wall or any mobile alert because they are not really effective way with event management.

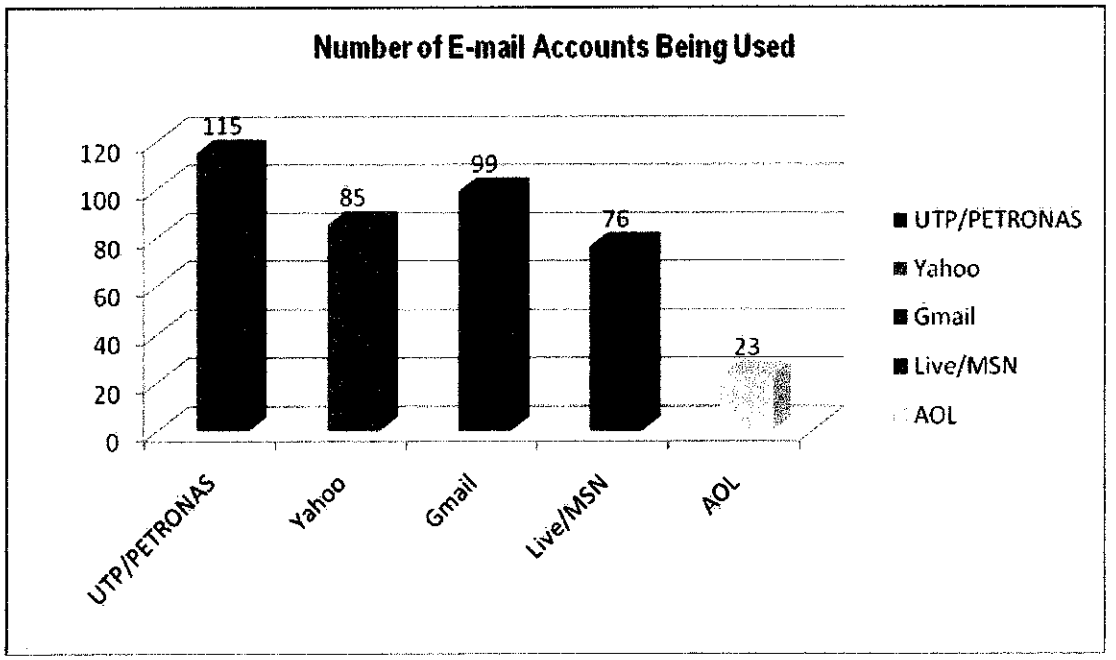

Figure 4.3: Shows the statistic number of people using each e-mail account.

From the above this graph, we can get some ideas relevant to my project that most of the people are using or own an e-mail account in either UTP if students or PETRONAS if lecturers. This means that users will use this e-mail account to send and/or get information updated from various sources. As we can see from the above Column Chart, the number of people who are using UTP/PETRONAS e-mail account is up to 115 out of 115 people. All of them are using having this e-mail account as private and most frequently used.

The second who most people are using is Gmail Web-based mail. This is a free web-based mail from Google Inc., This will help a lot in order for them to check the update information from their e-mail accounts. The number of people using Gmail is 99 and following by Yahoo which is 85, Live/MSN is 76 and AOL is only 23 people using.

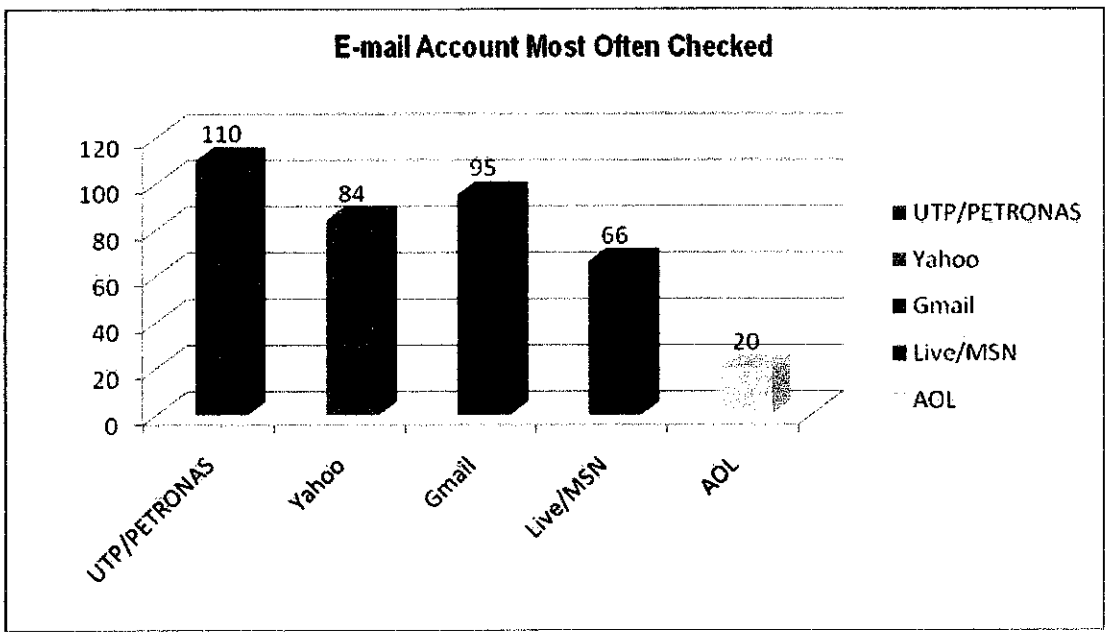

Figure 4.4: Shows the total number of e-mail account which are being checked most often.

This Column Chart describes that the e-mail account that number of people used to check e-mail or to use it as primary e-mail account is also UTP/PETRONAS. The overal total is up to 110 who using most often to open e-mail messages.

This will help the users will always stay alert with the updated information regarding the event of any cancellation of the meeting or any organized event both from inside and outside the company or organization. The system will be useful for them to have it installed in and they will make use of it as Event Trackinga Management System.

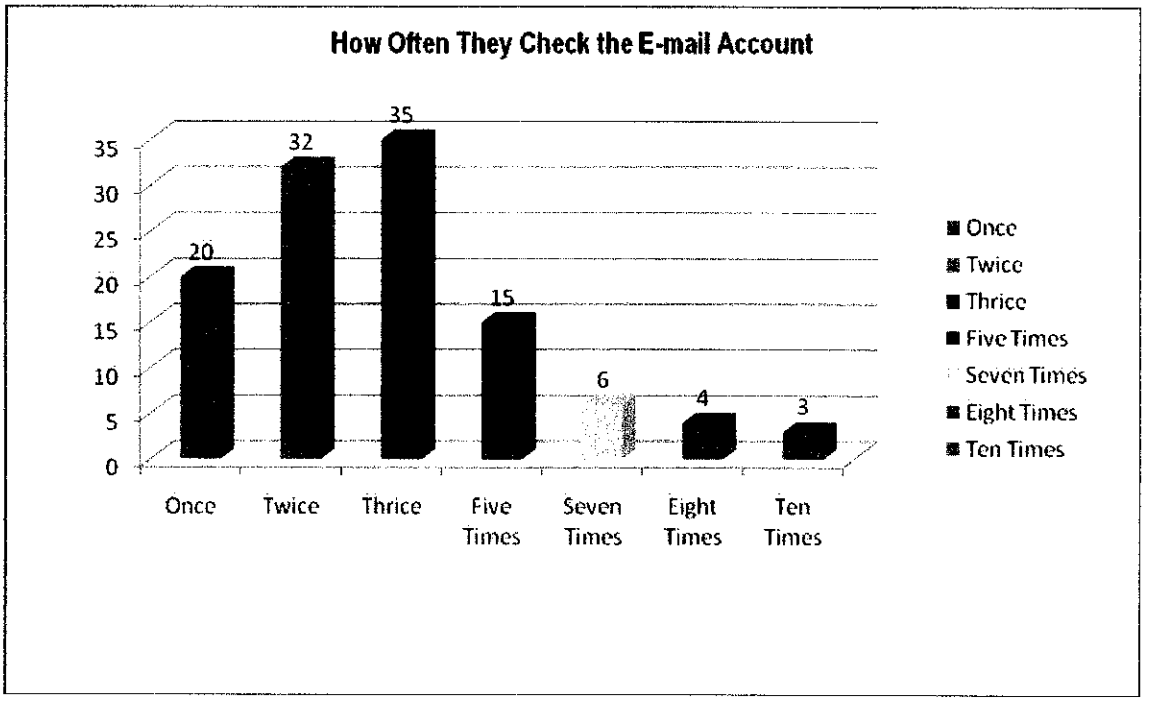

Figure 4.5: How often they check their e-mail account per day.

From the above Column Chart we can see that usually people tend to check their e-mail account three times a day, so it is good to have Event Management System intalled on their organization or company. They will stay alert with any updated information regarding to events organized by their own company.

The advantage of having this ssytem installed on their organization or company is that it can be categorized as real time event notificaiton which is provided by Instant Messenger from Yahoo, Gtalk or Window Live Messenger. Everytime any new e-mail arrives it will alert on the user's screen by popping up a small windows from the system tray so that user will know that there are an event on coming.

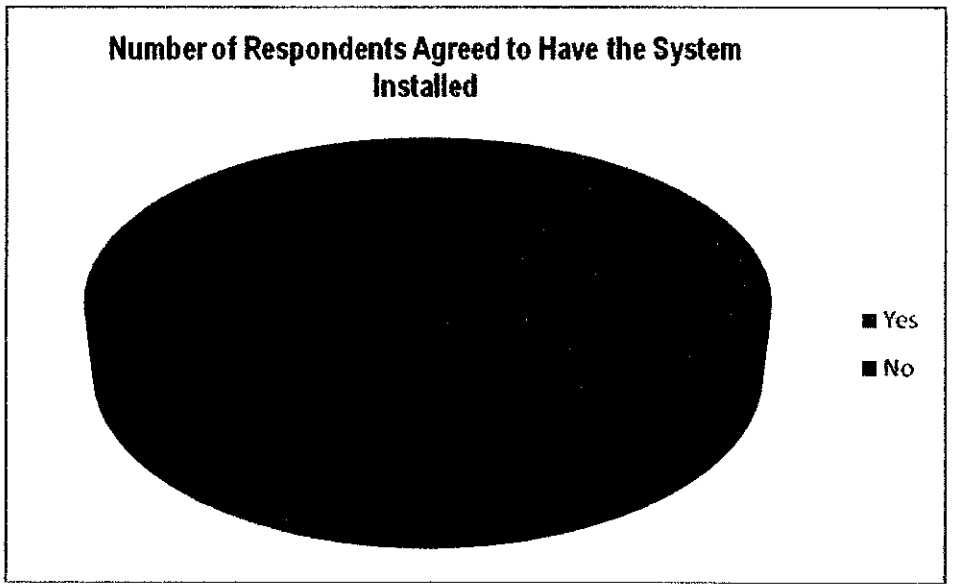

Figure 4.6: Number of respondents agreed to have this system installed in their organization.

This graph shows that there are 95 people out of 115 people who have agreed to have this system installed on their own organization or company so that it will make their lives easier to manage all the events or any meeting. This will help a lot in time management for users in the company. From the statistics above shows that only 20 people out of 115 who did not agree to have. It may because they have their own event calendar managemetn or event tracking system installed already.

It is good to have the Event Tracking System installed on the organization or company. In the future they do not have to type in all the events in their mobile phone or computer in order to remind of event coming.

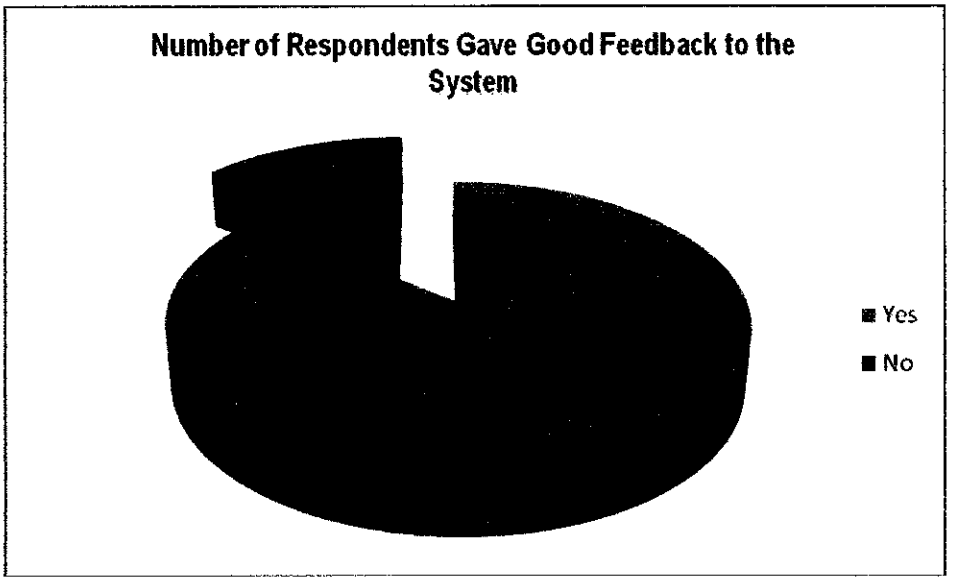

Figure 4.7: Number of respondents who gave good feedback on the system.

Regarding to the system, we have done some survey and they gave some feedbacks in term of system performance, speed, user friendliness, and producing or display result. The above Pie Chart shows that most people find out that the Event Tracking System is convenient to use and it is user friendly. As for the performance in term of speed, it is very fast to load the data. Users do not have to wait long for the page loading. Besides, its displaying information on the web is very clear. They can easily understand.

While the e-mail message sent to their e-mail account is look very nice and it is cool to have such a nice system installed on their company or organization. Overalls, we can say that most of the system features such as functionalities, interfaces, and performance are working well.

4.1.2 Flow Chart Diagram

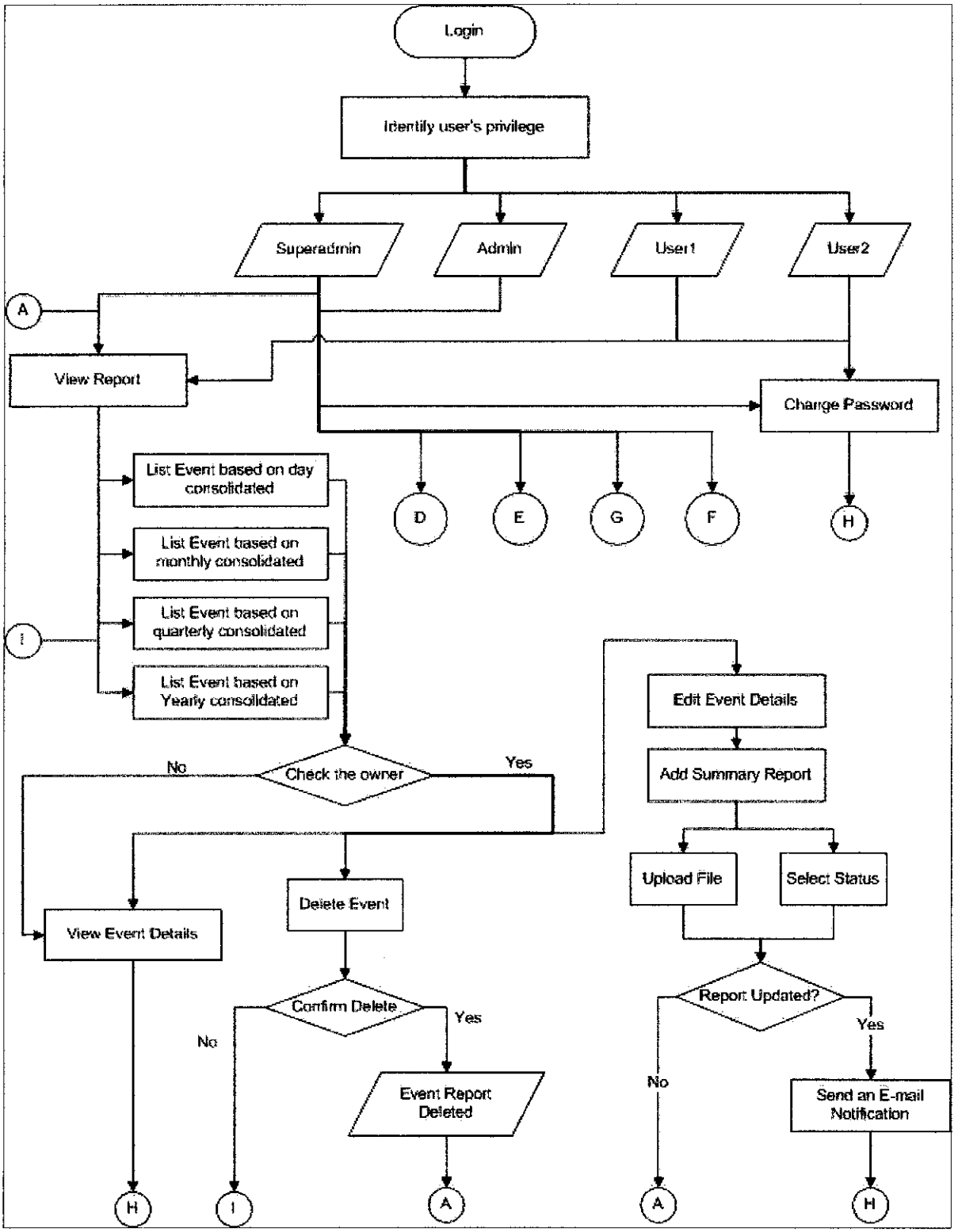

Figure 4.8: Flowchart Diagram

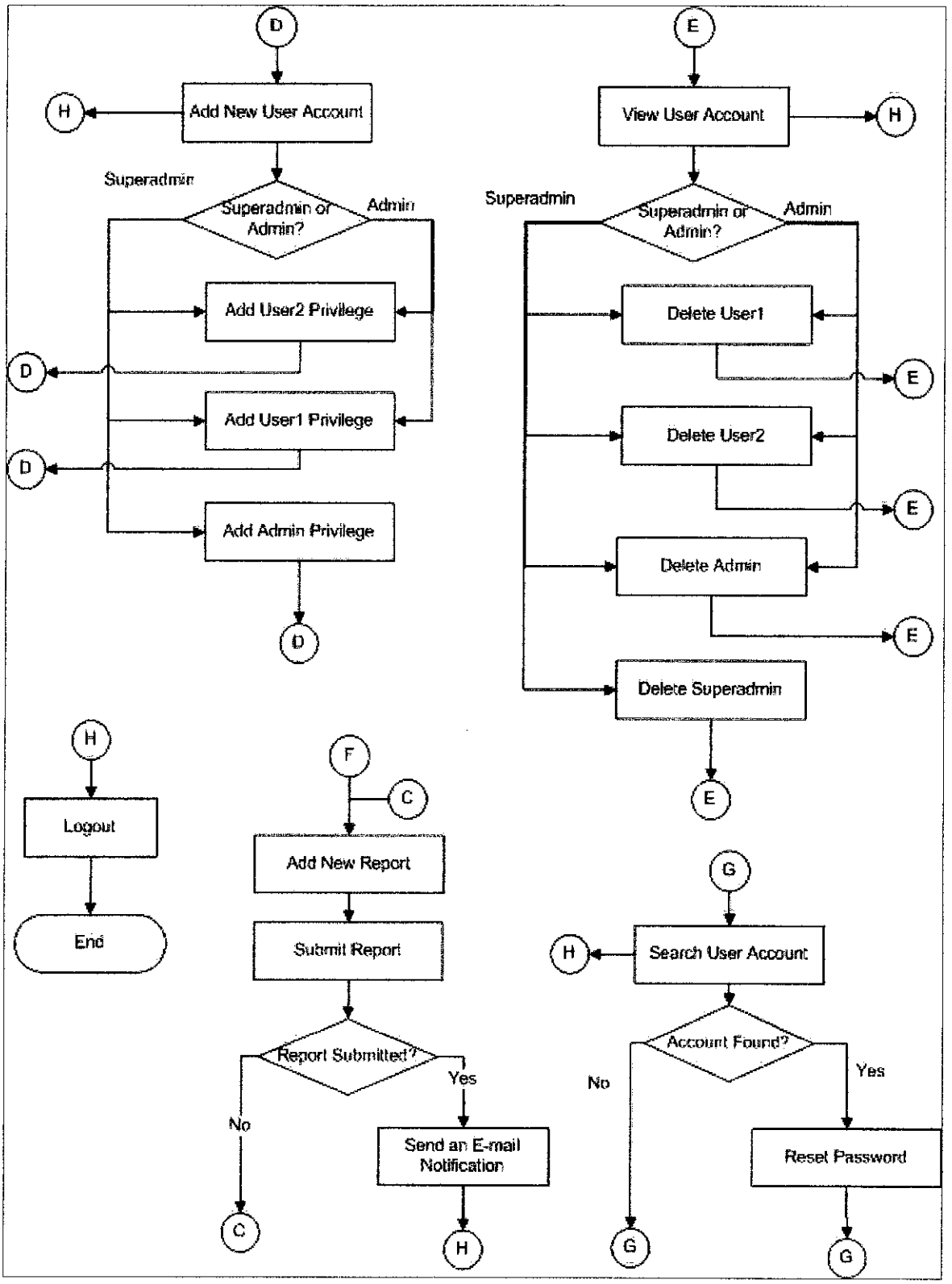

Figure 4.9: Flowchart Diagram

4.1.3 Use Case Diagram

Use case of sales management study was design to provide the view of use case and interaction between users and the system.

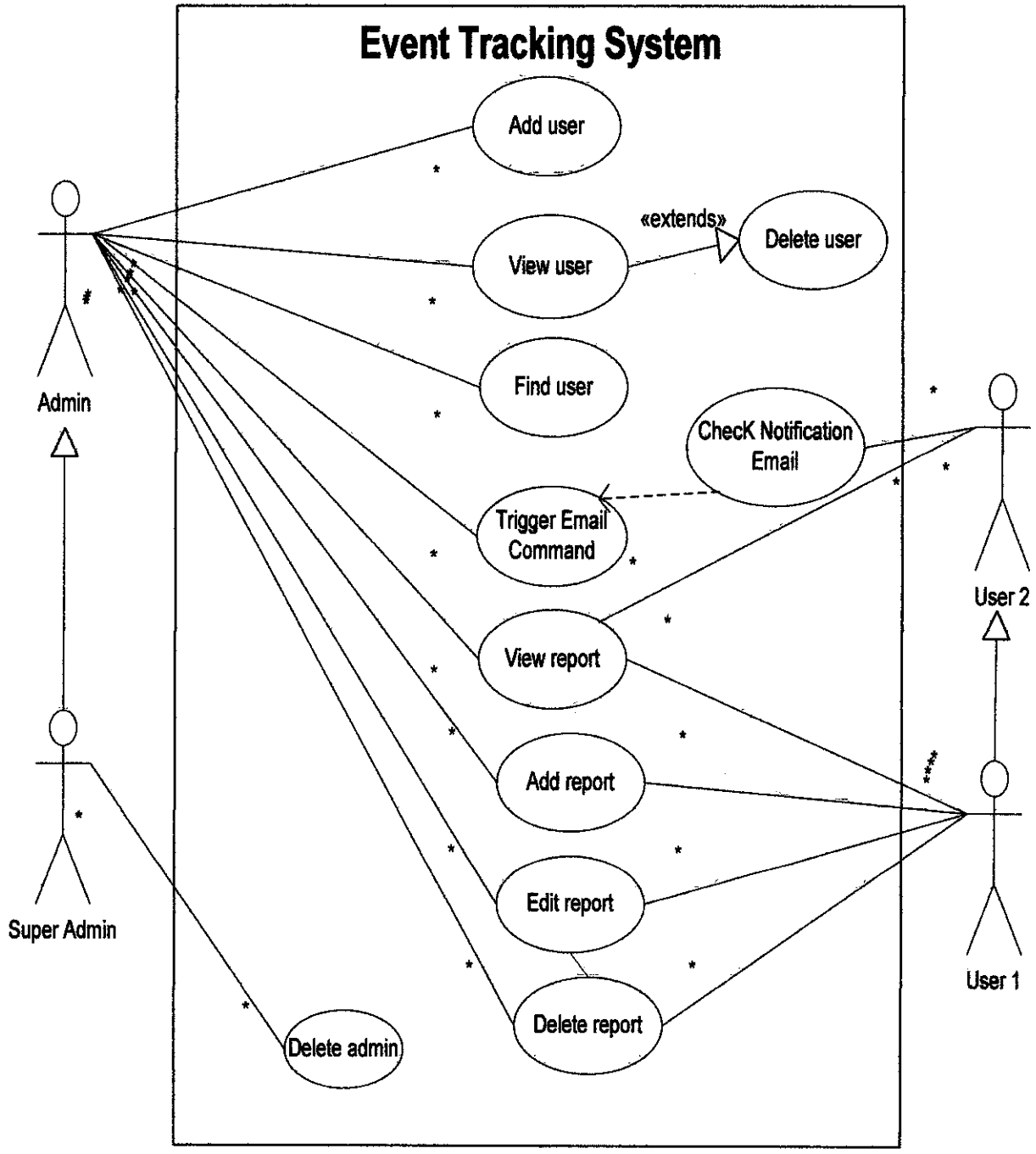

Figure 4.10: System Use Case Diagram

4.2 SYSTEM DESIGN

4.2.1 System Architecture

PeLSSB Event Tracking System was designed as three separate components:

1. The Database System
2. The Web Server Module
3. Clients

Each one of these has a specific function that can be used independently of each other depending on the final implementation. The basic design can be seen in Figure 4.1.3.

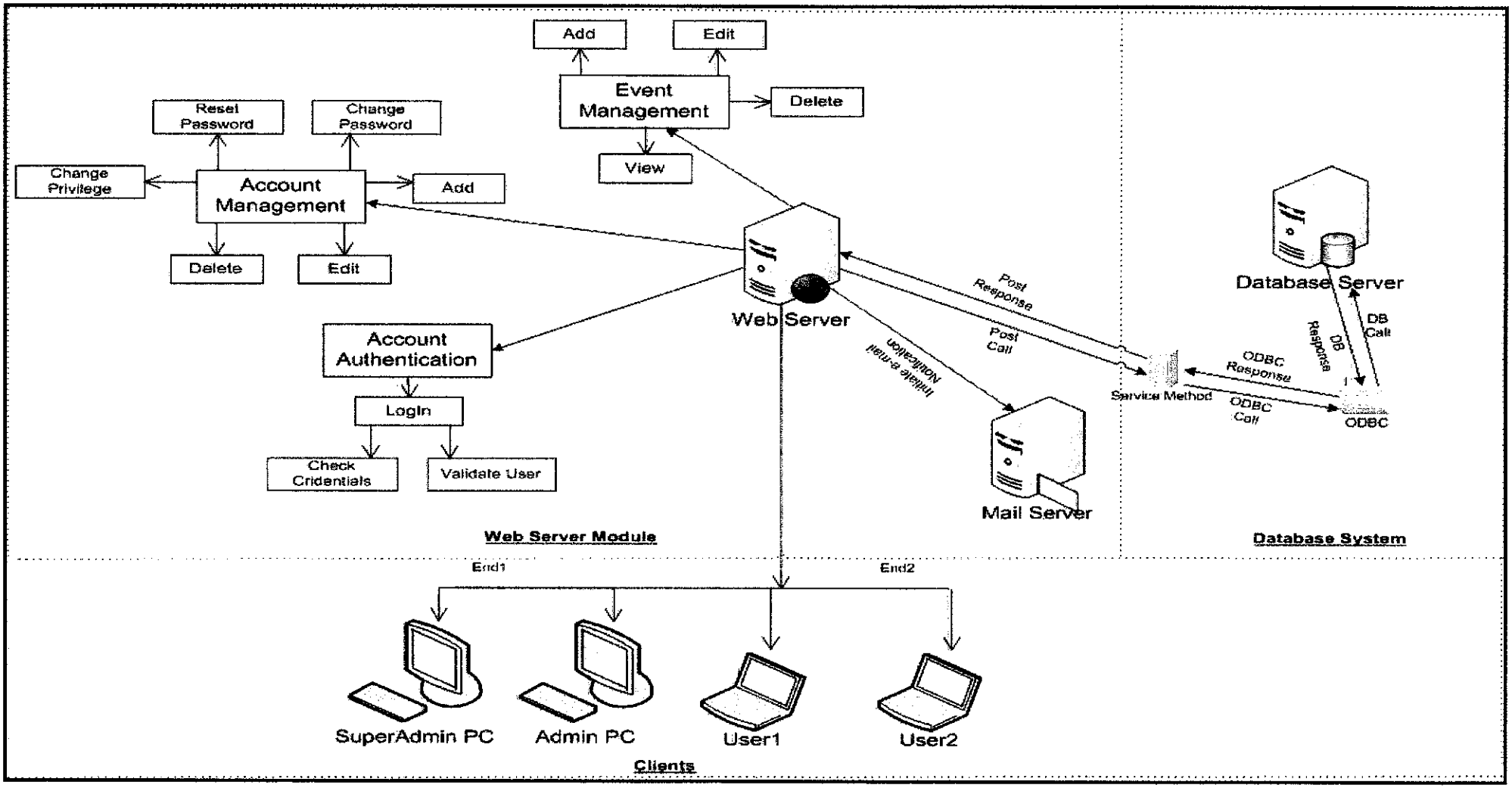

Figure 4.11: System Architecture

4.2.2 AJAX Architecture

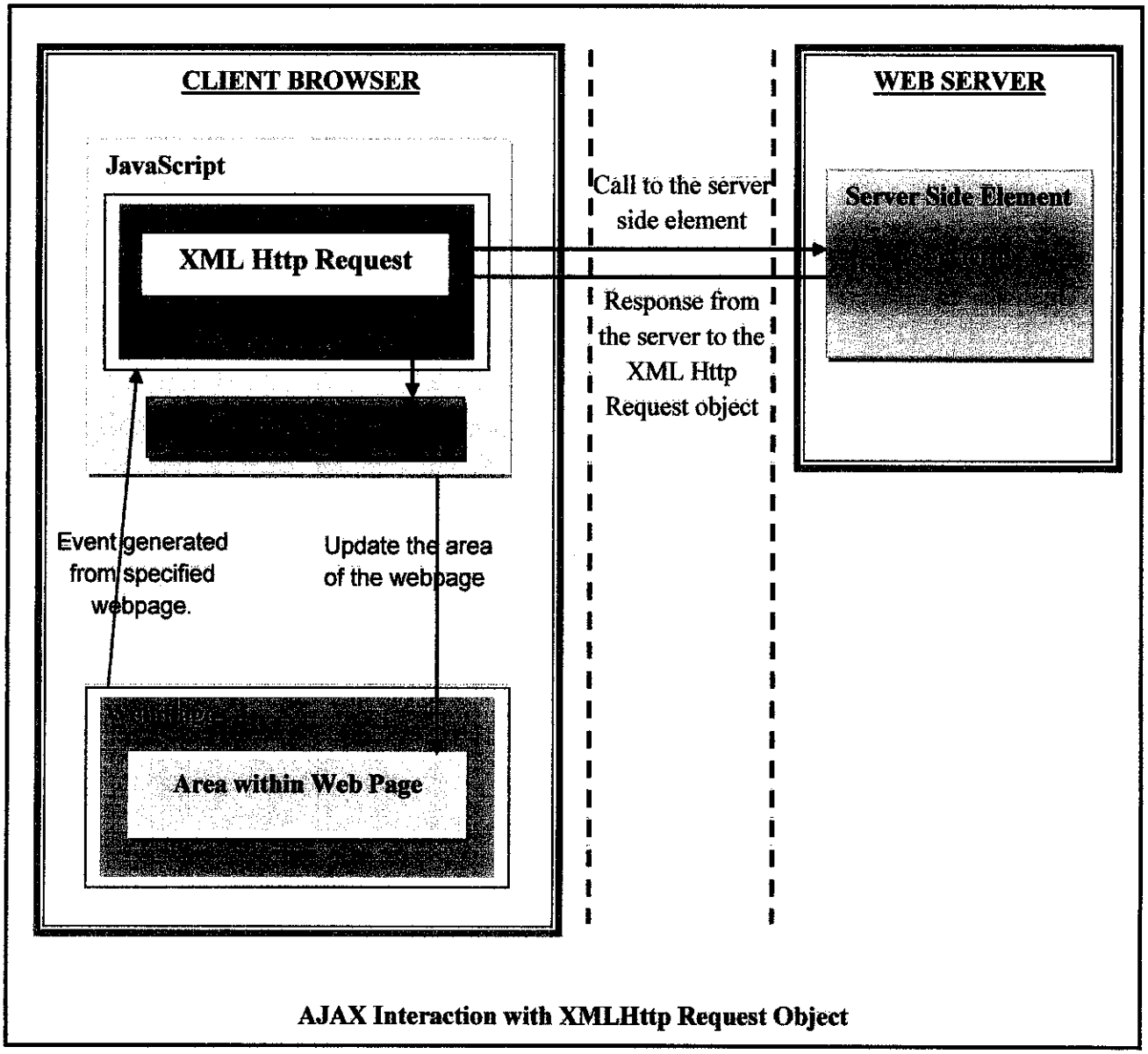

Figure 4.12: AJAX Interaction with XMLHttpRequest Object.

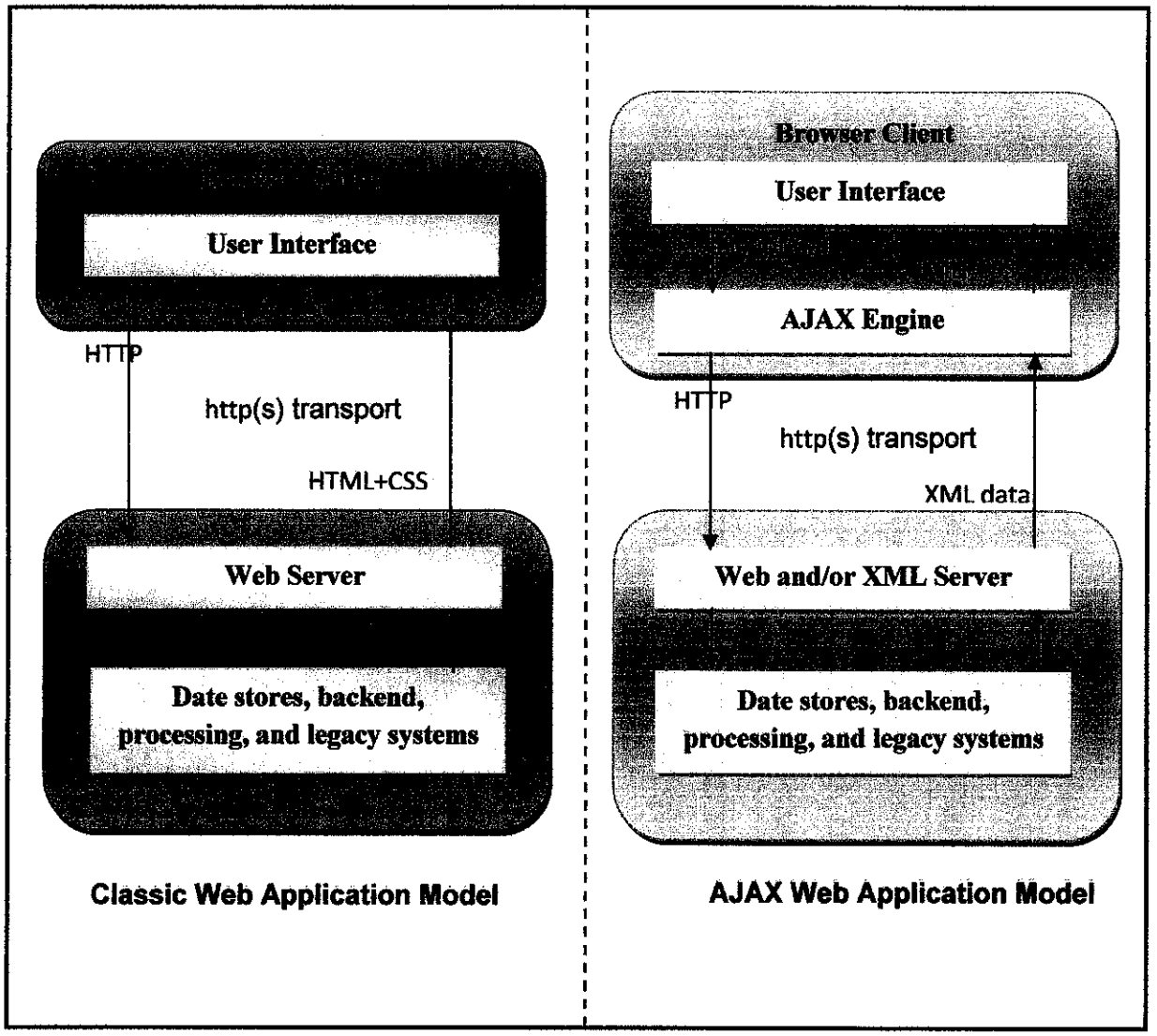

Figure 4.13: Comparison Between Classic and AJAX Web Application Model

4.2.3 Components

4.2.3.1 System Database

As for FYP1 a system prototype will be developed under local host computer. The database system comprises of a Windows system that runs a MySQL Database with installed ODBC (Open Database Connectivity) drivers and connectors. The ODBC is used for MySQL to appropriately communicate with the PHP (Hypertext Preprocessor) scripts that are on the web server. The hardware architecture in which this system runs on is local host which is using author's laptop. The hardware specifications include an Intel Core 2Duo processor 2.26GHz and a 200 GB Hard drive running on 3 GB of DDR2 DSRAM.

The system database holds all the necessary information, in this case there are: staff data and express mail records, and provides the information to the web server. Below is a brief description of how database is being design for this system.

Relational Schema for Proposed System:

```
pel_event( id_even, id_even_type, title_even, date_even, time_even,
Obj_even, avenue_even, note_even, report_even, report_file, pax_even,
organizer_even, evname, evphone, evemail, create_even)

pel_event_type(id_type, name_type, name_desc )

pel_event_user( id_even, id_user )

pel_files(id_file, link, name_file, event_id)

pel_participant( id , fullname, position, user_type, user_name, email
)

pel_user_type(user_type, type_user_name, type_code )

pel_mail_recipient(sId, fullname, address, phone_no, email)

pel_record ( rId, sender_add, date_out )
```

There are 7 tables needed for this system. The minimum numbers of the table being used so that it will improve the system performance and each table holding some

different information. A primary key is being used to create a unique index number for each table. This primary key field is an index that greatly speeds up queries, search and sort request. By having this primary key, duplicate record is not allowed.

4.2.3.2 Web Server Module

The web server is run on the same hardware that the database server is run on and uses the Apache HTTP server software available for the Windows operating system. PHP scripts are used to serve most of the pages in the system application. HTML (Hypertext Markup Language) is used in conjunction with PHP to give aesthetically pleasing web sites for users.

The web server acts as the medium between the database system and the user interface as it retrieves the information stored in the database and displays it on a web page for a web browser to view event reports and email. Nevertheless, it also acts as a communicator with e-mail server in order to initiate e-mail notification command to the user.

4.2.3.3 User Interface

User interface is referring to web user interface which handles the communication between users and web application. There are numbers web browsers available for users, but the most populate two are: Mozilla Firefox and Internet Explorer.

4.2.3.4 Comparison Between Classic Web and Ajax Web

Classic Web: Web Browser sends HttpRequest to server and server returns HttpResponse. Then the web page is rendered on the client browser. This is 1 round trip between client and server. In the classic way, if you want to update any part of your page (e.g.: get subcategory of a main category from database and display on the page), you need 1 more round trip => It takes more time to render unnecessary items (unchanged items on the web page) and causes more network traffic.

AJAX Web: Web Browser only sends request of a small part of the webpage which needs to be updated via XMLHttpRequest. Then the server processes that request and return only the changed items. (The data exchange between client and server is XML format data in comparison with HTML/CSS format data in classic web) => less items need to be processed by server and the client browser only renders the small part of the web page, not the whole page.

4.3 SYSTEM IMPLEMENTATION

This is the phase where the installation of software needed to build this system take place. Since the system is to be developed under evolutionary (Planning &analysis) and waterfall (Design phase, Implementation, Validation, and Deployment). Thus during this implementation phase is really based much on the defined user requirement, thus the system won't be changed much on the functionality. The processes in this phase are:

1. Software installation (development tool)
2. Software configuration (Integration between software need to be proper configured)
3. Develop the system(the actual coding take place)

4.3.1 System Functionalities

The analysis phase was carried out to determine what functions to include in the system as well as their scopes. Below are the descriptions of the functions and scopes for the proposed system:

- **Login**

  It is for security purposes. This function allows user to log into system as super administrator, administrator, user1 and user2. If the user name and password do not match, the user will not be able to access into the system. The authority is as super administrator, or administrator, he or she will able to use numbers of functions such as: add/delete/view/search for users account and reset back the user password to default if they forget their own password. He or she will also be able to use other functions like add/edit/delete and view his or her own report.

  If the authority is as User1, they will be able to use numbers of functions such as: add/edit/delete/ their own report, view all reports, and receive a notification

e-mail. They also can change their password once they login into the system. User2 can use this login function so that they can do the update of their information (changing in e-mail address, in case they prefer system to notify to a different address besides the default one which is PETRONAS email.)

On the other hand, for normal user2, they can only receive a notification e-mail and view all the reports. They also can do the updating of their information just like user1 too in this system.

All staffs are required to login into the system and change their password as soon as possible for the security purpose.

Example: Username: fadilah
Password: pel123

After the user logs in into the system, all the functions which each and individual user can access will appear on the top of the event calendar in the home page of the system. *Print screen of login pages can be found in Appendix A and Print screen of home pages can be found in Appendix B.*

- **Add User**

  This function allows both super admin and admin to add in new users account into the system. In order to add new user account some information such as user full name, position, user type, user name, password and e-mail need to be keyed in by both super admin and admin. By having this function, when super admin and admin enter user type's there will be a list of suggested type where they can just simply choose it.

  This function will show the differences of the authority between super administrator and administrator when they add new user account. Super administrator has the power to set user type as an admin account where by the admin can only set the user type as user1 and user2. This

system will have only one super admin but many super admin depend on the privilege which is set by super admin.

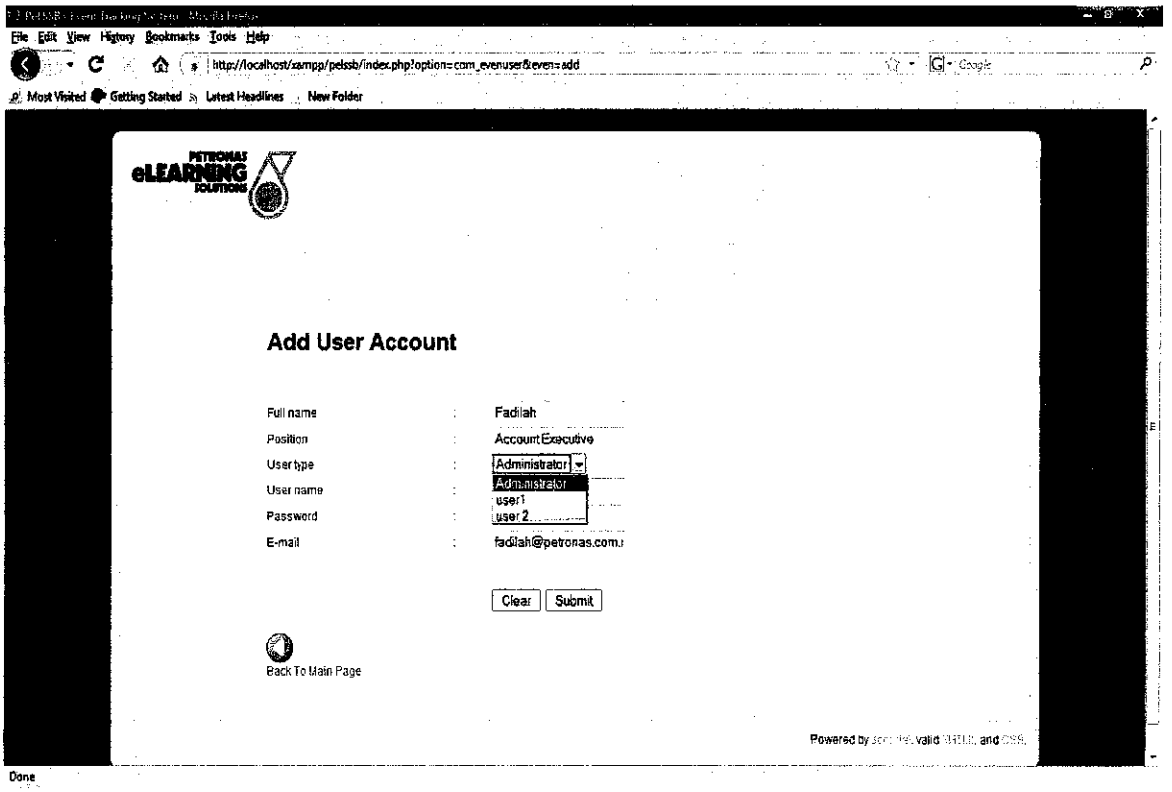

Figure 4.14: Add User for Super Admin

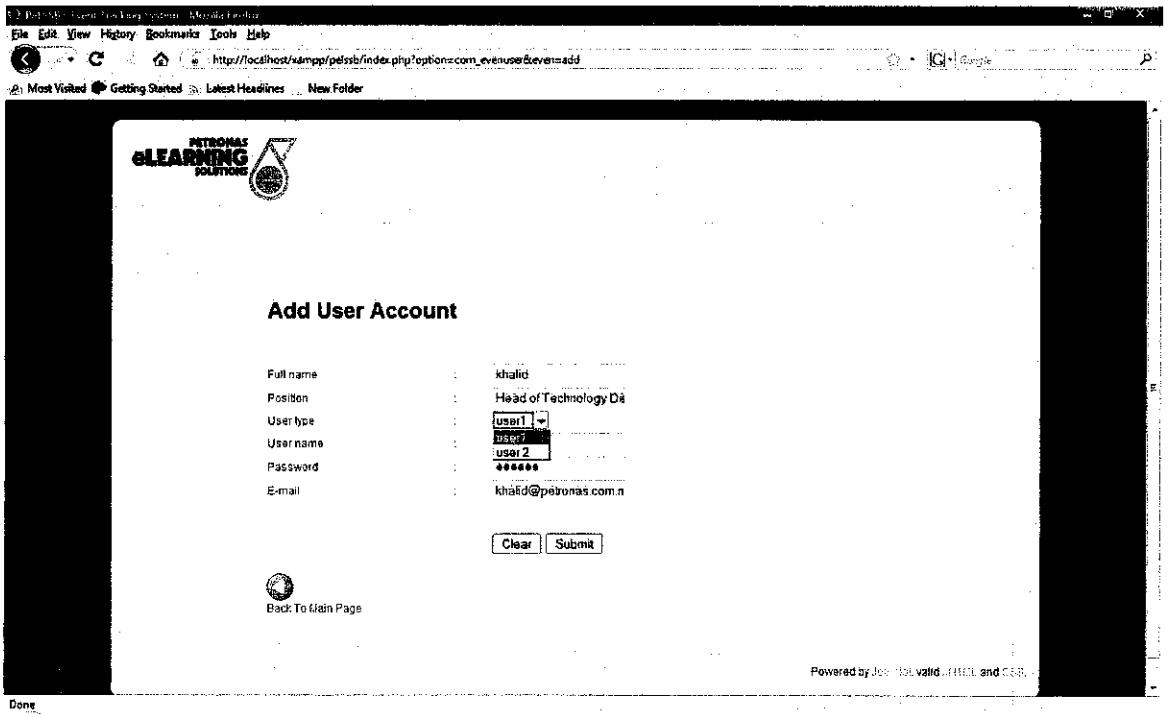

Figure 4.15: Add User for Admin

Refer to *Figure 4.14* and *Figure 4.15* above, when "**Submit**" button is clicked, a new user account will be saved into the database and the automate e-mail notification will immediately be sent to recipient accordingly to the recipient's details. It will provide the message which will show that the user account is successfully created. With AJAX technology it will make the system perform faster when loading from one page to another so that the user does not to waste their time to wait for another page loaded.

- **View User**

  This function allows super admin and admin to view all user accounts that have been stored in a system. In this function admin has a lower level access then the super admin therefore they can only view their own account, user1 and user2 account but cannot view super admin account.

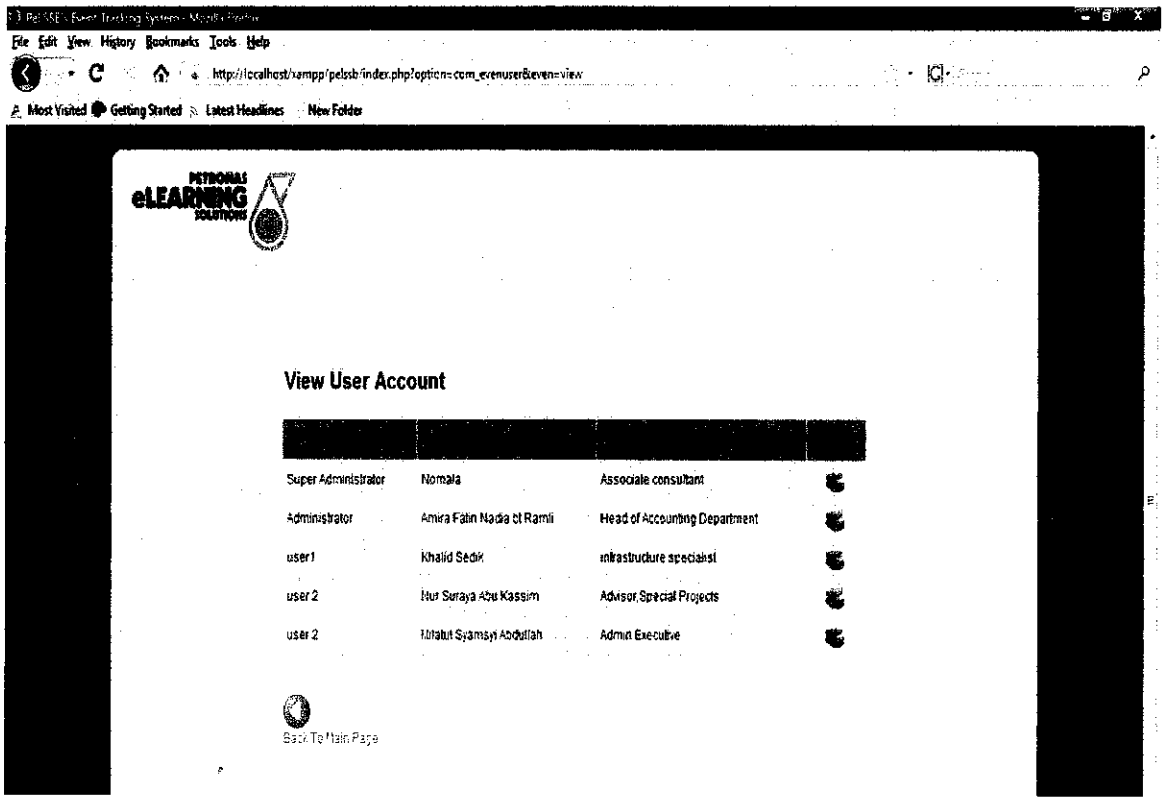

Figure 4.16: Super Admin View

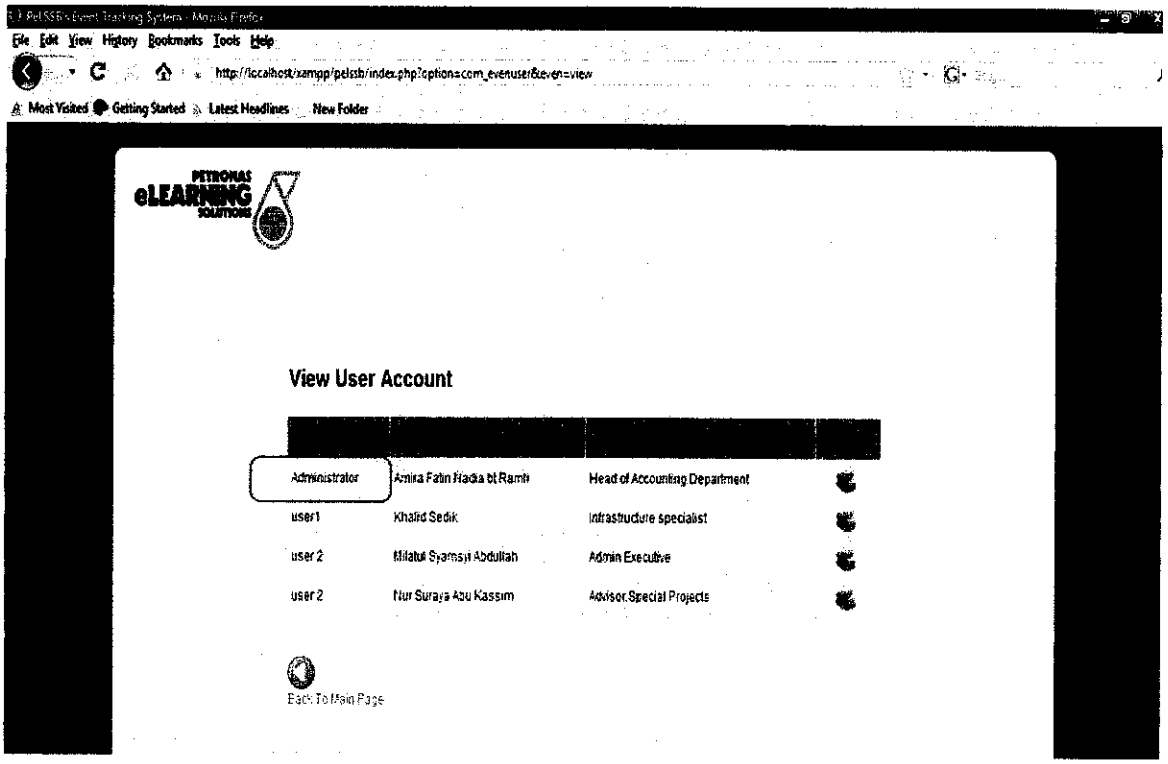

Figure 4.17: Admin View

- **Delete User**

This function allows super admin and admin to delete the user account that is no longer use the system. For example when the staffs stop working in the company, the super admin and admin can delete their users account from the system. In this function the super administrator have the authority to delete administrators and other users account where by the administrator cannot delete super administrator account due to lower authority accesses. This is where the super administrator has the power to control over the administrator. This function is actually in the same page with the view user account function. That means the super admin and admin can view account and see who are no longer uses the system then they can directly delete those users account. *Print screen of deleting users account pages can be found in Appendix C.*

- **Search User Account**

This function allows super admin and admin to search for the user account which has been lost or forget their own username that use to login to the system. They can search using staff full name then the system will search in system database and return back the result with the user name and message to confirm the super admin and admin whether or not to reset back the user password to default. *Print screen of deleting users account pages can be found in Appendix D.*

- **E-mail Notification**

System will automatically send an e-mail to users immediately after details of event report has been recorded into system database. Moreover, by taking advantage of the usage of Instant Messaging Service from service provider (Ex. Gtalk, Yahoo Messenger, and MSN) a real time notification is possible by giving a notification through a mini window pop-up at the bottom right corner when there is a new mail. The notification shows the sender names as well as topic of the e-mail. *(A sample e-mail notification can be found in Appendix E)*

- **Add Report**

All the 3 kinds of users (super admin, admin, user1) can add in a new event report before and after the event occurred. Once they add in the new report the system will immediately show the alert in the event calendar with the event date/title under the event calendar in the system at the homepage. In this function the system will allow the user to pick the date from the extra calendar so that it will make life easier. The system also allowed the user to choose type of participation and select staffs who are involved in the exhibition. When the user click submit button the new report will automatically save into the system database. *Print screen of add new event report pages can be found in Appendix F.*

- **Edit Report**

After adding in new even report, super admin, admin and user1 can edit back their own report which already stored in the system database. All the old information that they had key in last time still remains there in the report. While editing other information related to the event they can add in a brief summary of the event with two choosing options of the event status which are cancelled or completed because some time the event date has been set by the organizer but when the day come the event is cancelled or postpone to another date. So the company need to be specific with the event status whether it is cancelled or completed to ensure the exact information about the event. It is to avoid from missing or confusing information which will lead to miss communication among staffs who are involve in the event. At the same time the users can also uploading a multiple files such as pictures, and document related during the event occurred. *Print screen of edit new event report pages can be found in Appendix G.*

- **Delete Report**

This function allows super admin, admin and user1 to delete the report which they think it is no longer use and needed in the organization. This system will allow the user to delete only the report which each and individual staffs had created. If the report is not the one that they had created, the user can not delete it. The user will not see the button edit and delete next to the Event Note if the reports are not belong to them. They will only see the view button.

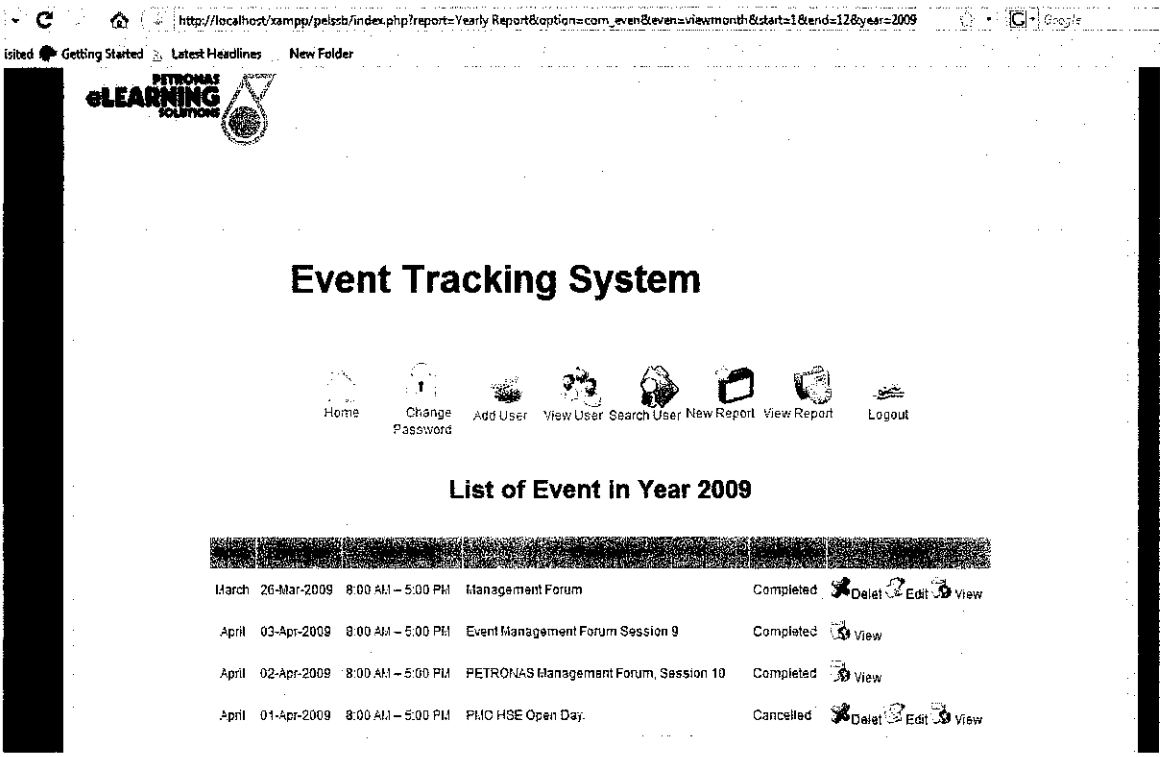

Figure 4.18: Deletion of Event Report

- **View Report**

This function allows all types of users to view all the reports which have been stored in the system database. In this part the users can view the report in 3 different views. They can view it as a Monthly Report, Quarterly Report and Yearly report. First the users will require to select the year that they want to view event report then only they can see all the messages that show how many events have in that year. From the message alert the user can click on it then it will direct the user to another page which will give them what they want to see. Once they can view the report the user can perform the edit, delete and view function as shown in the above figure 4.17.

CHAPTER 5
CONCLUSION AND RECOMMENDATION

5.1 CONCLUSION

This report is mainly to initiate the "Event Tracking System". The report was briefly defined the problem statement with the support from literature review. The objective and scope of study give the scope of project that was discussed and estimate the completion of project within the given time frame. As one of the result of this project initiative, the methodology was presented as the project development methodology.

Additional to preliminary report, prototyping of the system is presented to be discussed. The discussion was focus on the feature of the system, input, output, methodology and techniques used in building the system.

This project expects with an outcome product that can improve PETRONAS eLearning Solution working process as well as provide one centralized database system for the company in managing and store all important data. By putting efforts into making use of and improving available tools, techniques and methodology to improve over current system performance. By adopting this new proposed system, there is an expectation to solve problems that are facing by the company in managing and organizing the event report data and help the staff to ease their work load burden and directly improve distribution process.

5.2 RECOMMENDATION

This even tracking system is really useful for some standard organizations to help tracking and managing the events which are organized and held by the company itself or other external companies. Based on the implementation of the system, I would like to suggest few recommendations which can be done in order to improve the functionality of the system. The system can have a search function which allows user to find any events by keying in a title or date of the event that he or she wants to view within a particular period. This new recommended feature can help user in term of finding the past events or ongoing events or planning events. Besides, it makes the system becomes rich in functionalities.

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APPENDICES

QUESTIONNAIRES

Based on your idea, please select your answer by using tick (√). Only one answer is allowed.

1. What do you think about the system interface? Is it user-friendly?

   ☐ Yes ☐ No

2. Have you ever know about the Event Tracking System before?

   ☐ Yes ☐ No

3. How is the system performance, in term of speed or loading page?

   ☐ Very Fast ☐ Fast ☐ Medium

   ☐ Slow ☐ Very Slow ☐ Other: _____

4. How is the system performance, in term of producing outputs and displaying results?

   ☐ Very Clear ☐ Acceptable

   ☐ Not Clear ☐ Cannot View

5. Which e-mail account do you have? (if applicable)

   ☐ UTP/PETRONAS Mail ☐ Yahoo ☐ AOL

   ☐ Gmail ☐ Live/MSN/Hotmail ☐ Other: _____

6. Which e-mail account do you use most often? (if applicable)

   ☐ UTP/PETRONAS Mail ☐ Yahoo ☐ AOL

   ☐ Gmail ☐ Live/MSN/Hotmail ☐ Other: _____

7. How often do you usually check your e-mail per day?

☐ Once

☐ Twice

☐ Thrice and above (two times)

☐ Other: _____

8. Have you even attended any event before?

☐ Yes ☐ No

9. Have you ever forgotten to attend any scheduled event before?

☐ Yes ☐ No

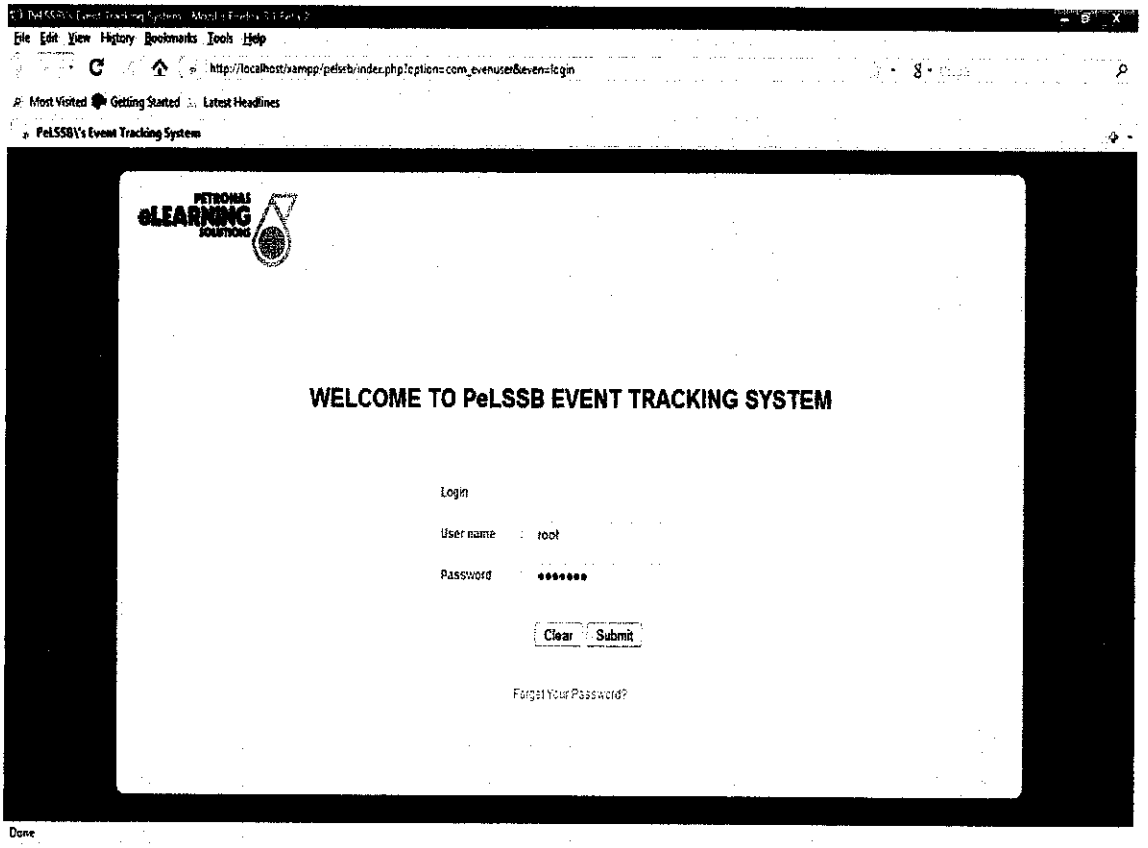
10. Do you think by having this system in your organization or company it will help improve the effectiveness of attending event?

☐ Yes ☐ No

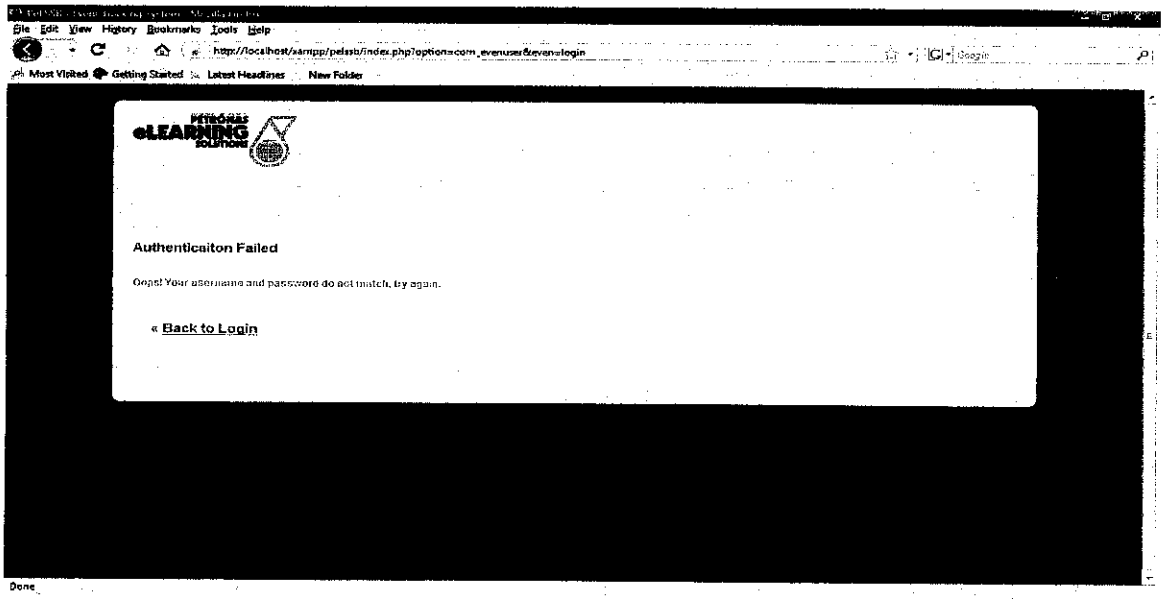
11. Do you think your company or organization should have installed this application so that it will help you in event tracking and notification?

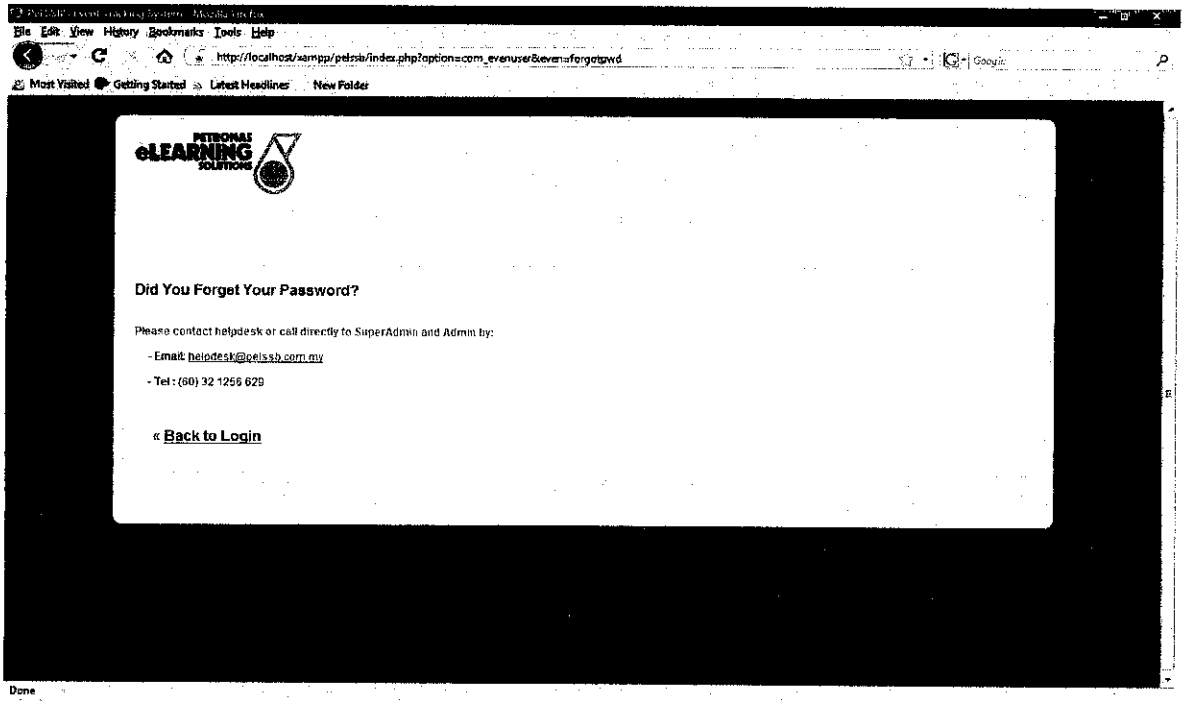
☐ Yes ☐ No

Appendix A: Login Page



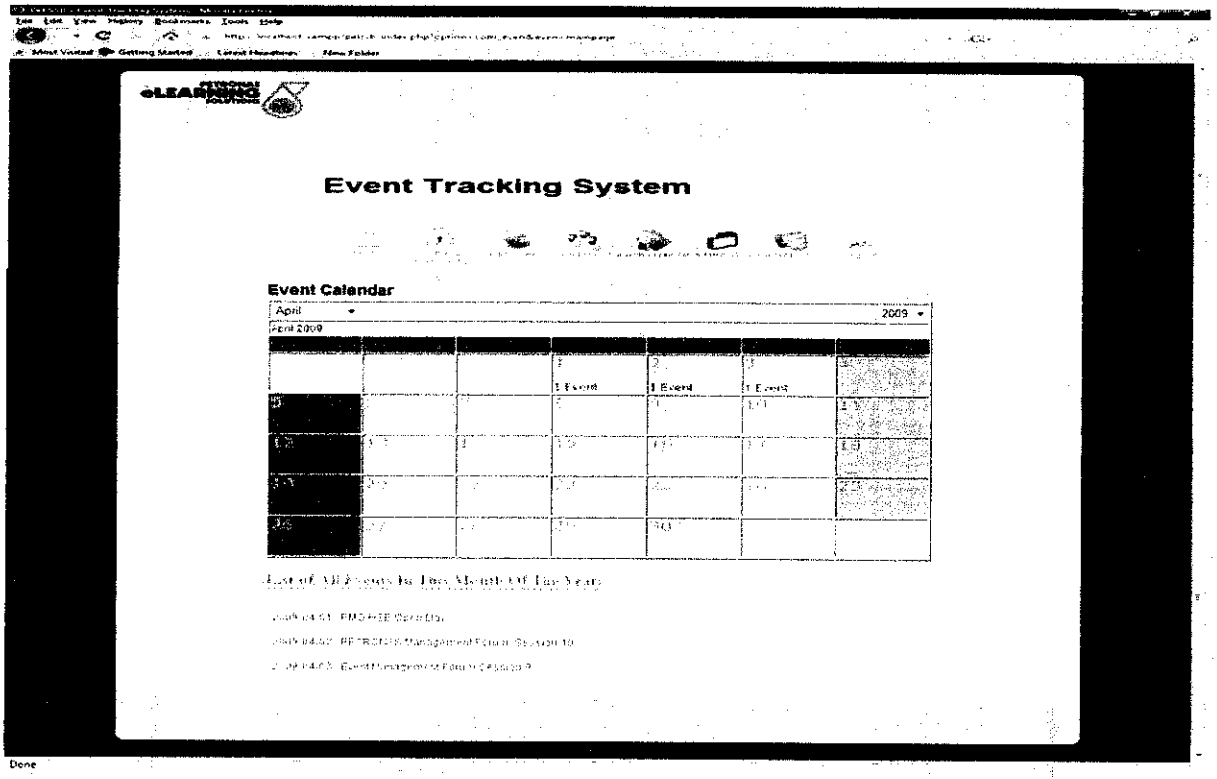
If the user key in wrong password or username this page will be displayed on the screen



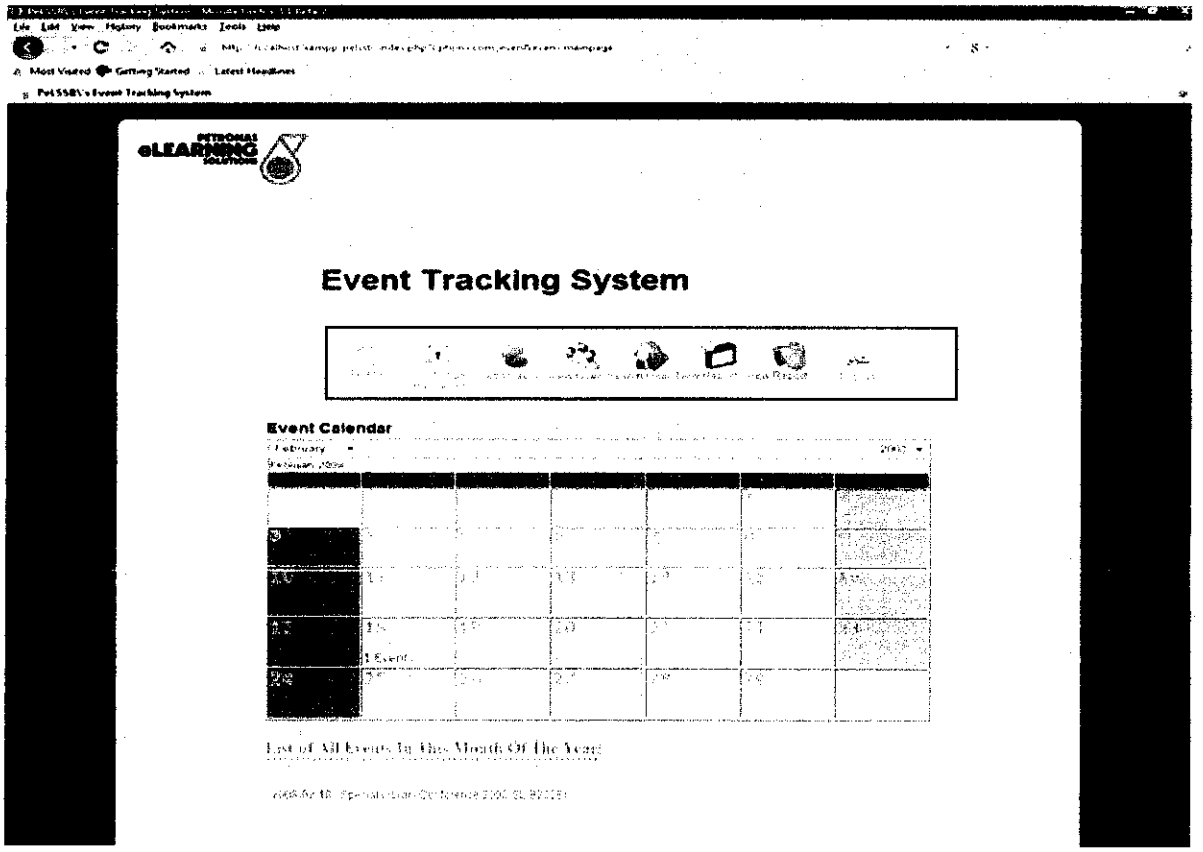


This page will be displayed when the user click on the Forget Your Password? From the login page

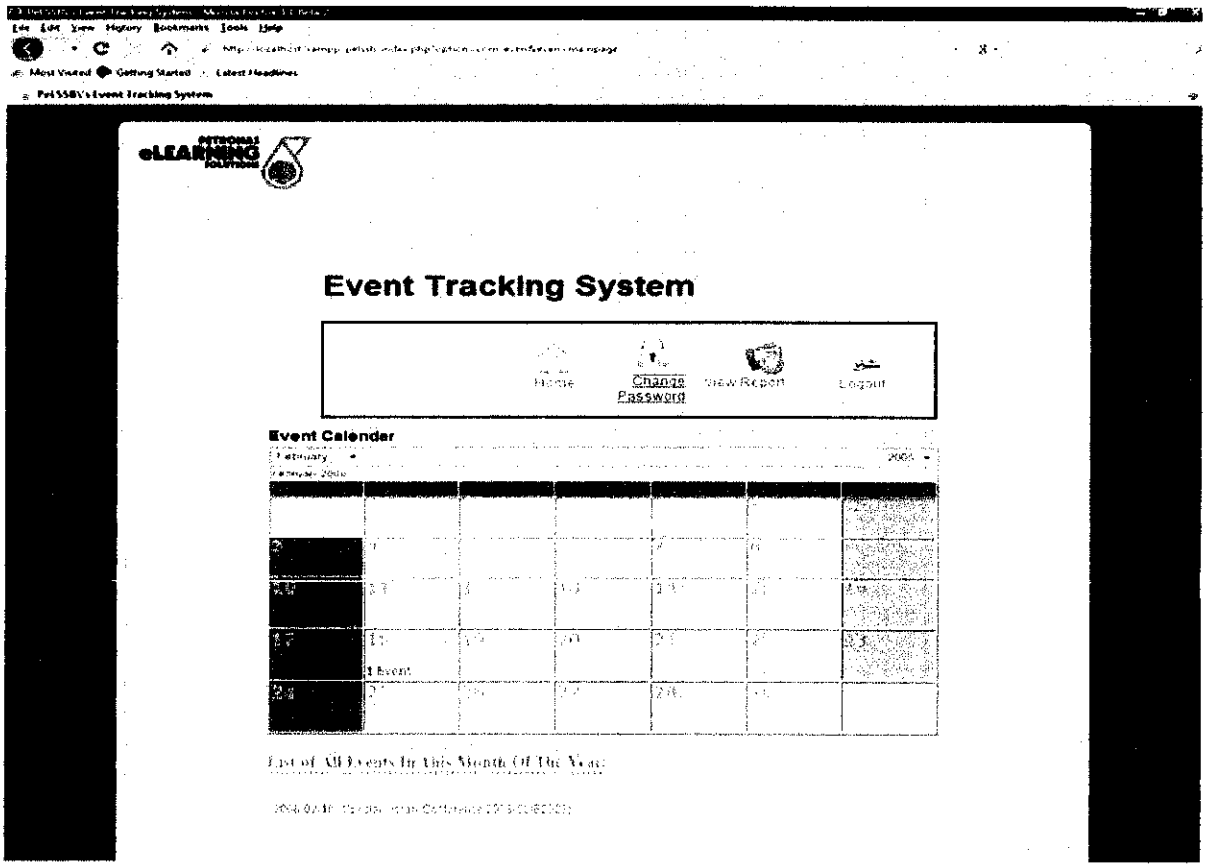
Appendix B: Home Page



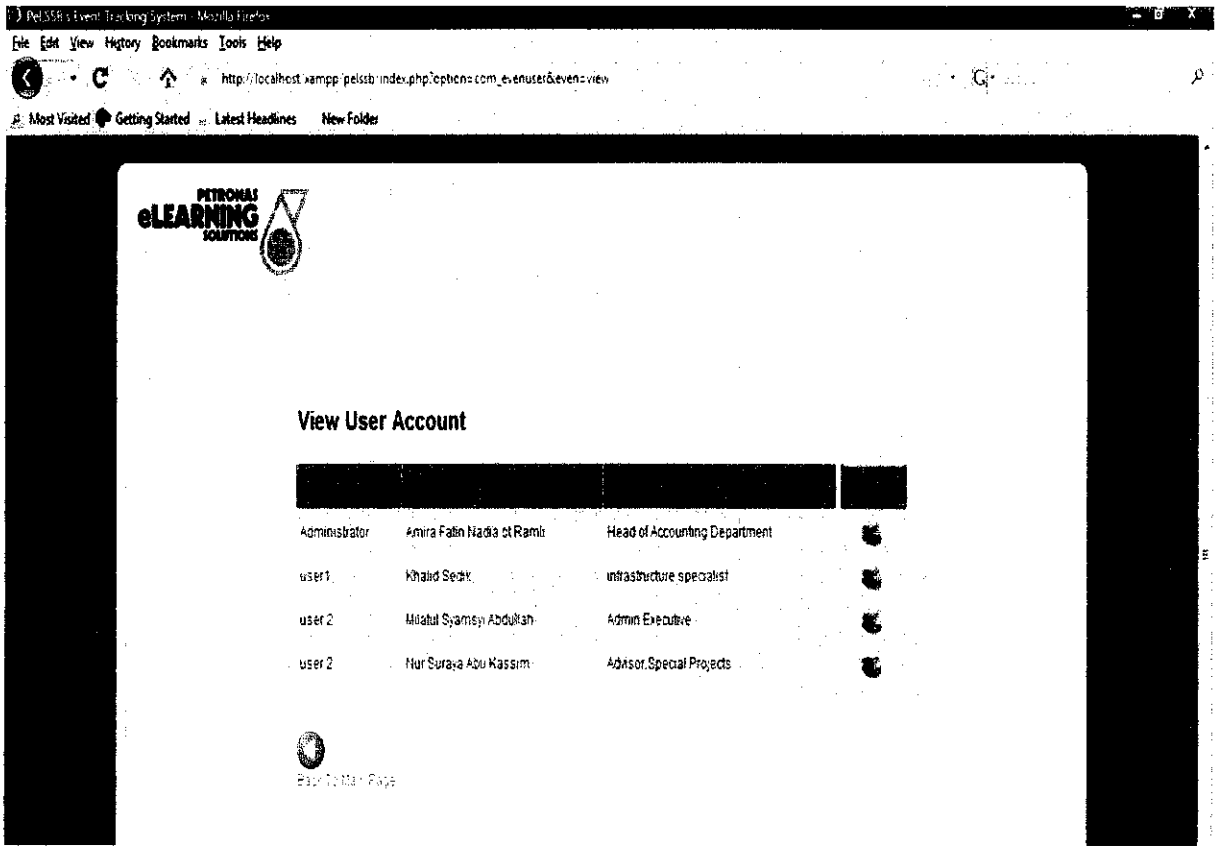
Super Admin and Admin Home Page



User2 Home Page

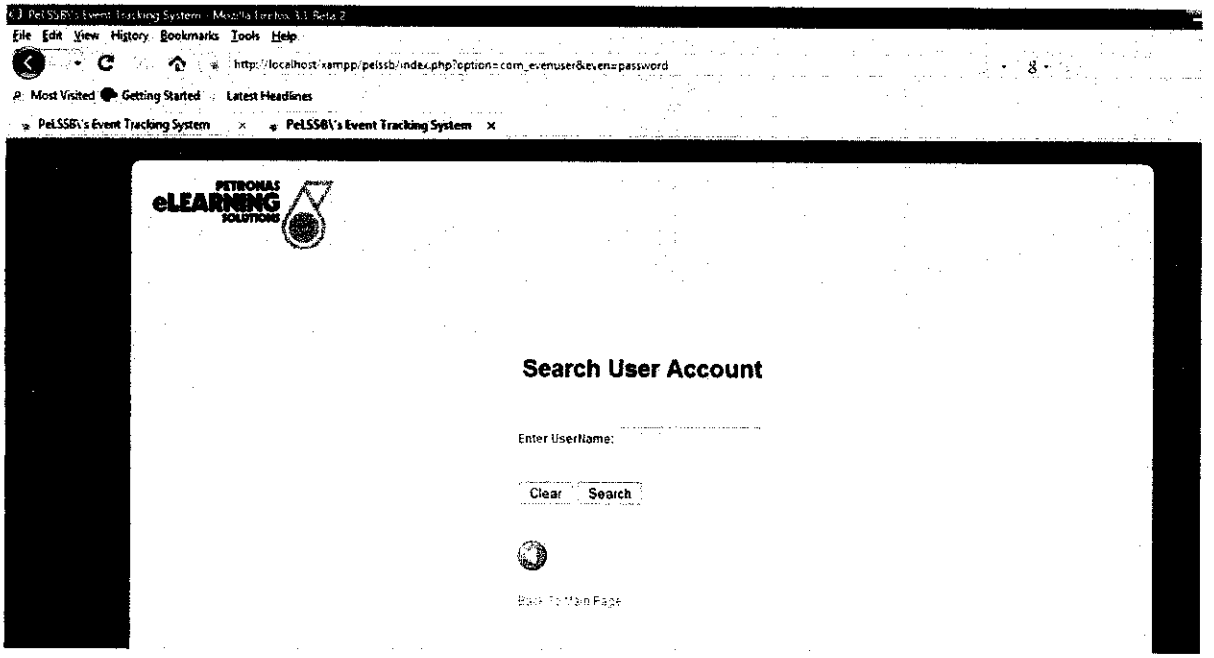


Appendix C: Delete User Account Page

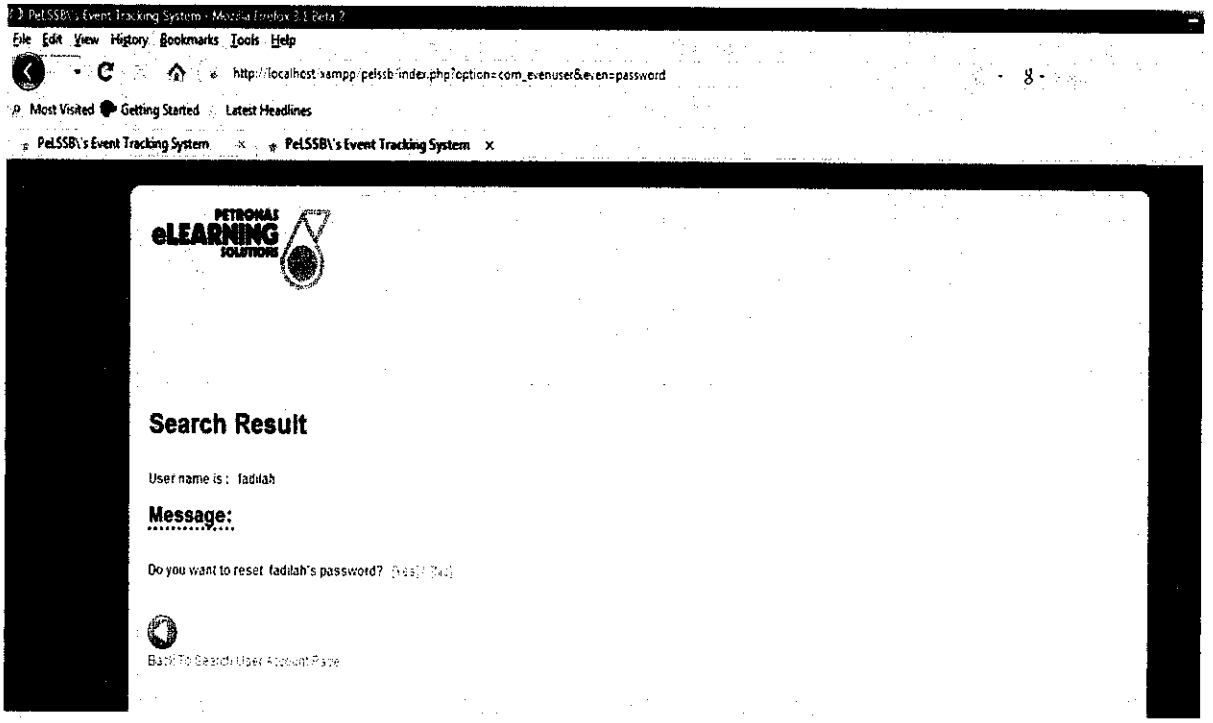


Appendix D: Find (Search) User Account

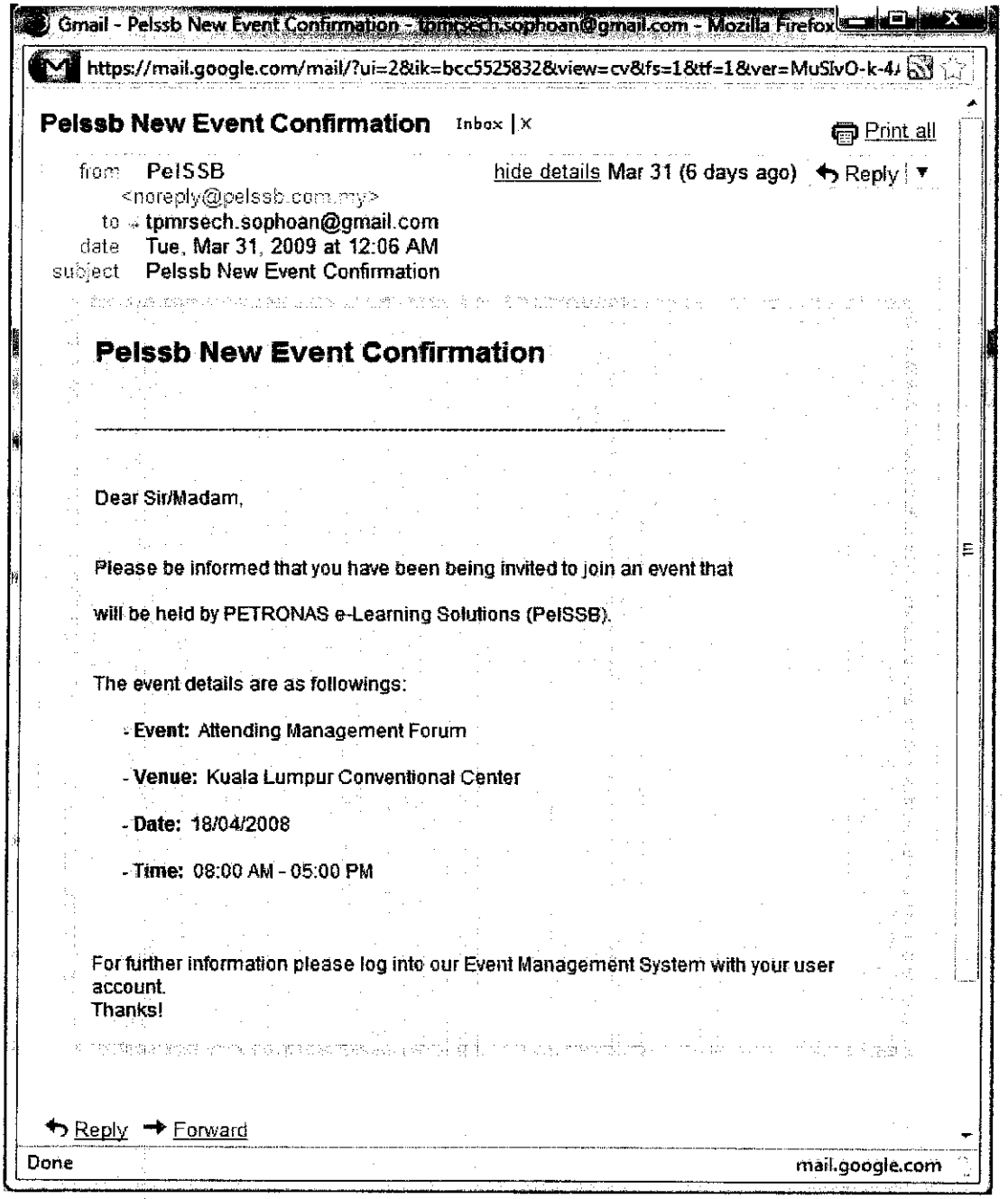
Search Page



Result Page



Appendix E: E-mail Notification


Gmail - Pelssb New Event Confirmation - tpmrsech.sophoan@gmail.com - Mozilla Firefox

https://mail.google.com/mail/?ui=2&ik=bcc5525832&view=cv&fs=1&tf=1&ver=MuSlvO-k-4

Pelssb New Event Confirmation Inbox | x

Print all

from PeISSB <noreply@pelssb.com.my> hide details Mar 31 (6 days ago) Reply

to tpmrsech.sophoan@gmail.com

date Tue, Mar 31, 2009 at 12:06 AM

subject Pelssb New Event Confirmation

Pelssb New Event Confirmation

Dear Sir/Madam,

Please be informed that you have been being invited to join an event that will be held by PETRONAS e-Learning Solutions (PeISSB).

The event details are as followings:

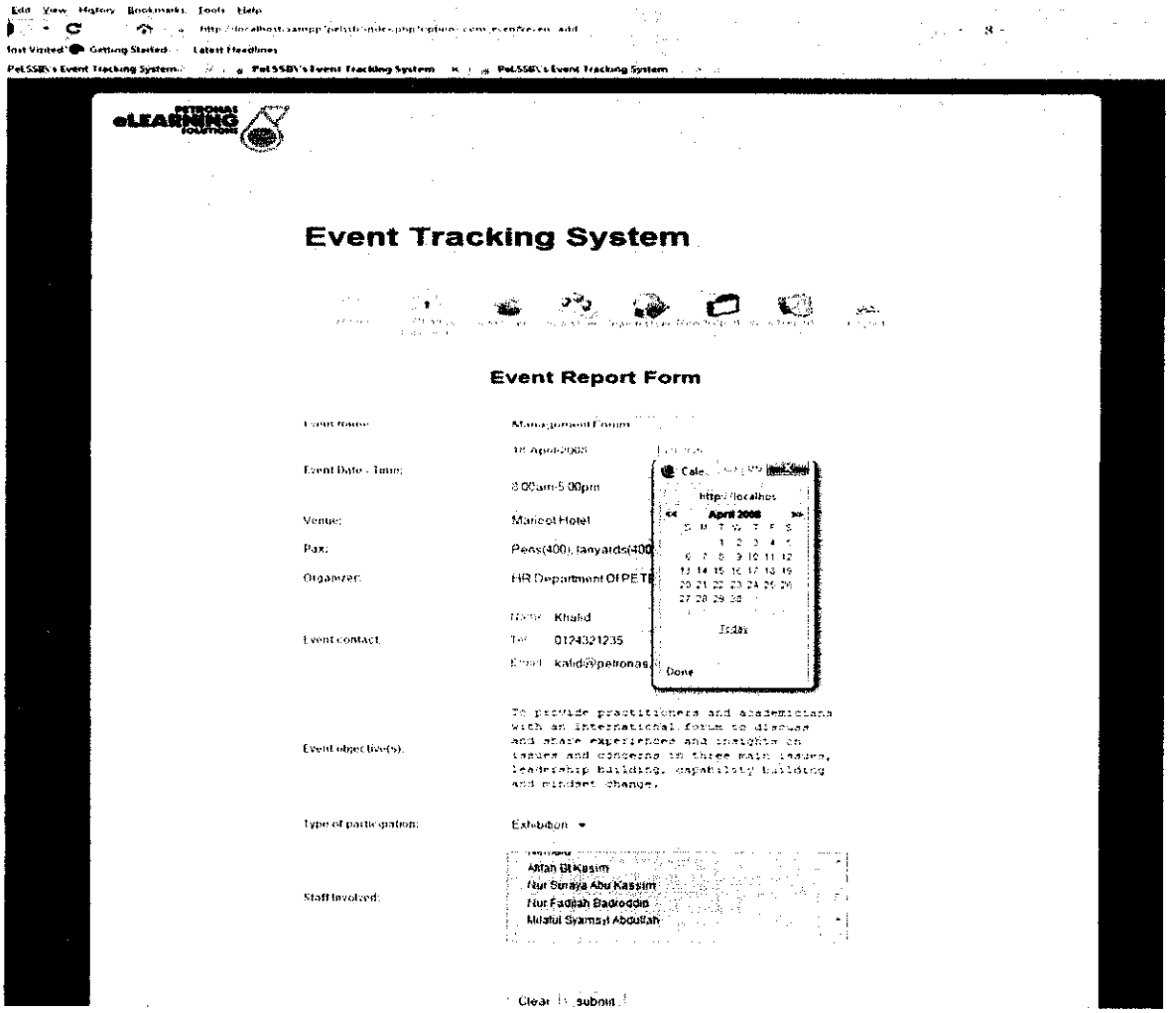
- **Event:** Attending Management Forum
- **Venue:** Kuala Lumpur Conventional Center
- **Date:** 18/04/2008
- **Time:** 08:00 AM - 05:00 PM

For further information please log into our Event Management System with your user account.
Thanks!

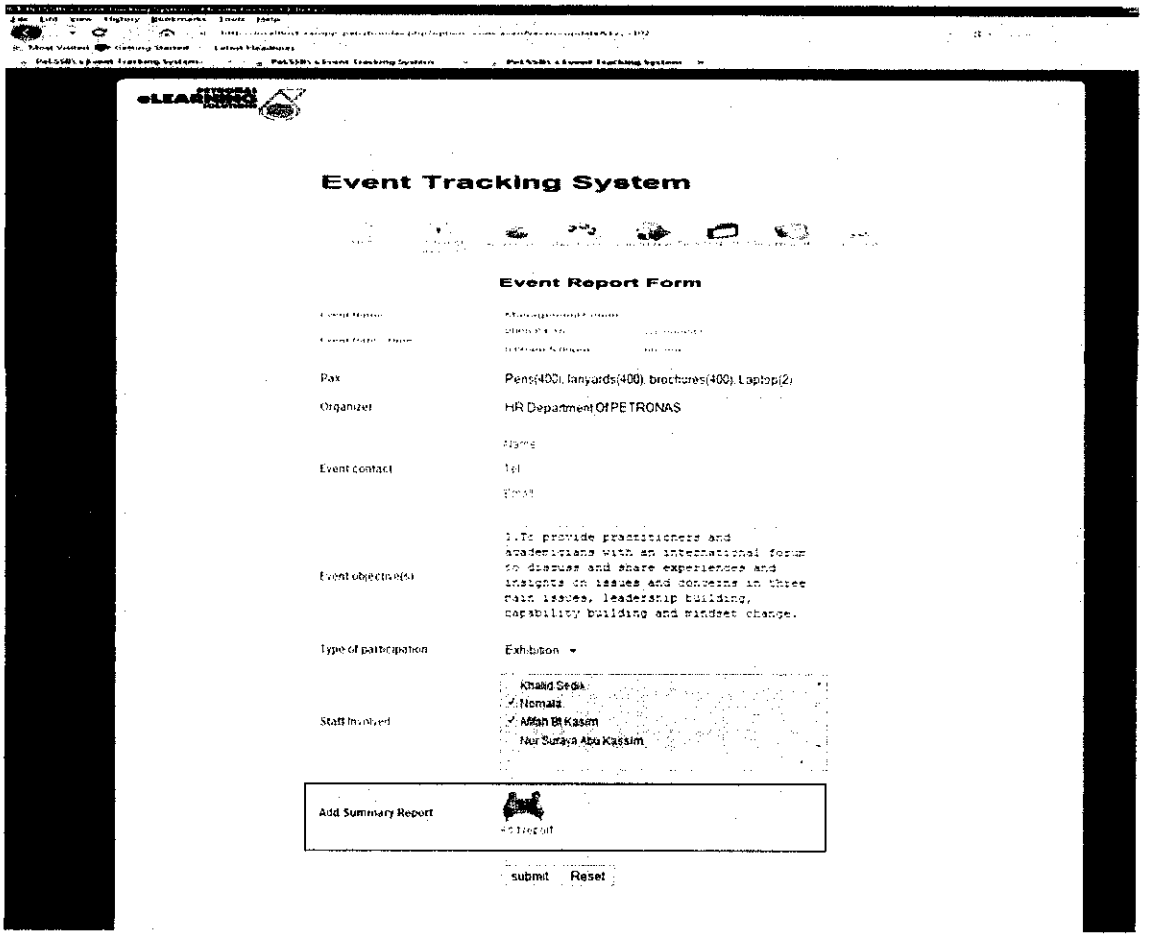
Reply Forward

Done mail.google.com

Appendix F: Add Event Report



Appendix G: Edit Report Page



Add Summary Page