Training Database Automation System

By

Chan Soo Ting 13724

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University Technologi PETRONAS
Bandar Seri Iskandar
31750 Tronoh
Perak Darul Ridzuan

ABSTRACT

The purpose of this paper is to propose a system that will improve record management of the training records in companies. PHILIPS LUMILEDS LIGHTING COMPANY is chosen as a background of research and studies which have shown lack of proper maintenance and management of their training records system. Consequently the problems affect the accuracy and completeness of training records for the purpose of auditing and other related operations. The proposed Training Database Automation System enables the storage of all training records into a single database system which helps in reducing human error. With the higher accuracy and completeness of data, Training Database Automation System has also equipped with flexible criteria searching modules which aid users for report retrieval for various criteria and requirement. Moreover, the system facilitate user in enrolling participant by generating the suggestion list for training for each of employees. Training Database Automation System delivers latest and accurate data management and efficient records retrieval and support flexible reports production for auditing purpose and evidently has shown significant time reduction for training record retrieval.

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CHAPTER I
INTRODUCTION

1.1 BACKGROUND OF STUDY

PHILIPS LUMILEDS LIGHTING COMPANY is a multinational company that produces LEDs located in Penang. It is the world's leading manufacturer of high-power LEDs and a pioneer in the use of solid-state lighting solutions for everyday purposes. It has about 3000 employee including direct and indirect labors. Every year, all the employees are necessary to attend 16 hours of training as one of the criteria in performance appraisal. Before an employee can attend training, Human Resources Training Department will have to identify which employee to attend for what training before proceeds to scheduling and enrolling. And after the training, training records will be entered into the database and the effectiveness of the training will be assessed. . Prior of that, each training records have their own set of material, trainers, targeted participants and evaluation analysis. This is a process that needs sufficient and complete records and information to ensure the right training to be conducted to the right person. It is also to ensure an optimized optimization of training budget.

PHILIPS LUMILEDS LIGHTING COMPANY is lacking of a proper documentation system and filing governing for all the training records. It is identified that 3 main factor contribute to the problem. Firstly, training records that consist of important evidence such as Attendance sheet, Evaluation Sheet, Pre/Post Test Paper and the rest are either scattered in stack in the office or they have been left unorganized. With the completion of a training and all the collected documents, the information are not stored in a structure database system but only into Microsoft Excel Spreadsheet which is more prone to human error. Hence every time when there is a need to refer a particular training, a lot of time will be spent just to find back the hardcopy or search through the incomplete or inaccurate Microsoft Excel Spreadsheet database. For instance, when the auditor is requesting a certain training from a certain date, the person-in-charge will need to find

all stack of the hardcopy or inside the Microsoft Excel as they are not certain where is the documents is actually deposited causing a longer period is needed in providing the accurate information requested by the auditor.

Secondly, with the mishandling of the training records, the key issue of the database which has been questioned to be the same with the amount of the training conducted. There has been no structured record management system developed over the years for the training conducted. Whenever there is a need to get a training record, a lot of time is needed to search for the hardcopy scattered around the desk and shelf and searching through an incomplete and inaccurate Excel Spreadsheet.

The last issue is the difficulty in effectively and efficiently generates a training report. Current database which is only in Excel Spreadsheet is hard for the employee to check their training record overview such as how many hours of training they have went through or which training they have went through. It is also hard for the top management to have a general overview on how many training done in a particular department and finding which staff involved actively and what are the courses has been attended for particular individual.

1.2 PROBLEM STATEMENT

1.2.1 Problem Identification

From the complication of their Training documents handling, below are the problems that have been identified to be solved through the proposed system:

- All Training Records are in hardcopy or in Microsoft Excel format
- Difficult in retrieving information in tracking the employee previous training record
- No flexible criteria searching modules for report retrieval for the training records during an audit session and similar matter.

1.2.2 Significance of Project

From the development of the proposed system, the significant of the system towards to organization as stated below:

- Time reduced in Training database retrieving and recording
- Increase accuracy in Training database retrieving and recording
- Assist Manager in assigning employee for trainings
- Lower Rate of issue of Audit Recertification
- More Organized & Structured working environment

1.3 OBJECTIVES

Objectives are needed to be clarified in order to ensure the effectiveness of the system. The main objective of the system is to develop a training database automation system for PHILIPS LUMILEDS LIGHTING COMPANY to ensure that they have an effective & efficient ways in recording and retrieving the training records.

Below are the specific objective needed to be achieved for the development of the Training Database Automation System:

- To develop an application that can store all the training records in a system
- To develop a system that can effectively & efficiently develop the training reports of the employee which include automatically calculate the training hours of employee and provide a suggestion list of training
- To develop a flexible report retrieval module in the system in order to ease the process of retrieving the report in a shorter time and accordingly to particular needs such as audit.

1.4 SCOPE OF STUDY

This study focuses on training conducted to the employee and the methods of capturing the training records in the system. Employee details and corporate departmental

functional will be studied in order to understand how reports can be retrieved in accordance with the head of department or the person-in-charge.

The specific aims of the study are to:

- Study the importance and beneficial of training hours and training evaluation calculation
- Identify the needs of head of department or person-in-charge in retrieving the records
- Analyze the methods of training records capturing that will be ease for the administrator
- Analyze the criteria flexibility of the report retrieval needed by the system user
- Understand the authorization personnel in accessing the system

1.5 FEASIBILITY OF THE PROJECT

1.5.1 Scope Feasibility

Extensive researches have been conducted to study the system background. Other related system or previous methods used by the organisation are also been studied to gather all required information from the involved parties to optimize the functionalities of the system. Advances in tools and techniques are also incorporated into the study to ensure the feasibility of the system. For the first phase of development, user interface and database structure will be focused as it is the fundamental for the later phases of development. Upon the completion of the system coding on the 2nd phase, the system will then be tested within the user in the company as well as the other company to check the friendliness of the system toward variation of end user.

1.5.2 Time Feasibility

The development of this system will take two semester in final year in which it will be divided into 2 parts. The first part of this system development in Final

Year Project 1 will only cover the planning, requirement analysis and design phase. Basically, Final Year Project 1 involves the in depth study of current method of record management of the organisation and analyse the requirement from the stakeholders in order to develop the most relevant system.

The second part of the system development in Final Year Project 2 will commence in the second semester whereby the output from Final Year Project 1 will be transformed into debugged code and executable codes. The reliability of the system will be tested by at least 20 users and maintenance and enhancement will be continual tasks to ensure the perfection of the system.

CHAPTER II
LITERATURE REVIEW

2.1 TRAINING WITHIN AN ORGANIZATION

The purpose of training and management development programs is to improve employee and organizational capabilities. For an organization investing its money to improve the knowledge and skills of its employees; the obvious benefits will come in the form of productivity increment and efficient employees. Investing in human resources through training and management development improves individual employee capabilities and organizational capabilities (Kirby A., 2003). Hence, to have better employee capabilities and organizational capabilities, PHILIPS LUMILEDS LIGHTING COMPANY has invested around RM 1 million per year investing in Training & Development for the employees. One of the most frequently encountered human capital development interventions is training (Campbell, J. P., & Kuncel, N. R. 2001). Therefore, training has become one of the KPI for all employees in the organization which means all the employee have to attend a certain amount of training every year. According to Holton, E.F., III et al (2000), to enhance job performance, training skills and behaviors have to be transferred to the workplace, maintained over time, and generalized across contexts. Related to prior context, PHILIPS LUMILEDS LIGHTING COMPANY never hesitates in investing in people especially in training and development. After all the trainings evaluation are needed to be conducted to assess the effectiveness and relevancy of the training. Training evaluation is the most important aspect of training and development. Evaluation of training and development is the most essential aspect of training programme(Gopal, 2009). Generally all good training and development programs start with identification of training and development needs and ends with evaluation of training (Gopal, 2009). Training evaluation ensures that whether candidates are able to implement their learning in their respective work place or to the regular routines (Nagar,

2009). As measures of training program success, Kirkpatrick (1959) suggested using four criteria: (1) Reaction- what the trainees thought of the particular program (2) Learning: - what principles, facts, and techniques trainees learned (3) Behavior: an assessment of changes in trainee job performance and (4) Results-the impact of the training program on organizational objectives, such as turnover, absence, and costs.

To make sure that the training is effective as mentioned in the 4 criteria, all the employees in PHILIPS LUMILEDS LIGHTING COMPANY are required to fill up the evaluation form. The evaluation data must be recorded in the database to enable measurement of the effectiveness of the training. According to JJ Phillips (1996) Return on Investment (ROI) level is essentially about comparing the fourth level of the standard model to the overall costs of training. Roger Kaufman(1998) says that ROI is essentially a level-four type of evaluation since it is still internal to the organization and that a fifth level of evaluation should focus on the impact of the organization on external clients and society. From all the factors above, it is important for PHILIPS LUMILEDS LIGHTING COMPANY to have a database system for all the Training Records.

2.3 DATABASE AUTOMATION SYSTEM

Database Automation is a tool that can be used to facilitate records management and archival function (Roper et.al, 1999). According to Roper et al, computers and system assist records personnel in managing records better to ensure their continued value of evidence. Besides that Automation System is an automated information system for the organized collection processing, transmission and dissemination of information in accordance with defined procedures. Automation can help PHILIPS LUMILEDS LIGHTING COMPANY to implement authentic and reliable record keeping practices especially on training records. It helps to improved tracking records of training activities and help in maintaining evidence through authentic and reliable records. Automation should be viewed as a tool to facilitate daily operation and planning in a records and archives institution. Automation can increase staff efficiency, perform routine tasks automatically and analyze data more quickly than could be done manually. (Roper et al,2009). Manual information systems may not be fast enough or sophisticated enough to meet growing user demands as well as the higher expectations and standards brought

about in society by increased computerization. Besides that Roper mentioned that Automation also assists in eliminating repetitious work and it makes some of the tasks offers become much more flexible. Therefore, it is important for PHILIPS LUMILEDS LIGHTING COMPANY to have an automation system for the training database to facilitate daily operation and planning.

2.2 DEFINITION OF RECORD, RECORD MANAGEMENT AND IMPORTANCE OF RECORD MANAGEMENT

Penn, Pennix and Coulson (1994:3) define record as any information captured in reproducible form that is required for conducting business. They also further enhance their definition that define record as any information that is recorded on any physical medium; generated or received by a business enterprise as evidence of its organization, functions, policies, procedures, operations and internal or external transaction; and valuable because of information it contains.

Hare and Mcleod (1997) support the above saying who state the records become more than just data or information but they become evidence for a business activity when they posses three characteristics which are content, context and structure:

- Content represents the text or image of the message or information they carry

- Context is the information supplied in letterhead; signatory lines, carbon copy lines about who sent the message and who received copies, and especially any information that would relate the document to other documents and the business process or functions that caused the creation of the document

- Structure is the physical form of the document

Parker (1999) also defines records from a function point of view as documents or other items containing recorded information, which are produced or received as part of a business activity. So from the above explanation, training records in PHILIPS LUMILEDS LIGHTING COMPANY is an essential records that should be kept and well manage.

Penn, et al (1994) describe records management as the management of any information captured in reproducible form that is required for conduction business. This definition is extended by McDonald(1989) who defines record management as the application of the management principles of planning, organizing, directing and controlling to the recorded information holdings of an enterprise. Parket(1999) defines records management as a systematic and consistent control of all records throughout their lifecyle which means all records need to be managed in a planned and methodical way by design rather than by accident. In further context, Davies(1991) offers the following definition: " record management will ensure that the company retains only those records that is required to conduct its business; that those which are created are managed or controlled effectively at the least cost, commensurate with operational and informational needs''.

Information and record is usually retained because it is perceived to be useful again at some stage in the future either as evidence of past actions, decisions, reasons and results, or for reference purposes to provide data which can be re-exploited (Garland, 1991). Thus good record management is reflected by the creation, use maintenance, retention, protection and preservation of records. Besides that, De Saez(1995:23) holds a view that if recorded information or record is considered the lifeblood and the corporate memory of an enterprise, then record management is integral. It is therefore significant to see that records management plat important in improving the use of information help and also ensure the comprehensiveness and full access of previous records. From the studies, it can be inferred that it is important for PHILIPS LUMILEDS LIGHTING COMPANY to have a proper record management for their training database.

Training records in PHILIPS LUMILEDS LIGHTING COMPANY have not been organized systematically. It is actually to have a good record keeping because records represent major sources of information and are the only reliable and legally verifiable source of data that can serve as evidence of decisions, actions and transactions in an organization (Wakumoya, J. 2000). Records are actually memory of the organization, capable of informing and influencing management decisions (Sutcliffe,P. 2003).Training records in PHILIPS LUMILEDS LIGHTING COMPANY are actually not only important for audit purposes but also helpful for management in deciding the correct

personnel for correct training vice versa. This also means a full utilization of training within the organization.

Yusof and Chell (1998:98) further state that the function of the record has changed from that of documenting organizational activities to that of providing information of decision making and providing evidence and compliance. Besides that, to show that records is actually influencing the decision making process, Gill (1993:5) indicates that record are facts supporting decision, and facts upon which to base future decision. Besides that, as part of a record, information is used to increase knowledge or reduce the decision-maker's uncertainties about a future state or event for competitive survival. Therefore, a good training record will help to provide an overview for the management to decide on the future steps and strategy implementation for betterment of the organization.

Furthermore, records and information allows organization to run the office and plot strategy as they are the core of every business and organizational operation (Pardo,2000). According to Hare & Mcleod (1997), the keeping and managing records are for three main significant:

- Records are an enterprise's most important information resources to ensure the operation are carried out appropriately and to aid decision making

- Records provide evidence for a business activity and conduct as proof if the enterprise is faced with any litigation

- Record is used for compliance such as proof that regulations have been observed.

There are four key benefit of managing records effectively: reliable information resources; complete evidence, minimum costs and an improved working environment (Diamond, 1995; Hare & McLeod,1997; Mellody,1997; Parker,1999).

- Reliable information resources: Records management control and reduce the creation of unnecessary records and copies of records. Therefore it provide a complete and accurate records which results in increased efficiency by providing speed access to the right information. Confusion and mistakes can be educed.

- Complete evidence: Complete and accurate records ensure more straightforward and audits and reduced legal risk

- Minimum costs: Substantial savings on space and resources which otherwise would be wasted on storing unnecessary records.

- Improved working environment: Only required records are kept in the available space with no piles visible anywhere around the working space

On the other side, the negative effect of poor managed records are unreliable information or no information at all; gaps in the records or too many records; uncontrolled costs; clutter and hazards; and security risk environment (Diamond, 1995; Hare & McLeod,1997; Mellody,1997; Parker,1999).

- Un-reliable information or no information at all leads to poor decision making as people do not have the information they needed; duplicated effort as information often has been re-created if the original records cannot be found

- Gaps in the records or too many records leads to lost legal battles either where the records to prove innocence cannot be found or where records have been kept which implicate the enterprise

- Uncontrolled cost on wasted space and resources

- Clutter and hazards: poor working environment characterized by piles of records everywhere and frustrated people as they cannot locate the required information, which might lead to loss of good staff

- Security risks relate to the lack of disaster planning and recovery that increases the risk of loss of information when a disaster occurs that may be detrimental to the continued operation of the enterprise

All the benefits & negative effect of poor managed records are then further derived into Objective of this research in developing the Training Database Automation System for PHILIPS LUMILEDS LIGHTING COMPANY. From all these researches are stating the importance and benefits of having a records and information keeping, it is further

deduced the important of PHILIPS LUMILEDS LIGHTING COMPANY to have a good training database management system that can help in effectively and efficiently retrieve records and able to automatically develop reports according to customized requirement.

2.3 COMPARISON WITH THE CURRENT RECORDS & DATABASE MANAGEMENT SYSTEM

With the survey and studies done through the Internet and some industries, there are a few records and database management system which is either Training related or not is available. Comparisons have been made between Training Database Automation System and the systems available in the market.

Brief Comparison:

1. Record Management System (RMS) by ONESolution
(http://www.sungardps.com/solutions/onesolution/public-safety-justice/rms/, 2013)

RMS by ONESolution		Training Database Automation System
A standardized interface, comprehensive database and superior data searching capabilities that allow users to quickly retrieve records and manage multiple involvements	Similarities	Also having a standardize user interface which include a central platform for database storage and having a flexible criteria searching modules that allow users to quickly retrieve records.
Does not have login authentication	Differences	Include login authentication as employee records are sensitive and highly confidential

Table 2.1: Brief comparison between RMS by ONESolution and Training Database Automation System

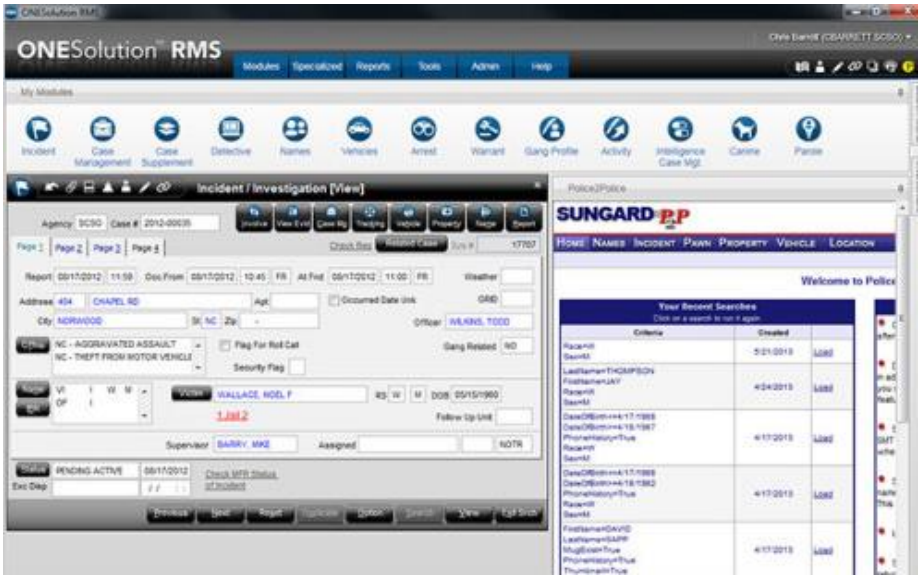

Figure 2.1: Screen shot of RMS by ONESolution (http://www.sungardps.com/solutions/onesolution/public-safety-justice/rms/, 2013)

2. Learning Content Management System (LCMS) by CornerStoneOnDemand (http://www.cornerstoneondemand.com/global-business/talent-management/learning-management-cloud, 2000)

Brief Comparison:

LCMS by CornerStoneOnDemand		Training Database Automation System
LCMS automate the administration and oversight of compliance data management processes to ensure the organization's in line with the latest regulatory requirements	Similarities	Also assist the administration in recording the training attendance and help in retrieving reports in a flexible criteria manner to ensure the organization meet the latest regulatory requirements such as ISO Audit
Include login authentication, viewing of complete training courses, advanced searching and browsing	Similarities	Also include the login authentication which further identify system admin and system viewer which has different authority in Read and Write. Searching and browsing of course topic is also available
Include interaction between system admin and participant	Differences	Not include interaction. Will take in account of future recommendation

Table 2.2: Comparison table between LCMS by CornerStoneOnDemand and Traning Database Automation System

Figure 2.2: Screen shot of LCMS by CornerStoneOnDemand (http://www.sungardps.com/solutions/onesolution/public-safety-justice/rms/, 2000)

3. Intel Technology Sdn Bhd – Training Records and Learning Management System

With extended interview with Intel current Technical Training Manager and previous Learning & Development Consultant, Intel is using an In-house developed Training Records and Learning Management System which is designed accordingly to Intel working environment.

Brief comparison:

Training Records and LMS by Intel		Training Database Automation System
Contain comprehensive login authentication which allow different user to user different function	Similarities	Also contain the login authentication with different authorities of Read/Write
Complete training topics and employee information for viewing	Similarities	Also contain complete training topics list and employee information for viewing purpose
Include flexible searching modules to ease the report retrieval for variation of requirement	Similarities	Have a flexible criteria searching modules which support different report retrieval
Does not include suggestion training for helping the manager in assigning employee for training	Differences	Provide a suggestion list of participant or training to assist the manager in assigning employee for training
Provide interaction through the system such as emailing participant for enrolment	Differences	Do not include interaction. It is a database system for recording and report retrieval. Will include in future recommendation
Provide graphical reports for further analysis	Differences	Do not include graphical reports, only normal table reports. Will include in future recommendation

Table 2.3: Comparison table between Training Records and LMS by Intel and Training Database Automation System

CHAPTER III
METHODOLOGY

3.1 RESEARCH METHODOLOGY

Several methods have been used to get the right information for the new developed system. Firstly, an interview session has been conducted to the staff in HR department of PHILIPS LUMILEDS LIGHTING COMPANY, the questions are more on gathering the information and understands the expectation of the new system. Moreover, the interviews helped to look thoroughly into the problems they are encountering with the current practice and to gather requirements that help to enhance the system. Interview has been done on the IT department to understand that will the system be helpful to HR department. Furthermore, interview with different industrial employee has also been conducted to understand the functionality of their organization's training records management for better understanding and comparison in order to consider additional modules to be included in the system.

Besides that, information in the company has been collected such as their employee details, training records and training courses in order to input into the system for testing purpose. I will also take a few of their training request form, training evaluation form, training attendance form in order to design the system which the interface is familiar to the users in HR Department.

In addition, more studies on the previous research have been done especially on which is related with Training & Development system. The researches are in term of research paper, journals, thesis which will be obtainable in the Information Resources Centre. Besides, compilation of information from the articles obtains from magazines and newspaper which is also obtainable in the IRC will also be done.

Internet is other resources for us to collect data in terms of searching for historical information, graphs, internationals studies, forums and much more in order to collect sufficient data for the research. With the understanding that the information obtained from the internet will not be as reliable, cross check with the data collected from the IRC and also comparison of various websites and findings will be done to ensure the accuracy of the data.

3.2 DEVELOPMENT METHODOLOGY

In this project, Prototyping Methodology has been adopted as a system development life cycle (SDLC). Basically, to adopt this methodology, several phases will need to go through for instance analyzing phase, designing phase and development phase repeatedly to produce system prototype. The system prototype will be presented to the user to provide a brief idea and overview of the system to ensure that the system development is according to the user requirement. Whenever there is a need to changed or updated will have to go through the circle of analyzing, designing and development again. This methodology will usually be adopted when the exact requirement is not yet clearly defined. Furthermore, this methodology is recommended for system that requires much human interaction. Updating the system will also be done until the completion of the system.

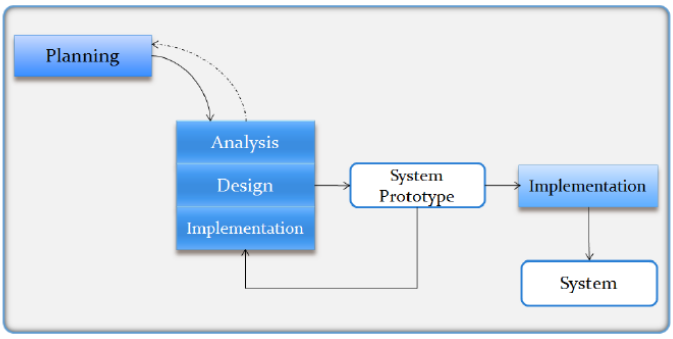

Figure 3.1: Prototyping Development Prototyping Model

Details of activities carries out in each phase will be describe in the below section of Details Project Activities.

3.3 DETAILS PROJECT ACTIVITIES

Major phases and deliverable:

i) Project Planning
   (a) Conduct further research on topic to be proposed for FYP topic and on its feasibility
   (b) Topic proposal to be submitted for FYP committee and lecturer for approval
   (c) Preliminary report that includes background, problem identification, significant of project, objective and scopes of study of the proposed system
   (d) Extended report that include more studies related to proposed system such as literature review, methodology, results and conclusion

ii) Planning and Analysis
    (a) Identify problem and opportunity will be done in planning phase to find out the problem with the current system and to determine how to solve that problem.
    (b) Identify available equipment and technology will be done in planning phase. This phase helped to determine required equipment for the propose system.
    (c) Get user requirement and system requirement will be done in analysis phase and user requirement will be reviewed in each proposed prototype.
    (d) Refinement the requirement will be done accordingly.

iii) Design
    (a) System architecture design will be defined.
    (b) UML diagram design will be defined.
    (c) User Interface will be drafted.
    (d) Database design will be defined.

iv) Implementation
    (a) User Interface will be implemented into coding.
    (b) Database server will be linked to ensure the storing and retrieving is enabled
    (c) Each feature is developed with unit testing.
    (d) All modules will be integrated, followed by system testing by self for examine any bugs or error

v) Deployment
    (a) A database and system will be fully deployed
    (b) Usability testing will be conducted by at least 30 direct and indirect users inside and outside of the organization to determine the usability of the system and accuracy of result.

vi) Documentation Completion
    (a) Final Report and technical report will be prepared
    (b) Viva and presentation of the system to FYP committee and supervisors

3.4 TOOLS REQUIRED

Hardware Required:

- Personal Computer

- Processor 2.5 GHz Intel Core i5
- Memory 4 GB 1600 MHz DDR3
- Storage 500GB
- Graphics Intel HD Graphics 4000 384 MB
- 1 TB External Hard Disk (for back-up purpose)

Software Required:

- Visual Studio 2008
- MySQL 5.5.20
- Notepad Plus
- Adobe Reader (for reading PDF files)
- Windows Microsoft Excel

Programming Language:

- MySQL for database
- VB for the interface
- .net framework

3.5 GANTT CHART & KEY MILESTONE

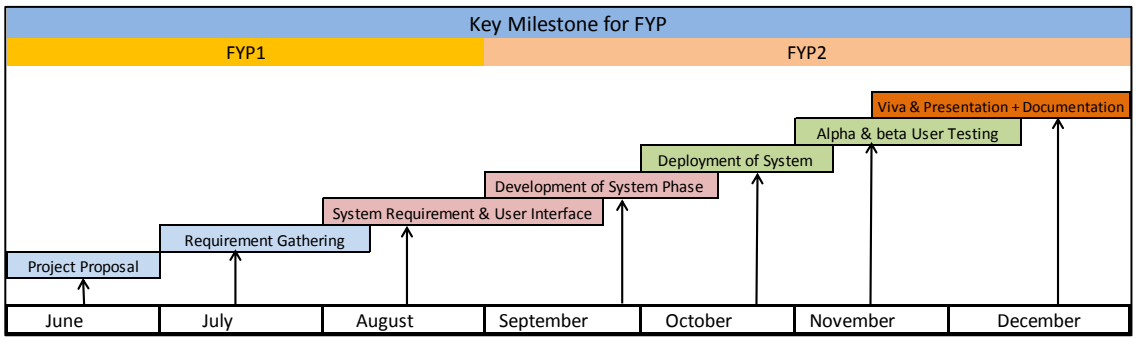

Figure 3.2: Key Milestone for Training Database Automation System

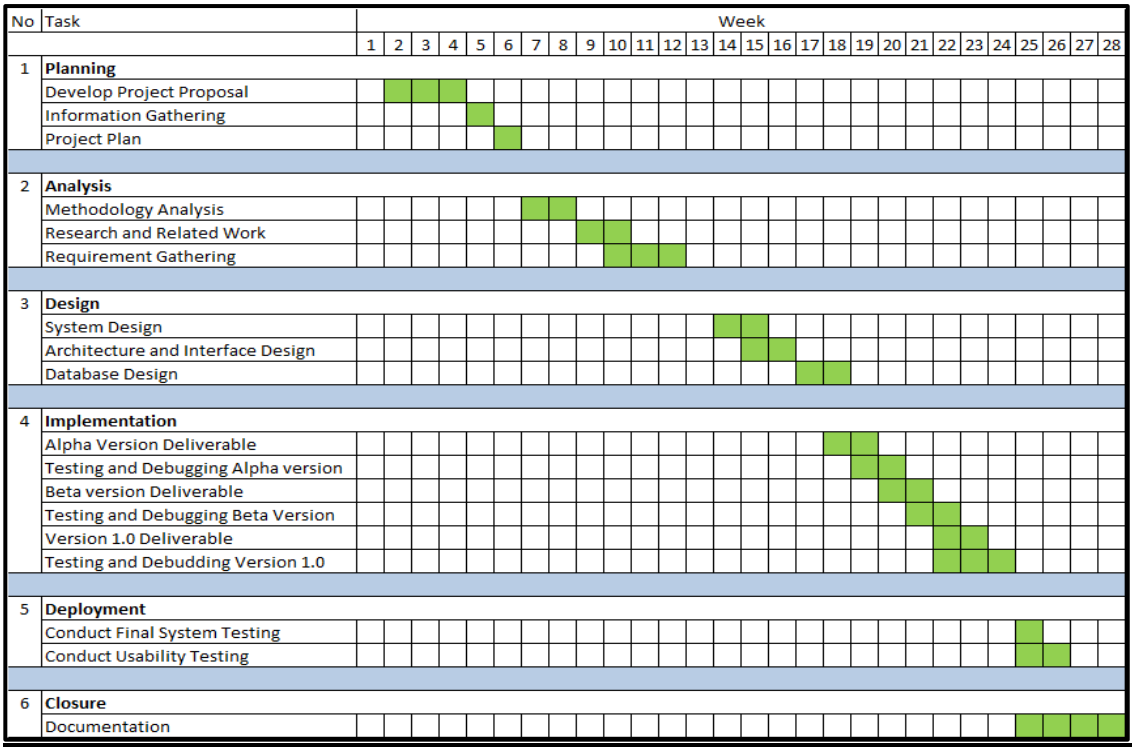

Figure 3.3: Gantt chart for Training Database Automation System

CHAPTER IV

RESULTS AND DISCUSSION

4.1 DATA GATHERING AND ANALYSIS

For the first stage of data gathering, the focus is on the problems encountered by Training Department. The first problem that they are having is all training records are in hardcopy.

Training Records (Types)	Quantity of Hardcopy (in year 2012)
Training Request Form	85
Training Attendance Sheet	71
Training Evaluation Sheet	677
Total hardcopy	833

Table 4.1: Amount of Training Related Document Hardcopy

The Table 4.1 shows that in total of training requested by each department; only 71 trainings have been conducted. After completion of training, every participant is supposed to fill in the evaluation form. There are a total of 677 evaluation forms received and need to be recorded in Microsoft Excel as well as recorded in attendance list. The total amount 677 names make the recording job difficult as well as retrieving results.

Furthermore, all these hardcopy are not located at the same location. After survey and studies, the location of the files of hardcopy has been tabulated as below:

Location	**Files Quantity**
Store Room	4
HR Admin 1	2
HR Admin 2	2
HR Admin 3	1
HR Admin 4	1
HR Admin 5	1
HR Manager	1
Total	**12**

Table 4.2: Location of files of Training documents hardcopy in Philips Lumileds Lighting Company

This shows that all hardcopy are allocated in different places and are handled by different personnel causing difficulties in maintaining and organizing the training records in a proper manner.

After personnel has attended a training, all the records such as the training records and training evaluation have been key in into a Microsoft Excel file manually (Appendix 1). The Microsoft Excel for 2012 training records has a lot of human error and missing spaces as tabulate below

Total row and column in 2012 Training Attendance: 5410		
Total Human Error	302	5.58%
Total Missing Space	296	5.47%
Total Errors	**598**	**11%**

Table 4.3: Total Errors in Philips Lumileds Lighting Company Microsoft Excel Sheet training records

The table shows that 11% of the records in the Excel Sheet are having errors. These affect the accuracy of the reports retrieval and will be penalized in terms of regulation especially during internal and external audit. The reason of having errors is all records are key in completely manually and there is no error checking or any automation aid. Furthermore, there will be times when different admin are assigning for recording hence causing errors during the transition of job.

Moreover, the repository of other data such as employee details, total training course list, Evaluation list is at different location as tabulate as below:

Types of Data	**Location**
3000 Employee Details	HR Payroll Database
Total Training Course List	HR Training SharedDrive
Total Evaluation list for each training	HR Admin 2 – Personal Computer

Table 4.4: Location of different types of data in Philips Lumileds Lighting Company

From the table 4.4 above, it shows that there is a lacking for a central platform or location for staff to get all the training related information thus causes more time needed for any report retrieving.

Each of the training is attended by averagely 25-30 participants. The table below measure the average time needed by 8 HR admin to key in their attendance into Microsoft Excel Form. Each attendance record consist of Name, Employee ID, Department Name, Department Number, Position and Training Attended Topic (Refer to Appendix 1)

Personnel	**Key In Time (Min)**
HR Admin 1	10
HR Admin 2	9
HR Admin 3	11
HR Admin 4	12
HR Admin 5	8
HR Admin 6	7
HR Admin 7	7
HR Admin 8	9
Average	9.125

Table 4.5: Average time needed for a HR admin to key in 25training records in Microsoft Excel Sheet

This shows that each training conducted need averagely 9.12 minutes to key in into the Microsoft Excel Form and the accuracy is still in question.

5 searching criteria has been set for preliminary test for 10 HR Personnel to record the time needed for retrieving reports as below. The criteria are set according to previous audit requirement.

Criteria	Test Personnel	Time Needed(min)	Test Personnel	Time Needed(min)	Process
1. Training that has been attended by all Finance Department personnel who has joined the company since 2011	HR Admin 1	20	HR Admin 6	18	1. Get Employee Details list from HR - Payroll 2. Filter the Employee from Finance Department 3. Filter the Employee from Finance which has joined since 2011 4. Get the name and check in the Excel Training Attendance List
2. Training that has been attended by employee under supervision of Mr. Scott	HR Admin 2	15	HR Admin 7	10	1. Get Employee Details list from HR - Payroll 2. Search for Mr. Scott Department 3. Get the department name and filter all employee under supervision of Mr Scott 4. Get the name and check in the Excel Training Attendance List
3. Training that has been attended by employee is in working schedule A and joined the company since 2010	HR Admin 3	20	HR Admin 8	20	1. Get Employee Details list from HR - Payroll 2. Filter the Working Schedule A Employee from Finance Department 3. Filter the Employee from Work Schedule A which has joined since 2010 from Work Schedule A 4. Get the name and check in the Excel Training Attendance List
4. How many employee in Colour Engineer Department has attended Microsoft Powerpoint Training	HR Admin 4	5	HR Manager	15	1. Get Employee Details list from HR - Payroll 2. Filter the Employee from Colour Engineer Dept 3. Filter the Ms Powerpoint Training 4. Check the names from Colour Engineer Dept from List
5. Training that exceed 90marks of Evaluation marks	HR Admin 5	20	HR Senior Manager	25	1. Retrieve all Evaluation list and analysis from HR Admin 2 2. Manually check each and every evaluation list that have evaluation marks higher than 90 3. Get the training list the have evaluation marks higher than 90
Total		**80**		**88**	

Table 4.6: Time needed to retrieve reports with different criteria by 10 HR Personnel

The table shows that the times needed for retrieving 5 reports need average of 84minutes. A few steps and different department is involved for retrieving the reports. Moreover, the uncertain of who to find or where to look for the data increase the time needed to retrieve for report.

The company was once trying to use Microsoft Macro to search for records and retrieve reports (Appendix 2). However the result has not been improved in terms of accuracy and time consumption.

4.2 RESULT AND DISCUSSION

From the problems discussed and gathered from the company, there are total of 6 main functions (modules) for in Training Database Automation System i.e. the Login Authentication, Employee Details Module, Course Catalog Module, Updating Training Attendance Module, Flexible Criteria Report Retrieval Module and Administration Control Module to help in managing and organizing their training records as well as report retrieving for regulation and decision making purposes.

4.2.1 Login Authentication

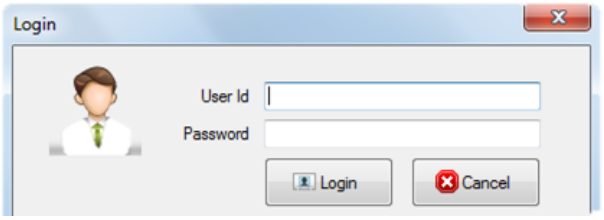

Figure 4.1: Screen shot of Login Authentication Module

Users are able to input their username and password for logging in. The username and the password given to the user identify either the user have the partial or complete access to the system. A user can either be partial access who can only have read authority for the system or can have complete access which can use all the function with read/write authority. Currently, the authentication process is successfully linked to the database as well as the error detection. Whenever there is a mistake in username or password, which indicates the input did not found match in the database, an error window will be appear to the user to ask for another input. The 1st Function of Login Authentication is successfully executed. Login for authentication has been setup that will granted access control for user which has read/write access or read only function. Wrong password or User ID will be notified to user.

With the Login Authentication function, only the approved personnel will be able to perform Read/Write function, whereas the other user or viewer can only perform Read only function. This login authentication function creates a higher security for all the information in the system compared to the security level in the company now. Currently, everyone can access into the training records which

will actually exposed to all the employee details which are actually sensitive and highly confidential. They are also able to edit the information as it is not protected by any password. Hence, with the implementation of Training Database Automation System, the system viewer can only view certain modules such as the attendance and report retrieving. They are not allowed to edit any information inside the system. System Viewer is particularly Top Management or Head of Department who need to make decision on assigning employees for training.

Below are the use case diagram which differentiates the authority of different user i.e. System Administrator and System Viewer.

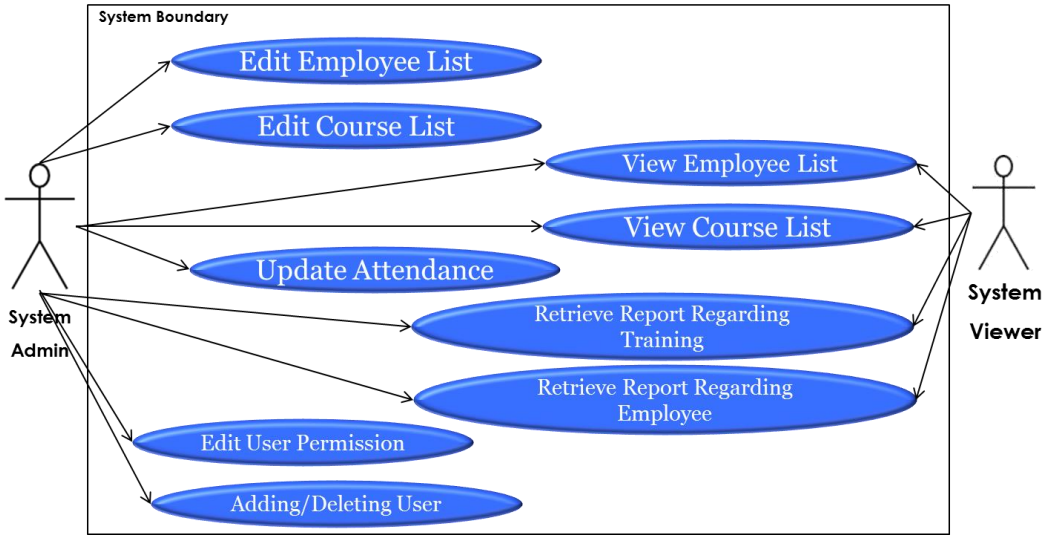

Figure 4.2: Use Case diagram for Training Database Automation System

4.2.2 Employee Details Module

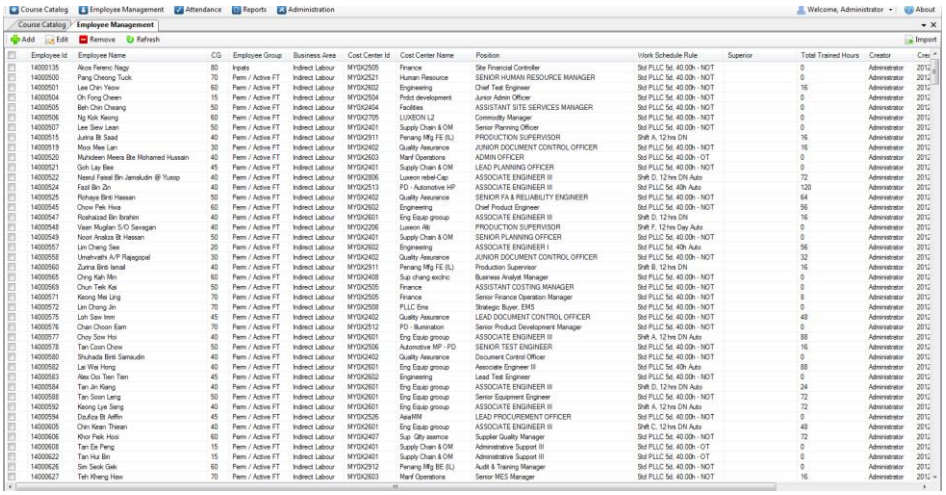

Figure 4.3: Screen shot of Employee Details Module

Employee Details Module is to provide the user to have a complete view of the current updated employee list and details of the employees. Employee's details such as Employee ID, Employee Name, Employee Corporate Grade, Employee Group, Employee Business Area, Business Cost Centre ID, Employee Position, Employee Work Schedule, Employee Supervisor, Employee Total Trained Hour is important for the user to have an overview, so all these will be include in the Employee Details Module.

All functions have been successfully executed such as input and importing the records, filtering, editing, removing records and arranging them in alphabetical order. Records input or imported are also successful linked to the database making it running on real time between the system and the database. The 2nd Function of Employee Details Module is successfully executed. An overview of all the employee list for the management for general viewing of employee details such as names, employee ID, department, cost center, trained hour.

This module enable all employee details locate in a same platform which will help the system administration to refer the employee details when there is a need. Refer to Table 4.6, where the HR Admin would have to get the employee list

from another department, it is very time consuming. By having the Employee Details Module, where the Payroll – HR can simply import in the Employee Details into the system, HR Admin can just view and look for the employee details from the same system – Training Database Automation System.

4.2.3 Training Course Catalog Overview Module

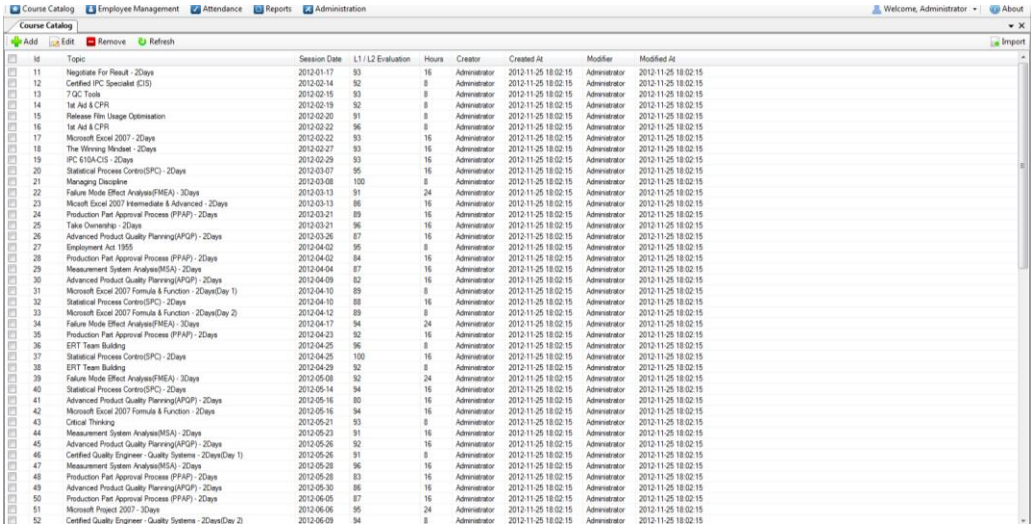

Figure 4.4: Screen shot of Training Course Catalog Overview Module

Training Course Catalog Overview Module is to provide the user to have a complete view of the current training courses as well as scheduled training list that to be conducted in the future. Training Course details such as Topic Name, Session Date, Evaluation Marks (for the conducted trainings only) and training hours are important for the user to have an overview, so all these will be included in the Training Course Catalog Overview Module. All functions are successfully executed such as input and importing the records, filtering, editing, removing records and arranging in alphabetical order. Records input or imported are also successful linked to the database making it running on real time between the system and the database. The 3rd Function of Training Course Catalog Overview Module is successfully executed. An overview of all the training list for the

management for general viewing of training courses such as training topic, training date, training evaluation etc.

As refer to Table 4.4, the complete training courses are in the SharedDrive and the evaluation list is in HR Admin 2 Personal Computer. This will complicate the process of viewing and retrieving report. Hence, by having the Training Course Catalog module, it has become a central platform for all HR Admin to view all the training courses for the entire year as well as each evaluation marks for each training.

4.2.4 Training Attendance Update Module

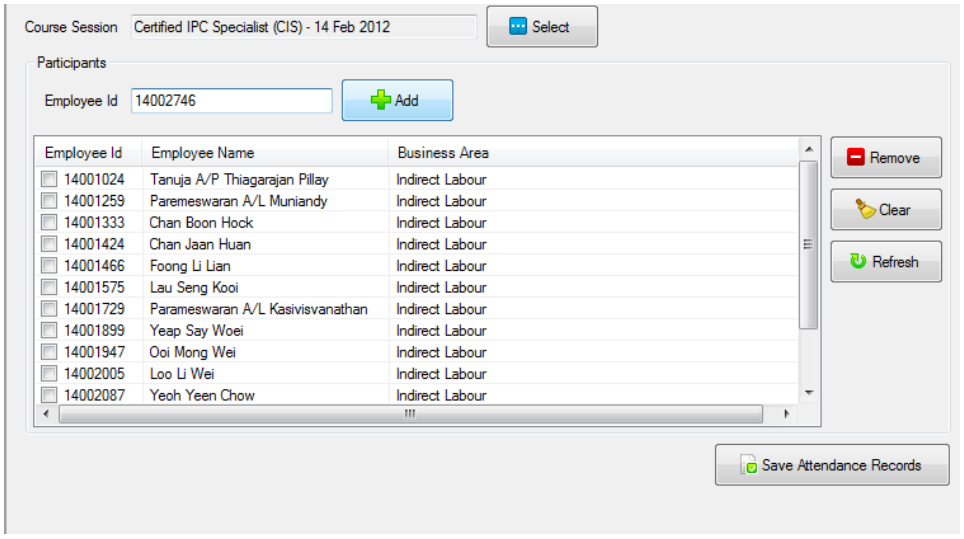

Figure 4.5: Screen shot of Training Attendance Update Module

Updating Training Attendance Module enable the user to record the employees record which have already attended the trainings. The recording of attendance is a simple process which is only typing the employees' ID. Once the employee's ID is recorded is click 'ADD', it will automatically finds out the details of the employee and record it into the database. The main function of recording attendance, linking into the database and saving the attendance record is successfully executed. The minor function such as removing attendance, clearing part of the records and refreshing the records are also successfully executed. The

4th Function of Updating Training Attendance Module is successfully executed as well as the database is successfully linked.

This module helps the HR Admin in recording the training attendance. Training Database Automation System allow multiple users at a time. Although there are a few Admin assigned to key in the attendance for training at the same time but the database will be stored at 1 same place. Moreover, the admin will only need to select the course and key in the employee ID. This reduces the time needed for attendance record. Attendance Records module also consist of error checking. Whenever there is an invalid ID being keyed in, it will immediately notify the admin. This will reduce the human error. In addition, the employee ID is directly linked to the employee details, which ensure reduced missing spaces in the report later.

4.2.5 Flexible Criteria Report Retrieval Module

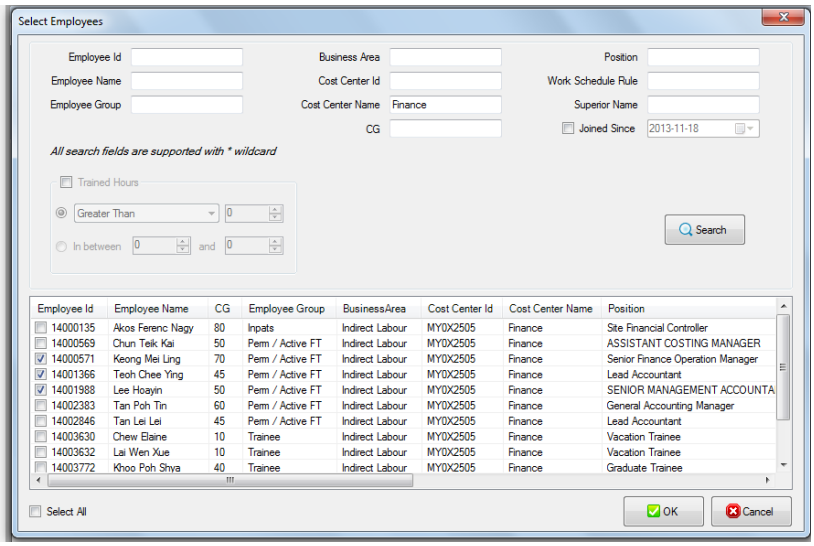

Figure 4.6: Screen shot of Flexible Criteria Report Retrieval Module

This Module enable the user to retrieve the report in a flexible manner which means, in either of the information the user have, he or she will be able to retrieve the reports that is needed. The reports available are Historical report or Suggestive Report. Historical Report indicates the report that shows all the participants that have attended any training before or the courses list that have

been conduct before. Suggestive Report indicates the suggested name list of participant for the upcoming trainings or the upcoming trainings available in the upcoming dates. Currently all the filtering for report and report creation is successfully executed. Databases have been successfully linked to the system.

Sample of the reports:

1. Historical Training Records

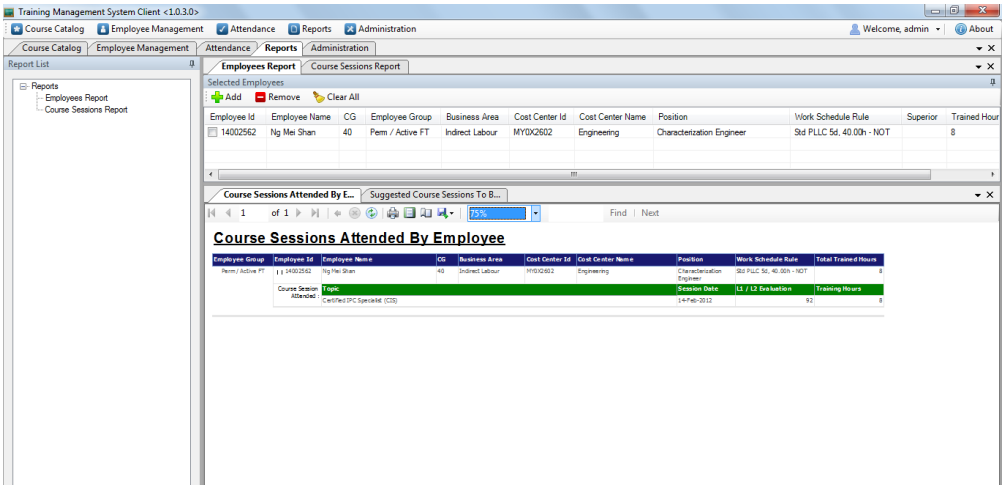

Figure 4.7: Screen shot of Sample report in Historical Training Records on Courses Session Attended by Employee

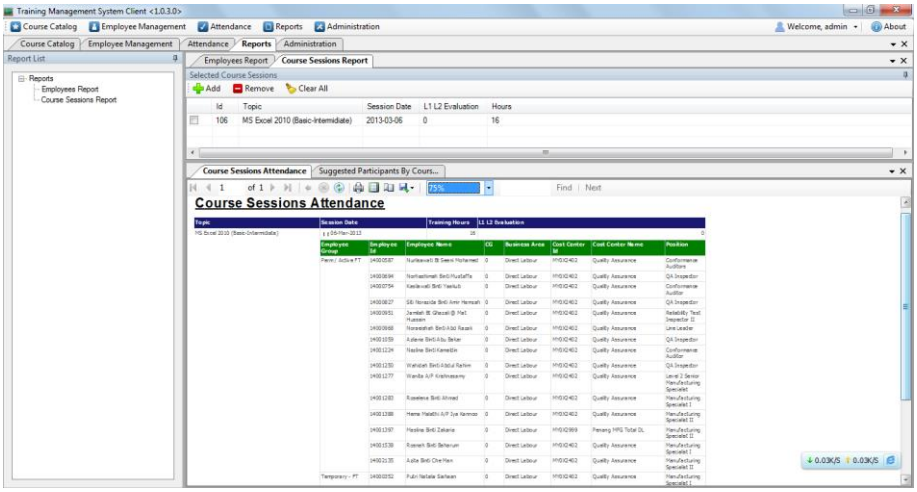

Figure 4.8: Screen shot of Sample report in Historical Training Records on Course Session Attendance

2. Suggested Training Records

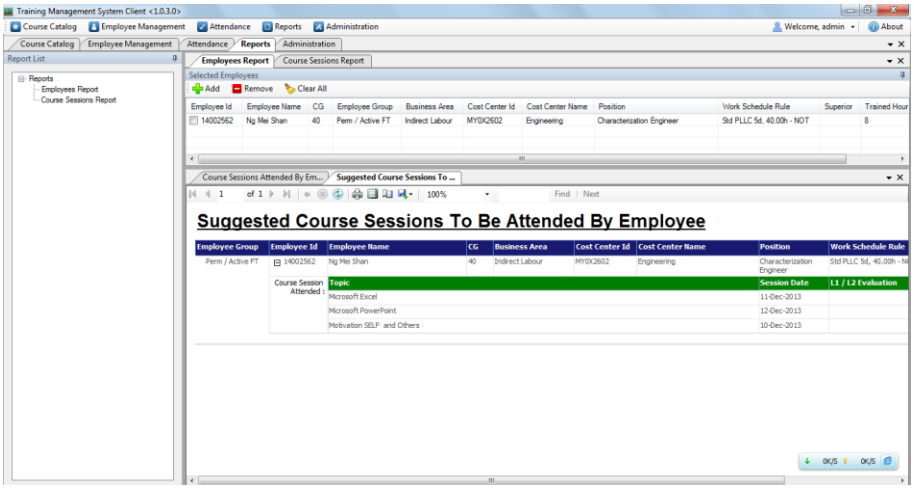

Figure 4.9: Screen shot of Sample report in Suggested Training Records on Sessions to be attended by Employee

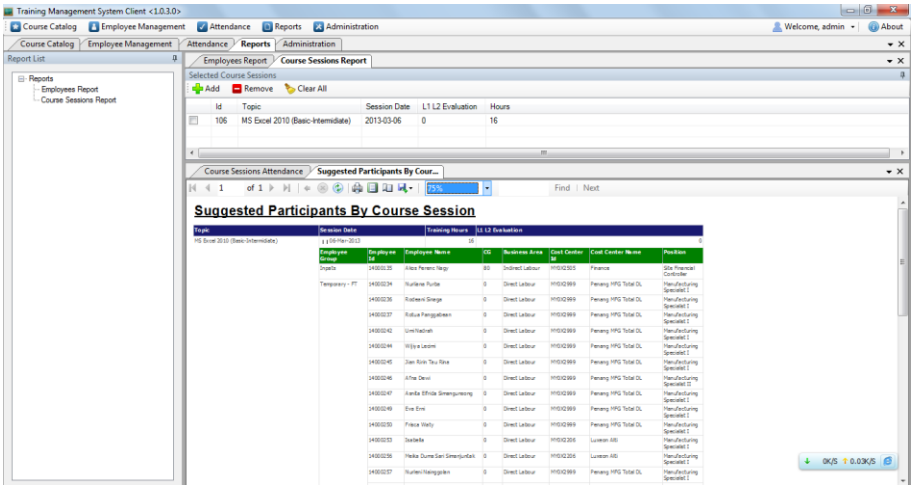

Figure 4.10: Screen shot of Sample report in Suggested Training Records on Course Session Attendance

4.2.6 Administration Control Module

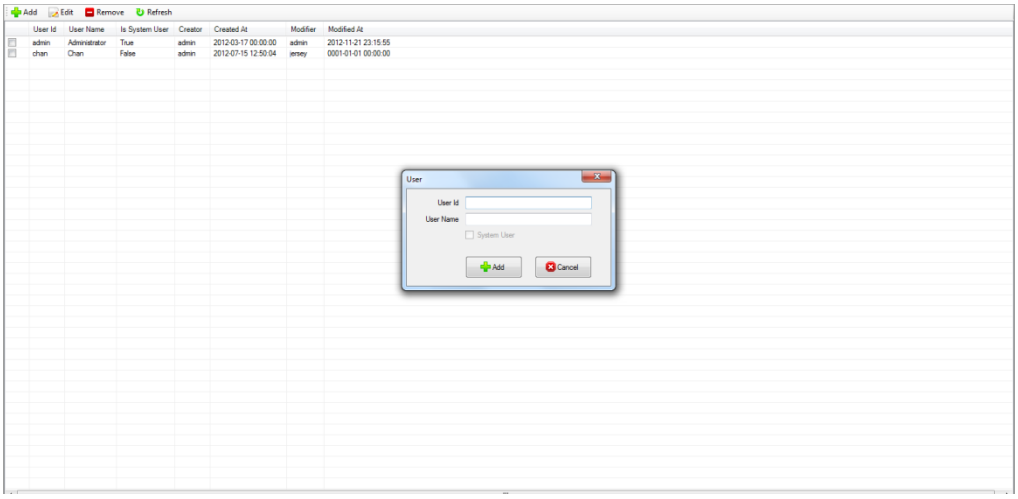

Figure 4.11: Screen shot of Administration Control module

This Module enables the administrator to control the access of the system. There will be 2 types of users which have either one of read authority or read & write authority. The administrator has the control of adding new users and assign password for the users. All function are successfully executed such as adding new user ID, user name, user password is successful and the databases are also successfully linked. Besides, function like Edit, Remove, Refresh and Alphabetical arrangement are also successfully executed. Admin control module enables the admin to create, add and edit user. Admin can control which user can have both read/write function and only read function. Any forgetting or user ID or password can also be retrieved from admin.

In summary, the core function of all modules and the creation of the database are successfully executed in time and even ahead of the schedule. All modules are then proceeding to user testing. It is vital to have different users and related stakeholders to test the system to ensure that the system is really relevance and helpful to the user. Final modifications are also important to have fine adjustment accordingly to the tester's recommendation.

4.3 TEST RESULTS & DISCUSSION

4.3.1 Stakeholders Testing

During the earlier stages, recommendation, ideas and advices have been gathered from stakeholders from PHILIPS LUMILEDS LIGHTING COMPANY from different department such as Human Resources, IT and Engineering. All the stakeholders are anticipating the completion of the system. Hence, before the completion of the system development, all the stakeholders have been gathered to test the Alpha Version of the system. The alpha testing is the first part of testing. After the test of Alpha Version, the system has been redeveloped and modify. The software has passed alpha testing and move on to beta testing. Typically, alpha and beta testing has been done after the formal test plan has been successfully completed. It is done by 15 stakeholders from various position in HR who have contributed their ideas earlier. Their further ideas and recommendation of the Refined Version system has been noted and modification on the system has been made. 15 stakeholders have agreed the main function that needs to be included for this stage as below:

- Complete view of Employee details & Topic Lit
- Attendance Record Module
- Flexible Report Retrieval Module
- Administration Control Module

After completing the refined version and include all the main function that the stakeholders are requesting, Beta Testing has been conducted to the same group of people and 5 more personnel from different industries for affirmation of the system is friendly and flawless.

4.3.2 Random User Testing

It is important to let random user to test on the system to ensure that Training Database Automation System is a user-friendly and easy-to-use system. There are 5 random users throughout PHILIPS LUMILEDS LIGHTING COMPANY and personnel from other industry to do the testing on the Beta Version System.

Their further ideas and recommendation of the Beta Version system has been noted and modification on the system has been made.

After the testing on Beta version of the system, simple survey has been conducted to gather their opinion regarding the system. The survey has been done for 20 personnel, 15 from Philips Lumileds Lighting Company and 5 from various companies. The company comprises of Multinational companies and Small Medium Enterprise.

4.3.3 Result for the survey

i) Is the System useful for the organization?

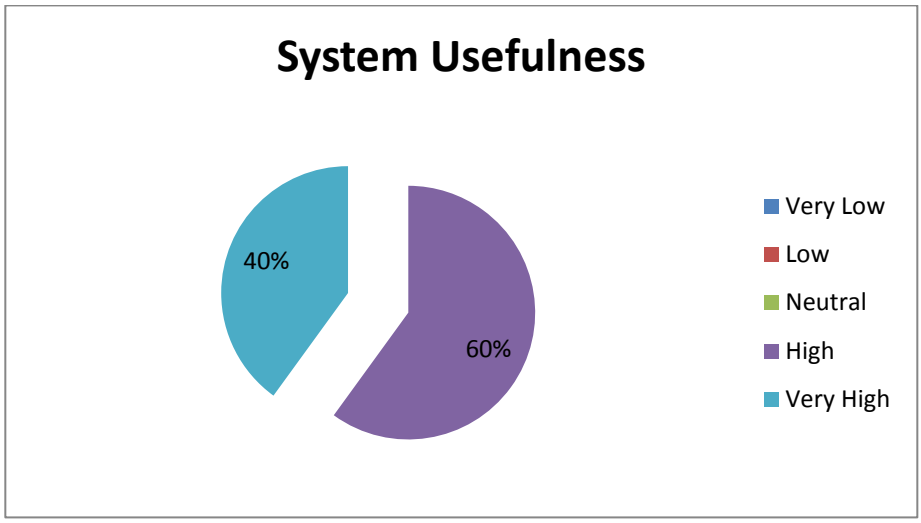

Figure 4.12: Pie chart for Survey Result on System Usefulness

The system usefulness if measured under below terms:

- Relevancy of the system towards work.
- Helpful in recording and retrieving training records
- Higher Accuracy and Completeness

The results shows that 12 users think Training Database Automation System is highly useful in their work where 8 users think that it is very highly useful in their work. No users disagree on the system usefulness after testing on it. It

shows that it is agreeable that Training Database Automation System is relevant to the work and it is helpful in recording and retrieving training records which are also higher in accuracy and completeness.

ii) Is the System friendly enough for the users?

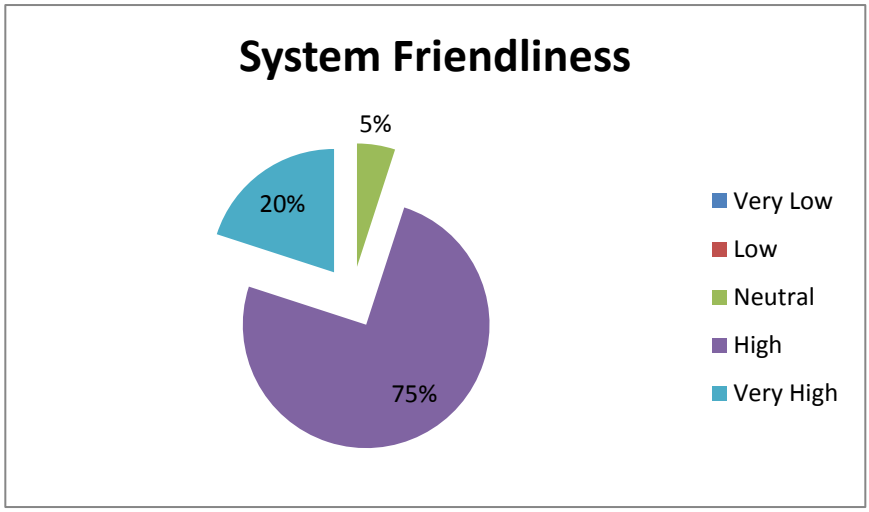

Figure 4.13: Pie chart for Survey Result on System Friendliness

The system friendliness is measured under below terms:

- Less Click needed for execution
- All Buttons are clear for understanding
- Colours are suitable for the system
- No complication in the system that need explanation

The result shows that 1 user thinks the System friendliness is just normal whereas 15 users agree that the system is friendly to use and 4 users is highly agree that the system is friendly to use. Hence, it is agreeable that the system only require a few clicks for execution, buttons are clear, color used are suitable and its simple to use.

iii) Will the system reduce the workload and time?

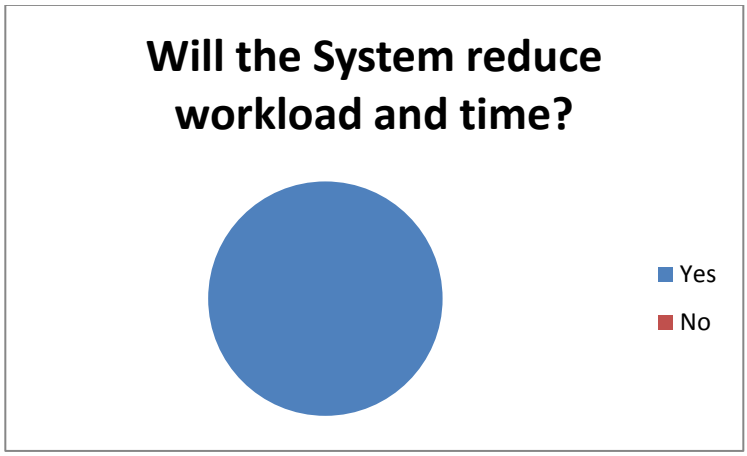

Figure 4.14: Pie chart for Survey Result on workload reduced after using the system

All 20 users agree that by having Training Database Automation System, it will help them in reducing workload and time especially in recording and retrieving training records.

iv)Will the user recommend the system to their organization?

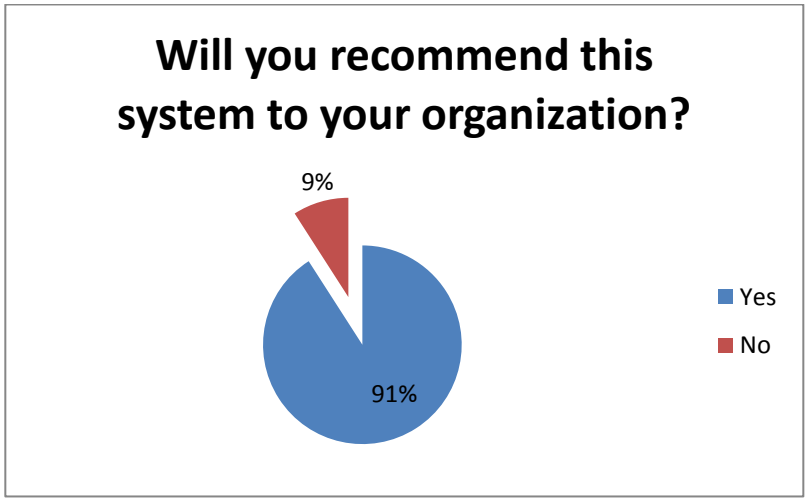

Figure 4.15: Pie chart for Survey Result on system recommendation

18 users will recommend this system to their company but there are 2 users will not recommend this system as they already have their in-house developed system that suits their working environment.

v) What do the user like most about the system?

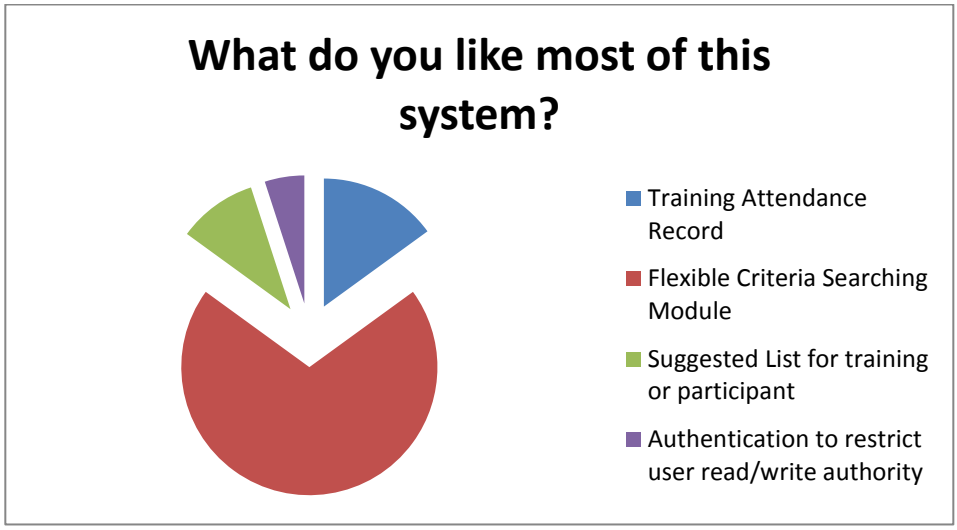

Figure 4.16: Pie chart for Survey Result on most preference function

The survey also asked for the most like function or module in Training Database Automation System. 3 of the users like the Training Attendance Record the most, 15 of them like the flexible criteria searching modules the most, 12 of the users like the Suggested List for training or participant the most while 1 of them like the Login Authentication the most. The reason of their likes is related to their work routine such as users that like about the training attendance record are mostly HR admin who deals with attendance recording. Users that prefer Flexible Criteria Searching and Suggested List are mainly HR personnel or manager who needs to retrieve report for audit session or needed to make decision on assigning employee for training. While the user who prefer the login authentication the most are the top management who truly understand the sensitivity of employee details and confidentiality of training records.

Last but not least, the survey also asked the users to suggest any modules they would like to have in the future or it is recommended to be included in the system. 15 of them have no suggestion whereas 2 of them suggested the interactive modules which enable the system admin to interact with the training participants. Another 3 user suggested adding in an enrolment module which can

automatically send email for the participant for training enrollment. All these suggestions will be included in the future recommendation for Training Database Automation System.

Besides the survey conducted, the time needed for key in attendance (Refer to Table 4.5) and searching various criteria (Refer to Table 4.6) by using Training Database Automation System has also measure as below:

Time comparison of key in 25 Attendance Records:

Personnel	**Key In Time (Min) BEFORE Using System**	**Key In Time (Min) AFTER Using System**
HR Admin 1	10	3
HR Admin 2	9	2
HR Admin 3	11	2
HR Admin 4	12	2
HR Admin 5	8	3
HR Admin 6	7	2
HR Admin 7	7	2
HR Admin 8	9	2
Average	9.125	2.25

Table 4.7: Time comparison on attendance key in before and after using Training Database Automation System

There is a significant reduce in time needed by using Training Database Automation System. The time needed before using the system is 9.125 minute while after using the system, the HR Admin only need averagely 2.25 minute to record the attendance of 25. There is an improvement of 75.3% in time needed for recording attendance for 25participants.

Time comparison of retrieving reports for multiple criteria:

Criteria	Test Personnel	Time Needed Before(min)	Time Needed After(min)	Test Personnel	Time Needed(min)	Time Needed After(min)
1. Training that has been attended by all Finance Department personnel who has joined the company since 2011	HR Admin 1	5	2	HR Admin 6	6	1.5
2. Training that has been attended by employee under supervision of Mr. Scott	HR Admin 2	6	2	HR Admin 7	6	1
3. Training that has been attended by employee is in working schedule A and joined the company since 2010	HR Admin 3	10	2	HR Admin 8	11	2
4. How many employee in Colour Engineer Department has attended Microsoft Powerpoint Training	HR Admin 4	5	1	HR Manager	6	1
5. Training that exceed 90marks of Evaluation marks	HR Admin 5	8	1	HR Senior Manager	12	2
Total		**34**	**8**		**41**	**7.5**

Average Time BEFORE using the System (min)	37.5
Average Time AFTER using the System (min)	7.75

Table 4.8: Time comparison on retrieving report on various criteria before and after using Training Database Automation System

There is a significant reduce in time needed by using Training Database Automation System. The time needed before using the system is average 37.5 minute while after using the system, the HR Admin only need averagely 7.75 minute to retrieve the reports of the criteria above. There is an improvement of 79.3% in time needed for retrieving the report.

CHAPTER 6
CONCLUSION & RECOMMENDATION

With the right training yields right attitude, hence empower employees to contribute more for the company as well as their own career path. Organizations that invested in training and development will have the benefits of obtaining higher knowledge level of workers and newly updated skills of its employees to perform much better in the fields of their works. Consequently, in order to have better management in sending employees to training and maintaining the training records, it is crucial to have a training database automation system. This system is developed using Visual basic for user interface and MySQL for database. Prototyping methodology is adopted in the development of the system. With the implementation of the Training Database Automation System, the main problems of PHILIPS LUMILEDS LIGHTHING COMPANY will be solved. The system will ensure an efficient way in recording the training data; provide an excellent navigation interface and functions to retrieve the training records in a more flexible ways. This system also provide a suggested training list or participant list which will helps managers to be able to allocate the right staff for the right training. Moreover, it provides better control on accessibility by having login authentication to protect and sensitive and highly confidential information. Survey has been done by the various users and the results shows positive outcome by using Training Database Automation System and has been recognized by Philips Lumileds Lighting Company.

For future enhancement, this system will be implemented in web-based environment which will encourage interaction. Besides that, it will also designed to suits all companies environment and add in decision support system to make the system more sophisticated. Other additional features such as prompt time reminder and training enrolment module will also be included in the future.

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APPENDIX

APPENDIX 1: Training Attendance in Microsoft Excel

APPENDIX 2: Training Attendance in Microsoft Excel with Macro

APPENDIX 3: Survey Form

APPENDIX 1: Training Attendance in Microsoft Excel

#	Name	Employee No.	Dept Name	Dept No	Position	Topic	Date
1	Kew Lee Yong	14002756	PD Phillopspher	2515	Product Development Engineer	Negotiate For Result	17-18 Jan 2012
2	Cheok Wye Leong	14002656	PD - Flash	2514	Senior Product Development Engineer	Negotiate For Result	17-18 Jan 2012
3	Ashraf Mohd Gaos	14002439	PD Phillopspher	2515	Senior Process Development Engineer	Negotiate For Result	17-18 Jan 2012
4	Lau Kam Yew	14002428	Engineering	2602	Senior Software Architecture Engineer	Negotiate For Result	17-18 Jan 2012
5	William Thanaraj	14002357	PD Phillopspher	2515	Lead Process Development Engineer	Negotiate For Result	17-18 Jan 2012
6	Yong Mee Lee	14000194			Product Development Manager	Negotiate For Result	17-18 Jan 2012
7	Loh Saw Imm	14000575	Quality Assurance	2402	LEAD DOCUMENT CONTROL OFFICER	Negotiate For Result	17-18 Jan 2012
8	Ellen Nifas	14002677	Quality Assurance	2402	Lead Quality Engineer	Negotiate For Result	17-18 Jan 2012
9	Kang Hooi Choo	14002691	PD - Systems Support	2517	Senior Project Lead Engineer	Negotiate For Result	17-18 Jan 2012
10	Jenny Chua Pei Yong	14002074	Engineering	2602	LEAD PROCESS ENGINEER	Negotiate For Result	17-18 Jan 2012
11	Tan Chin Mon	14002165	Quality Assurance	2402	Lead FA & Reliability Engineer	Negotiate For Result	17-18 Jan 2012
12	Yusrizal Yonos	14001722	Quality Assurance	2402	LEAD QA ENGINEER	Negotiate For Result	17-18 Jan 2012
13	Lee Seok Iem	14000820	Quality Assurance	2402	LEAD QA OFFICER	Negotiate For Result	17-18 Jan 2012
14	Tan Choon Im	14002422	Engineering	2602	Test Engineering Manager	Negotiate For Result	17-18 Jan 2012
15	Chan Kean Man	14002040	Quality Assurance	2402	Senior QA Engineer	Negotiate For Result	17-18 Jan 2012

1	Hamedah Binti Musa	14001281	Engineering	2602	Associate Engineer I	7 QC Tools	15 February 2012
2	Ng Mei Shan	14002562	Engineering	2602	Characterization Engineer	7 QC Tools	15 February 2012
3	Poo Tarn Shi	14002806	Engineering	2602	Graduate Trainee-Engineering	7 QC Tools	15 February 2012
4	Roslina Binti Johor	14002803	Engineering	2602	Graduate Trainee-Engineering	7 QC Tools	15 February 2012
5	Khor Luh Giin	14002429			Lead Product Engineer	7 QC Tools	15 February 2012

1	Ng Shian Kee	14002693	Engineering	2602	Lead Process Engineer	MS Excel 2007	22-23 February 2012
2	Mohd Hasrol Nizam bin Abd Hamid	14002802	Engineering	2602	Graduate Trainee-Engineering	MS Excel 2007	22-23 February 2012
3	Lam Wan Yee	14002793	Human Resource	2521	vacation Trainee	MS Excel 2007	22-23 February 2012
4	Ng Li Khun	14002808	Human Resource	2521	Vacation Trainee	MS Excel 2007	22-23 February 2012
5	Lim Li Lean	14002177	PD Phillopspher	2515	Lead Product Characterization Engineer	MS Excel 2007	22-23 February 2012
6	Teoh Hooi Nee	14002661	SBS Finance	2525	Accountant	MS Excel 2007	22-23 February 2012
7	Ooi Jia Hui	14002720			Account Assistant III	MS Excel 2007	22-23 February 2012
8	Tan Poh Tin	14002383	Finance	2505	Assistant General Accounting Manager	MS Excel 2007	22-23 February 2012
9	Lim Lay Ean	14002085	SBS Finance	2525	Accountant	MS Excel 2007	22-23 February 2012
10	Ling Pau Fang	14002014	Engineering	2602	Lead Characterization Engineer	MS Excel 2007	22-23 February 2012
11	Khong Lai Sham	14002642	PD - Automotive HP	2513	Senior Product Development Engineer	MS Excel 2007	22-23 February 2012
12	Ng Siew Nee	14001778	PD - Chara	2518	Lead Product Characterization Engineer	MS Excel 2007	22-23 February 2012
13	Teoh Cheng Yen	14002078	Engineering	2602	LEAD PRODUCT ENGINEER	MS Excel 2007	22-23 February 2012
14	Tan Hong Aun	14001034			Lead Process Engineer	MS Excel 2007	22-23 February 2012
15	Foo Ai Ling	14002349	SBS Finance	2525	Accountant	MS Excel 2007	22-23 February 2012

1	Kenny Loh Kheng Poh	14002614	Quality Assurance	2402	Associate Engineer III	Certified IPC Specialist (CIS)	14-15 February 2012
2	Parameswaran A/L Kasivisvanathan	14001729	Quality Assurance	2402	ASSOCIATE ENGINEER II	Certified IPC Specialist (CIS)	14-15 February 2012
3	Yeap Say Woei	14001899	Luxeon rebel-Cap	2806	Senior Test Engineer	Certified IPC Specialist (CIS)	14-15 February 2012
4	Ooi Mong Wei	14001947	Luxeon rebel-Cap	2806	Senior Product Engineer	Certified IPC Specialist (CIS)	14-15 February 2012
5	Tan Chong Hock	14001337	Luxeon rebel-Cap	2806	Senior NPI Engineer	Certified IPC Specialist (CIS)	14-15 February 2012
6	Tan Choon Shih	14002462	Luxeon rebel-Cap	2806	Lead Process Engineer	Certified IPC Specialist (CIS)	14-15 February 2012
7	Tanuja A/P Thiagarajan Pillay	14001024	Quality Assurance	2402	QA SENIOR SUPERINTENDENT	Certified IPC Specialist (CIS)	14-15 February 2012
8	Parameswaran A/L Muniandy	14001259	Quality Assurance	2402	Quality Project Leader	Certified IPC Specialist (CIS)	14-15 February 2012
9	Kumarentran A/L Sundra Pandian	14002213			Lead Supplier Quality Engineer	Certified IPC Specialist (CIS)	14-15 February 2012
10	Yeoh Yeen Chow	14002087	PD - Systems Support	2517	DESIGN ENGINEER	Certified IPC Specialist (CIS)	14-15 February 2012
11	Chan Jaan Huan	14001424	PD - Systems Support	2517	Senior Design Engineer	Certified IPC Specialist (CIS)	14-15 February 2012
12	Foong Li Lian	14001466	PD - Flash	2512	Senior Project Lead Engineer	Certified IPC Specialist (CIS)	14-15 February 2012
13	Loo Li Wei	14002005	Luxeon rebel-Cap	2806	Senior NPI Engineer	Certified IPC Specialist (CIS)	14-15 February 2012
14	Chan Boon Hock	14001333	Luxeon rebel-Cap	2806	Senior Process Engineer	Certified IPC Specialist (CIS)	14-15 February 2012
15	Lau Seng Kooi	14001575	Sup Qlty assrnce	2407	Senior Supplier Quality Engineer	Certified IPC Specialist (CIS)	14-15 February 2012

1	Roslina Binti Mat	14000518	Quality Assurance	2402	Conformance Auditors	1st Aid & CPR	19 February 2012
2	Nurriah Bt Ahamed	14000614	Quality Assurance	2402	Line Leader	1st Aid & CPR	19 February 2012
3	Poongavanam A/P Tangkamony	14000818	Quality Assurance	2402	Conformance Auditor	1st Aid & CPR	19 February 2012
4	Nurazlina Binti Mohamed Eusoff	14001386	Engineering	2602	Manufacturing Specialist II	1st Aid & CPR	19 February 2012
5	Azizah Binti Arshad	14000733	Penang MFG Total DL	2999	Manufacturing Specialist II	1st Aid & CPR	19 February 2012
6	Nurashikin Binti Mohd Sahabudin	14000848	Penang MFG Total DL	2999	Manufacturing Specialist II	1st Aid & CPR	19 February 2012
7	Norazli Binti Samsudin	14001349	Penang MFG Total DL	2999	Manufacturing Specialist II	1st Aid & CPR	19 February 2012
8	Mashitah Bt Izaham Musa	14001223	Penang MFG Total DL	2999	Manufacturing Specialist I	1st Aid & CPR	19 February 2012
9	Che Tom Binti Yahaya	14001904	Penang MFG Total DL	2999	Manufacturing Specialist I	1st Aid & CPR	19 February 2012
10	Ilani Binti Md Shaik Ismail	14001045	Penang MFG Total DL	2999	Line Leader	1st Aid & CPR	19 February 2012
11	Siti Rohana Binti Nordin	14000881	Penang MFG Total DL	2999	Manufacturing Specialist II	1st Aid & CPR	19 February 2012
12	Asmah Binti Hanif	14001132	Penang MFG Total DL	2999	Manufacturing Specialist I	1st Aid & CPR	19 February 2012
13	Haslinda Binti Mohamed Kamal	14001121	Supply Chain & OM	2401	Manufacturing Specialist I	1st Aid & CPR	19 February 2012
14	Mariam Binti Hassan	14001939	Supply Chain & OM	2401	Manufacturing Specialist I	1st Aid & CPR	19 February 2012
15	Siti Nadia Binti Mohd Sidek	14001768	Penang MFG Total DL	2999	Manufacturing Specialist II	1st Aid & CPR	19 February 2012
16	Saodah Binti Long	14001992	Penang MFG Total DL	2999	Manufacturing Specialist I	1st Aid & CPR	19 February 2012
17	Sharmila Binti Ismail	14001510	Penang MFG Total DL	2999	Manufacturing Specialist II	1st Aid & CPR	19 February 2012
18	Norhusni Binti Hussain	14001252	Penang MFG Total DL	2999	Manufacturing Specialist I	1st Aid & CPR	19 February 2012
19	Thiyagarajan A/L Karpayya	14002090				1st Aid & CPR	19 February 2012
20	Nila Seetha Binti Ahmad Kedah	14001702	Penang MFG Total DL	2999	MANUFACTURING SPECIALIST 1	1st Aid & CPR	19 February 2012
21	Jusneeta Binti Abu Bakar	14000824	Penang MFG Total DL	2999	Manufacturing Specialist II	1st Aid & CPR	19 February 2012

APPENDIX 2: Training Attendance in Microsoft Excel with Macro

		Key In Name			
		Key In Department			
		Key In Topic			
		Press Enter for Result			

Training Records

Name	Emp No	Position	Department	Topic	Date
Rohani Binti Abd Hamid	14001448	Engineering Operator	Engineering	(BE-Lean Pro) Lean Process Level Training	24-Apr-12
Abd Hamid Mohd Hanis	14001448	Engineering Operator	Engineering	(BE-Lean Pro) Lean Process Level Training	24-Apr-12
Foong Chia Sing	14002841	Vacation Trainee	Engineering	(BE-Lean Pro) Lean Process Level Training	2-Apr-12
Abd Hamid Mohd Hanis	14001448	Engineering Operator	Engineering	(M)edium (T)erm (P)lanning	15-Feb-12
Mohd Yusoff Ileyati	14002829	Vacation Trainee	Quality Assurance	(M)edium (T)erm (P)lanning	15-Feb-12
Abd Hamid Mohd Hanis	14001448	Engineering Operator	Engineering	A basic grounding in effective people management	9-Jan-12
Abd Hamid Mohd Hasrol Nizam	14002802	Graduate Trainee-Engineering	Engineering	A basic grounding in effective people management	6-Mar-12
Chow Rong Hui	14002920	Vacation Trainee	Engineering	A basic grounding in effective people management	28-Jun-12
Chua Pei Yong	14002074	LEAD PROCESS ENGINEER	Engineering	A basic grounding in effective people management	9-Jan-12
Noor Rahman Noor Izzatie Husna	14002828	Vacation Trainee	Eng Equip grooup	A basic grounding in effective people management	15-Feb-12
Tan Chang You	14002744	Graduate Trainee-Engineering	Luxeon rebel-Cap	A basic grounding in effective people management	18-Dec-11
Abd Hamid Mohd Hanis	14002766	Vacation Trainee	Engineering	Acknowledging your colleagues' ideas	6-Mar-12
Abdul Haris Faranadia	14002797	Graduate Trainee-Engineering	Quality Assurance	Acknowledging your colleagues' ideas	20-Mar-12
Abdul Manan Nor Hazwani	14002738	Equipment Engineer	Eng Equip grooup	Acknowledging your colleagues' ideas	5-Mar-12
Abu Hassan Mohd Fareezie	14002724	Equipment Engineer	Eng Equip grooup	Acknowledging your colleagues' ideas	6-Mar-12
Ahmad Supian Salbiah	14001621	Manufacturing Specialist I	Penang MFG Total DL	Acknowledging your colleagues' ideas	5-Mar-12
Mior Jailla Mior Mohd Syafiq	14002784	Vacation Trainee	Engineering	Acknowledging your colleagues' ideas	20-Mar-12
Mohamad Maharum Mohamad Muazam	14002791	Vacation Trainee	Engineering	Acknowledging your colleagues' ideas	5-Mar-12
Mohamed Busari Mohamed Norsyafiq	14002822	Vacation Trainee	Eng Equip grooup	Acknowledging your colleagues' ideas	5-Mar-12
Sayed Abdullah Abdul Rahman	14002812	Vacation Trainee	Eng Equip grooup	Acknowledging your colleagues' ideas	5-Mar-12

APPENDIX 3: Survey Form

Survey for Training Database Automation System

Department :
Position:
Years of Working:

1. Please rate the Usefulness of the system
Relevancy of the system towards your work.
Helpful in recording and retrieving training records
High Accuracy and Completeness

1	Totally Disagree	2	Disagree	3	Neutral	4	Agree	5	Totally Agree

2. Please rate the Friendliness of the system
Less Click needed for execution
All Buttons are clear for understanding
Colours are suitable for the system
No complication in the system that need explanation

1	Totally Disagree	2	Disagree	3	Neutral	4	Agree	5	Totally Agree

3. Will the system reduce your workload?

☐ Yes How: _____
☐ No Reason: _____

4. Will you recommend this system to your organisation?

☐ Yes
☐ No Reason: _____

5. What do you like most in this system?

☐ a Training Attendance Record
☐ b Flexible Criteria Searching Module
☐ c Suggested List for training or participant
☐ d Authentication to restrict user read/write authority

6. Do you have suggested modules to be added in the system?

☐ Yes Suggestion: _____
☐ No