Web-Based Industrial Training Management System

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Acknowledgment

At last, intms project completed successfully. It's not easy to come up with the proper system and it's documentation, but, we are grateful that every section, unit, and module of this project completed successfully. Final Year Project – intms, involved many people and they are very kind with us. First of all, we would like to thank our Supervisor, Ms. Dayang Nur Fatimah Awang Iskandar for her very meaningful ideas, suggestions, concerns, and everything. She was very kind to us and she also as our friend. A thousand applause we would like to give to Faculty of Information Technology's Information System Officer – Mr. Hadinata Hadi which provided a computer (intms server) and create our intms internet connection (http://intms.fit.unimas.my). Thanks. Special thanks to ourselves as intms project team members, Hasmin Bin Isahak, Hirman Bin Sidi@Saidi, Muhammad Fakhrul Hilme Bin Bakar and intms Project Manager – Sani Bin Songli. Each members' commitments and contributions are very good – unbelievable and unremarkable. We hope we can completing intms and making intms a very useful system. We also would like to thank Macromedia, Inc. and Ulead Systems, Inc. for their useful technology and software. Last but not least, we would like to thank our supportive family and friends all over the world. Thanks.
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Abstract

Industrial training program is a compulsory course in Faculty of Information Technology, UNIMAS. It is very good to have in any university as it's putting students to the real situation of works. Besides that, industrial training also used to promote Faculty of Information Technology the companies. This is very important, because without promotes companies do not know what do students do in Faculty of Information Technology. If it is promoted then company will know. But, problems encountered when large volume of students applied. This students have to find their company for training, but, there are very little company that register to the Faculty of Information Technology, and company are limited cause by difficulty of registering. As for Coordinator, he/she are the most busy person in faculty – managing students' documents. To solve this problems, intms is the only shot. intms developed specifically to solve this problems. intms on Industrial Training Management System focus on management and works as Coordinator. So, Coordinator will not busy anymore and student will not facing any problems anymore. Company now are easily register to intms as intms are the web-based system and can be access anywhere as long as the internet connection are available.

1.1. Introduction

Industrial training program is a compulsory course for students in Faculty of Information Technology, University Malaysia Sarawak. It is normally taken every year and lasts for three months. The management of the documents needs to be processed, which is done by the Coordinator. The Coordinator is the most busy person in the Faculty of Information Technology.

The traditional way of managing these documents faced problems. It was difficult to manage the workload of the Coordinator, who managed the student's documents distributed to the industrial companies. The Coordinator faced problems in registering companies. The industrial training program (intms) was developed specifically to solve these problems. intms is an industrial training system which focuses on managing and supporting students in the process of industrial training. The Coordinator is responsible for managing the documents and coordinating the efforts between the students and companies. The system allows easy registration for companies, and it also ensures that the students do not face any problems. The system is web-based and can be accessed from anywhere providing there is an internet connection.

1.2. Problem Statement

The current system for managing industrial training was found to be difficult to manage. The traditional method of distributing the documents to the companies was found to be inefficient and time-consuming. The Coordinator faced challenges in managing the workload, and the students faced difficulties in finding companies for their training. The system intms was developed to address these issues. intms is a web-based system that allows companies to register easily and provides support to the Coordinator in managing the documents. The coordinator is the most busy person in the faculty and needs to handle the documents of the students. The system intms is designed to help the Coordinator by automating the process of managing the documents.

Table 1.1: Problem Statement

<table>
<thead>
<tr>
<th>Actor</th>
<th>Function</th>
</tr>
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<tbody>
<tr>
<td>Industrial Training</td>
<td></td>
</tr>
<tr>
<td>Coordinator</td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td></td>
</tr>
<tr>
<td>Company</td>
<td></td>
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Demo (Visit http://www.pdfsplitmerger.com)
Chapter 1: An Overview

1.1. Introduction

Industrial Training is one of the compulsory courses in Faculty of Information Technology, University Malaysia Sarawak. Since it was offered, hundreds of students enrolled the course yearly and as for the Industrial Training Coordinator, he/she has to manage every document needed. Until early 2002, the same way was used to manage all the documents which is done manually. For example, the students' application letter, Industrial Training Coordinator has to type every student's information needed, print it out and send it to the company.

The traditional Industrial Training Management System (intms) which is done manually faced problems such as heavy workload for Industrial Training Coordinator and also the supporting staff. In addition to that, there is lack of the information for the company about the Industrial Training course in UNIMAS. This Industrial Training Management System (intms) would try to reduce these problems and help the related actors in this Industrial Training procedures from beginning until the end.

1.2. Problem Statement

The current system is done manually, where is heavily using the paper and seems to be very difficult to manage as the course is taken by many students – about 200 students yearly. In the traditional system, the information about the Industrial Training course could not be distributed to the company easily.

There are there main actors that face the problems which are Industrial Training Coordinator, student and company. The lists of identified problems of the current system are stated as below:

<table>
<thead>
<tr>
<th>Actor</th>
<th>Problems</th>
</tr>
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<tbody>
<tr>
<td>Industrial Training Coordinator</td>
<td>1. Heavy workload – Industrial Training Coordinator have to manage the entire document needed for every student such as cover letter and resume.</td>
</tr>
<tr>
<td></td>
<td>2. Serious problems in communication with the company as only one Coordinator handle hundreds of phone call from the company which results he/she work as the operator.</td>
</tr>
<tr>
<td>Student</td>
<td>1. Difficulties in getting the information about the Industrial Training its latest news.</td>
</tr>
<tr>
<td></td>
<td>2. Time consuming to confirm the Industrial Training Company.</td>
</tr>
<tr>
<td>Company</td>
<td>1. Lack of information about the Industrial Training in UNIMAS.</td>
</tr>
<tr>
<td></td>
<td>2. Do not have the clear view of the students' qualification.</td>
</tr>
</tbody>
</table>

Table 1.1: Problems of the current system.
1.3. Purpose of Study

The suggestion of developing the Industrial Training Management System is to give the best solution to solve the problems faced by the current manual system.

To solve all these problems, the Industrial Training Management System has come up with five main objectives. The objectives are:

1. This project is focus on web based system that provide a better management system to Industrial Training Coordinator, students and company.

2. This project is to enhance the current system for reducing workload to Industrial Training Coordinator, and simplify communication between company and Industrial Training Coordinator.

3. Minimise cost and time by eliminating the use of paper and this system will provide a better management such as auto-generate letters and reports.

4. Make a research on how to reduce difficulty management between Industrial Training Coordinator, students and companies.

5. Provide the user to use the information technology instead of provide a clear guideline of the Industrial Training for students and company.

Table 1.2: Objectives of the purpose of study.

1.4. Scope of Project

This intms project to be invented needs their own scope to make sure this project will follow what the scope of this project has decided for it. This web based system is only the solution of the Industrial Training management problems in Faculty of Information Technology, UNIMAS. Which means it's specifically develop for Industrial Training course in Faculty of Information Technology. Below are the list of the scopes for further required of this project:

1. This web based system developed for company, Industrial Training Coordinator and students.

2. This web based system will provide better services and management for Industrial Training Coordinator and also to Industrial Trainees (students who are taking Industrial Training).

3. The web based system will be designed to be a proposed system to solve and reduce the problems faced by the traditional Industrial Training Management System.

Table 1.3: Scopes of the project.

Therefore, the web based system came up with five main objectives. The objectives are:

(i) Provide a better management system

Better management system means that Industrial Training can be managed easily and less complex between the Industrial Training Coordinator and company or students. Beside that, this system for the Industrial Training will provide better organisation of cover letters and resumes. This system also enable or resend the generating system to make a better

(ii) Reduce workload

This system enables the Industrial Training Coordinator to reduce workload in the training system enabling the student from the training system.

(iii) Simplify communication

This web based system will provide better services and management for Industrial Training Coordinator and also to Industrial Trainees (students who are taking Industrial Training). The company can understand the Industrial Training easily and provide a clear guideline of the industrial training for students and company.

(iv) Provide a better organisation of cover letters and resumes.

The company can get Industrial Training Coordinators can understand the Industrial Training easily and provide a clear guideline of the industrial training for students and company.

(v) Help in prevent errors

Industrial Training Coordinators and students can get Industrial Training easily and provide a clear guideline of the industrial training for students and company.

1.5. Research Suggestion

The Industrial Training Management System is to reduce the human error of the current manual system. This system will be developed for company and Industrial Training Coordinator (intms) is to reduce the human error of the current manual system. Since the web based system can be accessed anywhere and at anytime, the Industrial Training Coordinator and student can easily access the system any time and provide a clear guideline of the industrial training for students and company.

The company can understand in...
resumes. The system will also remind the Industrial Training Coordinator either make a call or resend the documents needed. Additional features such as showing the students status and generating some pre-format reports will help Industrial Training Coordinator to manage and make a better decision for the future improvement of Industrial Training course.

(ii) **Reduce workload**

This system can manage all the documents needed for every student and the Industrial Training Coordinator. This will result in less workload and less time consuming as the system enable the Industrial Training Coordinator to auto-generate the cover letters for each student from the web based system.

(iii) **Simplify communication between company and Industrial Training Coordinator**

This web based system will enable the Industrial Training Coordinator to contact company through e-mail. The company will confirm or inform the acceptance of the students for Industrial Training. Besides that, company can also gain information about the Industrial Training or students.

(iv) **Provide a clear guideline of the Industrial Training for students and company**

The company will get more information about the Industrial Training and help them to understand more about the Industrial Training through this web based system. The students can get Industrial Training information through this web based system by surfing the web site of Industrial Training easily and prepared very well.

(v) **Help in promoting the Industrial Training course**

Industrial Training course will be promoted and can be use to all any higher education departments with the students who was get through this web based system. Beside that, this objective will get achievement if the students and Industrial Training Coordinator corporate together.

1.5. **Research Significance**

The Industrial Training Management System (intms) is the proposed system to solve and reduce the heavy workload for the Industrial Training Coordinator at the Faculty of Information Technology, UNIMAS. This is the first industrial training web based system to be developed in UNIMAS. The significance of the Industrial Training Management System (intms) is to provide a better management system for the Industrial Training, reduce the workload for Industrial Training Coordinator and supporting staff, simplify communication and provide a clear guideline of the Industrial Training for students and company.

Since the web based system can accessible via the web site, students can access from anywhere and anytime they wanted that the web based system provided the guideline for the Industrial Training report and log book for his/her Industrial Training, so that he/she knows very well what to do. Beside that, the students can get Industrial Training information through this web based system by surfing the web site of Industrial Training easily and prepared very well.

The company will get more information about the Industrial Training and help them to understand more about the Industrial Training from this web based system. This web based
system will provide the information to help the company to find out what are Industrial Training objectives by surfing the website of Industrial Training. The company will get through this web based system to view the student qualification and get more information about them very easily. The company may decide what kind of jobs that can be given to student which meet their qualification.

This web based system can generate documents (letters and reports) and enable students to key-in their resume and application online. It is also enable the company assessment to be done online.

1.6. Project Plan/Schedule

Project plan is done to organise the project team member to complete the Industrial Training Management System (intms) according to schedule and dateline set by Final Year Project Coordinator.

Project time-line are develop to approve the organization of the project team members to complete their task within the dateline set in the time-lines. These are the general time-lines for the project and may be alter slightly:

Final Year Project team members are chosen 15th July 2002 as a prior day and assign specific task in revising overall project by planning and scheduling. The project planning will be done in 28 days according to the schedule done by the project team. Project planning will be done after the project team members were chosen and complete project schedule on 21st August 2002 by reviewing and revising plan according on schedule. Within these period times, complete schedule of the project is complete.

After the project planning and scheduling was completed, the collecting data phase will begin. The collecting data phase is analysing target population or sample and distribute to organising the collected data. The collecting data phase is scheduled to be finished within 9 days starting from 22nd August 2002 until 3rd September 2002.

The analysis phase of the project will begin within 19 days starting from 4th September 2002 until 30th September 2002. This analysis phase is done after the collecting data phase was completed. The analysis phase is analysing the collected data and problem statement. After that, it will prepare and complete the problem solutions to define the system requirements.

The design phase of the proposed system will be done within 34 days starting from 30th September 2002 until 15th November 2002 that is on the second semester of the final year project. The design phase will be completed into two categories: prepare the system architecture design and prepare the database design.

The complete schedule of the final year project which is done using the Gantt Chart can be view in the Appendix B.

Below is the table of the simple project planning and schedule:

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Start</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning &amp; Scheduling</td>
<td>15-07-2002</td>
<td>21-08-2002</td>
</tr>
<tr>
<td>Task Name</td>
<td>Start</td>
<td>Finish</td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td>Revise overall project plan</td>
<td>15-07-2002</td>
<td>01-08-2002</td>
</tr>
<tr>
<td>Complete detailed plan for detailed design</td>
<td>02-08-2002</td>
<td>06-08-2002</td>
</tr>
<tr>
<td>Revise skeleton and generic plan for test</td>
<td>02-08-2002</td>
<td>06-08-2002</td>
</tr>
<tr>
<td>Brief team members</td>
<td>07-08-2002</td>
<td>07-08-2002</td>
</tr>
<tr>
<td>Complete phase estimate</td>
<td>08-08-2002</td>
<td>13-08-2002</td>
</tr>
<tr>
<td>Review plan</td>
<td>14-08-2002</td>
<td>14-08-2002</td>
</tr>
<tr>
<td>Revise plan</td>
<td>15-08-2002</td>
<td>19-08-2002</td>
</tr>
<tr>
<td>Complete project schedule</td>
<td>20-08-2002</td>
<td>21-08-2002</td>
</tr>
<tr>
<td>Collecting Data Phase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analysing target population and sample</td>
<td>22-08-2002</td>
<td>03-09-2002</td>
</tr>
<tr>
<td>Analysing collecting data methods</td>
<td>22-08-2002</td>
<td>23-09-2002</td>
</tr>
<tr>
<td>Prepare questionnaire &amp; interview questions</td>
<td>26-08-2002</td>
<td>28-08-2002</td>
</tr>
<tr>
<td>Distribute and collect questionnaire</td>
<td>29-08-2002</td>
<td>29-08-2002</td>
</tr>
<tr>
<td>Interview target sample</td>
<td>29-08-2002</td>
<td>29-08-2002</td>
</tr>
<tr>
<td>Organising collected data</td>
<td>30-08-2002</td>
<td>03-09-2002</td>
</tr>
<tr>
<td>Analysis Phase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analysing collected data</td>
<td>04-09-2002</td>
<td>12-09-2002</td>
</tr>
<tr>
<td>Analysing problem statement</td>
<td>04-09-2002</td>
<td>12-09-2002</td>
</tr>
<tr>
<td>Prepare problem solution</td>
<td>13-09-2002</td>
<td>19-09-2002</td>
</tr>
<tr>
<td>Revise problem solution</td>
<td>20-09-2002</td>
<td>24-09-2002</td>
</tr>
<tr>
<td>Complete problem solution</td>
<td>25-09-2002</td>
<td>30-09-2002</td>
</tr>
<tr>
<td>Define system requirements</td>
<td>25-09-2002</td>
<td>27-09-2002</td>
</tr>
<tr>
<td>Design Phase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design ERD for the entire system</td>
<td>30-09-2002</td>
<td>04-10-2002</td>
</tr>
<tr>
<td>Revise ERD design</td>
<td>07-10-2002</td>
<td>08-10-2002</td>
</tr>
<tr>
<td>Prepare system architecture design</td>
<td>30-09-2002</td>
<td>24-10-2002</td>
</tr>
<tr>
<td>Design context diagram</td>
<td>30-09-2002</td>
<td>04-10-2002</td>
</tr>
<tr>
<td>Design DFD Level 1</td>
<td>30-09-2002</td>
<td>04-10-2002</td>
</tr>
<tr>
<td>Design Child Diagram</td>
<td>07-10-2002</td>
<td>15-10-2002</td>
</tr>
<tr>
<td>Revise design</td>
<td>16-10-2002</td>
<td>24-10-2002</td>
</tr>
<tr>
<td>Prepare database design</td>
<td>30-09-2002</td>
<td>30-10-2002</td>
</tr>
<tr>
<td>Conceptual Design</td>
<td>30-09-2002</td>
<td>29-10-2002</td>
</tr>
<tr>
<td>Data analysis and requirements</td>
<td>30-09-2002</td>
<td>01-10-2002</td>
</tr>
</tbody>
</table>
Table 1.4: Project planning and scheduling.

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Start</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entity relationship modelling &amp; norm.</td>
<td>02-10-2002</td>
<td>03-10-2002</td>
</tr>
<tr>
<td>Data model verification</td>
<td>04-10-2002</td>
<td>07-10-2002</td>
</tr>
<tr>
<td>Determine file structure</td>
<td>08-10-2002</td>
<td>14-10-2002</td>
</tr>
<tr>
<td>Define each process</td>
<td>15-10-2002</td>
<td>17-10-2002</td>
</tr>
<tr>
<td>Logical design</td>
<td>18-10-2002</td>
<td>24-10-2002</td>
</tr>
<tr>
<td>Revise design</td>
<td>25-10-2002</td>
<td>29-10-2002</td>
</tr>
<tr>
<td>Physical database design</td>
<td>18-10-2002</td>
<td>28-10-2002</td>
</tr>
<tr>
<td>Revise design</td>
<td>29-10-2002</td>
<td>30-10-2002</td>
</tr>
<tr>
<td>Prepare data normalisation</td>
<td>31-10-2002</td>
<td>07-11-2002</td>
</tr>
<tr>
<td>Prepare data dictionary</td>
<td>08-11-2002</td>
<td>14-11-2002</td>
</tr>
<tr>
<td>Design structure chart</td>
<td>08-11-2002</td>
<td>15-11-2002</td>
</tr>
<tr>
<td>Implementation phase</td>
<td>18-11-2002</td>
<td>27-11-2002</td>
</tr>
<tr>
<td>Prepare hardware</td>
<td>18-11-2002</td>
<td>18-11-2002</td>
</tr>
<tr>
<td>Prepare Server</td>
<td>18-11-2002</td>
<td>18-11-2002</td>
</tr>
<tr>
<td>Prepare Client</td>
<td>18-11-2002</td>
<td>18-11-2002</td>
</tr>
<tr>
<td>Prepare Software</td>
<td>18-11-2002</td>
<td>18-11-2002</td>
</tr>
<tr>
<td>Install IIS</td>
<td>18-11-2002</td>
<td>18-11-2002</td>
</tr>
<tr>
<td>Install Macromedia ColdFusion MX Server</td>
<td>18-11-2002</td>
<td>18-11-2002</td>
</tr>
<tr>
<td>Install Macromedia Dreamweaver MX</td>
<td>18-11-2002</td>
<td>18-11-2002</td>
</tr>
<tr>
<td>Implement Design</td>
<td>19-11-2002</td>
<td>27-12-2002</td>
</tr>
<tr>
<td>Implement Interface Design</td>
<td>21-11-2002</td>
<td>29-11-2002</td>
</tr>
<tr>
<td>Scripting</td>
<td>02-12-2002</td>
<td>20-12-2002</td>
</tr>
<tr>
<td>Implement Security</td>
<td>23-12-2002</td>
<td>27-12-2002</td>
</tr>
<tr>
<td>Testing &amp; Debugging</td>
<td>30-12-2002</td>
<td>29-01-2003</td>
</tr>
<tr>
<td>User Acceptance Test</td>
<td>30-12-2002</td>
<td>09-01-2003</td>
</tr>
<tr>
<td>Revise Design</td>
<td>10-01-2003</td>
<td>29-01-2003</td>
</tr>
<tr>
<td>Deployment</td>
<td>30-01-2003</td>
<td>05-02-2003</td>
</tr>
<tr>
<td>Install in User Environment</td>
<td>30-01-2003</td>
<td>31-01-2003</td>
</tr>
<tr>
<td>User Training</td>
<td>03-02-2003</td>
<td>05-02-2003</td>
</tr>
</tbody>
</table>

1.7. Outline of This Final Year

This final year is dedicated to the development of a project that will describe each chapter in detail.

Chapter 1: An Overview

This chapter will provide an overview of the project's goals, statements, and design decisions.

Chapter 2: Literature Review

This chapter will review the literature related to the project, comparing programming languages and technologies.

Chapter 3: Methodology

This chapter will provide a detailed methodology for different applications and technologies.

Chapter 4: Implementation

Implementation begins immediately after the analysis and design phases. This chapter will review the implementation of the system.

Chapter 5: System Design

This chapter will provide a detailed analysis of the system design, including the requirements and operational considerations.

Chapter 6: System Development

This chapter will describe the development of the system, including the implementation and testing phases.
1.7. Outline of Project Report

This final year project report will be divided into 8 main chapters. The following will describe each chapter's contents.

Chapter 1: An Overview

This chapter is about the project to be invented for the Final Year Project, the problem statements of this project, purpose of study, scope of this project, research significance of this project, plan or schedule of this project and outline of the project report.

Chapter 2: Literature Review

This chapter will review the project to be implemented based on the current system. The comparisons of the reviewed system is done by comparing the technology used, programming used, system features and system interface. Besides that, this chapter also review the implementation tools used to develop the systems. Based on this literature review, it will help us to develop and improve the proposed system from the existing system.

Chapter 3: Methodology

This chapter discusses the tools and processes to use in this project with different methods for different programs and different methods for different projects such as software applications and web sites. This chapter also recommend to use Rapid Application Development (RAD) in System Analysis (Chapter 4), System Design (Chapter 5), System Implementation (Chapter 6) and System Testing & Evaluation (Chapter 7). It also included with Multimedia Development Process.

Chapter 4: System Analysis

This chapter presents the current system analysis in detail and also the proposed of system analysis when the data collected and analysis phase begins. Analysis will cover all the related area of the problems that results the problem solutions for the entire system. This chapter specifies the requirements for the system with the user requirements, software requirements and hardware requirements. Firstly, the user requirement is the statement in natural language with diagrams with the services of the system provides and its operational constraints. Secondly, the software requirement is the statement of a structured document setting out detailed descriptions of the system services. Lastly, the hardware requirement is a detailed software description which can serve as a basis for a design or implementation.

Chapter 5: System Design

This chapter is about the designing of the system in more details when the design phase begins immediately. This chapter is according to the Analysis Phase that provides the key of analysis that help to design the system flow and the best interfaces as well as security part for the system. This chapter shows the way by using System Architecture like Context Diagram and Level 1, Entity Relationship Diagrams (ERD), Data Normalization, Data Dictionary, Input & Output Design and Structure Chart.

Chapter 6: System Implementation

This chapter is about implement all the design that has been made. Immediately after the
Design Phase finish, the design will be implemented in the Implementation Phase. This phase focuses on the code and system interfaces. This chapter will include the implementation of hierarchy model or System Decomposition, installation of operating system or System Configuration like Personal Web Server, implementation of system module, security & login procedure, report and help system or user manual.

Chapter 7: System Testing & Evaluation

This chapter is about the testing of the system likes unit test, module test and system integration test. Testing the system with the user and debugging the system if there are any problems with the system. It should refer to the Design Phase for system improvement. This chapter also included with system evaluation, user acceptance test that refer to the how us collect the data, result analysis that refer to the how us analyse the results and lastly the system limitations.

Chapter 8: Conclusion & Future Works

This is the last chapter that will make conclusion of the entire project report and the system with achievement and satisfaction. It is also include with future works that can be done continuously if there is something can be refer to the system with some new features and provide a better platform of communication between all of actors and successfully help the Industrial Training Coordinator to manage this system.

Chapter 2: Literature Review

2.1. Introduction

At University student to graduate course for two

The process for being ask to student industrial training task and time. industrial training Training Manager

Many research and the script project success.

In order to conclusion and system analysis.

2.2. History of Internet

The Internet, networks - a reproduce, get at other computer of the U.S. government was to create a be able to "talk" design was then the network come military attack

Today, the Internet hundreds of millions resources of the distinguishes the Control Protocol intranet and the

For many Inter Relay Chat (IRC) voice conversat

The most widely "WWW" or ca
Chapter 2: Literature Review

2.1. Introduction

At University Malaysia Sarawak, “Industrial Training Course” is a prerequisite for any student to graduate. Student is being asked to complete and passed their industrial training course for two month at least, before they be able to graduate.

The process for the applications of industrial training is done manually before. Student being ask to send in their resume and state in the place they interested in to having their industrial training course to the Industrial Training Coordinator. These will involve a lot of task and time needed to be complete manually for any students that enrolled for the industrial training course. In conjunction with this issue, one system called “Industrial Training Management System” or intms is being proposed in order to solve the problem.

Many researches have been made before about this new technology including the security and the script as well as the system design. This kind of research helps in developing this project successfully.

In order to complete this project successfully, database technology, web based technology, and system analysis and design technology must be mastered well.

2.2. History of Internet

The Internet, sometimes called simply "the Net," is a worldwide system of computer networks - a network of networks in which users at any one computer can, if they have permission, get information from any other computer (and sometimes talk directly to users at other computers). It was conceived by the Advanced Research Projects Agency (ARPA) of the U.S. government in 1969 and was first known as the ARPANET. The original aim was to create a network that would allow users of a research computer at one university to be able to "talk to" research computers at other universities. A side benefit of ARPANet's design was that, because messages could be routed or rerouted in more than one direction, the network could continue to function even if parts of it were destroyed in the event of a military attack or other disaster.

Today, the Internet is a public, cooperative, and self-sustaining facility accessible to hundreds of millions of people worldwide. Physically, the Internet uses a portion of the total resources of the currently existing public telecommunication networks. Technically, what distinguishes the Internet is its use of a set of protocols called TCP/IP (for Transmission Control Protocol/Internet Protocol). Two recent adaptations of Internet technology, the intranet and the extranet, also make use of the TCP/IP protocol.

For many Internet users, electronic mail (e-mail) has practically replaced the Postal Service for short written transactions. Electronic mail is the most widely used application on the Net. You can also carry on live "conversations" with other computer users, using Internet Relay Chat (IRC). More recently, Internet telephony hardware and software allows real-time voice conversations.

The most widely used part of the internet is the World Wide Web (often abbreviated "WWW" or called "the Web"). Its outstanding feature is hypertext, a method of instant
cross-referencing. In most Web sites, certain words or phrases appear in text of a different color than the rest; often this text is also underlined. When you select one of these words or phrases, you will be transferred to the site or page that is relevant to this word or phrase. Sometimes there are buttons, images, or portions of images that are "clickable." If you move the pointer over a spot on a Web site and the pointer changes into a hand, this indicates that you can click and be transferred to another site.

Using the Web, you have access to millions of pages of information. Web browsing is done with a Web browser, the most popular of which are Microsoft Internet Explorer and Netscape Navigator. The appearance of a particular Web site may vary slightly depending on the browser you use. Also, later versions of a particular browser are able to render more "bells and whistles" such as animation, virtual reality, sound, and music files, than earlier versions. [5]

2.2.1. Web based application

An application that is downloaded from the Web each time it is run. The advantage is that the application can be run from any computer, and the software is routinely upgraded and maintained by the hosting organization rather than each individual user. Some envision a future where everything is stored and downloaded from the Web, which is a return to the centralized processing architecture of the 1960s and 1970s. [13]

2.3. Reviewing of Existing System

2.3.1. Traditional or Manual System

Manual systems are used before to handle all the application process for industrial training course. There are lots of disadvantages reviled in these manual systems. Information is kept in manual such as on paper. This will cause a lot of spaces needed to keep the application form, where a room for cabinet is needed to store up all the papers. The way each application been process is too long because it need many task to be compete and it’s wasting times.

<table>
<thead>
<tr>
<th>Industrial Training Coordinator</th>
<th>Heavy workload that to manage the entire documents for every student. WORK as operator such as handle hundreds of phone call.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>Difficulties in getting the update information. Take a long time to confirm a place with the Industrial Training Coordinator.</td>
</tr>
<tr>
<td>Company</td>
<td>Lack of information about Industrial Training Course in University Malaysia Sarawak, especially Faculty of Information Technology. A difficulty in getting the student's qualification, as the resume itself does not enough.</td>
</tr>
</tbody>
</table>

Table 2.1: Problem statements between IT Coordinator, student and company.

Related to the project, web based system now becomes more common as its benefits and the internet users that increase significantly. Web based system has change the way
people do their business and communicate. Nowadays, almost every company has the internet connection and most of them now realized the important of internet and web based system. The system is very interesting especially the way they design and implement the technology. Related to the project, it was very difficult to find the web based system that similar to the proposed system. We only can find the web site that is quite similar to the proposed system. There are some sample forms which are done online that is quite similar to the proposed system. There are netBoomerang Web Based Training Administration System and MyMentis Personal Information.

2.3.2. NetBoomerang Web Based Training Administration System

This netBoomerang Web Based Training Administration System is the web based form that designed for the users or guests to test drive netBoomerang. The users' or guests' information will be confidential. NetBoomerang is especially suited for those training centers that have remote locations that need access to a centralized database of information. [14,15]
2.3.3. MyMentis Personal Information

This MyMentis Personal Information is the web based form or online training management system that designed for users or guests especially government and corporate training departments to learn Training Management System (TMS) that affordable with web based training management. MyMentis Personal Information of Training Management System (TMS) have the ability to reduce the administrative work load by providing things like student self-enrollment and direct access by coordinators for grading and attendance management. This web based system also provides an open architecture solution with role based access from anywhere on the Internet. [16]

Figure 2.2: MyMentis Personal Information of Training Management System (TMS).

2.4. Comparison

2.4.1. Comparison

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIM</td>
<td>Syste</td>
</tr>
<tr>
<td>netE</td>
<td>MyM</td>
</tr>
</tbody>
</table>
2.4. Comparison of the Reviewed System

2.4.1. Comparison of the Technology Used

<table>
<thead>
<tr>
<th>Technology Used</th>
<th>Manual System</th>
<th>Web based system.</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIMAS (Faculty of Information Technology) Manual System</td>
<td>Manual system.</td>
<td></td>
</tr>
<tr>
<td>netBoomerang Web Based Training Administration System</td>
<td>Web based system.</td>
<td></td>
</tr>
<tr>
<td>MyMentis Personal Information of Training Management System (TMS)</td>
<td>Web based system.</td>
<td></td>
</tr>
</tbody>
</table>

Table 2.2: Comparisons of the technology used between the web based systems.

2.4.2. Comparison of the Programming Used

<table>
<thead>
<tr>
<th>Programming Used</th>
<th>Manual System</th>
<th>Web based system.</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIMAS (Faculty of Information Technology) Manual System</td>
<td>No programming used. The information keep in manual such as papers.</td>
<td></td>
</tr>
<tr>
<td>netBoomerang Web Based Training Administration System</td>
<td>HTML. Microsoft Active Server Page (ASP). Oak Tree Systems' Boomerang Data Objects (BDO). Supported database formats include Microsoft SQL Server 6.5 or 7.0. Secure Socket Layer (SSL).</td>
<td></td>
</tr>
<tr>
<td>MyMentis Personal Information of Training Management System (TMS)</td>
<td>HTML. Microsoft SQL Server 7.0.</td>
<td></td>
</tr>
</tbody>
</table>

Table 2.3: Comparisons of the programming used between the web based systems.

2.4.3. Comparison of the System Features

<table>
<thead>
<tr>
<th>System Features</th>
<th>Manual System</th>
<th>Web based system.</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIMAS (Faculty of Information Technology) Manual System</td>
<td>Student have to fill in the form with manual system (not online). The form will gathering with cover letter and resume to the Industrial Training Coordinator. So many forms to be filled and manually send to other departments or organizations.</td>
<td></td>
</tr>
</tbody>
</table>
2.4.4. Comparison of the System Interface

<table>
<thead>
<tr>
<th>System</th>
<th>Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNiMAS (Faculty of Information Technology) Manual System</td>
<td>No system features because it uses the paper based and no interactive.</td>
</tr>
<tr>
<td>netBoomerang Web Based Training Administration System</td>
<td>Easy and understand to fill in. Good system features. Very simple to fill in.</td>
</tr>
<tr>
<td>MyMentis Personal Information of Training Management System (TMS)</td>
<td>Simple, easy and understand to fill in. Good system features. System interface comes with user's ID and user's password.</td>
</tr>
</tbody>
</table>

Table 2.4: Comparisons of the system features between the web based systems.

Table 2.5: Comparisons of the system interface between the web based systems.
2.5. Comparison of Implementation Tool

2.5.1. Why Macromedia Dreamweaver MX is used?

Macromedia Dreamweaver MX is a professional HTML editor for designing, coding, and developing websites, web pages, and web applications. The control of hand-coding HTML or prefer to work in a visual editing environment, Macromedia Dreamweaver MX provides the helpful tools to enhance the web creation to be more experience. The visual editing features in Macromedia Dreamweaver MX let be quickly create pages without writing a line of code. Macromedia Dreamweaver MX also includes many coding-related tools and features. Macromedia Dreamweaver MX helps to build dynamic database-backed web applications using server languages such as ASP, ASP.NET, ColdFusion Markup Language (CFML), JSP, and PHP. Below is the features and enhancements of Macromedia Dreamweaver MX. [8]

<table>
<thead>
<tr>
<th>Features</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy</td>
<td>Enhance productivity using the new integrated workspace, which is shared with Macromedia Flash MX and Fireworks MX. Jumpstart design and production using professional-quality, pre-built layouts and code, including site structures, forms, accessible templates, and JavaScript functions for client-side interactivity. Write code faster than ever before using high-powered coding features like code hints, tag editors, extensible color coding, tag choosers, snippets, and code validation.</td>
</tr>
<tr>
<td>Powerful</td>
<td>Use one integrated development environment to develop HTML, XHTML, XML, ASP, ASP.NET, JSP, PHP, and Macromedia ColdFusion websites. Quickly develop common Internet applications using libraries of code to create database insertion and update forms, recordset navigation pages, and user authentication pages. Take advantage of ColdFusion MX to rapidly develop Internet applications.</td>
</tr>
<tr>
<td>Open</td>
<td>Work in the technologies of your choice in a cross-platform, technology-agnostic development environment that supports J2EE and .NET, runs on Windows and Mac, and offers open integration with industry-leading tools such as Macromedia Flash MX and Fireworks MX. Accelerate next-generation development with support for XML, including creating, editing, and validating XML code, and importing XML schemes. Create accessible websites to comply with U.S. law and international standards, using compliance-checking features for pages and sites, in-product reference content, and an active authoring mode for accessibility.</td>
</tr>
</tbody>
</table>
### Table 2.6: Features of the Macromedia Dreamweaver MX.

<table>
<thead>
<tr>
<th>Features</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy</td>
<td>Intuitive tag-based language that requires fewer lines of code by handling low-level programming tasks automatically and simplifying code reuse.</td>
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<tr>
<td></td>
<td>New server-side ActionScript that enables Macromedia Flash developers to use the same scripting language for both client and server logic.</td>
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<tr>
<td></td>
<td>Complete support for new ColdFusion MX features within the Dreamweaver MX development environment, including powerful visual layout and prototyping,</td>
</tr>
<tr>
<td></td>
<td>enhanced code editing and development capabilities, and integrated debugging.</td>
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<tr>
<td>Powerful</td>
<td>Fully integrated application services for adding full-text search, dynamic charting, and high-performance connectivity to Macromedia Flash clients</td>
</tr>
<tr>
<td></td>
<td>to your applications.</td>
</tr>
<tr>
<td></td>
<td>Innovative architecture that delivers the scalability, reliability, and power of the Java platform without the complexity.</td>
</tr>
<tr>
<td></td>
<td>Complete extensibility via custom tag libraries, reusable components, Java/C++, and thousands of available third-party add-ons.</td>
</tr>
</tbody>
</table>

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**2.5.2. Why Macromedia ColdFusion MX is used?**

This suite of products from Allaire provides functionality that is similar to Active Server Pages but is available for Windows, Linux, Solaris, HP-UX and other server platforms. Like ASP, it allows to embed code in the web pages that is executed by the server prior to delivery the client. Macromedia ColdFusion MX has the advantage of being highly scalable, that is if your site is going to be quite extensive or viewed by a very large numbers of users, Macromedia ColdFusion MX can scale up to meet the demand. This popular product is being used to serve heavily visited site with excellent results. Another advantage is the large number of proven software components that have been developed using Macromedia ColdFusion MX. Pages created by Macromedia ColdFusion MX on the web can be recognized by ".cfm" file extension. Below is the features and enhancements of Macromedia ColdFusion MX. [7]

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**2.5.3. Why IIS (Internet Information Server) is used?**

IIS (Internet Information Server) is an application server capable of handling Internet and Intranet services. IIS is Microsoft's implementation of the Hypertext Transfer Protocol (HTTP) and the Common Gateway Interface (CGI) standards. It provides comprehensive web server capabilities. IIS is used by many organizations for hosting websites, applications, and other Internet services. It supports a wide range of technologies, including ASP.NET, PHP, and ColdFusion. IIS is scalable and modular, allowing organizations to customize the server to fit their specific needs. A typical IIS deployment includes the following services:

- **HTTP (Web) Server**: This service provides the core functionality of an Internet Information Server, allowing for the delivery of static and dynamic content to web browsers.
- **FTP (File Transfer Protocol)**: This service enables file transfer between the server and client over a network connection.
- **SMTP (Simple Mail Transfer Protocol)**: This service is used for email delivery, allowing users to send and receive email messages through the server.
- **POP3 (Post Office Protocol)**: This service is used for retrieving email messages from a server, allowing users to access their email from a client application.
- **IMAP (Internet Message Access Protocol)**: This service provides a protocol for accessing and managing email messages on a server.

IIS is a versatile and powerful tool for hosting websites and applications, providing a robust platform for developers and organizations to create and maintain their online presence.