Integration of Workflow Process in Managing Leave and Training Application in UTP

By

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Dissertation submitted in partial fulfillment of
the requirements for the
Bachelor of Technology (Hons)
(Information Technology)

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CERTIFICATION OF APPROVAL

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A project dissertation submitted to the
Information Technology Programme
University Teknologi PETRONAS
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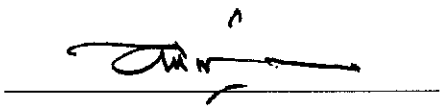
Approved by,



(Aliza Bt Sarlan)

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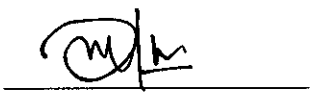
June 2004

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the reference and acknowledgements, and that the original work contained herein has not been undertaken or done by unspecified sources or persons.



MOHD MUNAWAR BIN MAHADZIR

ABSTRACT

This document provides a report for final year project of IT/ IS students. The purpose of this report is to provide further information on research topic to allow and ensure smooth development in this project. The propose project is called Automated Leave and Training Management System (ALTMS), where it will determine an important issues and requirement in developing ALTMS. Automated Leave and Training Management System (ALTMS) is automated web application in managing leave and training application of UTP staff. The scope of the study will be to design a system process based on current manual procedures to be fully automated and implemented with minimum human assistant. This is due to the current system that is still depending on manual system which may cause difficulties in workflow process. This document also gives further information about the system in the literature review/theory section, which is the main supporting information that comes from the previous research by an expert in this field. Those researches are useful as a reference and guideline in developing ALTMS. The most suitable methodology would be the communication-based methodologies of process modeling methodology which is Preparation, Negotiation, Performance and Acceptance

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Most grateful to God that I finally be able to complete my Final Year Project.
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ABBREVIATIONS AND NOMENCLATURES

FYP – Final Year Project

WFMS – Workflow Management System

MRP – Manufacturing Resource Planning

UTP – University Technology Petronas

AA – Assistant Administrator

ALTMS - AUTOMATED LEAVE AND TRAINING MANAGEMENT SYSTEM

CHAPTER 1
1. INTRODUCTION

1.1 BACKGROUND

Automated Leave and Training Management System is management web application automates the process of managing and tracking employee leave and training application. ALTMS also defined as computer-based applications that facilitate the preparation, review, auditing and reporting of employees' records of training and accrual balances, and the processing of appropriate payroll transactions. ALTMS has been designed from the ground up for companies to track all Employee leave and training application. Whether the employee has prebooked some time off work or unexpectedly had to take some sick leave .The system will give an overall picture on who is in, who is out, who has had what and who is entitled to what. The system will handle all of the mundane tasks and provide some valuable reports with which you can base company decisions on.

It is one of the most important issues in Human Resource Management. It involves work flow process from review, approved until process by HR. It enables Human Resources Managers to maintain detailed information on every employee within the organization. Staff data is organized around a central screen containing information that provides an overview of the staff.

ALTMS is a system integrator specializing in eliminating paper and automating business processes with document management and workflow solutions. Utilizing ALTMS, Automated Data Entry, Document Capture, and Workflow Technologies to assist companies in automating their documents, improving relations, and streamlining procedures

1.2 PROBLEM STATEMENT

Human Resource is an integral part to the overall functioning of an organization. Inefficiencies in this department can have consequences throughout. One of the biggest problems with automating the Human Resources departments is the mix of documents. These documents can range from paper and electronic job applications, employee reviews in MS Word, to employee photographs and signatures. Because all of these documents come from different sources, it has been difficult in the past to create a truly efficient Human Resources Department.

1.2.1 Problem Identification

The current leave and training application in UTP depend on manual system where all the activities involve too much paperwork and filing system. Hence, the issues such as difficulties in monitoring and updating all data or information may occur. The example of manual system flow ; start with the applicant need to fill the form manually, review and approved by the Program Head and then submitted to the Human Resource Department.

On the other hand, the approver (Program Head) may have a difficulty to make plan since involve a problem to view or keep track of staff information or data that move for training or take leave. This may cause issues for the Program Head to review and approve all the application.

Lastly, the existent manual system did not have proper database that kept all important data that may be used as reference. The process flow may take time and sometimes may raise problem like difficulties in managing the data that used as reference.

1.2.2 Significant of the Project

The idea is to develop an automated leave and training application management system or title as Automated Leave and Training Management System (ALTMS) that will provide more quality and reliability to the current system provide in UTP. It offers productivity improvements that can save time, effort and expense, and allow to focus on work, can be achieved through ALTMS Productivity Services. Meaning that its simplify all the task involve in doing the application for leave and training that can make all staff focus on the others important work. The using of automated system, some features that can guide the user (IT/IS staff) to fill the form easily with the more user-friendly interface.

1.3 OBJECTIVE AND SCOPE OF STUDY

1.3.1 The Objectives of the Project (ALTMS):

1. To develop an on-line application in managing IT/IS staff in UTP leave and training application.
2. To research on a current manual system (process flow) of leave and training application.
3. To develop a conceptual process flow model for automated leave and training application system or call as Automated Leave and Training Management System (ALTMS).

13.2 Relevancy of the Project

The rationale of this project is to accomplish better workflow solution in implementing automated application, since it's very important to improve the quality of work. Nowadays many work involved workflow process, meaning that all task are dependent, employees interact at different times, and possibly different places. Hence it is suitable to apply in UTP since the current manual system is not practical and reliable to handle the process flow that sometimes may raise a problem or difficulties.

CHAPTER 2

2. LITERATURE REVIEW / THEORY

2.1 Leave Management System

According to Sebin an HR executive who was instrumental in the team coming with a Leave planner as a part of HR plug-in for SmartWorks Leave Management System is one of the most important aspects of Human Resource Management. Every Organization irrespective of its size will have Leave Management existent in some form or the other, except for the leave policies and processes that vary from Organization to Organization. Leave Management is a simple issue that can be ignored, but in reality it cannot be. This is because every man-hour is accounted. Lack of Effective Leave Management System could lead to unaccounted loss of man-hours, which will definitely in a way hamper the growth of the Organization.

Hence this should be treated as a serious issue. Leave Management System for a small Organization could be simple, but complex for larger Organizations. This is when the HR Departments are prone to face problems. The issue will be solved if have a good leave policy in place. If fail to manage the system right, later realize the whole exercise of having a good & sound leave policy is at stake.

2.2 Office Automation

Office automation concept also known as an intelligent office where the aim of this process is to achieve an intelligent of overall system office solutions that will serve the building user, in either the residential or office context. An Office Automation suite generally consists of a Word Processor, a Financial Spreadsheet, a Database and some Presentation software. Email is either included in the package or added separately. Other major office automation suites you could choose are IBM/Lotus Smart Suite (OS/2, Windows), Star Office (OS/2, Linux, Unix, Windows), ApplixWare (Linux, Unix), and Corel WordPerfect Office (Windows, Unix (partial), Linux (partial, full very soon)). All are less expensive than MS Office, and have more liberal license terms. Star Office can be downloaded free from Sun Microsystems.

According to Lehto, Mervi. (The 'Intelligent Office' Concept Makes the Difference. Nordic Architectural Studies Review. Nordisk Arkitekturforskning 1996).

The Intelligent office concepts developed at the beginning of the 1980s formed the starting point for construction of smart homes and intelligent offices. Now intelligent concepts are becoming established as the target level for all offices, and the focus has shifted to the introduction of sustainable intelligent solutions. The study of intelligent offices proved the intelligent office concepts to have good energy efficiency. It proved also them to be, from the users' point of view, capable of increasing work efficiency and to some extent diminishing job related trips. Simultaneously, intelligence means an advantageous and comfortable working environment

The advantages are due to the intelligent architecture and the technical solutions installed. According to the study, it seems that simply the use of the intelligent concept as a holistic approach to the office design, makes the difference between a high quality office building and the intelligent office. Consequently, the message for building managers is that even the idea of integrated and user oriented concept in planning is enough. Work efficiency, reduction of traffic, energy efficiency, health issues and cost benefit ratio, all speak for intelligent offices. intelligent office must include the

characteristics of being modifiable and flexible, structurally active, capable of structural and functional, integration, informative, interactive, secure, comfortable and service-oriented, economic and productive based on correct fundamental solutions.

Workflow management technology originated in office automation projects in the 1970s at the University of Pennsylvania, Xerox Parc and others. The focus of office automation research was "to reduce the complexity of the user's interface to the [office information] system, control the flow of information, and enhance the overall efficiency of the office." [Ellis, Nutt 1980, p. 28]

Research in office automation, which flourished between 1975 and 1985, laid the groundwork for the development of industrial workflow applications through the analysis of technology support for administrative processes. While the research interest in office automation ceased by the middle of the 1980s [Mahling et al. 1995; Nutt 1996], the commercial exploitation of workflow technology began between 1983 and 1985, fostered by advances in imaging and document management technology on the one side, and enhanced e-mail systems that extended traditional point-to-point mail routing with a predefined process map on the other side [Swenson, Irwin, 1995]. From this first generation of workflow systems, only few vendors like are still active, while the majority of the early players have been restructured through mergers and acquisitions, or dropped out of the market altogether. [zur Muehlen 2003, p. 76].

2.3 Workflow Management

Workflow Management defines as delegating tasks is an effective way of working, but it requires strict control of the work processes. It provides an efficient tool that will ensure that delegation pays off. Tasks can be transferred between people and the system enables to define different workflow procedures for specific situations. Communication takes place via personal task lists and an alert/message system via email. Delphi study of Stevens Institutes of Technology defines workflow management is technology specialized in supporting progrALTMS that do not "run all at once". These progrALTMS have different people who must interact with them at different times, and possibly different places. The workflow system allows for a convenient programming paradigm, where a series of 'activities' are layed out graphically, but what the uses this for is to initialize thing, inform the party of the thing to do, and then wait for the response. These things are called "processes" because they are a sequence of 'activities' (pieces of work to be done) but typically the activities themselves are not 'automated' in the traditional sense.

They are just as manual as ever, but the sequencing (the stuff between) is automated.
The support of business processes through workflow technology promises significant efficiency gains through the automation of routine decisions, the automated assignment of pending activities to performers and the supervision of processes according to a standardized workflow model. The penetration of workflow systems in the industry has increased in the past years, but except for individual case studies (compare Fischer 1997, 1998, 2000, 2001), no studies about the critical success factors of process automation projects exist. The lack of these studies results in the absence of an agreed-upon methodology for successful workflow project design.

Workflow Management Systems are quickly becoming the technology of choice to implement large and heterogeneous distributed execution environments where sets of interrelated tasks can be carried out in an efficient and closely supervised fashion. In many ways, a workflow management system is not different from a sophisticated scheduler in which the scheduling is performed based on task dependencies, organizational structure, staff availability, and existing computing infrastructure. It is precisely this characteristic that makes workflow management systems so appealing, as it makes them match very well current organizational and technological trends.

Workflow management (lately called Business Process Management) is, in the largest sense, the coordination of work processes through software. A workflow management system routes pending activities to process participants according to a model of the process. Workflow management systems have been around since the late 1970s, but every now and then they are rediscovered in a marketing wave such as Office Automation, Business Process Reengineering, or Web Services Choreography.

Workflow and BPM are typical Information Systems topics, since they operate at the intersection of the business side and the technology side of an organization. While organizations can benefit immensely from a properly aligned solution, failing to match the available workflow technology with the organization's culture and the properties of its business processes can have strong counter-productive effects. Process management technology is a typical back-end solution, which is often embedded in middleware such as application servers or enterprise resource planning systems.

A list of desirable workflow attributes follows (Network Imaging Corporation, 1995), (FileNet Corporation, 1996) and (TSA/ADVET, 1996). Workflow should, Support existing networks, legacy data, personnel, and general business model, Recognize predefined policies, standards, rules and conditions and incorporate rules-based safeguards, Support graphical design and portrayal of workflow, Address

individual and grouped tasks, Determine required task sequence and identify required skill sets per task, Enforce document security via controlled access, Automatically route and reroute documents, Control/track document life cycle, Launch native applications, Adhere to a calendar schedule (schedule control), Perform action notification, Support view, pan, and zoom functions, Permit redlining and user comments for documents in process, Control revisions, Recognize and track the creation of multiple versions, Use document metadata to facilitate locating documents, Generate audit trails, Analyze performance and create status updates, Generate forms automatically and Link to e-mail, URL's, on-line documents.

Geogakoloulos, Horbick, Sheth (1995) characterized workflow into ad hoc, administrative and production. The dimension along these kinds of workflow are often described include repetitive and predictability of the workflow and task, how the workflow is initiated and controlled and requirement for the WFMS functionality. Ad hoc workflow performs office processes such as documentation and or sales proposal. It usually involves human coordination, collaboration, or co-decision. Tools that is used to facilitate ad hoc workflow are email, group calendaring and conferencing or also called groupware. Administrative workflow involves repetitive, predictable processes with simple task coordination rules, such as routing an expense report or travel request through an authorization process. WFMS that support administrative workflows handle simple information routing and document approval functions, such as those found in travel planning and purchase request and generally non-mission critical. Lastly, production workflow involves repetitive and predictable business processes, such as loan application or insurance claims. It is typically encompass a complex information process involving access to multiple information system. The study then discuss process of WFM which involves process modeling and workflow specification, process reengineering that requires workflow model and methodologies and lastly, workflow implementation and automation which is requires methodologies and automation for using information system. And human performer to implement, schedule, execute, and control the workflow task as described by the workflow specification.

Philip Hartmann, Reimer Studt (2001) Workflow technology is becoming increasingly interesting for a wide range of corporations, especially after the Y2K problem has been solved, and resources become available. Studies show that the market growth of workflow management software will be about 60% p. a., but it is getting increasingly difficult to serve the market with stand-alone workflow engines which have to be integrated into companies' current applications since most of the enterprises already own a sophisticated landscape of information technology. Thus, WMS will only prevail if they are closely linked to the existing standard applications, like Microsoft Exchange, Lotus Notes, or SAP R/3. This becomes evident in the trend that they are integrated with other system classes, such as manufacturing resource planning (MRP II), ERP, or groupware systems.

The trend mentioned above (integration of different system class applications) requires an extension of known classifications which mostly examine stand-alone WMS or WMS based on document management systems. There is no classification for the area of application for workflow management, neither in a technical (what combinations of system classes are suitable in what corporate area or industry) nor in an economic context (what benefits result from what combination, or what are the crucial advantages over conventional processing). These combinations are supposed to assist decision-makers to identify which of their interorganizational business processes are suitable for automation by workflow and what configuration should be considered. Furthermore, the crucial advantages of automating business processes on three scenarios will be discussed and the first step towards an investigation of corporate demand for workflow technology will be presented. In this heterogeneous environment, intercompany workflow management is becoming more and more important because of increasing tendencies to outsource product components. One special area here that is not dealt with in publications is intercompany QM, though there are proposals for QM within companies like. Neither do norms like ISO 9000 or quality awards like the Malcolm Baldrige National Quality Award elaborates on this topic. However, this area is important because two cooperating companies might concentrate on their local

optimums but might not work together to achieve the best result for both companies. A description of how intercompany QM can be implemented is given in this paper.

According to Charles Plesums, CSC Financial Services (2003) the workflow process is traditionally defined in office terms—moving the paper, processing the order, issuing the invoice. But the same principles and tools apply to filling the order from the warehouse, assembling documents, parts, tools, and people to repair a complex system, or manufacturing the complex device. With the automated workflow management system:

· Work doesn't get misplaced or stalled—expediters are rarely required to recover from errors or mismanagement of the work.

· The managers can focus on staff and business issues, such as individual performance, optimal procedures, and special cases, rather than the routine assignment of tasks. The army of clerks is no longer required to deliver and track the work.

· The procedures are formally documented and followed exactly, ensuring that the work is performed in the way planned by management, meeting all business and regulatory requirements.

· The best person (or machine) is assigned to do each case, and the most important cases are assigned first. Users don't waste time choosing which item to work on, perhaps procrastinating on important but difficult cases.

· Parallel processing, where two or more tasks are performed concurrently, is far more practical than in a traditional, manual workflow.

Charles Plesums, CSC Financial Services (2003). A simple workflow system could evenly distribute work among all the available resources1, or follow a simple algorithm such as giving the waiting work to the resource with the shortest queue, or implement assignments made manually by a supervisor. However, there are often significant benefits when the system can optimize the assignment of the work.

In order to do the assignment, the workflow management system must know who or what is available to perform the work, and have a profile about each user. This might include what work the resource is qualified to do, how good they are at that type of work (can they do only routine processing or can they handle the toughest cases), and whether the supervisor wants the work to be assigned to them. A supervisor may bias an automatic assignment for many reasons. A person many nominally be qualified for a type of work, but has made a large number of errors recently—the cause needs to be found and corrected. A person that is not feeling well may be able to handle fewer or simpler cases rather than "taking a sick day." A person who will be going on vacation may be given simpler work that can be completed before they leave, or may not be given any.

CHAPTER 3
3. METHODOLOGY / PROJECT WORK

3.1 Methodology

In developing the system, the student has chosen the Communication-Based Methodologies which are specifically design for system involving workflow process. It includes four phases that mainly focus on the customer/client (IT/IS staff or Assistant Administrator) and the performer (student).

The first phase is the preparation which is mainly like the planning phases where involving the student defining and offering the action that can be done. On the other hand the lecturer (IT/IS staff) or Assistant Administrator (IT/IS Dept) also can request some action. The second phase would be negotiation phase which involving both lecturer and student agree on the selected action. The next phase is performance phase where the student starts to design the system according to the term that established during both above phases. The last phase is acceptance phase, it involving the feedback from the lecturer or Assistant Administrator (IT/IS Dept) to express their satisfaction after testing the system.

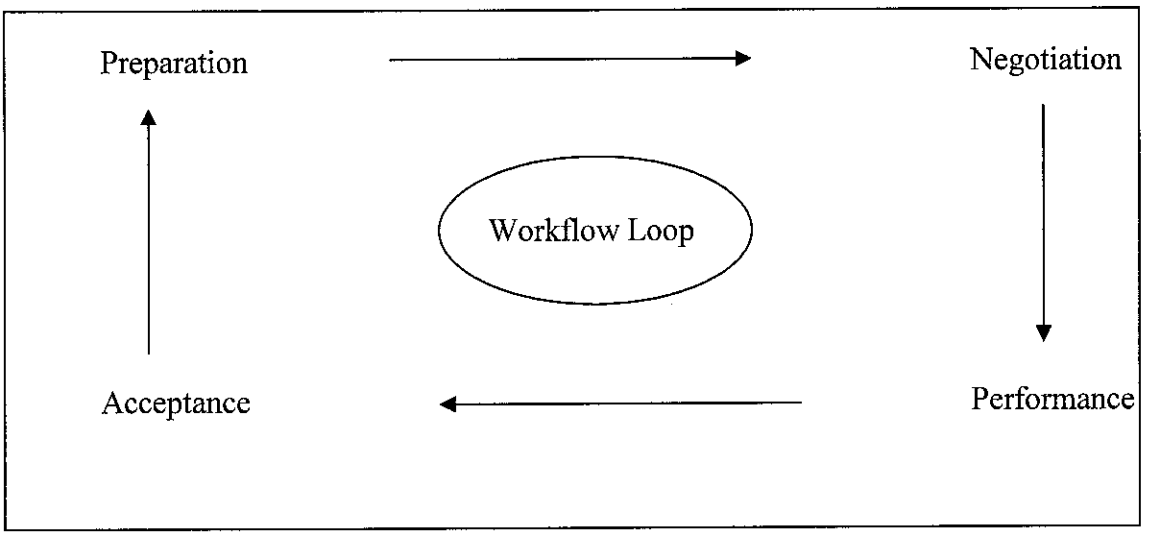


Figure 1: Communication-Based Methodologies

3.2 Tools

The system requires a specific software and manufacturer to ensure system stability and compatibility. As for this matter, I have narrowed down some specific software types that are commonly used for developing web application system.

Specification	Type	Licensing	Developer
Client Side Scripting	JavaScript	Open Source	Netscape
Server Side Scripting	PHP	Open Source	Apache Software Foundation
Web Server	Apache	Open Source	Apache Software Foundation
Relational Database	MySQL	Open Source	Enterprise Linux

Figure 2: Tools

3.3 Hardware and Tools

3.3.1 Development Software:

3.3.1.1 Macromedia Dream weaver MX

This software will be use for suited for Web development and can be embedded into HTML, Flash, XML, ASP and other programming tools. It offers an intuitive environment for building cross-platform sites and will be use for interface design and content layout

3.3.1.2 Adobe Photoshop

With its comprehensive set of retouching, painting, drawing, and Web tools, Photoshop helps to complete any image-editing task efficiently. It will be use for system cosmetics

3.3.1.3 SQL server

This software will be use for the creation of the database. The database will be used to store any data such as username list, password, multimedia files and others. MySQL were choose because of the application is the most suitable database tools to be integrated with PHP software.

3.3.1.4 Web browsers

This software will be use for testing and debugging application features

3.3.2 Hardware

Workstation with minimum specification to execute the above mentioned software.

3.3.3 Client Usage

3.3.3.1 Software

Compatible operating system with recommend browser to browse the application such as (Windows 98 and above with Internet Explorer 6 or Netscape Navigator with Java supported)

3.3.3.2 Hardware

Personal computer with minimum specification to execute the above mentioned software.

CHAPTER 4

4 RESULT AND DISCUSSION

4.1 Manual Workflow of ALTMS

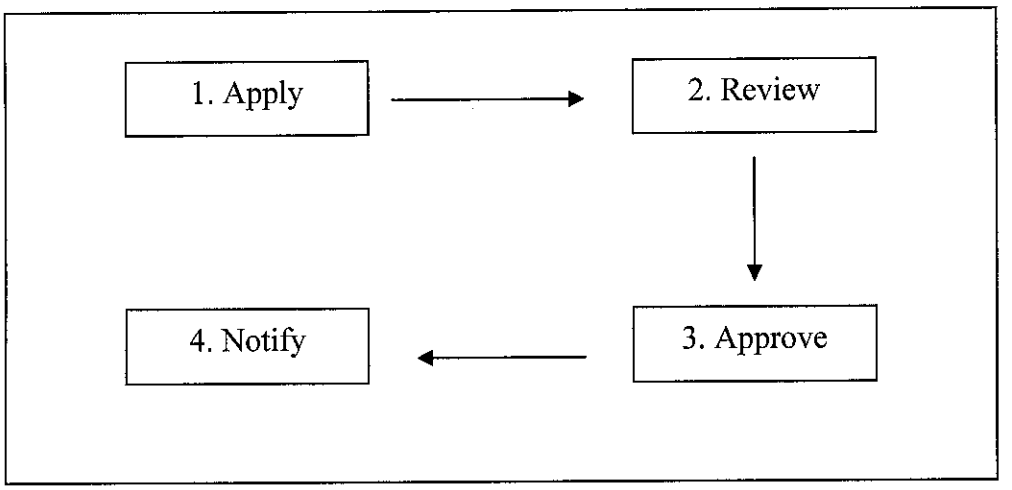


Figure 3: Manual workflow process for current system in UTP.

The current manual process flow of leave and training application in UTP basically involved four stages. It start with apply stage where the applicant fill in the form. Then the form is review and approves by head of the department and lastly submitted to the Human Resource Management (HR). After the application is process, the applicant will be notified manually. Usually the process between stage occur delayed since the form or document is submitted manually by a person involved (lecturer or AA). All the process is done using paperwork (form ITP – 22 for training and form ITP – 01 for leave application) and filling system are not organized properly

4.2 Conceptual Model of ALTMS

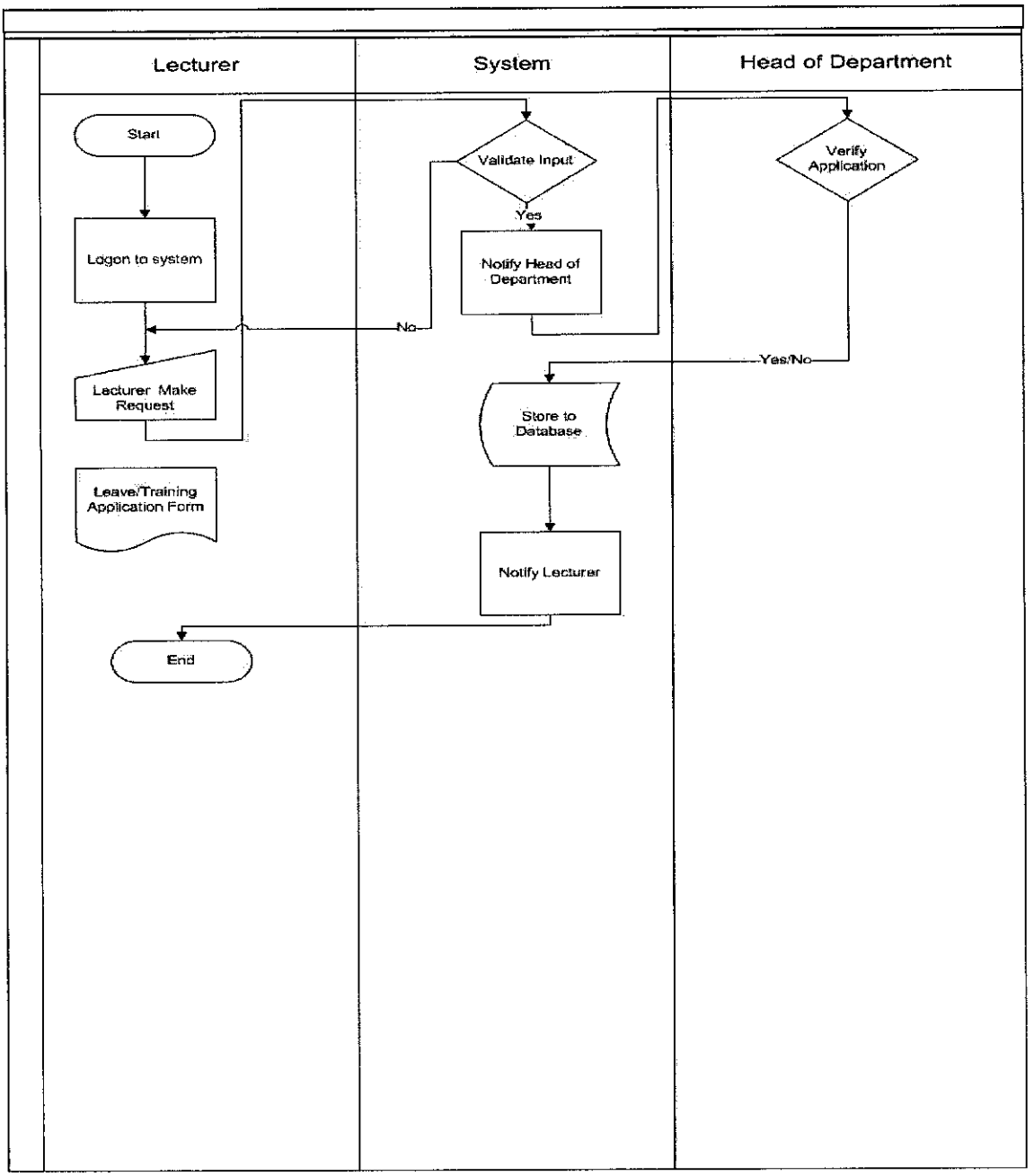


Figure 4: Automated Leave and Training Management System for IT/IS (ALTMS) Leave/Training application Flow

Figure 4 show the leave and training application flow process of the Automated Leave and Training Management System (ALTMS). The application starts with lecturer log on to the system with using Staff Id and the password. The system then automatically loads all the information of the user within the pages. The user can view all the information including personal detail and their schedule before making a request. The documents involved are leave and training program application form. Lecturer must fill up all the form in order to apply for the leave and training program.

All the details that have been filled up within the form is validate before submitting to the head of the department. The system will notify head of the department that there is a request by sending an internal message. Head of the department then review the request by using the lecturer data and information from the database as a references. The result whether approved or rejected will be stored in a database before notifying the applicant.

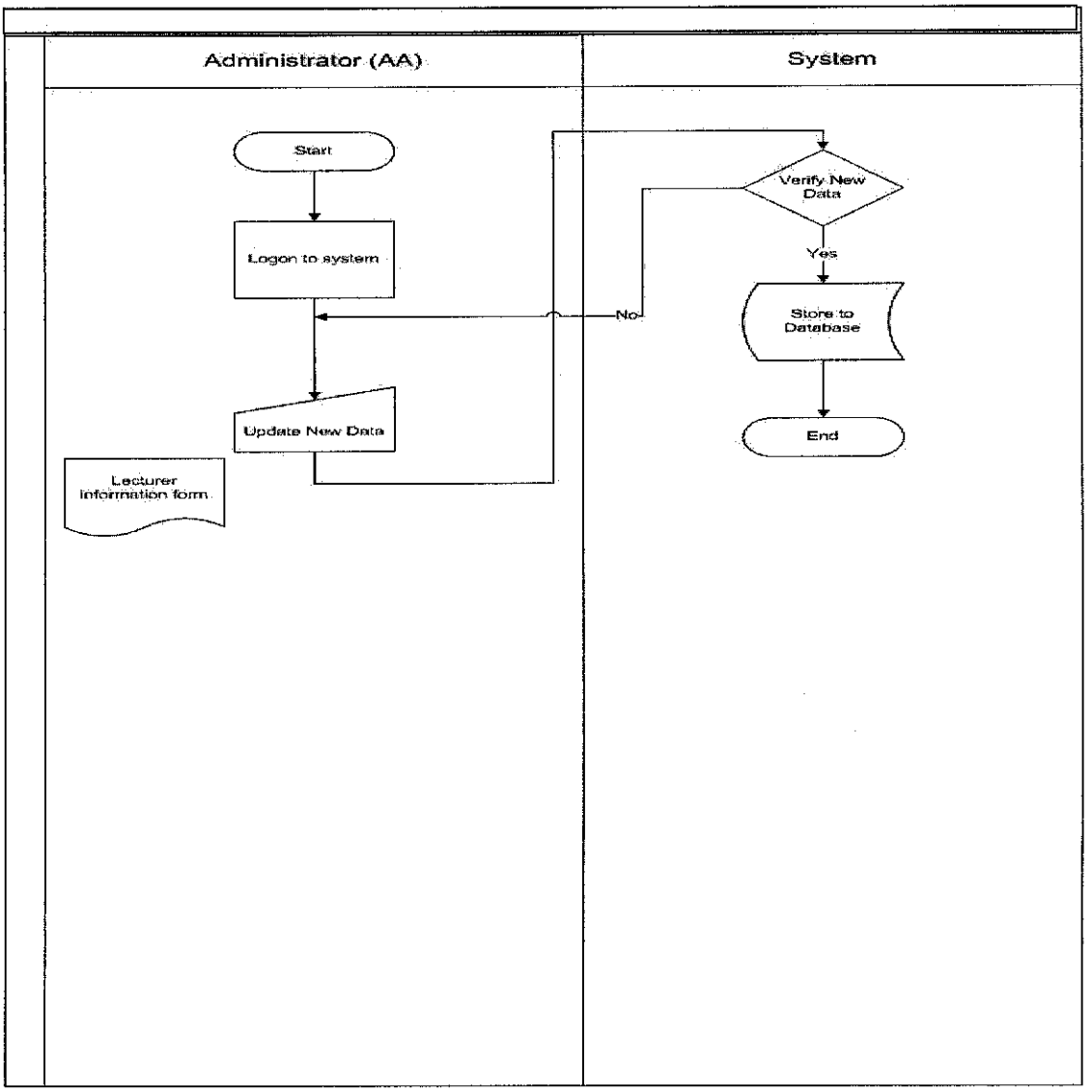


Figure 5: Automated Leave and Training Management System IT/IS (ALTMS) Update Data

According the above flowchart, Assistant Administrator (AA) is the person that performs adding, modifying and updating all the data within the system. Assistant Administrator (AA) also provides with user ID and a password to enter the system. The password allows the Assistant Administrator to perform all jobs independently in the system.

The new user or lecturer information is done by the assistant administrator by filled up the user information form. After validate the input the data is stored within the database. The user information form contains all the detail information of the lecturer. It is use as reference by the head of the program to review the request that have been submitted.

A part from that, the system will required assistant administrator to produce a report of the leave and training taken within period of time. The report is generate in HTML format which is enable the user to view it's as reference and print out for the Human Resources Department.

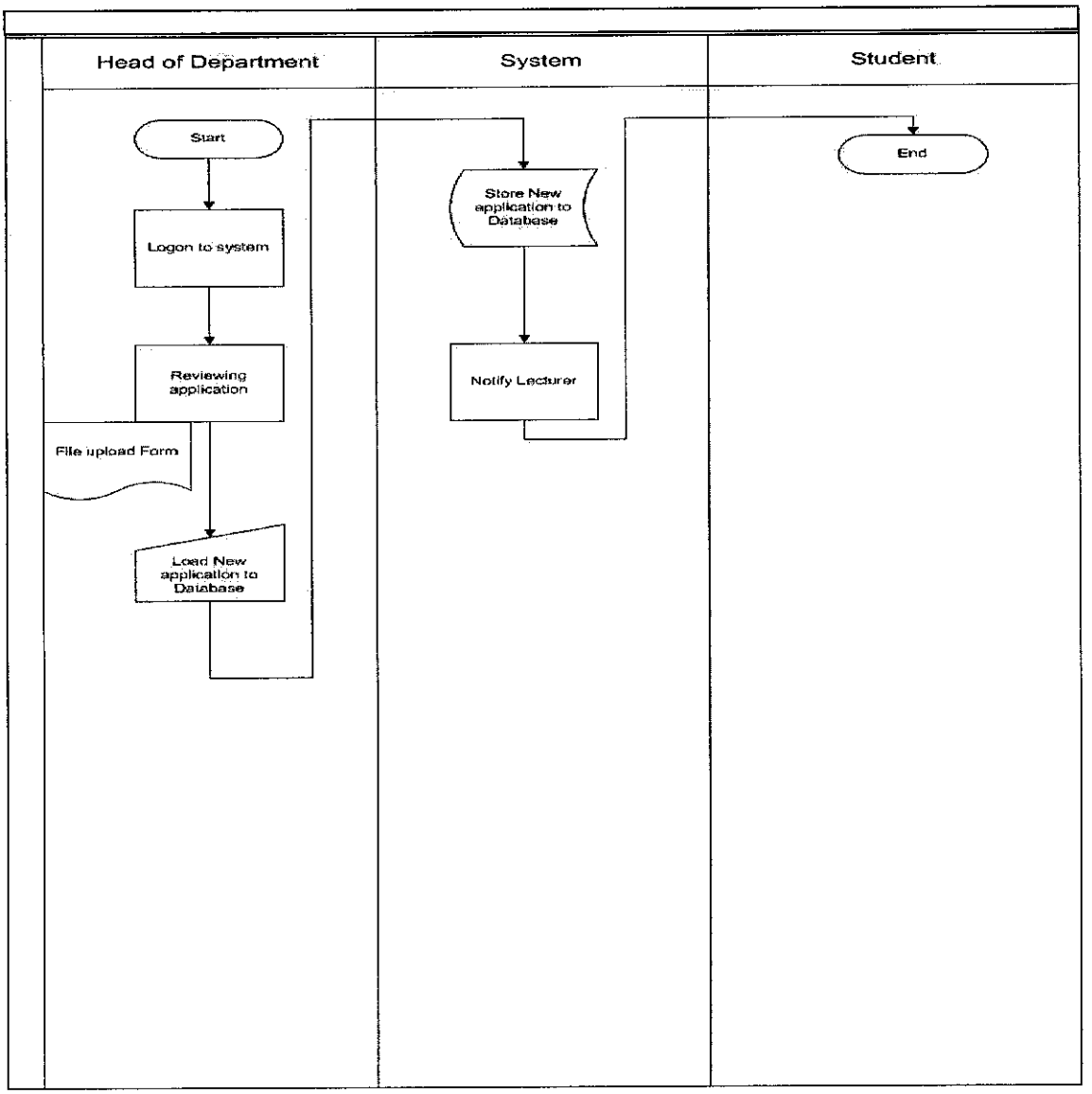


Figure 6: Automated Leave and Training Management System IT/IS (ALTMS) Approve/Reject process flow

Figure 6 above show approves or rejects process of Automated Leave and Training Management System IT/IS (ALTMS). The flow focusing on process flow between head of the department and lecturer within the system. Before start using the system head of the department must enter the user ID and password. the system then load all the data including the internal message if there is any request on leave and training application.

Head of the department can upload the entire related file concerning with the applicant in order to use as a reference. After finish reviewing, head of the department set a status of the application whether approved or rejected. The data then is stored in the system database before the notification send to the applicant.

4.3 System Architecture

The architecture of the system that has been developed is design as figure below.

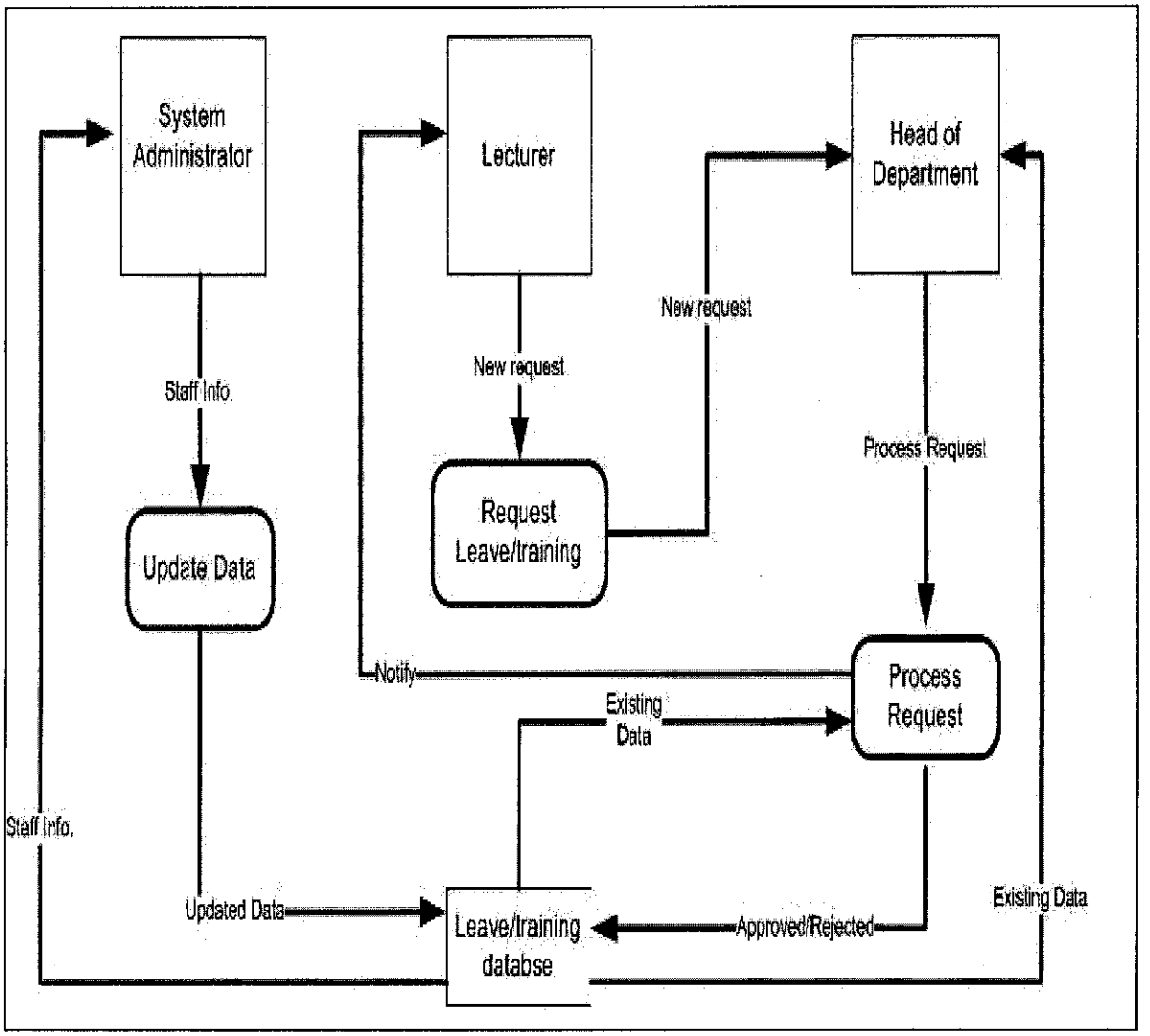


Figure 7: System Data Flow Diagram

Figure 7 show the conceptual flow design of the Automated Leave and Training Management System that focusing on a relationship or flow of the system involving system interface, system process and system storage or database. According to the above conceptual model there are three system interfaces which are system administrator, lecturer and head of the department.

System administrator is responsible in inserting, modifying and updating the data within the system. The data involved, including the lecturers information concerning with leave and training program. The data from the lecturer information form will be captured and stored in the project database. Apart from that, system administrator also can generate a report of leave and training application according to some period of time. All the application that has been approved will be print out by the system administrator to be submitted to the Human Recourses Management.

While for Lecturer, they can apply leave and training program by filling in the leave or training program form. They can start applying for leave and training program after view their schedule that has been provide in their personal information which is stored in the database. Leave and training form that have been filled up will submit to the head of the department for approval. The notification of the application whether approved or rejected will send to the lecturer after finish the reviewing process.

Lastly involved head of the department where is responsible in processing the request or the application by reviewing whether to approve or rejected the application. The existing data or information about lecturers can be loading from the database for this process. The data is important for the head of the department to make a reference in order to make a decision on the request. The data is store in database before notified the lecturers about their application condition.

4.4 Database Design

In database design, student prepared database architecture for the Automated Leave and Training Management System (ALTMS). Backend design of the system will include relation database, file database and user information database. The system use MySQL as the database architecture (*refer figure 8*). MySQL was chosen because of the availability of the software and the most suitable database tools to be integrated with PHP software. All information which is key-in by the user will be stored in the database. The information will retrieve if there are any changes or upgrading procedures occur to the database configuration.

As shown on figure 8 there are involved 3 tables all together in the ALTMS database. There are table Lecturer, Training and Leave. For the table Lecturer, the database will capture all the data and the information about the lecturer of IT/IS department. The Assistant Administrator responsible to key in the data that is useful for reference by the Head of the Department. The training table will capture all the data within the Training Programme Application form. While the Leave table will capture all the data that will be key in within the Leave Application Form.

Staff_id is set to be a primary key for all 3 tables. This is because whenever the user login to the system, the system will check the staff id of the user in order to load the database into the pages. The student used one to many relationships between each of the table (1 lecturer can apply many training and leave).

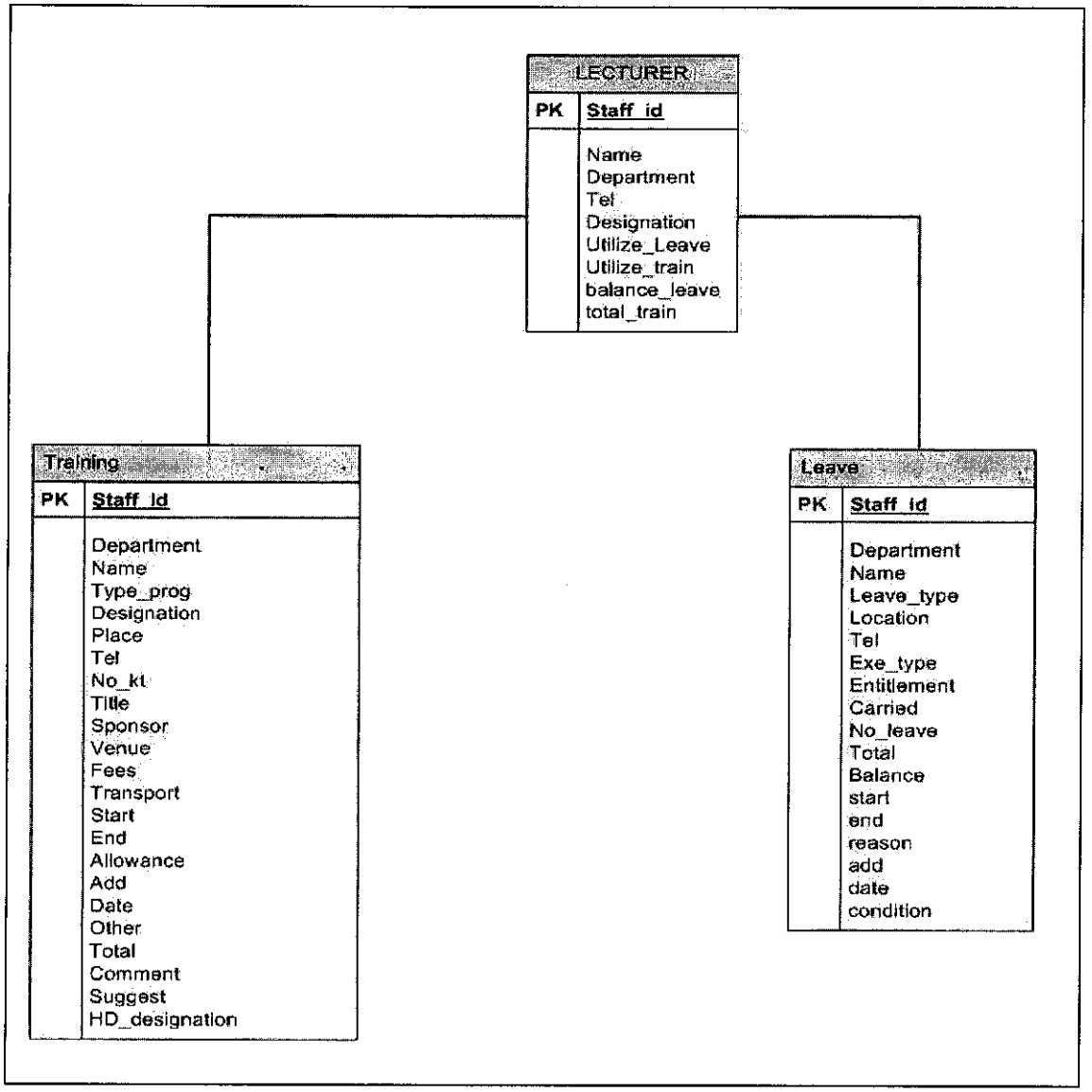


Figure 8: Database Design for ALTMS

4.5 System Functionality (ALTMS)

4.5.1 Administrator

Administrators have complete control over ALTMS. They are allowed to add/edit/delete all information within the ALTMS including lecturer's information and making the system completely flexible. They are also tasked with setting up the system initially for every other employee and setting company defaults. Administrator can generate a report of leave and training application after some period of time.

4.5.2 Employees (Lecturers)

Employees are allowed to apply new leave or training and notify through the system for themselves. They can also see their summaries for any year that exists for them showing leave or training that has been taken and leave or training that has been approved. Sickness summaries are also available showing any sick leave that the employee has had to take.

4.5.3 Head of Department

Program Head are essentially the same as employees with a couple of added bonuses. They are allowed to submit a request to notify of sickness for any employee within their team. Summaries are also available to Program Head for Employees within their Team. Program head can approve or reject all the application by the lecturers. Hierarchical users' structure helps to maintain the access to summaries. For example, employees can view only his/her leaves. Head of Department can view his/her and his team members' leave details etc. Administrators can see all.

4.6 System Implementation

4.6.1 System Basic Design

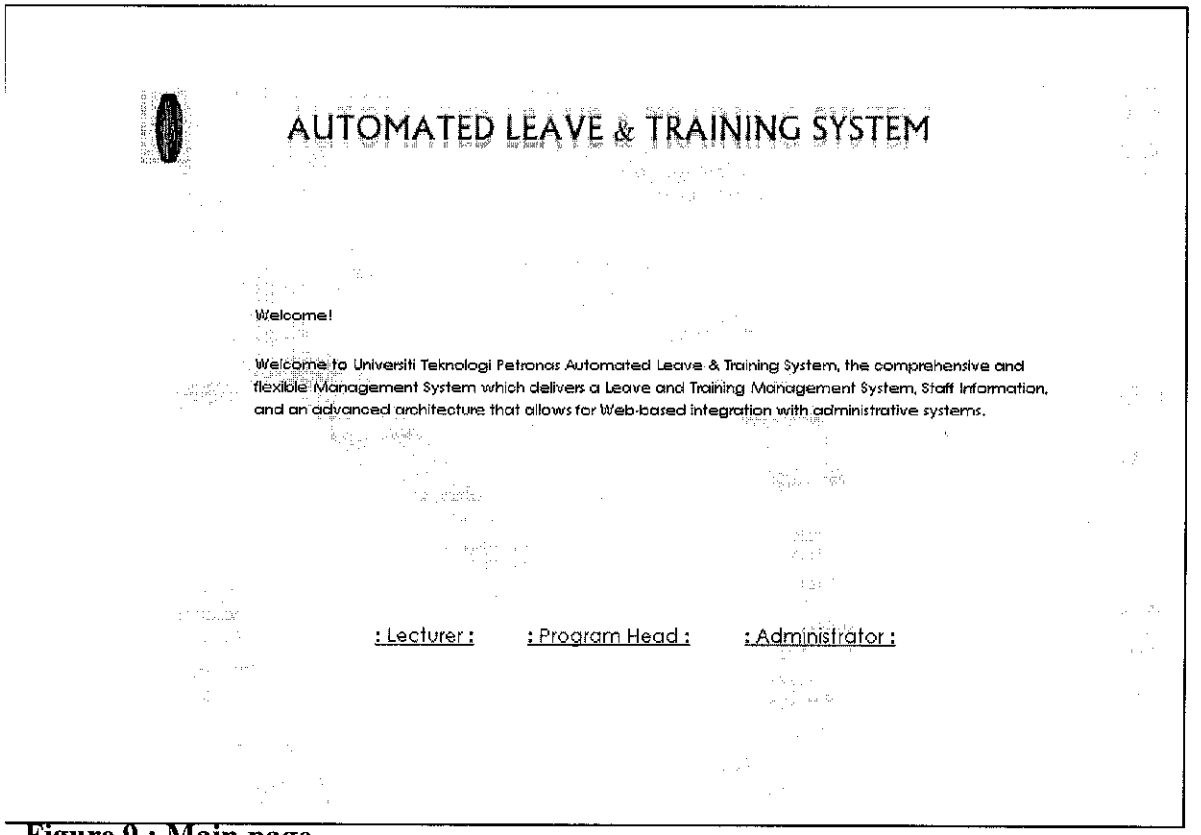


Figure 9 : Main page

Figure shows the main page or the default of the ALTMS. Through this page the user can log on to the system by simply click the login button. Then the system will open page based on the user id and the password entered.

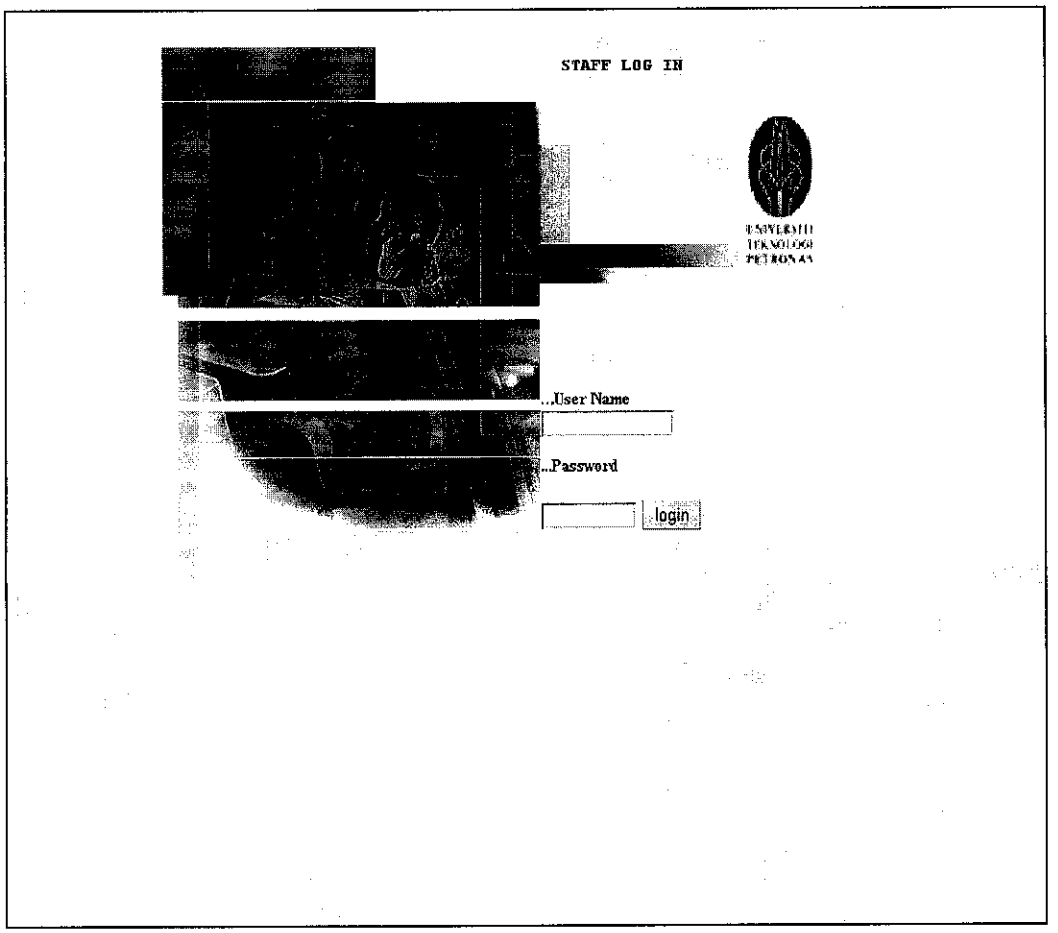


Figure 10 : Log in page

Figure above show the log in page for the ALTMS. The user either lecturer, head of department or administrator needs to log in into the system before start using it. The user has to enter the log in ID (staff id) and the password that they have chosen in order to access through the system. The user level is identifying by the log in ID and the password that is entered.

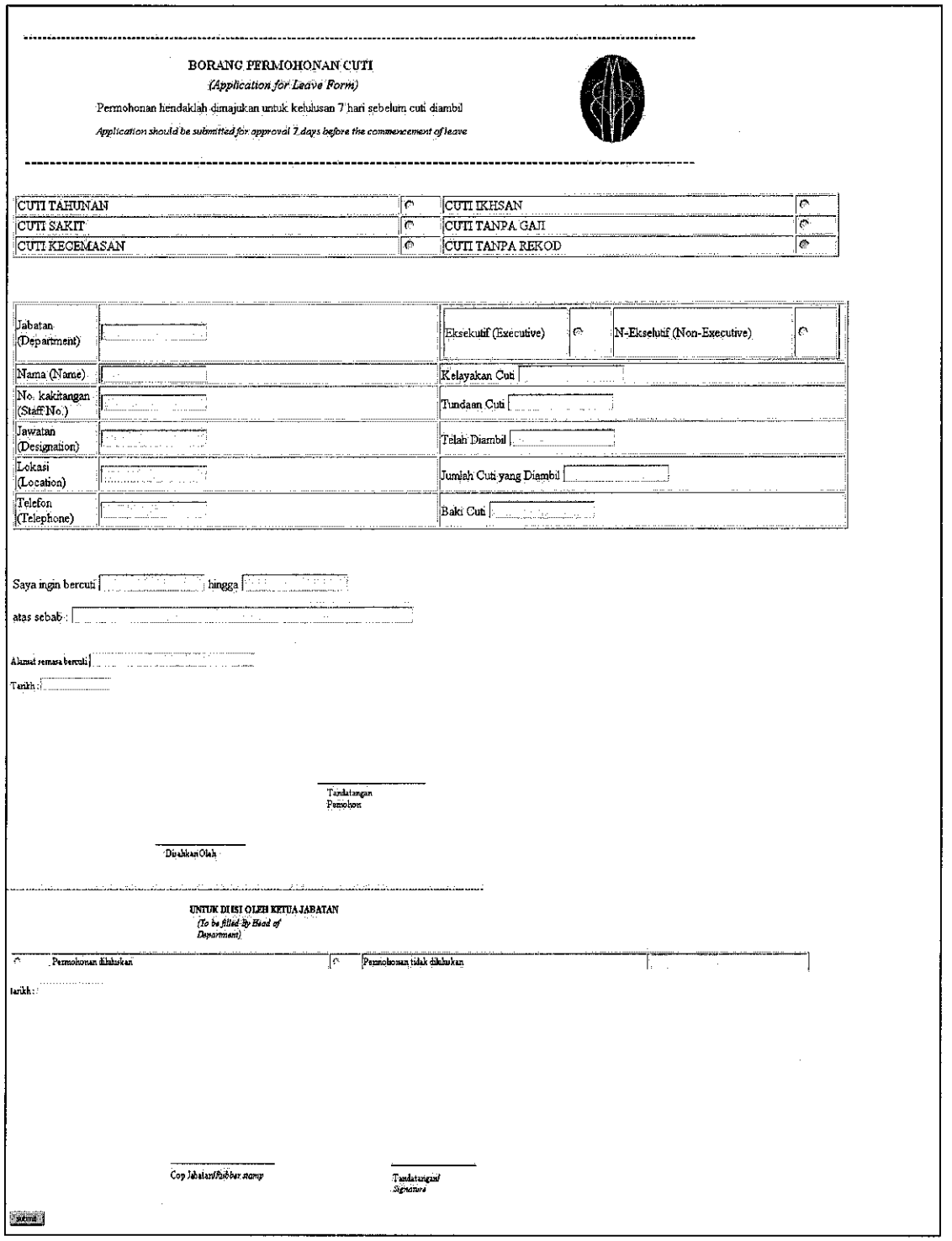
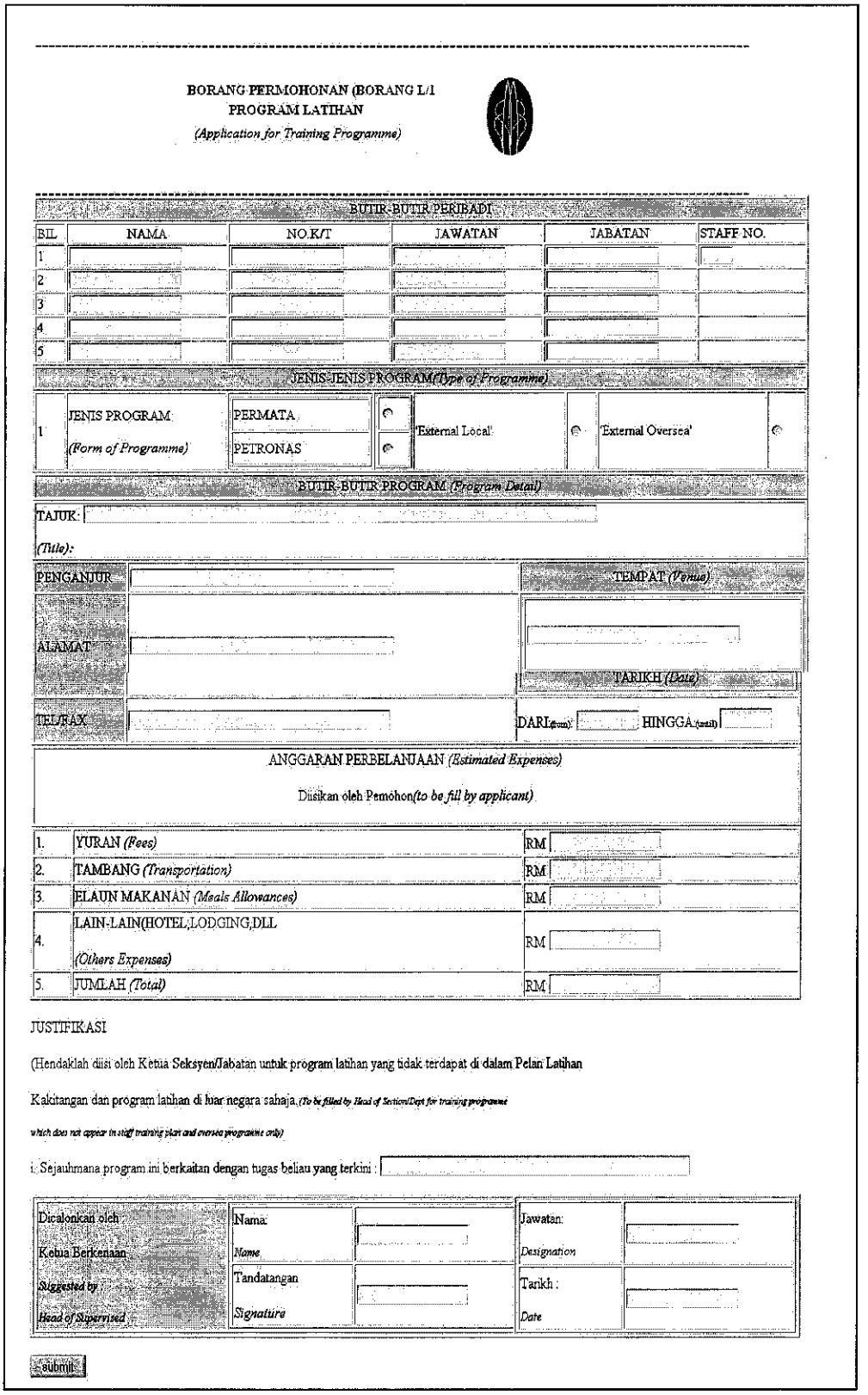


Figure 11: leave Application Form

Leave application form required the user to fill in the necessary detail in applying leave



BORANG PERMOHONAN (BORANG L/1
PROGRAM LATIHAN
(Application for Training Programme)

BUTIR-BUTIR PERIBADI

BIL	NAMA	NO.K/T	JAWATAN	JABATAN	STAFF NO.
1					
2					
3					
4					
5					

JENIS-JENIS PROGRAM *(Type of Programme)*

1	JENIS PROGRAM *(Form of Programme)*	PERMATA	○	'External Local'	○	'External Oversea'	○
		PETRONAS	○				

BUTIR-BUTIR PROGRAM *(Program Detail)*

TAJUK: *(Title):*

PENGANJUR | TEMPAT *(Venue)*

ALAMAT | TARIKH *(Date)*

TEL/FAX | DARI *(from)*: HINGGA *(until)*

ANGGARAN PERBELANJAAN *(Estimated Expenses)*

Diisikan oleh Pemohon *(to be fill by applicant)*

1.	YURAN *(Fees)*	RM
2.	TAMBANG *(Transportation)*	RM
3.	ELAUN MAKANAN *(Meals Allowances)*	RM
4.	LAIN-LAIN(HOTEL,LODGING,DLL *(Others Expenses)*	RM
5.	JUMLAH *(Total)*	RM

JUSTIFIKASI

(Hendaklah diisi oleh Ketua Seksyen/Jabatan untuk program latihan yang tidak terdapat di dalam Pelan Latihan

Kakitangan dan program latihan di luar negara sahaja. *(To be filled by Head of Section/Dept for training programme*

which does not appear in staff training plan and oversea programme only)

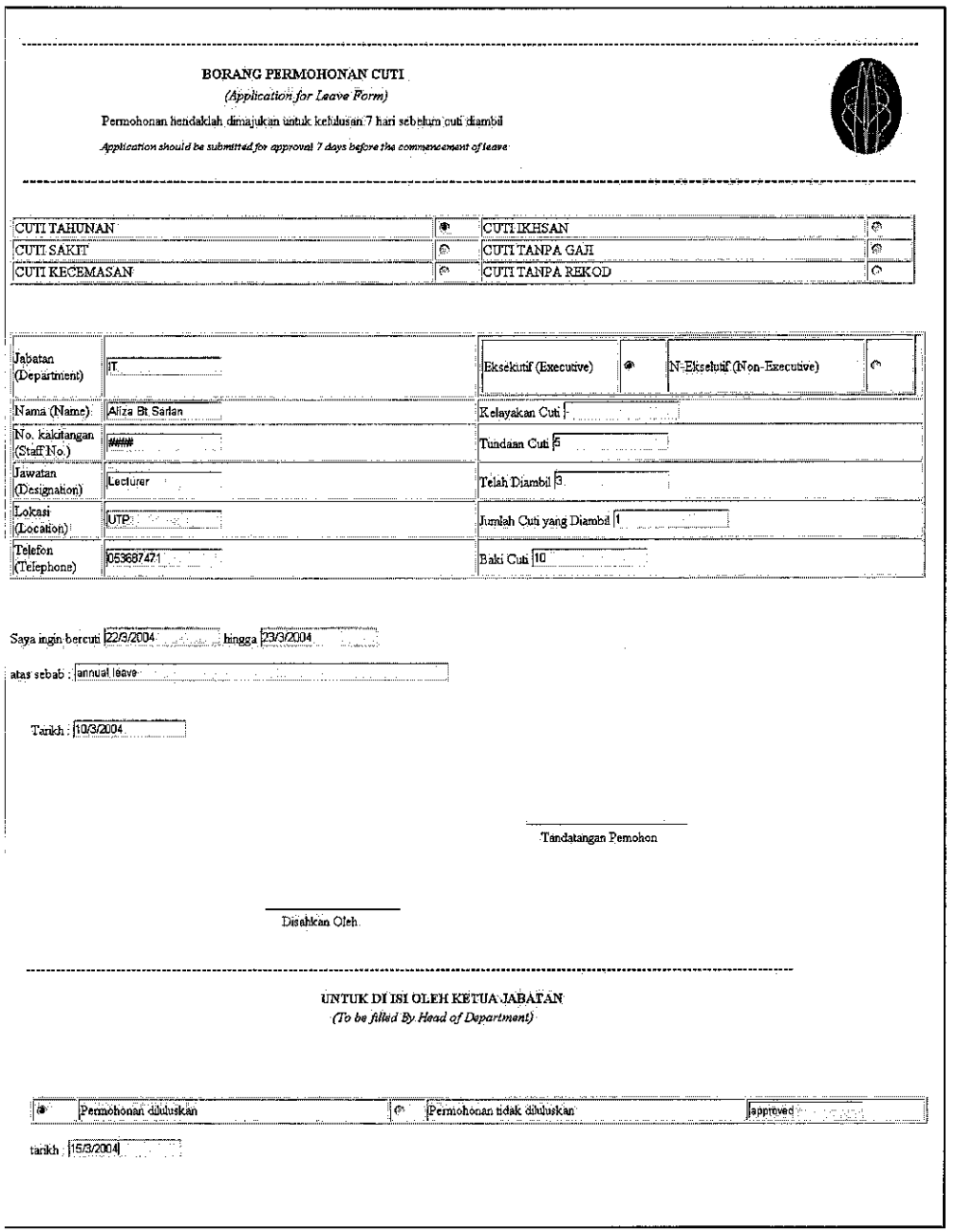
i. Sejauhmana program ini berkaitan dengan tugas beliau yang terkini :

Dicalonkan oleh : Ketua Berkenaan *Suggested by : Head of Supervisor*	Nama: *Name*		Jawatan: *Designation*	
	Tandatangan *Signature*		Tarikh : *Date*	

submit

Figure 12: Training Application Form

The training application form work the same way like the leave application form



BORANG PERMOHONAN CUTI

(Application for Leave Form)

Permohonan hendaklah dimajukan untuk kelulusan 7 hari sebelum cuti diambil

Application should be submitted for approval 7 days before the commencement of leave

CUTI TAHUNAN	●	CUTI IKHSAN	○
CUTI SAKIT	○	CUTI TANPA GAJI	○
CUTI KECEMASAN	○	CUTI TANPA REKOD	○

Jabatan (Department)	IT	Eksekutif (Executive)	●	N-Eksekutif (Non-Executive)	○
Nama (Name)	Aliza Bt Sarlan	Kelayakan Cuti			
No. kakitangan (Staff No.)	#####	Tundaan Cuti	5		
Jawatan (Designation)	Lecturer	Telah Diambil	3		
Lokasi (Location)	UTP	Jumlah Cuti yang Diambil	1		
Telefon (Telephone)	05368747	Baki Cuti	10		

Saya ingin bercuti 22/3/2004 hingga 23/3/2004

atas sebab : annual leave

Tarikh : 10/3/2004

Tandatangan Pemohon

Disahkan Oleh

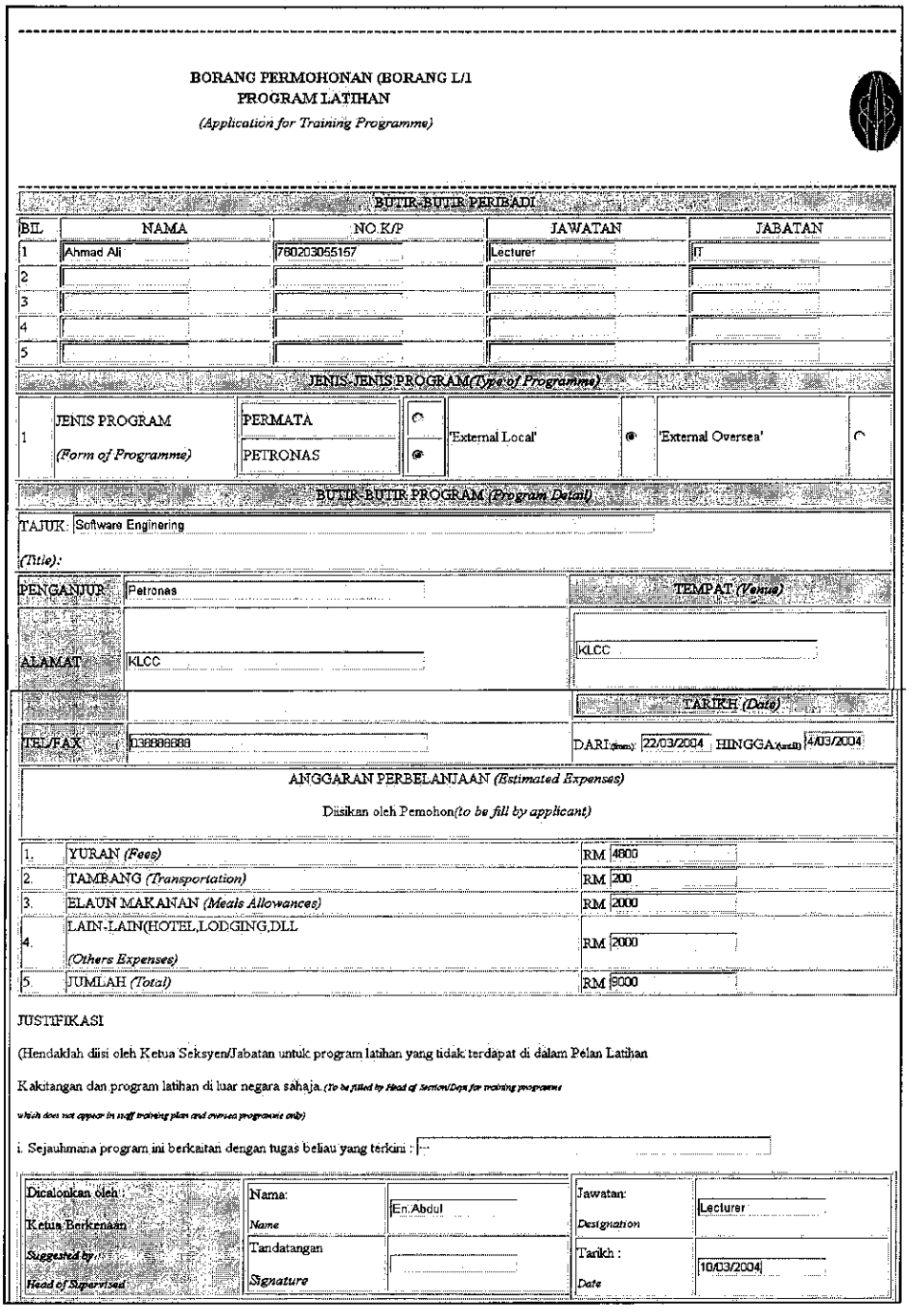
UNTUK DI ISI OLEH KETUA JABATAN

(To be filled By Head of Department)

●	Permohonan diluluskan	○	Permohonan tidak diluluskan	approved

tarikh : 15/3/2004

Figure 13 : Leave Application Approval Form



BORANG PERMOHONAN (BORANG L/1
PROGRAM LATIHAN
(Application for Training Programme)

BUTIR-BUTIR PERIBADI

BIL	NAMA	NO K/P	JAWATAN	JABATAN
1	Ahmad Ali	760203055167	Lecturer	IT
2				
3				
4				
5				

JENIS-JENIS PROGRAM *(Type of Programme)*

1	JENIS PROGRAM *(Form of Programme)*	PERMATA	○	'External Local'	●	'External Oversea'	○
		PETRONAS	●				

BUTIR-BUTIR PROGRAM *(Program Detail)*

TAJUK: Software Enginering
(Title):

PENGANJUR: Petronas — TEMPAT *(Venue)*

ALAMAT: KLCC — KLCC

TARIKH *(Date)*

TEL/FAX: 036888888 — DARI *(from)*: 22/03/2004 HINGGA *(until)*: 4/03/2004

ANGGARAN PERBELANJAAN *(Estimated Expenses)*

Diisikan oleh Pemohon *(to be fill by applicant)*

1.	YURAN *(Fees)*	RM 4800
2.	TAMBANG *(Transportation)*	RM 200
3.	ELAUN MAKANAN *(Meals Allowances)*	RM 2000
4.	LAIN-LAIN(HOTEL,LODGING,DLL *(Others Expenses)*	RM 2000
5.	JUMLAH *(Total)*	RM 9000

JUSTIFIKASI

(Hendaklah diisi oleh Ketua Seksyen/Jabatan untuk program latihan yang tidak terdapat di dalam Pelan Latihan

Kakitangan dan program latihan di luar negara sahaja. *(To be filled by Head of Section/Dept for training programme*

which does not appear in staff training plan and overseas programme only)

i. Sejauhmana program ini berkaitan dengan tugas beliau yang terkini :

Dicalonkan oleh: Ketua Berkenaan *Suggested by: Head of Supervised*	Nama: *Name*	En Abdul	Jawatan: *Designation*	Lecturer
	Tandatangan *Signature*		Tarikh : *Date*	10/03/2004

Figure 14 : Training Application Approval Form.

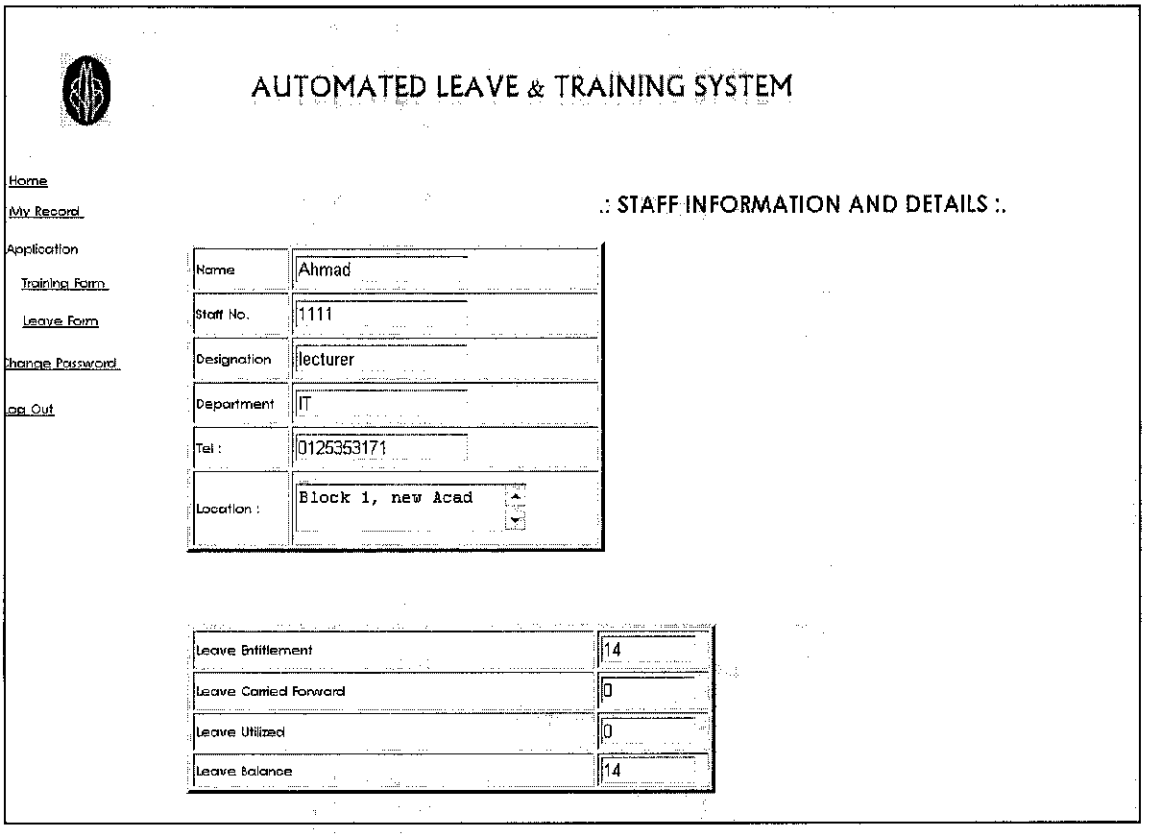


Figure 15 : Staff Information Page.

4.7 The benefits of ALTMS are listed below:

4.7.1 Improve Workflow Process

In Implementing automates system, workflow process may become easier to handle since all the activities are done online. It also reduces time by eliminating human assistants.

4.7.2 Better References

Reviewing and approval by the program head also can be easier with all the references that can be view using the system. head of the department that is responsible for review and give a status to the application can easily view the applicant (lecturer) information which including schedule to make sure that leave and training is given at a proper time and can give a benefit to the applicant and the department itself.

4.7.3 Improve Communication

It improves communication by centralizing the source of data and information. For this situation it involves all the lecturer, head of the department and the assistant administrator (AA).

4.7.4 Organize Data

All important data of all the staff is captured and stored properly in a well organize database. The data also can be load easily since there is a properly define and organize relationship between all the data within the database.

4.7.5 Easy to Use

Step-by-step wizards simplify the process of making and changing of registration. This system provided more systematic approach which can easily learn and understand by user. It also provides easier procedure to the both applicant (lecturer) and the approver (head of the department).

4.7.6 Flexibility

Software control over processes enables their re-design in line with changing business needs.

4.7.7 Better Process Control

Improved management of business processes achieved through standardizing working methods and the availability of audit trails

CHAPTER 5

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

This paper introduces an approach to enhance the flexibility of workflow management systems by providing the ability to change the structure of workflow instances dynamically. By allowing changing the assignment of workflow instances and workflow schemas, different workflow schemas can be used to control a given workflow instance at different point in time.

It is now possible to automate an entire human resources operation utilizing an integrated document management solution. This allows managers quick access to any employee's personnel file via the Web. It also allows employees to take a proactive approach in managing their information and everything from address and phone number changes and vacation requests and benefits changes. This provides great efficiencies within the department and gives employees a sense of control over their information. Due to this existing problem and difficulties that arise can be eliminate and more reliable and quality of working is achieved.

5.2 Recommendation

ALTMS is developed as a working prototype resulting from the research of the project; therefore this prototype can be improved in terms of its functionality, features as well as performance. The prototype can be enhanced into a final working product that can be used widely in UTP.

As for recommendation, the student suggests that ALTMS is implemented widely at UTP. It includes the entire department from the engineering school to other non-academic department. From this centralized and reliable system hopefully it can increase the quality leave and training management in UTP.

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APPENDICES

AUTOMATED LEAVE & TRAINING SYSTEM

Welcome!

Welcome to Universiti Teknologi Petronas Automated Leave & Training System, the comprehensive and flexible Management System which delivers a Leave and Training Management System, Staff Information, and an advanced architecture that allows for Web-based integration with administrative systems.

: Lecturer : : Program Head : : Administrator :

AUTOMATED LEAVE & TRAINING SYSTEM

INFORMATION TECHNOLOGY & INFORMATION SYSTEM PROGRAMME

Home

Staff

Staff balance

Search

Log Out

Name	No.	Position	Section	Tel	Location	Entitlement	Taken	Balance
Ahmad	1111	lecturer	IT	0125353171	Block 1, new Acad	14	0	0	14
Ali	4444	Lecturer	IS	0123654987	Block 2, new Acad	14	0	0	14
Aliza bt Sarlan	5555	Lecturer	IS	053637564	Block 2, new Acad	14	0	0	14
Dr. Abass	2222	Head	IT	0123456789	Block 1, new Acad	20	0	0	20
Asrul Abu	1234	Admin	IT	0123456789	Block 1, new Acad	14	0	0	14
Md Noor	3333	Lecturer	IT	01234567	Block 1, new Acad	14	0	1	13

AUTOMATED LEAVE & TRAINING SYSTEM

Home

Registration

Search

Staff Balance

Leave Application

Approve

Reject

Training Application

Approve

Reject

Log Out

New Endorsement

Staff No. :3333

Name : Md Noor

Date : 1st June 2004

AUTOMATED LEAVE & TRAINING SYSTEM

Home

My Record

Application

Training Form

Leave Form

hange Password

ga Out

Username	1111
Old Password	
New Password	
Confirm Password	
Change Password	