Personnel Information System for Escap

By

Mr. Warote Wongphakdee

Final Report of the Three - Credit Course
CS 6998 System Development Project

Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master of Science
in Computer Information Systems
Assumption University

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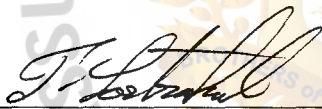CS 6998 System Development Project**

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Project Title	:	Personnel Information System for Escap
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Academic Year	:	1998

The Graduate School of Assumption University had approved this final report of the three-credit course, CS 6998 System Development Project, submitted in partial fulfillment of the requirements for the degree of Master of Science in Computer Information Systems.
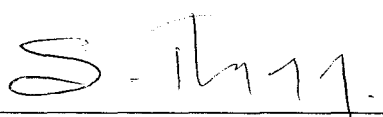
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ABSTRACT

The role of information is very vital for the changing world . The existing system presented problems that are associated with screen design, hardware , and report layout . The screen is not friendly to use. Hardware is too old. The report layout is complex. The new system will help to address a various Personnel Information System in an integrated and comprehensive manner.

The project is focused on the Personnel Information System which supports all the personnel information operation, which classifies areas of operation into main menus, create reports, update personnel files , personnel files management.

The problem of the department requires an improvement in personnel filing system which will facilitate employees performance evaluation, planning in managing people and manpower (program budget) . New hardware is needed. New screen and report layout design are needed. The new system will improve the performance in working. The screen will be friendly to use. The report layout will not be complex anymore. The new hardware will increase the performance in operation.

ACKNOWLEDGEMENTS

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I. INTRODUCTION

1.1 Background of Escap

The Economic and Social Commission for Asia and the Pacific was established on 28 March 1947 by the Economic and Social Council of the United Nations. In 1974, the name of the commission was changed from ECAFE (Economic and Social commission for Asia and the Far East) to ESCAP to reflect the new dimensions of its activities.

The principal role of the ESCAP is to initiate and participate in measures for facilitating concerted action for the development of Asia and the Pacific, including the social aspects of such developments, with a view to raising the level of economic activity and standards of living, and for maintaining and strengthening the economic relations of countries and territories in Asia and the Pacific, both among themselves and with other countries in the world.

The role of information is very vital for the changing world. The existing system presented problems that are associated with screen design, hardware, and report layout. The screen is not friendly to use. Hardware is too old. The report layout is complex.

The new system will help to address a various Personnel Information System in an integrated and comprehensive manner. The project is focused on the Personnel Information System which supports all the personnel information operation, which classifies areas of operation into main menus, create reports, update personnel files, personnel files management.

ORGANIZATIONAL STRUCTURE OF THE SECRETARIAT OF THE ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC
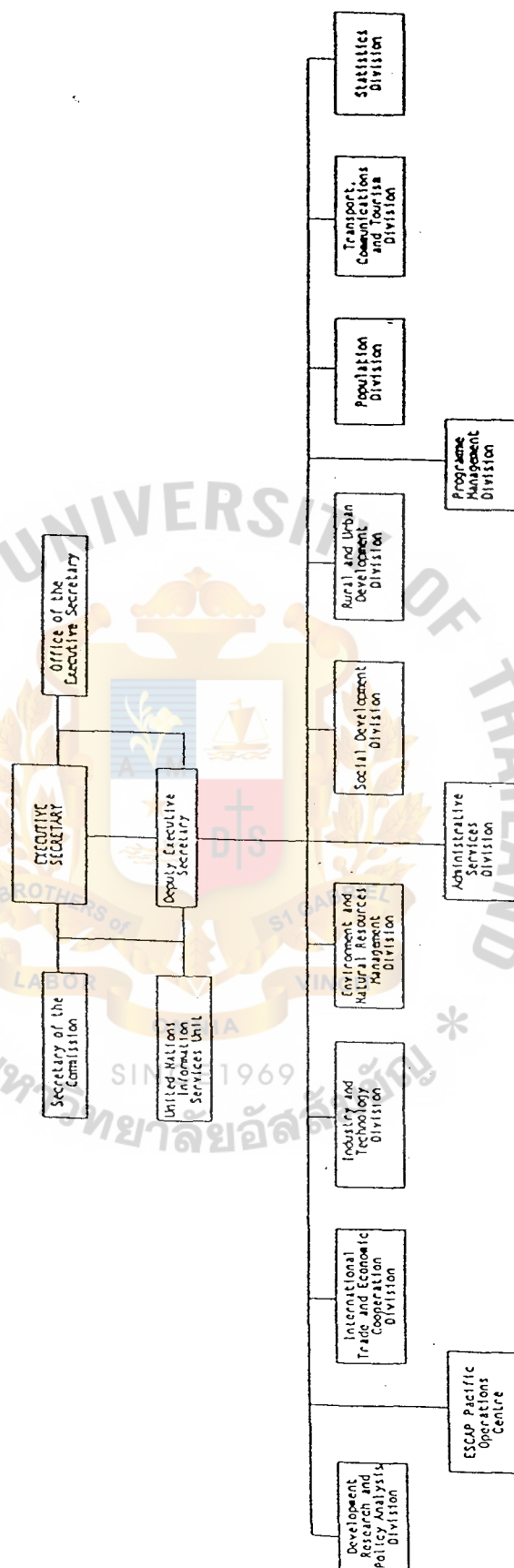
Figure 1.1.   Organizational Structure of Escap

The problem of the department requires an improvement in personnel filing system which will facilitate employees performance evaluation, planning in managing people and manpower (program budget) . New hardware is needed. New screen and report layout design are needed. The new system will be improve the performance in working. The screen will be friendly to use. The report layout will not be complex anymore. The new hardware will increase the performance in operation.

In this organization, the operation will depend on the budget that is supported by United Nations. The manpower request will depend on the program budget. The permanent staff continue the employment contract every 3 years. The temporary staff has the employment contract about 1 year. The professional staff will control the general service staff . The promotion in this organization depends on the capacity and education of the staff. When the organization has a vacant position , the committee will announce . The candidate needs to participate in the test. The best one only can get that position. The problem of the department requires an improvement in personnel filing system which will facilitate employees performance evaluation, planning in managing people and manpower (program budget) . New hardware is needed. New screen and report layout design are needed. The new system will improve the performance in working. The screen will be friendly to use. The report layout will not be complex anymore. The new hardware will increase the performance in operation.

1.2 Identifying The Problems

After discussion and interview with personnel involved, the problems of personnel department are : the hardware is too old, the file design does not match with user requirements, the screen size is too small so that the screen design is not easy to understand, the report does not match with user requirement, the database management system has low security, and the Lan system is low speed.

The existing system uses Intel 486 which has low speed in operation. The screen size of existing system is 14" so that the user cannot see the information effectively. The database design is not good enough for keeping the data. Some files are not in the system. The staff have to work manually for keeping the data. The application file, leave and late file, performance education file, medical treatment file, financial compensation file and training file are not in the existing system. When the candidate applies for the job, the staff have to keep the data in hardcopy. When the management level would like to select the person for the new position , they have to read the data from the hardcopy , because the performance education file and training file are not in the existing system. The medical treatment file and financial compensation files are important for budget control, but they are not in the computer system. The existing system use Foxpro for Dos to create the screen. The user interface is not attractive. The screen designs have a lot off abbreviations, such as, EFF = effective, Suprusr = supervisor which are hard to understand. The user can lose the screen. The users have to remember the command, for example, put 99 exit to Dos, but they put 1 which goes to the main menu. The report of the existing system does not match with user requirements. Some reports are not in the existing system , such as, application report, performance education report, medical treatment report, financial compensation

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report and training report. It is hard for management level for collecting the data. The planning cannot move effectively.

The human resource management is very important today. The management have to wait for collecting the data before decision making. It is a slow operation. The existing system uses Foxpro for Dos for database management. The Foxpro is known by a lot of people, so the people who know Foxpro can make changes to the system. The security of the system is low. The hacker can come to the system and know the information easily. The system will be damaged. The data will not be in the right place. This system will work at low speed in keeping a lot of data.

1.3 Scope of The Project

The project is focused on the Personnel Information System which supports all the personnel information operation, which classifies areas of operation into main menus, create reports, update personnel files , and personnel files management.

The problem of the department is to improve personnel filing system which will facilitate employees performance evaluation, planning in managing people and manpower (program budget) . New hardware is needed. New screen and report layout design are needed. The new system will improve the performance in working. The screen will be friendly to use. The report layout will not be complex anymore. The new system will increase the performance in routine task and will help the management level in decision making.

The new system will cover all employee information systems, such as , conducting an improvement on current employee filing system, screen design ,and report. New hardware and software will facilitate the operation. The database design of existing system is not good enough for keeping the data. Some files are not in the system. The staff has to work manually for keeping the data. The new database design will correct the problems effectively. File designs have proper information. The existing system uses foxpro for Dos to create the screen. The user interface is not attractive. The screen design has a lot of abbreviation. The new system uses C for window 95.

The user interface is very attractive and easy to understand. It saves time and cost for training. The report of the existing system does not match with user requirements. Some reports are not in the existing system, such as , application report, leave and late report, performance education report, medical treatment report, financial compensation report and training report. It is hard for management level to collect the data. The planning cannot move effectively. The report of new system will show the things that user wanted to know. The existing system uses Foxpro for Dos for database management. The Foxpro is known by a lot of people, so the people who know Foxpro can make changes to the system. The security of the system is low. The hacker can come to this system and know the information easily. The system will be damaged. The data will not be in the right place. This system will work in low speed in case of keeping a lot of data. The new system uses Oracle 7.3 for database management that matches with bigger operation and new user interface. The Oracle is better than the Foxpro in connecting the database. In retrieving the data it is more effective. The Oracle

has more security . The new database server will increase the performance in operation.

1.4 Objectives of The Project

The objectives of the project on the Personnel Information System are as follows:

1. To study the existing system of the Personnel Information System.

2. To analyze the problem of user ' s requests.

3. To design a low cost microcomputer-based information system on LAN.

4. To develop and test the software package for the Personnel Information System which is written in C.

5. To reduce the complexity work from Personnel Department.

1.5 Project Plan

Activities.

Activities	NOV				DEC				JAN				FEB			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
System analysis and requirement																
- Personal interview	■	■														
- Identify area under study		■														
- Identify the objective		■														
- Identify the problem		■														
- Identify even-list of the system		■														
- Identify the requirement of users		■														
System design																
- Develop the logical DFD of the system			■													
- Design file structures of the system				■												
- Data dictionary				■												
- Design input & output screen					■											
- Design report layout					■											
- Structured charts					■											
- System prototype					■											
Coding and testing																
- Pseudocode or minispec							■									
- Programming								■	■	■	■					
- Testing											■	■				
Conversion and implementation																
- Demonstration and training												■				
- Acceptant system													■			
- Documentation														■		
Maintenance																
- Any corrections															■	■
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Figure 1.2.   Gantt Chart

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The Gantt Chart is an activity chart of the estimated time that is assigned to each job. In this case , it takes 4 months from the beginning until finished. The Gantt Chart is divided into 5 activities including :

1. **System Analysis and Requirement :**

It is the first task before designing the new system. The existing system is done by interviewing the user and involved persons. This is to knowing the area under study, the objective , the problem, the process of work, and the requirements of the new system and analyzing it. This activity took about 2 weeks time.

2. **System Design :**

After knowing the requirements of the user , we develop the logical data flow diagram of the new system , design file structures, data dictionary, design the output and input screen including report layout. Structure chart and system prototype are in this activity also and these activities take about 4 weeks time.

3. **Coding and Testing :**

After finishing the first two activities, we develop pseudocode and coding the program by using C . We test the program after coding to check whether there is an error or not and to let the users know and see whether program that   matches with them or not. This activity takes about 6 weeks time.

4. **Conversion and Implementation :**

I convert this system into the real work. We need to create the files and key in the real data and keep in the files, implementation process by parallel run to check that they get the same result or not . In this activity, we include the demonstration and training of the involved users. The acceptance from the user and the management level is in this activity. This activities takes about 2 weeks time.

5. **Maintenance :**

This activity, concerns corrections that may happen after implementing this system. This activity takes about 2 weeks time.

II. THE EXISTING SYSTEM

2.1 Introduction

The principal role of Escap is to initiate and participate in measures for facilitating the development of Asia and the Pacific, including the social aspect. Of Escap raising the economic activity and standards of living . Escap has a lot of divisions such as, development research and policy analysis divisions, Escap pacific operations center, international trade and economic cooperation division, industry and technology division , environment and natural resources management division, administrative services division, social development division, rural and urban development division, program management division, population division, transport communication and tourism division, and statistics division. In this organization, the operation will depend on the budget that is supported by United Nations. The manpower request will depend on the program budget. The permanent staff renew the employee contract every 3 years. Some staff has employee contract for just 1 year. The promotion in this organization depends on the capacity and education of the staff. When the organization has a vacant position , the committee will announce to internal staff and general person. The candidate have to participate in the test . The best one only can get that position.

The project is focused on the Personnel Information System which supports all the personnel information operation, which classifies areas of operation into main menus, create reports, update personnel files, and personnel files management.

2.2 The Existing System

2.2.1 Users of The System

The users of the system are :

The management level composes of personnel management team and planning division. They need the personnel information in decision making, planning, budget control, etc. They will get the information from reports according to their request, in the computerized system. The information that the management level requires are employee record, training record, budget record, etc. They can get it by display screen at the terminal. These are accurate information because all the organizational information are stored in the central database by local area network system.

The general service level composes of the group of the personnel staff service department officers. These officers have the responsibility to store the information, update the information, search the information, prepare the reports, and personnel file maintenance. They need all sources of personnel information in order to store, update, searching , and create reports.

The staff need the system that can work at high speed. At the end of the month, the operation looks like a bottle neck. The personnel staff have to work hard to generate the salary document, it will meet the problem about low speed in operation.

2.2.2 Process of The Work

The work processes of the existing system are described into six sections which are employee selection, training, medical treatment, loan, finance compensation, and create reports.

2.2.2.1 Employee Selection

Employee selection is one of the most important management works involving recruitment and placement, which find the right man in the right job and hiring them.

1. Human resource officer gets the manpower request from other departments. The request will depend on the budget of Escap.

2. Personnel officers receive the applicant's document.

3. The officer check the documents detail.

4. The valid applicant will be contacted for interview.

5. If the applicant passed the interview, the officer appoint for guarantee.

6. The officers keep all applicant information into file.

7. Prepare new employee report.

8. Send the employee report to a personnel manager.

9. Send the employee report to require department.

2.2.2.2 Training

After selecting employees, the next step is orientation and training. The organization provides the information and skills to be successful in the new position. There are two cases in training : new employee training and employee training.

2.2.2.2.1 New Employee Training

1. Preparing the orientation.

2. Human resource officers get the training requirement course from training division.

3. The personnel officer creates new employee report.

4. Send employee report to training division.

2.2.2.2.2 Employee Training

1. Human resource officers get the training requirement course from training division.

2. The officer searches the old record of employee training file.

3. The officer creates training and employee report.

4. Send training report and employee report to training division.

2.2.3 Medical Treatment

The medical treatment is an important welfare in the organization. The organization will pay 80% for employee. The employee have to pay 20% themselves.

1. The medical treatment process begins with the medical treatment document from employee.

2. The officer checks medical treatment document.

3. The officer creates the medical treatment report.

4. Sending the medical treatment report to accounting and financial department for payment.

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2.2.4 Loan

Loan is the second employee welfare. The employee can invest in business, buy the car and house , etc... with this money. The loan processes are as follows :

1. The personnel officer receives loan document..

2. The officer checks the loan document.

3. The officer checks the limit and amount of loan.

4. Guarantee process.

5. Keep loan document and record into file.

6. The officer creates loan report.

7. Sending the loan report to welfare division.

2.2.5 Financial Compensation

The financial compensation is the employee welfare. In case of injury in work, the financial compensation processes are as follows:

1. The personnel officer receives financial compensation document.

2. The officer considers the details of accident.

3. The officer contacts the guarantee company.

4. Keep financial compensation document and record into file.

5. The officer creates financial compensation report.

6. Sending the financial compensation report to welfare division.

2.2.6 Summary of The Existing System

From studying the existing system by personnel interview, the existing system works are summarized as follows :

2.2.6.1 Update Employee File

It is the responsibility of personnel department to keep all employee information. When the employee information are changed, it is the duty of personnel officer to update the employee record. There are 3 types of update : adding , changing and deleting.

Adding   : In case of adding new employee, adding new telephone number, etc.

Changing   : In case of changing all employee details such as   salary, position, address, etc.

Deleting   : In case of resignation, etc.

2.2.6.2 Create Report

It is the duty of personnel officer to create reports. This is for the operation at personnel department and for management level to make decision, planning, etc.   The report is very important for making decisions. The budget planning is a vital task of management level. Putting the right man in the right job is very important too. The personnel officer has a great role in recording data and creating reports.

2.3 Current Problems and Areas for Improvement

2.3.1 Personnel Interviewed

NAME	: MR. SARAVUT BUNNAG
POSITION	: RECORD UNIT OFFICER
DEPARTMENT	: PERSONNEL STAFF SERVICE DEPARTMENT
DATE OF INTERVIEW	: NOVEMBER 22, 1997
INTERVIEW NOTES	:

He is a record unit officer. He told about his responsibility, and problems in work and including the requirements that he wants to improve his work.

After discussion and interview with personnel involved, the problems of personnel department are : the hardware is too old, the file design does not match with user requirements, the screen size is too small, the screen design is not easy to understand, the report does not match with user requirement, the database management system has low security, and the Lan system has low speed.

The existing system uses Intel 486 which has low speed in operation. The screen size of existing system is 14" so that the user cannot see the information with effectiveness. The database design is not good enough for keeping the data. Some files are not in the system. The staff have to work manually for keeping the data. The application file , leave and late file, performance education file, medical treatment file, financial compensation file and training file are not in the existing system. When the candidate applies for the job, the staff have to keep the data in hardcopy. When the management level would like to select the person for the new position, they have to read the data from the hardcopy because the performance education file and training file are not in the existing system. The medical

treatment and financial compensation are important for budget control, but they are not in the computer system.

The existing system uses Foxpro for DOS to create the screen. The user interface is not attractive. The screen designs have a lot of abbreviations, such as , EFF = effective, Suprusr = supervisor, which are hard to understand. The users can lose the screen . They have to remember the command, for example, put 99 exit to DOS , but they put 1 which goes to the main menu. The report of the existing system does not match with user requirements. Some reports are not in the existing system, such as, application report, performance education report, medical treatment report, financial compensation report and training report. It is hard for management level for collecting the data. The planning cannot move with effectiveness. The human resource management is very important today. The management have to wait for collecting the data before decision making. It is a slow operation. The existing system uses Foxpro (DOS) for database management. The Foxpro is known to a lot of people, so the people who know Foxpro can make changes to the system. The security of the system is low. The hacker can come to the system and know the information easily. The system will be damaged. The data will not be in the right place. This system will work at low speed in keeping a lot of data.

The problems of the department, is to improve personnel filing system which will facilitate employee's performance evaluation, planning in managing staff and manpower. The new system will help the management level in decision making. The new system will cover all employee information systems ,such as,

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conducting an improvement on current employee filing system , screen design ,

and report. New hardware and software will facilitate the work. The database

design of existing system is not good enough for keeping the data. Some files are

not in the system. The staff have to work manually for keeping the data. The new

database design will correct the problems with effectiveness. File designs have

proper information. The existing system uses Foxpro for DOS to create the screen

. The user interface is not attractive. The screen design has a lot of abbreviations.

The new system uses C for window 95 . The user interface is very attractive and

easy to understand. It saves time and cost for training. The report of the existing

system does not match with user requirements. Some reports are not in the

existing system , such as, application report, leave and late report, performance

education report, medical treatment report, financial compensation report and

training report. It is hard for management level to collect the data. The planning

cannot move with effectiveness. The report of the new system will show the

things the user wanted to know. The existing system uses Foxpro (DOS) for

database management. The Foxpro is known by a lot of people, so the people who

know Foxpro can make changes to the system. The security of the system is low.

The hacker can come to this system and know the information easily. The system

will be damaged. The data will not be in the right place. This system will work at

low speed in case of keeping a lot of data. The new system uses Oracle 7.3 for

database management that matches with bigger operation and new user interface.

The Oracle is better than the Foxpro in connecting the database. In retrieving the

data , it is more effective. The Oracle has more security than Foxpro. The new

database server will increase the performance in operation. The Pentium 133 is used for new system for faster operation and can run with new application program. Intel 486 is obsolete already. The new screen size is 15" that makes the staff see the information clearly. The network operating system of existing system is NetWare 3. In case of adding new servers, user has to generate the password for each server. If the system has 10 servers, the user has to log in 10 times with different passwords. It wastes a lot of time. In case of printing the report, the user has to wait for printing queue. NetWare 4.1 of new system can use just 1 password for 10 servers. User can log in just for 1 time. It does not waste the time. In case of printing, the user can send print command to the printer directly. User does not have to wait for printing queue. The important document can be sent to the management level rapidly. All of these are good for management level in decision making.

III. THE PROPOSED SYSTEM

3.1 System Design

The user requirements are : new database designs that can keep the important information, in new screen designs which are easy to understand the new reports in the computer system, new database server that has more security, new screen size (15") for clear vision, and the faster speed of Lan system. The database design is not good enough for keeping the data. Some files are not in the system. The staff have to work manually for keeping the data. The application file , leave and late file , performance education file, medical treatment file , financial compensation file and training file are not in the existing system. When the candidate applies for the job, the staff have to keep the data in hardcopy. When the management level would like to select the person for the new position , they have to read the data from the hardcopy because the performance education file and training file are not in the system. The medical treatment and financial compensation are important for budget control , but they are not in the computer system. The new database design will correct problems with effectiveness. File designs have proper information. Fields are too small to keep the important information. The existing system uses Foxpro for DOS to create the screen. The user interface is not attractive. The screen designs have a lot of abbreviation , such as Eff = Effective , Suprusr = Supervisor, which are hard to understand, sometime the user lost screen. The new screen use C for window95. The user interface is very attractive and easy to understand. It saves time for training. New screen shows day, month, year which are easy to record. The report of the existing system does not match with user requirements. Some

reports are not in the existing system , such as, application report, leave and late report, performance education report, medical treatment report , financial compensation report and training report. It is hard for management to collect the data. The planning cannot move with effectiveness. The human resource management is very important today. The management level has to wait for collecting the data before decision making. It is a slow operation. The new system will correct the problems with effectiveness. The report will show the things that user wanted to know. The existing system uses Foxpro (DOS) for database management. The Foxpro is known by a lot of people, so the people who know Foxpro can make changes to the system. The security of the system is low. The hacker can come into the system and know the information easily. The system will be damaged. The data will not be in the right place. The system will work at low speed, in case of keeping a lot of data. The new system uses Oracle 7.3 for database management that matches with bigger operation and new user interface. The Oracle 7.3 is better than the Foxpro in connecting the database. Retrieving the data is more effective. The oracle has more security than Foxpro . It uses a lot of password in correcting the data.

The hardware of existing system uses Intel 486. Window 95 which cannot run with high speed. I use the new hardware because the cost is not too high. Changing some part of old hardware use a lot of money . The new hardware uses Pentium 133 as a CPU. Window 95 can run with high speed. The speed of existing system on Lan is 10 Mbps. The network operating system is NetWare 3. The speed of communication on Lan is very slow. NetWare 3 has to wait for printing queue. In case of adding the new server, the user has to create the new password. If the system adds 10 servers, the user has to create 10

passwords for each server. It wastes the time in operation. When salary releases each month, the staff has to print the salary report for checking the amount. The training staff would like to check the training report and the management level would like to select the person for new position. The personnel department will work like a bottle neck. The report cannot be released on time. The speed of new system will run on 100 Mbps because of new hub and network interface card. NetWare 4.1 is the new operating system. The staff do not wait for printing queue. They can select the printer by themselves. And in case of adding the new server, the user can log in for just 1 password. It is a very fast operation.

The figure 3.1 shows context diagram of personnel information system. The information of application information system, employee information system, training information system, management information system, accounting and financial information system, welfare information system can flow with effectiveness. The application information system can send the application information system to personnel information system. The application information is useful for recruitment. The management level can put the right man in the right job with effectiveness. Training information is a good tool for employee performance evaluation. The management level can select the right man for the operation. The employee training information will be kept in personnel information system. The management level can know the report about training , budget control, application, employee background, salary. The figure 3.2 shows level 0 of data flow diagram of personnel information system. Processes of personnel information system are employee screen process, prepare manpower planning, prepare training information, financial compensation, credit and loan, and medical treatment. Application information , testing and interview

result will be kept in central database. The management level can check it all the time. Training , welfare, financial compensation, salary of staff are cost of organization. The management level has to know about it for budget control. The medical treatment of staff is the welfare. The organization will pay 80% from whole cost. Staff have to pay 20% themselves. In new staff training , staff have to prepare for orientation and get training course from training division. After that, the personnel officer create new employee report and send to training division. In staff training, the personnel officer has to search for the old record of employee training file. After that, send employee and training report to training division. The financial compensation is the employee welfare, in case of injury in work, the personnel staff has to consider the details of accident and contact with insurance company.
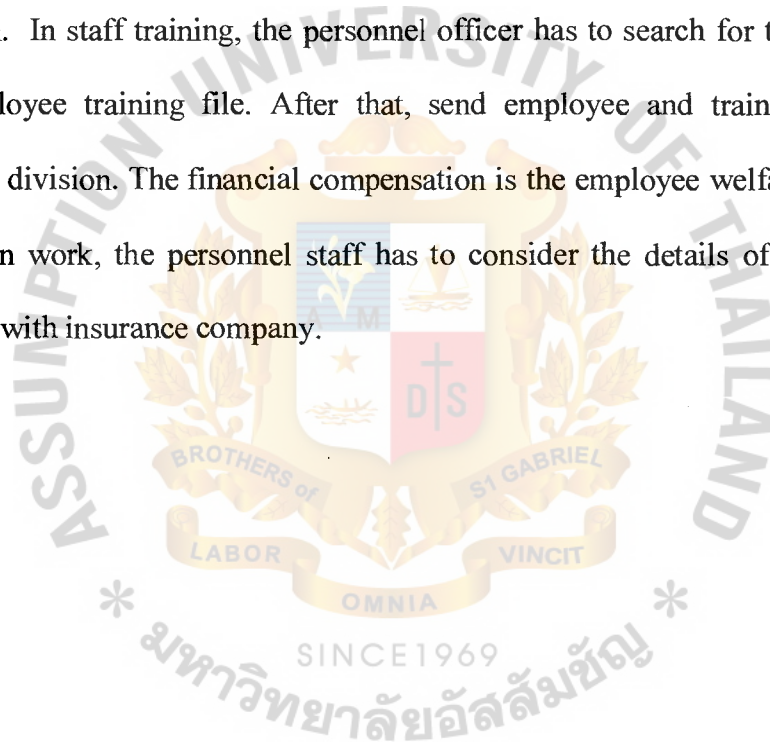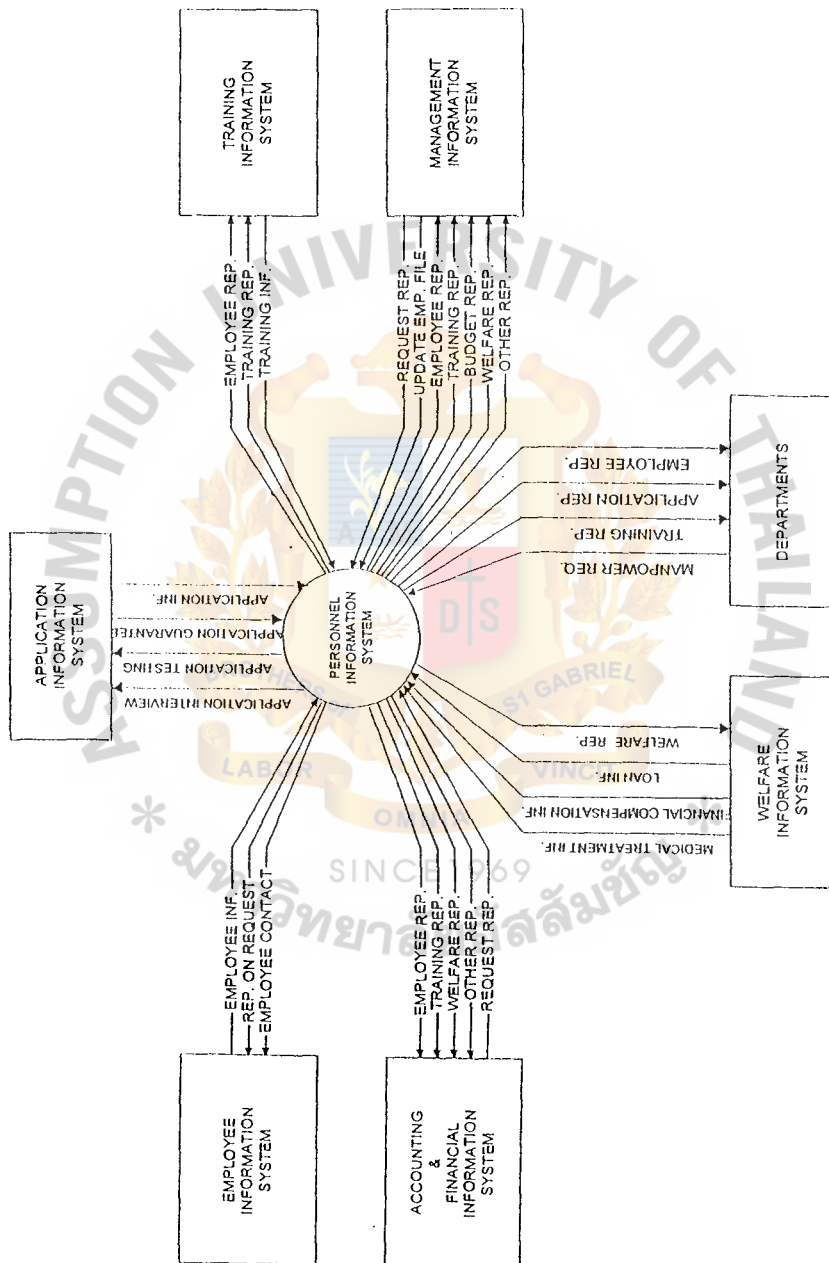
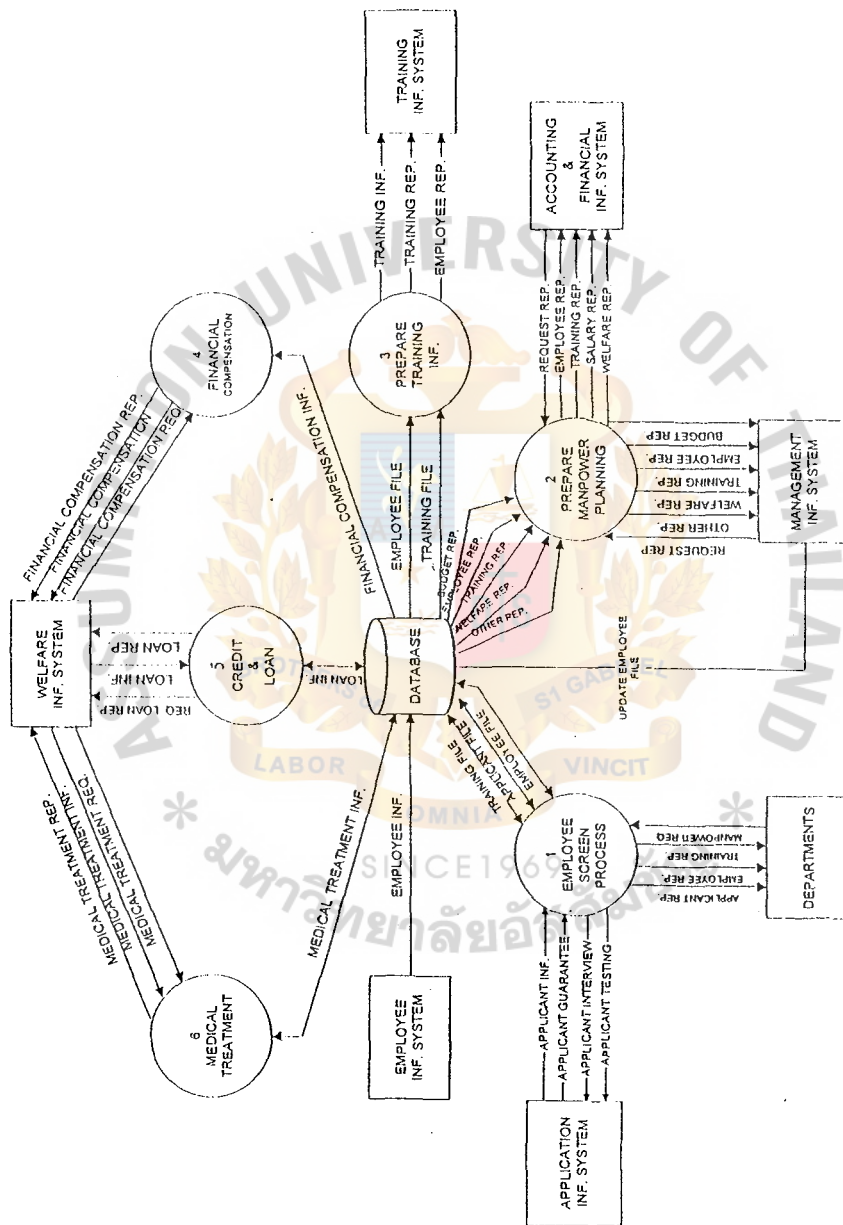Figure 3.1. Context Diagram of Personnel Information System

Figure 3.2. Level 0 of Dataflow Diagram of Personnel Information System

3.1.1 Screen Design

The information of personnel department is personal information. Personal information is not for all persons to retrieve it. Password is used for security control. Unauthorized person cannot access this system. Checking the authority of person to access the system by using 4 characters and 4 digits password before entering the system. The program will not show the password that they key on screen in order to protect from other person seeing the password. They have 3 times to put the right password that they key on screen. The password menu is shown on figure 3.3. Main menu has 4 parts which are : employee information, human resource planning, application and welfare . Each part has the detail that the user can select for operation. The detail will come out after user clicking. The main menu is shown on figure 3.4. Selection menu is for user operation. The user can manage the information with this menu. The information can be changed or added with this menu. The selection menu is shown on figure 3.5. Employee menu shows the detail of staff such as, employee name, sex , status, birth date, division name, and position name. The management level can know the detail of employee. This is good to manage the people. Employee menu is shown on figure 3.6. Salary menu shows the salary of staff, starting salary, and overtime late. The management level can know the financial status of the employee. Salary menu is shown on figure 3.7. Employee guarantor menu shows guarantor names, guarantor addresses, guarantor telephone numbers. The employee guarantor menu is shown on figure 3.8. Leave and late menu show late , sick and casual

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leave of the staff. The management level can select the right person by using this menu. The employee who works hard can get the good position. Leave and late menu is shown on figure 3.9.
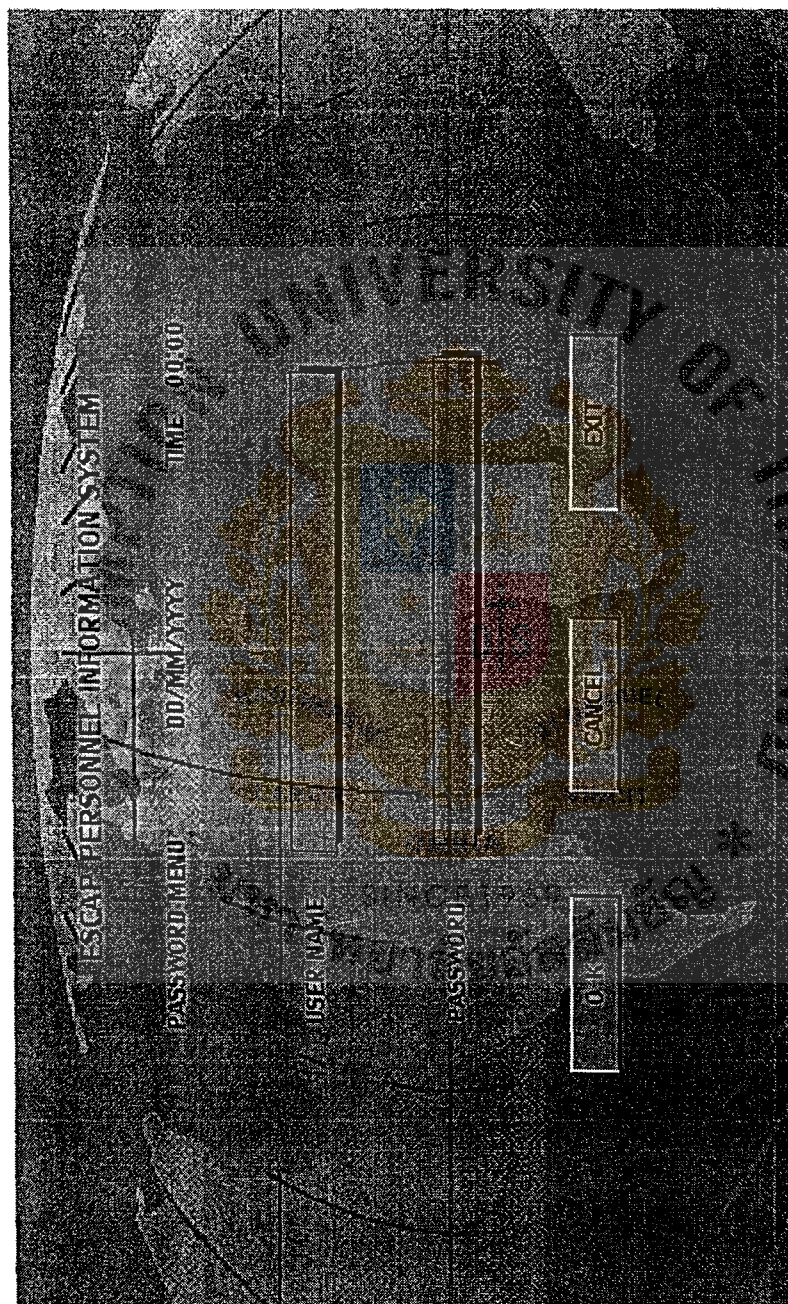
Figure 3.3. Password Menu
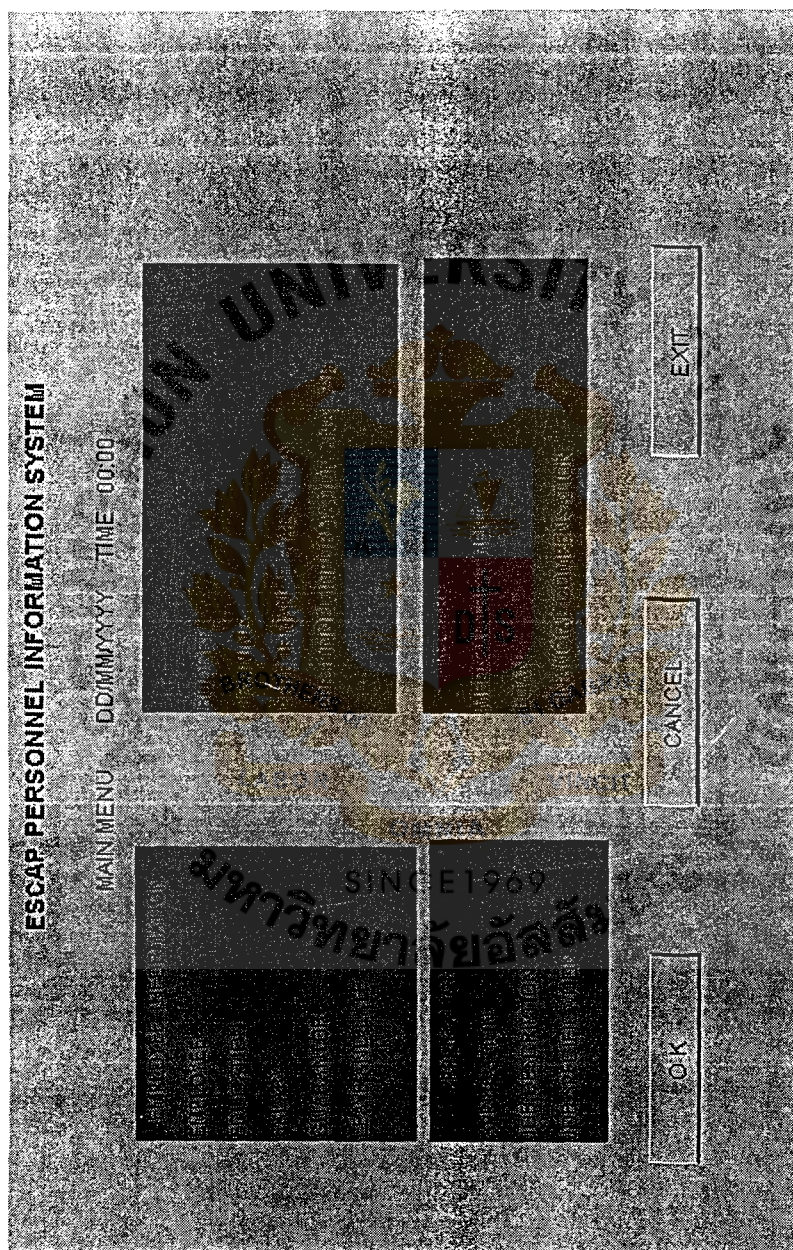
Figure 3.4. Main Menu
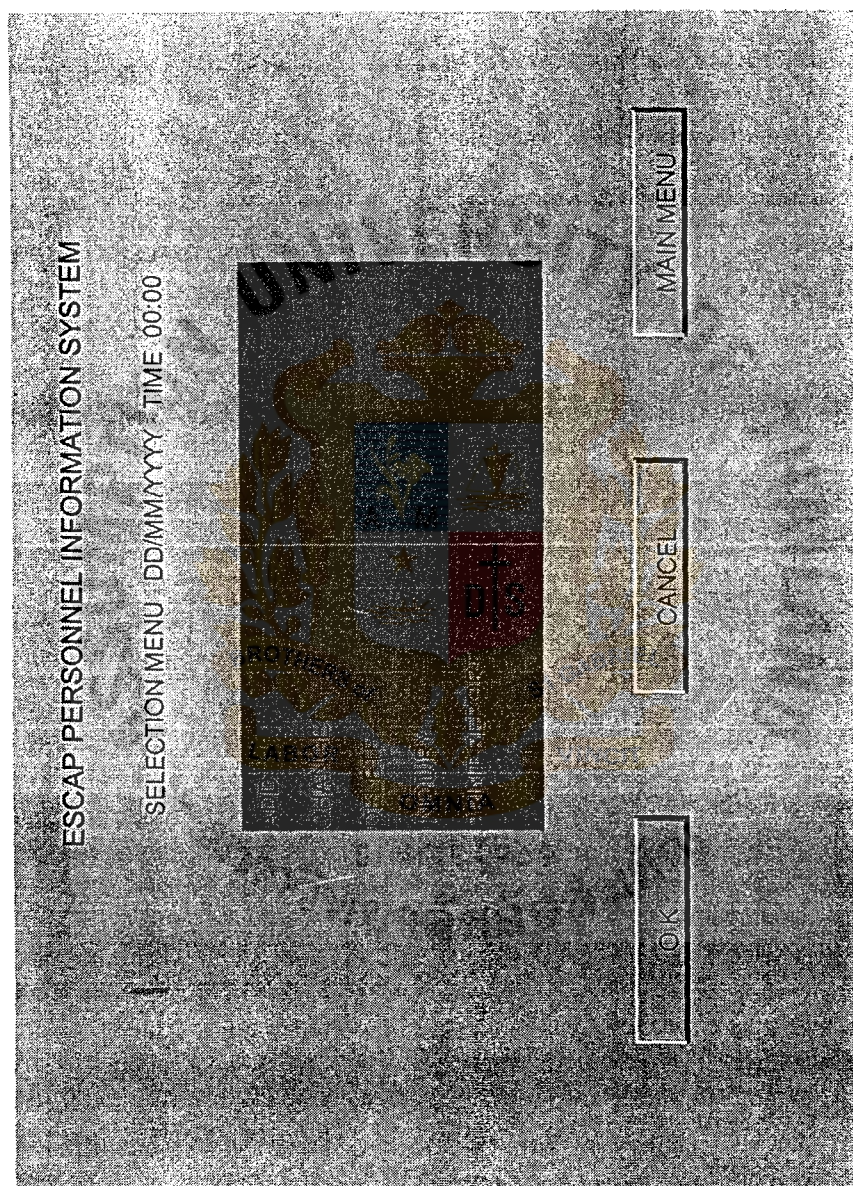
Figure 3.5. Selection Menu

Figure 3.6. Employee Menu

Figure 3.7. Salary Menu

Figure 3.8. Employee Guarantor Menu

Figure 3.9. Leave and Late Menu

Figure 3.10.   Budget Menu
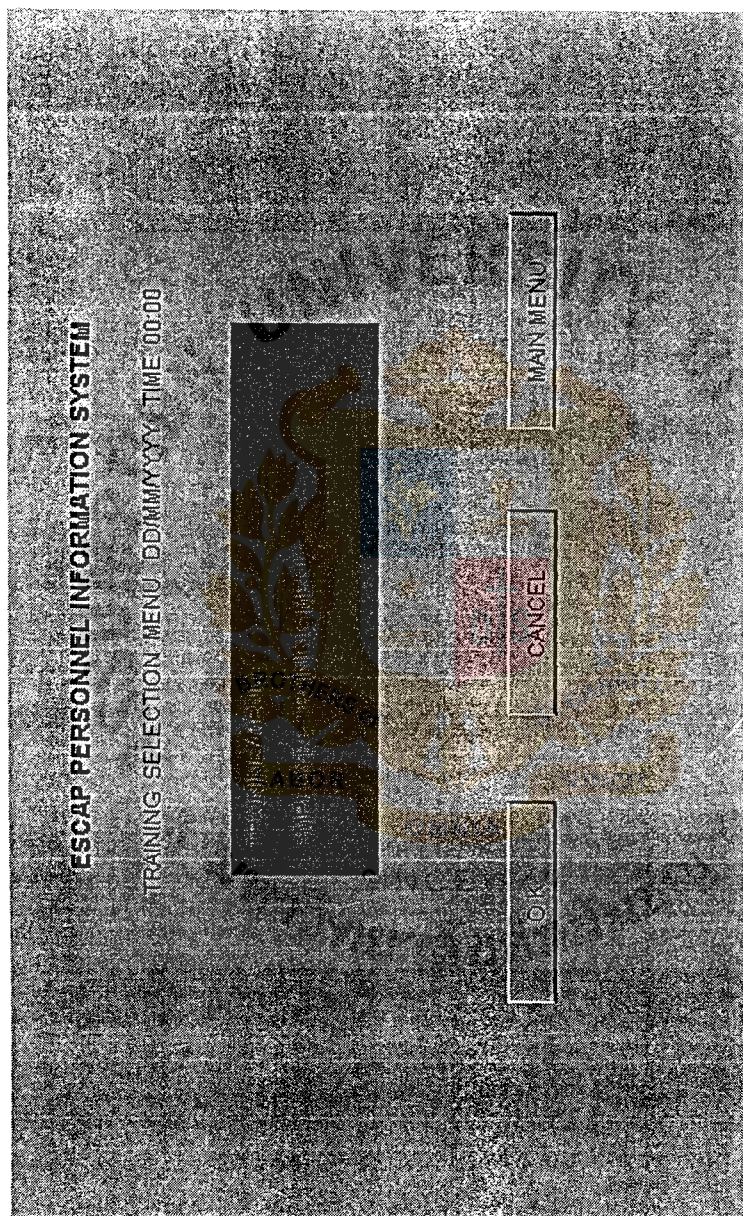
Figure 3.11. Training Selection Menu

Figure 3.12. Training Menu

Figure 3.13. Employee Training Menu
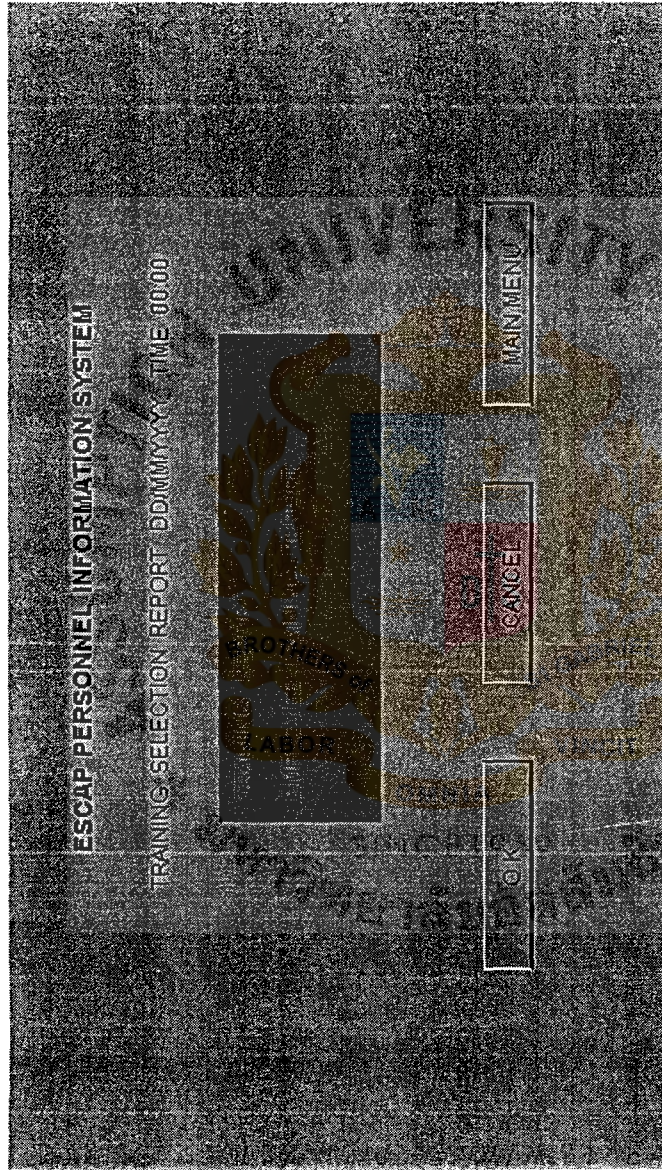
Figure 3.14.   Training Selection Report Menu
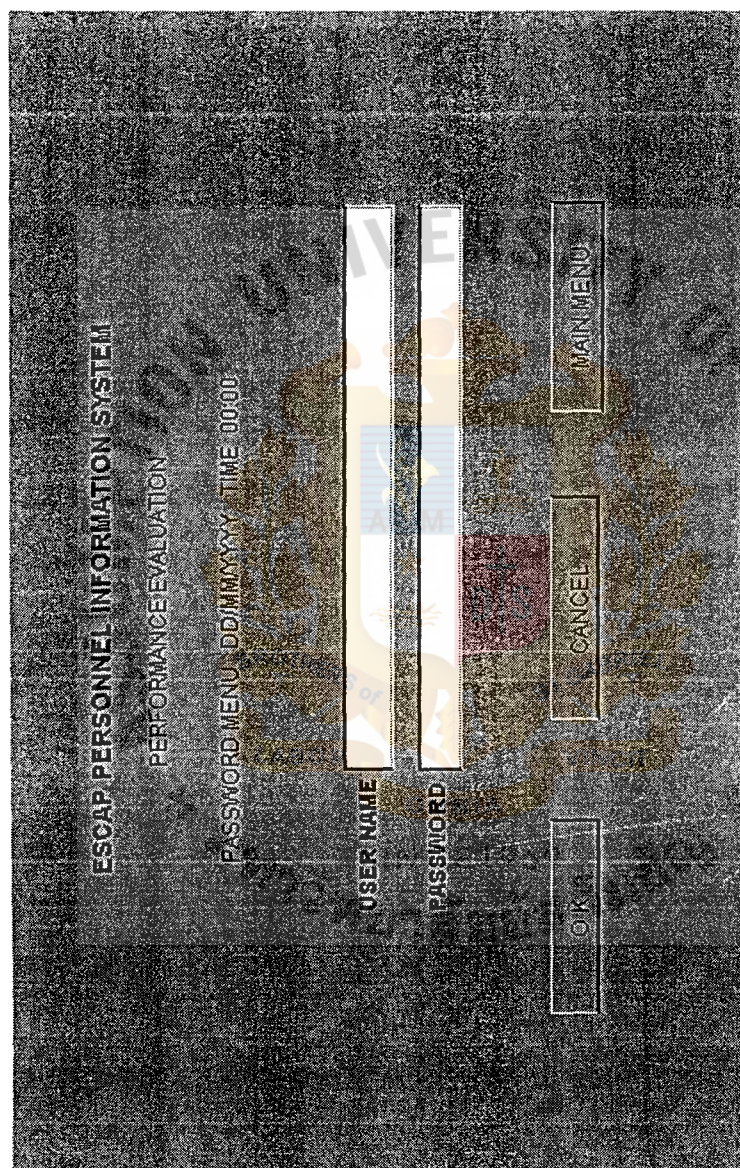
Figure 3.15.   Performance Evaluation Password Menu

Figure 3.16.   Performance Evaluation Menu

Figure 3.17.   Application Analysis Menu

Figure 3.18.   Medical Treatment Menu

Figure 3.19. Education Menu

Figure 3.20. Personnel Information Analysis Selection Menu
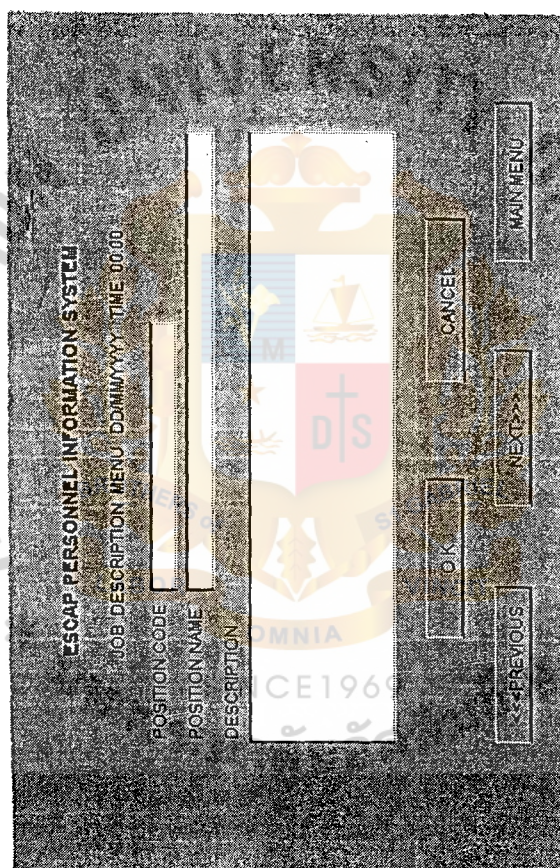
Figure 3.21.   Job Description Menu
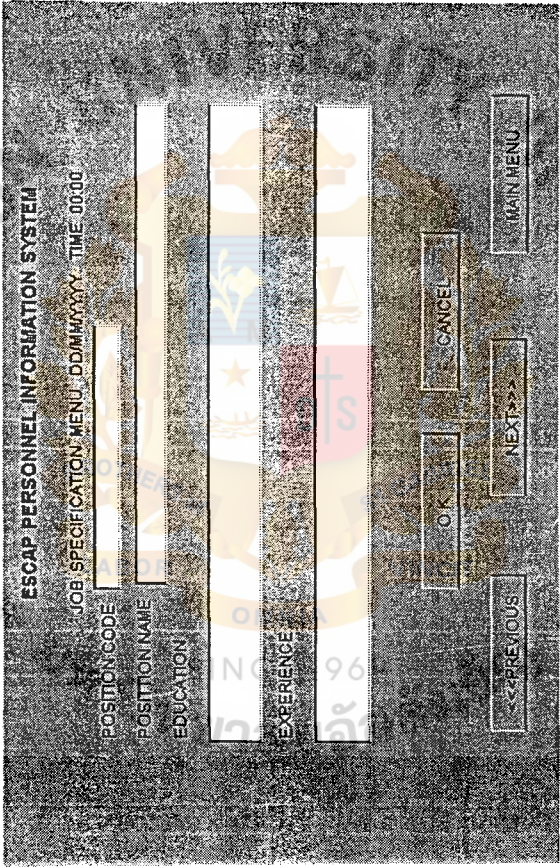
Figure 3.22. Job Specification Menu

Figure 3.23.   Financial Compensation Menu

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3.1.2 Report Layout

Application report shows an applicant's name, the experience of applicant and education of an applicant. The management level can know the experience of the applicant. This is good for selecting the right man in the right job. The application report is shown on table 3.1. The leave and late report shows late , sick, and casual leave of employee . The management level can know which person comes to work late. Time is very important for the organization. The leave and late report is shown on table 3.5. The budget report shows budget description, amount of budget, and department that receive the budget. The management level can manage the budget with effectiveness. The budget is very important for the organization. The budget report is shown on table 3.6. The training report shows course name, the date in training, trainee amount and training cost. The management level can know the course name and the training cost. This is good to manage the budget. The training report is shown on table 3.8. The job description report shows position name and description. The detail of the position is shown on this report. The different positions have different responsibilities. The employee who can go aboard will be selected in some operations, in some parts of the operation, the staff have to go abroad. The job description report is shown on table 3.9.

Table 3.1. Application Report

APPLICATION NO.	APPLICANT NAME	EDUCATION INST.	FACULTY	MAJOR	PRIOR COMPANY	PRIOR POSITION
				PERSONNEL INFORMATION SYSTEM APPLICATION REPORT		
99999	XXX...X	XXX...X	XXX...X	XXX...X	XXX...X	XXX...X
99999	XXX...X	XXX...X	XXX...X	XXX...X	XXX...X	XXX...X
99999	XXX...X	XXX...X	XXX...X	XXX...X	XXX...X	XXX...X

Table 3.2.   Employee Report

PERSONNEL INFORMATION SYSTEM
EMPLOYEE REPORT

EMPLOYEE NO.	EMPLOYEE NAME	POSITION	DIVISION	DEPARTMENT
99999	XXX...X	XXX...X	XXX...X	XXXXXXX...X
99999	XXX...X	XXX...X	XXX...X	XXXXXXX...X
99999	XXX...X	XXX...X	XXX...X	XXXXXXX...X

Table 3.3.   Education Report

	PERSONNEL INFORMATION SYSTEM EDUCATION REPORT			
EMPLOYEE NO.	EMPLOYEE NAME	DEGREE	MAJOR	PREVIOUS DEGREE
99999	XXX...X	XXX...X	XXX...X	XXXXXXX...X
99999	XXX...X	XXX...X	XXX...X	XXXXXXX...X
99999	XXX...X	XXX...X	XXX...X	XXXXXXX...X

Table 3.4. Salary Report

EMPLOYEE NO.	EMPLOYEE NAME	SALARY	PERDIUM
		PERSONNEL INFORMATION SYSTEM SALARY REPORT	
99999	XXX...X	999,999.99	999,999.99
99999	XXX...X	999,999.99	999,999.99
99999	XXX...X	999,999.99	999,999.99

Table 3.5. Leave and Late Report

		PERSONNEL INFORMATION SYSTEM LEAVE AND LATE REPORT				DD/MM/YYYY
EMPLOYEE NO.	EMPLOYEE NAME	DIVISION	DEPARTMENT	LATE	SICK	CASUAL LEAVE
99999	XXX...X	XXX...X	XXX...X	99	99	99
99999	XXX...X	XXX...X	XXX...X	99	99	99
99999	XXX...X	XXX...X	XXX...X	99	99	99

Table 3.6.   Budget Report

PERSONNEL INFORMATION SYSTEM
BUDGET REPORT

BUDGET NO.	BUDGET DESCRIPTION	DIVISION	DEPARTMENT	AMOUNT	DATE
99999	XXX...X	XXX...X	XXX...X	999,999,999.99	DD/MM/YYYY
99999	XXX...X	XXX...X	XXX...X	999,999,999.99	DD/MM/YYYY
99999	XXX...X	XXX...X	XXX...X	999,999,999.99	DD/MM/YYYY

Table 3.7. Training Report Separate by Employee Number

EMPLOYEE NO.	EMPLOYEE NAME	COURSE NO.	COURSE NAME	STARTING DATE	END DATE
		PERSONNEL INFORMATION SYSTEM			
		TRAINING REPORT SEPARATE BY EMPLOYEE NO.			
99999	XXX...X	XXX...X	XXX...X	DD/MM/YYYY	DD/MM/YYYY
99999	XXX...X	XXX...X	XXX...X	DD/MM/YYYY	DD/MM/YYYY
99999	XXX...X	XXX...X	XXX...X	DD/MM/YYYY	DD/MM/YYYY

Table 3.8.   Training Report

COURSE NO.	COURSE NAME	TRAINEE AMT	TRAINING COST	STARTING DATE	END DATE
		PERSONNEL INFORMATION SYSTEM **TRAINING REPORT**			
99999	XXX...X	XXX...X	XXX...X	DD/MM/YYYY	DD/MM/YYYY
99999	XXX...X	XXX...X	XXX...X	DD/MM/YYYY	DD/MM/YYYY
99999	XXX...X	XXX...X	XXX...X	DD/MM/YYYY	DD/MM/YYYY

Table 3.9. Job Description Report

PERSONNEL INFORMATION SYSTEM
JOB DESCRIPTION REPORT

POSITION CODE	POSITION NAME	DESCRIPTION
99999	XXX...X	XXXXXXXXXXXXXXXXXXXXX...X

Table 3.10. Job Specification Report

	PERSONNEL INFORMATION SYSTEM JOB SPECIFICATION REPORT		
POSITION CODE	POSITION NAME	EDUCATION	EXPERIENCE
99999	XXX...X	XXXXXXXX...X	XXXXXXXXXXX...X

Table 3.11. Medical Treatment Report

PERSONNEL INFORMATION SYSTEM
MEDICAL TREATMENT REPORT

MEDICAL TREATMENT NO.	EMPLOYEE NO.	EMPLOYEE NAME	AMOUNT	DATE	HOSPITAL
99999	99999	XXX...X	999,999.99	DD/MM/YYYY	XXX...X
99999	99999	XXX...X	999,999.99	DD/MM/YYYY	XXX...X
99999	99999	XXX...X	999,999.99	DD/MM/YYYY	XXX...X

Table 3.12.   **Loan Report**

PERSONNEL INFORMATION SYSTEM
LOAN REPORT

EMPLOYEE NO.	EMPLOYEE NAME	LOAN AMOUNT	DATE	LOAN TYPE	LOAN LIMIT
99999	XXX....X	9, 999,999.99	DD/MM/YYYY	XXX....X	9,999,999.99
99999	XXX....X	9,999,999.99	DD/MM/YYYY	XXX....X	9,999,999.99
99999	XXX....X	9, 999,999.99	DD/MM/YYYY	XXX....X	9,999,999.99

Table 3.13. Financial Compensation Report

| | | PERSONNEL INFORMATION SYSTEM | | | |
| | | FINANCIAL COMPENSATION REPORT | | | |
EMPLOYEE NO.	EMPLOYEE NAME	COMPENSATION AMOUNT	DATE	DESCRIPTION	INSURANCE AMOUNT
99999	XXX...X	9, 999,999.99	DD/MM/YYYY	XXX...X	9,999,999.99
99999	XXX...X	9,999,999.99	DD/MM/YYYY	XXX...X	9,999,999.99
99999	XXX...X	9, 999,999.99	DD/MM/YYYY	XXX...X	9,999,999.99

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3.1.3 File Design

The file design of existing system is not good enough for keeping the data. Some files are not in the system. The staff have to work manually for keeping the data. The application file, leave and late file, performance education file, medical treatment file, financial compensation file and training file are not in the existing system. When the candidate apply for the job, the staff have to keep the data in hardcopy. When the management level would like to select the person for the new position. They have to read the data from the hardcopy because the performance education file and training file are not in the system. The medical treatment and financial compensation   are important for budget control , but are not in the computer system. The new database design will correct problems with effectiveness. File designs have proper information. Fields are not too small to keep the important information. The application file can keep application number, application name, the date of application, the position and salary of candidate. The resume of applicant can be kept in this file. Leave and late information can keep in computer system. The management level can know which staff works hard or not. The number of   days that staff sick, late or casual leave will kept in computer system. The management level can select the good skilled person for higher position from performance education information. The performance education file will keep the grade of employee in training. Skill , respond, quality, volume, solving, initiate, learning , confidence, leader, teamwork are keep in performance education file. Staff do not have to work manually anymore. The computer system will save time in operation.

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Some documents of existing system are kept in hardcopy. It uses a lot of cost of paper and waste the time in find it. The new system can keep a lot of information that are useful in personnel department. The report can be released on time that make the management level satisfy with it. The operation staff will work faster .

Table 3.14.   Employee File

FIELD NAME	TYPE	WIDTH	DEC
1. EMP_NO	N	5	0
2. EMP_NAME	C	30	
3. E_SEX	C	1	
4. E_STATUS	DATE	8	
5. E_BIR_DATE	C	10	
6. E_NATION	C	10	
7. E_RELIGION	C	35	
8. E_ADDR_1	C	35	
9. E_ADDR_2	C	13	
10. E_ID_CARE	C	1	
11. E_BLOOD	C	8	
12. E_STARD_D	C	3	
13. E_POSITION	C	3	
14. E_DIVISION	C	3	
15. E_DEPT	C	3	

Table 3.15.   Training File

FIELD NAME	TYPE	WIDTH	DEC
1. COURSE_NO	N	4	0
2. COURSE_NAME	C	20	
3. T_STAR_D	DATE	8	
4. T_END_D	DATE	8	
5. TRAINEE	N	4	0
6. T_COST	N	7	2

Table 3.16.   Medical Treatment File

FIELD NAME	TYPE	WIDTH	DEC
1. MED_NO	N	4	0
2. EMP_NO	N	5	0
3. M_DATE	DATE	8	
4. HOSPITAL	C	25	
5. M_AMT	N	6	2

Table 3.17.   Financial Compensation File

FIELD NAME	TYPE	WIDTH	DEC
1. FIM_NO	N	4	0
2. EMP_NO	N	5	0
3. F_DATE	DATE	8	
4. INS_AMT	N	7	2
5. COM_AMT	N	6	2

Table 3.18.   Loan File

FIELD NAME	TYPE	WIDTH	DEC
1. LOAN_NO	N	4	0
2. EMP_NO	N	5	0
3. L_DATE	DATE	8	
4. L_TYPE	C	7	
5. L_LIMIT	N	7	2
6. L_AMT	N	7	2
7. INT_RATE	N	7	2
8. L_TIME	N	2	2

Table 3.19. Budget File

FIELD NAME	TYPE	WIDTH	DEC
1. B_NO	N	5	0
2. B_CODE	N	3	
3. B_DESC	C	25	
4. B_DATE	DATE	8	
5. B_DEPT	C	3	
6. B_DIV	C	3	
7. B_AMT	N	7	2

Table 3.20. Application File

FIELD NAME	TYPE	WIDTH	DEC
1. APP_NO	N	5	0
2. APP_NAME	C	30	
3. APP_DATE	DATE	8	
4. POS_REG	C	3	
5. SAL_REG	N	6	
6. APP_ADDR_1	C	35	
7. APP_ADDR_2	C	35	
8. APP_SEX	C	1	
9. APP_AGE	C	2	
10. APP_BIR_D	DATE	8	
11. EDU_INSTI	C	15	
12. A_FACULTY	C	10	
13. A_MAJOR	C	15	
14. PRO_C_NAME	C	20	
15. PRI_POS	C	2	

Table 3.21. Salary File

FIELD NAME	TYPE	WIDTH	DEC
1.EMP_NO	N	5	0
2.START_SAL	N	6	2
3.SALARY	N	6	2
4.OT_RATE	N	2	2

Table 3.22.   Education File

FIELD NAME	TYPE	WIDTH	DEC
1.EMP_NO	N	5	0
2.E_DEGREE	C	30	
3.E_FACULTY	C	30	
4.E_MAJOR	C	30	
5.PRE_DEGREE	C	30	
6.PRE_FACULTY	C	30	
7.PRE-MAJOR	C	30	

Table 3.23.   Employee Guarantor File

FIELD NAME	TYPE	WIDTH	DEC
1.EMP_NO	N	5	0
2.G_DATE	DATE	8	
3.G_NAME	C	30	
4.G_ID_CARD	C	13	
5.G_H_ADDR_1	C	35	
6.G_H_ADDR_2	C	35	
7.G_O_ADDR_1	C	35	
8.G_O_ADDR_2	C	35	

Table 3.24.   Loan Guarantor File

FIELD NAME	TYPE	WIDTH	DEC
1.EMP_NO	N	5	0
2.G_DATE	DATE	8	
3.G_NAME	C	30	
4.G_ID_CARD	C	13	
5.G_H_ADDR_1	C	35	
6.G_H_ADDR_2	C	35	
7.G_O_ADDR_1	C	35	
8.G_O_ADDR_2	C	35	

Table 3.25.   Tra_link File

FIELD NAME	TYPE	WIDTH	DEC
1.EMP_NO	N	5	0
2.COU_NO_1	C	4	
3.COU_NO_2	C	4	
4.COU_NO_3	C	4	
5.COU_NO_4	C	4	
6.COU_NO_5	C	4	

Table 3.26.   Leave and Late File

FIELD NAME	TYPE	WIDTH	DEC
1.DEPT_CODE	C	2	
2.DIV_CODE	C	2	
3.EMP_NO	N	5	0
4.LATE	N	2	
5.SICK	N	2	
6.CAS_LEAVE	N	2	
7.L_FROM	DATE	8	
8.L_TO	DATE	8	

Table 3.27.   Department File

FIELD NAME	TYPE	WIDTH	DEC
1.DEPT_CODE	C	3	
2.DEPT_NAME	C	35	

Table 3.28. Division File

FIELD NAME	TYPE	WIDTH	DEC
1.DIV_CODE	C	3	
2.DIV_NAME	C	35	

Table 3.29. Position File

FIELD NAME	TYPE	WIDTH	DEC
1.POS_CODE	C	3	
2.POS_NAME	C	35	

Table 3.30. Job Description File

FIELD NAME	TYPE	WIDTH	DEC
1.POS_CODE	C	3	
2.DESCRIPT_1	C	60	
3.DESCRIPT_2	C	60	
4.DESCRIPT_3	C	60	

Table 3.31. Job Specification File

FIELD NAME	TYPE	WIDTH	DEC
1.POS_CODE	C	3	
2.EDUCATE_1	C	60	
3.EDUCATE_2	C	60	
4.EDUCATE_3	C	60	
5.EXPER_1	C	60	
6.EXPER_2	C	60	
7.EXPER_3	C	60	
8.EXPER_4	C	60	

Table 3.32.   Performance Education File

FIELD NAME	TYPE	WIDTH	DEC
1.EMP_NO	N	5	0
2.SKILL	C	1	
3.RESPON	C	1	
4.QUALITY	C	1	
5.VOLUME	C	1	
6.SOLVING	C	1	
7.INITIATE	C	1	
8.LEARNING	C	1	
9.CONFIDENCE	C	1	
10.LEADER	C	1	
11.TEAMWORK	C	1	

3.1.4 System Prototype

After gathering the user requirements for the new systems, they built the prototype of the system by combining both user's requirements and the work processes of personnel department. Besides the prototype of the system, they also have to prepare the cost and benefit analysis in detail. System prototype, cost and benefit analysis are used for making decision whether to continue or just stop the project. The proposed system will be tested before implementation. There are the steps of the test as follow:

1. Code Testing

There will be a test every path through the program. The test cases are developed to result in executing every instruction in the program modules.

2. Specification Testing

This is to test the program to check whether it performs according to the specification requirements. The test cases are developed in various conditions.

3. Unit Testing

This is to test the programs making up a system. The test focuses on the modules, independently of one another, to detect the error and bug.

4. System Testing

With this system testing, all the modules are integrated and tested. This is to find discrepancies between the system, objectives, current specifications, and system documentation.

5. Special System Testing

Peak load testing, this is to determine whether the system will handle the volume of activities that occur when the system is at the peak of its processing demand.

Storage testing , to determine the capacity of the system to store transaction data on a disk and in other files.

Performance time testing, to determine the length of time system used by the system to process transaction data.

Recovery testing , to test to recover data from system failure. By creating the failure or data loss event where the user is forced to reload and recover from backup copy. This test can determine where the recovery procedure is adequate.

Procedure testing , to determine clarity of documentation on operation and use of system by having user do exactly according to manual.

Human factor testing , to test how user will use this system when processing data or preparing reports.

6.   Test Data

The data will be tested both live and artificial.   Live data is used with real data. The user has to key in the data from their normal activities. The data will be tested to use with the system and find the error. Using artificial data is the data that is created   solely for testing purposes. The data will be tested with all combinations of formats and value.

3.1.5 Local Area Network

The connections between computers are usually within a limited area. For my project , it is in a office building. LAN offers high speed communication in the computer. The speed of existing system is 10 Mbps. The hub and network interface card is 10 Mbps. The network operating system uses Netware 3 . The speed of communication on LAN is very slow. Netware 3 has to wait for printing queue. In case of adding the new server the user has to create 10

passwords for each server. It wastes the time in operation. When salary releases each month , the staff has to print the salary report for checking the amount. The training staff would like to check the training report and the management level would like to select the person for new position. The personnel department will work like a bottle neck. The report cannot be released on time. The speed of new system will run on 100 Mbps because of new hub and network interface card. Netware 4.1 is the new network operating system. The staff do not have to wait for printing queue. They can select the printer by themselves, and in case of adding the new server, the user can log in for just 1 password. It is a very fast operation.

Network Configuration
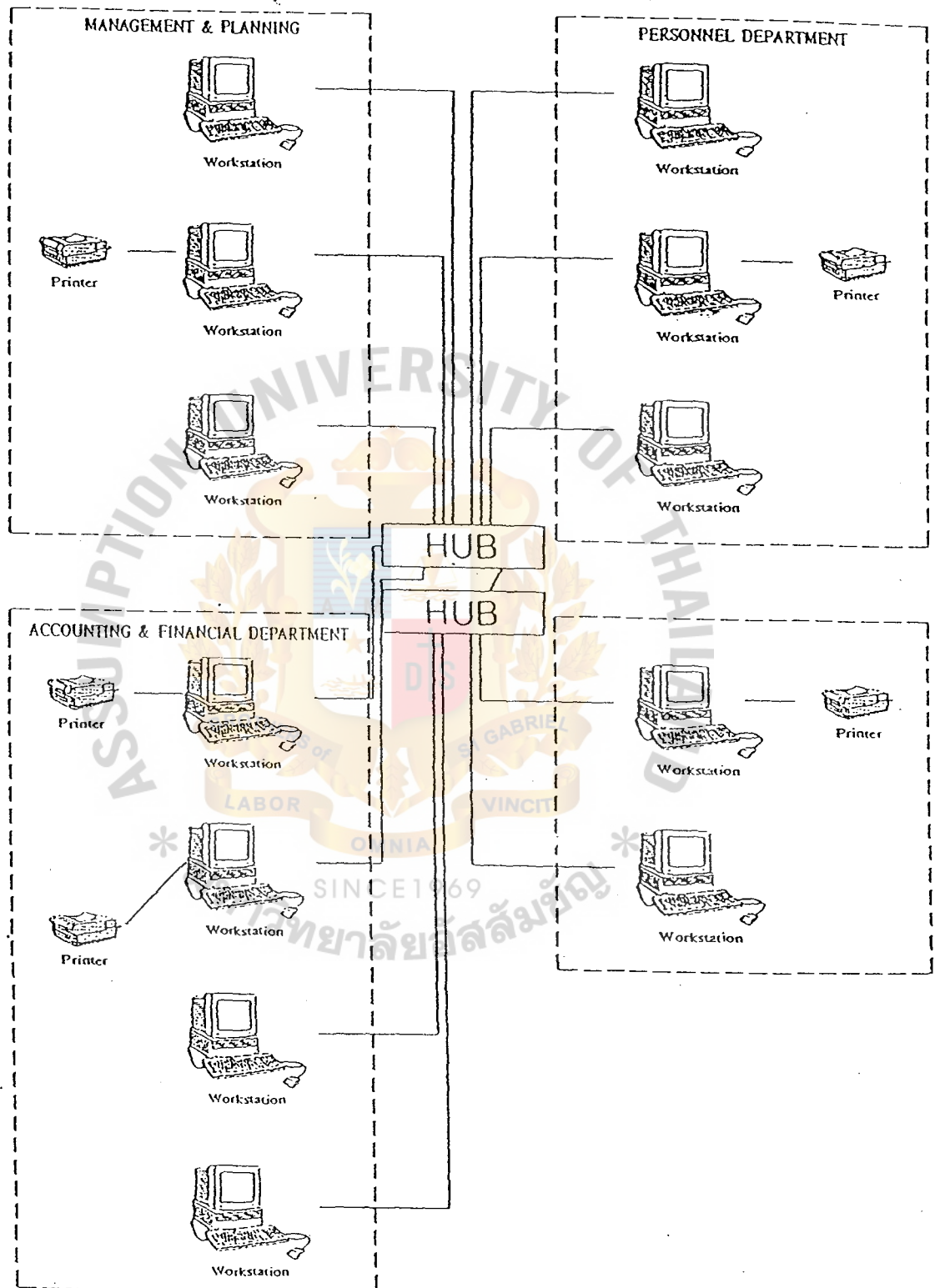
Figure 3.24.   Local Area Network Configuration

3.1.6 Security Control

The staff information is personnel information. So, personnel information system is not for general staff to retrieve it. Updating by unauthorized persons may damage the system. Security control is provided to save the system. Check the authorized person to access the system by using 4 characters and 4 digits password before entering the system. They have 3 times to put the correct password. The program will not show the password that the staff key on the screen for protecting from other persons seeing the password. The personnel staff have to change their password every month.

The data record units have to backup the database files in other places to protect carelessness and physical damage to files such as fire, water, etc. Every month the computer staff will check the backup of the database files. The rooms that keep personnel information are used by authorized persons only.

3.2 Hardware and Software Requirements

Netware 4.1   120,000.00.- Baht .

Windows 95   5,500.00.-

Oracle 7.3   100,000.00.-

PC Work station 20 Units

COMPAQ PRESARIO 4704

Pentium 133 Mhz

RAM 32 MB

Harddisk 1.6 GB

15" Color Monitor

CD ROM 8x   640,000.00.-

Laser Printer   4 Units

HP Laser Jet 5 M,12ppm,

6 MB RAM, 600dpi   168,000.00.-

Hub   2 Units

D-LINK Ethernet Stackable Hub,12 ports   24,000.00.-

UTP Cable 100 m.   2,600.00.-

Network Interface Card (Complex)   23,000.00.-

RJ-45 Connector   200.00.-

Total cost   1,083,300.00.- Baht .

3.3 Costs and Benefits Analysis

System start-up Costs :

-Development

System analysis and requirements determination

2 weeks	7,000.00.- Baht.

System design

4 weeks	12,000.00.- Baht.

Development and implementation

8 weeks	20,000.00.- Baht.
-Equipment purchase	1,083,300.00.- Baht.

-Installation

Site preparation	4,000.00.- Baht.
Training	7,000.00.- Baht.
Total start-up costs	**1,133,300.00.- Baht.**

System operating costs :

■ Equipment maintenance	5,000.00.- Baht.
■ Program maintenance	8,000.00.- Baht.
Total operating costs (First year)	**13,000.00.- Baht.**
Total investment cost (First year)	**1,146,300.00.- Baht.**

System Tangible Benefits :

-Saving on training cost	50,000.00.- Baht.
-Reducing 2 training staff member	
(2 x 25,000 x 12)	600,000.00.-
-Reduction of paper works	50,000.00.-
-Reduce paper material due double filing	30,000.00.-
-Reduce the stationery cost	50,000.00.-
-Reduction of assets loss	150,000.00.-
Total system tangible benefit (First year)	**930,000.00.- Baht.**

System Intangible Benefits :   **Cannot Estimate**

- Better planning information
- Better in Human resource management
- Satisfy the employee
- The operation work faster
- The software and hardware can upgrade
- Ability to make reports for the requested period
- Reduce volume of paper produced and handled
- Performance improvement among the staffs
- Improved decision process
- The new screen design is easy to understand.

Comparison Cost

	0	1	2	3
Commulative Costs	1,098,900	1,146,300	1,198,900	1,230,600
Commulative Benefits	586,000	930,000	1,259,700	1,579,000
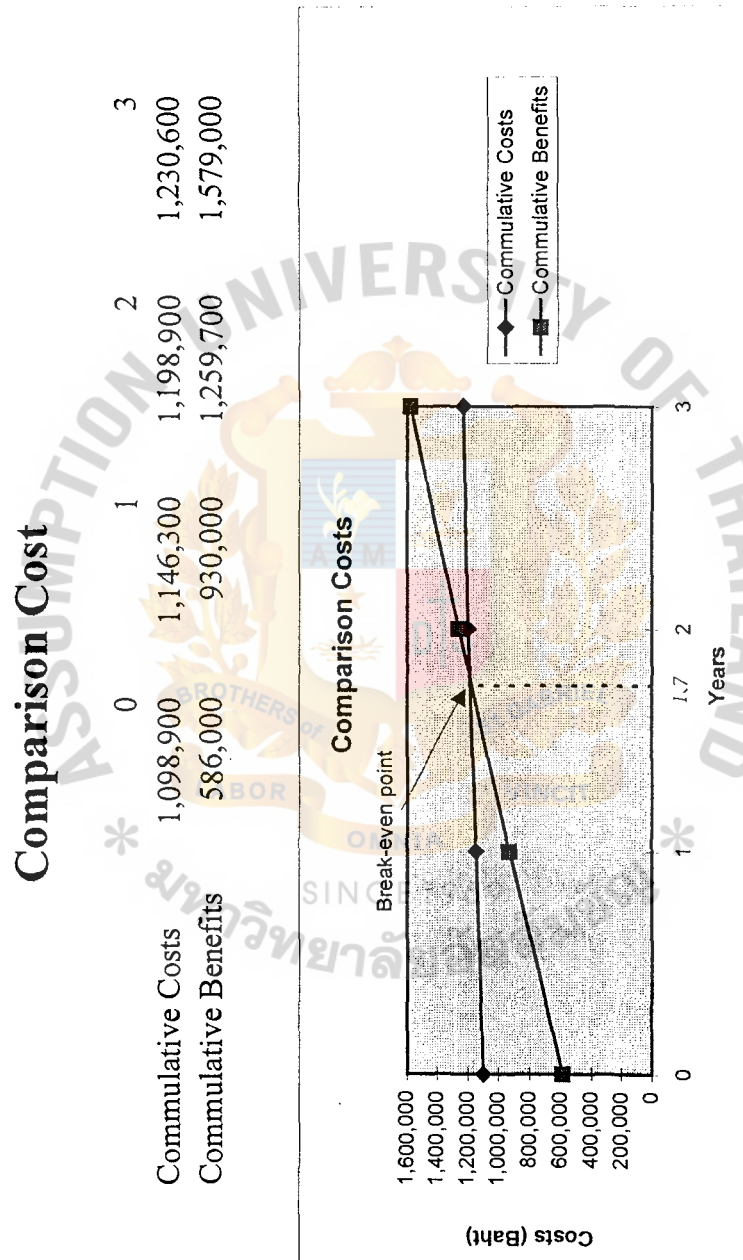
Figure 3.25.   Payback Period of Proposed System

3.3.1 Payback Period

From the cost analysis, it can be seen that the initial cost of new system is greater than the cost of existing system. The cost of existing system must pay every year for stationary cost, training cost, and paper cost. The new system can save these costs. The initial cost of new system is 1,146,300.00 baht. As time goes by, the cost of existing system would be higher than the cost of new system. The new system uses less staff, and can reduce cost of operation. The new system is friendly to use.

The figure 3.18 is payback analysis which shows a payback period of 1.76 years. The new system requires less cost in long run.

Formula $$P = \frac{I}{(1-T)\,R}$$

Note : I = Investment

T = Corporate tax rate (use 30%)

R = Annual saving by investment

$$P = \frac{1,146,300}{(1-0.30)\,(930,000)}$$

Payback period = 1.76 years

IV. CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

The Economic and Social Commission for Asia and the Pacific was established on 28 March 1947 by the Economic and Social Council of the United Nations. In 1974, the name of the commission was changed from ECAFE (Economic and Social commission for Asia and the Far East) to ESCAP to reflect the new dimensions of its activities. The principal role of the ESCAP is to initiate and participate in measures for facilitating concerted action for the development of Asia and the Pacific, including the social aspects of such developments, with a view to raising the level of economic activity and standards of living, and for maintaining and strengthening the economic relations of countries and territories in Asia and the Pacific, both among themselves and with other countries in the world.

The role of information is very vital for the changing world . The existing system presented problems that are associated with screen design, hardware , and report layout . The screen is not friendly to use. Hardware is too old. The report layout is so complex. The new system helps to address various Personnel Information System in an integrated and comprehensive manner. Concerning the problem of the department, requires an improvement in personnel filing system which will facilitate employees' performance evaluation, planning in managing people and manpower (program budget). New hardware is needed. New screen and report layout design are needed. The new system will improve the performance in working. The benefits of proposed system are : the user can work faster , improved decision process by provide easy report layout,

reduce operation cost in long run. The cost for training the new staff is high.

The easier system will be easy to instruct. The new user can understand the purposed system easily. The user can see the information clearly in new screen. The new system will help the management level in planning human resource, and budget management. The new system will calculate the performance of staff in every aspect. The new system is a good tool in the organization.

4.2 Recommendations

Developing the computer system in personnel information system work, can solve many problems in the department. LAN system is useful because it can use the information system from the central database among the departments. Long term strategic planning will need information concerning quantity and quality of the work force that is available to overcome their target. Human resource planning is an important work. This planning is concerned with strategic planning in personnel information. The management level can forecast the need of organization about staff. Moreover, they can calculate the program budget with effectiveness. The easy way of proposed system will help the operational staff and management level operate the work clearly and accurately. The screen and report will be easy to understand. The users can operate their work with effectiveness. The user just click, after that, the vital information will come out as they want. It is so easy.

The data record units have to backup the database files in other places to protect carelessness and physical damage to files such as fire, water, ... etc. Every month the computer staff will check the backup the database files. The rooms that keep personnel information are used by authorized persons only. The password is a good way for security control. It is easy to use the password for protecting from unauthorized persons. Unauthorized persons may damage the system. Password is the easy way to save the system.

All systems in the organization ought to be linked and shared information together, so standard file and database design are important. The different database system will generate the problems.

Using old hardware will have slower operation. This system ought to use Pentium 133 or higher.

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APPENDIX A

Dataflow Diagram
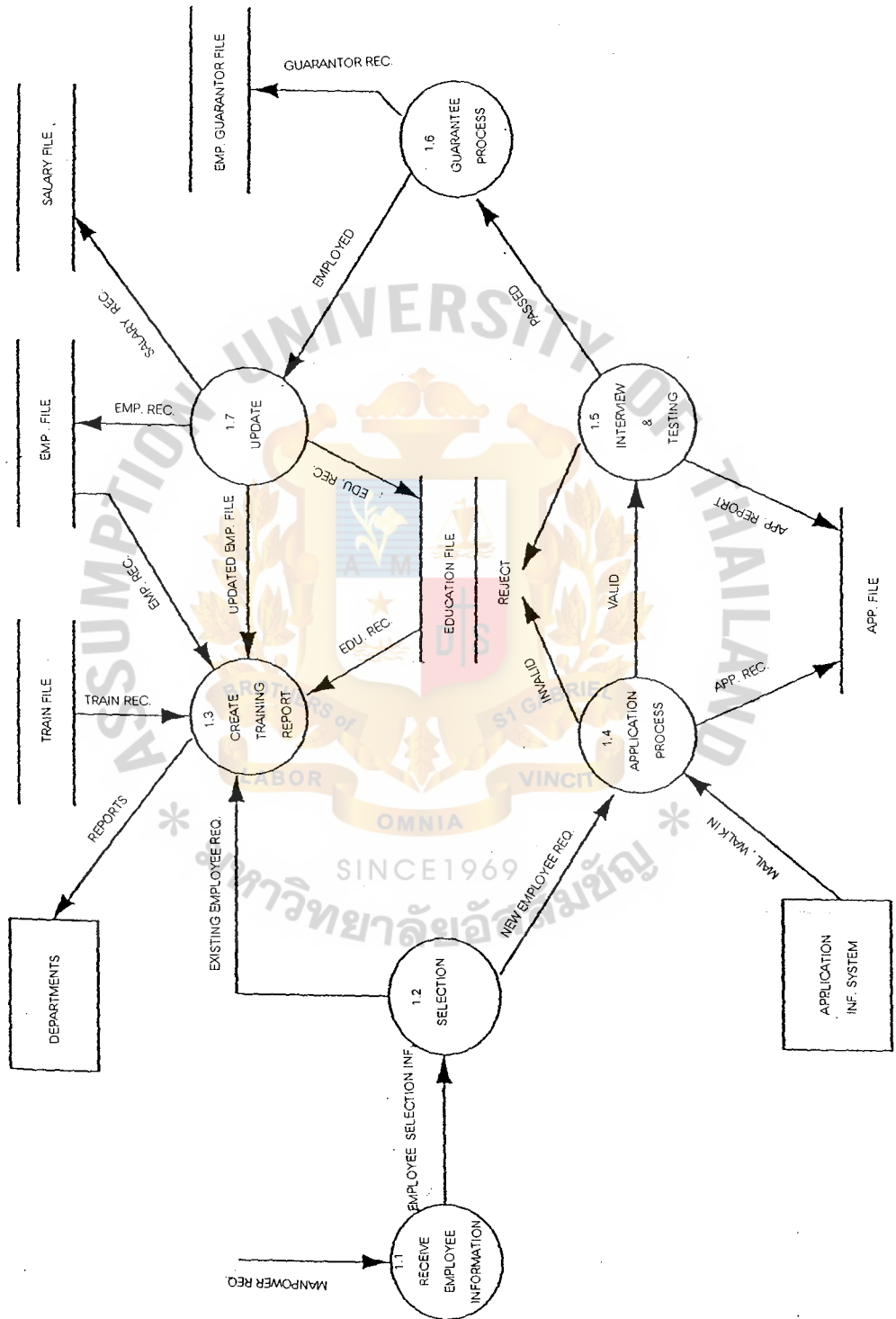
Figure A.1. 1 Level Dataflow Diagram of Employee Screen Process
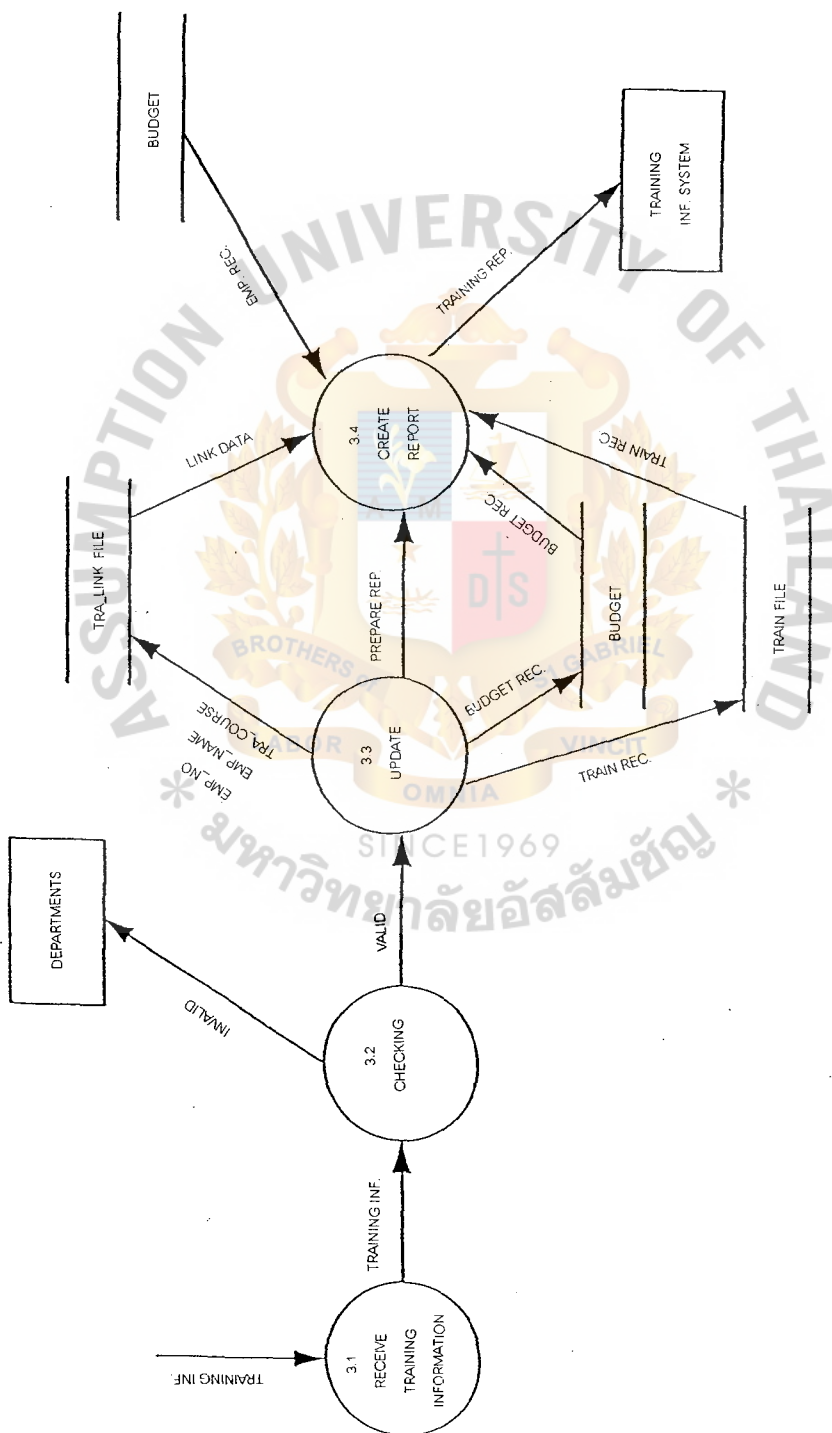
Figure A.2.   1 Level Dataflow Diagram of Prepare Training Information
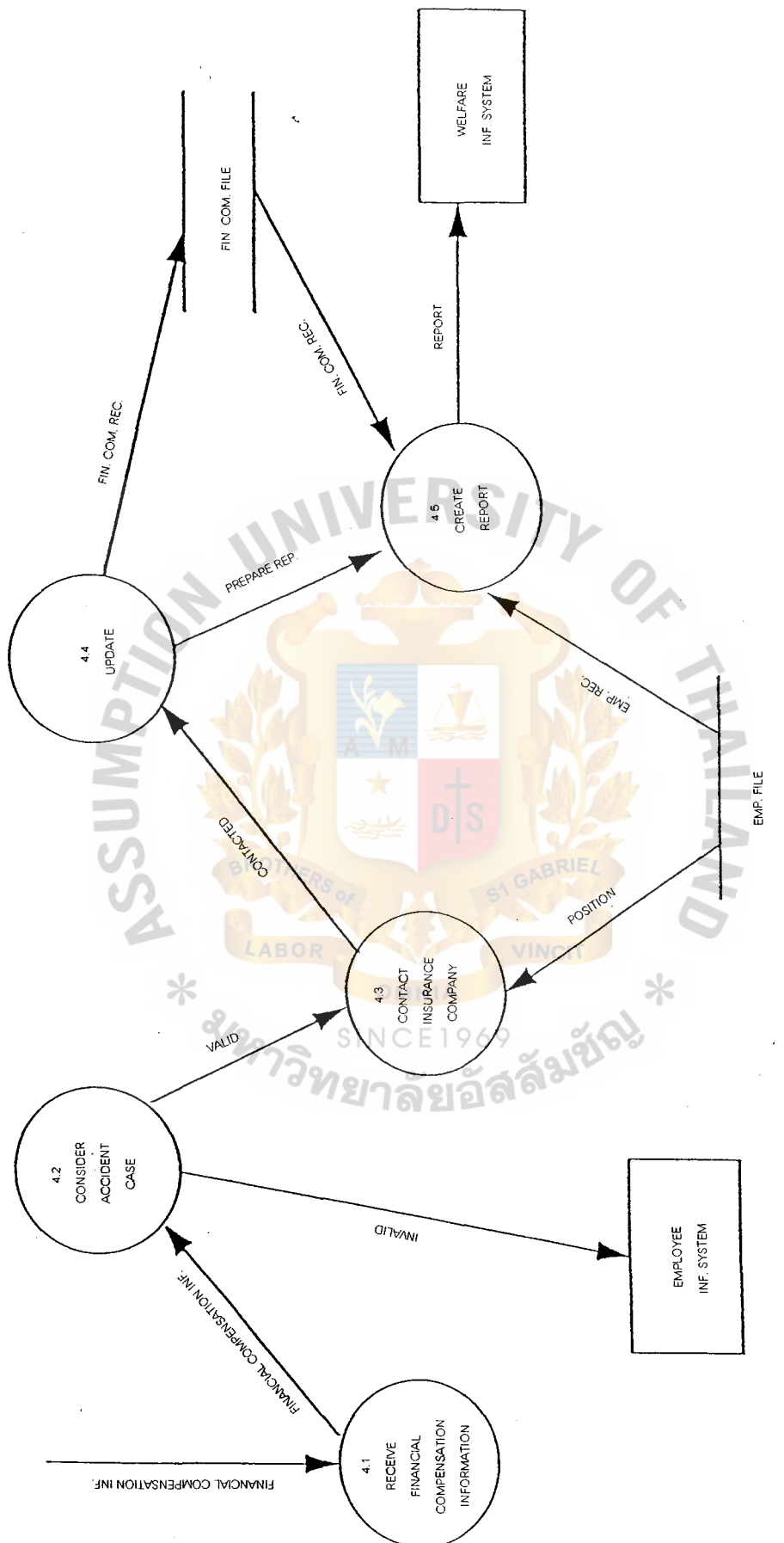
Figure A.3.   1 Level Dataflow Diagram of Financial Compensation
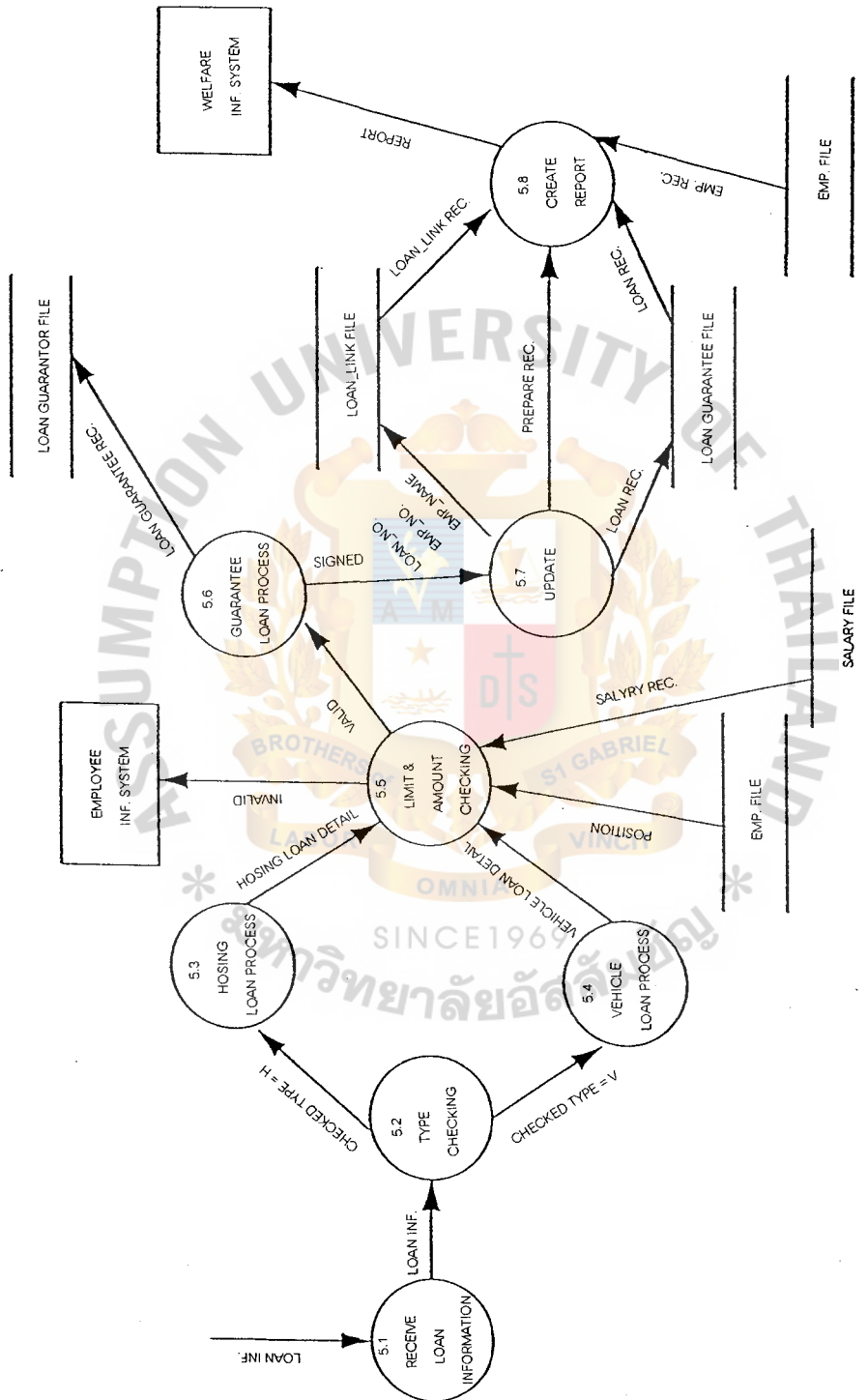
Figure A.4.   1 Level Dataflow Diagram of Credit and Loan
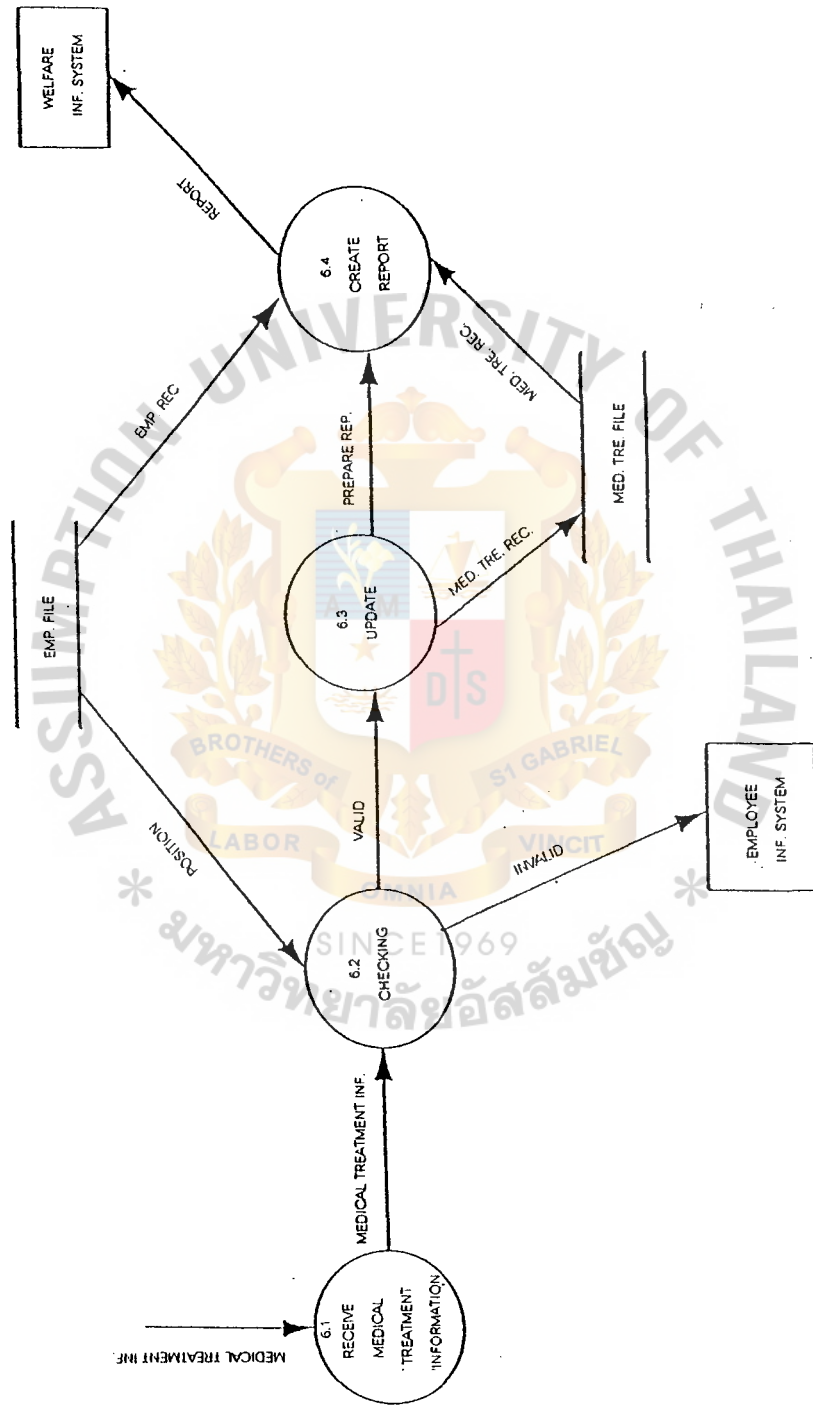
Figure A.5.   1 Level Dataflow Diagram of Medical Treatment
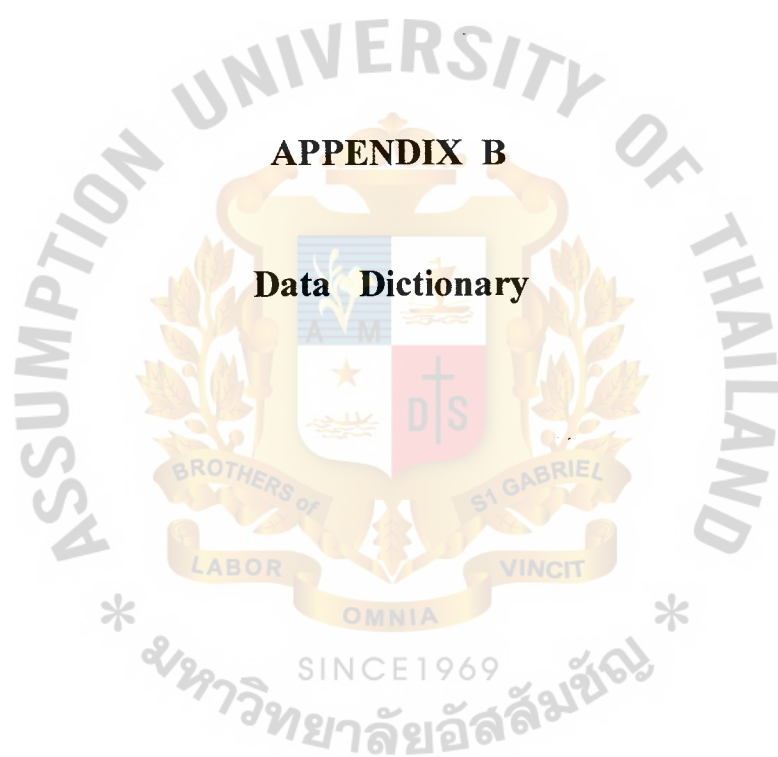
APPENDIX B

Data Dictionary

Data Dictionary

APP_ADDR   :   *Application address*

APP_AGE   :   *Application age*

APP_BIR_D   :   *Applicant birth date*

APP_DATE   :   *The date that the applicant contact with the Escap as

candidate.*

APP_NAME   :   *Applicant name*

APP_NO   :   *Applicant number*

APP_SEX   :   *Applicant sex*

A_STATUS   :   *Applicant status which show that they are interviewed,

tested, or selected.*

B_AMT   :   *Budget amount*

B_DATE   :   *The date that the authorize person asks for budget.*

B_NO   :   *Budget number*

B_TYPE   :   *Type of budget*

CAS_LEAVE: *Casual leave of employee*

COM_AMT   :   *The amount of financial compensation welfare

payment.*

DEPT_CODE: *Department code*

DEPT_NAME: *Department name*

DIV_CODE   :   *Division code*

DIV_NAME   :   *Division name*

EDU_INSTI   :   *Education institution of the applicant*

EMP_NAME :   *Employee name*

EMP_NO   :   *Employee number*

E_ADDRESS :   *Employee address*

E_BIR_DATE: *Employee birth date*

E_BLOOD   :   *Employee blood group*

E_DEPT   :   *Employee department*

E_DIVISION :   *Employee division*

E_ID_CARD :   *Employee identity card*

E_NATION   :   *Employee nationality*

E_POSITION: *Employee position*

E_RELIGION: *Employee religion*

E_SEX   :   *Employee sex*

E_START_D :   *The first day that the employee comes to work.*

E_STATUS   :   *Employee status*

F_DATE   :   *The date that the employee asks for financial
                           compensation welfare.*

G_DATE   :   *Guarantor date*

G_HOME   :   *Guarantor home address*

G_ID_CARD :   *Guarantor identity card*

INS_AMT	:	*Insurance amount for employee financial compensation welfare.*
INT_RATE	:	*Loan interest*
L_DATE	:	*The date that the employee asks for loan welfare.*
L_FROM	:	*The beginning late, sick, or casual leave date of employee*
L_LIMIT	:	*Limit of loan*
L_TIME	:	*Loan time of the employee according to the company's contract.*
L_TO	:	*The last late, sick or casual leave date of employee.*
L_TYPE	:	*Type of loan*
M_AMT	:	*The amount of medical treatment welfare payment.*
M_DATE	:	*The date that the employee asks for medical treatment welfare.*
OT_RATE	:	*Overtime rate*
POS_REQ	:	*The position requirement of the applicant *

PRE_DEGREE: *Employee previous degree*

PRE_MAJOR: *Employee previous major*

PRI_C_NAME: *Prior company name of the applicant*

PRI_POS   :   *Prior position of the applicant*

SAL_REQ   :   *The salary requirement of the applicant*

SOLVING   :   *Ability in solving problem in operation of employee*

START_SAL :   *The start salary of the employee*

TR_COURSE: *Employee training course*

T_COST   :   *Training cost*

T_END_D   :   *The end date of training course*

T_GROUP   :   *Amount of employee to have training*

T_START_D :   *The start date of training course*

VOLUME   :   *The quantity of works which the employee can operate
in a period of time.*

APPENDIX C

Process Specification

PROCESS NUMBER : 1.1

PROCESS NAME	:	Receive employee selection document.
DESCRIPTION	:	Personnel information officer receives manpower request from other department. Send to process 1.2.
INPUT	:	Manpower request description.
OUTPUT	:	Employee selection details.
LOGIC	:	Verify the accuracy of data.

PROCESS NUMBER : 1.2

PROCESS NAME	:	Classify current or new employee.
DESCRIPTION	:	Receive employee selection details from process 1.1. Classify current or new employee. Send current employee requirement to process 1.3. Send new employee requirement to process 1.4.
INPUT	:	Employee selection details.
OUTPUT	:	Specific employee requirement.
LOGIC	:	Classify current or new employee.

PROCESS NUMBER : 1.3

PROCESS NAME	:	Create employee report, train report.
DESCRIPTION	:	Print employee report and training report .
INPUT	:	Employee file, training file , and education file.
OUTPUT	:	Employee report, training report.
LOGIC	:	Retrieve the information from relate files.

PROCESS NUMBER : 1.4

PROCESS NAME   :   Application process

DESCRIPTION   :   The applicant go to the personnel information department as the candidates for the position requirement according to the advertising in the newspaper.

INPUT   :   Applicant's document.

OUTPUT   :   Applicant's information.

LOGIC   :   Check the initial qualification of each applicant. If valid, record into applicant file.

PROCESS NUMBER : 1.5

PROCESS NAME   :   Testing and interview process.

DESCRIPTION   :   The officer appoints the applicants for testing and interview.

INPUT   :   Applicant report

OUTPUT   :   The list of applicant who passed the interview.

LOGIC   :   Retrieve the applicant information from applicant file in the form of report.

PROCESS NUMBER : 1.6

PROCESS NAME   :   Sign and guarantee process.

DESCRIPTION   :   Receive the applicant information who passed the interview from process 1.5. The officer appoints them to sign the employment contract and doing employee guarantee process.

INPUT   :   List of applicants who are selected.

OUTPUT   :   Completed employment contract.

LOGIC   :   Write guarantor record into employee guarantor file.

PROCESS NUMBER : 1.7

PROCESS NAME	:	Update employee file, education file, and salary file.
DESCRIPTION	:	Receive employee's information from process 1.6. Update employee's information into employee file, education file, salary file. Send to process 1.3 for prepare employee report.
INPUT	:	Employee's information
OUTPUT	:	Update employee file, education file, and salary file.
LOGIC	:	Update relate files.

PROCESS NUMBER : 2.1

PROCESS NAME	:	Receive training document.
DESCRIPTION	:	Personnel information officer receives training Information from training division. Send to process 2.2.
INPUT	:	Training information
OUTPUT	:	Training details
LOGIC	:	Verify the accuracy of document.

PROCESS NUMBER : 2.2

PROCESS NAME	:	Check training detail.
DESCRIPTION	:	Receive training detail from process 2.1. Check the Detail of training information. If valid, send to process 2.3 .
INPUT	:	Training detail
OUTPUT	:	Valid training information
LOGIC	:	To make sure that the training details are valid.

PROCESS NUMBER : 2.3

PROCESS NAME   :   Update training file, budget file, and tra_link file.

DESCRIPTION   :   Receive training detail from process 2.2 .

Update training information into training file, budget

file, and tra_link file. Send to process 2.4.

INPUT   :   Training information

OUTPUT   :   Updated training file, budget file, and tra_link file.

LOGIC   :   Update relate files.

PROCESS NUMBER : 2.4

PROCESS NAME   :   Create employee report and training report.

DESCRIPTION   :   Print employee report and training report.

INPUT   :   Employee file, training file, and budget file.

OUTPUT   :   Employee report , and training report.

LOGIC   :   Retrieve the information from relate files and

using linking file among them to print reports.

PROCESS NUMBER : 3.1

PROCESS NAME   :   Receive medical treatment document.

DESCRIPTION   :   Personnel information officer receives medical

treatment information. Send to process 3.2.

INPUT   :   Medical treatment information

OUTPUT   :   Medical treatment detail

LOGIC   :   Verify the accuracy of data.

PROCESS NUMBER : 3.2

PROCESS NAME : Check medical treatment document.

DESCRIPTION : Receive medical treatment detail from process 3.1.

Check the detail of document. If valid, send to

process 3.3 . If invalid, return to the employee.

INPUT : Medical treatment detail

OUTPUT : Valid medical treatment information

LOGIC : To check that the medical treatment documents

are valid.

PROCESS NUMBER : 3.3

PROCESS NAME : Update medical treatment file.

DESCRIPTION : Receive medical treatment detail from process 3.2.

Update medical treatment information into medical

treatment file. Send to process 3.4.

INPUT : Valid medical treatment information

OUTPUT : Updated relate files

LOGIC : Update relate files.

PROCESS NUMBER : 3.4

PROCESS NAME : Create medical treatment report.

DESCRIPTION : Print medical treatment report.

INPUT : Medical treatment report

OUTPUT : Medical treatment report

LOGIC : Retrieve the information from relate files to

print the report.

PROCESS NUMBER : 4.1

PROCESS NAME	:	Receive loan document.
DESCRIPTION	:	Personnel information officer receives loan Information Send to process 4.2.
INPUT	:	Loan information description
OUTPUT	:	Loan information details
LOGIC	:	Verify the accuracy of data.

PROCESS NUMBER : 4.2

PROCESS NAME	:	Check type of loan.
DESCRIPTION	:	Receive loan information details from process 4.1. Check type of loan that it is housing or vehicle loan.
INPUT	:	Loan information details
OUTPUT	:	Specific loan type
LOGIC	:	Check type of loan. If type = H , send to process 4.3. If type = V , send to process 4.4.

PROCESS NUMBER 4.3

PROCESS NAME	:	Housing loan process
DESCRIPTION	:	Personnel information officer performs housing loan process.
INPUT	:	Housing loan document
OUTPUT	:	Housing loan detail
LOGIC	:	Perform housing loan process according to the Escap's rule.

PROCESS NUMBER : 4.4

PROCESS NAME   :   Vehicle loan process.

DESCRIPTION   :   Personnel information officer performs vehicle loan

                           process.

INPUT   :   Housing loan document

OUTPUT   :   Housing loan detail

LOGIC   :   Perform vehicle loan process according to the

                           Escap's rule.

PROCESS NUMBER : 4.5

PROCESS NAME   :   Check limit, amount of loan.

DESCRIPTION   :   Receive loan detail from process 4.3 or 4.4 .

                           Check the limit and amount of loan. If valid, send

                           to process 4.6. If invalid, send to employee.

INPUT   :   Loan detail

OUTPUT   :   Valid loan information

LOGIC   :   To make sure that the amount of loan not over limit by

                           retrieve the information from employee file and salary

                           file.

PROCESS NUMBER : 4.6

PROCESS NAME   :   Sign and guarantee process.

DESCRIPTION   :   Receive the valid loan information from process 4.5.

                           The officer appoints the employee to sign loan

                           contract

                           and doing loan guarantee process.

INPUT   :   Valid loan information

OUT PUT   :   Completed loan contract

LOGIC   :   Write guarantor record into loan guarantor file.

PROCESS NUMBER : 4.7

PROCESS NAME : Update loan file, loan_link file.

DESCRIPTION : Receive loan information from process 4.6.

Update loan information into loan file, loan_link

file. Send to process 4.8 for prepare loan report.

INPUT : Loan information

OUTPUT : Updated loan file.

LOGIC : Update relate files.

PROCESS NUMBER : 4.8

PROCESS NAME : Credit loan report.

DESCRIPTION : Print loan report. Send the report to welfare division.

INPUT : Loan file , employee file

OUTPUT : Loan report

LOGIC : Retrieve the information from relate files.

PROCESS NUMBER : 5.1

PROCESS NAME : Receive financial compensation document.

DESCRIPTION : Personnel information officer receives financial

compensation information from the employee.

Send to process 5.2.

INPUT : Financial compensation description

OUTPUT : Financial compensation detail

LOGIC : Verify the accuracy of data.

PROCESS NUMBER : 5.2

PROCESS NAME : Consider detail of accident.

DESCRIPTION : Receive financial compensation detail from process 5.1. After that , consider the detail of accident. If valid , send to process 5.3. If invalid send to the employee.

INPUT : Financial compensation detail

OUTPUT : Valid financial compensation information

LOGIC : To make sure that financial compensation are valid

PROCESS NUMBER : 5.3

PROCESS NAME : Contact insurance company.

DESCRIPTION : Personnel information officer contact the insurance company for payment according to the agreement.

INPUT : Valid financial compensation document

OUTPUT : Insurance company accepted the compensation request.

LOGIC : The officer contact the insurance company for financial compensation payment.

PROCESS NUMBER : 5.4

PROCESS NAME : Update financial compensation file.

DESCRIPTION : Accepted the compensation request from the insurance company. Update financial compensation file. Send to process 5.5 for prepare financial compensation report.

INPUT : Accepted the compensation payment from the insurance company.

OUTPUT   :   Updated financial compensation file.

LOGIC   :   Update relate file.

PROCESS NUMBER : 5.5

PROCESS NAME   :   Create financial compensation report.

DESCRIPTION   :   Print financial compensation report.

                                          Send the report to welfare division.

INPUT   :   Employee file, financial compensation file

OUTPUT   :   Financial compensation report.

LOGIC   :   Retrieve the information from relate files.