



Personnel Controlling System

By

Mr. Sophon Siridumrongsak

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

July, 1999

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| | |
|-----------------|------------------------------|
| Project Title | Personnel Controlling System |
| Name | Mr.Sophon Siridumrongsak |
| Project Advisor | Dr.Thotsapon Sortrakul |
| Academic Year | July 1999 |

The Graduate School of Assumption University has 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.


Approval Committee:



(Dr. Thotsapon Sortrakul)
Advisor



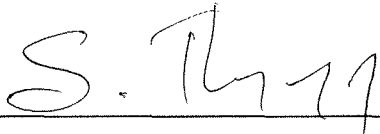
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Chairman



(Air Marshal Dr. Chulit Meesajjee)
Dean and Co-Advisor



(Dr. Vichit Avatchanakorn)
Member



(Assoc. Prof. Somchai Thayarnyong)
MUA Representative

July 1999

ABSTRACT

This system, Personnel Controlling System, is developed from the manual system to be computerized for Personnel Department of Adkinson Securities Public Company Limited. The existing system in which processing, handling and filing are done manually cause many mistakes that are associated with manual operations. Then, the new proposed system is developed to eliminate all those problems.

The study is mainly focused on computerization of the Personnel Controlling. The existing system is studied and analyzed. The new system is designed to solve and minimize the problems in the existing system and provide accurate and timely information to the top executives for making decision.

The areas of the proposed system are payroll processing, filing information such as employees records, training program, projects, etc. and generating reports. This project consists of objectives and scope of the project, the company background, the existing business functions, the current problems and areas for improvement, the user requirements for the proposed system include system design, hardware and software requirement, security and control, system cost evaluation and comparison, etc.

ACKNOWLEDGEMENTS

In preparing this project, the author would like to express his appreciation to his project advisor, Dr.Thotsapon Sortrakul, who has contributed suggestions and recommendation to make this project successful.

The author greatly appreciates the time, experience, and expertise provided by several prominent personnel of Adkinson Securities Public Company Limited for their great effort and contributions.

As a result, the author would also like to thank Assumption University for handling and arranging the Computer Information System Program to help the students understand more about computer technology and to apply the studied concept to the working environment today.



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I. INTRODUCTION

1.1 Background of the Project

Information systems are part of an organization. Indeed, for some companies without the system there would be no business. One key element of an organization is its personnel. Organizations can survive, grow and compete with the others if there are qualified personnel working. Then, organizations require many different kinds of skills and people. Consequently, there are many kinds of people working in the firm.

One major organizational function is human resources. Its functions are attracting, developing, and maintaining the organization's labor force, and maintaining employee records. Those functions are handled and managed by Personnel Department.

In doing personnel management's functions concerning with a great deal of employee documents, personnel officers usually have problems in managing the information. To make things better, computer information technology usage is introduced in many organizations.

Personnel Controlling System for Adkinson Securities Public Company Limited is developed to be computerized because the number of increasing employees and many employees' records are to be handled and the need to reduce errors. This system is needed to fulfill the Personnel Department's requirement of faster, more accurate, and more efficient operations.

1.2 Objectives of the Project

The project is studied in order that the new proposed Personnel Controlling System will reduce repetitive manual work, operating time and also provide a good filing system. The following need to be accomplished in this project:

- To study the existing Personnel Controlling System and to design a new system to improve effectiveness and efficiency
- To analyze the current problems of the existing system
- To improve the productivity in accordance with the company's overall objectives
- To develop and implement the proposed computerized system to replace the existing system
- To identify user requirement for the new system
- To find the best procedure to reduce processing time
- To develop new automated filing and reporting system
- To develop a good controlling system

1.3 Scope of the Project

The scope of the project is based on the functional areas of Personnel Department. These functional areas concern about collecting, filing and retrieving employees' information, controlling employees' payroll and generating reports as desired.

All those above functions are identified by analyzing the existing system, studying current problems and requirements and together with reviewing the existing form and documents.

1.4 Project Plan

The area of the work will mainly focus on the information system which supports all the human resources operation concerning the problem of the department. It requires an improvement of the personnel filing system which will facilitate employee performance evaluation, planning in managing people and manpower.

The Gantt chart in figure 1.1 shows the activities in developing this project with

the estimated time that is assigned to each job. The total period required to develop this project is about six months. The activities are divided into three phases and each phase consists of sub-activities as follows:

1. System Analysis

This is the first phase of the project plan. The activities done in this phase are surveying and planning the project, studying and analyzing the current system and defining business requirements. The problems and opportunities of the project are surveyed. The project scope and plan are defined. The process, problems and opportunities of the current system will be analyzed together with establishing the system objectives and modifying project and scope plan. This phase takes about two months to finish.

2. System Design

This is the second phase of the project plan. The activities done in this phase is designing and integrating the new system. The data and process will be analyzed and distributed. The hardware and software requirement will be discussed. Database, input and output will be designed together with writing data dictionary. The cost evaluation and comparison are also done in this phase. The time spent in this phase is about two months.

3. System Implementation

This is the last phase of the project plan. The activities done in this phase are constructing the new system and delivering the system into operation. The database, inputs, outputs, and user interface will be constructed. Programs will be coding and testing. The system test version will be installed and tested. The conversion plan will be done. We will manage the training course for the users during this time. The documents will be prepared. The estimated time for this phase is about three months.

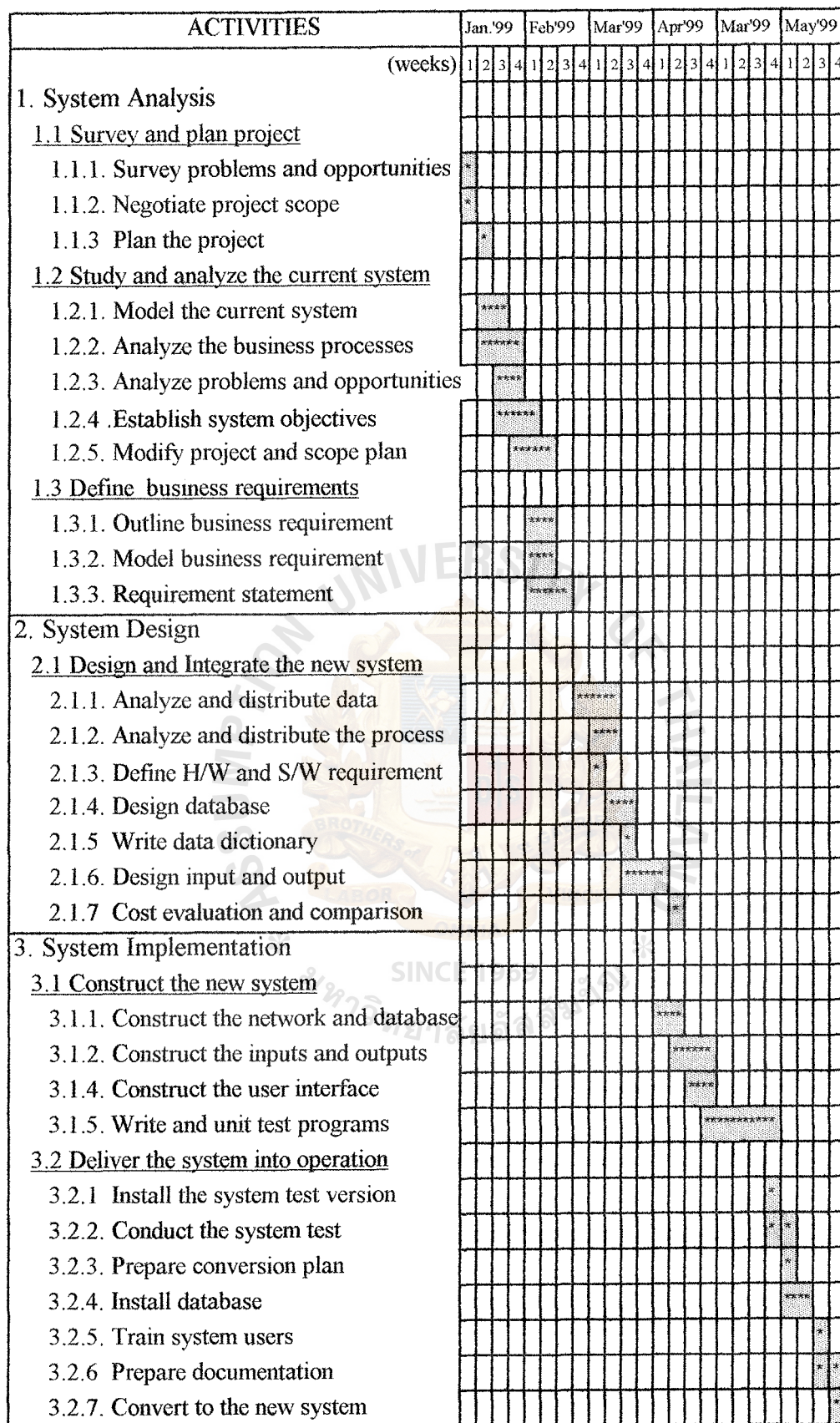


Figure 1.1. Gantt Chart.

II. THE EXISTING SYSTEM

2.1 Background of the Organization

Adkinson Securities Co., Ltd. was established on April 4, 1966 with an initial registered capital of Baht 300,000, under the name of “Adkinson Enterprise Co., Ltd..” In the early stage, the company was in construction and real-estate agent business.

In 1974, the company was elected to be a member of the Stock Exchange of Thailand No. 3, providing securities brokerage service and securities consultant. After that, in 1979, the company’s name was changed to “Adkinson Securities Co., Ltd.” to comply with the Finance, Securities and Credit Foncier Act B.E. 2522 (1979) and operated in securities business.

In 1983, Techaratanachai family is acquired from Jiarakul family the majority equity ownership in the company. Mr. Kritha Techaratanachai was appointed as the Managing Director. At the same time, the company moved its office from K&Y Building to No. 132, Sintorn Building, Wireless Road, Pathumwan District, Bangkok.

In order to cope with the rapid and continuous expansion in securities business, in 1990, the company increased its registered capital from Baht 30 million to Baht 100 million.

On July 4, 1991, the Minister of Finance authorized the Stock Exchange of Thailand to adopt the company’s ordinary shares as authorized securities.

On December 14, 1993, the company announced an additional increase in registered capital by Baht 400 million to Baht 600 million. On February 7, 1994, the shares of Baht 10 par value each were all issued to old shareholders with the ratio of 1 old share to 2 new shares.

Adkinson Securities Public Co., Ltd.'s organization chart is shown in figure 2.1.

It consists of many departments and sections as follows:

1. Marketing Department
 - Marketing 1 Department
 - Marketing 2 Department
2. Development Department
 - Research Department
 - Underwriting
3. Electronic Data Processing Department
 - System Development
 - Computer Operation
 - System Analyst and Planning
4. Branch Department
 - Branch Manager (Chiang Mai)
 - Branch Manager (Haad- Yai)
5. Administration and Personnel Department
6. Operation Department
 - Finance Department
 - Accounting Department
 - Custodian Department

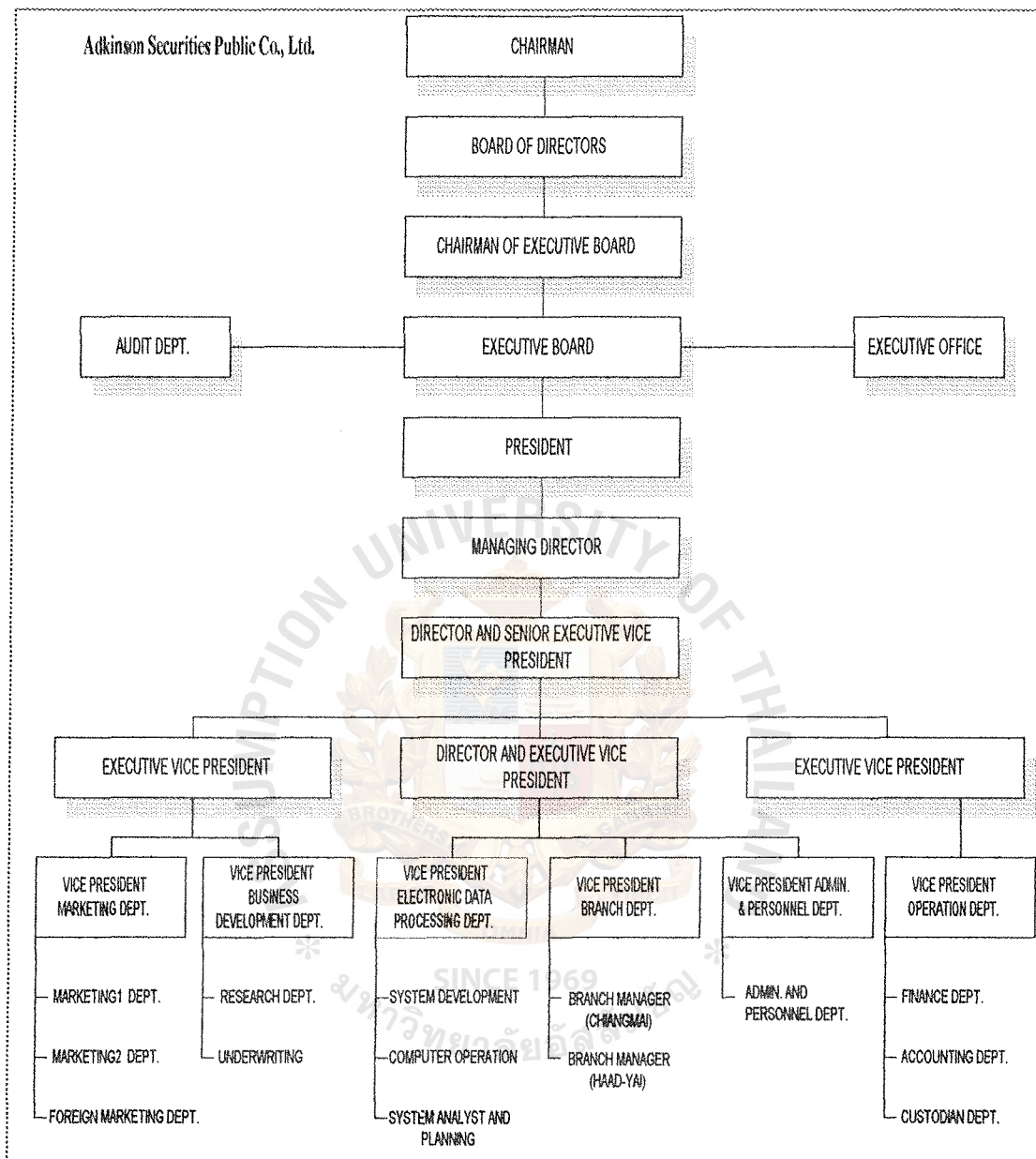


Figure 2.1. Organization Chart.

2.2 Existing Business Functions

The existing information system of Personnel Department mostly is manual operation. The context diagram and data flow diagram of the existing system is shown in figures 2.2 and 2.3.

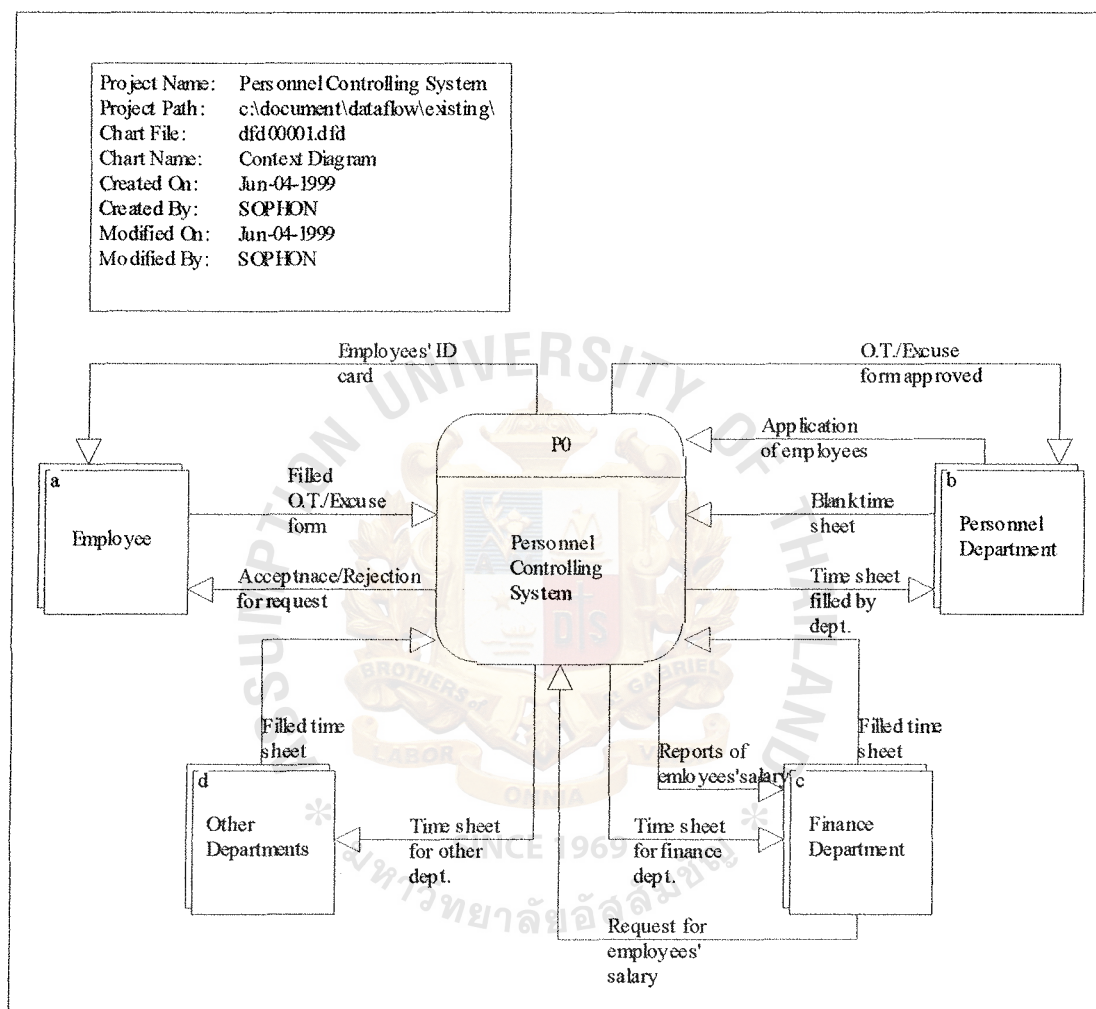


Figure 2.2. Context Diagram of the Existing System.

Figure 2.2 shows the existing Personnel Controlling System of Adkinson Securities Public Co., Ltd.. This system is still a manual system. All the departments in the company must participate in this system. The head of each department has to

take care of the time sheet given by Personnel Department and return it back at end of the week.

The Personnel Department will record the employees' work time. Other functions of Personnel Department are to give the blank overtime or absence form to the employees whenever they request them. When the employees receive the blank form, they have to fill in and ask for approval and return them back to Personnel Department for recording.

When there are new employees, the Personnel Department has to make the employees' profile and produce the employees' ID. Cards for them. The details of all the processes are shown in the data flow diagram in figure 2.3.

The data flow diagram in figure 2.3 consists of three processes. There are five staffs working manually in the Personnel Department. The three main processes are described as follows:

1. Performing Payroll Activities
2. Recruiting new employees
3. Making Employees' ID. card

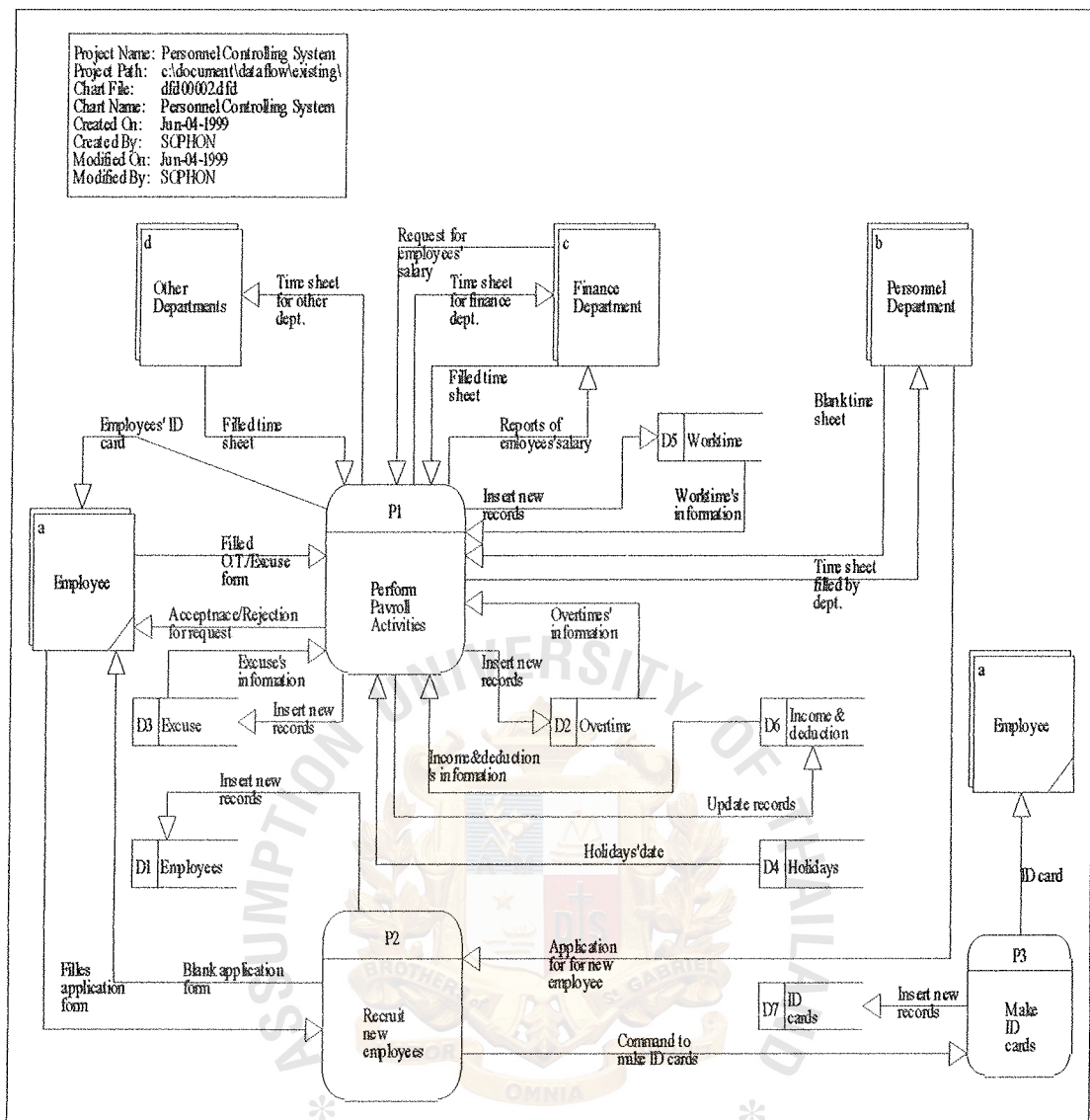


Figure 2.3. Data Flow Diagram of the Existing System.

Process 1.0 Payroll Activities

Recording Work Time

- The working hours of the company are 8:30 – 17:00. Before employees start working, they have to write down their beginning work time on the time sheet at their own department. They also have to do the same after they stop working. The time sheet will be taken care of by the head of their departments.

- The time sheet will be collected by the Personnel Department at the end of the week, usually on Friday evenings.

Recording Overtime

- The head of each department can order their employees to work for overtime any day or each employee has a right to ask for doing overtime. Any employee who asks for doing overtime or is requested to do overtime has to write the overtime period down on the overtime request form. The overtime form must be approved by the head of the department and submitted to the Personnel Department.

Recording Excuse Time

- Before any employee wants to be absent, she/he has to ask for the absence form from Personnel Department and write down the information on the form. The absence forms must be approved by the head of department and returned to the Personnel Department. The employee cannot be absent over the limit of the type of absence allowed.

Computing Salary

- At the end of each month, the Personnel Department will calculate the salary of all the employees by checking from their work time, overtime, income and deduction. The type of overtime can be classified into three levels. The first level means that when the employees work after 17:00, they will get 1.5 extra time. The second level means that when the employees work on Saturday or Sunday, they will get 2 extra time. The last level means that when the employees work on holidays which the company has given a notice, they will get 3 extra time. The salary information of employees will be submitted to the Finance Department to continue the process, which is paying salary.

Process 2.0 Recruiting New Employees

- Each department can submit the request to the Personnel Department to ask for new employees. Then, the most appropriate applicants that conform to qualification identified are selected. After new employees are recruited, the employees' records (application forms) must be kept and employees' ID. Card is produced

- It is the responsibility of the Personnel Department to keep all employees' information. When the employees' information has changed, it is the duty of Personnel Staffs to keep updating the record, including adding new employees, changing employees' information and employee resignation.

Process 3.0 Generating Reports required

- All the information concerning about employees is recorded by the Personnel Department. Any department can request for any specified reports of their employees from the Personnel Department. It is the duty of the Personnel staffs to create the right report on time.

2.3 Current Problems and Areas for Improvements

Current Problems

After discussion and interview with the personnel involved have been performed, the current problems of the existing Personnel Controlling System can be identified as follows:

1. Inaccuracy and unavailability of information needed

If timely and accurate information cannot be provided to top management for decision making, then, the decision may be full of mistakes. With the current system, it is very difficult to support all information within the time. Sharing information with several users at the same time is impossible in the current system.

2. Too much paper work

Mostly, the information concerning employees are recorded on paper. The large volume of personnel can cause the company to waste space in keeping those papers. The work may be loaded at somebody's department in the process.

3. Repetitive work

Some work may be done repetitively which creates inaccurate information and some data are lost in the process.

4. Unsmooth workflow

The workflow may be interrupted when some personnel are not available at that time. Then, the work may be done inefficiently.

5. Not enough facility to support workflow

Due to the manual operation, all the work can be done very slowly. It is very difficult and takes more time in filing and searching for the information needed. There is no convenient equipment to increase speed of work.

6. Lack of security control

The existing system still does not have a good measure to make security control. The information can be damaged and lost easily.

7. Ineffective personnel

The personnel in the department seem to be sufficient but the productivity is quite low. So, it can cause the operation cost to be higher.

8. Take time in finding qualified people to the right project

When the Personnel Department receives command from other departments to find qualified people to participate in the project, it must take a long time to do that. It is caused from improper filing.

9. Human errors

Personnel staffs can make the mistake during recording employees' information or making reports. Poor handwriting can make a big trouble.

Areas for Improvements

The existing Personnel Controlling System is still a manual system. It is not suitable in updating employee records. When people deal with a great deal of information, there is more chance to make errors.

Furthermore, the speed in processing is quite slow as well. It is very difficult to improve the consistency. Information and reports with errors can cause a lot of damage to the company.

Personnel Department needs to improve the personnel filing system, which will facilitate employees' performance, evaluation, planning and managing. The new way of filing employees' information should reduce the amount of paperwork in order to reduce the operating cost spent on storing and maintaining data.

Usually, the company has training programs, seminars, or projects to do several times a year. The filing of such information is still not good. It takes much time in finding some needed information. The filing system of the information should be considered.

New facilities, hardware and software, should be introduced to the Personnel Department. So, the personnel staffs must learn to use them effectively. This can reduce the mistakes occurred from human errors and smooth the workflow as well. With the new tools, the security control will be better and guaranteed. The chance of losing data in the process will be decreased.

III. THE PROPOSED SYSTEM

3.1 User Requirements

Personnel Department does not work alone. It has to coordinate with other departments. In order to know user requirements, all the existing forms were analyzed, some activities had been observed and some employees had been interviewed. The user requirements can be defined as follows:

- The system should always keep only the updated information in order to produce accurate reports. It is necessary for the system to be able to provide timely information to the top management for future use.
- The system should reduce the volume of the paper work in order to save the storage space and reduce the operating cost in searching them.
- Some repetitive work must be eliminated so that the data will not be lost in the process.
- The workflow should not be interrupted when there is somebody absent at that time. It is necessary for the workflow to go on smoothly. The work should not be loaded on to somebody. Every personnel staff member should be replaceable by another personnel staffs.
- There must be some way to keep, protect, and backup the information and recover it when information is damaged or lost.
- There should be new facilities to help and support the workflow in order to reduce human errors and increase the speed of work.
- The system should reduce the operating cost as much as possible.
- The reports required should be produced correctly as desired.
- Every personnel should do his/her jobs efficiently and effectively.

3.2 System Design

From the scope of the project concerning the functional areas of the Personnel Department, some repetitive tasks have been eliminated and there is increasing productivity of work. The context diagram of the new proposed system is shown in figure 3.1. and then the details of their processes are shown is the data flow diagram in figure 3.2.

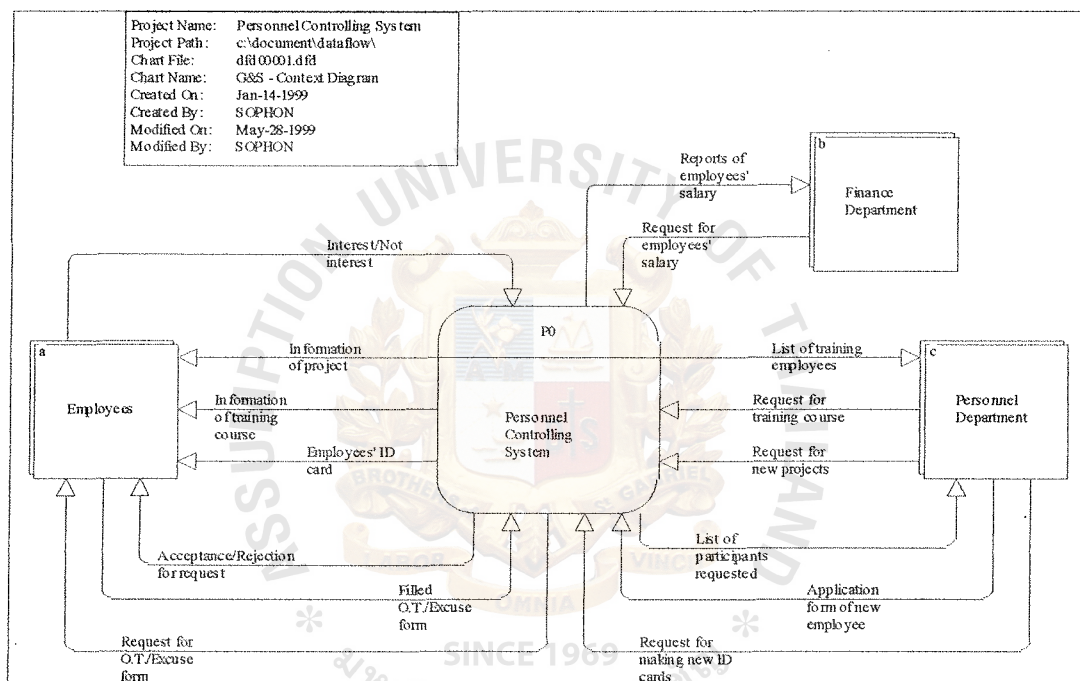


Figure 3.1. Context Diagram of the Proposed System.

Figure 3.1 shows the proposed Personnel Controlling System of Adkinson Securities Public Co., Ltd. This system is now a computerized system.

The differences between the existing system and the new proposed system are described as follows:

- The number of departments involved manually

The new proposed system has eliminated the number of departments that are involved manually in the system. In the existing system, all departments have to submit the time sheet to the system at the end of the week. This can cause some human errors or mistakes and delay in the process. For the new system, the time recorder is used. Then, the need for time sheets disappears. All the work time of employees in each department can go to the system immediately and correctly.

- The need for time sheet

In the existing system, the time sheets are need for every department for their employees to sign up their work time on time sheets every day. This activity is quite expensive and provide a high chance of cheating. The proposed system eliminates the need for time sheets. All the employees' work time go directly to the system through time recorder.

- Processes

The existing system faces the problem in finding the people to participate in the project. Time spent on selecting qualified people is quite long. There are no processes to deal with these problems. For the proposed system, two more processes have been added. The two processes are managing training course and managing projects.

- The way reports are produced

The existing system has problems when many departments need the reports at the same time. Due to the manual system, all the personnel have to write the reports manually; consequently, the reports have rough handwriting, and contain lots of mistake and take a long time. For the proposed system, all reports have been generated by computers. It is faster and highly accurate to produce.

The details of the new proposed system can be seen in figure 3.2. The main processes of the new proposed Personnel Controlling System can be divided into six processes as follows:

1. Performing payroll activities
2. Checking number of employees needed
3. Making employees' ID cards
4. Managing the new training program
5. Managing the new project
6. Generating the reports required

The data flow diagram for all six processes can be seen in figure B.1. All of those six functional parts above will be described as follows:

Process 1.0 Performing payroll activities

For this process, there still are four sub-processes which are :

- 1.1 Managing overtime work
- 1.2 Managing employees' absence
- 1.3 Finding employees' salary
- 1.4 Updating database file (Holiday file)

The data flow diagram for this process can be seen in figure B.2.

1.1 Managing overtime work

This process starts when any employee wants to work for overtime on weekend day or holiday. The employees must submit the overtime request form to the Personnel Department in order that staffs can add the record into appropriate files. The request may or may not be approved by the manager of the department in which the employees are working.

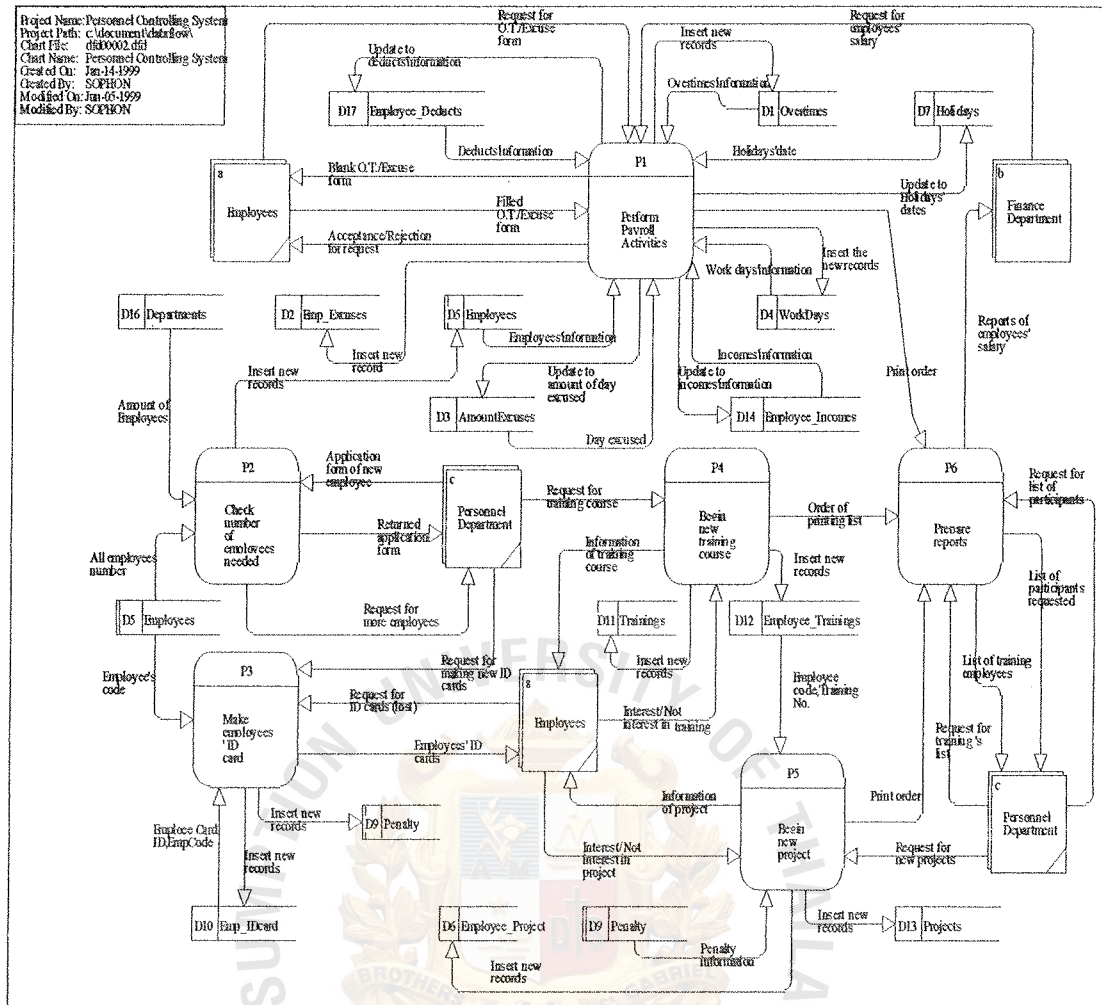


Figure 3.2. Data Flow Diagram of the Proposed System.

1.2 Managing employees' absence

This process begins when any employee wants to be absent. The employees must submit the request form to the Personnel Department in order that staffs can add the record into file. All of the above steps are quite similar to Managing overtime work process.

Furthermore, there is one more step that staffs cannot forget to do before recording to the file. That step is checking the number of absences of that employee who asks to be absent. If the number of excuse is still not over the limit, then staffs can update the file.

1.3 Finding employees' salary

Before getting the employees' salary, there are some steps required to be performed first which are finding employees' real work hours, and finding employees' real overtime hours.

The real work hours and real overtime hours will be used to calculate the salary. After getting the net salary, the reports which include employees' code, salary, and bank account number will be generated to the Finance Department.

The system will get the work time of employees from the time recorder every workday morning. The data from the time recorder are in text file will be generated to the system.

Example of data received from time recorder:

K01980617095804000001

The detail of the data:

| | | |
|--------|----|-----------------------------------|
| K | = | Not in use |
| 01 | = | Position of the time recorder |
| 980617 | =* | Year/Month/Date |
| 0958 | = | Hour/Minute |
| 0 | = | Not in use |
| 40 | = | Show function of the work shift |
| 00001 | = | Identification number of employee |

Example of data collected in text file:

K019801010739010000001

K019801010812010000002

K019801020630010000003

K019801020721010000004

1.4 Updating database file (Holiday file)

This updating file (for Holiday file) mostly will be done once a year or when there is any emergency days. This process is very important when calculating employees' overtime.

Process 2.0 Checking number of employees needed

The process starts with checking whether the number of employees employed is sufficient and can satisfy the need of each department or not. In checking the workforce, if the outcome says "already enough", then this process stops. Unless the result is "yes, need more", then the process is still on going. The program will tell the staffs how many employees must be recruited for that specific department. Then staffs can generate reports and submit to the Personnel Manager in order to recruit new employees for that department.

When new employees are hired, the application form will be given to staffs in the Personnel Department in order to update the database file. The data flow diagram for this process can be seen in figure B.3.

Process 3.0 Making employees' ID card

This process will be performed when it encounters two situations which are recruiting any new employees and being requested to do so by old employees.

If the first situation is met, the staffs will make an identification card for a new employee and record into the file.

If the second situation is met, it means that the old employees have lost their identification card. They will be fined and their behaviors will be recorded into the file.

Staffs can check the status of an identification card of any specific employee whether he/she is an old or a new employee by using checking ID card status program.

The data flow diagram for this process is shown in figure B.4.

Process 4.0 Managing the new training program

This process begins when any department has new training programs and requires any employee to join in that program.

The information of training programs will be recorded into the file. The information will be printed and passed around to people who are interested in that particular program. If somebody prefers to join in the program, the employee code of that person together with the training code will be recorded into the file. The data flow diagram for this process can be seen in figure B.5.

Process 5.0 Managing the new project

When the company has a new project and needs participants, this process will be active. The information of the project will be recorded into the file. The qualification of the participants should be people who have been trained in related field of the project. There is one way to find the participants which is searching from finding trainees program. The list of people who are involved in the training program which is related to the project's topic will be printed and submitted to the project manager. He/she can select the participants from the list. The data flow diagram for this process can be seen in figure B.6.

After informing about the new project to the people on the list, they may or may not desire to participate in that project. If the answer is no, find a new person. If yes, the project code and employee code of that employee will be recorded into the file.

Process 6.0 Generating the reports required

This process will be active when there is any request for some specific reports from anybody. The reports will be generated according to the request. After printing out the reports, they will be checked for finding any mistake. If some mistake occurs,

redo them again. Finally, the reports will be submitted to people who request for them. The data flow diagram for this process can be seen in figure B.7.

Application Architecture

Network Architecture

Distributed data is selected to be the network architecture for the system being built. The network configuration is shown in figure 3.3.

From figure 3.3, there is one server connecting with three workstations. The computer server is located in the computer department. The three workstations are in the Personnel Department. In this architecture, the information system's stores data on the server and the business login and user interfaces with the clients.

The concept of database server is employed. The database is store in the database server and the database commands are executed on that server. The clients run the business logic of the information system application, which is written by using Delphi 95.

There are several reasons for the answer.

1. Single point of control

The database is kept in a single central place. It is easier to exercise control over the database. It is much easier to maintain data integrity.

2. Traffic concern

This kind of network architecture is considered as generating excessive traffic over the network because the clients have to load the records to and from the file server. We believe that traffic is not a problem because the size of the network is very small and transaction is quite low. We believe that the network capacity is sufficient to handle the company's operations.

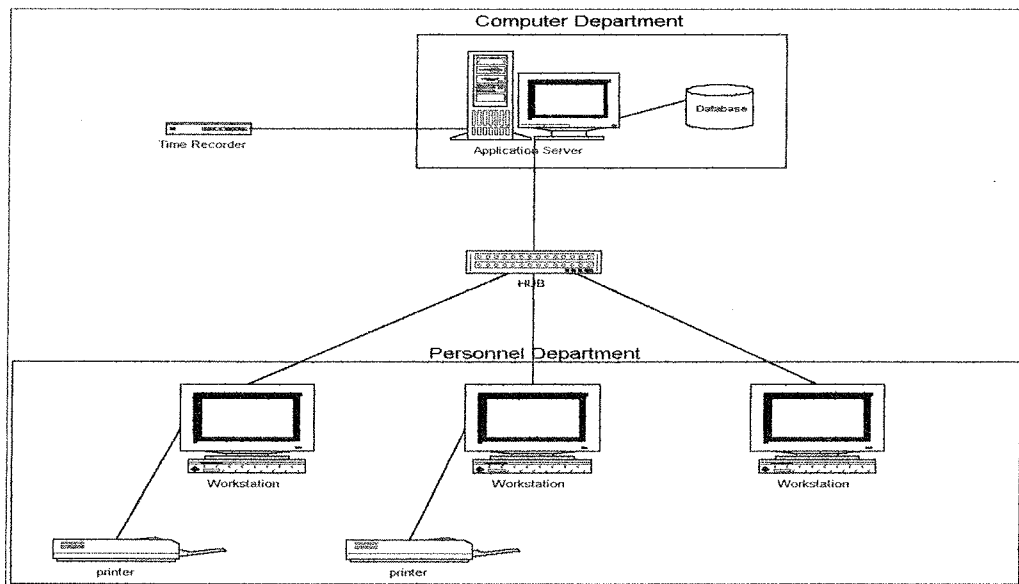


Figure 3.3. Network Configuration.

Network topology

The star topology is chosen as network topology. There are reasons to support this choice :

- 1) The equipment is cheap and widely available in the market.
- 2) Construction is less complicated.
- 3) It is proven as a stable standard topology
- 4) Maintenance is simple.

Database Architecture

Relational database is selected as database architecture. The Microsoft SQL Server 6.5 has been selected. The database design is shown in Appendix D. It is strongly recommended to choose relational database because of the following reasons:

1. Wide range of relational database products are available in the market.

Moreover, many products have been proven as stable and efficient products.

2. Although the trend of database technology is heading toward object database, Relational database is still the market leader for several years to come.
3. Since the relational database products are produced by trust worthy companies, there is strong commitment for future support or even migration to another technology.
4. With SQL, it supports not only queries but also complete database creation and maintenance

Input and Output Design

Input Design

This project is developed to include a GUI. These types of interfaces are rapidly replacing the more traditional text-based screen design. GUI designs provide a more user-friendly interface. Figure 3.4 is an example of GUI input screen design used in the proposed system.

The most common control used for input of data is text box. A text box consists of a rectangular shaped box that is usually accompanied by a caption. As shown in figure 3.4, the text box is used for employee code, serial number, absent date, reason, etc. A drop-down list is another control that requires the user to select a data item's value from a list of possible choices. It is shown in absence code in figure 3.4.

The other types of data input are radio buttons, check box, list box, and combo box. Radio buttons provide the user with an easy way to quickly identify and select a particular value from a value set. The examples of all those GUI input screen designs are shown in Appendix C.

Figure 3.4. GUI Input Screen Design.

Output Design

During system analysis, the output needs and requirements are defined and analyzed. Then, those requirements are design to be effective outputs for users in two forms of outputs, which are on-screen outputs and reports. The example of on screen output is shown in figure 3.5.

As shown in figure 3.5, when the users want to know the behavior of any specific employees, the users just enter the employee code and click the Check button. The output will appear on the screen.

Some output reports fulfill management reporting and decision support requirements. The management information systems typically produce three types of reports, which are detailed reports, summary reports and exception reports.

The example of detailed reports is shown in figure 3.6. This report lists all the information of all employees, including employee code, name,

department, and position. The example of summary reports is shown in figures 3.7 and 3.8. Figure 3.7 shows the monthly salary summary of employees for specific department. Figure 3.8 shows the overtime done by each department in a specific month.

Behavior Profiles

บริษัทหลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

Behavior Profiles

Employee Code: 00001 Month: 1

| OVERTIME | |
|----------|-----------|
| O.T. 1 | 100 Hours |
| O.T. 2 | 24 Hours |
| O.T. 3 | 1 Hours |

| | |
|---------------------|-----------|
| Late Day | 20 Day(s) |
| Absent Day | 0 Day(s) |
| Early Leave Day | 1 Day(s) |
| Forget Punching Day | 0 Day(s) |

Search Edit Add Delete Exit

Print

Figure 3.5. On-Screen Output.

The example of exception report is shown in figure 3.9. It shows the employees who were punished. The exception reports filter data before they are presented to the manager as information.



บริษัท หลักทรัพย์ แอดคินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

LIST OF ALL EMPLOYEES

| <u>Code</u> | <u>Name</u> | <u>Department</u> | <u>Position</u> |
|-------------|-------------------------|----------------------|----------------------------|
| 00001 | Wanne Boonyasiriwat | Operation | V.P.Operation |
| 00002 | Prasert Weerawatpaisal | Marketing | V.P. Marketing |
| 00003 | Sirikul Kitjaporn | Marketing | A.V.P.Marketing 1 |
| 00004 | Prasarn Luekittisapt | Marketing | A.V.P.Marketing 2 |
| 00005 | Raviwan Sukhumtus | Marketing | A.V.P.Marketing 3 |
| 00006 | Monvipa Saochindaratana | Marketing | A.V.P.Marketing 4 |
| 00007 | Viroj Ratwattana | Foreign Marketing | A.V.P.Foreign Marketing |
| 00008 | Aniruch Synsukpermpoon | Branch | A.V.P.Branch |
| 00009 | Pipat Ronakiati | Research | A.V.P.Research. |
| 00010 | Taywon Ouchareon | Computer | A.V.P.System Development |
| 00011 | Chalermchai Sihanern | Computer | A.V.P.Computer Operation |
| 00012 | Yuttasart Sangponsanon | Audit | A.V.P.Audit |
| 00013 | Pirakit Visamsaisatom | Personnel | A.V.P.Personnel |
| 00014 | Jeeraphan Pajriyapong | Custodian | A.V.P.Custodian |
| 00015 | Nipaporn Phumichaisak | Finance | A.V.P.Finance |
| 00016 | Kornthanee Cherdchoo | Accounting | Chief Accountant |
| 00017 | Kulayarat Tangsuphachai | Administration | A.V.P.Administration |
| 00018 | Wipa Wanichsermkul | Business Development | A.V.P.Business Development |
| 10000 | Luxamee Kongvatanasest | Accounting | Accountant |
| 11000 | Kulayarat Tangsuphachai | Audit | Auditor |
| 11100 | Chaiwat Ekrojrat | Computer | Computer Officer |
| 11110 | Therdtham Pianpichan | Computer | Computer Officer |
| 11111 | Saisunee Rodpranee | Operation | Executive Officer |
| 15478 | Kobboon Srichai | Marketing | Marketer |
| 21000 | Penprapa Tangtham | Operation | Staff |
| 21450 | Chanchai hultavarakorn | Foreign Marketing | Staff |
| 22000 | Chiapant Pongtanakorn | Research | Staff |
| 25147 | Rangsarn Chalernsri | Personnel | Staff |

TOTAL EMPLOYEES: 28 PERSONS

Figure 3.6. Detailed Report.



บริษัท หลักทรัพย์ แอดคินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

EMPLOYEE 'S SALARY SUMMARY BY DEPARTMENT

Department: Marketing

| <u>Month</u> | <u>Net Salary (Baht)</u> |
|--------------|--------------------------|
| January | 86,196.22 |
| February | 86,210.12 |
| March | 90,000.00 |
| April | 44,473.01 |
| May | 65,541.00 |
| TOTAL | 372,420.35 |

Figure 3.7. Summary Report1.



บริษัท หลักทรัพย์ แอดคินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

OVERTIME SUMMARY BY January

| <u>Department</u> | <u>Hour(s)</u> |
|-------------------|----------------|
| Accounting | 650 |
| Administration | 450 |
| Custodian | 150 |
| Foreign Marketing | 200 |
| TOTAL | 1,450 |

Figure 3.8. Summary Report2.



บริษัท หลักทรัพย์ แอดคินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

REPORT OF EMPLOYEES WHO GOT PENALTY

| <u>No.</u> | <u>Note</u> | <u>Name</u> | <u>Position</u> |
|--------------------------------|-----------------------|------------------------|-------------------------|
| 00001 | Always come late | Luxamee Kongvatanasest | Accountant |
| 00002 | Lost Employee ID Card | Wanne Boonyasiriwat | V.P.Operation |
| 00003 | Talkative | Luxamee Kongvatanasest | Accountant |
| <u>TOTAL EMPLOYEES:</u> | | | <u>3 PERSONS</u> |

Figure 3.9. Exception Report.

3.3 Hardware and Software Requirements

Hardware requirements

1. Computer for Server (already exist in computer department) 1 Units
 - Pentium III 450 MHz
 - Main Board Pentium III MS7192S Support Slot-1 Socket 370
 - Memory 64 MB SDRAM
 - Hard Disk 4.3 GB (UDMA)
 - Floppy Disk Drive 1.44 MB
 - VGA 3DAGP 8 MB
 - Monitor 14"
 - ATX Form Tower Casing 250 Watt
 - 40X CD ROM
 - Mouse, Keyboard 108 keys
2. Computer for workstation 2 Units
 - CYRIX M II 333 MHz
 - Main Board "MATSONIC" TX-PRO II 512 KB Cache
 - Memory 32 MB SDRAM Exp. To 256 MB
 - Floppy Disk Drive 1.44 MB
 - Hard Disk 3.2 GB
 - VGA Built-in 64 bit up to 4MB
 - Monitor TYSTAR 14"
 - Medium Tower Casing 230 Watt
 - Keyboard 104 Keys Thai/English. Mouse
3. Printer 2 Units
 - EPSON LQ 1170i

- | | |
|---|---------|
| 4. Scanner (already exist in computer department) | 1 Unit |
| - EPSON GT-8000 (16.7 M;600 dpi) | |
| 5. Time recorder model:5000T | 1 Unit |
| 6. Converter RS232/RS485 | 1 Unit |
| 7. Magnetic stripe maker | 1 Unit |
| 8. Network interface card | 2 Units |
| 9. Hub | 1 Unit |
| 10. UPS | 1 Unit |
| 11. LAN cable and cable 4/C | |

Software requirements

1. Operating System & DBMS

- Windows NT Server 4.0
- Microsoft Windows 95
- Microsoft SQL Server 6.5

2. System Development Software

- Delphi95

3. Document Preparation Software

- Microsoft Word 97
- Visio 3.0
- EasyCase Professional 4.22
- PhotoFinish 3.0

3.4 Security and Control

Security and control are divided to three types as follows:

1. Operational security
2. Data security
3. User security

Operational security

This type of security protects hardware and software from either intentional or inadvertent threats. At this level of security, three more securities can be classified as follows:

Password security:

- Before entering system, the users need to login with their usernames and passwords. The usernames can identify the status of the users as to what data they can read, what data they can write or what data they can do both read and write. Unauthorized persons are not allowed to enter into the system. Mostly, the users are the personnel staffs.
- The users should change their passwords frequently and do not let others know their passwords.

Hardware security:

- The computer should be turn off after use.
- Always keep doors locked after use and restrict visitors' access to personnel room.
- UPS are used in order to smooth the system and prevent the damage occurring from electricity problems.

Software security:

- Always keep the system programs in a safe place in order to protect from

unauthorized access or modification.

Data security

- Backup data everyday in order to prevent data lost and to make a recovery when data are damaged.
- Restrict access to certain data items such as read only data access.
- Security logs of all changes made to data items.

User security

- Personnel staffs should be trained about the skill in using some hardware in order to prevent human errors.
- Inform users to know the danger of computer viruses and the procedures to manage and prevent them.



3.5 Systems Cost Evaluation and Comparison

Cost and Benefit Analysis

In order to implement the new proposed system, the implementation fixed cost and operating cost are estimated along with tangible and intangible benefits to see whether the system is cost-effective. The cost analysis and benefit analysis are shown in tables 3.1, 3.2, 3.3, 3.4 respectively.

Table 3.1. Cost Analysis.

| Development Cost | | |
|---------------------------|---|-------------|
| <u>Personnel</u> | | <u>Baht</u> |
| 1 | System Analyst (550 Hour, 550 Baht/Hour) | 302,500.00 |
| 2 | Programmer/Analyst(220 Hours, 400 Baht/Hour) | 176,000.00 |
| 1 | Network Specialist (16 Hours, 400 Baht/Hour) | 6,400.00 |
| | | |
| <u>Expense</u> | | |
| 1 | Delphi 95 Training Course | 11,000.00 |
| 1 | Client/Server Architecture Course | 8,500.00 |
| 1 | SQL Server Training Course | 7,500.00 |
| | | |
| New Hardware and Software | | |
| 1 | Development Server (Already Exist in Computer Department) | - |
| 2 | Workstation Machines | 40,000.00 |
| 2 | Network Equipments (Server and Workstations) | 5,600.00 |
| 1 | Input Device (Time Recorder) | 39,000.00 |
| 2 | Output Devices (Printers) | 18,000.00 |
| 1 | DBMS Software | 39,000.00 |
| 2 | Workstation Software | 50,000.00 |

Table 3.2. Cost Analysis (continued).

| | | |
|--|--|-------------|
| 1 | Magnetic Stripe Maker with Plastic Cards | 27,500.00 |
| | Total Development Costs | 731,000.00 |
| | | |
| Projected Annual Operating Costs (Increase 15%/Year) | | |
| <u>Personnel</u> | | <u>Baht</u> |
| 1 | Programmer/Analyst (180 Hours, 300 Baht /Hour) | 54,000.00 |
| 1 | Database Administrator (180 Hours, 300 Baht /Hour) | 54,000.00 |
| 2 | Personnel Officer (2 x 8,000 Baht x12 Months) | 192,000.00 |
| 1 | Key Operator (1 x 4,000 Baht x 12 Months) | 48,000.00 |
| | | |
| <u>Expense</u> | | |
| 1 | Maintenance Cost of Server (5000/Machine) | 5,000.00 |
| 2 | Maintenace Cost of Workstations (3500/Machine) | 7,000.00 |
| | Preprinted Forms (15,000 /Year @ 10 Baht/Form) | 15,000.00 |
| | Office Equipment & Supplies | 25,000.00 |
| | Miscellaneous Expense | 20,000.00 |
| | Total Annual Costs | 420,000.00 |

Table 3.3. Benefit Analysis.

| <u>Tangible Benefits</u> | | |
|--------------------------------------|--|-------------|
| | - Reduction of 2 Personnel Staffs (2 x 9,000 Baht x 12 Months) | ฿216,000.00 |
| | - Reduction of 1 Key Operator (1 x 4,000 Baht x 12 Months) | ฿48,000.00 |
| | - Reduction of Paper Works | ฿70,000.00 |
| | - Reduction of Asset Loss | ฿45,000.00 |
| | - Fewer Processing Errors | |
| | - Increased Throughput | |
| | - Decreased Response Time | |
| | - Elimination of Job Steps | |
| Total Tangible Benefits (First Year) | | ฿540,000.00 |

Table 3.4. Benefit Analysis (continued).

| Intangible Benefits | Can't Estimate |
|-------------------------------|----------------|
| - Improved Employees Morale | |
| - Better Decision Making | |
| - Better Planning Information | |
| - Better Manpower Management | |
| - More Satisfied Employees | |
| - Others | |

The benefits received from this new proposed system are perceived as the tangible and intangible benefits as follows:

1. Tangible benefits

In obtaining and implementing the proposed Personnel Controlling System, the company can save cost in hiring staffs. The number of personnel staffs can be reduced. Two personnel staff and one key operator can be reduced. The amount of paper works and asset loss can be decreased dramatically.

With computerized system, there are fewer processing errors done by human. The throughput can be seen in a short period. The response time and the job steps also decrease. It is expected that this system can be used in the company more than five years before it will encounter major changes.

2. Intangible benefits

There are also several intangible benefits that we can obtain from the new computerized system. They can be listed as follows:

- Improved employee morale

The employees will be satisfied with the new system due to the fact that it helps them perform work in time and without mistake.

As a result, they will not be scolded by their bosses.

- Better decision making and planning information

All information generated from computer system contain few errors when compared with that of the manual work. Then, the top management receives accurate and timely reports to make their decision and planning.

- Better manpower management

All information concerning employees have been recorded into the new proposed system. Then, it is easy to manage the manpower in the company.

- Confidential control

The company has more confidence in a better control of confidentiality of the employee's record within the company's authorization. In general, the new computerized system is worthwhile.

- Better company image

The company image will be better when the company's computerized system is known by other people. In the opinion of others, all the works which are carried out by computer are always better than being performed by hands

Payback Analysis

The payback period to install new system is calculated by using the basic format after tax payback of:

$$\text{Formula} \quad P = I / (1 - T)R$$

$$\text{Where} \quad I = \text{Investment or capital expenditure}$$

$$T = \text{Tax rate (12\%)}$$

$$R = \text{Annual saving by investment}$$

$$\text{Payback period (Year)} = 731,000 / ((1 - 0.12)(540,000))$$

$$= 1.54 \text{ years}$$

You can see the detail in table 3.5. The payback period is shown in figure 3.10.

Table 3.5. Payback Analysis of the Proposed System.

| Cash Flow Items | Years | | | | |
|---|--------------|----------------|----------------|----------------|----------------|
| | 0 | 1 | 2 | 3 | 4 |
| Development Cost | -฿731,000.00 | | | | |
| Operation & Maintenance Cost | | -฿420,000.00 | -฿483,000.00 | -฿555,450.00 | -฿638,767.50 |
| Discount Factor For 12% | ฿1.00 | ฿0.89 | ฿0.80 | ฿0.71 | ฿0.64 |
| Time-Adjusted Costs | -฿731,000.00 | -฿375,060.00 | -฿384,951.00 | -฿395,480.40 | -฿406,256.13 |
| Cumulative Time-Adjusted Costs | -฿731,000.00 | -฿1,106,060.00 | -฿1,491,011.00 | -฿1,886,491.40 | -฿2,292,747.53 |
| Benefits Derived From the New System | ฿0.00 | ฿540,000.00 | ฿1,400,000.00 | ฿1,300,000.00 | ฿1,700,000.00 |
| Discount Factor for 12% | ฿1.00 | ฿0.89 | ฿0.80 | ฿0.71 | ฿0.64 |
| Time-Adjusted Benefits | ฿0.00 | ฿482,220.00 | ฿1,115,800.00 | ฿925,600.00 | ฿1,081,200.00 |
| Cumulative Time-Adjusted Benefits Over Lifetime | ฿0.00 | ฿482,220.00 | ฿1,598,020.00 | ฿2,523,620.00 | ฿3,604,820.00 |
| Cumulative Lifetime-Adjusted Cost + Benefits | -฿731,000.00 | -฿623,840.00 | ฿107,009.00 | ฿637,128.60 | ฿1,312,072.47 |

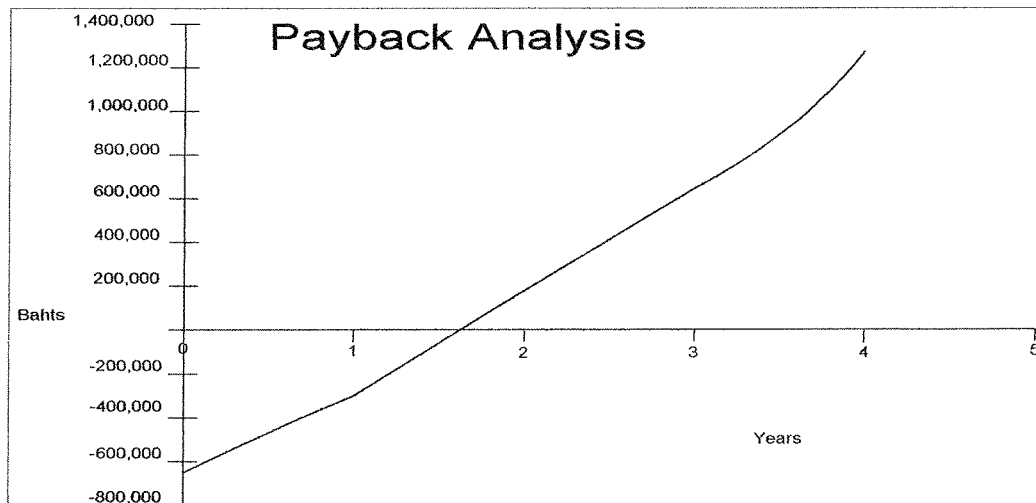


Figure 3.10. Payback Period.

Cost Comparison

The cost of the existing system can be seen in table 3.6. The comparison between the cumulative cost of the two systems is shown in table 3.7.

Table 3.6. The Cost of the Existing System.

| Cost Items | Years | | | | |
|---|-------------|-------------|-------------|-------------|-------------|
| | 0 | 1 | 2 | 3 | 4 |
| Personnel Officers (4 x 8,000 Baht x 12) | ฿384,000.00 | ฿441,600.00 | ฿507,840.00 | ฿584,016.00 | ฿671,618.40 |
| Key Operators (2 x 4,000 Bahts x 12) | ฿48,000.00 | ฿55,200.00 | ฿63,480.00 | ฿73,002.00 | ฿83,952.30 |
| Office Equipment & Supplies | | | | | |
| - Typewriter | ฿15,400.00 | ฿0.00 | ฿0.00 | ฿10,000.00 | ฿0.00 |
| - Furniture | ฿20,000.00 | ฿0.00 | ฿0.00 | ฿10,000.00 | ฿0.00 |
| - Cabinets | ฿11,500.00 | ฿2,000.00 | ฿1,800.00 | ฿1,000.00 | ฿1,000.00 |
| - Papers | ฿18,900.00 | ฿21,546.00 | ฿24,777.90 | ฿28,494.59 | ฿32,768.77 |
| Maintenance Cost | ฿0.00 | ฿10,000.00 | ฿15,000.00 | ฿20,000.00 | ฿20,000.00 |
| Other Expenses | ฿30,000.00 | ฿33,900.00 | ฿38,985.00 | ฿44,832.75 | ฿51,557.66 |
| Total Cost | ฿527,800.00 | ฿564,246.00 | ฿651,882.90 | ฿771,345.34 | ฿860,897.14 |

Table 3.7. The Comparison Between the Cumulative Cost of the Two Systems.

| Year | Cumulative Cost of the Proposed System | Cumulative Cost of the Existing System |
|------|--|--|
| 0 | ฿731,000.00 | ฿0.00 |
| 1 | ฿1,151,000.00 | ฿1,092,046.00 |
| 2 | ฿1,634,000.00 | ฿1,743,928.90 |
| 3 | ฿2,189,450.00 | ฿2,515,274.24 |
| 4 | ฿2,828,217.50 | ฿3,376,171.38 |

The cumulative cost of the proposed system and the existing system can be shown in terms of the break even point as shown in figure 3.11.

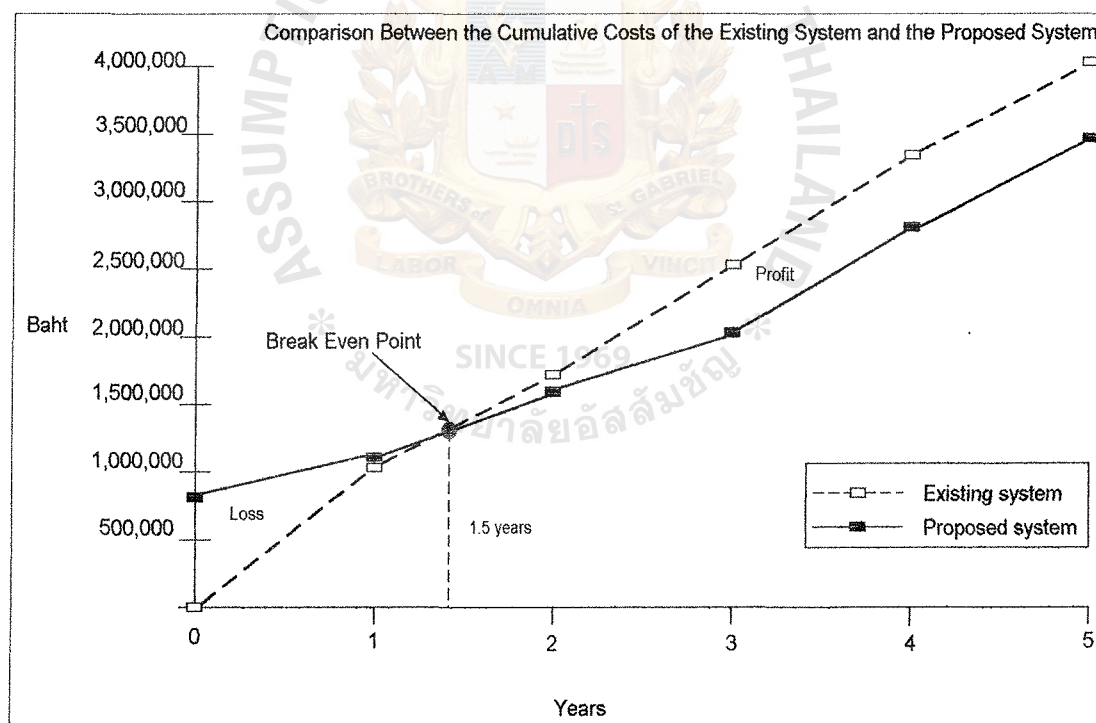


Figure 3.11. Cumulative Costs of the Proposed System and that of the Existing System.

Table 3.8. Net Present Value Analysis.

| Cash Flow Items | Years | | | | | Total |
|---|--------------|--------------|---------------|---------------|---------------|----------------|
| | 0 | 1 | 2 | 3 | 4 | |
| Development Cost | -฿731,000.00 | | | | | |
| Operation & Maintenance Cost | | -฿420,000.00 | -฿483,000.00 | -฿555,450.00 | -฿638,767.50 | |
| Discount Factor for 12% | 1.00 | 0.89 | 0.80 | 0.71 | 0.64 | |
| Present Value of Annual Costs | -฿731,000.00 | -฿375,060.00 | -฿384,951.00 | -฿395,480.40 | -฿406,256.13 | |
| <u>Total Present Value of Lifetime Costs</u> | | | | | | -฿2,292,747.53 |
| Benefit Derived from the New System | ฿0.00 | ฿540,000.00 | ฿1,400,000.00 | ฿1,300,000.00 | ฿1,700,000.00 | |
| Discount Factor for 12% | 1.00 | 0.89 | 0.80 | 0.71 | 0.64 | |
| Present Value of Annual Benefits | ฿0.00 | ฿482,220.00 | ฿1,115,800.00 | ฿925,600.00 | ฿1,081,200.00 | |
| <u>Total Present Value of Lifetime Benefits</u> | | | | | | ฿3,604,820.00 |
| Net Present Value | | | | | | ฿1,312,072.47 |

Return on Investment (ROI) Analysis

This ROI analysis shows a percentage rate that measures the relationship between the amount of business obtained back from an investment and the amount invested. The ROI for this project is calculated as follows:

$$\text{ROI} = \frac{(\text{Estimated lifetime benefits} - \text{Estimated lifetime costs})}{\text{Estimated lifetime costs}}$$

$$\text{Estimated lifetime benefits} = 3,604,820.00 \text{ Bahts}$$

$$\text{Estimated lifetime costs} = 2,292,747.53 \text{ Bahts}$$

$$\text{Therefore, ROI} = \frac{(3,604,820.00 - 2,292,747.53)}{2,292,747.53}$$

$$= 0.572 = 57\%$$



IV. PROJECT IMPLEMENTATION

4.1 Programming the system

The new proposed system is developed by using Delphi 95, which provides many facilities that can be applied for the employee requirements. There are tools for developing queries, screen templates and reports.

During system implementation, a new designed database will be built and tested, the input and output are constructed and the new programs will be written by using Delphi 95. Programmers must write and test all the programs carefully in which a few months may be required for these activities.

The system can be divided into parts as follows:

Payroll

In this part, there are small parts, including work time, absence, overtime, income and deduction, and salary.

Work time record: It deals with the work time information of employees received from time recorder. This system provides two main functions.

1. Data correction: It is used for data modification about employees' work time information.
2. Data inquiry: It is used for checking all the work time of employees.

Absence record: It deals with the absence information of employees which should be used by personnel staffs. This system provides three main functions.

1. Data entry: It is used for recording the information of employees concerning the employees' absence. The source of data comes from approved absence form filled by employees.
2. Data correction: It is used for data modification about employees' excuse information.

3. Data inquiry: It is used for checking the amount of available time to make excuse.

Overtime record: It deals with the overtime information of employees.

This system provides three main functions.

1. Data entry: It is used for recording the information of employees concerning the employees' overtime. The source of data comes from approved overtime form filled by employees.
2. Data correction: It is used for data modification about employees' excuse information.
3. Data inquiry: It is used for checking the amount of overtime done by employees and the total overtime done.

Income and deduction record: It deals with the income and deduction information of employees. This system provides two main functions.

1. Data entry: It is used for recording the information of employees concerning the employees' income and deduction.
2. Data correction: It is used for data modification about employees' income or deduction information.

Salary record: It deals with the salary information of employees. This system provides three main functions.

1. Data computation: It is used for calculating the salary of employees.
2. Data inquiry: It is used for checking the amount of salary of employees.

Employee

Employee record: It deals with the information of salary. This system provides two functions.

1. Data entry: It is used for recording the employees' information. The source of data come from the application form.
2. Data correction: It is used for data modification about employees' profile.
3. Data inquiry: It is used for checking the number of employees needed in each department.

ID. Card

Employees' ID card record: It deals with the information of employees'

ID. cards. This system provides two functions.

1. Data entry: It is used for recording the employees' ID card information.
2. Data correction: It is used for data modification about employees' profile.
3. Data inquiry: It is used for checking the status of employee.

Training

This part is used for maintaining the training course system. It can be divided into 2 functions as follows:

Training record: It deals with the information of training course. This system provides two functions.

1. Data entry: It is used for recording the description of training course.
2. Data correction: It is used for data modification about training course.

Trainee record: It deals with the information of trainees in specific training course.

1. Data entry: It is used for recording the trainee with training course.

2. Data correction: It is used for data modification about trainees.
3. Data inquiry: It is used for checking trainees who join training course.

Project

This part is used for maintaining the project program system. It can be divided into 2 functions as follows:

Project record: It deals with the information of project program. This system provides two functions.

1. Data entry: It is used for recording the description of project program.
2. Data correction: It is used for data modification about project program.

Participant record: It deals with the information of participants in specific project program.

1. Data entry: It is used for recording the participants with project program.
2. Data correction: It is used for data modification about participants.
3. Data inquiry: It is used for checking participants who participate in any specific project program.

Report

This part will produce the reports depending on the user requirements.

Generate

This part works by receiving the work time information of employees from time recorder and generating into the system by checking some conditions.

4.2 Testing the system

After programming, we need to test the whole system. The test is to ensure that all programs are free of errors. There are steps of the test as follows:

1. Sub testing

This test is performed on individual modules, whether they are main program, subroutine, subprogram, block or paragraph. There will be a test on every path through the programs. The test cases are developed to result in executing every instruction in the program, or modules.

2. Unit testing

This is a test whereby all the modules that have been coded and stub tested are tested as an integrated unit.

3. System testing

This is a test that ensures that application programs written in isolation work properly when they are integrated into the total system.

4. Special system testing

This can be called peak load testing. This test is to determine whether the system can handle the volume of activities that might occur when the system is at the peak of its processing demand.

4.3 Installing the system

After all programs in the systems have been tested and passed as a whole, the next phase is to convert the old system to the new proposed system. The new system will be installed for the test version and the system starts to be tested.

There are three activities needed to be done in converting to the new system.

1. To prepare the conversion plan
2. To make training plan
3. To install database

Conversion Plan

For preparing conversion plan, one strategy, called parallel conversion, is used. It means that the old and new systems are operated for some period of time. This is done to ensure that all majors problems in the new system have been solved before the old system is discarded. The final cut-over may be gradual, as portions of the new system deemed adequate.

Due to the existing system of this company is still a manual system, some unexpected problems may occur if we change the existing system into the computerized system immediately. This strategy reduces the high risk of damage occurring during sudden conversion because the existing system and the new proposed system are both executed at the same time.

In fact, this strategy is time-consuming, costly and requires more additional personnel. The benefits and results of the complete system after completing the changeover is much more than from those using the old system. The estimated time for completing the conversion plan is about one month.

In order to ensure that the new proposed system can perform all its works successfully, the system analysts may perform the check list with business end users. The form looks like the form in figure 4.1.

| | | |
|-----------------------------|----------|--------------|
| <u>Administrative Data</u> | | |
| Application/Module: _____ | | |
| Date/Time of test: _____ | | |
| User in charge: _____ | | |
| Staff in charge: _____ | | |
| <u>Technical Data</u> | | |
| Resource Needed | Location | Availability |
| 1. Test transaction | _____ | _____ |
| 2. Master files/database | _____ | _____ |
| 3. Operator instruction | _____ | _____ |
| 4. Special media/forms | _____ | _____ |
| 5. Acceptance criteria | _____ | _____ |
| 6. Input support personnel | _____ | _____ |
| 7. Output support personnel | _____ | _____ |
| 8. Backup/recovery plan | _____ | _____ |
| 9. Security plan | _____ | _____ |
| 10. Error message actions | _____ | _____ |

Figure 4.1. System Check List Form.

Training Plan

For making training plan, appropriate training programs is set for the end-users. the objective of the training program is to make the users readily familiar with the new system before taking the real action in order to prevent some mistakes that might occur at that time The training course will finish within one week.

The contents of the training program will be as shown in table 4.1.

Table 4.1. Training Schedule.

| Session Number | Training Topic |
|----------------|---|
| 1 | <ul style="list-style-type: none"> - System Overview - Payroll Activities <ul style="list-style-type: none"> • Set Time Recorder • Getting Data from Time Recorder |
| 2 | <ul style="list-style-type: none"> - Payroll Activities (continued) <ul style="list-style-type: none"> • Overtime Process • Excuse Process • Checking Query |
| 3 | <ul style="list-style-type: none"> - Filing Employees' Records - Project and Training Process - Generating Reports |
| 4 | <ul style="list-style-type: none"> - Back Up and Recovery Data - Updating Database Yearly |

Installing Database

For installing database, due to the fact that the old system is a manual system, there are no data to be converted from the existing system. We need people to key in the data. The details of this activity are as follows:

- Two personnel staffs work on entering data
- 10 days spent on keying all data
- Printing reports for checking errors

After installing the new system, we have to test the whole system to ensure having a complete system. The new system is tested by end users using simulated data over some period of time in simulated environment and after that the real data are used in live environment testing. There are two levels of testing as follows:

1. Verification testing:
2. Validation testing

Verification testing:

- After personnel staff key in the data, the real data will be backed up at one

place and another copy is in the new system. The system will run in a simulated environment using simulated data. The test will look for errors and omissions regarding user requirements. This test is done in one week.

Validation testing:

- At this time, the new system runs in a live environment using real data. The test took one week. During this test, a number of items are tested which are:
 - System performance: Throughput and response time is tested.
 - Peak workload processing performance: Workload at peak time is tested. Hardware and software functions are tested.
 - Methods and procedure test: Users check their understanding.
 - Backup and recovery testing: A data loss disaster is simulated and we test the time required in recovering from that disaster.

V. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The existing Personnel Controlling System is studied by analyzing the current problems and user requirements, interviewing staffs in Personnel Department and reviewing the existing form and documents.

In order to meet the users' requirement which usually emphasize on reducing processing time and needing accurate information, it is difficult to get all work done by the existing system. The study of the existing system has portrayed the weakness and areas for improvement.

The new system is designed and implemented to replace the manual operations in the area of the Personnel Department. The manual operations take high cost and yield unsatisfactory productivity. The computerized system is expected to improve the efficiency while reducing operation costs. We can make a conclusion concerning the development of the system as follows:

1) Cost-benefit Analysis

It is expected to take about 1.5 years for the benefit to overtake the costs. After that, all benefits gained from the system will totally be the surplus for the company. The life time of the system is estimated to be longer than 5 years.

2) Costs Reduction

Computerization will help reduce work force normally required by the manual operation. The company will need less people to do the jobs because of the use of computers. We can expect a 20% reduction in work force. Other costs associated with the transaction can be reduced such as the paper expense.

3) Employees satisfaction

There are other benefits derived from the system other than the benefits that can be measured in terms of money. The employees are satisfied with the new system and this increases the productivity of employees.

4) Better decision making and planning

With computer technology involved, the mistake from human errors and inaccurate information are decreasing. The top management can use the accurate and timely information in decision making and planning.

5.2 Recommendations

The Personnel Controlling System is developed under Delphi 95 and is an independent system. Eventhough this new system has been designed and developed for handling current business user requirements in the Personnel Department, we expect that the new computerized system can satisfy the business requirements at least for the next 5 years (estimated from expected business growth).

Some information cannot be automated and shared. When other departments want to know some information, the reports must be printed out from the Personnel Department. Then, further development should take place and become on-line and link to other departments as well.

Presently, the proposed system has been developed and can serve the workload of the company. In the future, if the users need a fully computerized system in every department, this system cannot serve the workload. Then, it is recommended to upgrade the system or buy another CPU for faster processing.

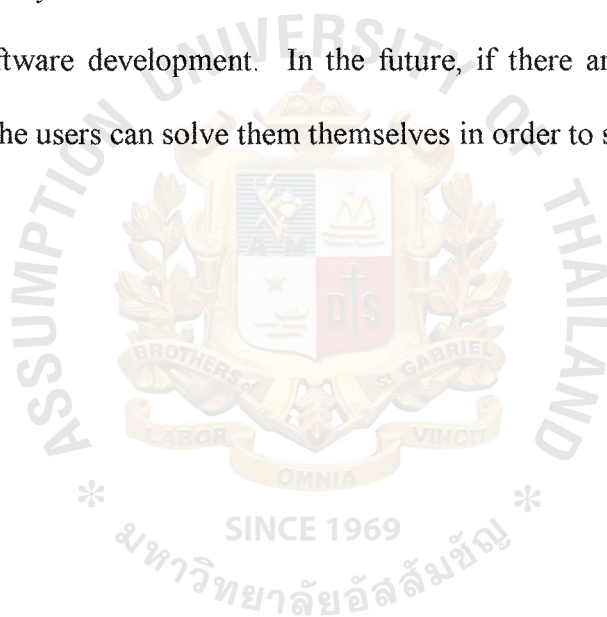
The company should have a plan for future system upgrade or even developing the new system. During the period that the current system is still workable, the company should train its employees to become analysts or at least computer-educated.

These people will become the persons who know both business requirements and technical solutions.

The application architecture of this system is not suitable for a big system such a system that covers large geographical area or the system that handles high transaction rate. In order to cover more large geographical area, the system should be redesigned.

The company should employ a full-time staff who takes care of the system and holds the responsibility of help-desk. The system will become a core of the business. It requires considerable attention.

The company should train the user to know some basic knowledge about computer and software development. In the future, if there are any small problems with the system, the users can solve them themselves in order to save time and cost.



APPENDIX A
CONTEXT DIAGRAM



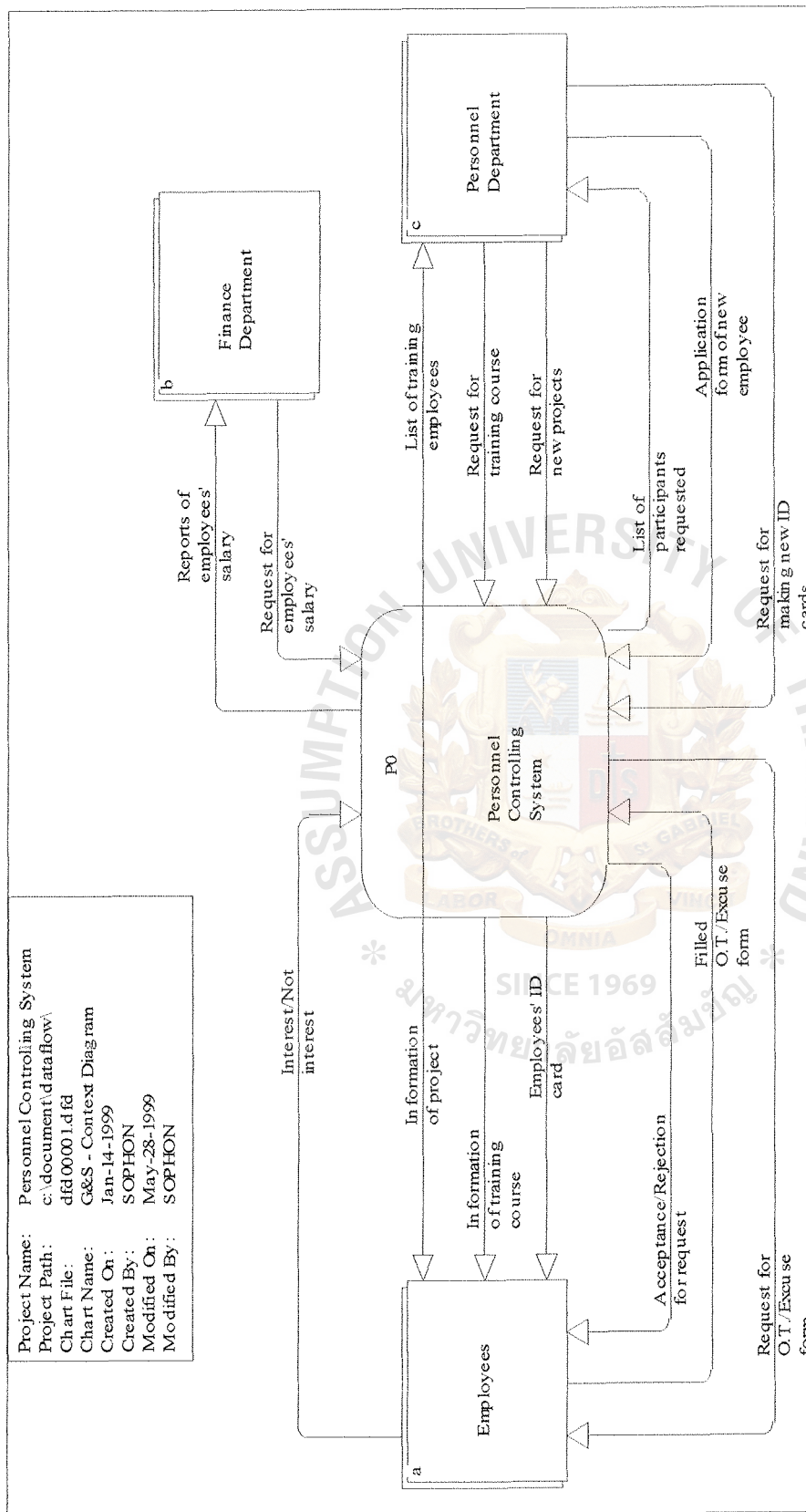
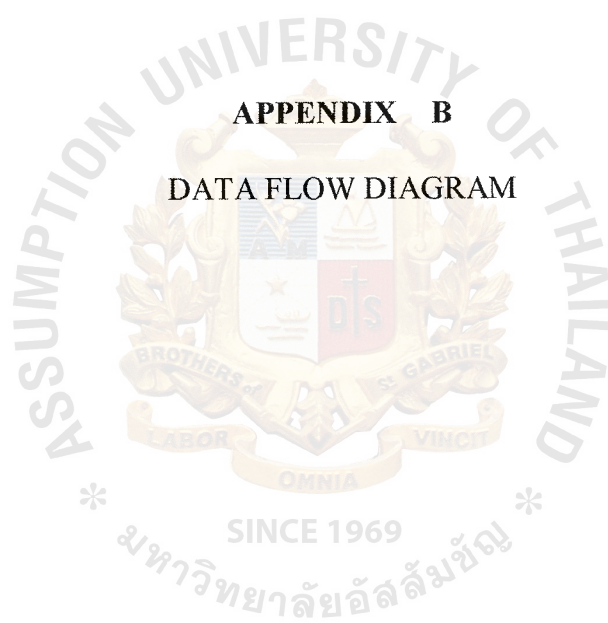
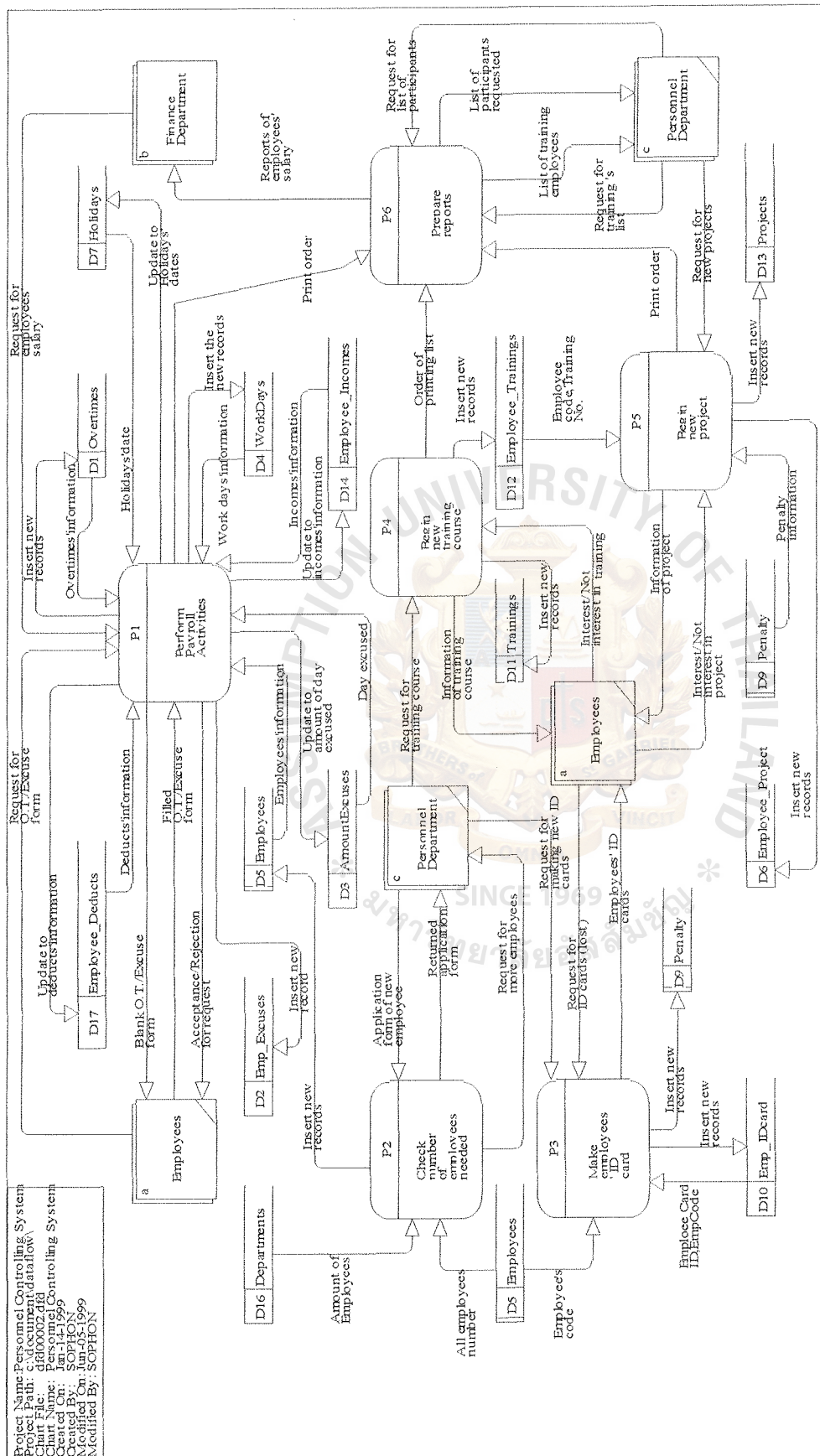


Figure A.1. Context Diagram of the Proposed System.



APPENDIX B

DATA FLOW DIAGRAM



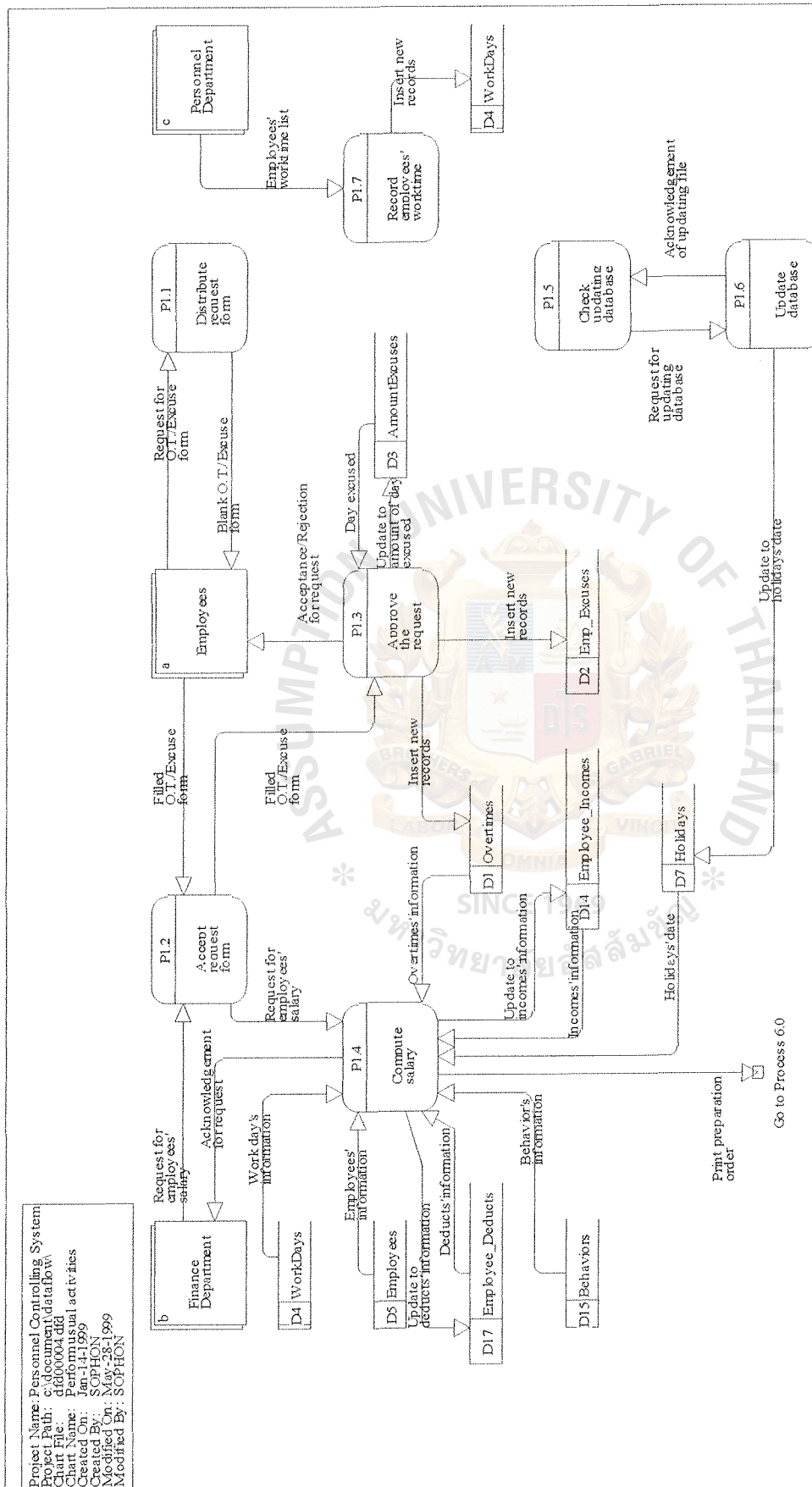


Figure B.2. Data Flow Diagram Level 1 for Process 1 of the Proposed System.

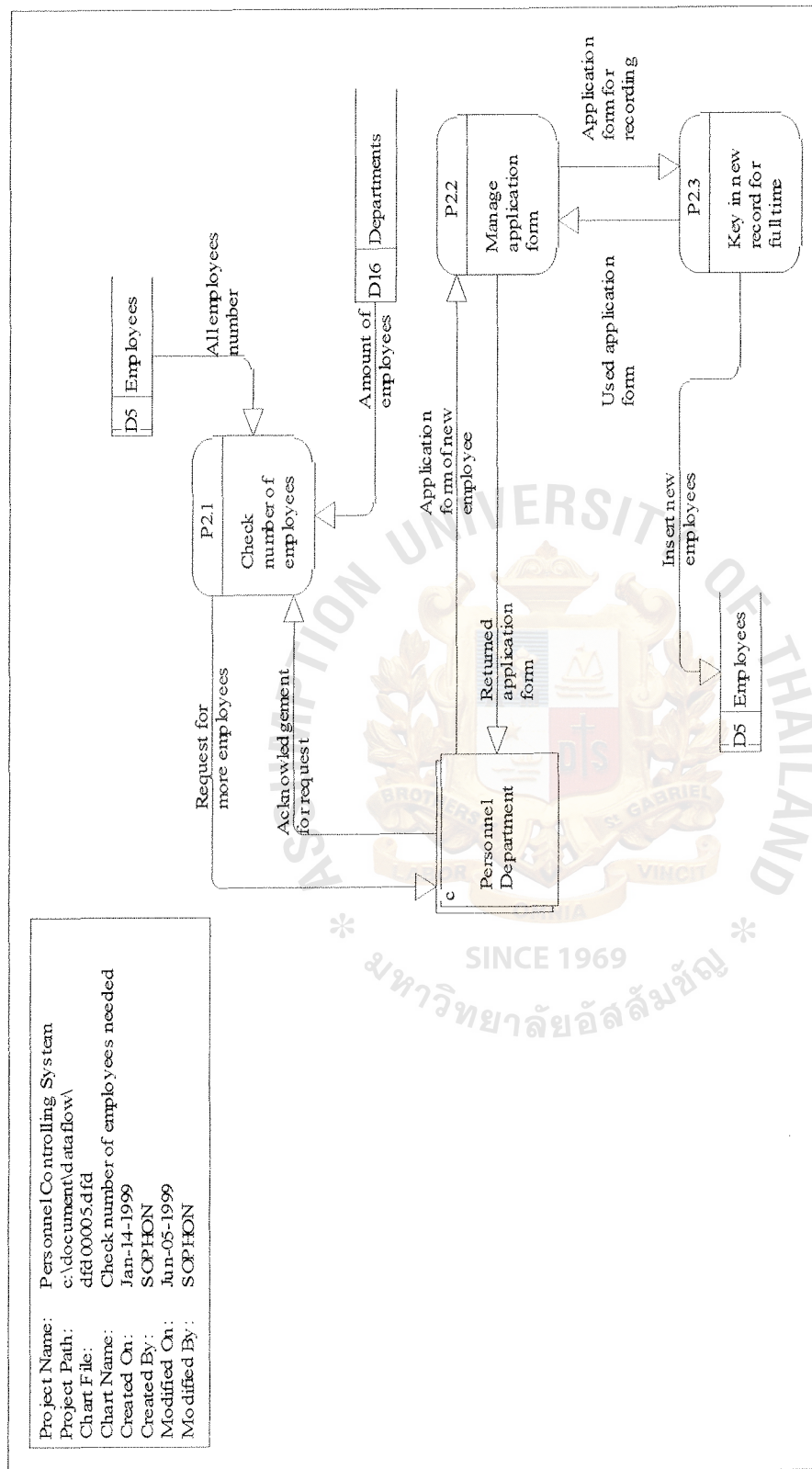


Figure B.3. Data Flow Diagram Level 1 for Process 2 of the Proposed System.

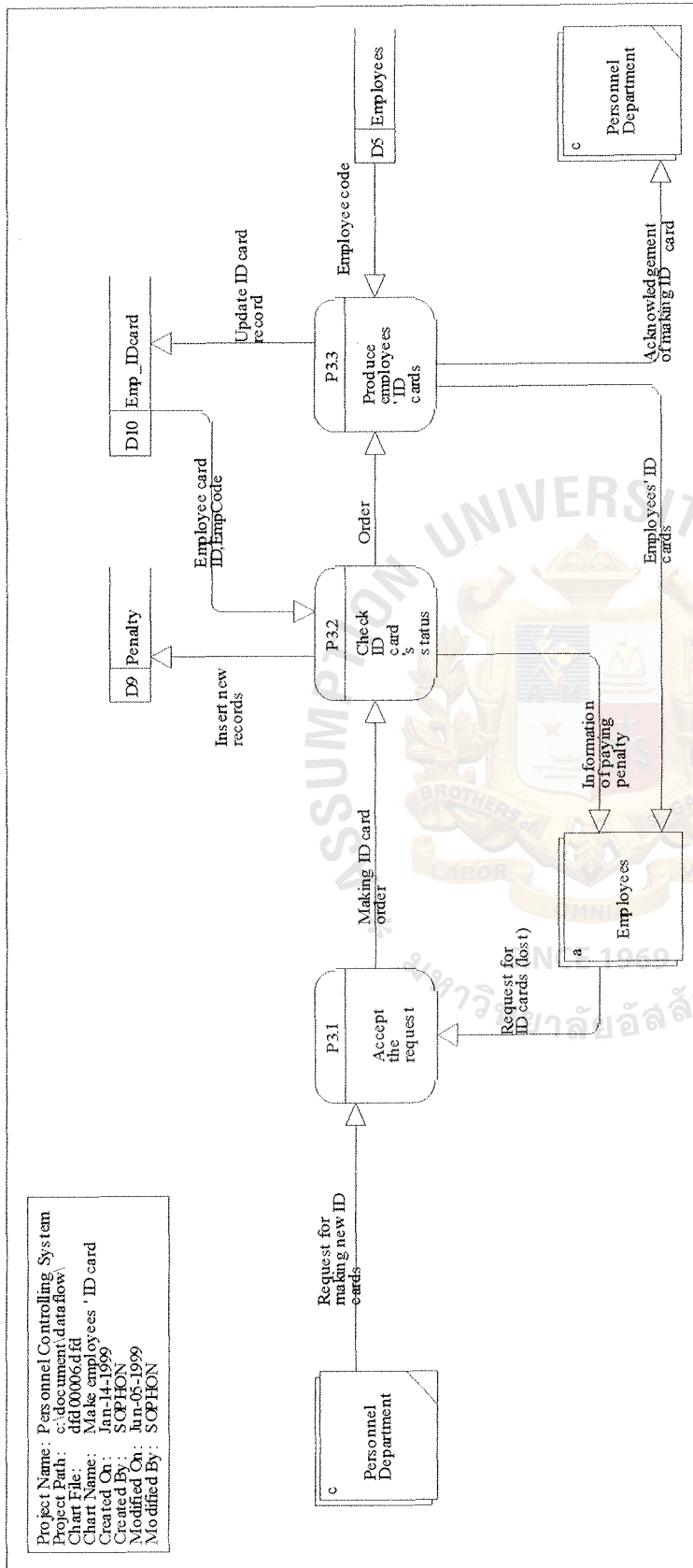


Figure B.4. Data Flow Diagram Level 1 for Process 3 of the Proposed System.

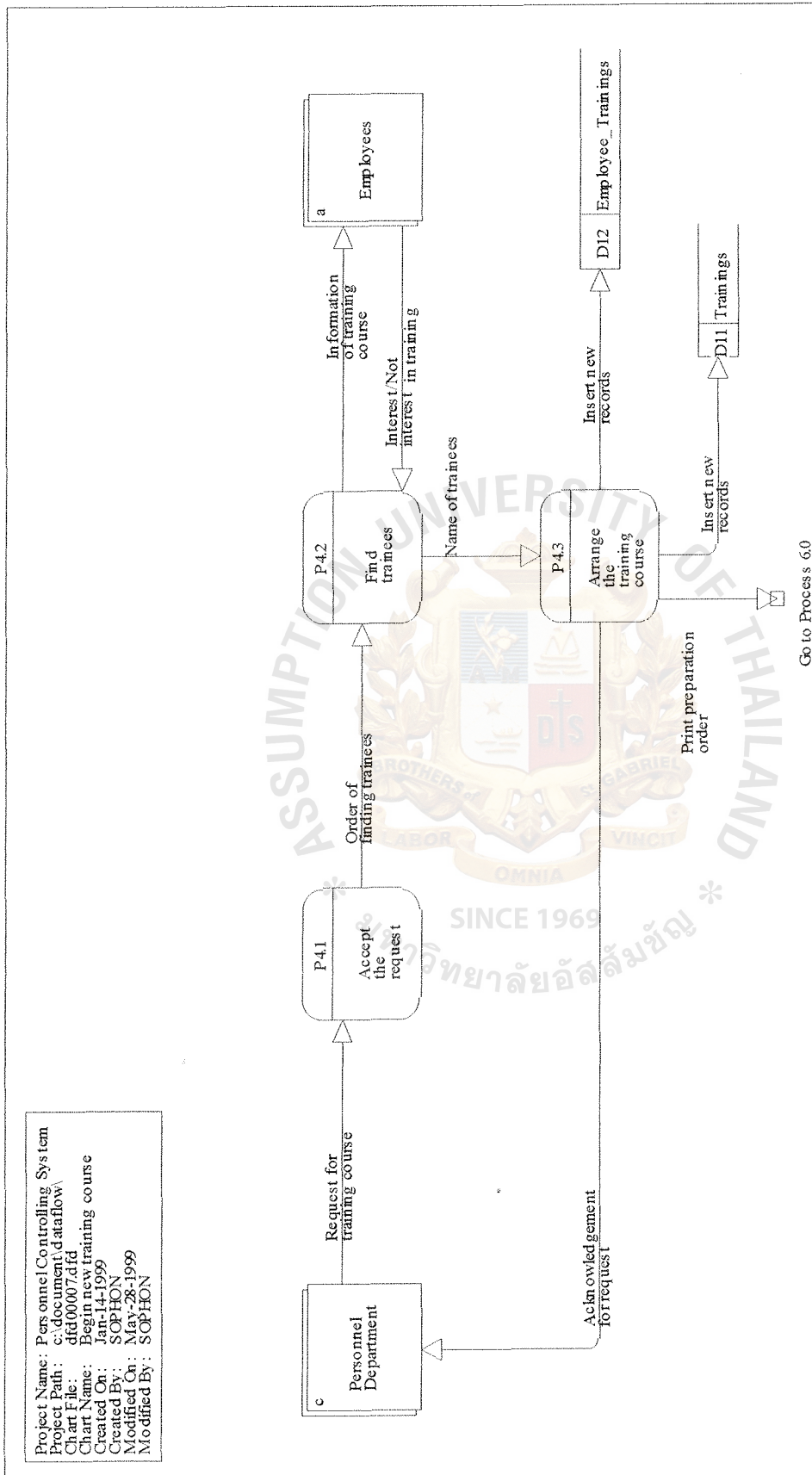


Figure B.5. Data Flow Diagram Level 1 for Process 4 the Proposed System.

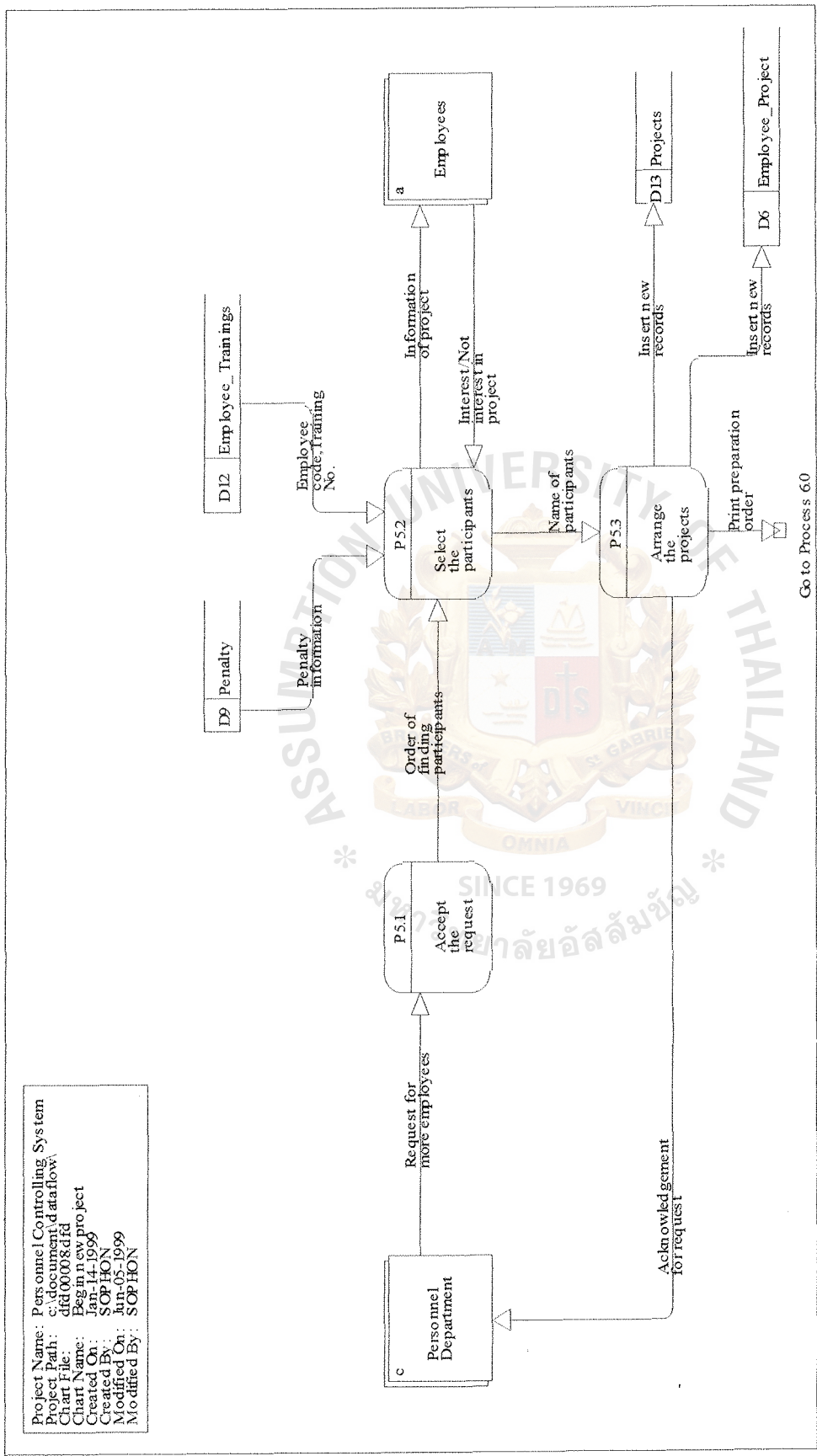


Figure B.6. Data Flow Diagram Level 1 for Process 5 of the Proposed System.

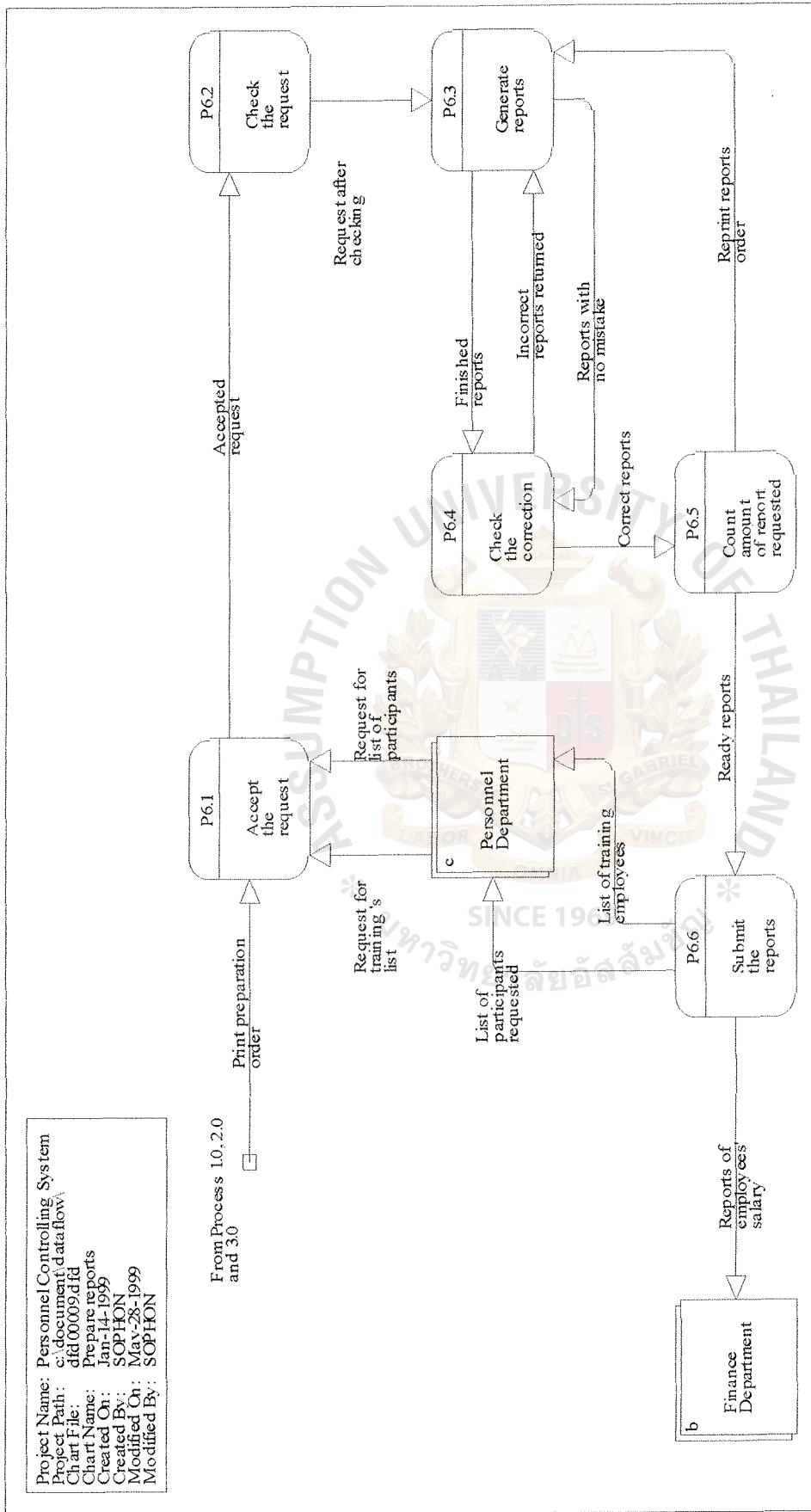



Figure B.7. Data Flow Diagram Level 1 for Process 6 of the Proposed System.



APPENDIX C

OUTPUT DESIGN

Check Work Time of Full Time Employees

 บริษัทหลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited


CHECK WORK TIME OF FULL TIME EMPLOYEES

Enter Employee Code :

| WorkDate | WorkTimeIn | WorkTimeOut |
|----------|------------|-------------|
| 1/1/99 | 7:00:00 | 17:00:00 |
| 2/1/99 | 7:30:00 | 17:30:00 |
| 3/1/99 | 7:32:00 | 17:04:00 |
| 4/1/99 | 8:25:00 | 17:05:00 |

Figure C.1. Check Work Time of Employees.

Check Real Overtime

 บริษัทหลักทรัพย์ แอดคินชั่น จำกัด (มหาชน)
Adkinson Securities Public Company Limited

CHECK REAL OVERTIME


Enter Employee Code : Enter Overtime Date :

| | Time In | Time Out | Total | |
|------------------|--------------------------------------|---------------------------------------|--------------------------------------|--------------------------------------|
| Overtime Request | <input type="text" value="7:00:00"/> | <input type="text" value="17:00:00"/> | <input type="text" value="9"/> hours | <input type="text" value="30"/> mins |
| Real Work Time | <input type="text" value="7:00:00"/> | <input type="text" value="17:00:00"/> | <input type="text" value="9"/> hours | <input type="text" value="0"/> mins |

Real Overtime Done :

Figure C.2. Check Actual Overtime of Employees.

Check Excuse

 บริษัทหลักทรัพย์ แอดकिनชั่น จำกัด (มหาชน)
Adkinson Securities Public Company Limited

CHECK EXCUSE

Enter Employee Code : Select Absence Code :


The Amount of Absence : Day(s) Hour(s)

Absent Limit : Day(s)

Available Time can be absent = Day(s)

Figure C.3. Check the Absent Day of Employees.

Check Amount of Behavior (In Month)

 บริษัทหลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited


CHECK AMOUNT OF BEHAVIOR (IN MONTH)

Enter Employee Code: Select Month:

| | | | |
|------------------------------|---------------------------------|--------|--|
| Amount of Coming Late : | <input type="text" value="20"/> | Day(s) | <input type="button" value="Check"/> <input type="button" value="Clear"/> <input type="button" value="Print"/> |
| Amount of Early Leaving : | <input type="text" value="1"/> | Day(s) | |
| Amount of Forgetting Punch : | <input type="text" value="0"/> | Day(s) | |
| Amount of Absent Day : | <input type="text" value="0"/> | Day(s) | |

Figure C.4. Check the Behavior of Employee by Month.

List All Employees' Salary

 บริษัทหลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited


LIST ALL EMPLOYEES' SALARY

Select the Month :

| EmpCode | OnIncomeMonth | NetIncome |
|---------|---------------|-----------|
| 00001 | 1 | 86196.22 |
| 00002 | 1 | 53602.19 |

Figure C.5. List All Employees' Salary.

Check Specific Employees' Salary



บริษัทหลักทรัพย์ แอดคินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

CHECK EMPLOYEE SALARY

Employee Code

Month

| INCOME : | | DEDUCTION : | | TOTAL INCOME : |
|--------------|--|-------------|-----------------------------------|--|
| Salary | <input type="text" value="50,000.00"/> | Inc. Tax | <input type="text" value="0.00"/> | <input type="text" value="50,000.00"/> |
| Bonus | <input type="text" value="0.00"/> | Car Loan | <input type="text" value="0.00"/> | |
| OT/Allowance | <input type="text" value="14,054.79"/> | Car Park | <input type="text" value="0.00"/> | <input type="text" value="0.00"/> |
| Incen./Comm. | <input type="text" value="0.00"/> | Social Club | <input type="text" value="0.00"/> | |
| Pay In Lieu | <input type="text" value="0.00"/> | Advance | <input type="text" value="0.00"/> | <input type="text" value="0.00"/> |
| Others | <input type="text" value="0.00"/> | Social Sec. | <input type="text" value="0.00"/> | <input type="text" value="0.00"/> |
| | | Others | <input type="text" value="0.00"/> | <input type="text" value="0.00"/> |
| | | | | <input type="button" value="Exit"/> <input type="button" value="Print"/> |

Figure C.6. Check Employee Salary.

Full Time Employees' Profiles

 บริษัทหลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

FULL TIME EMPLOYEES' PROFILE

Personal Data More Data

Employee Code: 00002

Hire Date: 12/12/75

Name: Prasert Weerawatpalsal

Sex: ☒ Male ☐ Female

Age: 42 Years

Birthday: 17/2/57

Position: V.P. Marketing

Salary: ฿60,000.00



Search

Edit

Add


Delete

Exit

Print

Figure C.7. Employees' Profile.

Check Amount of Employees

 บริษัทหลักทรัพย์ แอดคินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

CHECK AMOUNT OF EMPLOYEE

Select Department:


The Amount of Employees must be :

The Real Amount of Employees :

The Amount of Employee Required :

Figure C.8. Check Amount of Employees Required.

Check Employees' ID. Card

 บริษัทหลักทรัพย์ แอดคินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

Check Employee 's ID Card

Employee Code


ID Card No.

Issue Date

Status : New Employee

Figure C.9. Check Employees' ID. Card.

Training Profiles



บริษัทหลักทรัพย์ แอดกินชั่น จำกัด (มหาชน)
Adkinson Securities Public Company Limited

TRAINING PROFILES

Training No.

Topic

Place

Start Date End Date


Start Time End Time

Arrange by Request By

Instructor(s)

Figure C.10. Training Profile.

Find Trainees



บริษัทหลักทรัพย์ แอดคินสัน จำกัด (มหาชน)
 Adkinson Securities Public Company Limited

FIND TRAINEES

Select Training Topic :

| TrainingNo | Topic |
|------------|---|
| ▶ 00001 | Relational Database Management System (RDBMS) |
| 00002 | Marketing Strategies in High Level |
| 00003 | Tax & Accounting Planning |

List of Trainees

Training No.

00001


| EmpCode_1 | Name |
|-----------|---------------------|
| ▶ 00001 | Wanne Boonyasiriwat |

Print

Exit

Figure C.11. Find Trainees.

Project Profiles

 บริษัทหลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

PROJECT PROFILES

Project No.


Project Name

Start Date End Date

Project Manager

Figure C.12. Project Profiles.

Check Participants in Projects

 บริษัทหลักทรัพย์ แอดคินชั่น จำกัด (มหาชน)
Adkinson Securities Public Company Limited

Check Participants in Project


Select Project:

| ProjectNo | ProjectName |
|-----------|----------------------------------|
| 00001 | Restructure Company 's Building |
| ▶ 00002 | Re-Engineering Accounting System |
| 00003 | Design New Company 's Database |

List of Participants

Project No. 00002

| EmpCode | Name |
|---------|---------------------|
| ▶ 00001 | Wanne Boonyasiriwat |
| 00005 | Raviwan Sukhumtus |

 Print

Exit

Figure C.13. Check Participants in Project.

Holidays



บริษัทหลักทรัพย์ แอดคินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

COMPANY CALENDAR


| HolidayDate | Description | Note |
|-------------|--------------------------------|------|
| 1/1/99 | New Year | |
| 4/3/99 | In Lieu of Mahkhabucha Day | |
| 8/4/99 | In Lieu of Chakri memorial Day | |
| 12/4/99 | Songkran Day | |

Today Is :
Tuesday, June 1, 1999

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|-----|-----|-----|-----|-----|-----|-----|
| | | 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 27 | 28 | 29 | 30 | | | |

Figure C.14. Company Holidays.

Penalty Profile

 บริษัทหลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

PENALTY

Employee Code Penalty No. Penalty Date

Note

Figure C.15. Penalty of Employees.



บริษัท หลักทรัพย์ แอดคินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

REPORT OF EMPLOYEE 'S WORK TIME

Employee Code: 00001 Name: Wanne Boonyasiriwat

Department: Operation

| <u>Work Date</u> | <u>Time In</u> | <u>Time Out</u> |
|------------------|----------------|-----------------|
| 1-Jan-99 | 7:00 | 17:00 |
| 2-Jan-99 | 7:30 | 17:30 |
| 3-Jan-99 | 7:32 | 17:04 |
| 4-Jan-99 | 8:25 | 17:05 |
| 5-Jan-99 | 8:45 | 17:04 |
| 6-Jan-99 | 8:30 | 16:58 |
| 7-Jan-99 | 8:30 | 20:00 |

TOTAL WORK DAY: 7 DAYS

Figure C.16. Report of Employee's Work Time.



บริษัท หลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

REPORT OF EMPLOYEE 'S ABSENCE REQUEST

Serial No: 1 Absent Date: 1-Feb-99

Employee Code: 00001 Name: Wanne Boonyasiriwat

Absent Type: Sickness

Reason: -

Start Date: 2-Feb-99 End Date: 3-Feb-99

Period: 1 Day(s)
0 Hour(s)

Contact Place: At Home Contact Phone No. : 223-2545

Delegate: Somchai Kemklut

Figure C.17. Report of Employee's Absence Request.



บริษัท หลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

REQUEST FOR OVERTIME

Employee Code: 00001 **Name:** Wanne Boonyasiriwat

Department: Operation

| <u>Date</u> | <u>Time In</u> | <u>Time Out</u> |
|-------------|----------------|-----------------|
| 1-Jan-99 | 7:00 | 21:30 |
| 6-Jan-99 | 8:30 | 17:00 |
| 7-Jan-99 | 8:30 | 19:00 |

TOTAL : 3 DAY(S)

Figure C.18. Report of Overtime Request.



บริษัท หลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

REPORT OF TOTAL OVERTIME HOURS

Employee Code: 00001

Month: 1

Name: Wanne Boonyasiriwat

Overtime 1 : 20 hour(s)

Overtime 2 : 5 hour(s)

Overtime 3 : 4 hour(s)

Total Overtime : 29 hour(s)

Figure C.19. Report of Total Overtime Hours.



บริษัท หลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

REPORT OF EMPLOYEE 'S BEHAVIOR

Employee Code: 00001 **Month:** January
Name: Wanne Boonyasiriwat **Position:** V.P.Operation
Department: Operation

| | | |
|--------------------|-----|---------|
| Overtime 1: | 100 | hour(s) |
| Overtime 2: | 24 | hour(s) |
| Overtime 3: | 1 | hour(s) |

| | | |
|-------------------------|----|--------|
| Tardy Day: | 20 | day(s) |
| Forgetting Punch | 0 | day(s) |
| Early Leave Day: | 1 | day(s) |
| Absence Day: | 0 | day(s) |

Figure C.20. Report of Employee's Behavior.



บริษัท หลักทรัพย์ แอดคินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

LIST OF ALL EMPLOYEES

| <u>Code</u> | <u>Name</u> | <u>Department</u> | <u>Position</u> |
|-------------|-------------------------|----------------------|----------------------------|
| 00001 | Wanne Boonyasiriwat | Operation | V.P.Operation |
| 00002 | Prasert Weerawatpaisal | Marketing | V.P. Marketing |
| 00003 | Sirikul Kitjaporn | Marketing | A.V.P.Marketing 1 |
| 00004 | Prasarn Luekittisapt | Marketing | A.V.P.Marketing 2 |
| 00005 | Raviwan Sukhumtus | Marketing | A.V.P.Marketing 3 |
| 00006 | Monvipa Saochindaratana | Marketing | A.V.P.Marketing 4 |
| 00007 | Viroj Ratwattana | Foreign Marketing | A.V.P.Foreign Marketing |
| 00008 | Aniruch Synsukpermpoon | Branch | A.V.P.Branch |
| 00009 | Pipat Ronakiati | Research | A.V.P.Research. |
| 00010 | Taywon Ouchareon | Computer | A.V.P.System Development |
| 00011 | Chalermchai Sihanem | Computer | A.V.P.Computer Operation |
| 00012 | Yuttasart Sangpongsanon | Audit | A.V.P.Audit |
| 00013 | Pirakit Visamsaisatom | Personnel | A.V.P.Personnel |
| 00014 | Jeeraphan Pajriyapong | Custodian | A.V.P.Custodian |
| 00015 | Nipaporn Phumichaisak | Finance | A.V.P.Finance |
| 00016 | Kornthanee Cherdchoo | Accounting | Chief Accountant |
| 00017 | Kulayarat Tangsuphachai | Administration | A.V.P.Administration |
| 00018 | Wipa Wanichsermkul | Business Development | A.V.P.Business Development |
| 10000 | Luxamee Kongvatanasest | Accounting | Accountant |
| 11000 | Kulayarat Tangsuphachai | Audit | Auditor |
| 11100 | Chaiwat Ekrojrat | Computer | Computer Officer |
| 11110 | Therdtham Pianpichan | Computer | Computer Officer |
| 11111 | Saisunee Rodpranee | Operation | Executive Officer |
| 15478 | Kobboon Srichai | Marketing | Marketer |
| 21000 | Penprapa Tangtham | Operation | Staff |
| 21450 | Chanchai hultavarakorn | Foreign Marketing | Staff |
| 22000 | Chiapant Pongtanakorn | Research | Staff |
| 25147 | Rangsarn Chalernsri | Personnel | Staff |

TOTAL EMPLOYEES: 28 PERSONS

Figure C.21. List of All Employees.



บริษัท หลักทรัพย์ แอดคินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

EMPLOYEE 'S SALARY SUMMARY
BY DEPARTMENT

Department: Marketing

| <u>Month</u> | <u>Net Salary (Baht)</u> |
|--------------|--------------------------|
| January | 86,196.22 |
| February | 86,210.12 |
| March | 90,000.00 |
| April | 44,473.01 |
| May | 65,541.00 |

| | |
|--------------|-------------------|
| TOTAL | 372,420.35 |
|--------------|-------------------|

Figure C.22. Employees' Salary Summary by Department.



บริษัท หลักทรัพย์ แอดคินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

OVERTIME SUMMARY
BY January

| <u>Department</u> | <u>Hour(s)</u> |
|-------------------|----------------|
| Accounting | 650 |
| Administration | 450 |
| Custodian | 150 |
| Foreign Marketing | 200 |

| | |
|---------------------|---------------------|
| <u>TOTAL</u> | <u>1,450</u> |
|---------------------|---------------------|

Figure C.23. Overtime Summary by Month.



บริษัท หลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

ALL EMPLOYEES' SALARY SUMMARY
BY January

| <u>Code</u> | <u>Name</u> | <u>Department</u> | <u>Bank Account No.</u> | <u>Net Salary</u> |
|-------------|------------------------|-------------------|-------------------------|-------------------|
| 00001 | Wanne Boonyasiriwat | Operation | 2451654715 | 86,196.22 |
| 00002 | Prasert Weerawatpaisal | Marketing | 3651254785 | 53,602.19 |

Figure C.24. All Employees' Salary Summary by Month.



บริษัท หลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

PAYROLL SLIP

Employee Code: 00001

Name: Wanne Boonyasiriwat

Department Code: 11

Department Name: Operation

Period: January

INCOME:

Salary: 50,000.00
Bonus: 0.00
OT./Allowance: 44,054.79
Incentive/Commission: 0.00
Pay In Lieu: 0.00
Others: 0.00

DEDUCTION:

Income Tax: 0.00
Car Loan: 0.00
Car Park: 0.00
Social Club: 0.00
Advance: 0.00
Social Security: 0.00
Others: 0.00

Total Income: 94,054.79

Total Deduct: 0.00

Net Pay: 86,196.22

Figure C.25. Payroll Slip.



บริษัท หลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

REPORT OF EMPLOYEE 'S SALARY

Employee Code: 00001 Name: Wanne Boonyasiriwat
Department: Operation

| <u>Month</u> | <u>Net Salary (Baht)</u> |
|--------------|--------------------------|
| January | 86,196.22 |
| February | 86,210.12 |
| March | 0.00 |
| April | 44,473.01 |
| May | 0.00 |

Figure C.26. Report of Employee's Salary.



บริษัท หลักทรัพย์ แอดกินสัน จำกัด (มหาชน)

ADKINSON SECURITIES PUBLIC COMPANY LIMITED

REPORT OF EMPLOYEE 'S PROFILE

Employee Code : 00001

Hire Date : 5-May-80

Name : Wanne Boonyasiriwat **Sex :** Female

Position : V.P.Operation **Birthday :** 15-Feb-59

Department : Operation **Age :** 39 Years

Identification No. : 2541547845 **Salary :** 50,000.00 Baht

Birth Address :

24/45 Youkhon2 Road,
Bumrungmeung, Bangkok

Telephone House :

223-4578,223-4777

Present Address :

24/45 Youkhon2 Road,
Bumrungmeung, Bangkok

Telephone Contact :

223-4578,223-4777

Identification No. : 2541547845 **Bank Account No. :** 2451654715

Tax ID No. : 1235816281 **Social Security No :** 1254784587

Figure C.27. Report of Employee's Profile.

| | | | | |
|---|----------------------|------------|-------------------|-------------------|
|  | | | | |
| บริษัท หลักทรัพย์ แอดกินสัน จำกัด (มหาชน) | | | | |
| ADKINSON SECURITIES PUBLIC COMPANY LIMITED | | | | |
| <u>LIST OF TRAINEES</u> | | | | |
| Training Topic : Marketing Strategies in High Level | | | | |
| Emp.Code | Name | Sex | Department | Position |
| 00001 | Wanne Boonyasiriwat | Female | Operation | V.P.Operation |
| 00002 | Prasert Weerawatpais | Male | Marketing | V.P. Marketing |
| 00003 | Sirikul Kitjaporn | Female | Marketing | A.V.P.Marketing 1 |
| 00004 | Prasarn Luekittisapt | Male | Marketing | A.V.P.Marketing 2 |
| 00005 | Raviwan Sukhumtus | Female | Marketing | A.V.P.Marketing 3 |
| 00006 | Monvipa Saochindarat | Female | Marketing | A.V.P.Marketing 4 |
| TOTAL EMPLOYEES: | | | | 6 PERSONS |

Figure C.28. List of Trainees.



บริษัท หลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

LIST OF PROJECT PARTICIPANTS

PROJECT NAME : Re-Engineering Accounting System

| <u>Code</u> | <u>Name</u> | <u>Position</u> | <u>Department</u> |
|-------------|---------------------|-------------------|-------------------|
| 00001 | Wanne Boonyasiriwat | V.P.Operation | Operation |
| 00005 | Raviwan Sukhumtus | A.V.P.Marketing 3 | Marketing |

TOTAL EMPLOYEES: 2 PERSONS

Figure C.29. List of Project Participants.



บริษัท หลักทรัพย์ แอดคินสัน จำกัด (มหาชน)
ADKINSON SECURITIES PUBLIC COMPANY LIMITED

COMPANY CALENDAR

| <u>HolidayDate</u> | <u>Description</u> |
|--------------------|--------------------------------|
| 1/1/99 | New Year |
| 4/3/99 | In Lieu of Mahkhabucha Day |
| 8/4/99 | In Lieu of Chakri memorial Day |
| 12/4/99 | Songkran Day |
| 15/4/99 | Songkran Day |
| 1/5/99 | National Labour Day |
| 6/5/99 | In Lieu of Coronation Day |
| 31/5/99 | Wisakhabucha Day |
| 1/7/99 | Semiannual Holiday |
| 30/7/99 | Khao Phansa Day |
| 12/8/99 | H.M. the Queen's Birthday |
| 23/10/99 | King Rama V memorial Day |
| 5/12/99 | H.M.the King's Birthday |
| 10/12/99 | Thai Constitutions Day |
| 31/12/99 | New Year's Eve Day |

Figure C.30. Company Calendar.



APPENDIX D
DATABASE DESIGN

DATABASE DESIGN

1. Absence (AbsenceCode<PK>, Ab_Meaning, LimitAbsentDay)

Table D.1. Absence Table.

| Field Name | Type | Size |
|----------------|-----------|------|
| AbsenceCode | Character | 5 |
| Ab_Meaning | Character | 20 |
| LimitAbsentDay | Number | 2 |

2. AmountExcuse (EmpCode<PK>, AbsenceCode<PK>, Day)

Table D.2. AmountExcuse Table.

| Field Name | Type | Size |
|-------------|-----------|------|
| EmpCode | Character | 5 |
| AbsenceCode | Character | 5 |
| Day * | Number | * 3 |

3. Behavior (EmpCode<PK>,<u>OnMonth<PK>, OT1,OT2,OT3, TardyDay,
LeaveEarlyDay, NotPunchDay, AbsenceDay)

Table D.3. Behavior Table.

| Field Name | Type | Size | Dec |
|---------------|-----------|------|-----|
| EmpCode | Character | 5 | - |
| OnMonth | Number | 2 | - |
| OT1 | Number | 3 | 2 |
| OT2 | Number | 3 | 2 |
| OT3 | Number | 3 | 2 |
| TardyDay | Number | 2 | - |
| LeaveEarlyDay | Number | 2 | - |
| NotPunchDay | Number | 2 | - |
| AbsenceDay | Number | 2 | - |

4. Department (DeptCode<PK>, DeptName, AmountEmployee, ManagerID<FK>)

Table D.4. Department Table.

| Field Name | Type | Size |
|----------------|-----------|------|
| DeptCode | Character | 5 |
| DeptName | Number | 40 |
| AmountEmployee | Number | 3 |
| ManagerID | Number | 5 |

5. Emp_Excuse (SerialNo<PK>, EmpCode<FK>, ExcuseDay, AbsenceCode<FK>, Reason, StartDate, EndDate, PeriodDay, PeriodHour, ContactPlace, ContactPhone, Delegate)

Table D.5. Emp_Excuse Table.

| Field Name | Type | Size |
|--------------|-----------|------|
| SerialNo | Character | 5 |
| EmpCode | Character | 5 |
| ExcuseDay | Date | 2 |
| AbsenceCode | Number | 5 |
| Reason | Character | 40 |
| StartDate | Date | 8 |
| EndDate | Date | 8 |
| PeriodDay | Number | 3 |
| PeriodHour | Number | 3 |
| ContactPlace | Character | 40 |
| ContactPhone | Character | 40 |
| Delegate | Character | 40 |

6. Emp_IDcard (EmpCardID<PK>, EmpCode<FK>, IssueDate, Track1, Track2, Track3)

Table D.6. Emp_IDcard Table.

| Field Name | Type | Size |
|------------|-----------|------|
| EmpCardID | Character | 10 |
| EmpCode | Character | 5 |
| IssueDate | Date | 8 |
| Track1 | Number | 7 |
| Track2 | Number | 7 |
| Track3 | Number | 7 |

7. Employee (EmpCode<PK>, Name, Sex, Birthday, HireDate, BirthAddress, Tel_House, PresentAddress, Tel_Contact, ID_No, BankAccountNo, Position, Salary, DeptCode<FK>, TaxID, SocialSecNo, Photo)

Table D.7. Employee Table.

| Field Name | Type | Size | Dec |
|--------------|-----------|------|-----|
| EmpCode | Character | 5 | - |
| Name | Character | 40 | - |
| Sex | Logical | 1 | - |
| Birthday | Date | 8 | - |
| HireDate | Date | 8 | - |
| BirthAddress | Character | 50 | - |
| Tel_House | Character | 20 | - |

Table D.8. Employee Table (continued).

| Field Name | Type | Size | Desc |
|----------------|------------|------|------|
| PresentAddress | Character | 50 | - |
| Tel_Contact | Character | 20 | - |
| ID_No | Character | 13 | - |
| BankAccountNo | Number | 10 | - |
| Position | Character | 20 | - |
| Salary | Number | 6 | 2 |
| DeptCode | Number | 5 | - |
| TaxID | Number | 10 | - |
| SocialSecNo | Number | 10 | - |
| Photo | OLE Object | - | - |

8. Employee_Deduct (EmpCode<PK>, OnDeductMonth<PK>, IncomeTax,
CarLoan, CarPark, SocialClub, Advance, SocialSec, Others)

Table D.9. Employee_Deduct Table.

| Field Name | Type | Size | Dec |
|---------------|-----------|------|-----|
| EmpCode | Character | 5 | - |
| OnDeductMonth | Number | 2 | - |
| IncomeTax | Number | 5 | 2 |
| CarLoan | Number | 5 | 2 |
| CarPark | Number | 5 | 2 |
| SocialClub | Number | 5 | 2 |

Table D.10. Employee_Deduct Table (continued).

| Field Name | Type | Size | Desc |
|------------|--------|------|------|
| Advance | Number | 5 | 2 |
| SocialSec | Number | 5 | 2 |
| Others | Number | 5 | 2 |

9. Employee_Income (EmpCode<PK>, OnIncomeMonth<PK>, Bonus,

OT_Allowance, Incentive_Comm, PayInLieu, Others, NetPay)

Table D.11. Employee_Income Table.

| Field Name | Type | Size | Dec |
|----------------|-----------|------|-----|
| EmpCode | Character | 5 | - |
| OnIncomeMonth | Number | 2 | - |
| Bonus | Number | 5 | 2 |
| OT_Allowance | Number | 5 | 2 |
| Incentive_Comm | Number | 5 | 2 |
| PayinLieu | Number | 5 | 2 |
| Others | Number | 5 | 2 |
| NetPay | Number | 6 | 2 |

10. Employee_Project (EmpCode<PK>, ProjectNo<PK>)

Table D.12. Employee_Project Table.

| Field Name | Type | Size |
|------------|-----------|------|
| EmpCode | Character | 5 |
| ProjectNo | Character | 5 |

11. Employee_Training (EmpCode<PK>, TrainingNo<PK>)

Table D.13. Employee_Training Table.

| Field Name | Type | Size |
|------------|-----------|------|
| EmpCode | Character | 5 |
| TrainingNo | Character | 5 |

12. Holiday (HolidayDate<PK>, Description, Note)

Table D.14. Holiday Table.

| Field Name | Type | Size |
|-------------|-----------|------|
| HolidayDate | Date | 8 |
| Description | Character | 40 |
| Note | Character | 50 |

13. Overtime (EmpCode<PK>, OTDate<PK>, OT_TimeIn, OT_TimeOut, Calculate)

Table D.15. Overtime Table.

| Field Name | Type | Size |
|------------|-----------|------|
| EmpCode | Character | 5 |
| OTDate | Date | 8 |
| OT_TimeIn | Time | - |
| OT_TimeOut | Time | - |
| Calculate | Logical | 1 |

14. Password (UserName<PK>, PassCode, Level)

Table D.16. Password Table.

| Field Name | Type | Size |
|------------|-----------|------|
| UserName | Character | 10 |
| PassCode | Character | 15 |
| Level | Number | 1 |

15. Penalty (PenaltyNo<PK>, PenaltyDate, Note, EmpCode<FK>)

Table D.17. Penalty Table.

| Field Name | Type | Size |
|-------------|-----------|------|
| PenaltyNo | Character | 5 |
| PenaltyDate | Date | 8 |
| Note | Character | 50 |
| EmpCode | Character | 5 |

16. Project (ProjectNo<PK>, ProjectName, StartDate, EndDate, ProjectManager<FK>)

Table D.18. Project Table.

| Field Name | Type | Size |
|----------------|-----------|------|
| ProjectNo | Character | 5 |
| ProjectName | Character | 40 |
| StartDate | Date | 8 |
| EndDate | Date | 8 |
| ProjectManager | Character | 5 |

17. Training (TrainingNo<PK>, Topic, Place, StartDate, EndDate, StartTime, EndTime, ArrangeBy, Instructor, DeptCode<FK>)

Table D.19. Training Table.

| Field Name | Type | Size |
|------------|-----------|------|
| TrainingNo | Character | 5 |
| Topic | Character | 30 |
| Place | Character | 40 |
| StartDate | Date | 8 |
| EndDate | Date | 8 |
| StartTime | Time | - |
| EndTime | Time | - |
| ArrangeBy | Character | 40 |
| Instructor | Character | 40 |
| DeptCode | Number | 5 |

18. WorkDay (EmpCode<PK>, WorkDate<PK>, WorkTimeIn, WorkTimeOut,
Late, EarlyLeave, NotPunch)

Table D.20. WorkDay Table.

| Field Name | Type | Size |
|-------------|-----------|------|
| EmpCode | Character | 5 |
| WorkDate | Date | 8 |
| WorkTimeIn | Time | - |
| WorkTimeOut | Time | - |
| Late | Logical | 1 |
| EarlyLeave | Logical | 1 |
| NotPunch | Logical | 1 |

***Note: PK = Primary Key

FK = Foreign Key

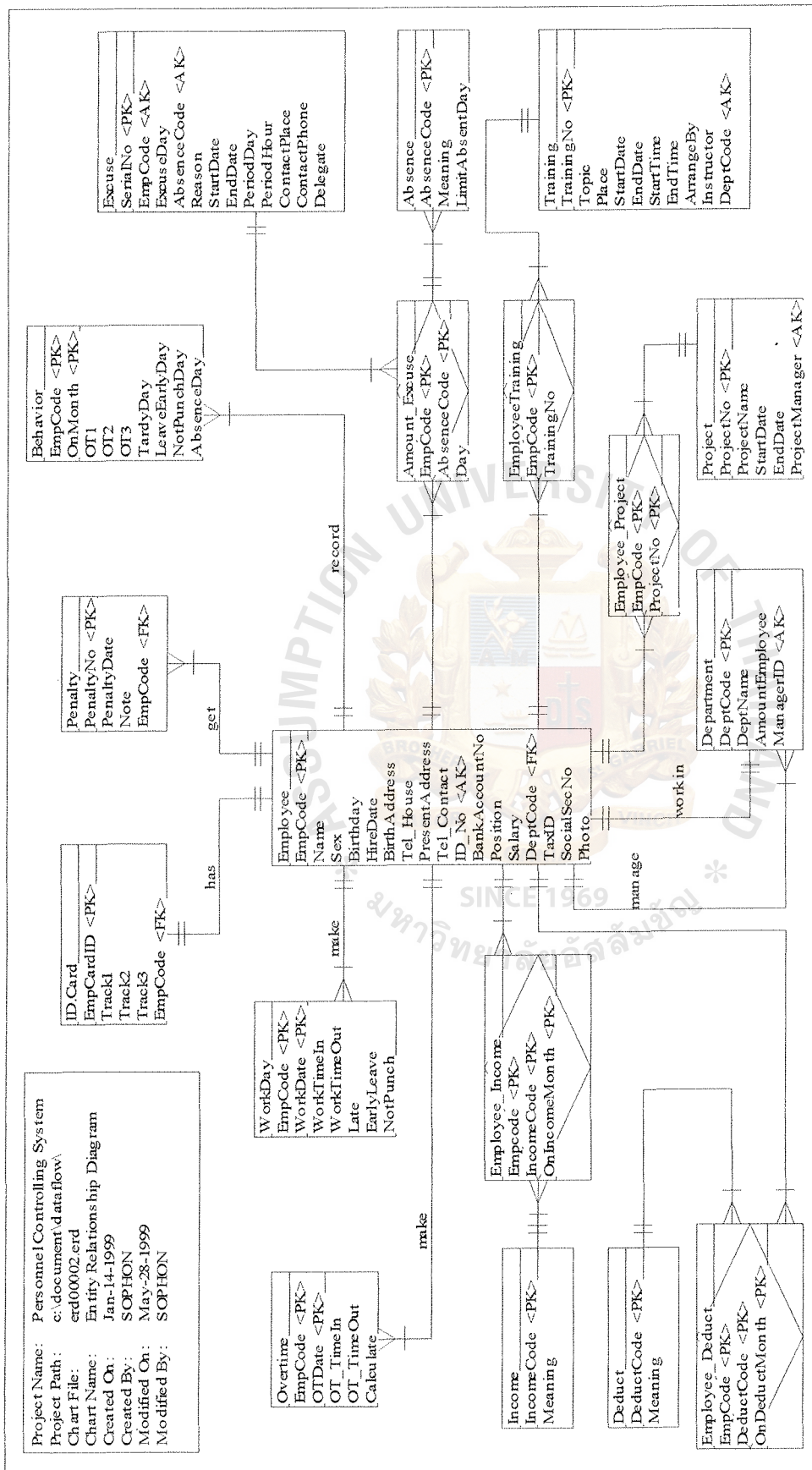


Figure D.1. Entity Relationship of the Proposed System.



APPENDIX E
DATA DICTIONARY

DATA DICTIONARY

- Ab_Meaning = * meaning of absence code number (e.g sick, vacation) *
- AbsenceCode = * code number used to represent many kinds of absence *
- Advance = * amount of employees' salary which they ask for in advance (one part of employees' deduction) *
- AmountEmployee = * limit number of employees in each department *
- BirthAddress = * real address of employee *
- Bonus = * one part of employees' income *
- Calculate = * To show whether Overtime file has already been calculated or not *
- CarLoan = * one part of employees' deduction *
- CarPark = * one part of employees' deduction *
- Dept_Code = * code number used to represent the name of department *
- DeptName = * name of department *
- Emp_IDcard = * employee's identification card number (issued by company) *
- EmpCode = * code number used to represent full time employee *
- HireDate = * date which employee is hired *
- Incentive_Comm = * incentive and commission which are one part of employees' income *
- IncomeTax = * one part of employees' deduction *
- Level = * number used to indicate the security level of the user
- LimitAbsentDay = * limit number of day that employee can make absences *
- ManagerID = * code number of employee whose position is manager of particular department *

Name = * it includes first name and last name of one employee *

NetPay = * net salary which employee receives after subtracting all deductions *

OnIncomeMonth = * month which employees receive any income *

OnDeductMonth = * month which employees have any deduction *

OT_Allowance = * Overtime and Allowance which are one part of employees' income *

OT_TimeIn = * time when employee starts working for over time (same as in employee's overtime request form) *

OT_TimeOut = * time when employee leaves the company for over time (same as in employee's overtime request form) *

OT1 = * Overtime 1 (count after 18:00 on normal work day) *

OT2 = * Overtime 2 (count from 8:30 to 17:30 on holiday or weekend) *

OT3 = * Overtime 3 (count after 18:00 on holiday or weekend) *

PassCode = * Password that user uses together with user name to enter Personnel Controlling system *

PayInLieu = * one part of employees' income *

Photo = *employee's photograph *

PresentAddress = * address which is convenient to contact employee *

SerialNo = * number on the absence request form *

SocialClub = * one part of employees' deduction *

SocialSec = * social security which is one part of employees' deduction *

SocialSecNo = * social security number *

TaxID = * employee's tax identification number *

Tel_Contact = * telephone number that is used to contact employee conveniently *

Tel_House = * telephone number of the house in which employee was born *

Track1 = * null *

Track2 = *code number encrypted used on time recorder in order to record employee ' s work time in and work time out *

Track3 = * code number encrypted used for opening the doors *

UserName =* name that users use to login to the Personnel Controlling system *

Absence = @AbsenceCode + Ab_Meaning + AbsentLimitDay

AmountExcuse= @EmpCode + @AbsenceCode + Day

Behavior = @EmpCode + @OnMonth + OT1 + OT2 + OT3 + TardyDay +
LeaveEarlyDay + NotPunchDay + AbsenceDay

Department = @DeptCode + DeptName +AmountEmployee + ManagerID

Emp_Excuse = @SerialNo + EmpCode + ExcuseDay + AbsenceCode +Reason +
StartDate + EndDate + PeriodDay + PeriodHour + ContactPlace +
ContactPhone + Delegate

Emp_IDcard = @EmpCardID + EmpCode + IssueDate + Track1 + Track2 + Track3

Employee = @EmpCode + Name + Sex + Birthday + HireDate + BirthAddress +
Tel_House + PresentAddress + Tel_Contact + ID_No +
BankAccountNo+ Position + Salary + DeptCode + TaxID +
SocialSecNo + Photo

Employee_Deduct = @EmpCode + @OnDeductMonth + IncomeTax + CarLoan +
CarPark + SocialClub + Advance + SocialSec + Others

Employee_Income = @EmpCode + @OnIncomeMonth + Bonus + OT_Allowance
+ Incentive_Comm + PayInLieu + Others + NetPay

Employee_Project = @EmpCode + @ProjectNo

Employee_Training = @EmpCode + @TrainingNo

Holiday = @HolidayDate + Description + Note

Overtime = @EmpCode + @OTDate + OT_TimeIn + OT_TimeOut + Calculate

Password = @UserName + PassCode + Level

Penalty = @PenaltyNo + PenaltyDate + Note + EmpCode

Project = @ProjectNo + ProjectName + StartDate + EndDate + ProjectManager

Training = @TrainingNo + Topic + Place + StartDate + EndDate + StartTime +
EndTime + ArrangeBy + Instructor + DeptCode

WorkDay = @EmpCode + @WorkDate + WorkTimeIn + WorkTimeOut





APPENDIX F
PROCESS SPECIFICATION

PROCESS SPECIFICATION

Process 1.0 Perform payroll activities

Process no. : 1.1

Process name : Distribute request form

Description : Distribute the blank overtime or excuse form

Input : Request for overtime or excuse form

Output : Blank overtime or excuse form

Process :
1. Employee wants to make any excuse or want to do overtime
2. Employee comes to ask for the blank form
3. Distribute the blank overtime or excuse form

Process no. : 1.2

Process name : Accept request form

Description : Accept every type of request form and filled form

Input :
1. Request for employees' salary from Finance Department
2. Filled overtime or excuse form made by employees

Output :
1. Request for employees' salary accepted for Process 1.4
2. Filled overtime or excuse form accepted for Process 1.3

Process :
1. Finance Department requests for employees' salary report
2. Employees submit the filled overtime or excuse form
3. Send the request accepted to Process 1.4 and to Process 1.3

Process no. : 1.3

Process name : Approve the requests

Description : Approve all forms from Process 1.2

Input : 1. Filled overtime or excuse form

2. The excuse day and limitation of excuse of employee
- Output : 1. Send acceptance or rejection of form to employee
2. Update the amount of excuse of employee
3. Insert new records on overtime or excuse file
- Process : 1. All requests received will be approved by reading the amount of excuse day and limitation of excuse day and the results will be sent to employee whether with acceptance or rejection of request status
2. The new overtime record or excuse record will be inserted into the files

Process no. : 1.4

Process name : Compute salary

Description : Compute monthly salary of all employees

- Input : 1. Request for employees' salary from Process 1.2
2. Work time of employees
3. Employees' information
4. Income and deduct information
5. Behavior of employees
6. Overtime information
7. Holidays information

- Output : 1. Send print preparation order to Process 6.0
2. Update income and deduction file

- Process : 1. Receive the request for employees' salary report from Process 1.2 and read the information required in computing salary which are work time, employees' information, employees' income and deduction, behavior and holidays.

2. Update the income file and deduction file
3. Send print preparation order to Process 6.0

Process no. : 1.5

Process name : Check updating database

Description : This process will be active when the program reach the condition to update the file, usually yearly

Input : Acknowledgement of updating files from Process 1.6

Output : Request for updating database

Process : At the end of the year, this process will be active and request sent for updating database to Process 1.6

Process no. : 1.6

Process name : Update database

Description : Update the database yearly

Input : Request for updating database from Process 1.5

Output :
1. Acknowledgement of updating files
2. Update holidays file

Process : At the end of the year, this process will update the company calendar, which consists of company' s holidays

Process 2.0 Check number of employees needed

Process no. : 2.1

Process name : Check number of employees

Description : Check number of employees needed for each department

Input :
1. The number of employees available in each department
2. The number of employees needed in each department

Output : Request for more employees

Process : 1. The number of needed employees for each department is checked
2. The request for more employees is sent to the Personnel Department.

Process no. : 2.2

Process name : Manage application form

Description : Arrange the application form to the place requested

Input : 1. Application form of new employees
2. Used application form

Output : 1. Returned application form
2. Application form for recording

Process : 1. Receive application form from Personnel Department
2. Send application form for recording received to Process 2.3
3. Receive the used application form from Process 2.3 and return application form to Personnel Department

Process no. : 2.3

Process name : Key in new record of employee

Description : Key in the new employees record from application form

Input : Application form for recording

Output : 1. Used application form
2. Insert new employee record

Process : 1. Receive the application form for recording from Process 2.2
2. Insert the new record of employees to employee file
3. Return used application form to Process 2.2

Process 3.0 Make employees' ID card

Process no. : 3.1

Process name : Accept request

Description : Accept the request from Personnel Department

Input :
1. Request for making ID card for new one
2. Request for making ID card for lost one

Output : 1. Making ID card order

Process :
1. Accept the request for making new ID cards from Personnel Department
2. Accept the request for making ID card for lost one from employees
3. Send the order of making ID card to Process 3.2

Process no. : 3.2

Process name : Check ID card's status

Description : Check ID card whether owned by new or old employee

Input :
1. Order of making ID card
2. Employee ID card and employee information

Output :
1. Information of paying penalty
2. Update penalty files
3. Order to make ID card

Process :
1. Accept order of making ID card from Process 3.1
2. Check ID card status by reading employee ID card and employee information
3. Send the information of paying penalty to employees who lost the ID card

4. Send the order to make ID card to Process 3.3

Process no. : 3.3

Process name : Produce employees' ID cards

Description : Produce the employees' ID cards to employees

Input :
1. Order to make ID card
2. Employee information

Output :
1. Employees' ID card
2. Update ID card's file
3. Acknowledgement of making ID card

Process :
1. Accept order of making UD card from Process 3.2
2. Produce ID card and give to employees
3. Update the employees' ID card to ID card file
4. Send acknowledgement of making ID card to Personnel Dept.

Process 4.0 Begin new training course

Process no. : 4.1

Process name : Accept the request

Description : Accept the request for training program

Input : Request for training course

Output : 1. Order of finding trainees

Process :
1. Receive the request for training course from Personnel
Department
2. Submit the order of finding trainees to Process 4.2

Process no. : 4.2

Process name : Find trainees

Description : Select the perspective trainees

Input : 1. Order for finding trainees
2. Interest or not interest in training

Output : 1. Information of training
2. Name of trainees

Process : 1. Receive the order of finding trainees from Process 4.1
2. Send the information of training course to employees
3. Receive the answer from employees whether interested or not interested in the training course
4. Submit the name of trainees to Process 4.3

Process no. : 4.3

Process name : Arrange the training course

Description : Manage facilities to be ready for the training course

Input : Name of trainees

Output : 1. Acknowledgement for request
2. Print preparation order
3. Update training records

Process : 1. Receive the name of trainees from Process 4.2
2. Send the acknowledgement to Personnel Department
3. Send the print preparation order to Process 6.0
5. Update the employee_training and training files

Process 5.0 Begin new project

Process no. : 5.1

Process name : Accept the request

Description : Accept the request for more participants in project

Input : Request for more employees

- Output : 1. Order of finding participants
- Process : 1. Receive the request for more participants from Personnel Department
2. Submit the order of finding participants to Process 5.2

Process no. : 5.2

Process name : Select the participants

Description : Find the perspective participants in the project

- Input : 1. Order for finding participants
2. Interest or not interest in project
3. Information of penalty
4. Information of trainees in related topic

- Output : 1. Information of project
2. Name of participants

- Process : 1. Receive the order of finding participants from Process 5.1
2. List the name of trainees in related topic and their penalty
3. Send the information of project to employees
4. Receive the answer from employees whether interested or not interested in the project
5. Submit the name of participants to Process 5.3

Process no. : 5.3

Process name : Arrange the project

Description : Manage the facilities to be ready for the project

Input : Name of participant

- Output : 1. Acknowledgement for request
2. Print preparation order

3. Update project records

- Process : 1. Receive the name of participants from Process 5.2
2. Send the acknowledgement to Personnel Department
3. Send the print preparation order to Process 6.0
6. Update the employee_project and project files

Process 6.0 Prepare reports

Process no. : 6.1

Process name : Accept the request

Description : Accept the request for printing reports

- Input : 1. Print preparation order
2. Request for trainings' list
3. Request for participants' list

Output : Accepted request

- Process : 1. Accept the order of print preparation from Process 1.0 and 2.0
2. Receive the request for trainings' list from Personnel Dept.
3. Receive the request for participants' list from Personnel Dept.
4. Send the accepted request to Process 6.2

Process no. : 6.2

Process name : Check the request

Description : All submitted requests will be checked and prepared for reports

Input : Accepted request

Output : Request after checking

- Process : 1. Receive the accepted request from Process 6.1
2. Send the checked request to Process 6.3

Process no. : 6.3

Process name : Generate reports

Description : All the reports requested will be printed

Input :
1. Checked request
2. Incorrect reports returned
3. Reprint reports order

Output :
1. Finished reports
2. Reports with no mistake

Process :
1. Receive the checked request from Process 6.2
2. Submit the finished reports, which may or may not contain the mistake to Process 6.4
3. Receive the incorrect report returned from Process 6.4
4. Receive reprint reports order from Process 6.5
5. Submit the reports with no mistake to Process 6.4

Process no. : 6.4

Process name : Check the correction

Description : All reports printed will be check for finding errors

Input :
1. Finished reports
2. Reports with no mistake

Output :
1. Incorrect reports returned
2. Correct reports
3. Reprint reports order

Process :
1. Receive finished reports from Process 6.3
2. Return the incorrect reports to Process 6.3
3. Receive the reports with no mistake from Process 6.3

4. Send the correct reports to Process 6.5

Process no. : 6.5

Process name : Count amount of reports requested

Description : The number of reports printed will be checked with the number of request

Input : Correct reports

Output :
1. Reprint reports order
2. Ready reports

Process :
1. Receives all the correct reports from Process 6.4
2. Send the reprint reports order to Process 6.3
3. Submit the ready reports to Process 6.6

Process no. : 6.6

Process name : Submit the reports

Description : All the reports requested will be delivered to the requestors

Input : 1. Ready reports

Output :
1. List of participants
2. List of trainees
3. Report of employees' salary

Process :
1. Receive the ready reports requested from Process 6.5
2. Submit the list of participants to the Personnel Department
3. Submit the list of trainees to the Personnel Department
4. Submit the reports of employees' salary to the Finance Department



APPENDIX G
USER MANUAL

USER MANUAL

1. Introduction

Personnel Controlling System is used in Personnel Department. The system was installed in the computer server, which is located in the computer department. This system provides speed, compatibility with many types of database. The database that will be selected is Paradox 5.0 for windows. Multiple windows, pull-down menus, mouse support, and more are all here within this user manual.

2. Getting started with the system

First of all, we need to create database to store the data. You can create database by using database desktop from Delphi 95. When you enter the database desktop, there is one dialogue to ask you whether to create new table or open table. You just select create new table and select the database type, Paradox 5.0 for windows.

The next step is to define the field name, types of fields, and the length you will use. Many different data types can be used. You can see the data type in figure G.1.

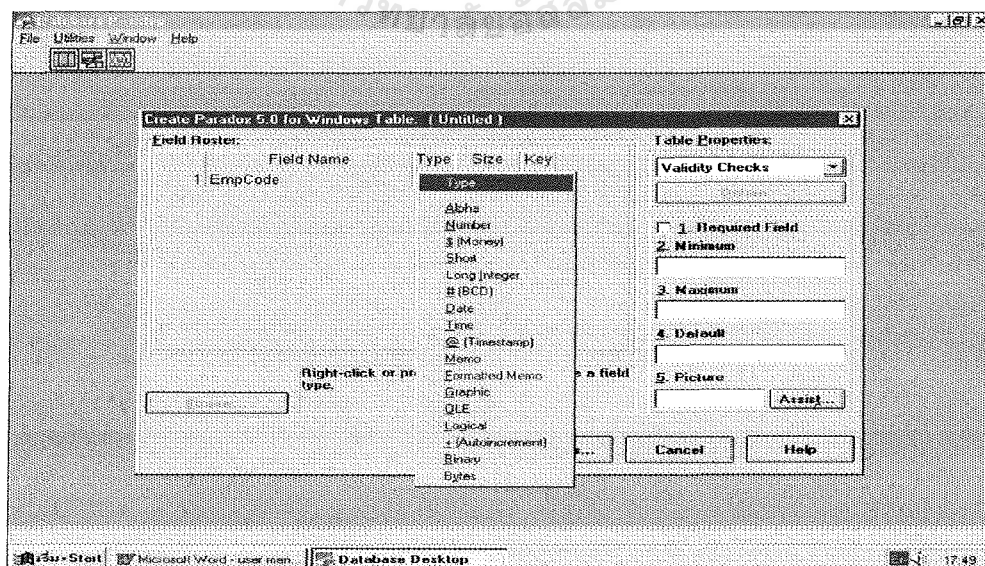


Figure G.1. Database Desktop Screen.

The number of tables that you have to create and the data type, field name are in Appendix C. Do not forget to create primary key for each table. You can also set the minimum or maximum value in each field or set the default value as well.

Once, you create database, you can enter the Personnel Controlling System. When you enter the system the first menu appears as shown in figure G.2.

Before users can enter the system, they must have their own username and password. Both are required in entering the system. The username identifies the user level as to which menu they can see or read only, or both read and write.

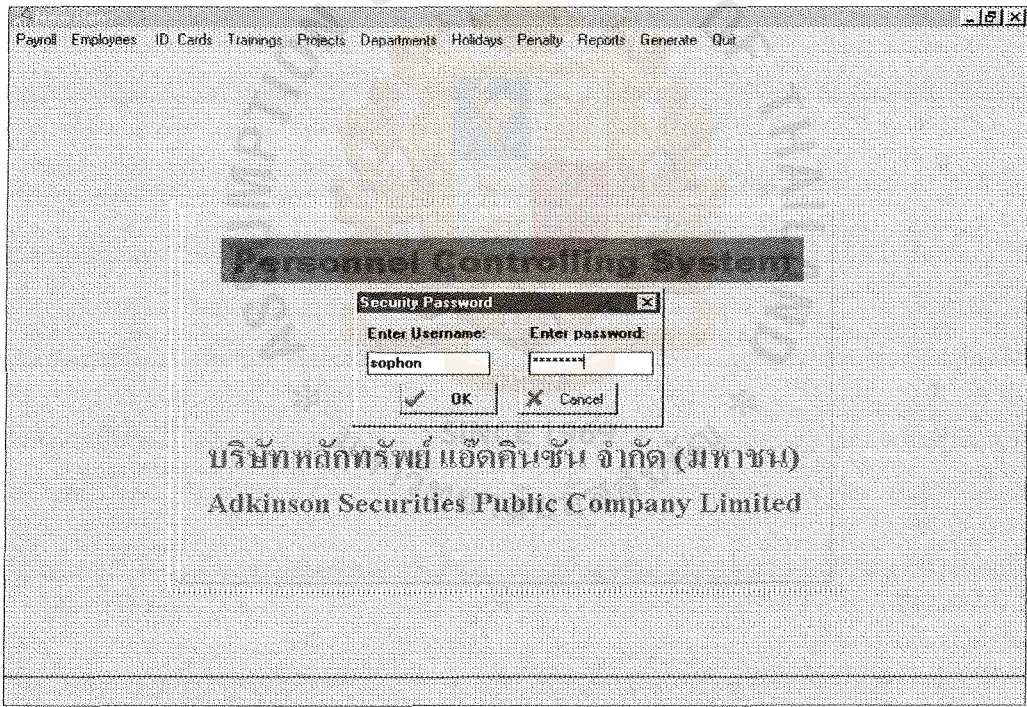


Figure G.2. Security Password Screen.

If users type the wrong password, the error message will appear. They have to reenter the password again. If the users type the correct password, the password security dialogue box will disappear. You will see the main menu as shown in figure G.3.

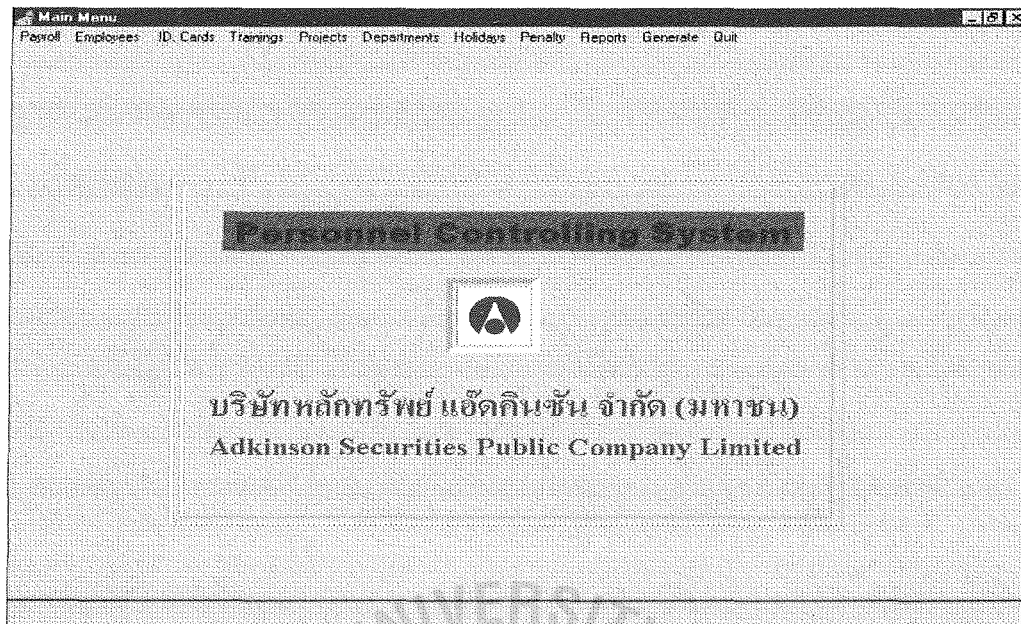


Figure G.3. Main Menu Screen.

The style of user interface used in this system is menu selection. From figure G.3, you will see in the menu bars, which display the selection horizontally across the top of the screen/window, a series of choices from which the user can select. The choices typically correspond to commands or properties that the user can select or toggle.

The choices themselves are organized from left to right on the basis of the frequency that a choice is selected. The given choices are Payroll, ID. Cards, Employees., Trainings, Projects, Department, Holidays, Generate and Quit.

When users select a choice from the menu bar, there will be more choices available for users to select on pull-down menus. Pull-down menus provide a vertical list of choices to the user (see figure G.4).

The available choices which appear are work time, overtime, absence, excuse, behavior, income and deduction, salary, and payroll reports. From figure G.4, there is one type of menu selection used here, which is called cascading menu.



Figure G.4. Payroll Menu.

A cascading menu is a menu that must be requested by the user from another high-level menu. When you click the mouse on any choice on pull-down menu, there are more choices appearing on the small menu. The choices of full time and check full time appear when the users click on work time on pull-down menu.

The available choices on each pull-down menu are listed as follows:

Payroll

- Work time (in figure G.4)
 - Full time
 - Check full time
- Overtime (in figure (G.5))
 - Overtime request
 - Check overtime request
 - Check real overtime requested



Figure G.5. Overtime Menu Screen.

- Check all overtime
- Absence
- Excuse (see figure G.6)
 - Excuse request
 - Update amount excuse
 - Check excuse
 - Check total amount excuse
- Behavior (see figure G.7)
 - Behavior profile
 - Check amount (Year)
 - Check amount (month)
- Income/Deduction (see figure G.8)
 - Income

- + Check income
- Deduction
 - + Deduction of employees
 - + Check deduction

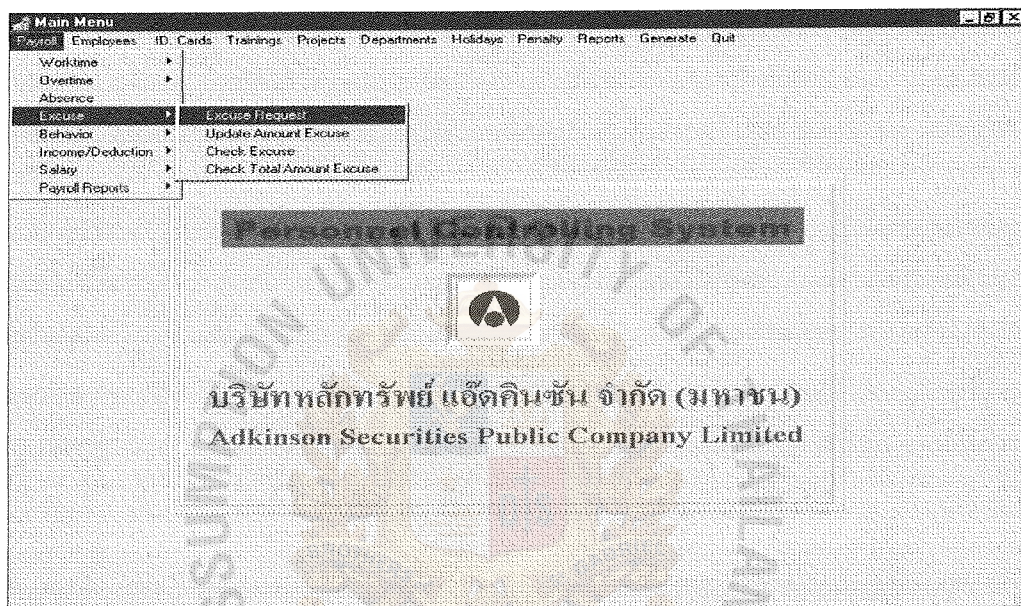


Figure G.6. Excuse Menu Screen.

- Salary (see figure G.9)
 - List all employees' salary
 - Check all employees' salary
 - Check specific employee's salary
 - Salary reports
 - + All employees
 - + Specific employee
 - + Payroll slips



Figure G.7. Behavior Menu Screen.



Figure G.8. Income/Deduction Menu Screen.

- Payroll Reports (see figure G.10)
 - Work time
 - + Specific employee code
 - + Specific employee code and date
 - + All employee date
 - Overtime
 - + Request of specific employee
 - On employee code
 - On employee code & date
 - + Request of all employee
 - Excuse
 - Income
 - + On income code
 - + On specific employee's income
 - + Employee's income (all months)
 - Deduction
 - + One deduction code
 - + On specific employee's deduction
 - + On employee's deduction
(all months)

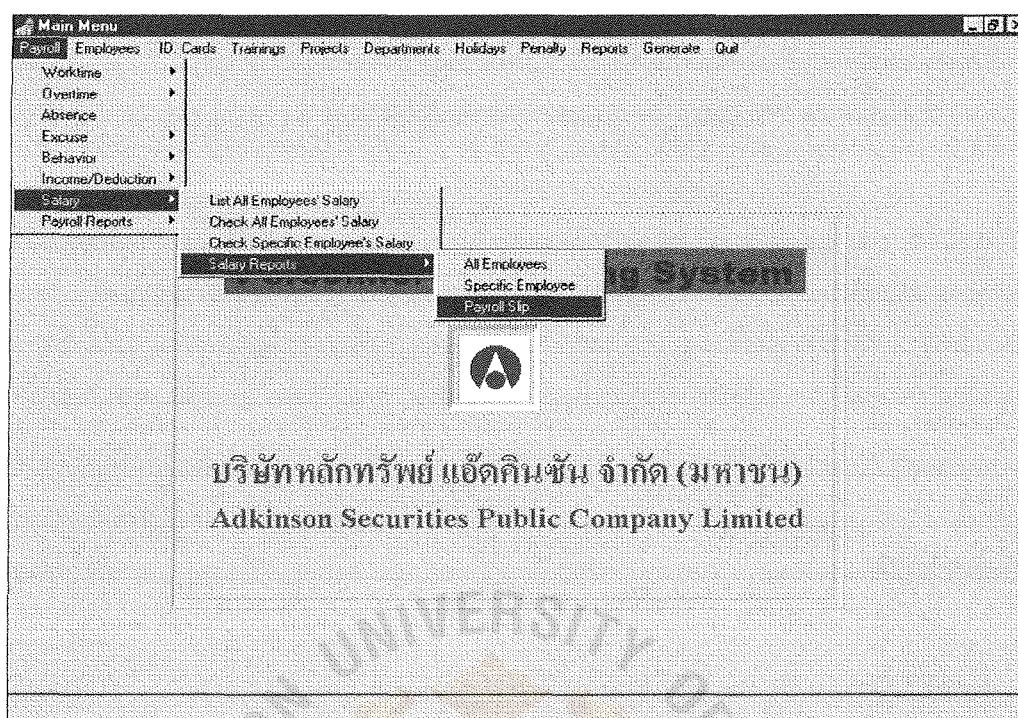


Figure G.9. Salary Screen Menu.

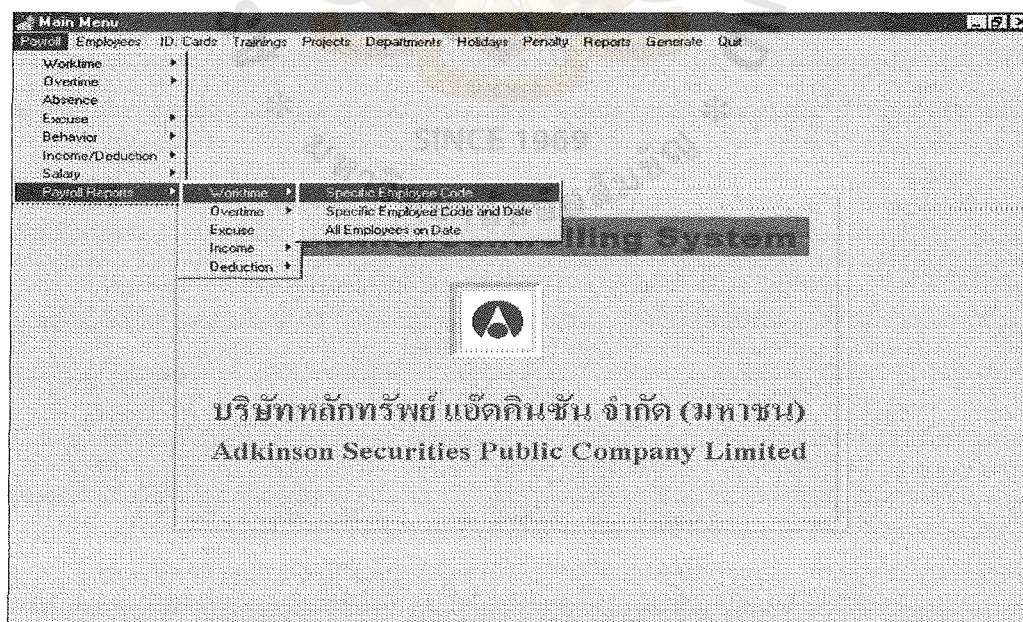


Figure G.10. Payroll Reports Menu Screen.

Payroll Menu

Work time:

When users select the choice full time on work time menu, it means that the users want to maintain the data generated from the time recorder. All the data received from time recorders can be updated via this program. The screen of this program is shown in figure G.11.

Work Day

บริษัทหลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

WORK DAY

Employee Code: 00001 Work Date: 1/1/99

Time In: 7:00:00
Time Out: 17:00:00

Late: False Early Leave: False Not Punch: False

Search
Edit
Add
Delete
Exit

Figure G.11. Work Day Screen.

When users want to edit any data, they just enter employee code and work date then the rest will appear on the screen. In the field of late, early leave and not punch, it is automatically computed by the system.

Late means that the users come to punch the card later than 8:30 A.M. Early leaving means that the users come to punch the card before 5:00 P.M. Not punch means that users forget to punch the card either in the morning or in the evening. The value on those fields are just only true or false.

When users select the choice of checking full time employee from work time, it means that they want to list all the work time through the year. The screen is shown in figure C.1. The users enter the required employee code and click the check button and then the results will appear on the screen.

Overtime:

Whenever users need to do overtime or are asked to do overtime, they have to ask for the overtime form from Personnel Department. They have to fill in the detail and get approval from their boss and then return to Personnel Department.

The screenshot shows a window titled "Overtime Request". At the top, there is a logo and the text "บริษัทหลักทรัพย์ แอดกินสัน จำกัด (มหาชน)" and "Adkinson Securities Public Company Limited". Below this, a box contains the title "OVERTIME REQUEST". Inside this box, there are input fields for "Employee Code" (containing "00001"), "O.T. Date" (containing "7/1/99"), "Time In" (containing "8:30:00"), and "Time Out" (containing "19:00:00"). There is also a "Calculate" button. To the right of the box, there is a vertical list of buttons: "Search", "Edit", "Add", "Delete", and "Exit". At the bottom of the box, there are four small navigation buttons: left arrow, right arrow, double left arrow, and double right arrow.

Figure G.12. Overtime Request Screen.

After that the personnel staff will select the overtime request choice on overtime menu. All the details on overtime request form will be keyed in to the system. The overtime request screen is in figure G.12.

บริษัทหลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

CHECK OVERTIME REQUEST

Enter Employee Code : 00001

| OTDate | OT_TimeIn | OT_TimeOut |
|--------|-----------|------------|
| 1/1/99 | 7:00:00 | 17:30:00 |
| 6/1/99 | 8:30:00 | 17:00:00 |
| 7/1/99 | 8:30:00 | 19:00:00 |

Buttons: Check, Clear, Print, Exit

Figure G.13. Check Overtime Request Screen.

From figure G.12, you can see that there is one field called calculation. It means that when the users key in the data, the default of this field is false. When the time to compute salary is reached, the information are used to calculate employees' salary and then the value of the calculation will become false.

When the users want to check all the overtime requested by any specific employee on any day, they can do this by selecting check the overtime request choice. The screen of checking overtime request is shown in figure G.13.

The way to use this program is just entering the employee code and pressing the check button. All the days that employees had asked for doing overtime will be listed on the screen. The data appeared are about the days asked for doing overtime, the time in and the time out.

Sometimes, the users want to ensure whether the employees had done overtime corresponding to the overtime requested or not. They can check it easily by selecting

the check real overtime requested choice on overtime menu.

Then, the screen in figure C.2 will appear. The users just enter the employee code and the requested overtime date and click the check button. The outcome will be shown on the screen.

Type of overtime

The overtime can be classified into three levels as follows:

1. Overtime 1: It means that when employees ask for doing overtime on the normal work days after work time which is over 6:00 P.M., the employees will get 1.5 extra time for their salary.
2. Overtime 2: It means that when employees ask for doing overtime on Saturday or Sunday, the employees will get 2 extra time for their salary.
3. Overtime 3: It means that when employees ask for doing overtime on company's holidays, the employees will get 3 extra time for their salary.

All the employees' overtime hours, which include three overtime levels can be checked by selecting check all overtime choice on overtime menu. The screen is shown in figure G.14 will appear.

Excuse:

The activities that the employees have to do before making any excuse is to ask the excuse form from Personnel Department. After that, they have to fill in the details and ask for approval from their bosses and then return back to the Personnel Department.

When the employees return the excuse form back to the Personnel Department, the personnel staff must key in the information on the form into the system through the screen called excuse request. The screen of excuse request is shown in figure G.15.

The number of absent day can be updated through the screen called update amount excuse. When personnel staffs make mistake concerning in employees' absence information, they can correct them via this screen.

บริษัทหลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

CHECK ALL OVERTIME

Enter Employee Code : 00001 Select Month : January

O.T. 1 O.T. 2 O.T. 3

100 Hours 24 Hours 1 Hours

Total Overtime 125 Hours

Check Clear

Exit Print

Figure G.14. Check All Overtime Screen.

Before employees can make any absence, they have to conform to the condition said that you cannot make any type of absence over the limit of that excuse. So, the personnel staffs can check the number of absent days and the days left by selecting the check total amount excuse choice excuse menu. The screen can be seen in figure C.3.

The users just enter the employee code and select the type of absence code from the listed box and click the check button. The number of absence in days and hour, the absence limit, and the available time as employee can be absent will appear on the screen.

The absence limit can be maintained by selecting absence on the payroll menu. The type of absence together with the limit days will be ready for updating. This is used when the company changes the company's policy.

ABAC
GRADUATE SCHOOL LIBRARY

Excuse Request

บริษัทหลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

EXCUSE REQUEST

Serial No. Employee Code

Excuse Date Absence Code

Reason

Start Date End Date

Period : Day(s) Hour(s)

Contact : Place

Phone

Delegate

Search
Edit
Add
Delete
Exit
Print

Figure G.15. Excuse Request Screen.

Behavior:

The behaviors of employees are recorded into the system through time recorder. The information like coming late, leaving early and forgetting to punch in/out will be entered in to the system during generating the work time. However, the information can be changed by selecting behavior profile on behavior menu. This screen is shown in figure G.16.

The behavior of the employees can be checked in terms of month or year. If the users want to check in terms of year, they have to select check number (year) choice on the behavior menu or select check number (month). The screen of check number of behavior by month is shown in figure C.4.

Income/Deduction:

Employees can earn more income besides the salary and overtime. The company has a policy to give some special income to employees, which depends on their status and capabilities. The special incomes of the company are listed as follows:

Behavior Profiles

บริษัทหลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

Employee Code: Month:

| OVERTIME | | Late Day | |
|----------|--|--|---------------------------------------|
| O.T. 1 | <input type="text" value="100"/> Hours | <input type="text" value="20"/> Day(s) | |
| O.T. 2 | <input type="text" value="24"/> Hours | Absent Day | <input type="text" value="0"/> Day(s) |
| O.T. 3 | <input type="text" value="1"/> Hours | Early Leave Day | <input type="text" value="1"/> Day(s) |
| | | Forget Punching Day | <input type="text" value="0"/> Day(s) |

Search Edit Add Delete Exit Print

Figure G.16. Behavior Profiles Screen.

1. Bonus
2. Pay in Lieu
3. Incentive/Commission
4. Allowance
5. Others

The employees' salary and special income are recorded by using the income of employee screen as shown in figure G.17. Anyway, all the employees' records concerning about their income can be checked by using the program checking income as shown in figure G.18.

The users enter the employee code and click on the check button. All the income information will appear on the screen in the form of a table.

Some employees may have special incomes and deductions. This is also the company's policy to deduct some amount of their salary.

Income of Employee

บริษัทหลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

INCOME OF EMPLOYEE

Employee Code On Month

Bonus Overtime/Allowance

Pay In Lieu Incentive/Commission

Others

Search
Edit
Add
Delete
Exit

Print


Figure G.17. Income of Employee Screen.

The deduction of employees are listed as follows:

1. Income tax
2. Social security *
3. Social club
4. Car loan
5. Car park
6. Money in advance
7. Others

The employees' deductions are recorded by using the deduction of employee screen as shown in figure G.19. Anyway, all the employees' records concerning about their deduction can be checked by using the program checking deduction as shown in figure G.20. The users enter the employee code and click on the check button. All the deducted information will appear on the screen in the form of a table.

Check Amount of Income

 บริษัทหลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

CHECK AMOUNT OF INCOME

Enter Employee Code:

| OrdIncome | Month | Bonus | OT Allowance | Incentive | Comm | PayIn Lieu | Others |
|-----------|-------|-------|--------------|-----------|------|------------|--------|
| 3 | | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | | 123 | 0 | 0 | 0 | 0 | 0 |
| 5 | | 0 | 0 | 0 | 0 | 0 | 0 |

Figure G.18. Check Amount of Income Screen.

Salary:

The salary of employees will be calculated at the end of the month and transferred to the employees' bank account on 25th of every month. If that day is a Saturday or a Sunday or the company's holidays, the salary will be transferred before that week day or holidays. The work time, overtime, income, deduction and the behavior of employees will be used in computing employees' salary.

The selection for users on salary menu are to list all employees' salary, check all employees' salary, check specific employee's salary, and salary reports. In salary reports, there are some more choices, which are printing all employees, printing specific employees and printing payroll slip.

When the users want to list all the employees' salary on the screen, they should select a list of all employee's salary choice on the salary menu. The screen in figure C.5 will appear on the screen.

บริษัทหลักทรัพย์ แอดคินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

DEDUCTION OF EMPLOYEE

Employee Code: 00001 On Month: 1

Income Tax: ฿0.00 Car Loan: ฿0.00

Social Security: ฿0.00 Car Park: ฿0.00

Social Club: ฿0.00 Advance: ฿0.00

Others: ฿0.00

Buttons: Search, Edit, Add, Delete, Exit

Print

| | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|

Figure G.19. Deduction of Employee Screen.

บริษัทหลักทรัพย์ แอดคินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

CHECK AMOUNT OF DEDUCTION

Enter Employee Code: 00001

| OnDeductMonth | IncomeTax | CarLoan | CarPark | SocialClub | Advance | So |
|---------------|-----------|---------|---------|------------|---------|----|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 |

Buttons: Check, Clear, Print, Exit

Figure G.20. Check Amount of Deduction Screen.

The users have to select the desired month on the listed box and click the check button. Then, all employee codes and their net income will be listed in the form of a table as you see in figure C.5.

บริษัทหลักทรัพย์ แอดกินสัน จำกัด (มหาชน)
Adkinson Securities Public Company Limited

CHECK ALL EMPLOYEES' SALARY (ALL MONTHS)

Enter Employee Code : 00001

| OnIncomeMonth | NetIncome |
|---------------|-----------|
| 1 | 86196.22 |
| 2 | 86210.12 |
| 3 | 0 |
| 4 | 44473.01 |
| 5 | 0 |

Buttons: Check, Clear, Print, Exit

Figure G.21. Check All Employees' Salary (All Months) Screen.

The amount of employees' salary of any specific employee can be checked for every month. The users click the check all employees' salary choice on the salary menu. The screen in figure G.21 will appear on the screen.

The users key in the employee code and click the check button. Then the salary on each month will appear on the screen in the form of a listed table.

Anyway, there is still one option for users to see the details of employees' income and deduction. When the users need to do that, they have to select the check specific employee's salary choice on the salary menu. The screen in figure C.6 will appear on the screen.

Users have to enter the employee code and select the required month on the listed box. After clicking the check button, the information of employees' income and deduction will show up.

Payroll reports:

The reports will be printed on the demand of the users. The users can select the type of reports from the choices provided under the payroll reports menu.

Employee Menu

When the users need to do any activities concerning about employees' profiles, they have to select this menu. The screen in figure G.22 will be shown when users select the employee selection on the menu bar. The pull-down menu will show other choices as shown in figure G.22.

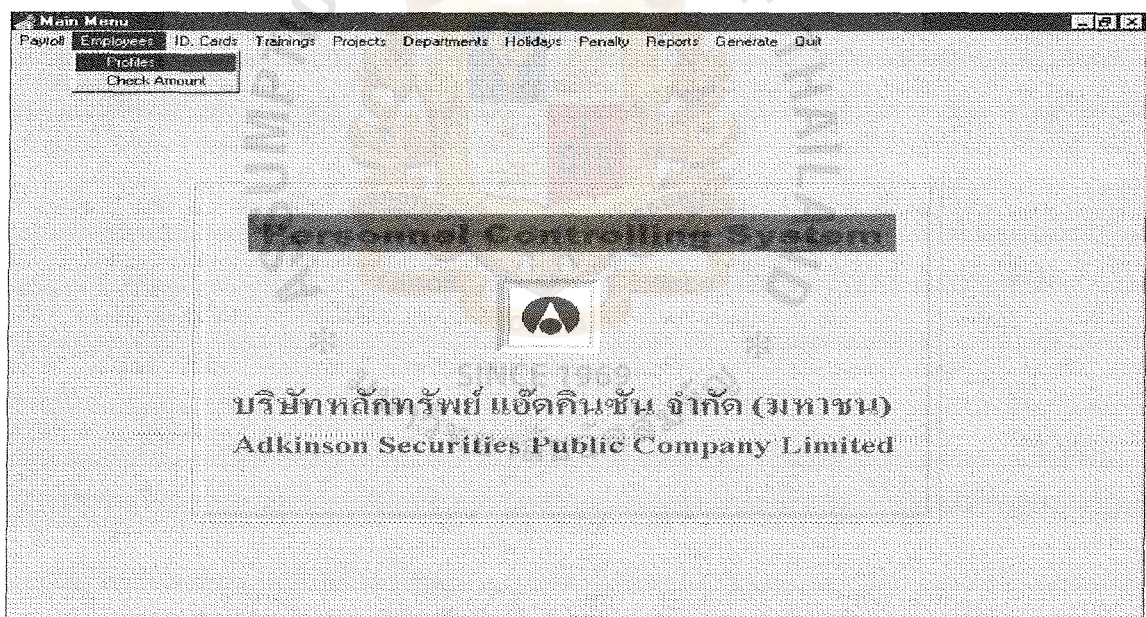


Figure G.22. Employee Menu.

The selections provided on the pull-down menu are profiles and check amount.

Profiles:

This program is used when there are new employees entering the company. The information on the application forms will be keyed into the system by personnel

staffs. When users select profiles choice on employees menu, the screen shown in figure C.7 will appear on the screen.

Check amount:

This program is called when the Personnel Department wants to check the amount of employees required for the company on each department. This screen is shown in figure C.8. The users need only select the department and click the check button. The information about the number of employees needed and the real number available in the department will be displayed on the screen.

ID. Cards

After new employees are recruited, the Personnel Department has to make their employees' identification cards. Then, the ID.Card choice on menu bar is selected. The choices inside appear on the screen as shown in figure G.23.



Figure G.23. ID. Cards Menu.

In the ID. Cards menu, there are two more choices to select which are profiles and checking status.

Profiles:

After new employees are recruited, the Personnel Department has to make their identification card, which are done by using magnetic stripe maker. At the back of employees' identification card, there is a magnetic stripe that record about employees' information. The magnetic stripe is divided into three tracks. The first track contains nothing. The second track contains the employees' code. The third track contains the code encrypted for opening the doors.

The screen that is used to record all the employees' ID card is shown in figure G.24. The information that has to be recorded is the issue date, employee code, identification card number, track 2, and track3

There is one program to check the status of the employees whether they have received the employees' ID card or not by selecting the check status choice on the ID card menu. The screen of the program is shown in figure C.9.

The users enter the employee code and click the check button on the screen. The information displayed on the screen are the ID. Card No., issue date, and the status. The status will show whether new employees or old employees.

New employees means that the Personnel Department still has not made the employees' ID. Card for the employee code. If the status shows old employee, it means that the Personnel Department has already made the employee's ID. Card. The employee has to request for an identification card again. At this time, they have to pay some fees. The record of losing ID. Card will be recorded in the penalty profile.

บริษัทหลักทรัพย์ แอดดิงสัน จำกัด (มหาชน)
Addinson Securities Public Company Limited

ID CARD'S PROFILES

Issue Date: 10/3/95

ID Card No.: 00001 Employee Code: 00001

Track1:

Track2: 9500001

Track3:

Search
Edit
Add
Delete
Exit

Figure G.24. ID Card's Profiles.

Training

The company has policies to manage the training course for all employees. All the training courses' information will be recorded and submitted to the employees who want to attend that training course or the company manages the training course for them. The screen of training menu is shown in figure G.25.

Profiles:

All the information of training course will be recorded into the system through screen shown in figure C.10. The descriptions recorded are training no., topic, place, start date, end date, start time, end time, whom arranged by, instructors, and the person who requests this training course.

Training and Employees:

When any employees want to attend the training course, they have to inform the Personnel Department. The names of those employees will be keyed in through a screen shown in figure G.26.



Figure G.25. Training Menu.

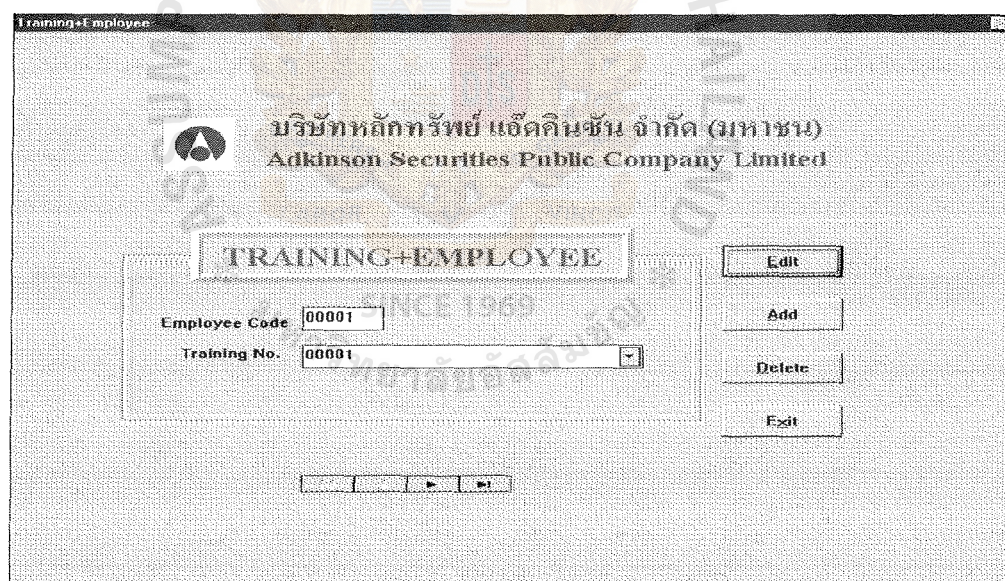


Figure G.26. Training and Employee Screen.

Find trainees:

The program, for personnel staffs, to show who attended any training course is shown in figure C.11. The users choose the training number from the selection. While

the user selects the training number, the training topic will appear besides the training number field. At the bottom of the selection, there will be a table to list down the employee code and name.

Projects

Frequently, the company will arrange the projects. The participants are needed in the project. The participants will be selected by the project manager. Mostly, the project managers will select the employees who have some basic knowledge on that kind of project. Those can be found on the program in this menu.

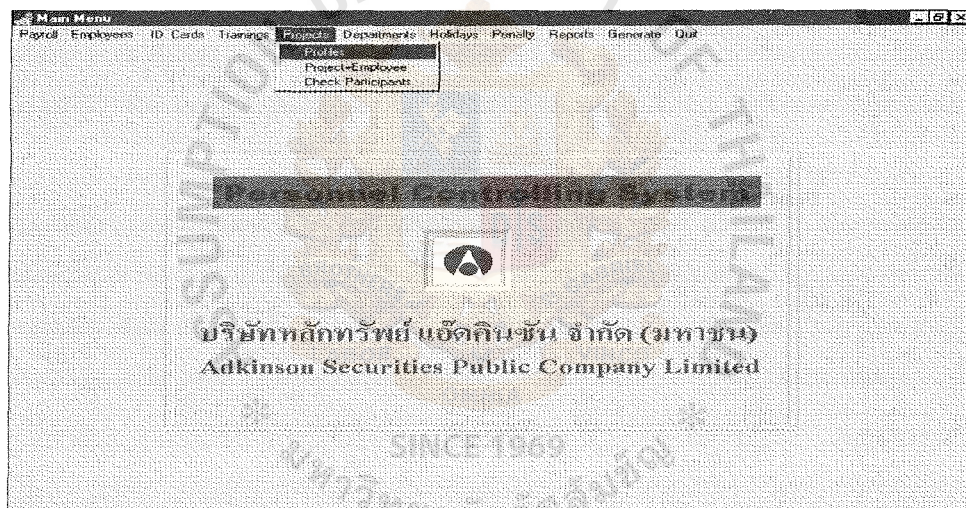


Figure G.27. Projects Menu.

Profiles:

The description of the project will be recorded into the system through the program shown in figure C.12. The description recorded are project number, project name, start date, end date and the project manager. When the descriptions are recorded into the system, the personnel staffs will print all the details and give to the prospective participants. If they are interested in joining in the project, they have to inform the Personnel Department.

Project and Employees:

When the employees are interested in the project and they want to join, the personnel staffs have to record the name of that employee into the system through the screen shown in figure G.28.

Check participants in the project:

When the list of participants in any project is needed to be checked, the program called check participants in the project are selected on the project menu. The screen of that program is shown in figure C.13.

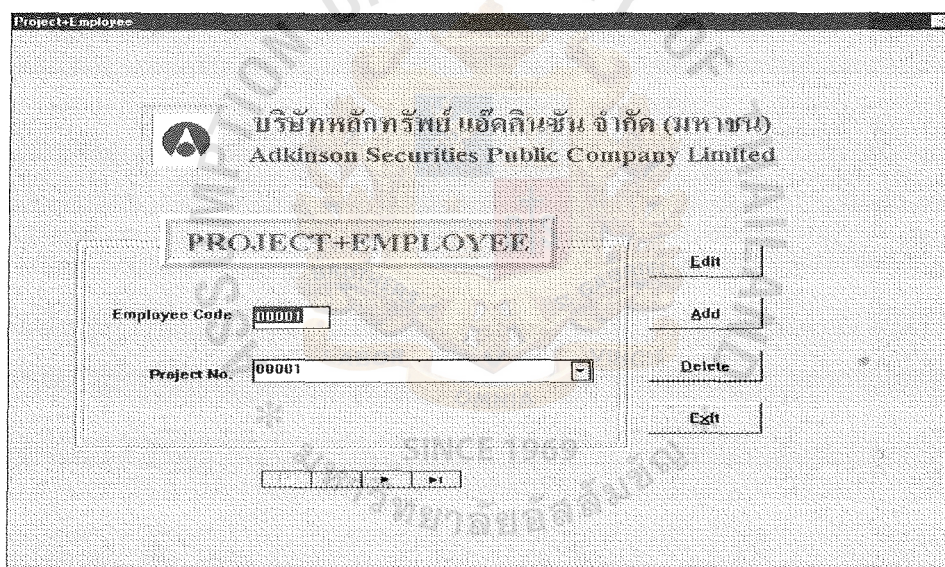


Figure G.28. Project and Employee Screen.

Department

The department screen which is shown in figure G.29 is used to record the department code and the name together with the number of employees working in that department and the code of the manager is also recorded. This screen is seldom used by personnel staff. It will be used when the company wants to change the company's structure or the number of employees need to be updated to the business growth.

Figure G.29. Department Screen.

Penalty

The penalty will be used when any employees have done any mistake such as losing employees' identification card, destroying something intentionally, etc. All of the punishment will be recorded in to the system. The records in this program will be useful for top management to promote the employees. The penalty menu is shown in figure G.30.

Profiles:

The program shown in figure C.15 will be used to record the penalty of employees. The information recorded is penalty number, employee code, the penalty date. This screen will appear when the user selects profile choice on the penalty menu.

Check penalty of employee:

The screen in figure G.31 will appear on the screen when users select check penalty of employee choice on the penalty menu. The users just enter the employee

code and click check button and then the information concerning the employees' penalty will be shown in the form of a table.

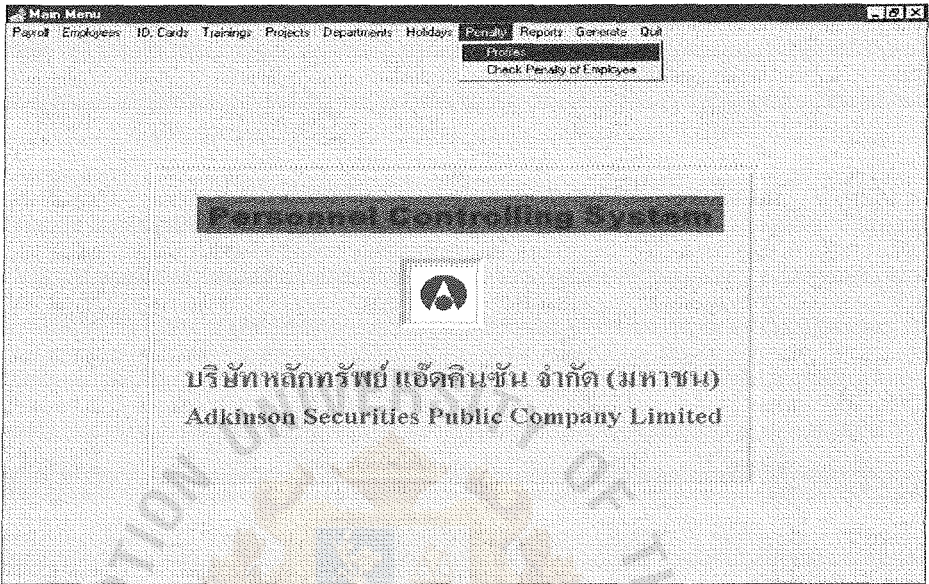


Figure G.30. Penalty Menu.

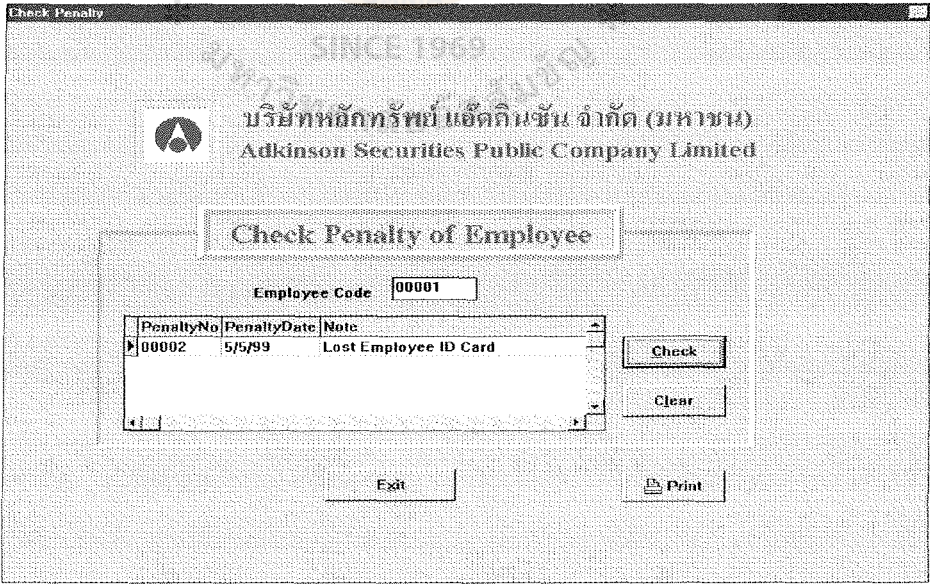


Figure G.31. Check Penalty of Employee.

Holidays

The screen shown in figure C.14 is called company holidays. The personnel staff needs to update this once a year, mostly at the end of the year. It shows the details of the company's holidays in a year. The company's holidays are used in computing employees' salary as well.

Reports

The report menu shows the type of reports that personnel staffs can select to print from the reports menu. The type of report can be printed are listed below:

1. Employees
2. Training
3. Project
4. Department
5. Absence
6. Holidays

When users select any choices on the menu bar, there are more choices appearing on the pull-down menu. Each type of reports still has sub-choices for that. The example of those choices are shown in figure G.32.

From figure G.32, the training on pull-down menu is selected, the choices appeared are all training program, specific training program's trainees, and specific training program. All the choices on report menu do not show in the user manual, the users can see them on the program.

Generate

This program is required when the users want to receive the work time of employees through time recorder. This program will convert the text file received from time recorder into suitable file format for Personnel Controlling System.

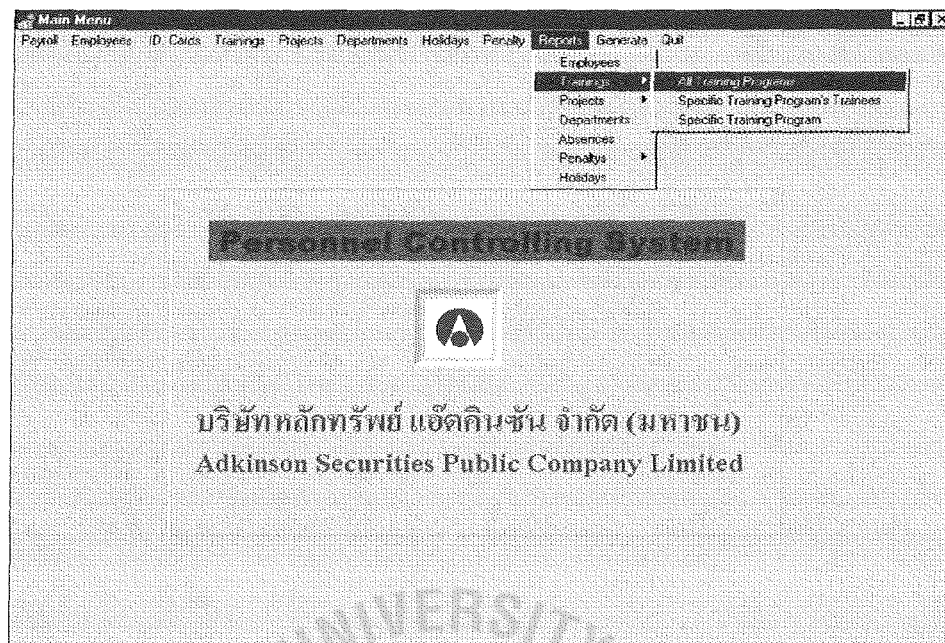


Figure G.32. Report Menu for Training.

Quit

This is used when the users want to exit the system.

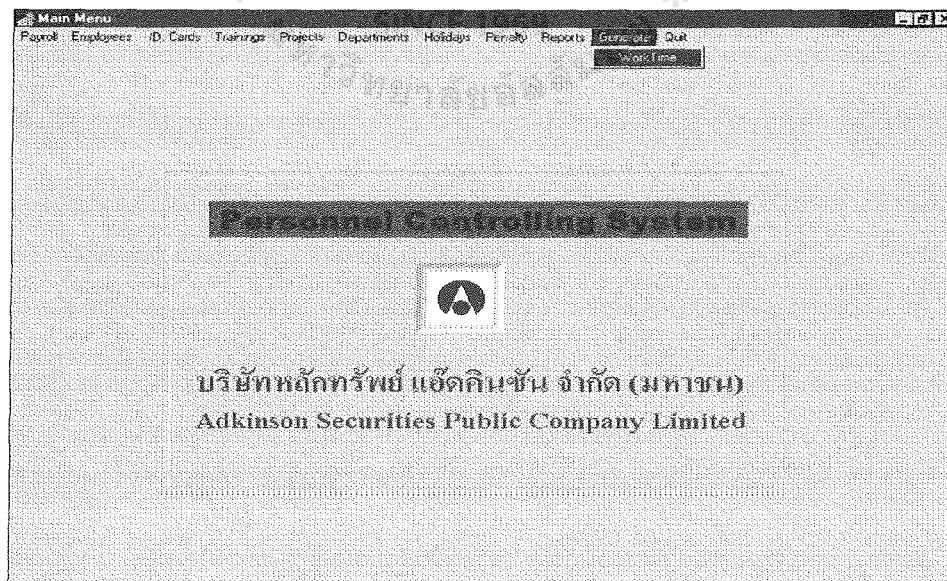


Figure G.33. Generate Menu.

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