



Practical Development of Information System in Business Context:
Payroll System for Tanalarp Co., Ltd.

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Submitted in Partial Fulfillment
of the Course BC 4500 280 Hour Training Program
Bachelor's Degree of Business Administration
in Business Computer Program
Assumption University

December 2002

Project Name: Payroll System for Tanalarp Co.,Ltd.

Intern: Ms.Passaporn P.
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Advisor: A.Jitti Thongmuang

Academic Year: 2002

The Department of Business Computer, ABAC School of Management has approved the aforementioned student's BC 4500 280-Hour Training Project, which includes complete documentation and program as a partial fulfillment of the requirements for the Bachelor's Degree of Business Administration in Business Computer

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BC4500 280-HOUR TRAINING PROGRAM WRITE-UP

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I. INTRODUCTION

1.1 Background of The Organization

Tanalarp Company was established in 1996 as a vegetable distributor. The company is located on 134/14 Soi Jaroenjai Sukhumvit 71 North Klongton Wattana District Bangkok 10110.

Tanalarp Company composes of 4 main departments which are Account and Finance Department, Marketing Department, Expertise and Control Department, and Human Resources Management Department. The Company's main product is mushroom. The company has been very well known for people around the area where it is located. Most of the farm's products are sold to the well known superstores and supermarkets, namely, Tesco Lotus, Tops Supermarket, Macro and so forth. However, the company performs task manually, therefore most of the works run slow, and this may cause the ineffective in work structure. For example, considered Human Resources Department currently system which have been managed manually. This may cause the inaccuracy and time consuming works.

To solve the problem, the computerized payroll system is recommended. This system would enhance the company to work more accurate and effective in systematic fashions.

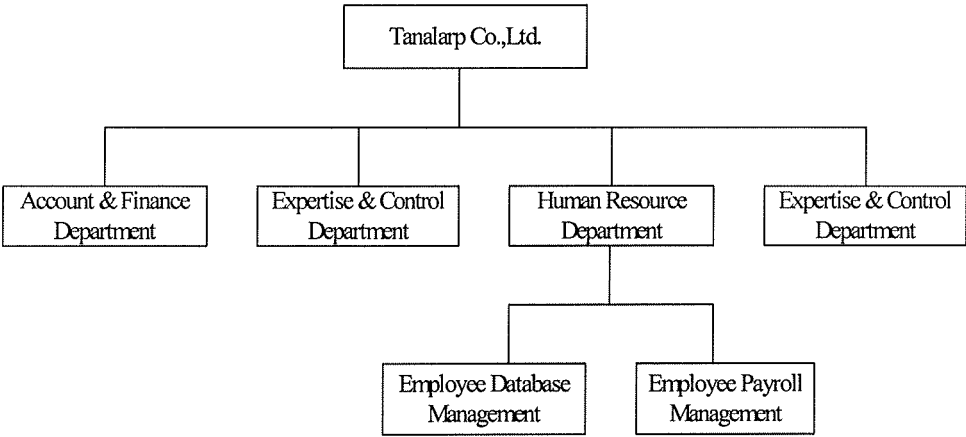


Figure 1-1 Organization Chart

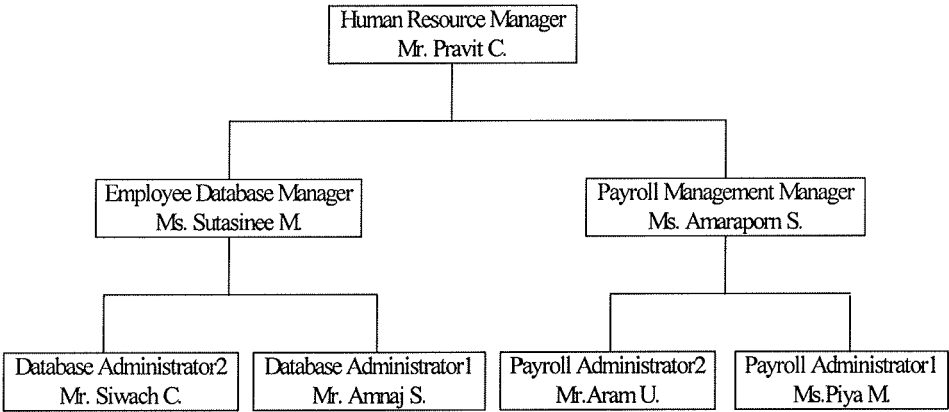


Figure 1-2 Department Chart

1.2 OBJECTIVES OF THE SYSTEM

The current processes of the company was done manually without the use of computerize system. Therefore, we will introduce the computer software application to help them in better managing and controlling payroll system and human resources system to increase efficiency of the company's performance.

The objectives of this project are as follows:

- (1) The computerized system will be applied in order to reduce errors which will occur from manual operation system, which is the old existing system.
- (2) Easier and better managing and controlling in payroll system and resource system.
- (3) The company can improve its accuracy record keeping.
- (4) The new system can prevent and avoid the problem of lost records.
- (5) The existing database that was written on papers will be managed by the computerized system so that the company will work and run its business with more efficient and effective performances.
- (6) The company will gain a faster processing transaction speed and better controlling daily updated database.
- (7) Adopting the new system would make it easier and less time consuming for the company to search employee's databases.
- (8) The New computerize system would enable Human Resources Management easier in such a way that some employer's database could be tracked.
- (9) To analyze the causes of problems of the existing system.

- (10) To define user requirements that will support and solve current problems.
- (11) To improve tasks performance by reducing operational time and eliminating errors.
- (12) To make systematic documentation for future reference.
- (13) To implement the system in the real working context.

1.3 SCOPE OF THE SYSTEM

The following are the scopes of the proposed systems:

- (1) The systems will mainly concerns with human resources management and payroll system.
- (2) The system allows users to build employee profile and that enable registering function.
- (3) Employer profile includes their information pictures, their salary basis, position, department, personal data and so forth.
- (4) The system should be able to edit all kinds of necessary function such as salary basis, position and fringe benefits.
- (5) The system should be able to check for late and absents of employees.
- (6) The system should be showing the employee status whether they're on probation or have passed the probation or that have been fired.
- (7) Deleted function should be located in appropriate fashions.
- (8) The whole system should be able to work with the barcode and magnetic card.
- (9) Payroll calculation function is included according to employee time works.
- (10) Over Time works made by employee should be able to be calculated by the system properly in reasonable fashion.

- (11) The system should be able to analyze work condition made by employee and that should be able to summarize them.
- (12) The system should alert user of over limit late and absent.
- (13) The system should be able to generate Salary Slip to employee.
- (14) The system should be able to generate Work data report.
- (15) The system should be able to generate Working ID card for certain employee.

1.4 PROJECT PLAN

As to improve the existing system, the new system was developed. The system was divided into four main steps starts from Analyzing the Existing System, Preliminary Investigation, Analyzes and Design of the Proposed System, then Implementation of the Proposed System. Each of the steps takes approximately months and as four months altogether. Starts from the Analyzing the Existing System, starts from the beginning of August till the end of the month, four sub steps was allocated which are study the existing system, Identify the existing problem, Studying existing context and data flow diagram. Each of this sub steps took approximately a week. Preliminary Investigation took approximately three weeks, starts from the first week of September till the third week, three sub steps was allocated, namely are, Define the Objectives and Scope, determine Hardware Requirements, determine the Software Requirements. Third Step, Analysis and Design of the Proposed System, took approximately a month starts from the fourth week of September till the fourth week in October. And six sub steps was included which are Entity-Relationship Diagram, Database Design, Data Flow Diagram, Functional Description, Interface Design, and Report Design. And Last step is implementation of the proposed system, these steps would take approximately four to five weeks, the sub steps are Coding, Testing and

Documentation. However Coding takes 4 weeks having the testing process at the same time, and Documentation was implemented from the beginning until the completion of the whole. Figure 1-3 Project Plan for Tanalarp Payroll system identify the time line for each step.

No.	Task Name	August				September				October				November			
	I. Analysis of The Existing System	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Study the Existing System																
2	Identify the Existing Problems																
3	Existing Context Diagram																
4	Existing Data Flow Diagram																
	II. Preliminary Investigation																
5	Define the objectives and scope																
6	Hardware Requirements																
7	Software Requirements																
	III. Analysis and Design of the Proposed System																
8	Entity-Relationship Diagram																
9	Database Design																
10	Data Flow Diagram																
11	Functional Description																
12	Interface Design																
13	Report Design																
	IV. Implementation of the Proposed System																
14	Coding																
15	Testing																
16	Documentation																

Figure 1-3 Project Plan for Tanalarp Co., Ltd. Payroll System

II. THE EXISTING SYSTEM

2.1 Background of the Existing System

The company current system is operate manually as a consequence, every data are paper based only. Time in and out worked by all employees are recorded by a manager at every end of each day, the manager will be collected the employee card then manually recorded on the paper and key in data onto the computer using excel. Moreover, all of the employee’s information is kept in the file cabinet. The following figure shows the existing system the company is using. Figure 2-1 shows Context Diagram of Existing System.

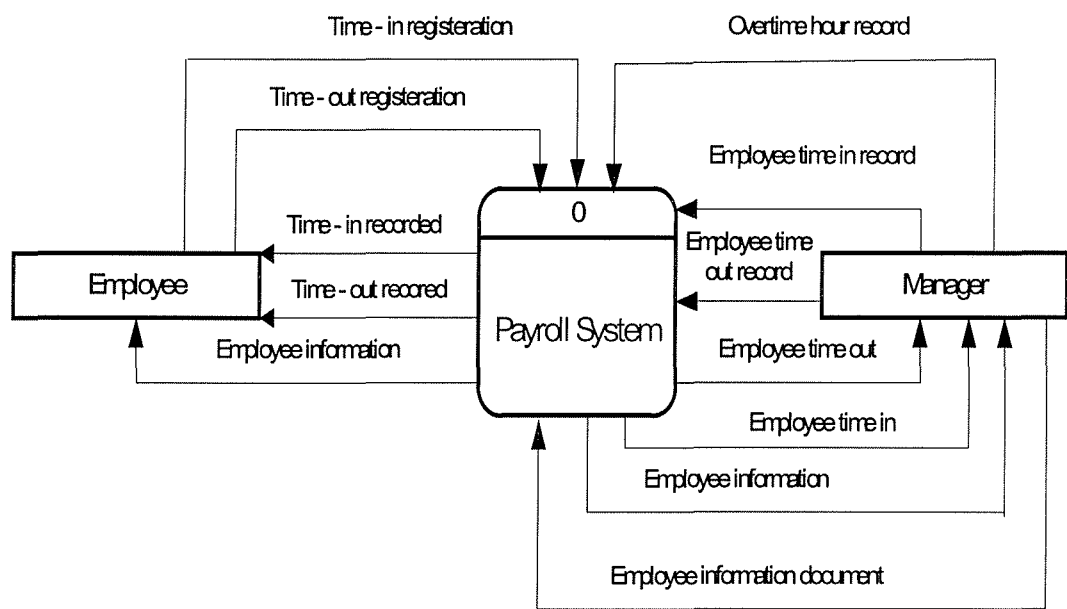


Figure 2-1 Context Diagram of Existing System

2.2 Problem Definition

(1) Inefficient management control

Managing the Human Resource and Payroll System is time consuming tasks as it is done manually. The company has been encountered with the problem of employee database filing and allocating payment to them. This problem is caused by manually recording both employee database and their working performance and condition, namely Over Time Hours, Sick Leaves, Personal Leaves, and Day Late and so on and so forth. Moreover, Problem of inefficient employee work data tracking which will result in an inefficient payroll management and employee database record keeping.

(2) Difficulties in Retrieving Information

As the existing system operate in manually fashion, problem of retrieving information seems to be an inevitably sequence. These to be retrieved information may be information concerning both human resources management and payroll management function. For example, in human resources management function, problem of retrieving seems to be persisted when employee database administrator wants to make some adjustment, the adjustment concerning employee's description or their work data. In Payroll system, the problem of retrieving happens when payroll administrators wants to make some adjustment over day late, sick leaves ,personal leaves and OT in order to calculate salary for each employee in each month.

(3) Time Consuming

The problem of time consuming seems to be the most major one since the Tanalarp Co.,LTD existing system are wholly done manually. Therefore both Human Resources Management and Payroll System Management would take

much time processing. For Human Resources Management System, Problem exists when user wants view profile, retrieve data for edition and adjustment and so on. For Payroll system , time consuming take place when user acquired and calculate additional expense to employee due to their over time works done and subtraction of day when they are absents and so forth. Furthermore using the existing system, considered paper based, user might use much more time to process both the said system.

III. THE PROPOSED SYSTEM

3.1 System Specification

(1) Hardware Requirements

Table 3-1 Hardware Requirements

HARDWARE	SPECIFICATION
CPU	Pentium or Higher
RAM	32 MB.(64 or more is recommended)
Hard Disk	Minimum 350 MB.

The system requires this hardware specification, CPU of Pentium or Compatible, RAM minimum of 32 MB. And Hard disk Minimum of 350 MB. Because it would generate best performance in both speed and capacity, or the system would run with better speed on higher specification, but specification below this specification would cause slower performance. For Hard disk minimum of 350 MB. Would also cause faster performance as a consequence.

(2) Software Requirements

Table 3-2 Software Requirements

SOFTWARE	SPECIFICATION
Operating System	Microsoft Windows 98
Application	1. Microsoft Office 2000 2. Visual Basic Version 6.0 3. McAfee Anti Virus 4. Crystal Report Version 8.0

The System Require Microsoft Windows 98 or Higher so that it would generate faster and better performance to both user and system developer.

3.2 System Design

(3) Data Flow Diagram

Data flow diagram show how data moves through an information system but does not show program logic or processing steps. DFD represent a logical model that shows what the system does not how do it. The distinction is important because focusing on implementation issue at the point would restrict your search for the most effective system design (Gary B. Shelly & Thomas J. Cashman 2001:4.2)

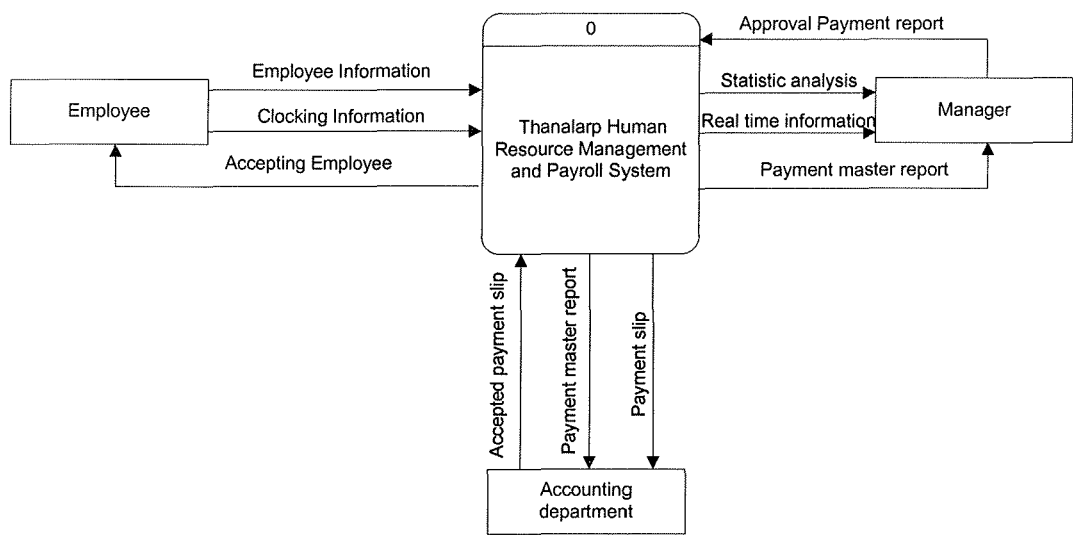


Figure 3-1 Context Diagram

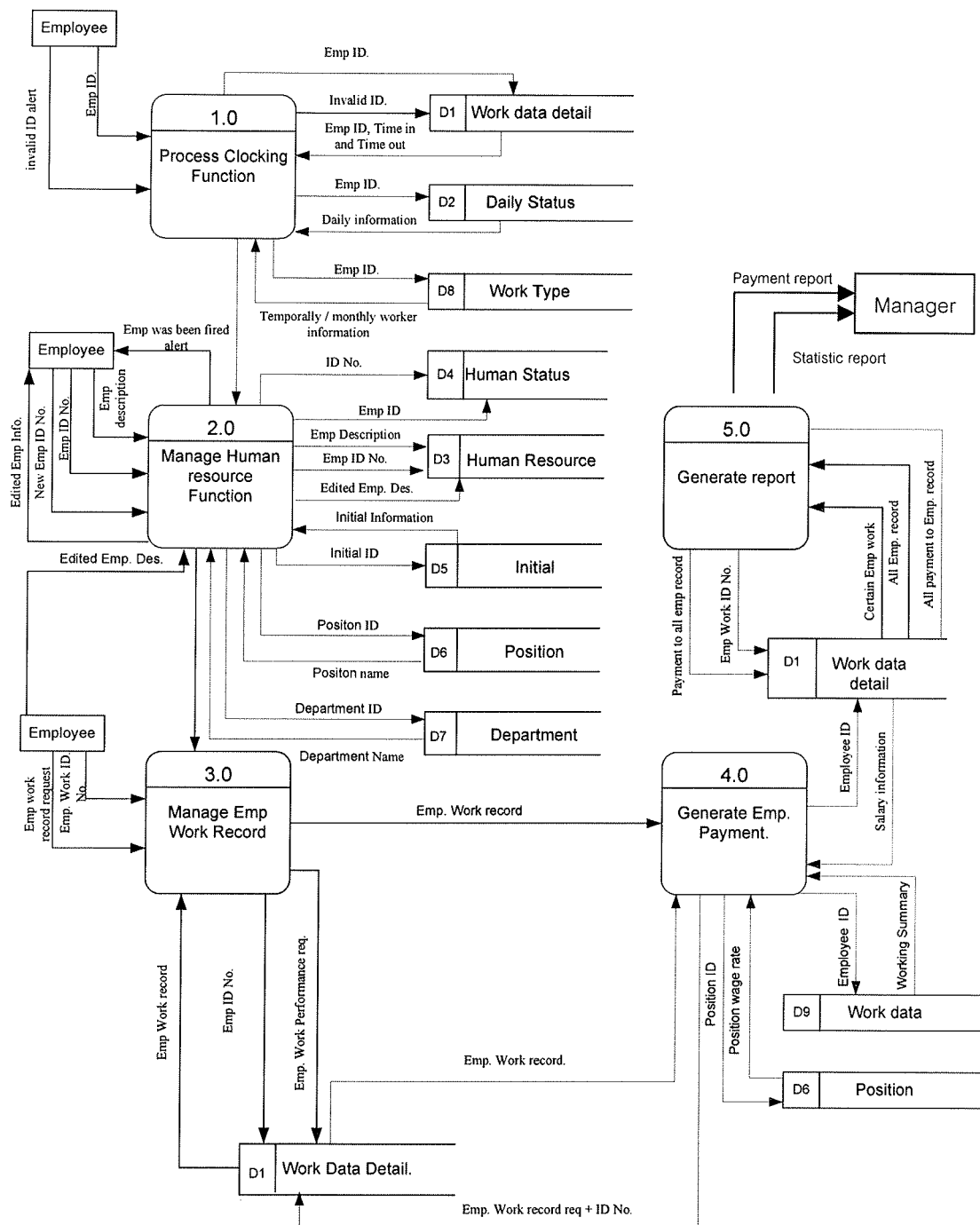


Figure 3-2 Data Flow Diagram – Level 0

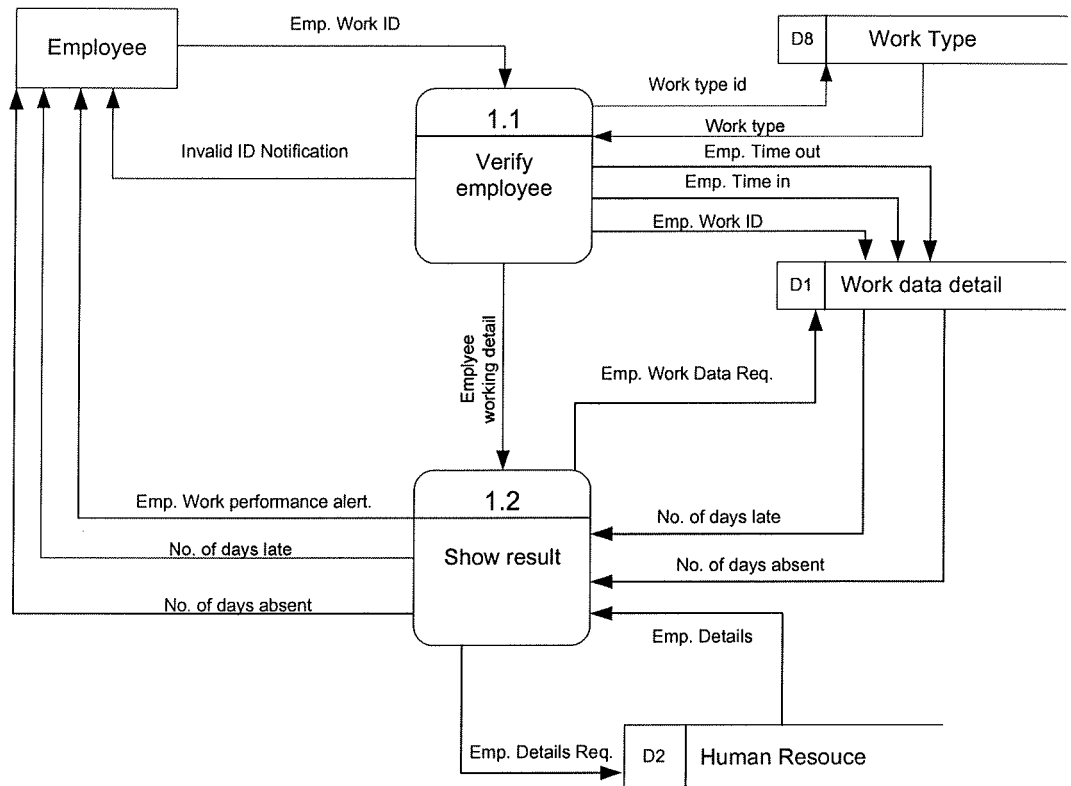


Figure 3-3 Data Flow Diagram – Level 1 for Process 1.0

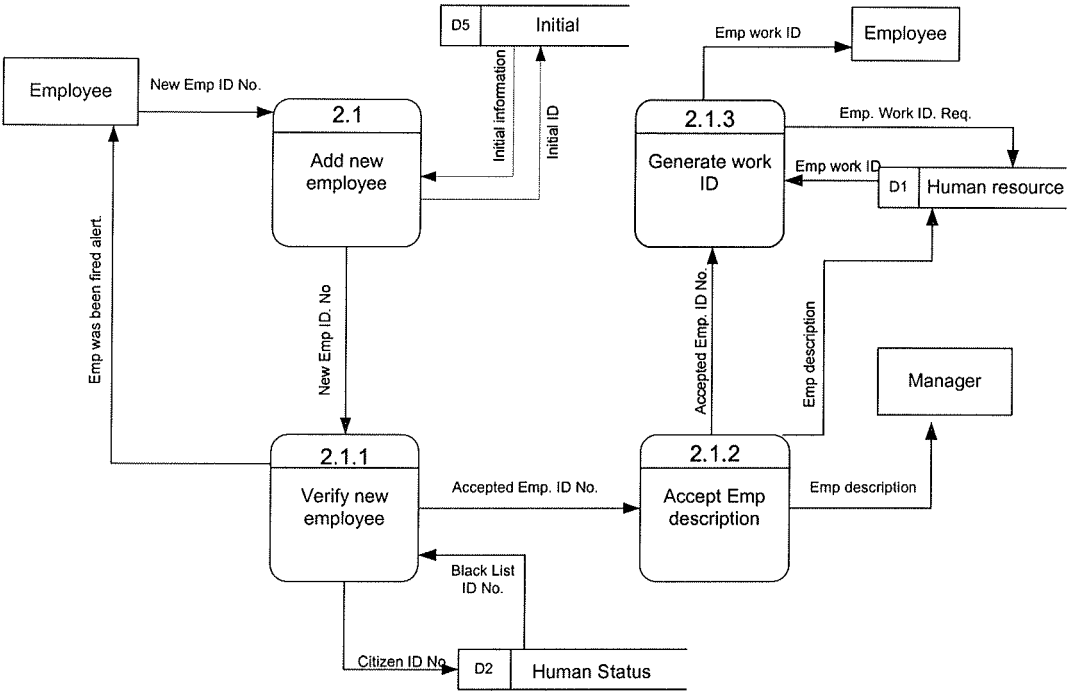


Figure 3-4 Data Flow Diagram – Level 1 for Process 2.0

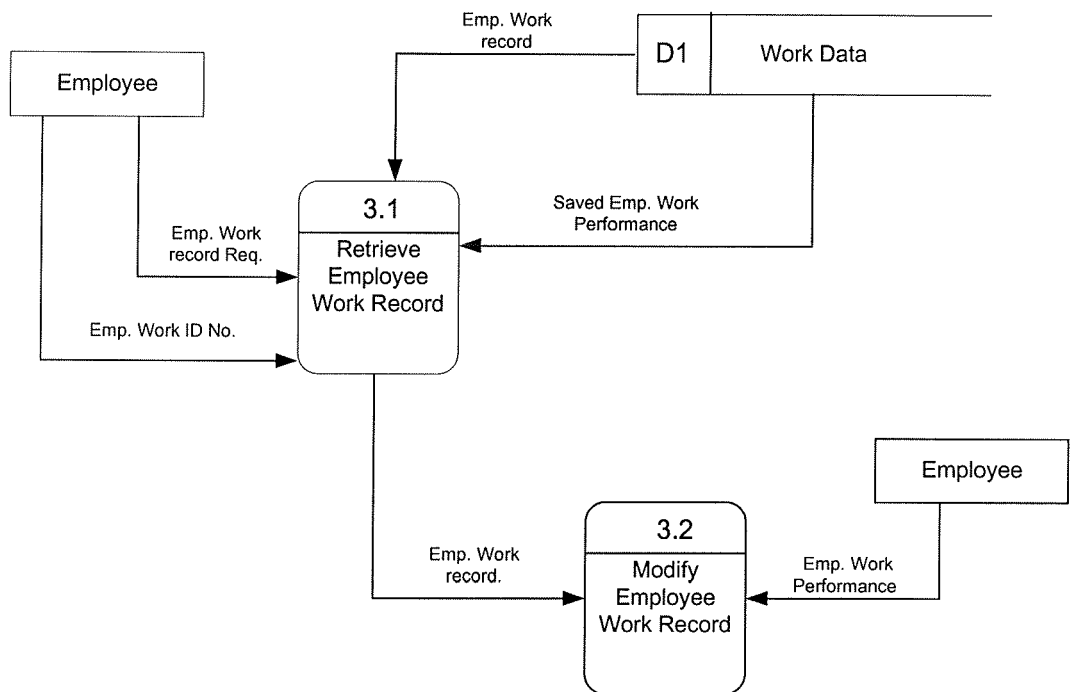


Figure 3-5 Data Flow Diagram – Level 1 for Process 3.0

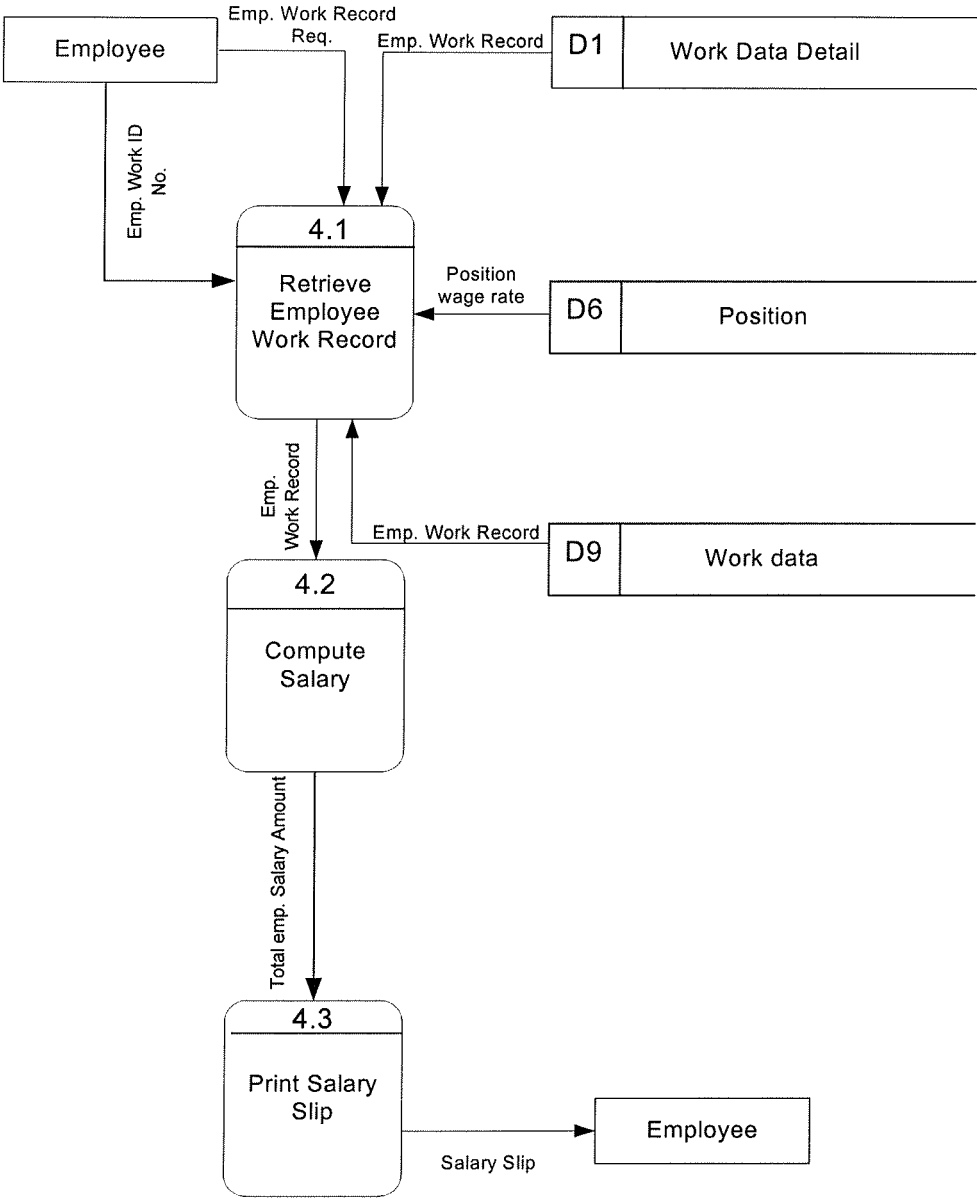


Figure 3-6 Data Flow Diagram – Level 1 for Process 4.0

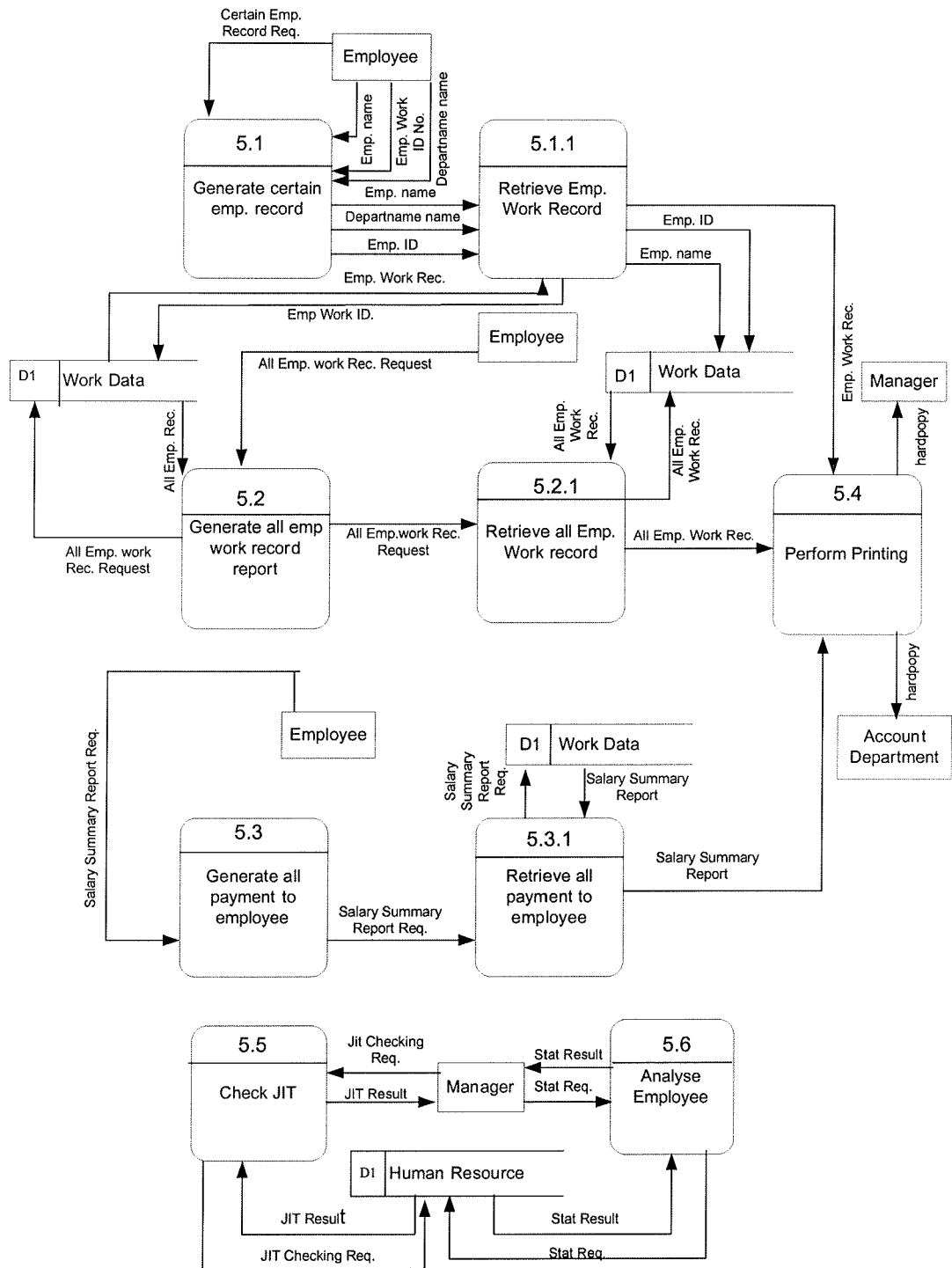


Figure 3-7 Data Flow Diagram - Level 1 for Process 5.0

(3) Entity – Relationship Diagram

Entities and relationships in the E-R diagram correspond to types and relations in Simple Logic. The semantic of an E-R diagram correspond to Simple Logic relation declaration (except relationship cardinality that is difficult to express in Simple Logic).

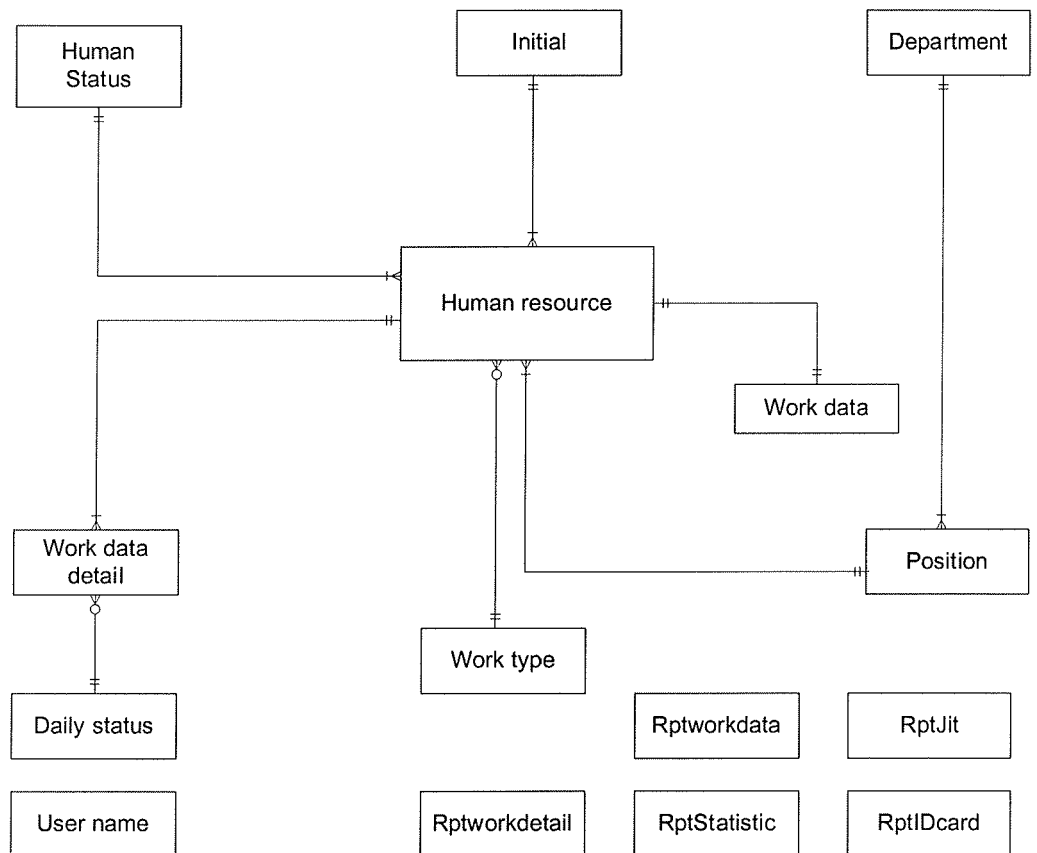


Figure 3-8 Entity Relationship Diagram

(4) Database Design

The Tanalarp Co.,LTD. Human Resource Management and Payroll System is designed by making use of relational database model that is considered new system which organizes all data in form of table or relations, moreover it provides further functions which incorporate well with SQL statement, to provide flexibility in selecting data.

Each columns of a table represents an attribute or characteristic of an entity. Each row of a table represents an instance of the entity. An important property of the relational model is that it represents logical relationships between entities by values stored in the columns of the corresponding tables.

Using logical database design also helps in transforming the conceptual data model (E-R diagram) to a logical data model (relational database). It represents entities as a relation and sets the identifier of the entity as primary key of the relation in order to be unique and single value in each row and some non – key attribute of the relation as foreign key to link between two relations. Then, it represents relationships and normalizes or refines the relations to avoid the problems of redundancy data. Finally, it will merge the relations in order to minimize the redundancy of data (Coronal 1997: 157,158).

According to the system, we include thirteen tables altogether to represent database design as follows (Database Design refers in the Appendix A)

(1) Human Resource Table

Human Resource Table shows information to the whole system since most of the attribute throughout the system connected to this table, but the table is mainly uses to perform human resources management function, these attributes include HumanID, InitialID, FullNameThai, FullNameEng,, DepartmentI,

PositionID, BeginWorkDate, LeaveDate, Salary, OTPerHour, Address, Tel, Mobile, Sex, IsWork, WorkTypeID, IsFullTime, StatusID, PictureFileName, and ID Card. (Table A-2)

(2) Daily Status Table

Daily Status Table shows employee's status in a particular day and for further salary calculation the attributes here are DailyStatusID and DailyStatus Description.(Table A-1)

(3) Department Table

Department Table is use for editing function and add department function,the attribute in the table are DepartmentI and DepartmentName.(Table A-3)

(4) Initial Table

Initial Table consists of two attributs which are InitialID and InitialName. Add and edit employee screen is making use of this table.(Table A-5)

(5) Position Table

Position Table made up of six fields name which are PositionID, PositionName, DepartmentI, BaseSalary, OTPerHour, DailySalary Salary Calculation make use of this table.(Table A-6)

(6) RPTIdCard Table

RPTIdCard Table has five fields name altogether namely are, ID, Name, Dept, Pos, Pic. This table is use for Employee ID printing in crystal report.(Table A-11)

(7) RPTWorkData Table

RPTWorkData is use to link database for Employee Work Data Report Preview and Printing as to show their salary slip details, eleven fields name is allocated here as, HumanID, WorkEachMonth, CurrentSalary, OTHour, OTPerHour, OTWage, LateDateNum, LostDateNum, LateLostDate, SocialDis, NetTotal (Table A-12)

(8) RPTWorkDetail Table

RPTWorkDetail Table is use to link database for employee work details which summarize number of days late and their other status. Seven fields name is allocated here as, Start, End, Dept, ID, Name, Late, Lost (Table A-13)

(9) UserName Table

UserName Table is use for user authorization management, three fields name is allocated here which are Username, Password, and IsNormal..

(Table A-7)

(10) WorkData Table

WorkData Table consists of totally eleven fields name which are HumanID, WorkEachMonth,CurrentSalary, OTHour, OTPerHour, OTWage, LateDateNum LostDateNum, LateLostDate, SocialDis, and NetTotal. The table is mainly use for salary calculation function. (Table A-8)

(11) WorkDataDetail Table

WorkDataDetail Table consists of six fields name which are HumanId, WorkDailyMonth, DailyStatusID, StartTime, StopTime, and Work Hour. This table is mainly use for Clock In and Clock out Function. (Table A-9)

(12) Work Type Table

Work Type Table has two fields name which are WorkTypeID and Work Type Description. The table is use to keep record of work type weather it is monthly or daily status. (Table A-10)

(13) Human Status Table

Human Status Table contains two fields of type which are Status ID and Status Description this which is use to keep record of user in order to make use in system access.

(14) RptJit Table

RptJit Table contains four fields which are Dept, Work, Miss, and Total. This table will employee real time status report..

(15) RptStatistic Table

RptStatistic Table contains total of nine fields which are Start, End, Dept, Miss , Late, Sick, Leave, Half and Total. This table will keep record of work data statistic which is sort by department.

(5) Process Specification

Process specifications are created for primitive's process on data-flow diagram as well as for higher-level processes that explode to child diagram. These specifications explain the decision-making logic and formulas that will transform process input data into output. Each derived element or other previous created derived elements that are input to the primitive processes

(Kendall, Kenneth E. and Julie E. Kendall.NJ: Prentice-Hall, 1999:341-342)

Table 3-3 Process Specification for Process 1.0

Process Name:	Process Clocking Function
Data In :	(1) Employee ID (2) Invalid ID
Data Out :	(1) Employee ID (2) Employee work performance alert (3) Employee Time in and Time out
Process :	(1) To keep record of employee time in and time out (2) To keep record of employee work data (3) To give user alert due to their employee data (4) To show employee work data

Table 3-4 Process Specification for process 1.1

Process Name :	Verify Employee
Data In :	(1) Emp. Work ID
Data Out :	(1) Emp. Time In and Time Out (2) Emp. Work ID (3) Invalid ID Notification
Process :	(1) To verify employee (2) To register employee time in and time out (3) To check and gives user alert for invalid ID Notification
Attachment :	(1) Process 1.2 (2) Data Store D1 (3) User

Table 3-5 Process Specification for process 1.2

Process Name	Show Result
Data In :	(1) Numbers of days late (2) Numbers of days absent (3)Emp details
Data Out :	(1) Number of days late (2) Number of days absents (3) Employee details Req. (4) Employee Work Performance alert
Process :	(1) Get Employee work data record (2) Get Employee details (3) Alert employee weather they have been over absent
Attachment :	(1) User (2) Data Store D1 (3) Data Store D2 (4) Process 1.1

Table 3-6 Process Specification for process 2.0

Process Name	Manage Human Resource Function
Data In :	<ul style="list-style-type: none"> (1) Emp. Description (2) Emp. work ID number (3) Emp. Citizen ID number (4) Edited Emp. Information
Data Out :	<ul style="list-style-type: none"> (1) Emp. Was been fired alert (2) Edited Emp. Description (3) Emp. Work and citizen ID number (4) New Emp. Description
Process :	<ul style="list-style-type: none"> (1) To notify new employee if they aren't allow to work (2) Provide employee edit function (3) Add new employee (4) View customer Profile
Attachment :	<ul style="list-style-type: none"> (1) Data Store D2 (2) User (3) Process 3.0 (4) Data Store D3

Table 3-7 Process Specification for process 2.1

Process Name	Add New Employee
Data In :	(1) New emp. ID number.
Data Out :	(1) New emp. ID number.
Process :	(1) To accept new employee ID for further process (2) To accept old employee ID number for further process
Attachment :	(1) Process 2.1.1 (2) User

Table 3-8 Process Specification for process 2.1.1

Process Name	Verify New Employee
Data In :	(1) New Employee Id number (2) Black list ID No.
Data Out :	(1) Accepted Emp. ID number (2) Employee Citizen ID number (3) Emp. Was been fired alert
Process :	(1) Verify weather the to be add new employee wasn't on the black list
Attachment :	(1) Verify existing employee work ID (2) Process 2.1 (3) Data Store D3 (4) Process 2.1.2 (5) User

Table 3-9 Process Specification for process 2.1.2

Process Name :	Accept Employee Description
Data In :	(1) Accept Employee. ID number (2) Employee Description (3) Employee edited Description
Data Out :	(1) Accepted Emp. ID No. (2) Employee Description (3) Employee edited Description
Process :	(1) Accept new employee information (2) Store new employee information (3) Accept edited employer information
Attachment :	(1) User (2) Data Store D2 (3) Process2.1.1

Table 3-10 Process Specification for process 2.1.3

Process Name :	Generate work ID
Data In :	(1) Emp. Work ID (2) Accepted Emp. ID Number
Data Out :	(1) Emp. Work ID (2) Emp. Work ID request
Process :	(1) Create work ID for employee
Attachment :	(1) Data Store D2 (2) User (3) Process 2.1.2

Table 3-11 Process Specification for process 2.2

Process Name :	View Employee Details
Data In :	(1) Employee Profile
Data Out :	(1) Employee ID, Name, Department (2) View employee Profile Request (3) Employee Profile
Process :	(1) To view employee profile (2) Allow search function sort either by Employee. ID , Name, or Department to acquire employee profile
Attachment :	(1) Data Store D1 (2) User

Table 3-12 Process Specification for process 3.0

Process Name :	Manage employee Work Record
Data In :	(1) Employee Work ID number (2) Employee work record request (3) Employee Work record
Data Out :	(1) Employee ID number (2) Employee work record request (3) Employee work record
Process :	(1) Retrieve employee work record (2) Modify employee work record
Attachment :	(1) Data Store D1 (2) Process 2.0 (3) User (4) Process 4.0

Table 3-13 Process Specification for process 3.1

Process Name :	Retrieve Employee Work Record
Data In :	(1) Employee work record request (2) Employee work ID. Number (3) Employee work record
Data Out :	(1) Employee work record (2) Employee work record request (3) Employee work ID number
Process :	(1) To retrieve employee work record data for further process
Attachment :	(1) User (2) Process 3.2 (3) Data Store D1

Table 3-14 Process Specification for process 3.2

Process Name :	Modify Employee Work Record
Data In :	(1) Employee Work Record (2) Employee work Performance
Data Out :	(1) Modified employee work record
Process :	(1) To updated the modified employee work performance or store
Attachment :	(1) Process 3.1 (2) User (3) Data Store D1

Table 3-15 Process Specification for process 4.0

Process Name :	Generate Employee Payment
Data In :	(1) Employee Work number (2) Employee Work record request (3) Employee work record
Data Out :	(1) Employee work record request (2) Employee work ID number (3) Salary Slip
Process :	(1) Retrieve Employee work record (2) Compute salary (3) To print salary Slip (4) To store each salary paid by the employer for Summarize

Table 3-16 Process Specification for process 4.1

Process Name :	Retrieve Employee Work Record
Data In :	(1) Employee work record request (2) Employee work ID number (3) Employee Work Record
Data Out :	(1) Employee Work Record request (2) Employee work record
Process :	(1) Get Customer work record
Attachment :	(1) User (2) Process 4.2 (3) Data Store D1

Table 3-17 Process Specification for process 4.2

Process Name :	Compute Salary
Data In :	<p>(1) Employee Work Record</p> <p>(2) OT rate</p> <p>(3) Social Insurance Fee</p>
Data Out :	(1) Total employee Salary Amount
Process :	(1) Compute salary allocate to employee
Attachment :	<p>(1) Process 4.1</p> <p>(2) Process 4.3</p> <p>(3) Data Store D1</p> <p>(4) Data Store D2</p>

Table 3-18 Process Specification for process 4.3

Process Name :	Print Salary Slip
Data In :	(1) Total Emp. Salary Amount
Data Out :	(1) Salary Slip
Process :	(1) Perform Salary Slip Printing Function
Attachment :	(1) Employee (2) Process 4.2

Table 3-19 Process Specification for process 5.0

Process Name :	Generate Reports
Data In :	<ul style="list-style-type: none"> (1) All payment to Emp. Record (2) Certain Emp work (3) Payment to all emp record request (4) All Emp. Record (5) All Emp work record request. (6) Certain emp work record request (7) Emp work ID No.
Data Out :	<ul style="list-style-type: none"> (1) Emp Work ID No. (2) Certain Emp. Rec. Request (3) All Emp work record request (4) Payment to all emp record (5) Report Hard Copy
Process :	<ul style="list-style-type: none"> (1) Get Salary Summary Report (2) Get Work data Report (3) Get ID card hard copy printed
Attachment :	<ul style="list-style-type: none"> (1) Data Store D1 (2) User

Table 3-20 Process Specification for process 5.1

Process Name :	Generate Certain Employee Record
Data In :	(1) Certain Employee record request (2) Employee Name (3) Employee ID number (4) Employee Department
Data Out :	(1) Employee Name (2) Employee ID number (3) Employee Department
Process :	(1) accept search condition such as employee name, employee Id number, or employee department
Attachment :	(1) User (2) Process 5.1.1

Table 3-21 Process Specification for process 5.1.1

Process Name :	Retrieve Employee Work Record
Data Input :	(1) Employee Name (2) Employee ID number (3) Employee Department (4) Employee Work Record
Data Output :	(1) Employee work ID (2) Employee Name
Process :	(1) Accept Search condition (2) Get data concerning employee work record
Attachment :	(1) Process 5.1 (2) Data Store D1 (3) Process 5.4

Table 3-22 Process Specification for process 5.2

Process Name :	Generate all employee work record report
Data In :	(1) All employee work record request (2) All employee work record
Data Out :	(1) All employee work record request
Process :	(1) Accept employee work record request
Attachment :	(1) Process 5.2.1 (2) User (3) Data Store D1

Table 3-23 Process Specification for process 5.2.1

Process Name :	Retrieve all employee work record
Data In :	(1) All employee work record request (2) All employee work record
Data Out :	(1) All employee work record
Process :	(1) Retrieve employee work record data from data storage (2) Send retrieved employee work record data to print function
Attachment :	(1) Data Store (2) Process 5.2 (3) Process 5.4

Table 3-24 Process Specification for process 5.3

Process Name	Generate all payment to employee
Data In :	(1) Salary Summary Report Req.
Data Out :	(1) Salary Summary Report Req.
Process :	(1) accept Salary Summary Report Request
Attachment :	(1) User

Table 3-25 Process Specification for process 5.3.1

Process Name	Retrieve all payment to employee
Data In :	(1) Salary Summary Report Req. (2) Salary Summary Report
Data Out :	(1) Salary Summary Report Req. (2) Salary Summary Report
Process :	(1) Get Salary Summary Report Request (2) Retrieve Salary Summary Report Data (3) Send Salary Summary Report File for printing
Attachment :	(1) Process5.3 (2) Data Store D1 (3) Process5.4

Table 3-26 Process Specification for process 5.4

Process Name:	Perform Printing
Data In :	<p>(1) Employee Work Record</p> <p>(2) All Employee work record</p> <p>(3) All Employee salary summary record</p>
Data Out :	(1) Reports Hard Copy
Process :	(1) Get all kinds of report to perform printing
Attachment :	<p>(1) Process 5.1.1</p> <p>(2) Process 5.2.1</p> <p>(3) Process 5.3.1</p> <p>(4) User</p>

Table 3-27 Process Specification for process 5.5

Process Name	Check JIT
Data In :	(1) JIT Checking Request (2) JIT Result
Data Out :	(1) JIT Result (2) JIT Checking Request
Process :	(1) Accepting JIT request from user (2) Show JIT Result
Attachment :	(1) User (2) Data store1

Table 3-28 Process Specification for process 5.6

Process Name	Analyses Employee
Data In :	(1) Stat Request (2) Stat Result
Data Out :	(1) Stat Result (2) Stat Checking Request
Process :	(1) Accepting Stat request from user (2) Show Stat Result
Attachment :	(1) User (2) Data store1

(7) Data Dictionary

A data dictionary is a specialized application of the kinds of dictionaries used as references in everyday life. The data dictionary is a reference work of data about (that is, metadata), one that is compiled by systems analysts to guide them through analysis and design. As a document, the data dictionary collects and coordinates specific data terms, and it confirms what each term means to different people in the organization. The data-flow diagrams are an excellent starting point for collecting data dictionary entries (Gary B. Shelly & Thomas J. Cashman 2001: 297,298,299)

In addition to providing documentation and eliminating redundancy, the data dictionary may be used to:

- (1) Information about the data maintained by the system, including data flow, data stores, record structures, and elements.
- (2) Provide a starting point for developing screens and reports.
- (3) Determine the contents of data stored in files.
- (4) Develop the logic for data-flow diagram processes.

Table 3-15 Data Dictionary of Payroll Processing System Database

Field Name	Meaning
Salary Summary Req.	Request for Salary Summary Report
Employee Work ID	Work Identification Number of employee
Employee Description	Description concerning department, work ID, or Employee name of employee
Employee work Data	Data concerning overtime work and other document to be used as input for system of employee
Employee work record req.	Request for employee work record
Employee Salary Slip Req.	Request for salary slip
JIT checking Req.	Request for JIT function
OT Record	Record concerning overtime
Emp. work record summary	Summary concerning work record
Emp. Salary Slip	Printed salary slip of employee
Statistic Report	Report concerning employee work data statistic
Employee Salary Summary	Summary of all employee report
JIT Result	JIT function result as actual point of time employee present
Unable to add Employee alert	Alert shows employee add deny
Statistic Analyze Req.	Request for statistic analyze function.
Time In	Employee time clocking in
Time Out	Employee time clocking out
Emp. Work Record Report	Report showing employee work record
Salary Summary Req.	Request for employee salary summary
Emp. ID	Employee work ID number
Invalid ID alert	alert for invalid employee work ID

Field Name	Meaning
Emp. ID no.	Employee citizen ID number
New Emp ID No.	New Employee ID number
Edited Emp Info	Employee Edited Information
Emp. Work ID No.	Employee work ID number
Emp. Work Record	Employee work data
Emp. Work record req + ID No.	Employee work record request and employee working ID No.
Payment to all emp. Record request	Request of all payment made to employee summary
All Emp. Work record request	Request for all employee work record request
Certain emp. Work record request	Request of work record for specific employee
Report hard copy	Printed document
All emp work record	Record of all employees concerning work performance.
Certain emp. Work record	Work record for certain employee
Emp. Time out	Employee time out
Emp. Time in	Employee time in
No. of days late	Number of days late in certain month
No. of days absent	Number of days absent in certain month
Employee Details Request	Request for employee Information
Accepted Emp. ID No.	Acceptable employee citizen ID number
Black List ID No.	Employee ID number on fired list
Saved Emp. Work Performance	Employee work performance that has been saved
Total Emp. Salary Amount	Net Salary paid to certain employee each month
Emp Name	Name of employee
Department Name	Name of department
Stat Result	Result concerning employee's work data statistic
Stat Req.	Request for statistic analyze function.

(7) Interface Design

The interface is the system for the most users. These are the objectives that helping to design good interface. First effectiveness as achieved through the design of interfaces that allows users to access the system in away that is congruent with their individual needs. Second, efficiency as demonstrated through interfaces that both demonstrated in the design of suitable interfaces and by providing appropriate feedback to users from the system Forth, productivity as measured by ergonomically sound principles of design for user interfaces and workspaces (Kendall, Kenneth E. and Julie E. Kendall.: Prentice-Hall, 1999:663)

A good interface design is to create an attractive screen for the user and draw them in and hold their attention. If user find screens appealing, they are likely to be more productive to need less supervision, and to make fewer errors. Some of the design principles used for forms apply. (Kendall, Kenneth E. and Julie E. Kendall. System Analysis and Design, Fourth Edition. NJ: Prentice-Hall, 1999:159)

The purpose of interface design is to allow users to access Refers to the Tanalarp Co.,LTD. Payroll System Interface Design, the design was developed in user friendly concept, which means easy to operate by users. Twelve main interfaces can be introduced as follows.

The system in a way that congruent with their individual needs. Second, to increase the speed of data entry and reduce errors. Third, to provide appropriate feedback to user interfaces and workspaces.(Kenneth E. Kendall & Julie E. Kendall 1999:663)

(1) User Login

This Page is the first page when running the program. The user will have to input their user name and password in order to gain the access to the system.

The user will be alert when they have entered wrong password or user name; there are two level of authorization.

(2) Main menu

This page contains various kind of menu that could be link to other screens. In case users are administrator then he or she is allow to use all function in the menu if not he or she can only use function which is said to be necessary for them.

(3) Add Employee

This screen input will allow user to add new or old employee. Incase of adding old employee the system will be asking weather user are certain to add a specified user if so the system will then automatically updated data, and for new employee, the system will assigned their work identification number according to their years of entrance, work type and department they belonged to.

(4) Edit Employee

This screen allows user to view employee profiles and allow them to edited employee, moreover, the system also provide user with search function at which employee is to search either by their name, department or work identification number.

(5) Employee Status

This screen allows user to change their employee status according to the necessity. Once employee status has changed, that specific employee would be able to do things according to the status scope.

(6) Add department

This screen allow user to add new department, once the department name was allocated then the department ID will automatically be assigned.

(7) Add Position

This screen allow user to add new position to the specified department then user will be ask to input basis salary. This data will be applied to the whole system for salary calculation purpose.

(8) Add User Name

This screen is for authorized user to assigned user name and password for another employee or user to gain the access to the system, however two level of authorization to the system must be specified here.

(9) Clock In

Allow user to Clock employee in when they come to work. This screen will keep record of time in and out and also the work data result in certain month. Once user has clock in employee ID then that Employee shoul not be able to clock in again.

(10) Clock Out

Allow user to Clock employee out when they finish work. This screen will keep record of time out and it will then use for salary calculation .User cannot clock out twice and must be clock in first.

(11) Work Data

Allow user to compute salary for each employee. Once user finished with the calculation he or she may then print out salary slip to that specific employee.

(12) JIT

These screens allow user to be able to check employee attendances weather how many of them has come to work at a certain point of time and how many of them are missing in the department.

(13) Statistic

This screen allow user to view employee work data as in percentage sorted by department according to the system analysis.

(Interface Design is Exhibited in Appendix B).

(8) Report Design

Printed report must be attractive, professional, and easy to read. Good report design, like any other aspect of user interface, requires effort and attention to detail. To product a well-designed report, the analyst must consider several topic, including report headers and footers, column headings and alignment.(Gary B. Shelly &Thomas J. Cashman 2001:7.29) See the report design in Appendix C.

(1) Print ID

This Page will show each employee work ID card which contains employee ID, Employee Name, Employee Department, and Employee Position all in English.

(2) Print ID Card2

Display ranges employee work ID, this page will be showing only when user has specified ranges employee ID number to be printed only.

(4) Work Data Report

Display employees work data reports, which contains summary of employee work record such as total number of days late, total number of days absents, total number of days sick and personal leaves by each employee according to specified department on a specified range of date and month.

(4) Salary Summary Report

Display employees Salary Summary which contains details of salary deducted or added amount due to social insurance, salary deducted of days absents, late or amount added from over time working hours.

IV. SYSTEM IMPLEMENTATION

4.1 Overview of the System Implementation

During system implementation, analyst helps implement the information system. This involves training users to handle the system. Some training is done by vendors, but oversight of training is the responsibility of the systems analyst. (Kendall & Kendall 1999:11)

In order to implement the new Tanalarp Human Resource Management and Payroll System we have to come up with ways to teach user of how the program works and how to manage them. In order to accomplished that, we would provide training to users, the training may be handle as small group training as we have teamed up a group of demonstrators for them. Furthermore, on the job training is necessary at the beginning when the new system was newly installed, this will help and allow user to ask questions when the problem due to system usage occurred right at the site as trainer would be able to see and clarify users problems.

Furthermore, The Tanalarp Co.,LTD. Payroll system was implemented by using the Direct Cutover Conversion Method because the existing system is manually managed. However, using direct cutover conversion method is considered high risk taking because once the new system was introduced the old one will abruptly dropped, this may cause user difficulties adapting to the new system and that it may take some times for them to get used to the new system. On the other hand, these risks may be reduced by giving a well training an tutorial class to users so that it would be other way to assist them cope with the new system which they have never been using before.

4.2 Test Plan

For testing the program, we start testing with unit testing. The objective of unit testing is to identify and eliminate execution errors that could have been missed during system works or runs. When the unit testing is already passed, then the link test is continued. Link testing is performing to ensure that two or more programs that depend on each other can perform at the same time as planed. If the error does not occur in link testing, then the system testing is performed (Gary B. Shelly & Thomas J. cashman 2001:4.2)

At the step of unit testing, we try to check error syntax and logical error to the system for example; data such as employee id and details field that allows only a range of numeric values to be typed in.

Integration Testing use to test weather program are will related to others. For example, one out put of one interface may be an input for the others one in appropriate fashion.

System Testing use to test the whole system weather each module is related to each other as a whole. In other word top-down testing is used here which means the testing starts at the most abstract component and works downwards. User will be tested the highest level before testing detailed components. After top-level component was tested its sub-components are implemented and tested in the same way.

Acceptance Testing test weather users find the system meet their needs and the system requirements. All of testing will helps you to avoid error that will happens and ensured user weather they have entered the correct in put data.

V. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Refers to the current system's problems, the proposed system is designed to replace the existing inventory system, which works manually, in order to provide higher efficiency and consistency. After the system was implemented and tested, the inventory works smoothly without error. Most users find the system user friendly even though the system is considered new computerizing system to them compared to the previous manually done system. However, some user finds some difficulties of using the system at the beginning but after some training and tutorial class those starts get used to the system and no longer find it hard to interact with. Moreover after the implementation of the system, the company finds it less burdensome dealing with employee database and payroll management which was previously done by hand and that they can make use of the data reports for further analyzes. Other advantage after implemented the system can be inevitably seen that some function such as keeping employee work records, salary calculation, database management could be process faster and less time consuming. Therefore, the system seems to help the company speeding up their employee payroll and human resources management system and generation of reports and analyzes. However, some disadvantage of the system is that it does not support a lot of workload of many employee because of database application and it is not designed to support and handle too much expansion of organization in the future so it requires high frequently and takes time to further develop new version of the system in order to improve the performance more smoothly and efficiently.

What we have learnt after the implementation of this system is that what we have taught from school class whether in business or computer field could be imply to

real life of developing the computerizing system and also valuing in teamwork in considerably important concerning real life at work.

5.2 Recommendation

From the interview with the company manager. The following recommendation can be listed as below:

- (1) Some user finds the program may have some difficult to use at the beginning stage (this is because they did not get used to the new system) therefore it is recommended that initial training should be provided.
- (2) Cost is higher at the beginning.
- (3) More effective ways of managing employee database and salary calculation.
- (4) Employee data are kept recorded in an organize fashion.
- (5) Analyze function assisted manager to make plan of assigning works to employee each day.
- (6) Reduce time consuming when using the new system, it is suggested to use and for better performance barcode system can be applied in the coming future.

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3. O'Brien J. A. Management Information Systems: **Managing Information Technology in the Internetworked Enterprise**, Fouth Edition. USA: McGrawHill, 1999.

APPENDIX A DATABASE DESIGN

Table A-1 DailyStatus Table

No.	Field Name	Field	Index	Unique	Nullable	Foreign Key to	Check	Key Type
1	DailyStatusID	Text	Y	Y				Primary Key
2	DailyStatusDescription	Text						Attribute

Table A-2 Human Resource Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to	Check	Key
1	HumanID	varchar (10)	Y	Y				Primary Key
2	InitialID	varchar (50)	Y			Initial		Attribute
3	FullNameThai	varchar (50)						Attribute
4	FullNameEng	varchar (50)						Attribute
5	Address	varchar (80)			Y			Attribute
6	Telephone	int (9)					<area code, 7 digits>	Attribute
7	OTPerHour	Number						Attribute
8	DepartmentID	Text				Position		Attribute
9	PositionID	Text				Position		Attribute
10	LeaveDate	Date/Time						Attribute
11	Mobile	Text						Attribute
12	Sex	Text						Attribute
13	Iswork	Text						Attribute
14	IsFullTime	Text					1=Full Time 0=Part Time	Attribute
15	PictureFileNam	Text				Human Status		Attribute
16	StatusID	Text				Work Type		Attribute
17	WorkTypeID	Text					Status of Human	Attribute
18	Salary	Number						Attribute
19	Idcard	Text						Attribute
20	BeginWorkDate	Date/Time						Attribute

Table A-3 Department Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to	Check	Key Type
1	DepartmentID	Text	Y	Y		Position		Primary Key
2	DepartmentName	Text						Attribute

Table A-4 Human Status Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to	Check	Key Type
1	StatusID	varchar	Y	Y		Human Resource		Primary Key
2	StatusDescription	varchar						Attribute

Table A-5 Initial Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to	Check	Key Type
1	InitialID	varchar (10)	Y	Y		Human Resource		Primary Key
2	InitialName	varchar (50)						Attribute

A - 4

Table A-6 Position Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key To	Check	Key Type
1	PositionID	Text	Y	Y				Primary Key
2	DepartmentID	Text				Department		Primary Key
3	POsitionName	Text	Y					Attribute
4	BaseSalary	Number			Y			Attribute
5	DailySalary	Number						Attribute
6	HolidayRate	Number						Attribute
7	OTPerHour	Number						Attribute

Table A-7 Username Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to	Check	Key Type
1	UserName	varchar (10)	Y	Y				Primary
2	Password	varchar (50)	Y					Attribute
3	IsNormal	varchar (50)	Y				1= Normal ,	Attribute

Table A-8 Work dataTable

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to	Check	Key Type
1	HumanID	varchar	Y	Y		Human Resource		Primary Key
2	WorkEachMonth	varchar	Y					Attribute
3	CurrentSalary	varchar	Y					Attribute
4	OTPerHour	Number						Attribute
5	OTWage	Number	Y					Attribute
6	OTHour	Number	Y		Y			Attribute
7	LostDateNum	Number						Attribute
8	LateLostDateDis	Number						Attribute
9	SocialDis	Number			Y			Attribute
10	NetTotal	Number	Y					Attribute
11	LateDateNum	Number						Attribute

Table A-9 Work data Detail Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to	Check	Key Type
1	HumanID	varchar (10)	Y	Y		Human Resource		Primary Key
2	WorkDailyMonth	Varchar(8)						Primary Key
3	StartTime	Date/Time						Attribute
4	StopTime	Number						Attribute
5	WorkHour	varchar (50)						Attribute
6	DailyStatusID	varchar	Y					Attribute

Table A-10 Work type Table

No.	Field Name	Field	Index	Unique	Nullable	Foreign Key to	Check	Key Type
1	WorkTypeID	Text	Y	Y				Primary Key
2	WorkTypeDescription	Text						Attribute

Table A-11 Rptidcard Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to	Check	Key Type
1	ID	Text	Y	Y				Primary Key
2	Name	Text						Attribute
3	Dept	Text						Attribute
4	Pos	Text						Attribute
5	Pic	Text						Attribute

Table A-12 Rptworkdata Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to	Check	Key Type
1	HumanID	varchar (10)	Y	Y				Primary Key
2	WorkEachMonth	varchar	Y					Attribute
3	CurrentSalary	varchar	Y					Attribute
4	OTPerHour	Number						Attribute
5	OTWage	Number						Attribute
6	OTHour	Number			Y			Attribute
7	LostDateNum	Number						Attribute
8	LateLostDateDis	Number						Attribute
9	SocialDis	Number	Y		Y			Attribute
10	NetTotal	Number	Y					Attribute
11	LateDateNum	Number	Y					Attribute

Table A-13 Rptworkdetail Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key	Check	Key Type
1	ID	Text	Y	Y				Primary Key
2	Name	Text		Y				Attribute
3	Dept	Text						Attribute
4	Start	Text						Attribute
5	End	Text						Attribute
6	Late	Text						Attribute
7	Lost	Text						Attribute

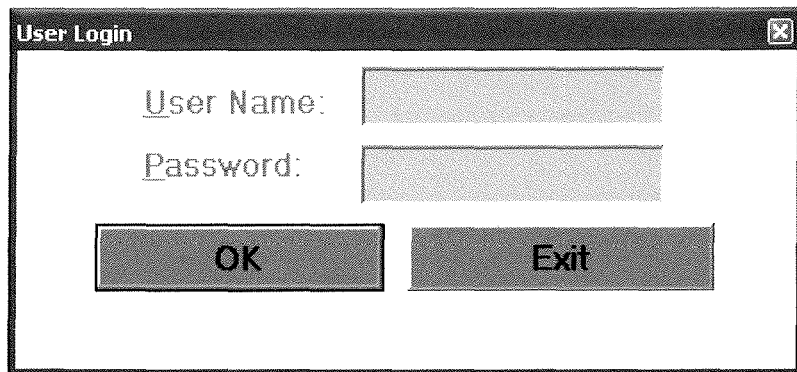
Table A-14 RptJit Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key	Check	Key Type
1	Dept	Text	Y	Y				Primary Key
2	Work	Num		Y				Attribute
3	Miss	Num						Attribute
4	Total	Num						Attribute

Table A-15 RptStatistic Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key	Check	Key Type
1	Start	Text	Y	Y				Primary Key
2	End	Text						Attribute
3	Dept	Text						Attribute
4	miss	Num						Attribute
5	late	Num						
6	sick	Num						
7	leave	Num						
8	half	Num						
9	total	Num						

APPENDIX B
INTERFACE DESIGN



A screenshot of a 'User Login' dialog box. The dialog has a title bar with the text 'User Login' and a close button (X) in the top right corner. Inside the dialog, there are two labels: 'User Name:' and 'Password:'. Each label is followed by a rectangular text input field. Below the input fields, there are two buttons: 'OK' on the left and 'Exit' on the right. The 'OK' button is slightly larger than the 'Exit' button.

Figure B-1 Login username and password interface

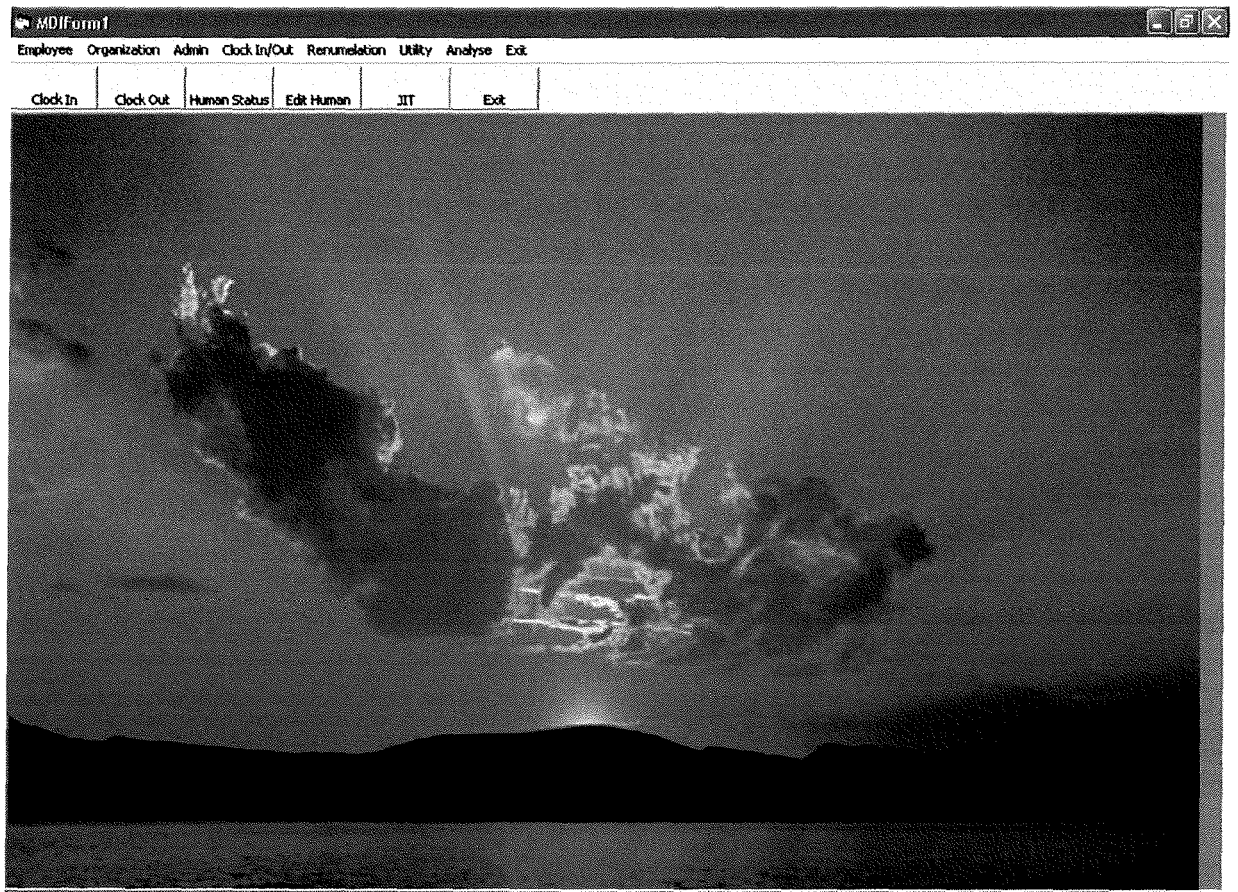


Figure B-2 Main Menu

MDIForm1

EmployeeOrganizationAdminClock In/OutRenumerationUtilityAnalyseExit

Clock In

Clock Out

Human Status

Edit Human

IT

Exit

Daily Login

Clock In

Employee ID:

-

-

-

Name :

Department :

Position :

Absent

Late

Sick Leave

Personal Leave

15:22:46

Save

Search

Time work Record

Figure B-3 Clock In

The screenshot shows a Windows application titled "MOI Form1". The menu bar includes "Employee", "Organization", "Admin", "Clock In/Out", "Renumeration", "Utility", "Analyse", and "Exit". Below the menu is a toolbar with buttons for "Clock In", "Clock Out", "Human Status", "Edit Human", "JIT", and "Exit". The main window has a title bar "Add Human" with standard window controls. The form itself has two tabs: "General Information" (selected) and "Other Information".

General Information Tab:

- Employee ID: A text field with a dropdown arrow.
- Initial: A dropdown menu.
- Citizen ID Number: A text field with a dropdown arrow.
- Name in Thai: A text field.
- Name in English: A text field.
- Department: A dropdown menu showing "Quality Control".
- Position: A dropdown menu.
- Begin Work Date: A date picker showing "20 November 2002".
- Work: A dropdown menu.
- Position Basis Salary: A section containing:
 - Salary: A text field with "0".
 - OT Rate(hr.): A text field with "0".
 - A button labeled "Position Rate".

Other Information Tab:

- Picture: A large empty rectangular box with a "Browse" button at the bottom right.
- Gender: A group box containing two radio buttons: "Male" (selected) and "Female".
- At the bottom right of the form are two buttons: "Save" and "Exit".


Figure B-4 Add Employee

MDIForm1
Employee Organization Admin Clock In/Out Renumelation Utility Analyse Exit

Clock In
Clock Out
Human Status
Edit Human
JIT
Exit

ViewHuman

HumanID :
ID Card :
Name in Thai : wimol kphasatan
Name in English : wimol kphasatan
Department : Quality Control
Position : Quality Control
Begin Work Date :
Work Type :
Salary : 10000
OT Rate(hr.) : 41.8865666666666
Address : 25/2 Ramkha km.5 Saphansong Bangkok 12423 thailand
Telephone : 02-7654323
Mobile :

Picture

Browse

Search
Department : Quality Control
HumanID :
Name in English :
Search

Edit Save
First Last
Back Next
Cancel

HumanID	ID Card	FullNameEng	PositionName
02-01-05-00001	4-3334-31123-46-7	Navin Chuchooiwong	Quality Control
02-01-05-00002	7-8767-87865-43-2	wimol kphasatan	Quality Control

Figure B-5 Edit Employee

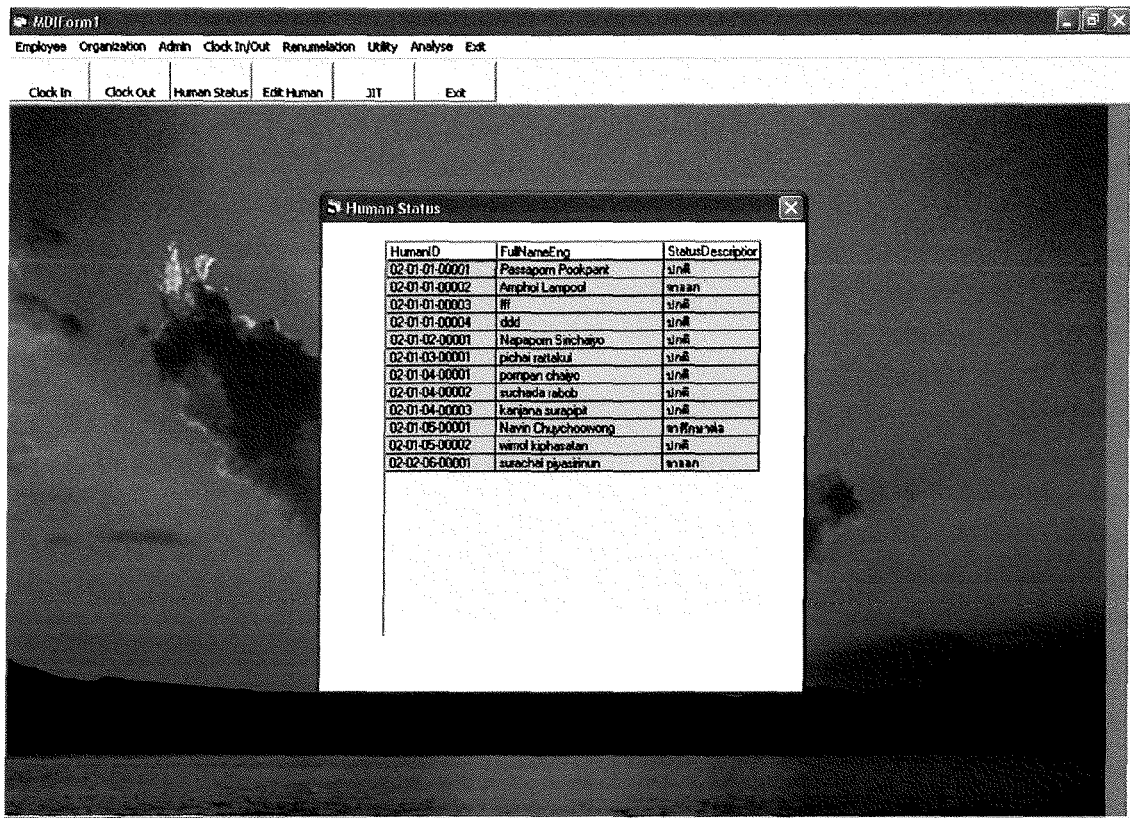


Figure B-6 Employee Status

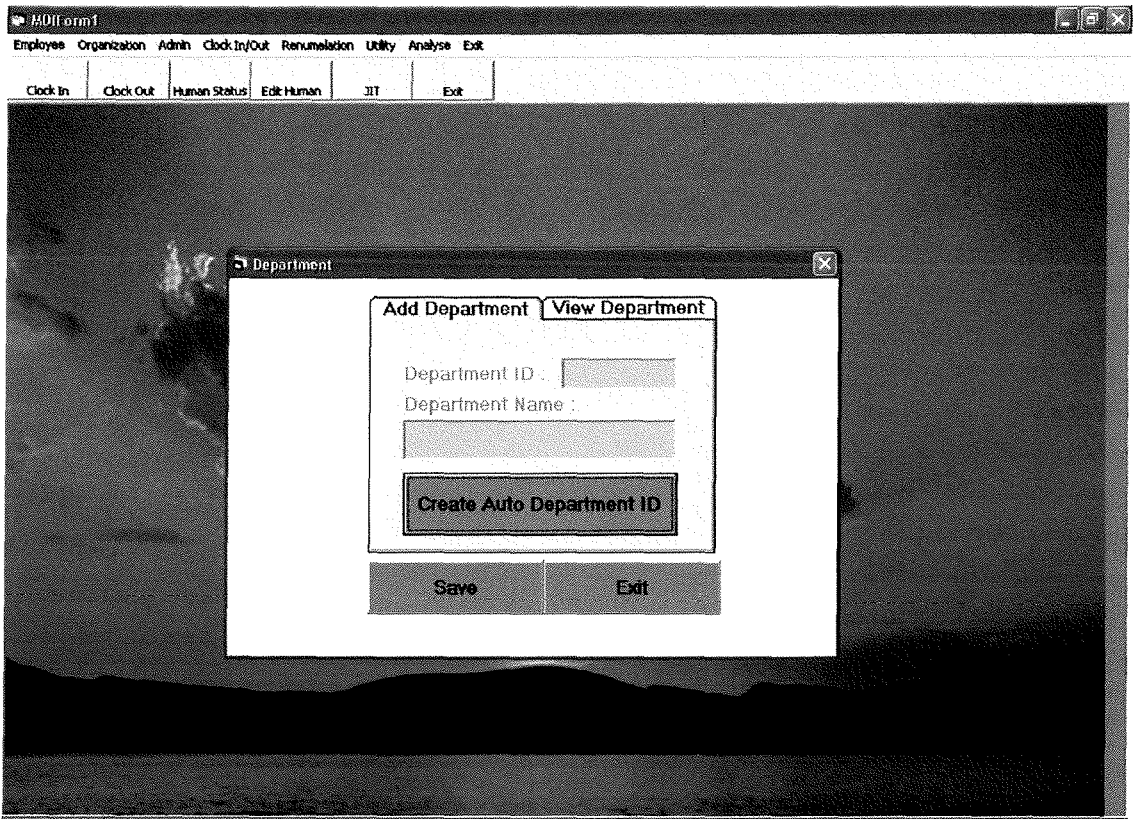


Figure B-7 Add Department

MDI form1

Employee Organization Admin Clock In/Out Remuneration Utility Analyse Exit

Clock In Clock Out Human Status Edit Human JIT Exit

Position

Add New Position Position Detail

Department Name :

Position ID :

Position Name :

Base Salary :

Rate OT :

Daily Salary (TH) : Bath

Figure B-8 Add Position

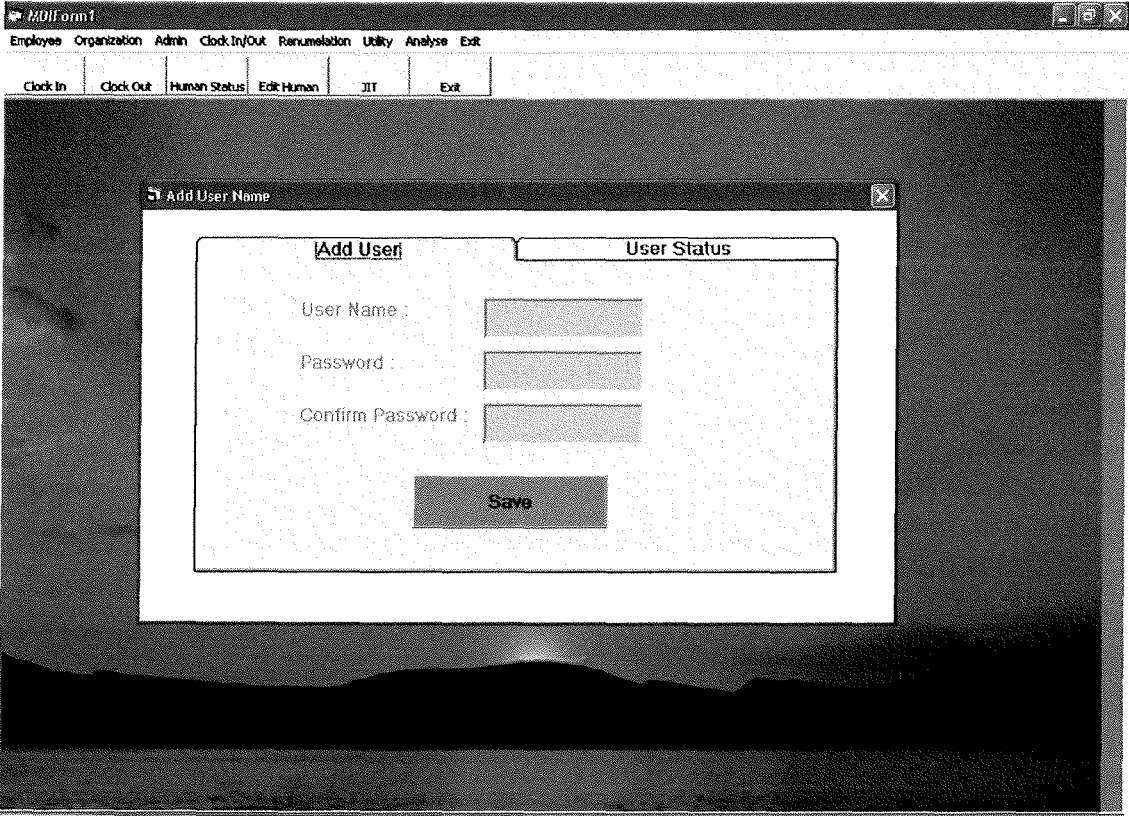


Figure B-9 Add User

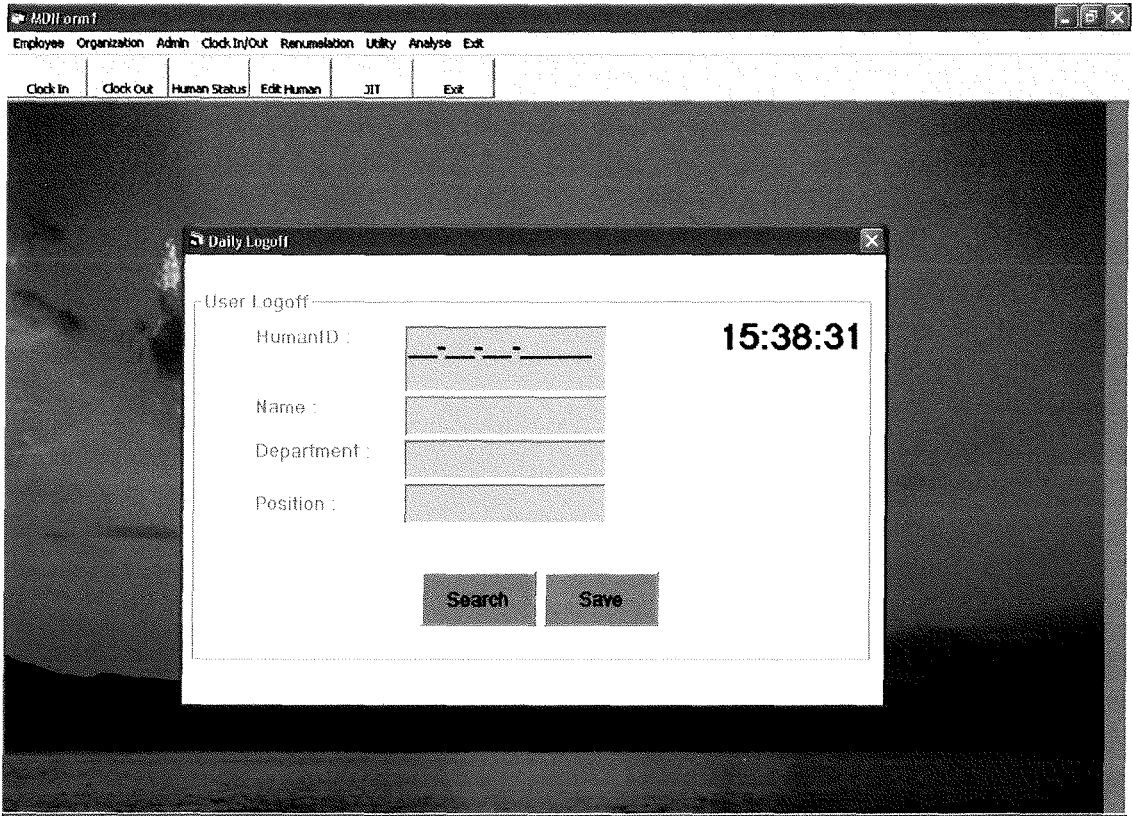


Figure B-10 Clock Out

The screenshot shows a Windows-style application window titled "MDI Form1". The menu bar includes "Employee", "Organization", "Admin", "Clock In/Out", "Remuneration", "Utility", "Analyse", and "Exit". The toolbar contains buttons for "Clock In", "Clock Out", "Human Status", "Edit Human", "JIT", and "Exit".

The main content area is divided into two panes. The left pane, titled "Employee Information", contains fields for "Employee ID", "Name", "Department", and "Position", each with a text input box. A "OK" button is located at the bottom right of this pane. The right pane, titled "Time work Record", features a date selector showing "20 November" and a "Day Off" button. Below these is a table with two columns: "Date" and "Note". The table has several empty rows for data entry. At the bottom of this pane are "Save" and "Print" buttons.

Below the "Employee Information" pane, there are input fields for "Late", "Sick", "Personal", "Absent", "OT (Hour)", and "SocialDis", each with a numeric input box. To the right of these is a "Total" section with input fields for "Salary", "OTRate", "FineLost", "OTWage", "SocialVal", and "Net Salary". The "Net Salary" field shows a value of "0".

The screenshot shows a Windows-style application window titled "MDI Form1". The menu bar includes "Employee", "Organization", "Admin", "Clock In/Out", "Remuneration", "Utility", "Analyse", and "Exit". The toolbar contains buttons for "Clock In", "Clock Out", "Human Status", "Edit Human", "JIT", and "Exit".

The main content area is divided into two panes. The left pane, titled "Employee Information", contains fields for "Employee ID", "Name", "Department", and "Position", each with a text input box. A "OK" button is located at the bottom right of this pane. The right pane, titled "Time work Record", features a date selector showing "20 November" and a "Day Off" button. Below these is a table with two columns: "Date" and "Note". The table has several empty rows for data entry. At the bottom of this pane are "Save" and "Print" buttons.

Below the "Employee Information" pane, there are input fields for "Late", "Sick", "Personal", "Absent", "OT (Hour)", and "SocialDis", each with a numeric input box. To the right of these is a "Total" section with input fields for "Salary", "OTRate", "FineLost", "OTWage", "SocialVal", and "Net Salary". The "Net Salary" field shows a value of "0".

The screenshot shows a Windows-style application window titled "MDI Form1". The menu bar includes "Employee", "Organization", "Admin", "Clock In/Out", "Remuneration", "Utility", "Analyse", and "Exit". The toolbar contains buttons for "Clock In", "Clock Out", "Human Status", "Edit Human", "JIT", and "Exit".

The main content area is divided into two panes. The left pane, titled "Employee Information", contains fields for "Employee ID", "Name", "Department", and "Position", each with a text input box. A "OK" button is located at the bottom right of this pane. The right pane, titled "Time work Record", features a date selector showing "20 November" and a "Day Off" button. Below these is a table with two columns: "Date" and "Note". The table has several empty rows for data entry. At the bottom of this pane are "Save" and "Print" buttons.

Below the "Employee Information" pane, there are input fields for "Late", "Sick", "Personal", "Absent", "OT (Hour)", and "SocialDis", each with a numeric input box. To the right of these is a "Total" section with input fields for "Salary", "OTRate", "FineLost", "OTWage", "SocialVal", and "Net Salary". The "Net Salary" field shows a value of "0".

Figure B-11 Work Data Management

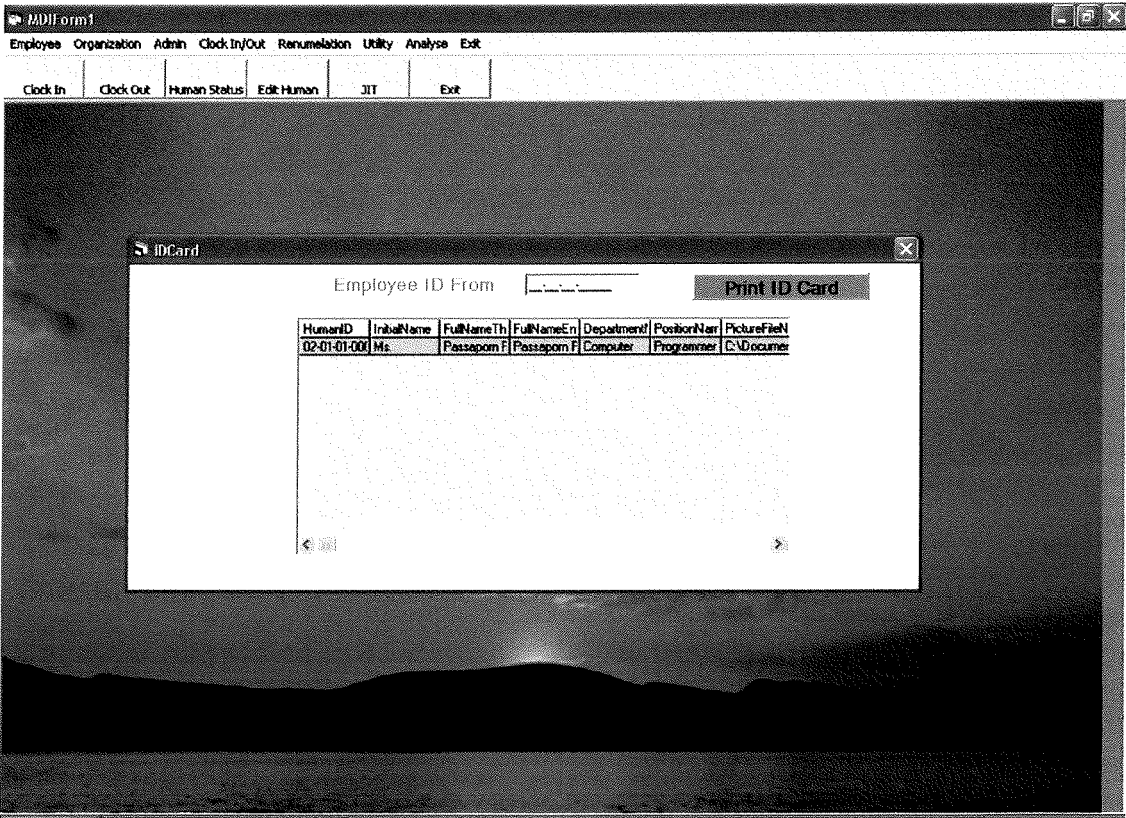


Figure B-12 Print Work Id By Person

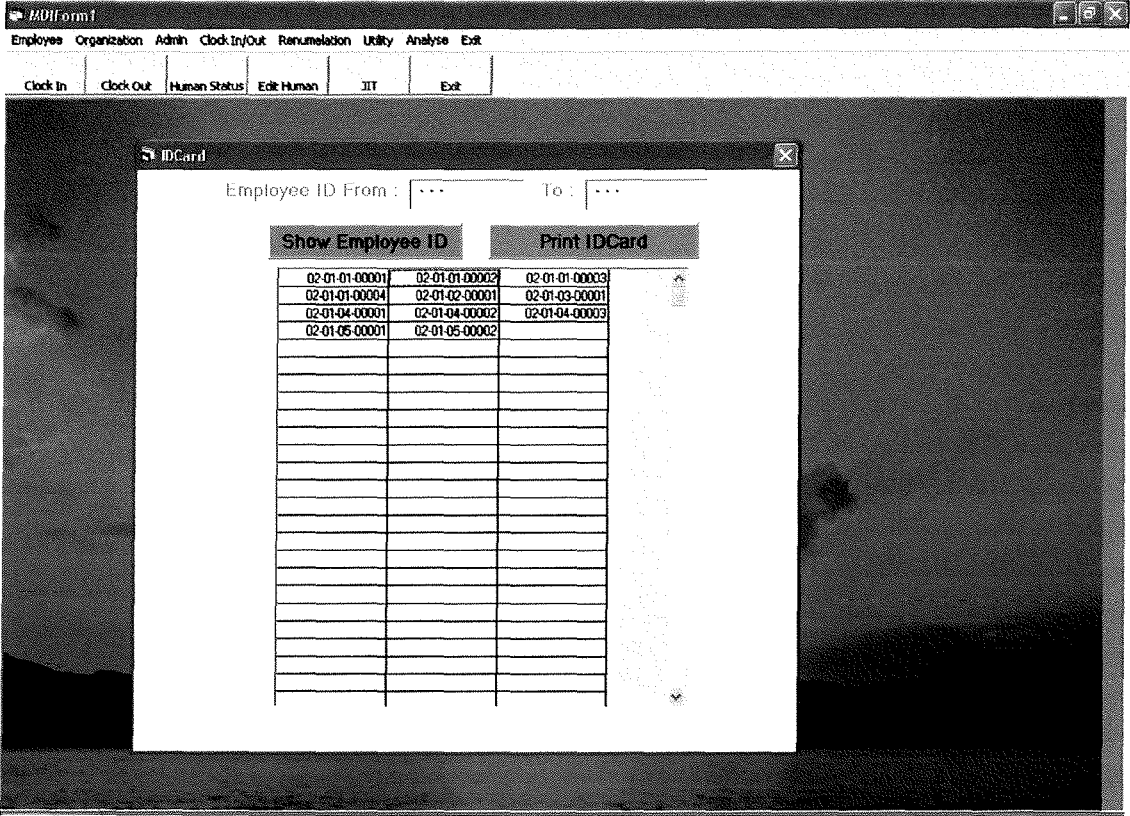


Figure B-13 Print Work Id In Range

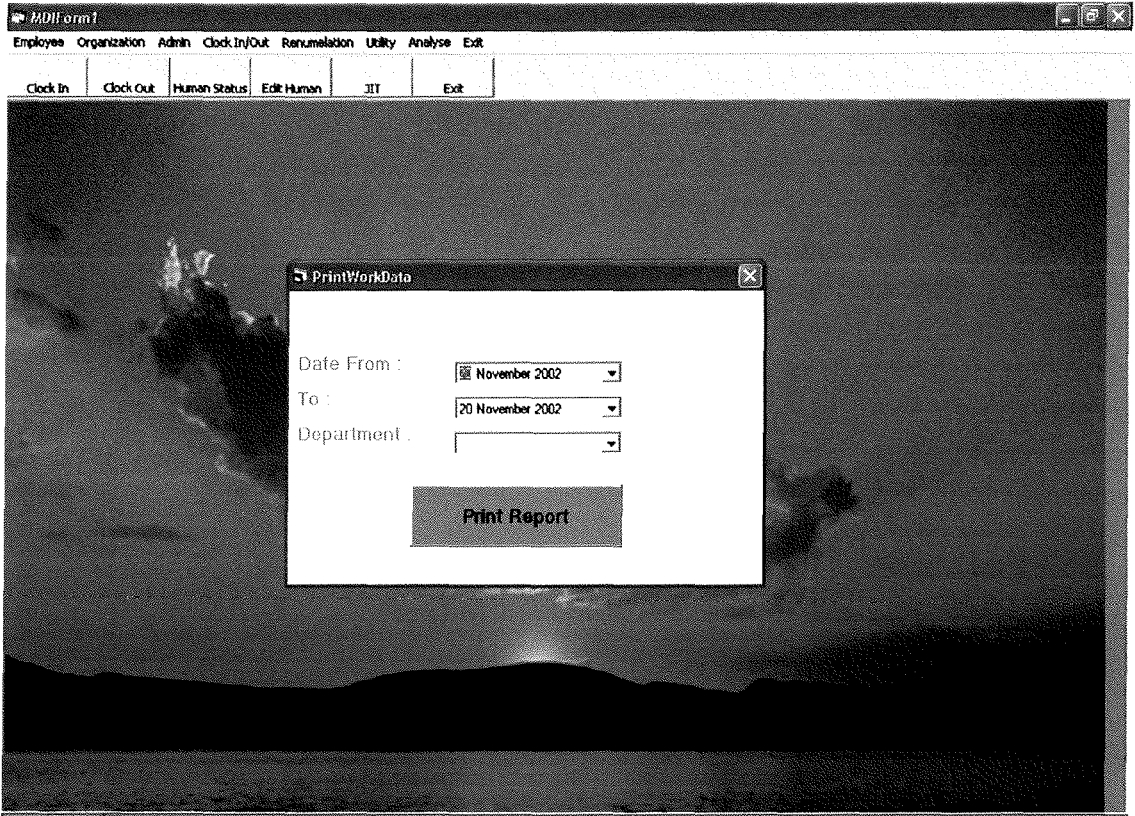


Figure B-14 Print Work Data

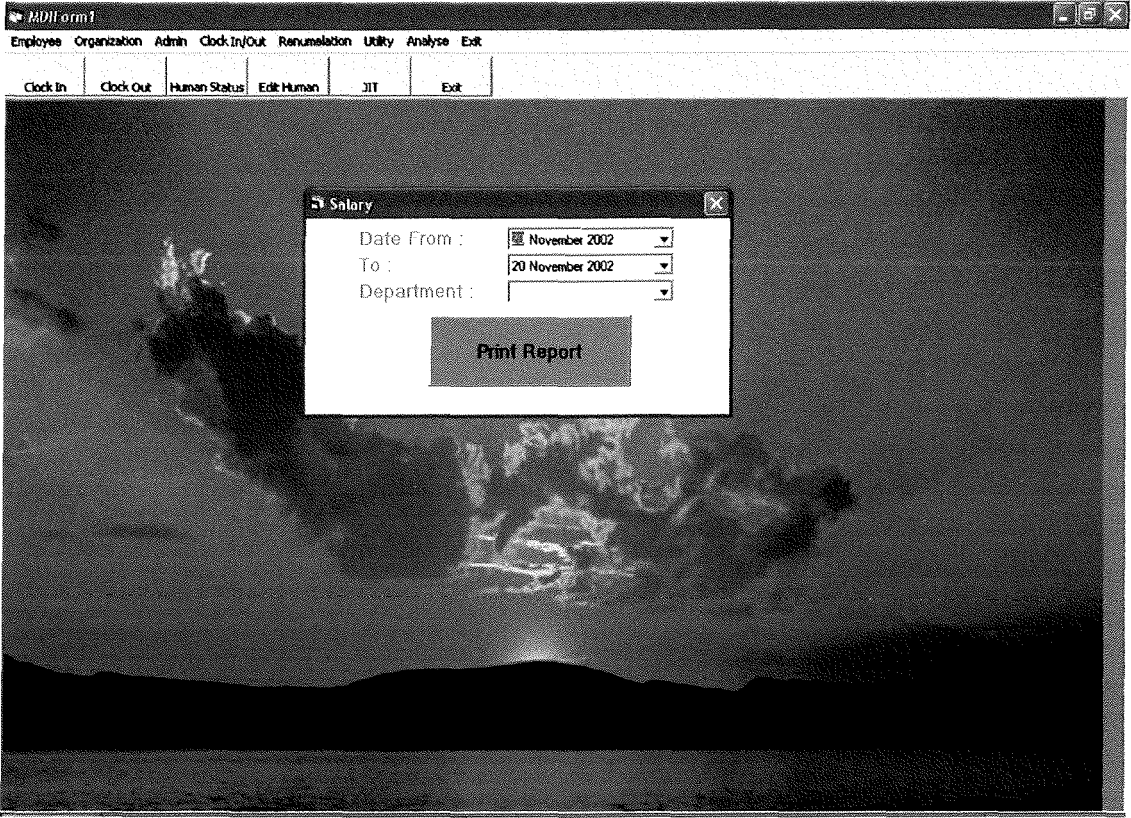


Figure B-15 Print Salary By Dept

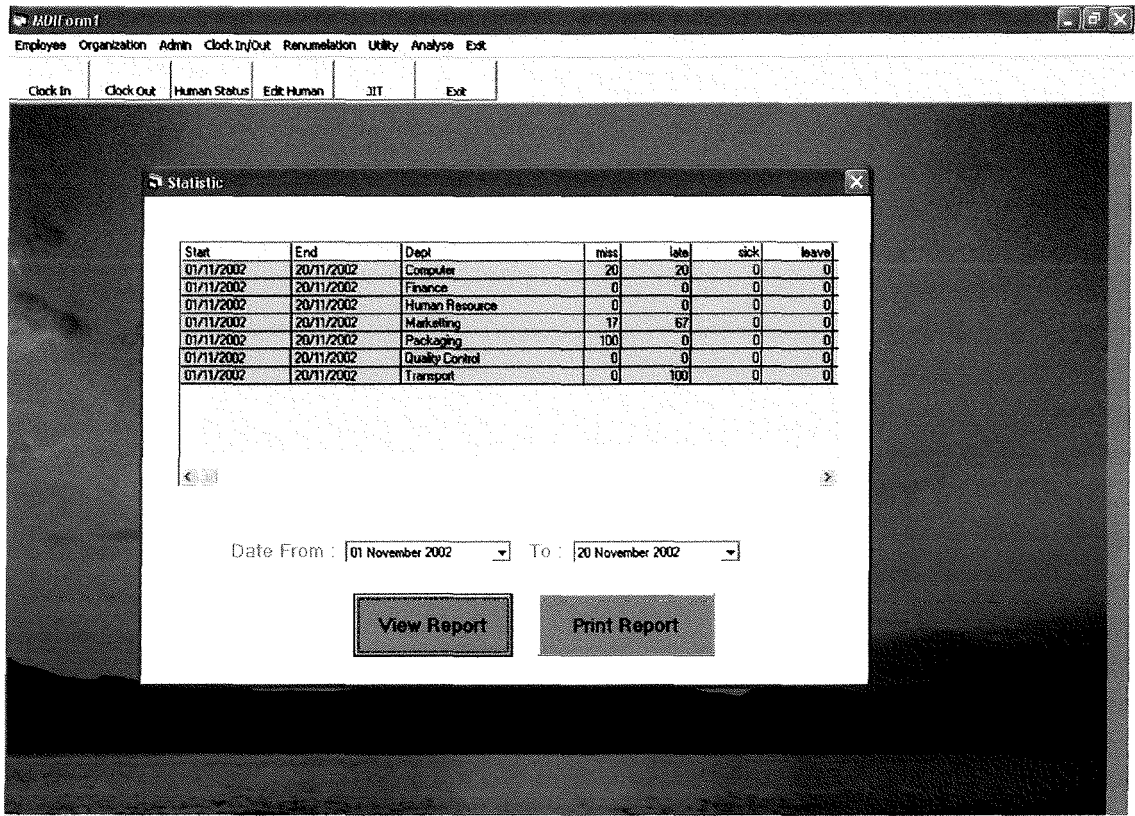


Figure B-17 Analyze By Statistic

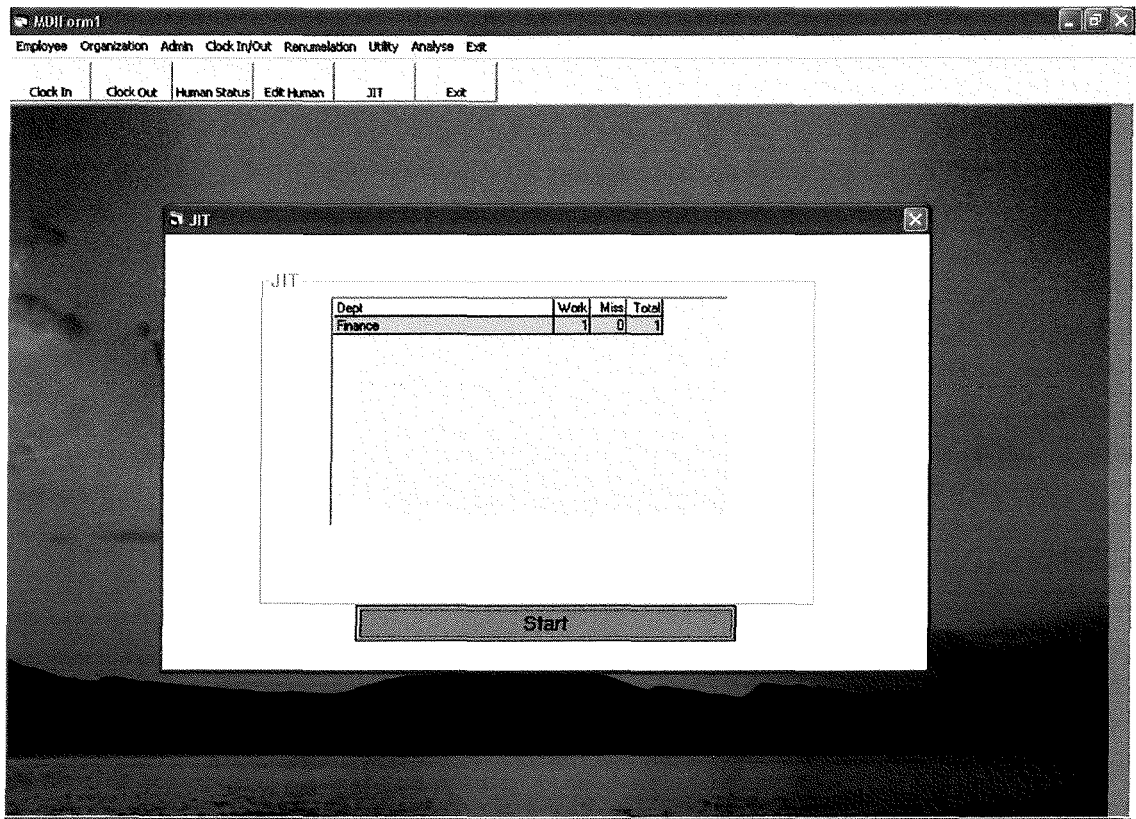


Figure B-18 Analyze By JIT.

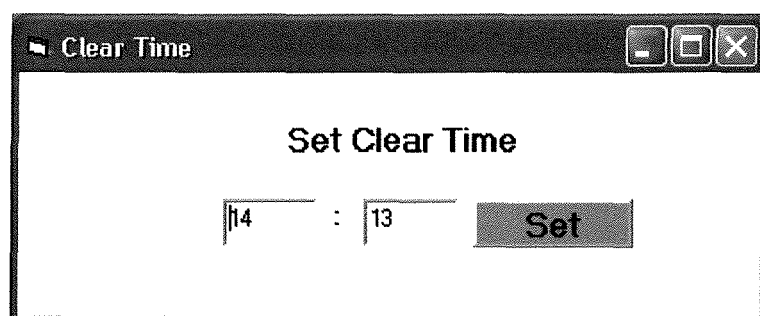


Figure B-19 Set Automatic Check Out Time

APPENDIX C
REPORT DESIGN

Thanalarp Co.,Ltd.
134/14 Soi Jaroenjai Sukhumvit71 North Klongtun
Bangkok 10110
Tel: 0-2314-7266-7 Fax : 0-2318-4983

Department Computer

Start 11/01/2002 **End** 11/20/2002

ID	Name	Late	Absent
02-01-01-00001	Passaporn Pookpant	0	0
02-01-01-00002	Amphol Lampool	0	0

Figure C-1 Print Work Data Report

Thanalarp Co.,Ltd.
134/14 Soi Jaroenjai Sukhumvit71 North Klongtun
Bangkok 10110
Tel: 0-2314-7266-7 Fax : 0-2318-4983

Department Computer

Start 11/01/2002 End 11-20/2002

ID	Name	Salary	OT Hours	OT	Absent	3%Social Disc	Net Salary
02-01-01-00001	Passaporn Pookpant	15,000	0	0	250	442	14308
02-01-01-00002	Amphol Lampool	15,000	0	0	0	450	14550

Figure C-2 Print Salary by Department Report

Thanalarp Co.,Ltd.
134/14 Soi Jaroenjai Sukhumvit71 North Klongtun
Bangkok 10110
Tel: 0-2314-7266-7 Fax : 0-2318-4983

Start 11/05/2002

End 11/20/2002

Department	late	Absent	Sick Leave	Personal Leave	Half Day	Total
Computer	20.00%	20.00%	0.00%	0.00%	600.00%	100.00%
Finance	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Packaging	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%
Marketting	67.00%	17.00%	0.00%	0.00%	17.00%	100.00%
Quality Control	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Transport	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Human Resource	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Figure C-4 Statistic Report

	<div></div>
	02-01-01-00001
Name	Passaporn Pookpant
Department	Computer
Position	Programmer

Figure C-5 Employee Work ID Card

