SALES INFORMATION SYSTEM FOR REAL ESTATE

by

MR. JEERAWAT PRAJAKWONG

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

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

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Project title   Sales Information System for Real Estate

Name   Mr.Jeerawat Prajakwong

Project Advisor   Prof.Dr.Srisakdi Charmonman

Academic year   1996

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

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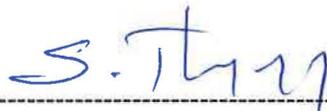
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Member

December 1996

ABSTRACT

This system project is developed to improve the work efficiency, capability, control, decision making and increase customer services of the sales information system for a real estate developer company. The scope of this project **Sales Information System (SIS)** will mainly be involved in interacting with prospects, marketing for property units constructed by the company, collecting payment and drawing sales contract with them. This system will provide facility for processing the following Prospect, Project, Booking, and Contract.

The structured analysis and design technique together with 10-step system development life cycle are applied in developing this sales information system. The new system project report discusses user requirements, system design, hardware and software requirements, security and controls, including cost/benefit analysis. The report also includes detail design of the inputs, outputs, screens and files. The system has been successfully tested and implemented.

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ACKNOWLEDGMENT

Several persons have made contributions to this project. The author would like to acknowledge their efforts here and thank them for their contributions. First, the author wishes to thank Professor Dr.Srisakdi Charmonman, the advisor of this project for his suggestions and advises.

The author also would like to thank Mr.Serttha Thavisin, the president of Sansiri Public Company Limited. Part and all staff in the sales department for their corporation and in sacrificing their time in the interview and data collection.

It hardly needs to say that much of the value of this project report is owing to their assistance, but the author alone bears responsibility for any errors or omissions that remain between the covers.

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Marketing Department carries out the necessary marketing research for launching individual project. They then sub-contract the company's project promotion and advertising to various notable advertising firms. Sales Department handles both pre- and post- sales services, contact potential customers and work closely with the Legal Department in drawing up all legal documents.

As we know that sales revenue is the major revenue of the firm and to success in setting up the appropriate management policy to support the sales strategies, we need the up-to-date information, for example, the information of sales progression, the customers' information, etc. With this information, the firm can use it as feedback. Moreover, it can help the firm to predict its future direction.

1.2 Objective of the Project

The objectives of the project on the Sales Information System are as follows

1. To study the existing system design the new system development for Sansiri Limited.

2. To design a computer based information system for management which will improve sales and customer service.

3. To generate accurate and meaningful information for management so that can make better decision.

4. To arrange the report to all level of management in order to plan the target and to control the way to achieve the goals.

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1.3 Scope of the Project

Sales **I**nformation **S**ystem **(SIS)** will mainly be involved in interacting with prospects, marketing for property units constructed by the company, collecting payment and drawing sales contract with them. This system will provide facility for processing the following :-

1. Prospect

2. Project

3. Booking

4. Contract

Prospect

Prospect is the information of prospect customers. The system will maintain the list of available prospect customers.

The input to this process will include the detailed information regarding the prospect such as name, address, category, profession, income group, social status etc. along with the detail of the property unit (like model, type of property, size etc.) in which prospect will be interested on a routine basic. All these information will be clubbed together and a list of prospects as well as the history of prospect by date will be generated by the system which will be utilized while making further call strategy and in drawing the sales contract with the prospect. Some information will be good for the next style of the project.

Project

The system will also maintain the list of products available for sale (like floor space, bed room, parlous, unit, air condition, facility equipment etc.) in each project.

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For this, the system will require the detail of projects, property units to be sole/leased (according to the area in square meter) along with the detail of its property type (condominium/home office/office building) etc. as the master input data and will generate the list of projects, list of products by project, status of the product, list of property types list of product codes as output.

Booking

The system will keep track of the booking of order in case of sale and lease transactions only. This will require the detail of the order booked including the identification of the prospect, booking advance collected, number of the unit(s) booked. A list of booking detail will be produced by the system as the output. On the basic of this detail the account department will prepare the booking receipts.

Contract

The main activity involved in this module will be the contract draw with a prospect (for sale, rent or lease transaction). Contract detail specifying the type of contract, prospect detail, property unit detail, advance received etc. will be entered into the system. Other input to this module will be the detail of amenities to be included in the contract.

The system will formal copies of each contract on pre-printed stationery. Each contract will also have the date of renewal of the contract, payment schedule of the installments. The system will produce a sales contract register, contract status report, two separate list of contracts due for signing

1. in case of contracts pending to be signed but booking advance received and are likely to be signed within few days (say with 2 to 3 days).

2. in case of those pending contracts which have become too late for signing.

In addition, the system will also maintain the detail of the installment fixed during the contract and the down payments taken at the time of signing the contract along with the payment schedule and the VAT to be charged. For this, the required input will be the contract number, contract date, due date of installment, applicable VAT amount etc. A list of installment due for payment will be produced by the system as output.

1.4 Gantt Chart of the Project Plan

ACTIVITIES	1995				
	Apr.	May	Jun.	Jul.	Aug.
SYSTEM ANALYSIS:	▬	▬			
Context diagram of old system	▬				
Identify the area under study	▪				
Develop the physical DFD of the existing system	▬				
Identify the contents of the existing data stores		▪			
Develop the logical DFD of the existing sysem		▬			
DETAIL ANALYSIS AND DESIGN :		▦	▦		
Develop the logical DFD of the new system		▦			
Identify the contents of the data stores for the new system		▦			
Data Dictionary			▦		
Structure Chart			▦		
Develop the physical DFD of the new system			▦		
IMPLEMENTATION :				▬	▬
Pseudocode or Minispecification				▪	
Programming				▬	
Screen Layout				▪	
Report Layout				▪	
Data Conversion					▬
Testing					▬
Training					▬
Acceptance Test					▬
Production					▪
Documentation					▬

2. THE EXISTING SYSTEM

2.1 Background of the Organization

Sansiri Public Company Limited is a major business conglomerate combining two outstanding real-estate businesses in Thailand -- Siripinyo Group and San Samran Group. The new company pursued its goal of achieving leadership in its field by offering premium quality commercial and residential property developments in the Thai market. Most of the properties owned by the company are situated on prime locations such as Century Plaza on Sukhumvit Road, Baan Piyasathorn on Sathorn Road, Baan Sansiri on Ratchadamri Road, Baan Ploenchit on Ploenchit Road, Baan Ruamrudee on soi ruamrudee, Sansiri Tower, and etc.

The Importance of Marketing & Sales Department

Marketing Department carries out the necessary marketing research for launching individual project. They then sub-contract the company's project promotion and advertising to various notable advertising firms. Sales Department handles both pre- and post- sales services, contact potential customers and work closely with the Legal Department in drawing up all legal documents.

As we know that sales revenue is the major revenue of the firm and to success in setting up the appropriate management policy to support the sales strategies, we need the up-to-date information, for example, the information of sales progression, the customers' information, etc. With this information, the firm can use it as feedback. Moreover, it can help the firm to predict its future direction.

Figure 2.1 Organization Chart of Sansiri Public Company Limited

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2.2 Existing Functions

At present, Sales Department still uses manual operations in their current system. They keep all of their information in word processing files and worksheets. They use the traditional way in keeping their files by filing them it the shelves and carbinets. There is no DataBase Management System software used in this department the following

1. Prospect

2. Project

3. Booking

4. Contract

2.2.1 Computer Hardware Currently, Sales Department has only PCs standalone distributed within the department. There are about 4 sets of PCs.

Computer : COMPAQ and other PC Compatible

Display Card : VGA Monochrome and VGA Color

Model : Range from 386 SX/25 to 486 DX2/66.

Memory : 4 MB RAM

Storage Media : Harddisk with size 170 MB

The other peripherals used in the company are :

Laser Printer : HP LascrJct 4P

Dot Matrix Printer : EPSON LQ1170

2.2.2 Software

2.2.2.1 System Software

- The Operating System - DOS 6.2 (Thai Edition)

- User-Interface Software run on top of DOS -

WINDOWS 3.1 (Thai Edition)

2.2.2.2 Office Automation Software

- Word Processing Software - Microsoft Word for

Windows (Used to prepare all of the document.)

- Spreadsheet Software - Microsoft Excel.(Used to

prepare product's price list)

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Management

Enquiry   Report

Other
Departments

—Prospect Detail—→

—Prospect Detail—

—Project Detail—→

Call Detail—→

—Reports—

SIS

—Law Information for Contract—

Legal

—Due Date Report—

—Copy Contract—

Commission Report—

Sales

Original Contract

Account

Client
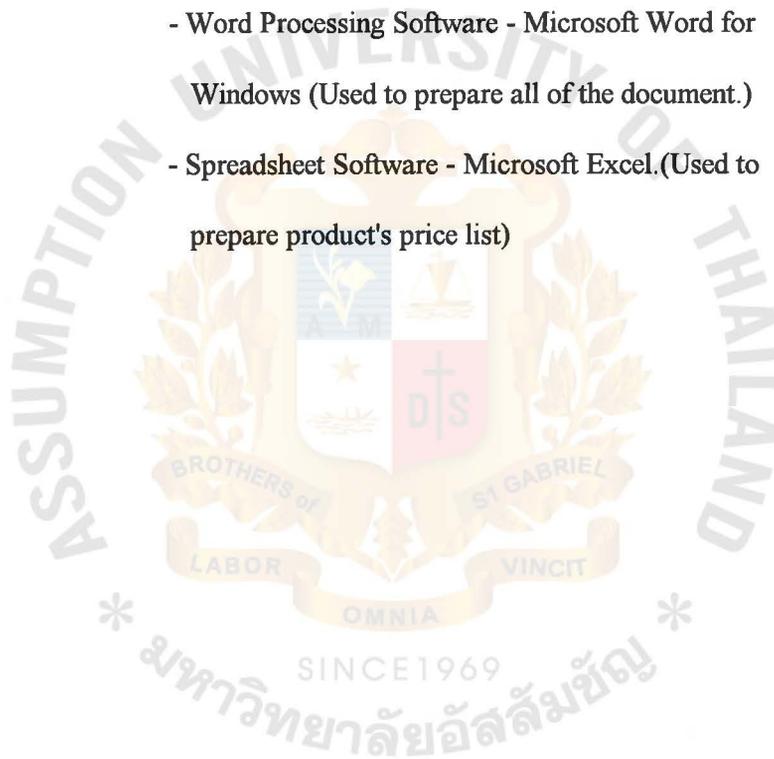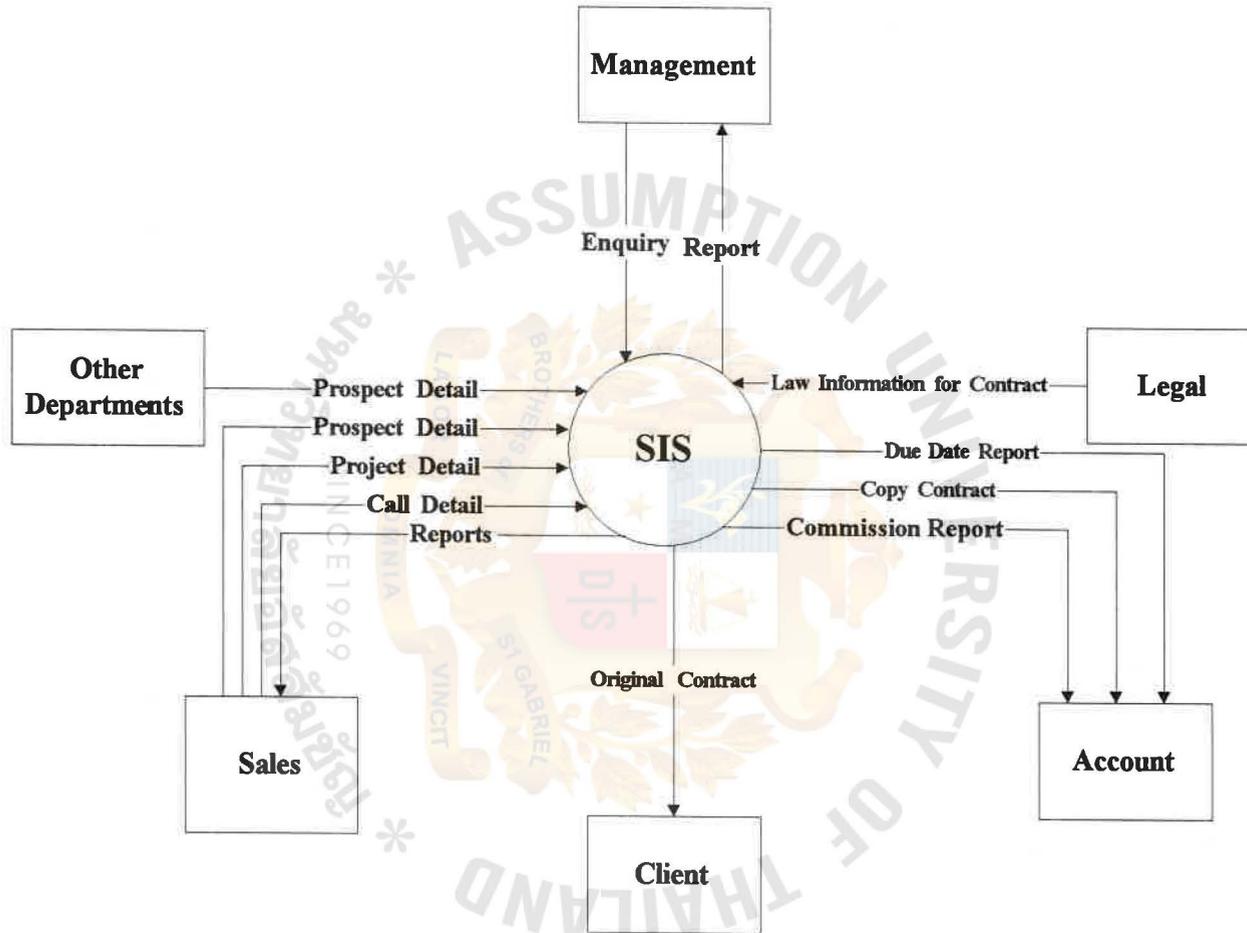
Figure 2.2 Context Diagram (the Existing System)

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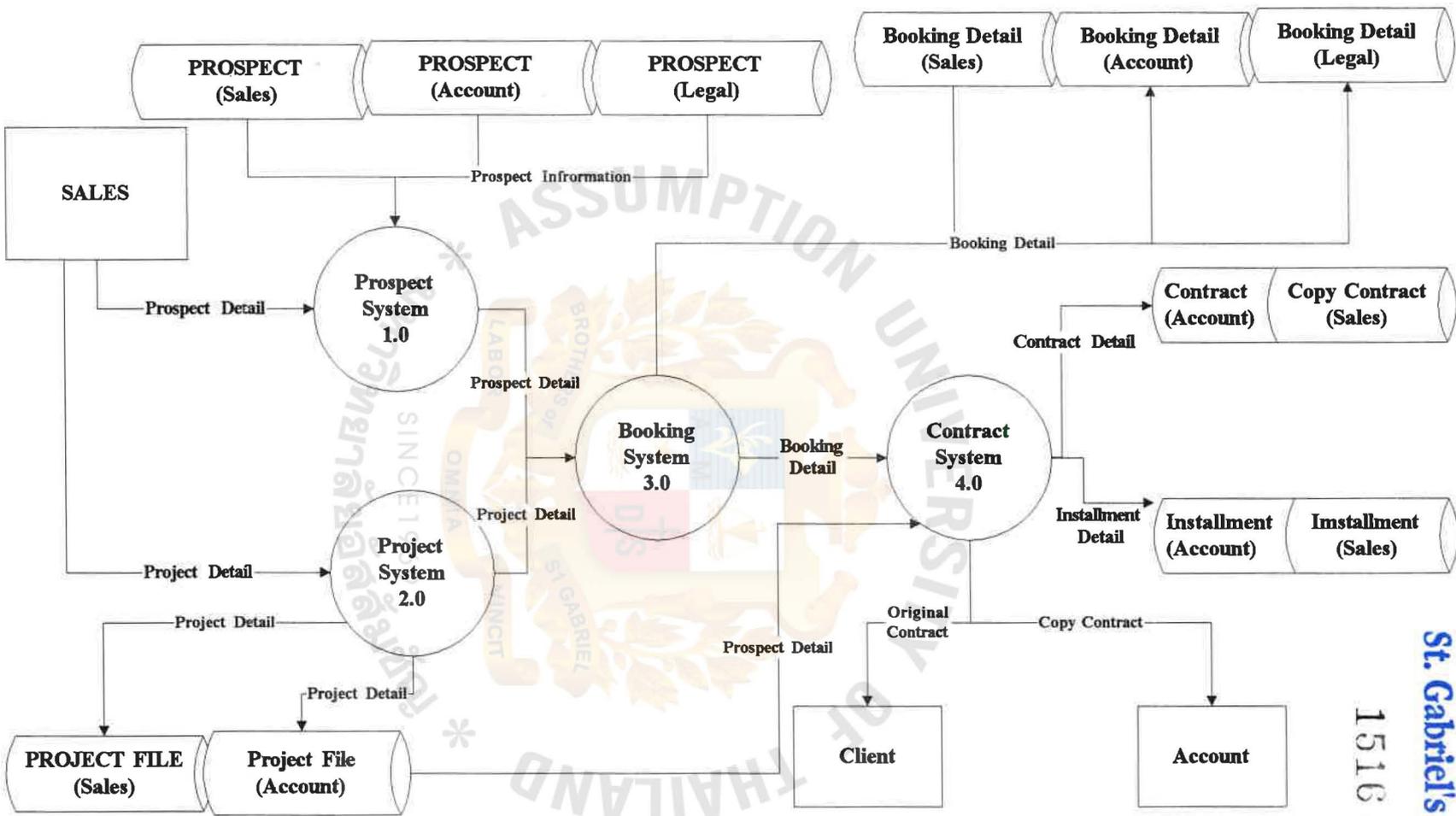
Figures 2.3 Level 0 DFD (the Existing System)

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2.3 Current Problems and Areas for Improvement

1. It is very difficult and clumsy process in retrieving the data such as the potential customers' and customers' information, the information about the current projects, etc.

2. The process of computing the projects' revenues is really complex and take very long time to complete. This will affect the decision making process of the management team.

3. The document stored in the traditional way may loses or easily to damaged. Moreover, it is hardly to maintain these document.

4. The existing system is not flexible enough to adjust to property stock situation which is always be at loss or in exceeding

5. The current system lacks the ability to generate reports for the management. It does not provide rapid retrieval of accurate information and it cannot provide reports for management upon request.

6. It is difficult to control because of no systematic standard and document support for daily operation, especially in stock control. Therefore the property inventory can easily be at loss due to poor system.

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3. THE PROPOSED SYSTEM

3.1 User Requirements

After analyzing the existing system, the requirements of the new system can be stated as follows

This new system will serve all the activities in the Sales department. All of the information will be kept in the DataBase Management System which will provide convenience to the end-users. At first, we will implement this new application on PC standalone for the simplicity and maintaining the information in the systematic way. In the future, we will expand our system to implement on the network which can help sharing the information among those computers in the department.

The advantages from the new system

1. Absolutely, this new system can easily serve the sales activities by helping the end-users searching the required information from the DataBase. The searching module can easily complete within a few or more minutes instead of an hour or more than one day. Moreover, it will guarantee the users for the accuracy

2. The system will automatically calculate the sales revenue from each project.

3. Ultimately, with the networking system, the information will be shared among the various users, also various departments. As the result, the sales staff can provide the meaningful information to the management with the shorter time.

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3.2 System Design

Sales **I**nformation **S**ystem **(SIS)** will mainly be involved in interacting with prospects, marketing for property units constructed by the company, collecting payment and drawing sales contract with them. This system will provide facility for processing the following :-

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<u>Coding Schemes</u>

The coding scheme used in the Sales Information System will be as follows

Project

Property type   -like office/commercial complex,condo etc.

Product code   -like condo A, condo B, shop,parlour etc.

Property unit   -like 200 sq. meter of land for sale etc.

Building/Phase code

Floor/Zone code   -Properety_id

Unit/Land number

999 X XX ·XX XX XX
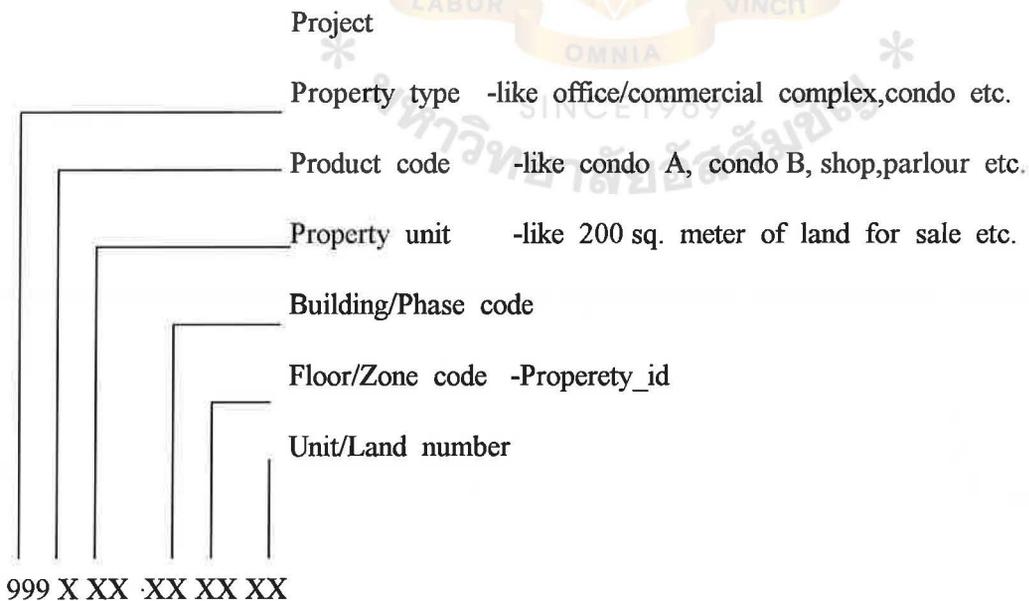
Note that the actual propeprty_id code (property identification code) will be formed from the building/phase code, floor/zone code and unit/land number only and will serve as the unique key for this module.

Project code, property type and product code will be used to classify each property unit and will not form part of the key.

The system will formal copies of each contract on pre-printed stationery. Each contract will also have the date of renewal of the contract, payment schedule of the installments. The system will produce a sales contract register, contract status report, two separate list of contracts due for signing

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The deliverables for the project on **Sales Information System (SIS)** use as follows

1. Screen Layout for all data input program

2. Various hard copy layout containing

Report

1. Project List

2. List of Product Codes

3. List of Amenities by Project

4. List of Prospect Customer

5. Prospect History

6. Sales Contract Register

7. Contract Status Report for Sales

8. Product Status for Property Type

9. List of Sales Executives

10. Sales Commission Report

11. Statement of Sales Executives Commission

12. Sales Call Report

13. Contracts due for Signing

14. Overdue Contract Installments

15. Detailed Project Status by Property Unit

A good report covers an element of performance that has a significant bearing on the goals of the area receiving the report. it indicates the company's actual operating result and plans for future improvements. It reports only essential datas so that manager can quickly learn the whole story.

A good report is aimed at controllable items. It segregates controllable and uncontrollable items so the report is easy to understand and easy to use. It focuses attention on out-of-line performance by emphasizing significant trends.

A good report appears in a format that is easy to understand , and it is expressed in the language of the report user.

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Report can be classified into the following four general categories

(1) Action report - initiate or control a necessary procedures or operation

(2) Information report - provide data or information for further analysis and control.

(3) Reference report - keep the managers/users informed on operations.

(4) Feeder report - consist of bits of data to be used later in conjunction worth other data, another report, or for accumulating data for making decision.

Frequency of Reporting

Within each of those four general categories of reports, they can be represented in frequency of reporting

(1) Scheduled report   - is prepared and distributed at a fixed period such as once a week, once a month or once a year.

(2) On-demand report   - is distributed upon the user's request

(3) Exception report   - is distributed only when certain parameters are out of line with what is expected of these parameters.

3.3 Hardware and Software Requirements

The proposed system is an integrated, on-line data processing system running in a PC-LAN. The requirements of the hardware and software are shown below :

Hardware

The new system requires the Local Area Network system to share the whole corporate database of sales and marketing of the Sansiri PCL.

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1. File Server PC Compatible Pentuim 166 MHZ.   1   Set

-CPU	- Intel Pentuim 166 MHZ. 512 Cache Memory
-Memory	- 32 MB
-Graphic Video	- Local bus 1 MB of DRAM support 1024 x 768
-Display Model	- 14" Super VGA color monitor 1024 x 768
-Auxiliary Storage	- 1.44 MB Disk Drive 3.5"
	Hard Disk 2.0 GB Disk Array
-Expansion Slot	- 10 Expansion slots
-Interface	- 2 buffered serial, 1 parallel and 1 pointing device
-Keyboard	- 104 keys
-Power Supply	- 250 Watts line Automatic line switching

2. Workstation   8   Sets

-CPU	- Intel Pentuim 100 MHZ. 256 Cache Memory
-Memory	- 8 MB
-Graphic Video	- Local bus 1 MB of DRAM support 1024 x 768
-Display Model	- 14" Super VGA color monitor 1024 x 768
-Auxiliary Storage	- 1.44 MB Disk Drive 3.5"
	Hard Disk 850 MB
	Tape Backup Tape Dat 2 GB with Controller
-Expansion Slot	- 8 Expansion slots available for expansion board
-Interface	- Multi I/O Adapter card
-Keyboard	- 104 keys
-Power Supply	- 200 Watts

3. Network Equipment's

-16-Bit Ethernet Network Interface Card (10 MBS)	9	Pcs.
-Coaxial Cable RG.58 AU. with shield	200	Meters
-T-Connector for each interface card	9	Units
-Terminator for RG.58 AU. coaxial cable	2	Units

4. Printers

EPSON LQ 2170+	2	Sets
HP JET 5P	1	Sets

5. Uninterrupted Power Supply 2 KVA.   1   Sets

6. Software

For Software requirements, new requires two parts. The first part is the operating system to control the Local Area Network system and the other one is uses to manage the database and the application program, called database management system, used to controlled, making changes to the database, adding and searching for a particular entry

-Novell Netware version 3.11	1 Set

Connected capability up to 20 users concurrently

Able to use both bus-topology or star-topology

Transaction tracking system provided 500 concurrent open files

-FoxPro for LAN version 2.0	1 Set

A database management software to drive the application and handle the database files

-MS. DOS version 6.22	9 Sets

3.4 Security and Control

This project based on the Local Area Network system that already provide with four different ways of security.

The first restrictions called log-in rights. The user must specify their log-in name. The user name is the identify of a user and is used to identify the user's personal account on the system.

The second level is a password. An optional password is an access keyword that is know only to the user. cannot be seen anywhere.

The third level is the time restriction that can be setup for individual users or all users. The system provides with the 24 hours in 7 days, It can be set for the valid time interval and the smallest interval is half an hour.

Finally, the fourth restriction level is the data access security called "Trustee Rights". The access rights in NetWare 386 have been enhanced to improve the capabilities of network managers to implement effective and transparent network security. The rights can be assigned to users of directories, subdirectories, and files in any compromising security. The rights are listed here and are assigned on two levels: to directory trustees and to file trustees [v].

R = Read

-Directory trustee: the user can open and read a file in the assigned directory and subdirectory.

-File trustee: the user can open and read to the assigned file.

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W = Write

-Directory trustee: the user can open and write to files in the directory and subdirectory.

C = Create

-The user can create new files and subdirectories.

E = Erase

-Directory trustee: this right can be assigned to a trustee of the directory, who can remove files and subdirectories.

-File trustee: this user can delete the file to which he or she is assigned.

D = Directory Scan

-The user can see this directory name when scanning the parent directory.

F = File Scan

-The user can see the file names of the files in the directory when scanning the directory. Users who are

-file trustees can see the file names of only the files hey are assigned trusteeship to.

A = Access Control

-Directory trustee: the user can modify the trustee list and inherited rights mask of this directory and of all child subdirectories and files, but the user cannot grant rights to themselves that they don't already have.

-File trustee: the user can modify the file's trustee list and inherited rights mask.

S = Supervisory

- Directory trustee: a user has all rights to this directory and all child subdirectories and files.

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The user can grant supervisor rights to other users in this directory and child subdirectories and files. The user's rights override all inherited right masks in child subdirectories and files.

M = Modify

-Directory trustee: user can change the name and attributes of a directory and all child subdirectories.

-File trustee: user can change the name and attributes of the assigned file.

These rights flag can be assigned to each user in the system independently and the users cannot add their trustee right by themselves, they have to tell the Local, Area Network's supervisor to add for them. These trustee rights is taking care by the Local Area Network operating software calls Novell Netware 386 and its very hard to break through their security system.

The second security control is the data encryption done by both database management system and by the application program for example nobody can type the file to view its content although access directly to database, open the data file and list the records contents, the important data are passed the encryption module so it gives a different meaning such as the cost element is divided by some constant value etc.

All of these security will ensure that the system is saved in the appropriate location and manipulated only by the authorized user.

3.5 Cost/Benefits Analysis

3.5.1 Cost Analysis : The expected cost for the new system have three major cost categories that must be taken into account. These three categories are:

1. Investment costs are non recurring capital outlays to acquire or develop new equipment, new software, or some other major new capability.

2. Implementation costs are one-time outlays to create or install this new capability.

3. The annual operating costs are the recurring outlays required to operate the system on a month-to-month or year-to-year basis.

3.5.1.1 Investment Cost

Requirement for the procurement of hardware is considered from

- Future expansion

- Number of spaces requirement

- Computer life cycle

- Speed according to work nature

- Economic computer set

- Computer technology

The solution on choosing hardware has been concluded after discussing of the above criteria's with the management. Below is details of hardware configuration and other details

- File Server PC Compatible Pentuim 166 MHZ. 1 Set   Bht.   100,000

- Workstation PC Compatible Pentuim 100 MHZ. 8 Sets   Bht.   320,000

- 16-Bit Ethernet Network Interface Card 9 Pcs.	Bht.	27,000
- Coaxial Cable RG.58 AU. with shield 200 Meters	Bht.	3,000
- T-Connector for each interface card 9 Pcs.	Bht.	1,500
- Terminator for RG.58 AU. coaxial cable 2 Pcs.	Bht.	500
- Printer EPSON LQ 2170+ 2 Sets	Bht.	37,000
- Printer HP JET 5P 1 Sets	Bht.	26,500
- Uninterrupted Power Supply 2 KVA.1 Sets	Bht.	89,000
- Software	Bht.	50,000
Total Investment Cost	Bht.	654,500

3.5.1.2 Implementation Cost

It is one-time outlays to create and install new system. This include an application program of the Sales Information System.

- Development Cost	Bht.	300,000
Total Implementation Cost	Bht.	300,000

3.5.1.3 Annual operating cost

- Software maintenance (10% of Development cost)	Bht.	30,000
- Hardware maintenance	Bht.	100,000
- Consumable	Bht.	50,000
Total Annual operation Cost	Bht.	180,000

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3.5.2 Benefits Analysis

3.5.2.1 Tangible benefits

- Increase efficiency of sales   Bht.   500,000

- Increase efficiency in payment collection   Bht.   250,000

              Total Tangible benefits   Bht.   <u>750,000</u>

Direct and indirect cost reductions

- Elimination of clerical personnel and/or manual operations.

- Reduction of inventories, manufacturing, operations and management

   costs.

- Effective cost reduction.

- Distribution of resources across demand for service.

Revenue Increases

- Increased sales due to better responsiveness.

- Improved services.

- Faster processing of operations.

Intangible Benefits

- Smoothing of operational flows.

- Reduced volume of paper produced and handled.

- Rise in level of service quality & performance.

- Expansion capability.

- Improved decision process by providing faster access to information

- Ability to meet the competition.

- Future cost avoidance.

- Positive effect on other classes of investments or resources such as better utilization of money, more efficient use of floor space or personnel and so forth.

- Improved employee morale.

- Produced fine job, clear documentation.

- Avoid the confusion of the human handwriting.

- Reduced the mistake occurs by the human errors.

- The operational work is done in timely manner, accuracy, efficient, and effective.

- Reduce the redundancy in procedures.

- Provide management for the intelligent information.

- Served as a guide line for the next phase project.

- Create a good image to the organization.

3.5.3 Economic Cost Comparison

There are varieties of method to analyze whether total cost of investment put into the proposed system will benefit or worth the cost. This project uses the Payback period method.

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

where
- P = Payback Period
- I = Investment
- R = Average Annual Return
- T = Corporate Tax Rate in percent (30%)

Total Investment Cost	=	654,500
Implementation Cost	=	300,000
Total Investment and Implementation Cost	=	954,500
Tax rate	=	30 %
Average annual return	=	750,000

$$\text{Payback Period} = \frac{954,500}{(1-0.30)\,(750,000-50,000)}$$

$$= 1.94 \text{ years}$$

$$= 2 \text{ years}$$

Table Cost Comparison (Existing System vs Proposed System)

Cost Comparison	Existing					Proposed				
	1	2	3	4	5	1	2	3	4	5
Personnel										
Section Head (25,000+15% increase)	300,000	345,000	396,750	456,263	524,702	300,000	345,000	396,750	456,263	524,702
Supervisors (10,000+15% increase)	360,000	414,000	476,100	547,515	629,642	360,000	414,000	476,100	547,515	629,642
Clerk (7,500+15% increase)	270,000	310,500	357,075	410,636	472,232	270,000	310,500	357,075	410,636	472,232
Hardware										
File Server	0	0	0	0	0	100,000 1 Set	0	0	0	0
Personal Computer	320,000 8 Sets	0	0	0	0	320,000 8 Sets	0	0	0	0
Laser Printer	60,000 2 Sets	0	0	0	0	60,000 2 Sets	0	0	0	0
Dot Matrix Printer	40,000 2 Sets	0	0	0	0	40,000 2 Sets	0	0	0	0
Other Equipments	0	0	0	0	0	184,500	0	0	0	0
Software										
Software	0	0	0	0	0	50,000	0	0	0	0
Overhead										
Overhead (20% for Existing, 10% for Proposed)	100,000	120,000	144,000	172,800	207,360	100,000	110,000	121,000	133,100	146,410
Other Expenses										
Other Expenses (20% for Existing, 10% for Proposed)	50,000	60,000	72,000	86,400	103,680	50,000	55,000	60,500	66,550	73,205
Total	1,500,000	1,249,500	1,445,925	1,673,614	1,937,616	1,834,500	1,234,500	1,411,425	1,614,064	1,846,191
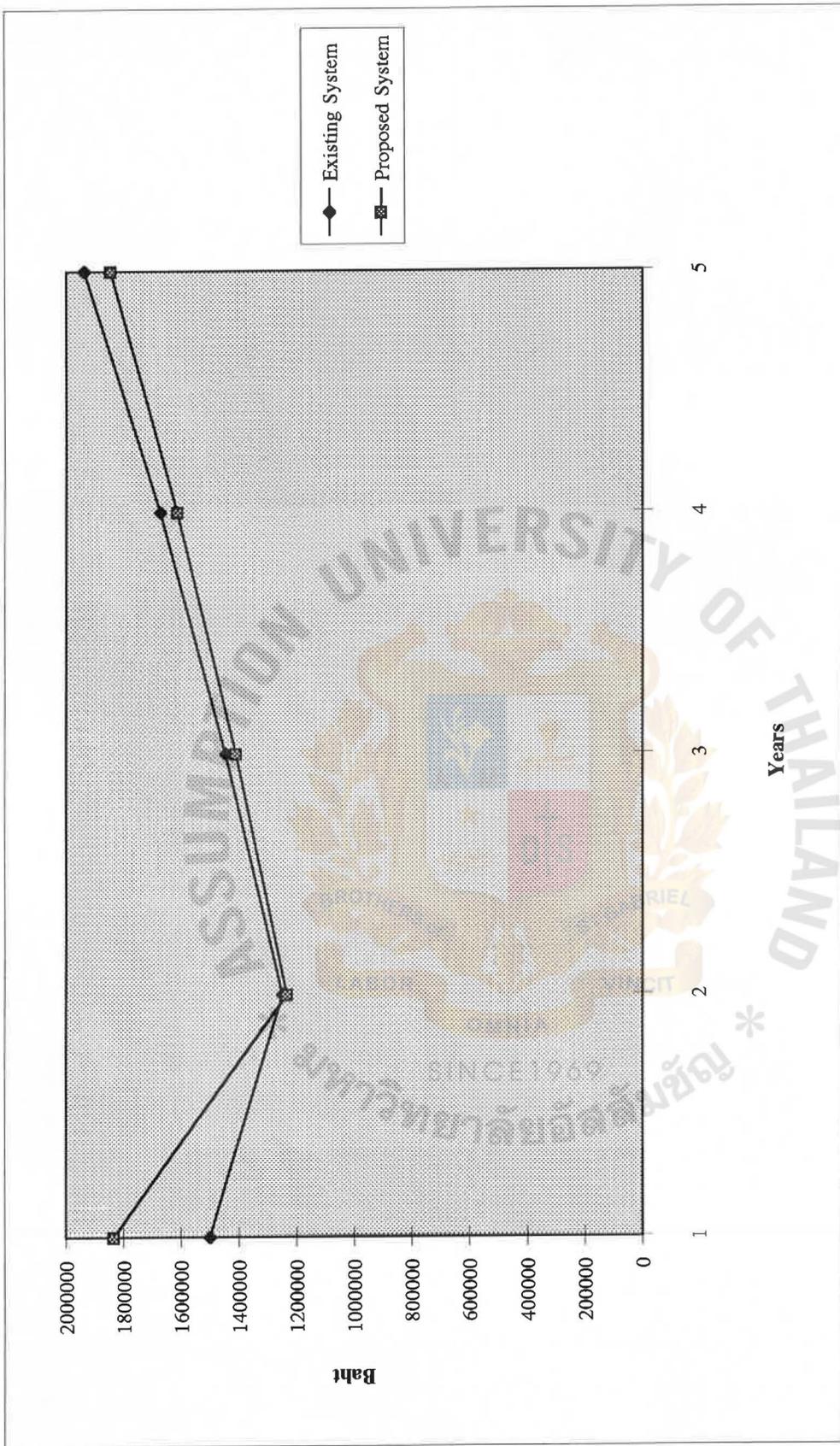
Figure 2.4 Break-Even Analysis

30

4. PROJECT IMPLEMENTATION

4.1 Overview of Project Implementation Schedule

4.1.1 Program The System

This is the point at which application program are written in order to perform whatever functions are being computerized. The programming processes in the following sequence :

    (1) After studying the existing system by interviewing or documentation's, then design the data flow diagram, flowchart and etc.

    (2) Develop the final form for output and then the input

    (3) Develop program flowchart of each program's step-by-step logical operations.

    (4) Determine the file layouts.

    (5) Write the program code.

    (6) Debug each program.

    (7) Run all the program together

    (8) Document the program.

4.1.2 Test the programs.

This involves the testing of the programs, a full system test, and the documentation of the programs.

A complete schedule of testing involves the following subtasks.

31

1. Testing individual programs. The programmer tested each individual program to make sure it performed satisfactorily.

2. Create an extensive set of test date. The programmers probably created some test data for testing the individual programs, but now test data must be create for all possible real - life situations. The programmers, systems analysts, user department representatives, and auditors should now get together. They should create test data that contain both valid and invalid data, test normal processing routines, test error routines, check lists, test variations using different input and output formats, test the addition and deletion of records to files, test the file storage and retrieval algorithms, insert data that will cause problems, and finally, prepare just plain ridiculous out - of - scale data.

3. Link or String testing. This testing is what we call the upstream and downstream feeds between different programs or program modules. The reason for testing the series of programs is, to ensure that the "job stream" is correct. The job stream consists not only of those job control statements that are necessary to invoke the proper programs to be processed, but it also defines the files that will be created and processed, and it designates the devices that are to be used for the files.

4. System or Multiple-thread testing. You probably will have some computer operations people try to run the system tests so they can determine if the system will operate on organization's computers. The objective of testing the entire system is to verify that the programs meet the original programming specifications, to

32

ensure that the computer operations staff has adequate documentation to run the system, to ensure that the overall system flow works properly.

5. Backup and restart testing. The basic goals are to make sure that the files can be reconstructed if they are destroyed totally, that the files can be down-dated to a value from a previous period of time, that the programs are backed up in case they are destroyed, and that the systems can be restarted in case of disaster.

6. Complete the documentation. After completion of the testing, you must finish the documentation of the program, set of programs, or program modules.

4.1.3 Implement (Install) the system.

This is the point at which you run the programs, interface with the different files of data, utilize any telecommunication networks, and interface with the users.

Actual implementation of the new system can begin at this point using either a parallel or a one-for-one-plan, or some blend of the two. It is advisable that both the systems analyst and the programmer observe the following basic principles during any implementation.

1. Avoid disrupting the day-to-day business activities during the implementation process.

2. Do not require excessive overtime work during implementation.

3. Inform management of all changes in the implementation method or time schedule.

4. Do not give demanding orders; you are functioning as advisory staff, not as a line manager.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

After study an existing system of the Sales Information System, there are many weak points that should be improved for example, It is very difficult and clumsy process in retrieving the data such as the potential customers' and customers' information, the information about the current projects, etc., The process of computing the projects' revenues is really complex and take very long time to complete. This will affect the decision making process of the management team., The document stored in the traditional way may loses or easily to damaged. Moreover, it is hardly to maintain these document. all of these samples cause the reduction of the whole performance and this make the negative image of client to the organization.

By using the structured analysis approach to implements the use of computer system in The Sansiri Public Company Limited helps improve both the system itself and the staffs performance. This approach helps depict the problems occur in the organization and find the best way to handle them.

The new system proposed improves the efficiency and the effectiveness of the booking and contract process by using computer transfer data to other department and management level instead of using the human handwriting. This reduce the time used and significantly reduced human errors. More over, the use of computer form raise up the client image because normally we rely on the machine more than the human.

5.2 Recommendations

This Sales Information System implemented for The Sansiri Public Company Limited is a part of the whole organization tasks and the system draw out a lot of benefits from using the computer. In the long term, The Sansiri Public Company Limited should implement the computer system in the remained parts especially in the management level for management decision making such as supporting report for instance sales forecasting budgeting report, and cashflow worksheet etc.

Eventhough the new system using the computer helps to improve the efficiency, effectiveness, and economy of the organization but the success of Sales Information System is also depend on the implementation. If the system itself is very good but the user does not accept, it would probably does not work. The management of The Sansiri Public Company Limited should open their mind for new technologies that will help them to success among the strong competitive market.

The recommendation for Sales Information System for the current situation are:-

- Improve staffs skill in using the computer and its devices.

- Invest for the information technology includes both hardware and software.

- Staffs rotation in order to have them familiar with the system.

- The management should open their mind for advance technology awareness.

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4. <u>FoxPro Tutorial</u> Fox Software, Inc., Ohio, 1989

5. Bodnar, H. George and Hopwood, S.William. <u>Accounting Information Systems,</u> Allyn and Bacon , Inc., 1988

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APPENDICES

APPENDIX A

Data Structure

Table A1 File Layout of Data Store Prospect

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	COMPANY	NUMBER	2		
2	PROJECT	NUMBER	3		
3	PROJECT_ID	NUMBER	6		
4	PROSPECT_NAME_THAI	CHAR	50		
5	PROSPECT_NAME_ENG	CHAR	50		
6	CONTACT_PERSON	CHAR	50		
7	OCCUPATION	NUMBER	2		
8	CATEGORY	CHAR	1		
9	MARITAL_STATUS	CHAR	1		
10	FOREIGN_LOCAL	CHAR	1		
11	NATIONALITY	CHAR	20		
12	ADDRESS	VARCHAR	120		
13	CITY	CHAR	20		
14	ZIP	CHAR	6		
15	PHONE	CHAR	20		
16	FAX	CHAR	15		
17	OFFICE_ADDRESS	VARCHAR	150		
18	OFFICE_CITY	CHAR	20		
19	OFFICE_CITY_ZIP	CHAR	6		
20	OFFICE_PHONE	CHAR	20		
21	OFFICE_FAX	CHAR	15		
22	YEARLY_INCOME	NUMBER	(16,2)		
23	NO_OF_DEPENDENTS	NUMBER	2		
24	VIP_STATUS	CHAR	1		
25	SIZE_REQUIRED	NUMBER	6		
26	PROPERTY_TYPE	CHAR	1		
27	PRODUCT_REQUIRED	CHAR	2		
28	MODEL_REQUIRED	CHAR	2		
29	TYPE_OF_DEAL	CHAR	1		
30	NO_OF_DEPENDENTS	NUMBER	2		
31	WAITING_PERIOD	NUMBER	3		

32	MEDIA_CODE	CHAR	2		
33	TYPE_OF_EXISTING_PROPERTY	VARCHAR	100		
34	EXISTING_OWNERSHIP_STATUS	CHAR	1		
35	VALUE_OF_EXISTING_PROPERTY	NUMBER	(16,2)		
36	PREVIOUS_DEAL	CHAR	1		
37	DESP_OF_PREVIOUS_DEAL	CHAR	50		
38	SALES_EXECUTIVE_CODE	CHAR	3		
39	MARKETING_STATUS	CHAR	1		
40	REMARKS	VARCHAR	255		

Prospect   This entity will keep the information regarding the prospect, description of previous deal (if any) done with the prospect along with the detail of the property unit in which the prospect will be interested.

Remarks   The unique key in this entity will be the prospect_id (prospect identification code). There will be a remarks field also which could be used to specify any type of remark/comment regarding the prospect by the marketing department for official purpose.

A1

Table A2 File Layout of Data Store Prospect_preferences

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	PROSPECT_ID	NUMBER	6		
2	PREFERENCE_CODE	CHAR	2		

Prospect   This entity will contain preferences attached to each Preferences prospect. For example, preference codes and their description could have the following values:

V1	Pool View
V2	Garden View
S1	North Facing
S2	South Facing
S3	East Facing
S4	West Facing etc.

Remarks   Here the prospect_id (prospect identification) field will be included to link the preferences with any particular prospect. The description of the preferences will be stored in a separate database.

A2

Table A3 File Layout of Data Store Property_type

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	PROPERTY_TYPE_CODE	CHAR	1		
2	DESCRIPTION	CHAR	30		

Property type This entity will contain the project wise detail of property types, These

property types will be hard coded in the system. The user will need to

enter only the code of the property type which will be fixed like

      1. for Office/Commercial complex

      2. for Residential house

      3. for Condominium

      4. for Service apartment

Remarks Each property type will be classified into products and each product will

have certain attributes / comments attached with it.

Table A4 File Layout of Data Store Products

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	COMPANY	NUMBER	2		
2	PROJECT	NUMBER	3		
3	PROJECT_ITYPE	CHAR	16		
4	PRODUCT_CODE	CHAR	2		
5	SALE_AREA_PER_UNIT	NUMBER	6,2		
6	UNIT_AREA	CHAR	2		
7	UNITS_SOLD	NUMBER	4		
8	UNITS_RENTED	NUMBER	4		
9	UNITS_LEASED	NUMBER	4		
10	TOTAL_UNITS	NUMBER	4		
11	SALE_PRICE	NUMBER	16,2		

A4

Table A5 File Layout of Data Store Product_attributes

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	COMPAN Y	NUMBER	2		
2	PROJECT	NUMBER	3		
3	PROPERTY_TYPE	CHAR	1		
4	PRODUCT_CODE	CHAR	2		
5	PRODUCT_ATTRIBUTE_CODE	CHAR	3		
6	REMARKS	VARCHAR	255		

A5
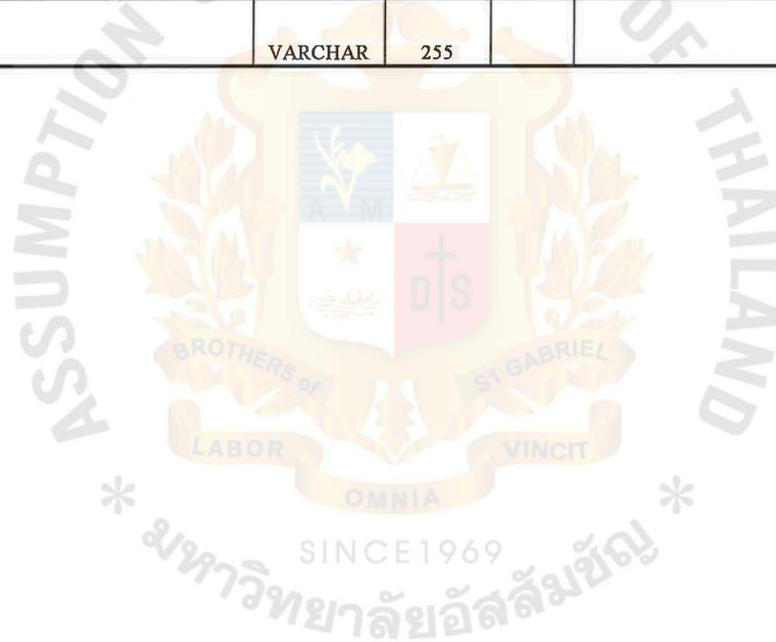
Table A6 File Layout of Data Store Property_unit

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	COMPANY	NUMBER	2		
2	PROJECT	NUMBER	3		
3	BUILDING_PHASE_CODE	CHAR	2		
4	FLOOR_ZONE_CODE	CHAR	2		
5	UNIT_NIMBER	CHAR	2		
6	PROPERTY_TYPE	CHAR	1		
7	PRODUCT_CODE	CHAR	2		
8	MODEL_CODE	CHAR	2		
9	STATUS	CHAR	1		0 : Free 1 : Booked 2 : Sold 3 : Rented 4 : Used 5 : Reserved 6 : Self Occupied
10	DESCRIPTION	VARCHAR	255		

Property unit   Each property type is classified into a number of property units belonging to any particular product.

Remarks   There will be several attributes / comments attached with every property unit.

Table A7 File Layout of Data Store Property_attribute

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	COMPANY	NUMBER	2		
2	PROJECT	NUMBER	3		
3	BUILDING_PHASE_CODE	CHAR	2		
4	FLOOR_ZONE_CODE	CHAR	2		
5	UNIT_NIMBER	CHAR	2		
6	PROPERTY_ATTRIBUTE_CODE	CHAR	3		
7	REMARKS	VARCHAR	255		

A7

Table A8 File Layout of Data Store Building_phase

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	COMPANY	NUMBER	2		
2	PROJECT	NUMBER	3		
3	BUILDING_PHASE_CODE	CHAR	2		KEY FIELD
4	DESCRIPTION	CHAR	30		

Building Phase   This entity will contain the code and description of the building (in case of commercial complexes) or of the phase (in case of residential houses).

A8
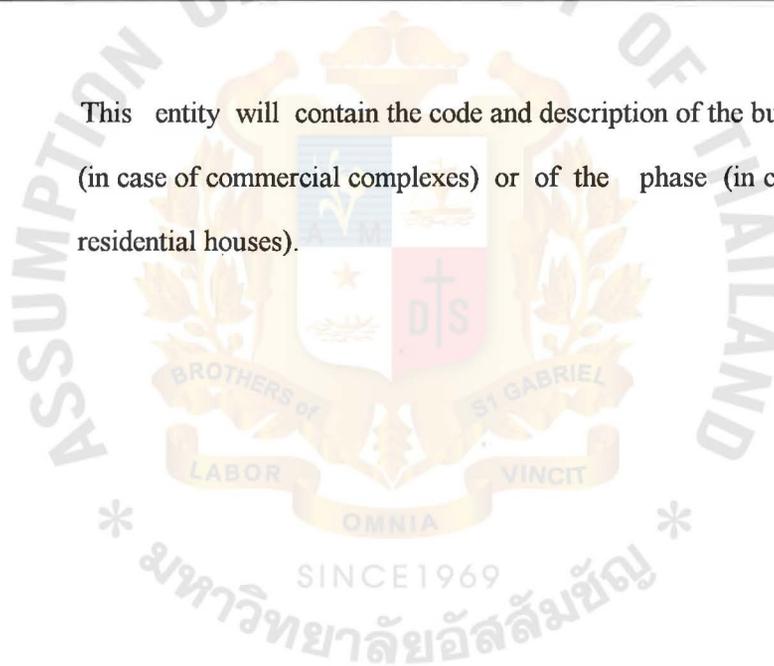
Table A9 File Layout of Data Store Floor/zone

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	COMPANY	NUMBER	2		
2	PROJECT	NUMBER	3		
3	BUILDING_PHASE_CODE	CHAR	2		KEY FIELD
4	FLOOR_ZONE_CODE	CHAR	2		KEY FIELD
5	DESCRIPTION	CHAR	30		

Floor / Zone   This will contain the code and description of the floor or the zone on which a roperty unit or the residential house will be located.

Table A10 File Layout of Data Store Models

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	COMPANY	NUMBER	2		
2	PROJECT	NUMBER	3		
3	PROPERTY_TYPE	CHAR	1		
4	PRODUCT_CODE	CHAR	2		
5	MODEL_CODE	CHAR	2		
6	DESCRIPTION	CHAR	50		
7	STANDARD_COST	NUMBER	16,2		
8	STANDARD_SALE	NUMBER	16,2		
9	PRICE	NUMBER	16,2		

Model   This will contain the detail of the e construction models (like housing model, office model etc.) along with the cost and selling price associated with each model.

A10

Table A11 File Layout of Data Store Model_attributes

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	COMPANY	NUMBER	2		
2	PROJECT	NUMBER	3		
3	PROPERTY_TYPE	CHAR	1		
4	PRODUCT_CODE	CHAR	2		
5	MODEL_CODE	CHAR	2		
6	ATTRIB_CODE	CHAR	3		
7	ATTRIB_QTY	NUMBER	16,2		
8	REMARKS	VARCHAR	255		

Remarks Each construction model will also have certain attributes attached.

Table A12 File Layout of Data Store Sales_booking

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	COMPANY	NUMBER	2		
2	PROJECT	NUMBER	3		
3	PROSPECT_ID	NUMBER	6		
4	BOOKING_NO	CHAR	10		KEY FIELD
5	BOOKING_DATE	DATE			
6	BOOKING_AMOUNT	NUMBER	16,2		
7	DUE_DATE_OF_CONTRACT	DATE			
8	BUILDING_PHASE_CODE	CHAR	2		
9	FLOODR_ZONE_CODE	CHAR	2		
10	UNIT_NO	CHAR	2		
11	RECEIPT_NO	CHAR	10		
12	STATUS	CHAR	1		O : Booking Open C : Booking Closed Z : Booking Cancel

Property Booking   A property deal normally begin with a booking advance from the prospect. One cheque could be given by the prospect for the booking of more than one unit (booking of multiple units). Booking advance could be paid against credit cards also. Booking will be done by the marketing department and the receipt will be prepared by the cashiering department.

Table A13 File Layout of Data Store Sales_contract

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	COMPANY	NUMBER	2		
2	PROJECT	NUMBER	3		
3	AGENT_CODE	CHAR	3		
4	CONTRACT_NUMBER	CHAR	10		KEY FIELD
5	CONTRACT_DATE	DATE			
6	TYPE_OF_CONTRACT	CHAR	1		(SALE, RENT, LEASE)

Sales Contract   Only one contract will be drawn up for a single property unit till the expire of that contract. Sales Contracts are usually drawn for a fixed period. A unique contract number will be assigned to any such contract drawn. Also the system subtracts the advance / down payment received from the net value of the property unit so that the remaining balance could be splitted into a number of installments with a specific payment schedule.

A13

Table A14 File Layout of Data Store Call_report

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	COMPANY	NUMBER	2		
2	PROJECT	NUMBER	3		
3	PROPERTY_ID	NUMBER	6		
4	SALES_EXECUTIVE_CODE	CHAR	3		
5	CALL_DESCRIPTION	VARCHAR	255		
6	CALL_DATE	DATE			
7	NEXT_CALL_DATE	DATE			
8	STATUS	CHAR	1		
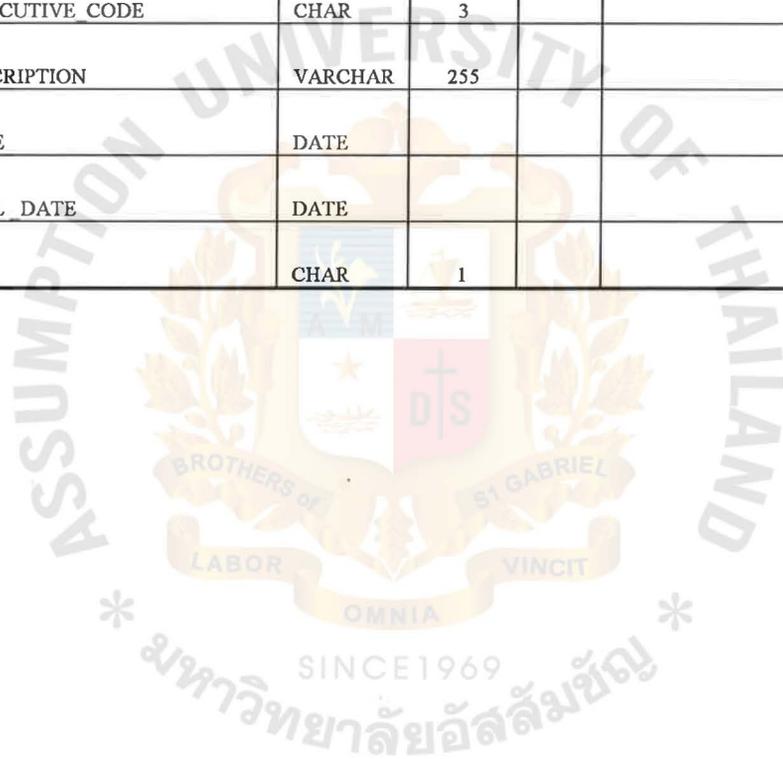
Table A15 File Layout of Data Store Sales_executive_commission

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	COMPANY	NUMBER	2		
2	PROJECT	NUMBER	3		
3	PROPERTY_TYPE	CHAR	1		
4	PRODUCT_CODE	CHAR	2		
5	COMMISION_CODE	CHAR	2		
6	SALE_MIN_QTY	NUMBER	6		
7	SALE_RANGE_FROM	NUMBER	6		
8	SALE_RANGE_TO	NUMBER	6		
9	SALE_COMMISION	NUMBER	4,2		
10	RENT_MIN_QTY	NUMBER	6		
11	RENT_RANGE_RROM	NUMBER	6		
12	RENT_RNAGE_TO	NUMBER	6		
13	RENT_COMMISION	NUMBER	4,2		
14	LEASE_MIN_QTY	NUMBER	6		
15	LEASE_RANGE_FROM	NUMBER	6		
16	LEASE_RANGE_TO	NUMBER	6		
17	LEASE_COMMISION	NUMBER	4,2		

Commission   A project wise commission slab on the properties, Rates sold / rented /

leased by the Sales Executives is also maintained by the system.

A15
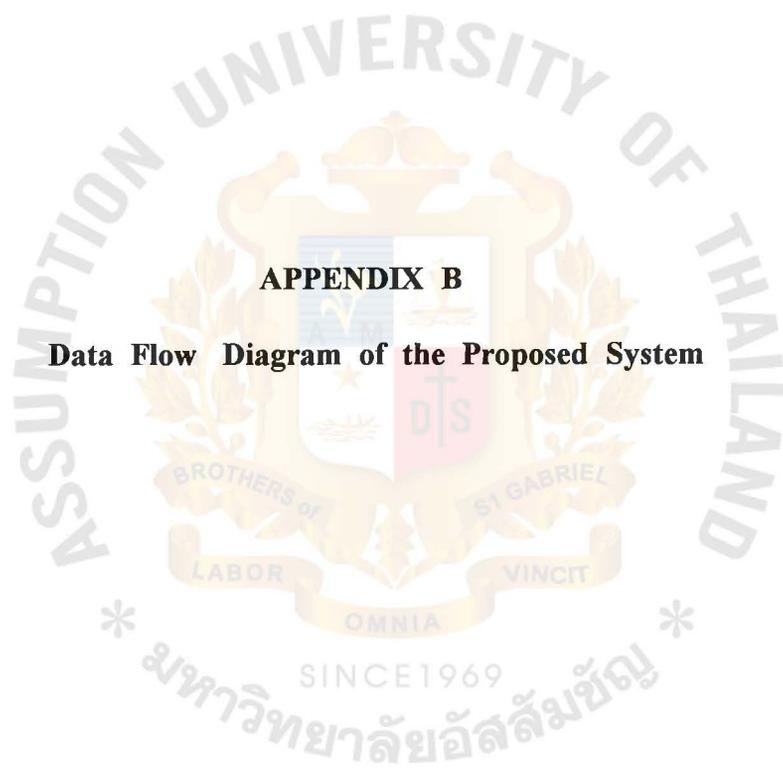
APPENDIX B

Data Flow Diagram of the Proposed System

Context Diagram (the Proposed System)
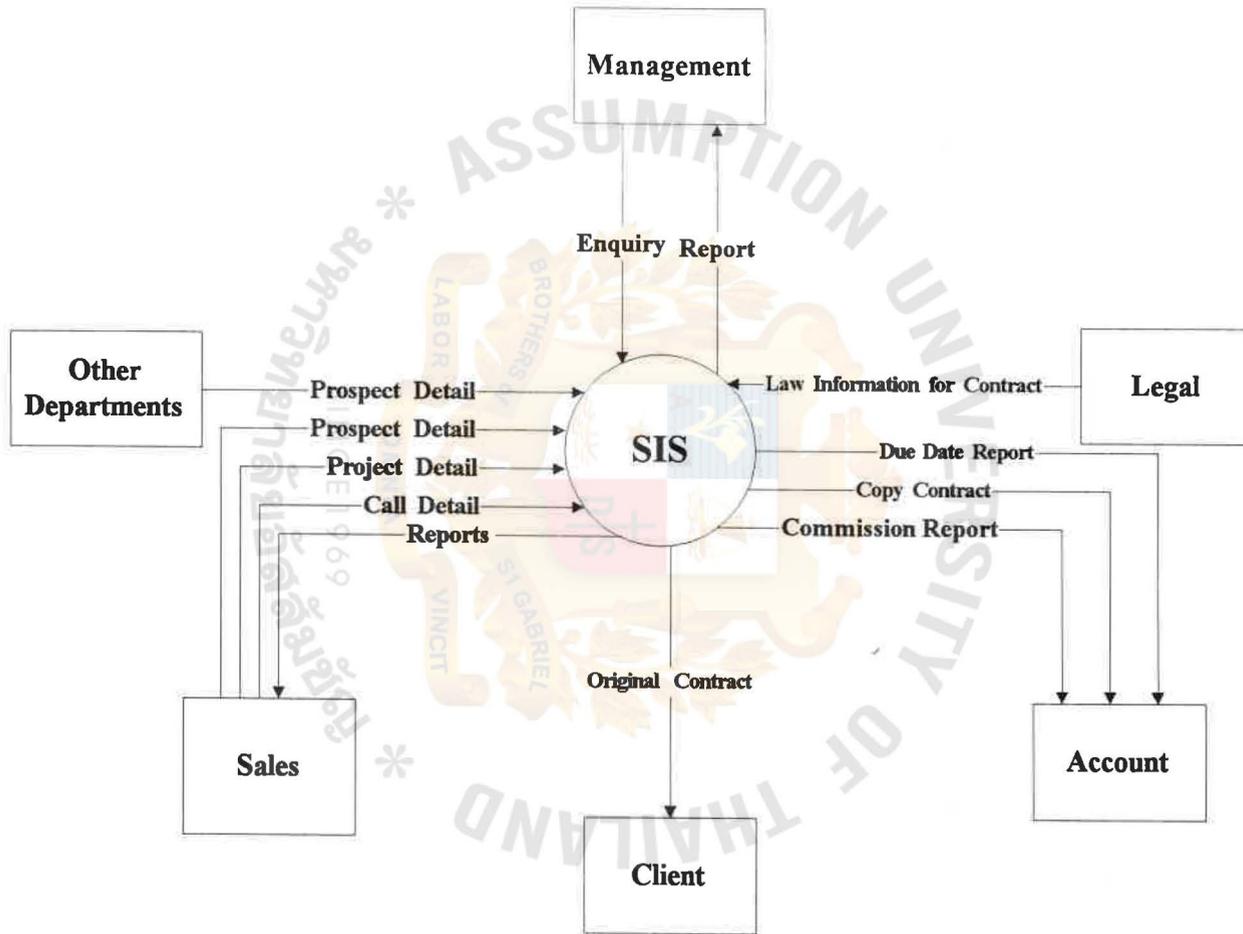
Figure B1 Context Diagram (the Proposed System)

Figure B2 Level 0 DFD of Sales Information System (the Proposed System)

B2
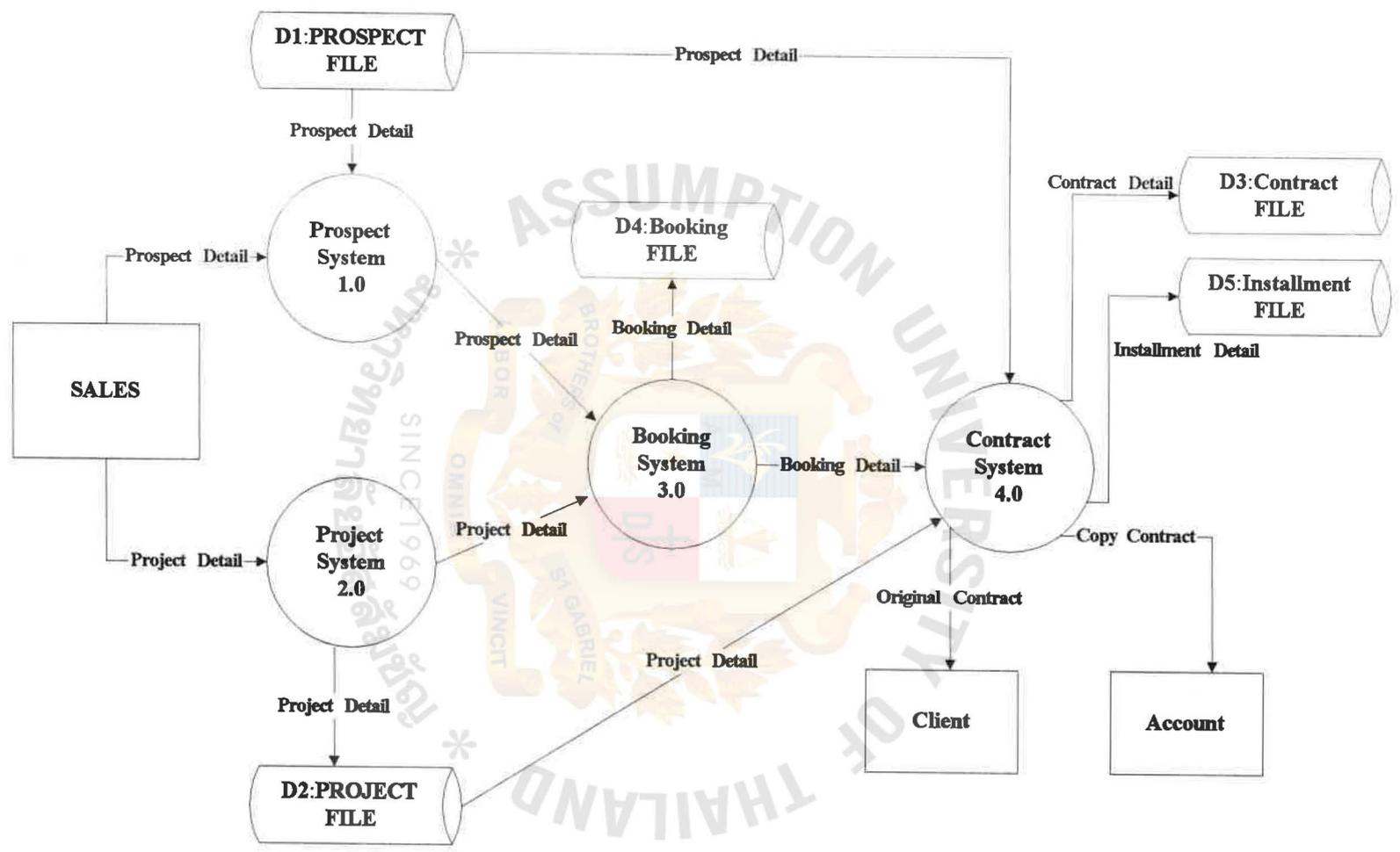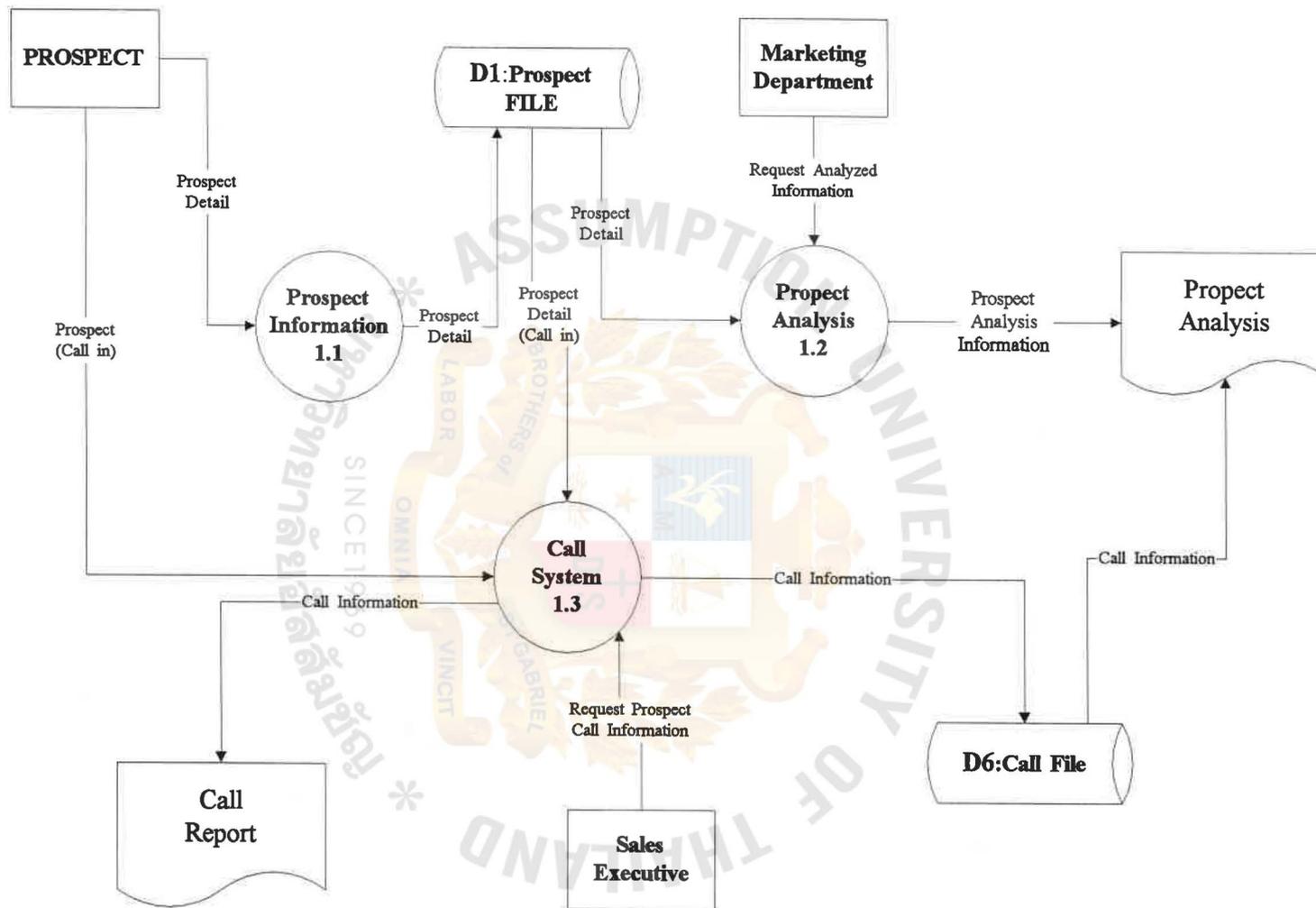
Figure B3 Level 1 DFD Process 1.0 Prospect

B3
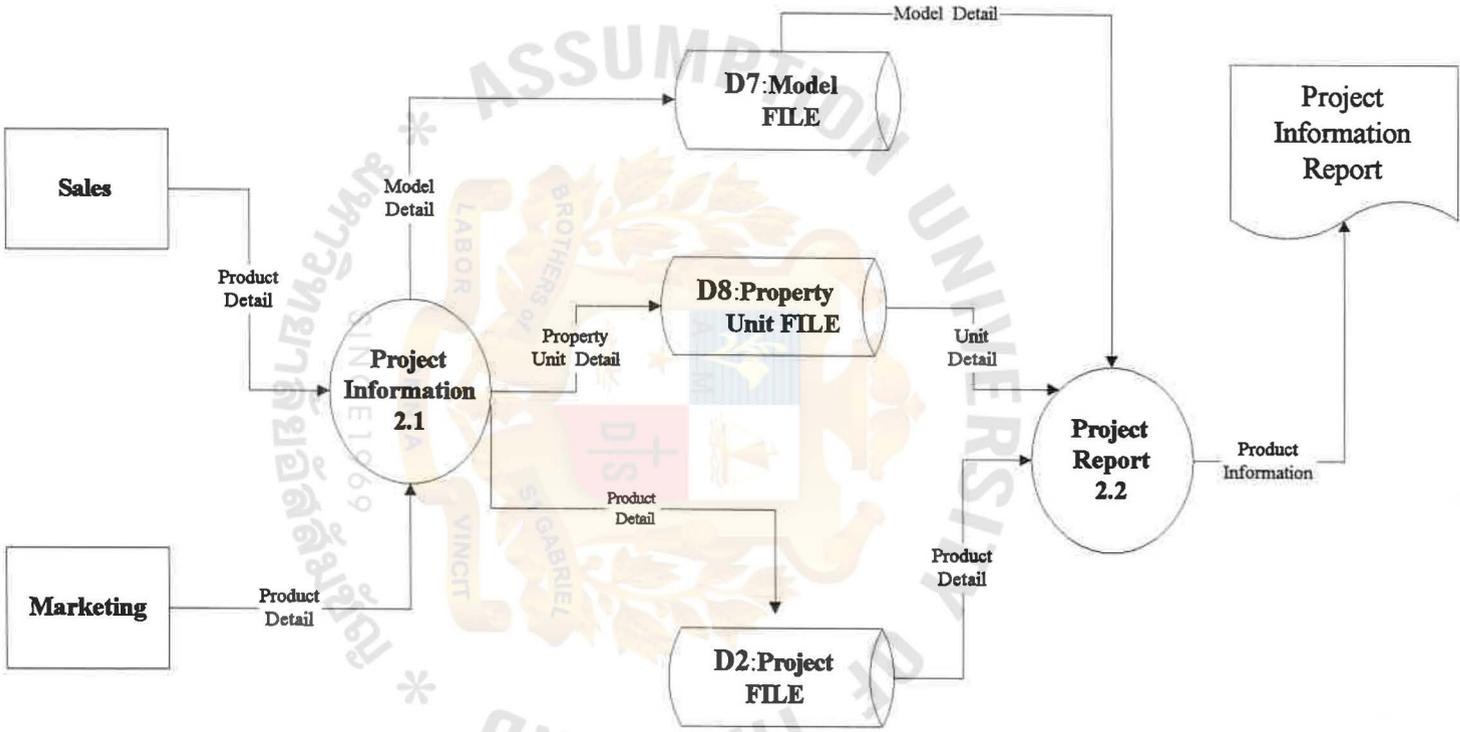
Figure B4 Level 1 DFD Process 2.0 Project

B4
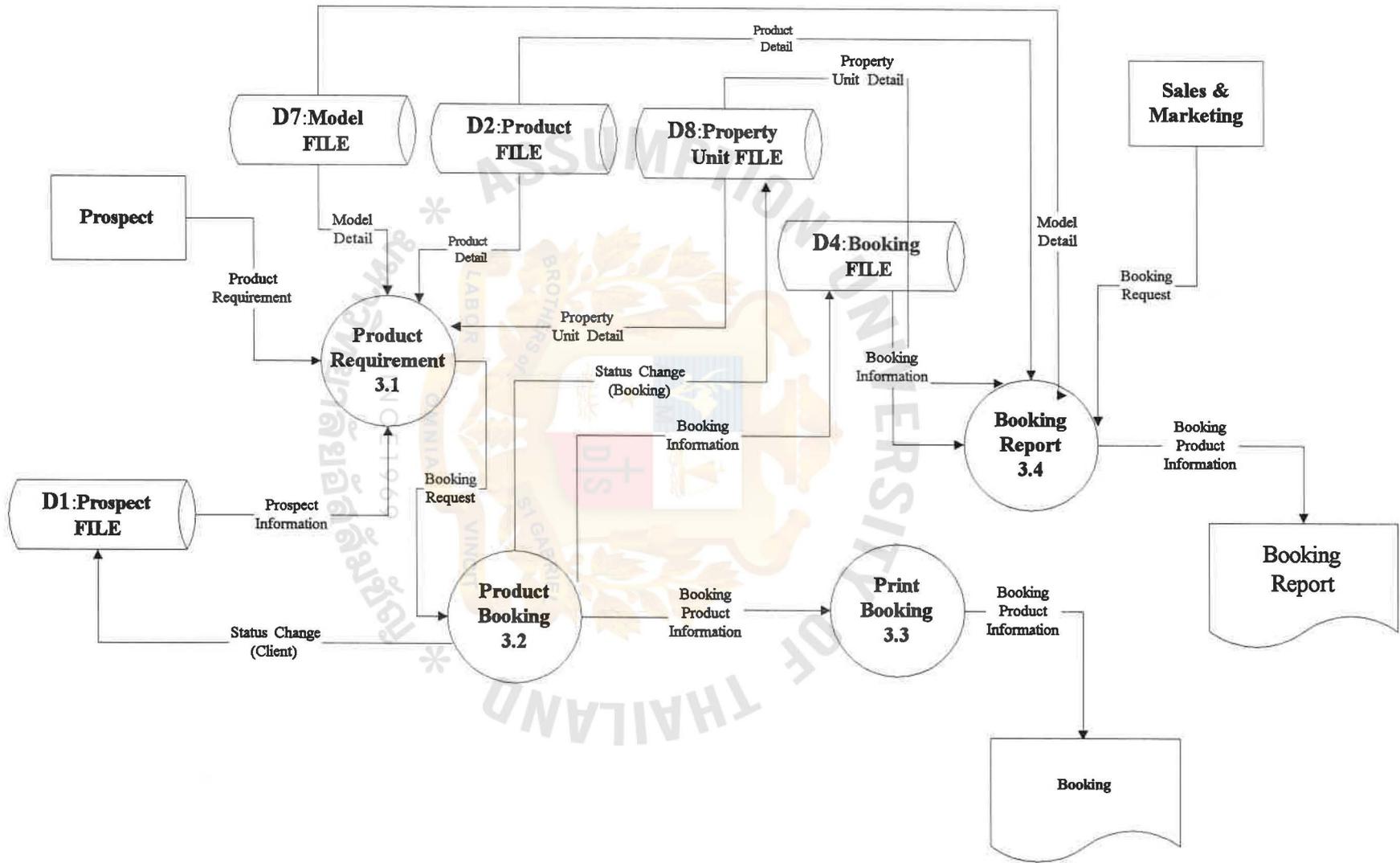
Figure B5 Level 1 DFD Process 3.0 Booking
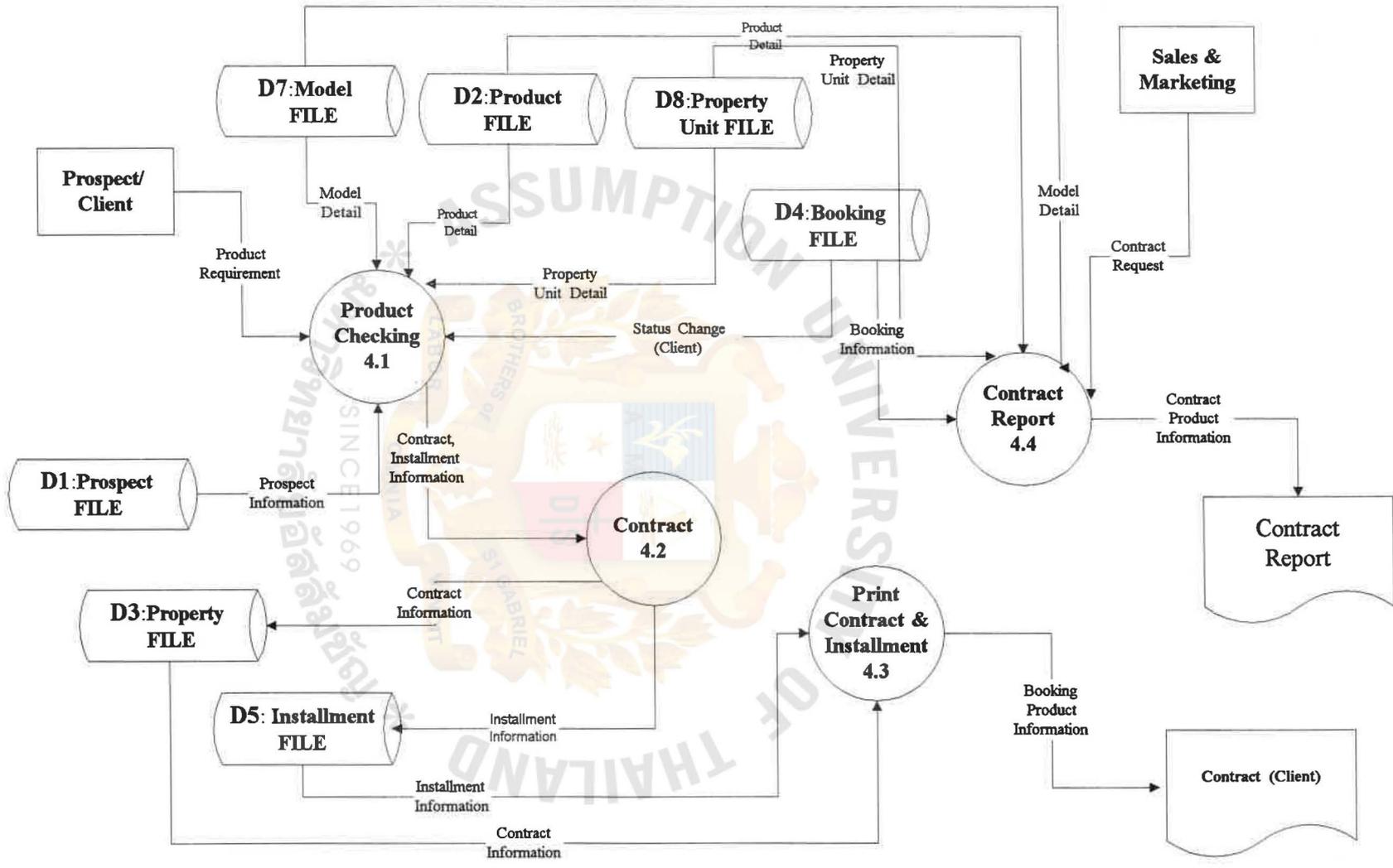
Figure B6 Level 1 DFD Process 4.0 Contract
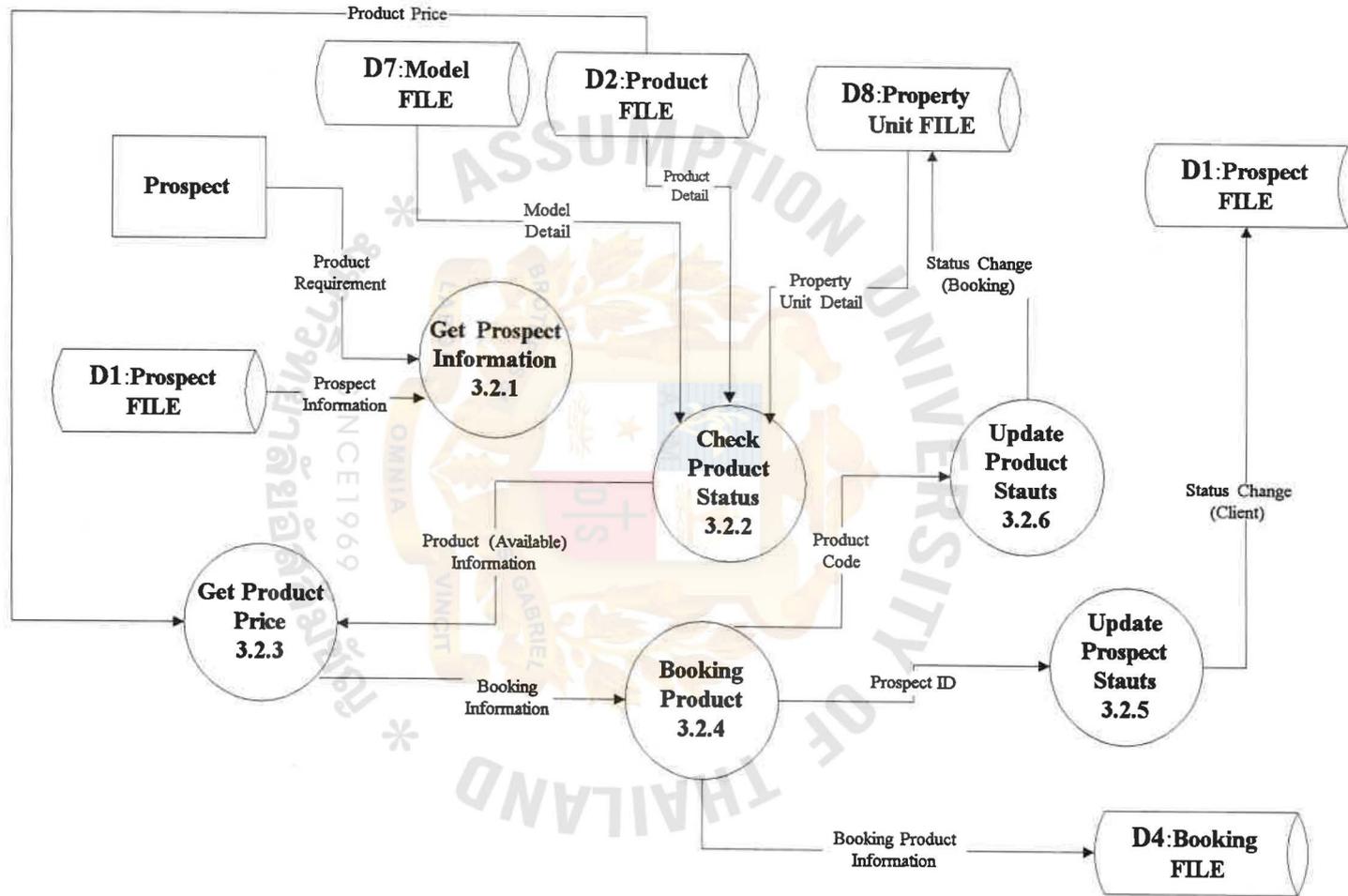
Figure B7 Level 2 DFD Process 3 Booking (Product Booking)

B7

APPENDIX C

Process Minispecifications

PROCESS MINISPECIFICATION
PROCESS NAME : Prospect
PROCESS NUMBER : 1.0
Prospect is the information of prospect customers. The system will maintain the list of available prospect customers. The input to this process will include the detailed information regarding the prospect such as name, address, category, profession, income group, social status etc. along with the detail of the property unit (like model, type of property, size etc.) in which prospect will be interested on a routine basic. All these information will be clubbed together and a list of prospects as well as the history of prospect by date will be generated by the system which will be utilized while making further call strategy and in drawing the sales contract with the prospect. Some information will be good for the next style of the project.
INPUT : the detailed information regarding the prospect such as name, address, category, profession, income group, social status etc.
OUTPUT : list of prospects
LOGIC :

Table C1 Process Minispecification Process 1.0 Prospect

C1

PROCESS MINISPECIFICATION
PROCESS NAME : Project
PROCESS NUMBER : 2.0
The system will also maintain the list of products available for sale (like floor space, bed room, parlous, unit, air condition, facility equipment etc.) in each project. For this, the system will require the detail of projects, property units to be sole/leased (according to the area in square meter) along with the detail of its property type (condominium/home office/office building) etc. as the master input data and will generate the list of projects, list of products by project, status of the product, list of property types list of product codes as output.
INPUT : the detail of projects, property units to be sole/leased (according to the area in square meter) along with the detail of its property type (condominium/home office/office building) etc.
OUTPUT : the list of projects, list of products by project, status of the product, list of property types list of product codes as output.
LOGIC :

Table C2 Process Minispecification Process 2.0 Project

C2

PROCESS MINISPECIFICATION
PROCESS NAME : Booking
PROCESS NUMBER : 3.0
The system will keep track of the booking of order in case of sale and lease transactions only. This will require the detail of the order booked including the identification of the prospect, booking advance collected, number of the unit(s) booked. A list of booking detail will be produced by the system as the output. On the basic of this detail the account department will prepare the booking receipts.
INPUT : the detail of the order booked including the identification of the prospect, booking advance collected, number of the unit(s) booked.
OUTPUT : A list of booking detail
LOGIC :

Table C3 Process Minispecification Process 3.0 Booking

C3

PROCESS MINISPECIFICATION
PROCESS NAME : Contract
PROCESS NUMBER : 4.0
The main activity involved in this module will be the contract draw with a prospect (for sale, rent or lease transaction). Contract detail specifying the type of contract, prospect detail, property unit detail, advance received etc. will be entered into the system. Other input to this module will be the detail of amenities to be included in the contract.
INPUT : Contract detail specifying the type of contract, prospect detail, property unit detail, advance received etc. and the detail of amenities to be included in the contract.
OUTPUT : the contract draw with a prospect (for sale, rent or lease transaction).
LOGIC :

Table C4 Process Minispecification Process 4.0 Contract

C4

APPENDIX D

Screen Design

SANSIRI PUBLIC COMPANY LIMITED

DATE : 21/10/1996   TIME :13:08 PM

| ADD | MODIFY | DELETE | QUERY | EXIT |

PROJECT DETAIL

COMPANY   _____

PROJECT   _____

PROJECT NAME   _____

ADDRESS   _____

CITY _____   ZIP _____

FAX _____   TELEPHONE _____

DESCRIPTION   _____

                 _____

                 _____

                 _____

PROJECT MANAGER _____

Figure D1 Screen Design of Project Detail

D1

SANSIRI PUBLIC COMPANY LIMITED

DATE : 21/10/1996   TIME :13:20 PM

| ADD | MODIFY | DELETE | QUERY | EXIT |

PROJECT AMENITIES MAINTENANCE

COMPANY   _____   PROJECT   _____

AMENITY CODE	DESCRIPTION	TOTAL	USED QUANTITY	VALUE/UNIT QUANTITY
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Figure D2 Screen Design of Project Amenities Maintenance

D2

SANSIRI PUBLIC COMPANY LIMITED

DATE : 22/10/ 1996   TIME :10:11 AM

ADD   MODIFY   DELETE   QUERY   EXIT

PROJECT MASTER MAINTENANCE

COMPANY   _____   PROJECT   _____

PROPERTY TYPE   _____

PRODUCT CODE   _____   DESCRIPTION   _____

TOTAL UNITS   _____   SALE AREA PER UNIT _____   UNIT OF AREA _____

SELLING PRICE   _____

UNIT SOLD   _____   UNIT RENTED _____   UNIT LEASED _____

POP UP SCREEN

```
************************************************************************
*                          ATTRIBUTES/COMMENTS                        *
************************************************************************
*    CODE                       DESCRIPTION                           *
*    _____                 _____          *
*    _____                 _____          *
*    _____                 _____          *
*    _____                 _____          *
************************************************************************
```

Figure D3 Screen Design of Project Master Maintenance

D3

SANSIRI PUBLIC COMPANY LIMITED

DATE : 22/10/1996   TIME :10:30 AM

ADD	MODIFY	DELETE	QUERY	EXIT

MODELS MAINTENANCE

COMPANY _____   PROJECT _____

PROPERTY TYPE _____

PRODUCT CODE _____ DESCRIPTION _____

MODEL CODE	DESCRIPTION	STANDARD COST	STANDARD SALE PRICE	DATE OF COST ESTIMATION
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NOTE:

Here, description (length = 50) will be the scrollable field.

Figure D4 Screen Design of Models Maintenance

D4

SANSIRI PUBLIC COMPANY LIMITED

| ADD | MODIFY | DELETE | QUERY | EXIT |

BUILDING /PHASE DEFINITION

COMPANY _____   PROJECT _____

BUILDING /PHASE CODE   DESCRIPTION

_____   _____
_____   _____
_____   _____
_____   _____
_____   _____
_____   _____
_____   _____
_____   _____

Figure D5 Screen Design of Building / Phase Definition
D5

SANSIRI PUBLIC COMPANY LIMITED

DATE : 22/10/1996   TIME :10:55 AM

ADD	MODIFY	DELETE	QUERY	EXIT

FLOOR / ZONE DEFINITION

COMPANY   _____   PROJECT   _____

BUILDING / PHASE CODE   _____

FLOOR / ZONE CODE   DESCRIPTION

Figure D6 Screen Design of Floor / Zone Definition
D6

SANSIRI PUBLIC COMPANY LIMITED

ADD	MODIFY	DELETE	QUERY	EXIT

PROPERTY UNIT DEFINITION

COMPANY _____   PROJECT _____

PROPERTY TYPE _____

BUILDING/PHASE _____

FLOOR/ ZONE CODE	UNIT/ LAND NO	PRODUCT CODE	MODEL CODE	LAND AREA	SALE AREA
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

```
POP  UP SCREEN :

  ***********************************************************************
  *                    ATTRIBUTES/COMMENTS                   *
  *       CODE              DESCRIPTION                       *
  *   _____        _____          *
  *   _____        _____          *
  *   _____        _____          *
  *   _____        _____          *
  ***********************************************************************
```

Figure D7 Screen Design of Property Unit Definition

SANSIRI PUBLIC COMPANY LIMITED

DATE : 22/10/1996   TIME :12:13 PM

| ADD | MODIFY | DELETE | QUERY | EXIT |

PROSPECT MASTER MAINTENANCE

COMPANY _____   PROJECT _____

PROSPECT ID _____   NAME _____

CONTACT PERSON NAME _____

ADDRESS _____

CITY _____ ZIP _____ TELEPHONE _____

FAX _____

OFFICE ADDRESS _____

CITY _____ ZIP _____ TELEPHONE _____

FAX _____

CATEGORY _____ OCCUPATION _____ MARITAL STATUS _____ VIP STATUS _____

NO. OF DEPENDENTS _____ YEARLY INCOME _____

FOREIGN/LOCAL _____ NATIONALITY _____

TYPE OF DEAL _____ TYPE OF PROPERTY _____ PRODUCT REQUIRED ____

SIZE REQUIRED _____ MODEL REQUIRED _____

WAITING PERIOD _____ PREVIOUS DEAL _____ EXISTING OWNERSHIP STATUS _____

TYPE OF EXISTING PROPERTY _____ VALUE OF EXISTING PROPERTY _____

DESCRIPTION _____ MEDIA CODE _____

SALES EXECUTIVE CODE _____

MARKETING STATUS _____

REMARKS _____

AUTO GENERATED FIELD:

        prospect identification number (Prospect id).

NOTE :

        Remarks (length = 255) will be the scrollable field.

Figure D8 Screen Design of Prospect Master Maintenance

D8

SANSIRI PUBLIC COMPANY LIMITED

DATE : 23/10/1996   TIME :12:20 PM

ADD	MODIFY	DELETE	QUERY	EXIT

PROPERTY BOOKING MAINTENANCE

COMPANY _____   PROJECT _____

BOOKING NUMBER _____   BOOKING DATE _____

PROSPECT ID _____   NAME _____

BUILDING/ PHASE CODE	FLOOR/ZONE CODE	UNIT/LAND NUMBER	BOOKING AMOUNT	DUE DATE OF CONTRACT	STATUS	RECEIPT NUMBER

Figure D9 Screen Design of Property Booking Maintenance

D9

SANSIRI PUBLIC COMPANY LIMITED

DATE : 23/10/1996   TIME :11:01 AM

```
ADD          MODIFY        DELETE        QUERY              EXIT
```

SALES CONTRACT MAINTENANCE

COMPANY _____   PROJECT   _____

CONTRACT NUMBER _____ DATE OF CONTRACT _____TYPE OF CONTRACT _____

BUILDING / PHASE CODE ___ FLOOR/ZONE CODE _____ UNIT/LAND NUMBER _____

START CONTRACT DATE ____ END CONTRACT DATE ____RENEWAL BY DATE CONTRACT VALUE _____

RATE / UNIT AREA _____

SECURITY DEPOSIT _____

BOOKING ADVANCE _____ ADVANCE REFERENCE NUMBER _____

DOWN PAYMENT _____ BALANCE AMOUNT _____

TRANSFER DATE _____

TRANSFER PAYMENT : WITHOUT VAT _____ VAT _____

MONTHLY CHARGES : RENT _____ FURNITURE _____ UTILITY _____

START RENT DATE _____

PROSPECT ID _____ NAME _____

A / R CODE _____

OWNERS ADDRESS _____

CITY _____ ZIP _____ PHONE _____

FAX _____

SALES EXECUTIVE CODE _____ NAME _____

AGENT CODE _____ AGENT COMMISSION _____

REMARKS _____

_____

Figure D10 Screen Design of Sales Contract Maintenance

D10

MENU :

There will be option in the menu to include amenities in the contract

and to fix the number of installments, installment amount and the

schedule of payment.

HELP AVAILABLE :

Help will be there for the amenities to be included in the contract

AUTO GENERATED FIELDS:

Contract number.

CALCULATION FIELD :

Balance amount.

DISPLAY ONLY FIELDS:

Owner's name, address, city, zip, phone, fax (on 'prospect id') and

Sales Executive's name (on 'sales executive code ') n add mode.

```
**********************************************************
*                  contract amenities                  *
**********************************************************
* AMENITY CODE                    QUANTITY            *
* _____                    _____            *
* _____                    _____            *
**********************************************************
```
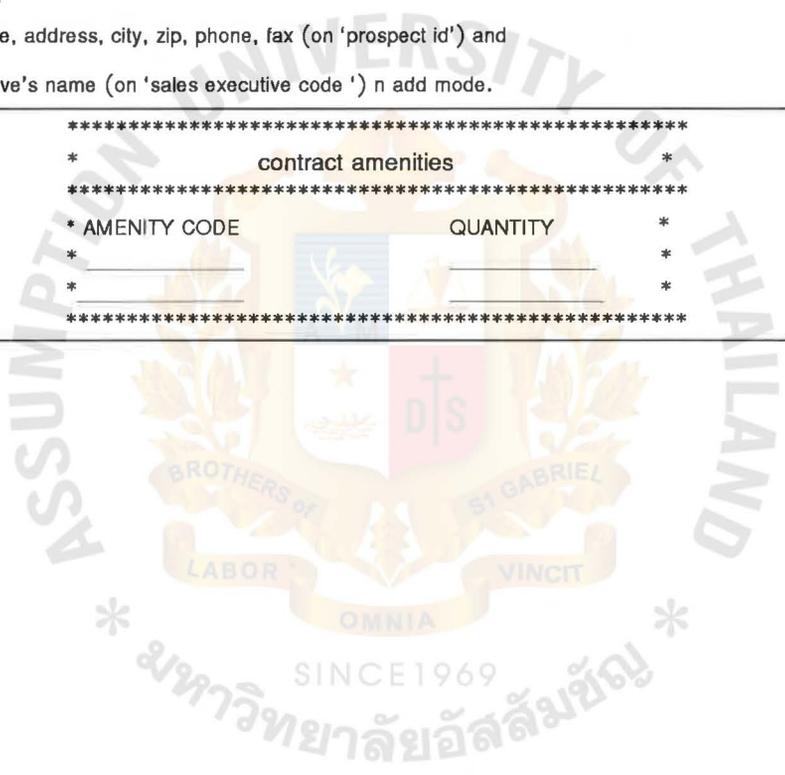
SANSIRI PUBLIC COMPANY LIMITED

DATE : 23/10/1996   TIME :11:13 AM

```
*********************************************************************************
*                          CONTRACT INSTALLMENT                                 *
*********************************************************************************
INSTALLMENT      DUE DATE OF      INSTALLMENT      VAT AMOUNT   BALANCE AMOUNT
NUMBER           INSTALLMENT      AMOUNT
*********************************************************************************
*  _____    _____      _____     _____   _____   *
*  _____    _____      _____     _____   _____   *
*  _____    _____      _____     _____   _____   *
*  _____    _____      _____     _____   _____   *
*  _____    _____      _____     _____   _____   *
*  _____    _____      _____     _____   _____   *
*  _____    _____      _____     _____   _____   *
*********************************************************************************
```

Figure D11 Screen Design of Contract Installment
D11

SANSIRI PUBLIC COMPANY LIMITED

DATE : 23/10/1996   TIME :02:11 AM

ADD	MODIFY	DELETE	QUERY
Exit			

SALES EXECUTIVES MAINTENANCE

COMPANY _____   PROJECT _____

EXECUTIVE CODE   NAME

_____   _____

Figure D12 Screen Design of Sales Executives Maintenance
D12

SANSIRI PUBLIC COMPANY LIMITED

| ADD | MODIFY | DELETE | QUERY | EXIT |

CALL REPORT MAINTENANCE

COMPANY _____   PROJECT _____

CALL DATE _____

SALES EXECUTIVE CODE _____ NAME _____

PROSPECT ID	NAME	CALL DESCRIPTION	NEXT CALL DATE	STATUS

NOTE :

Here, Name (length = 50) and Call Description (length = 255)

will be the scrollable fields.

HELP :

1) Prospect History

2) New Prospect screen pop-up

Figure D13 Screen Design of Call Report Maintenance

D13

SANSIRI PUBLIC COMPANY LIMITED

DATE : 24/10/1996   TIME :12:20 PM

ADD	MODIFY	DELETE	QUERY	EXIT

SALES EXECUTIVE COMMISSION RATE

COMPANY _____   PROJECT _____

COMMISSION CODE   _____

PROPERTY TYPE_____ .

PRODUCT CODE   _____

TYPE OF DEAL   _____

TYPE	CODE	QUANTITY		MINIMUM QUANTITY	RATE
		FROM	TO		
____	____	____	____	____	____
____	____	____	____	____	____
____	____	____	____	____	____
____	____	____	____	____	____
____	____	____	____	____	____
____	____	____	____	____	____

Figure D14 Screen Design of Sales Executive Commission Rate
D14

APPENDIX E

Report Design

```
REPORT NAME : XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  VERSION : XXXXXXXXXXXXXX

RUN BY : XXXXXXXX (USER -ID) ON: 99 XXX 9999 99:99

==================================================================================================================================


XXXXXXXXXXXXX COMPANY NAME  CHAR (50) XXXXXXXXXXXXXX                                          DATE : 99/99/9999

XXXXXXXXXXXXX PROJECT NAME  CHAR (50) XXXXXXXXXXXXXX                                          PAGE : 999

SALES CONTRACT REGISTER FROM  99/99/9999 TO  99/99/9999

==================================================================================================================================
```

----- CONTRACT -----			BUILDING/	FLOOR/	UNIT	START	END	RENEWAL	VALUE OF CONTRACT	BOOKING ADVICE		RATE/	RENT	-- SECURITY DEPOSIT ---	TRANSFER	MON
NUMBER	TYPE	DATE	PHASE	ZONE	NO.	DATE	DATE	DATE		REF. NUMBER	AMOUNT AREA	UNIT	START	-- DOWN PAYMENT ------	DATE	CHA
													DATE			

```
==================================================================================================================================

XXXXXXXX  X   99/99/99   XX        XX       XX    99/99/9999 99/99/9999 99/99/9999  99,999,999,999,999.99 XXXXXXXXX 9,999,999,999.99 9,999.99 99/99/9999  99,999,999,999,999.99   99/99/9999   99,999,9
                                                                                                                                   99,999,999,999,999.99
PROSPECT IDENTIFICATION NO.:  999999          A/R CODE : XXXXXXXX     ----------------------------------------------------------

                                                                            BALANCE :      99,999,999,999,999.99
NAME    : XXXXXXXXXXXX ENGLISH (50) XXXXXXXXXXXXXXXXXXXXXXXXXX     ----------------------------------------------------------
          XXXXXXXXXXXX THAI  (50) XXXXXXXXXXXXXXXXXXXXXXXXX       TRANSFER PAYMENT WITH VAT  :      99,999,999,999,999.99
ADDRESS : XXXXXXXXXXXXXXXXXX(50) XXXXXXXXXXXXXXXXXXXXXXXXXXX         TRANSFER PAYMENT WITHOUT VAT :      99,999,999,999,999.99
          XXXXXXXXXXXXXXXXXX(50)XXXXXXXXXXXXXXXXXXXXXXXXXXX       ----------------------------------------------------------
          XXXXXXXXXXXXXXXXXX(50)XXXXXXXXXXXXXXXXXXXXXXXXXXX
          XXX CITY XXXXXX       ZIP : XXXXXX
PHONE : XXXXXXXXXXXXXX FAX: XXXXXXXXXXXXXXXXXX

REMARKS : XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX (102) XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX (102) XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

==================================================================================================================================
** END OF REPORT **

Sort Order      : Project_code, Contract_Number and Date.
Table  used     : Sales contract
Report  Width   : 220 column
```

Figure E1 Report Design of Sales Contract Register

```
REPORT  NAME : XXXXXXXXXXXXXXXXXXXXX   VERSION : XXXXXXXXXXXXX
RUN BY   : XXXXXXXX  (USERS-ID) ON :  99 XXX 9999 99:99
=========================================================================


XXXXXXXXXXX COMPANY  NAME  CHAR (50) XXXXXXXXXXXX      DATE: 99/99/9999
                                                      PAGE: 999

LIST OF AMENITIES FOR PROJECT  999 TO 999
=========================================================================
XXXXXXXXXX  PROJECT  NAME  CHAR (50) XXXXXXXXX
-------------------------------------------------------------------------
AMENITY              DESCRIPTION        TOTAL          QUANTITY
CODE                                    QUANTITY       USED
=========================================================================
XXXXXXXXXXX          XXXXX(25)XXXXXXXXXX   99999999.99     99999999.99
                     XXXXXXXX(25)XXXXXXXXX

XXXXXXXXXXX          XXXXX(25)XXXXXXXXXX   99999999.99     99999999.99
                     XXXXXXXX(25)XXXXXXXXX
=========================================================================
** END OF REPORT **


Sort Order           : Project code, Amenity code.
Tables used          : Amenities.
Report Width         : 80 columns
```
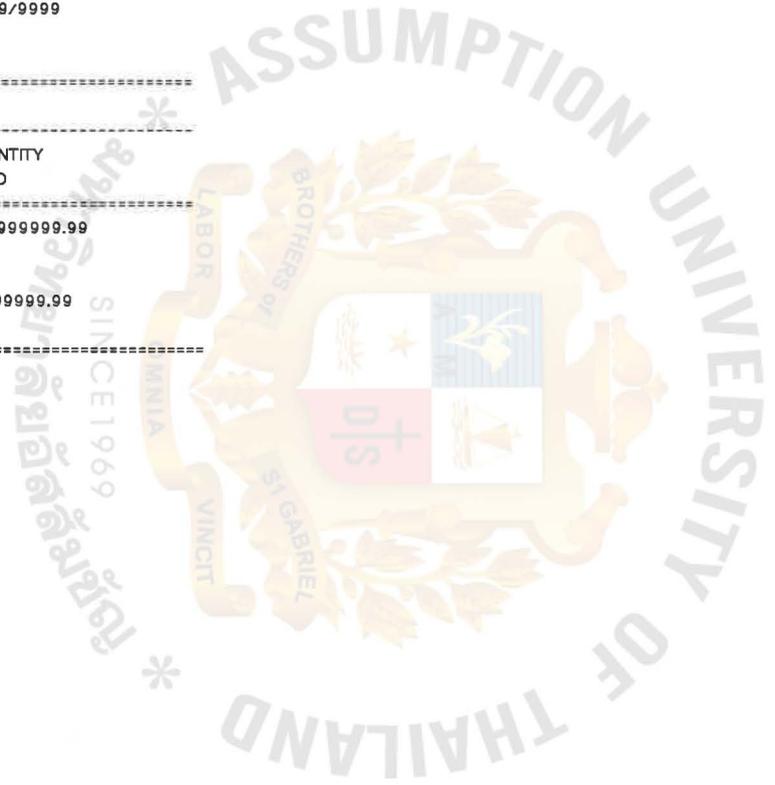
Figure E2 Report Design of List of Amenities For Project

```
REPORT NAME: XXXXXXXXXXXXXXXXXXXXXXXXXXXX   VERSION: XXXXXXXXXXXX
RUN BY : XXXXXXXXX (USER-ID) ON: 99 XXX 9999 99:99
=====================================================================================

XXXXXXXXXX COMPANY  NAME  CHAR(50)  XXXXXXXXXXX          DATE: 99/99/9999
XXXXXXXXXX PROJECT  NAME  CHAR(50)  XXXXXXXXXXX          PAGE: 999
SALES CALL REPORTS FOR SALES EXECUTIVES  XXX TO XXX FROM 99/99/9999 TO 99/99/9999
=====================================================================================
XXX       EXECUTIVE NAME : XXXXXXXXXXXXXXXXXX(50)XXXXXXXXXXXXXXXXXXXXXXXXXXXX
=====================================================================================
DATE     PROSPECT ----------PROSPECT NAME ----------------- NEXT   STATUS
   ID                                          CALL
=====================================================================================
99/99/99  999999 XXXXXXXXXXX ENGLISH (50) XXXXXXXXXXXXXXXXX 99/99/99    X
                 XXXXXXXXXXX THAI (50) XXXXXXXXXXXXXXXXXXXX

CALL       :     XXXXXXXXXXXXXXXXXX (51) XXXXXXXXXXXXXXXXX
DESCRIPTION       XXXXXXXXXXXXXXXXXX (51) XXXXXXXXXXXXXXXXX
                  XXXXXXXXXXXXXXXXXX (51) XXXXXXXXXXXXXXXXX
                  XXXXXXXXXXXXXXXXXX (51) XXXXXXXXXXXXXXXXX
                  XXXXXXXXXXXXXXXXXX (51) XXXXXXXXXXXXXXXXX


=====================================================================================
** END OF REPORT**


Sort Order              : Project_code, Sales_executive, Call_date.
Tables used             : Call_report, Prospect.
Report Width            : 80 columns.
```

Figure E3 Report Design of Sales Call Report For Sales Executives

```
REPORT NAME : XXXXXXXXXXXXXXXXXXXXXXXXXXXXX VERSION: XXXXXXXXXXXXX
RUN BY  : XXXXXXXXX (USER-ID) ON: 99 XXX 9999 99:99
=================================================================================================================================


XXXXXXXXXXX COMPANY NAME CHAR (50) XXXXXXXXXXX                                              DATE: 99/99/9999
XXXXXXXXXXX PROJECT  NAME CHAR (50) XXXXXXXXXXX                                             PAGE: 999
LIST OF PROSPECTS FROM PROSPECT IDENTIFICATION NO. 999999 TO 999999
=================================================================================================================================
PROSPECT   PROSPECT'S NAME/CONTACT PERSON'S NAME AND   CATE- MARITAL OCCUPATION YEARLY INCOME NO. OF  VIP FOREIGN/ NATIONALITY   SALES DESCRIPTION OF        TYPE & S
ID         ADDRESS                                     GORY  STATUS                 DEPENDENTS          LOCAL                    EXEC. PREVIOUS DEAL          OF P
=================================================================================================================================
999999     XXXXXXXXXXX PROSPECT NAME ENGLISH (50) XXXXXXXXXX  X    X       99      9.999,999.99          X  X    XXXXXXXXXXXXX XXX   XXXXXXXX (25) XXXXXXXXX    X 999999
           XXXXXXXXXX  PROSPECT NAME THAI (50)  XXXXXXXXXXXXX                                                                        XXXXXX (25) XXXXXXXXXXXX
CONTACT   : XXXXXXXXXX CONTACT PERSON (50)  XXXXXXXXXXXXXXXX
RESIDENCE : XXXXXXXXXXXXXXXXXXXX(50)XXXXXXXXXXXXXXXXXXXXXXXX
            XXXXXXXXXXXXXXXXXXXXX(50) XXXXXXXXXXXXXXXXXXXXXX
            XXXXXXXXXXXXXXXXXXXXX(50) XXXXXXXXXXXXXXXXXXXXXX
            XXXXX CITY XXXXXXXXXX        XXXXX COUNTRY XXXXXXX
      ZIP :  XXXXX
    PHONE : XXXXXXXXXXXXXXXXXXXX  FAX: XXXXXXXXXXXXXXX
OFFICE  : XXXXXXXXXXXXXXXXXXX(50)XXXXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXX(50)XXXXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXX(50)XXXXXXXXXXXXXXXXXXXXXXXXXXX


REMARKS:  XXXXXXXXXXXXXXXXXXX(51)XXXXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXX(51)XXXXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXX(51)XXXXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXX(51)XXXXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXX(51)XXXXXXXXXXXXXXXXXXXXXXXXXXX

=================================================================================================================================
**END OF REPORT**


Sort Order      : Project_code, Prospect_id.
Tables used     : Prospect, Prospect_ preferences, Preference.
Report Width    : 220 columns
Options         : By Prospect_ID or Prospect_Name or  Category or Type of Property.
```

Figure E4 Report Design of List of Prospects From Prospect Indentification

```
REPORT  NAME : XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  VERSION : XXXXXXXXXXXXX
RUN BY   : XXXXXXXXX (USER-ID)  ON : 99 XXX 9999  99:99
===============================================================================


XXXXXXXXXXXXX  COMPANY  NAME  CHAR (50)  XXXXXXXXXXXXXXXX      DATE : 99/99/9999
XXXXXXXXXXXXX  PROJECT  NAME  CHAR (50)  XXXXXXXXXXXXXXXX      PAGE : 999
LIST OF SALES EXECUTIVES FROM XXX TO XXX
===============================================================================
EXECUTIVE                          NAME
CODE
===============================================================================
XXX                   XXXXXXXX XXXXXXXX CHAR  (50) XXXXXXXXXXXXXXXX
XXX                   XXXXXXXX XXXXXXXX CHAR  (50) XXXXXXXXXXXXXXXX
XXX                   XXXXXXXX XXXXXXXX CHAR  (50) XXXXXXXXXXXXXXXX


===============================================================================
**END OF REPORT**


Sort  Order          : Project_code, Executive_code.
Table used           : Sales_executive.
Report Width         : 80 columns.
```

Figure E5 Report Design of List of Sales Executives

```
REPORT NAME : XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  VERSION: XXXXXXXXXXXXXXXX
RUN BY  : XXXXXXXXXXXXXX (USER-ID) ON :   99 XXX 9999 99: 99
===================================================================================

XXXXXXXXXXXXXX COMPANY  NAME CHAR (50)  XXXXXXXXXXXXXX        DATE : 99/99/9999
XXXXXXXXXXXXXX PROJECT   NAME CHAR (50)  XXXXXXXXXXXXXX        PAGE : 999
LIST OF PRODUCT CODES FROM XX TO XX
===================================================================================
PRODUCT                           DESCRIPTION
CODE
===================================================================================

XX                    XXXXXXXXXXXXXXXXXXXX CHAR (50) XXXXXXXXXXXXXXXXXX

XX                    XXXXXXXXXXXXXXXXXXXX CHAR (50) XXXXXXXXXXXXXXXXXX

XX                    XXXXXXXXXXXXXXXXXXXX CHAR (50) XXXXXXXXXXXXXXXXXX


===================================================================================
*END OF RECORD **


Sort Order              : Project_code, Product_code.
Table used              : Products.
Report Width            : 80 columns
```

Figure E6 Report Design of List of Product Codes

```
REPORT  NAME: XXXXXXXXXXXXXXXXXXXXXXXXXXX     VERSION: XXXXXXXXXXXXXX
RUN BY : XXXXXXXXX (USER-ID) ON:  99 XXX 9999    99:99
==================================================================================
XXXXXXXXXX COMPANY NAME CHAR (50) XXXXXXXXXXXXXXXX          DATE: 99/99/9999
PROJECT LIST FROM PROJECT  999 TO  PPP
==================================================================================
PROJECT                     PROJECT NAME AND DESCRIPTION
CODE
==================================================================================

999     XXXXXXXXXXXXX  PROJECT NAME CHAR (50)  XXXXXXXXXXXXXXXX
              XXXXXXXXXXXXXXX  CHAR (50) XXXXXXXXXXXXXXXXXXXXXXXXXX
              XXXXXXXXXXXXXX  CHAR (50) XXXXXXXXXXXXXXXXXXXXXXXX
              XXXXXXXXXXXXXX  CHAR (50) XXXXXXXXXXXXXXXXXXXXXXXX
              XXXXXXXXXXXXXX  CHAR (50) XXXXXXXXXXXXXXXXXXXXXXXX

999     XXXXXXXXXXXXX  PROJECT NAME CHAR (50)  XXXXXXXXXXXXXXXX
              XXXXXXXXXXXXX  CHAR (50) XXXXXXXXXXXXXXXXXXXXXXXXXX
              XXXXXXXXXXXXX  CHAR (50) XXXXXXXXXXXXXXXXXXXXXXXXXX
              XXXXXXXXXXXXX  CHAR (50) XXXXXXXXXXXXXXXXXXXXXXXX
              XXXXXXXXXXXXXX  CHAR (50) XXXXXXXXXXXXXXXXXXXXXXXXXX

==================================================================================
**END OF REPORT**


Sort Order              : Project_code.
Table used              : Project.
Report Width            : 80 columns
```
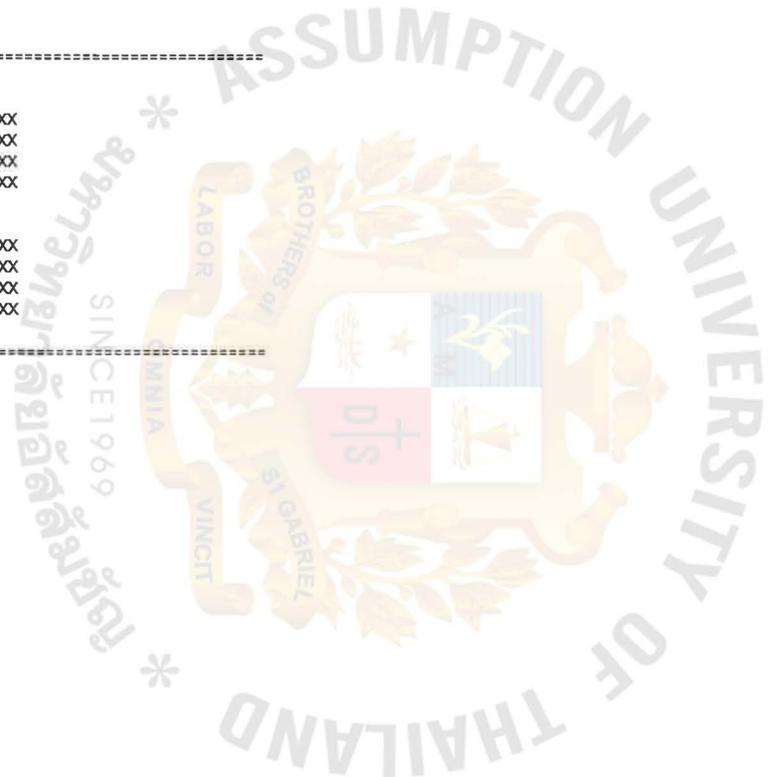
Figure E7 Report Design of Project List From Project

```
REPORT NAME : XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  VERSION: XXXXXXXXXXXX
RUN BY : XXXXXXXX (USRE-ID) ON : 99 XXX 9999 99:99
=====================================================================================================================================

XXXXXXXXXXXXX COMPANY NAME  CHAR (50) XXXXXXXXXXXXX                                                                DATE: 99/99/9999
XXXXXXXXXXXXX PROJECT  NAME  CHAR (50) XXXXXXXXXXXXX                                                               PAGE: 999
PRODUCT STATUS FOR PROPERTY TYPES XX TO XX
=====================================================================================================================================
-------------PRODUCT----------------- BUILDING/  FLOOR/  TOTAL ------------ SOLD -------------- ------------LEASED --------------- ------------- RENTED ----------- BALANCE
CODE            DESCRIPTION PHASE      ZONE     QTY. QUANTITY             VALUE         QUANTITY              VALUE        QUANTITY             VALUE            AVAILABLE
                                                      UNIT (%)                          UNIT (%)              UNIT (%)             = UNIT (%)
=====================================================================================================================================
PROPERTY  TYPE : XX XXXXXXXXXXXXXXXX(50)XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

XX     XXXXXXXXXX (30) XXXXXXXXXXXXX   XX      XX   9999   9999 99.99    99,999,999.99    9999 99.99    99,999,999.99   9999 99.99    99,999,999.99   9999   99.99
XX     XXXXXXXXXX (30) XXXXXXXXXXXXX   XX      XX   9999   9999 99.99    99,999,999.99    9999 99.99    99,999,999.99   9999 99.99    99,999,999.99   9999   99.99
XX     XXXXXXXXXX (30) XXXXXXXXXXXXX   XX      XX   9999   9999 99.99    99,999,999.99    9999 99.99    99,999,999.99   9999 99.99    99,999,999.99   9999   99.99

PROPERTY  TYPE : XX XXXXXXXXXXXXXXXX(50)XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

XX     XXXXXXXXXX (30) XXXXXXXXXXXXX   XX      XX   9999   99.99   99,999,999,999,999.99   99.99   99,999,999,999,999.99   99.99   99,999,999,999,999.99   9999
XX     XXXXXXXXXX (30) XXXXXXXXXXXXX   XX      XX   9999   99.99   99,999,999,999,999.99   99.99   99,999,999,999,999.99   99.99   99,999,999,999,999.99   9999
XX     XXXXXXXXXX (30) XXXXXXXXXXXXX   XX      XX   9999   99.99   99,999,999,999,999.99   99.99   99,999,999,999,999.99   99.99   99,999,999,999,999.99   9999

=====================================================================================================================================
**END OF EPORT

Sort Order        : Project_code, property_type, product_code.
Tabled used       : Products, Property_type.
Report Width      : 160 columns.
```

Figure E8 Report Design of Product Status For Property Types

```
REPORT NAME: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  VERSION: XXXXXXXXXXXX
RUN BY :  XXXXXXXX (USER-ID) ON: 99 XXX 9999 99:99
=======================================================================================

XXXXXXXXXXXX COMPANY NAME CHAR(50) XXXXXXXXXXXXXXX         DATE: 99/99/9999
XXXXXXXXXXXX PROJEXT  NAME CHAR(50) XXXXXXXXXXXXXXX        PAGE: 999
PROSPECT HISTORY FOR PROSPECT 999999 TO 999999 BY 99/99/9999
=======================================================================================

PROSPECT ID  : 999999 XXXXXXXXXXXXXXXXXXXXX(ENGLISH)XXXXXXXXXXXXXXXXXXXXXX
                      XXXXXXXXXXXXXXXXXXXXXX(THAI)XXXXXXXXXXXXXXXXXXXXXX
CONTACT      :        XXXXXXXXXXXXXXXXXXXXX(50)XXXXXXXXXXXXXXXXXXXXXXXXXX

ADDRESS      :        XXXXXXXXXXXXXXXXXXXXX(50)XXXXXXXXXXXXXXXXXXXXXXXXXX
                      XXXXXXXXXXXXXXXXXXXXX(50)XXXXXXXXXXXXXXXXXXXXXXXXXX
                      XXXXXXXXXXXXXXXXXXXXX(50)XXXXXXXXXXXXXXXXXXXXXXXXXX
                      XXXXXXXXXXXX(20)XXXXXXX   ZIP:XXXXXX
         PHONE: XXXXXXXXXXXXXXXXXXXXX  FAX: XXXXXXXXXXXXXXXXX
CATEGORY    : X  SEX : X  TYPE  : X  VIP STATUS  : X  PREVIOUS  DEAL : X
TYPE OF DEAL : X  WAITING PERIOD : XX  MONTHS
-----------------------------------------------------------------------------------------
CALL DATE    NEXT CALL DATE  STATUS -------------------- SALES EXECUTIVE -----------------
                                    CODE                 NAME
-----------------------------------------------------------------------------------------
99/99/9999   99/99/9999      X      XXX  XXXXXXXXXXXXXXXXX (50) XXXXXXXXXXXXXXXXXXXXXXXXXXXX
99/99/9999   99/99/9999      X      XXX  XXXXXXXXXXXXXXXXX (50) XXXXXXXXXXXXXXXXXXXXXXXXXXXX

              TOTAL CALLS : 99
-----------------------------------------------------------------------------------------
REMARKS  : XXXXXXXXXXXXXXXXXX (51) XXXXXXXXXXXXXXXXXXXXXXXX
           XXXXXXXXXXXXXXXX (51) XXXXXXXXXXXXXXXXXXXXXX
           XXXXXXXXXXXXXXXX (51) XXXXXXXXXXXXXXXXXXXXXX
           XXXXXXXXXXXXXXXX (51) XXXXXXXXXXXXXXXXXXXXXX
           XXXXXXXXXXXXXXXX (51) XXXXXXXXXXXXXXXXXXXXXX

=======================================================================================
**END OF REPORT**


Sort Order         : Project_code, Prospect_code.
Tables used        : Prospect, Call_Report, Sales_Executive.
Report Width       : 100 columns.
```

Figure E9 Report Design of Prospect History For Prospect

```
REPORT NAME : XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  VERSION: XXXXXXXXXX
RUN BY : XXXXXXXX (USER-ID) ON: 99 XXX 9999  99:99
=====================================================================================================================================

XXXXXXXXXXXXX COMPANY NAME CHAR (50) XXXXXXXXXXXXXXX                                            DATE: 99/99/9999
XXXXXXXXXXXXX PROJECT  NAME CHAR (50) XXXXXXXXXXXXXXX                                           PAGE: 999
DETAILED PROJECT STATUS BY PROPERTY UNIT XX TO XX.
=====================================================================================================================================
PROPERTY  BUILDING  FLOOR UNIT  STATUS ----------------BOOKING-------------------  ------------------- CONTACT--------------------------------PROSPECT----------------------- /A
TYPE      NO          NO   (S/R/L) NO.       DATE        AMOUNT                NO.        DATE        AMOUNT              IDENTI.    NAME
=====================================================================================================================================
XX        XX        XX    XX    X     XXXXXXXXXX 99/99/9999  99,999,9999,9999,9999.99 XXXXXXXXXX  99/99/9999  99,999,999,999,999.99  999999   XXXXXXXXXXXXXXXXXXXXX (50) XXXXXXXXXXXXXXXXXXXX  XX
XX        XX        XX    XX    X     XXXXXXXXXX 99/99/9999  99,999,9999,9999,9999.99 XXXXXXXXXX  99/99/9999  99,999,999,999,999.99  999999   XXXXXXXXXXXXXXXXXXXXX (50) XXXXXXXXXXXXXXXXXXXX  XX
XX        XX        XX    XX    X     XXXXXXXXXX 99/99/9999  99,999,9999,9999,9999.99 XXXXXXXXXX  99/99/9999  99,999,999,999,999.99  999999   XXXXXXXXXXXXXXXXXXXXX (50) XXXXXXXXXXXXXXXXXXXX  XX
XX        XX        XX    XX    X     XXXXXXXXXX 99/99/9999  99,999,9999,9999,9999.99 XXXXXXXXXX  99/99/9999  99,999,999,999,999.99  999999   XXXXXXXXXXXXXXXXXXXXX (50) XXXXXXXXXXXXXXXXXXXX  XX
=====================================================================================================================================
**END OF REPORT**


Sort Order        : Project_code, Property_type, Building_number,b_floor,unit_number.
Tables used       : Property_unit, Booking_advance.
Report Width      : 220 columns.
```

Figure E10 Report Design of Detailed Project Status By Property Unit

```
REPORT NAME : XXXXXXXXXXXXXXXXXXXXXXX  VERSION: XXXXXXXXXXXXX
RUN BY : XXXXXXXX (USER-ID) ON: 99 XXX 9999  99:99
===========================================================================================================================

XXXXXXXXXXXXX COMPANY  NAME CHAR (50) XXXXXXXXXXXXXXX                                               DATE: 99/99/9999
XXXXXXXXXXXXX PROJECT  NAME CHAR (50) XXXXXXXXXXXXXX                                                PAGE: 999
CONTRACT STATUS REPORT FOR SALE BY PROPERTY ID XXXXXX TO XXXXXX
===========================================================================================================================

BUILDING/  FLOOR/  UNIT/   CONTRACT    ------------------- OWNER----------------------  CONTRACT VALUE   BOOKING ADVANCE   DOWN PAYMENT   INSTALLMENT       TRANFER  AMOUNT    TRANSFER DATE
PHASE      ZONE    LAND NO. DATE                                                                                                         BALANCE
===========================================================================================================================

XX         XX      XX      99/99/9999  XXXXXXXXXXXXXXXXXXXX (50) XXXXXXXXXXXXXXX  99,999,999.99    99,999,999.99     99,999,999.99  9,999,999,999.99  9,999,999,999.99  99/99/9999
XX         XX      XX      99/99/9999  XXXXXXXXXXXXXXXXXXXX (50) XXXXXXXXXXXXXXX  99,999,999.99    99,999,999.99     99,999,999.99  9,999,999,999.99  9,999,999,999.99  99/99/9999
XX         XX      XX      99/99/9999  XXXXXXXXXXXXXXXXXXXX (50) XXXXXXXXXXXXXXX  99,999,999.99    99,999,999.99     99,999,999.99  9,999,999,999.99  9,999,999,999.99  99/99/9999
XX         XX      XX      99/99/9999  XXXXXXXXXXXXXXXXXXXX (50) XXXXXXXXXXXXXXX  99,999,999.99    99,999,999.99     99,999,999.99  9,999,999,999.99  9,999,999,999.99  99/99/9999
XX         XX      XX      99/99/9999  XXXXXXXXXXXXXXXXXXXX (50) XXXXXXXXXXXXXXX  99,999,999.99    99,999,999.99     99,999,999.99  9,999,999,999.99  9,999,999,999.99  99/99/9999
XX         XX      XX      99/99/9999  XXXXXXXXXXXXXXXXXXXX (50) XXXXXXXXXXXXXXX  99,999,999.99    99,999,999.99     99,999,999.99  9,999,999,999.99  9,999,999,999.99  99/99/9999
XX         XX      XX      99/99/9999  XXXXXXXXXXXXXXXXXXXX (50) XXXXXXXXXXXXXXX  99,999,999.99    99,999,999.99     99,999,999.99  9,999,999,999.99  9,999,999,999.99  99/99/9999

===========================================================================================================================
**END OF REPORT**


Sort Order       : Contract_number.
Tables used      : Sales_contract.
Report Width     : 220 columns.
```

Figure E11 Report Design of Contract Status Report For Sale By Preperty

```
REPORT NAME : XXXXXXXXXXXXXXXXXXXXXXXX  VERSION: XXXXXXXXXXXXX
RUN BY : XXXXXXXX (USER-ID) ON: 99 XXX 9999 99:99
=================================================================================================================================================

XXXXXXXXXXXXX  COMPANY  NAME  CHAR (50)  XXXXXXXXXXXXXXX                                                    DATE: 99/99/9999
XXXXXXXXXXXXX  PROJECT  NAME  CHAR (50)  XXXXXXXXXXXXXXX                                                    PAGE: 999
OVERDUE CONTRACT INSTALLMENTS FROM 99/99/9999 TO 99/99/9999
=================================================================================================================================================
A/R CODE --------------------- NAME ----------------------- -------------CONTRACT--------------- PROPERTY ------------------------------INSTALLMENT ---------------------------------
                                            NUMBER   DATE    VALUE               ID      NO. DATE     AMOUNT RECEIEVED TO DATE   OVERDUE AMOUNTS       DAYS LATE
=================================================================================================================================================

XXXXXXXX XXXXXXXXXXXXXXXXXXXX CHAR (50) XXXXXXXXXXXXXXX XXXXXXX 99/99/99  99,999,999,999,999.99  XXXXXX   99 99/99/9999  9,999,999.99              9,999,999.99          XXX
XXXXXXXX XXXXXXXXXXXXXXXXXXXX CHAR (50) XXXXXXXXXXXXXXX XXXXXXX 99/99/99  99,999,999,999,999.99  XXXXXX   99 99/99/9999  9,999,999.99              9,999,999.99          XXX
XXXXXXXX XXXXXXXXXXXXXXXXXXXX CHAR (50) XXXXXXXXXXXXXXX XXXXXXX 99/99/99  99,999,999,999,999.99  XXXXXX   99 99/99/9999  9,999,999.99              9,999,999.99          XXX
XXXXXXXX XXXXXXXXXXXXXXXXXXXX CHAR (50) XXXXXXXXXXXXXXX XXXXXXX 99/99/99  99,999,999,999,999.99  XXXXXX   99 99/99/9999  9,999,999.99              9,999,999.99          XXX
XXXXXXXX XXXXXXXXXXXXXXXXXXXX CHAR (50) XXXXXXXXXXXXXXX XXXXXXX 99/99/99  99,999,999,999,999.99  XXXXXX   99 99/99/9999  9,999,999.99              9,999,999.99          XXX
XXXXXXXX XXXXXXXXXXXXXXXXXXXX CHAR (50) XXXXXXXXXXXXXXX XXXXXXX 99/99/99  99,999,999,999,999.99  XXXXXX   99 99/99/9999  9,999,999.99              9,999,999.99          XXX
=================================================================================================================================================
**END OF REPORT**


Sort Order        : Project, Contract_number, Contract_date
Tables used       : Sales_contract, contract_installment.
Report Width      : 220 columns.
```

Figure E12 Report Design of Overdue Contract Installments

```
REPORT NAME : XXXXXXXXXXXXXXXXXXXXXXXX  VERSION: XXXXXXXXXXXX
RUN BY :  XXXXXXXX (USER-ID) ON: 99 XXX 9999  99:99
===============================================================================================================

XXXXXXXXXXXXX  COMPANY  NAME  CHAR (50)  XXXXXXXXXXXXXXX                        DATE: 99/99/9999
XXXXXXXXXXXXX  PROJECT  NAME  CHAR (50)  XXXXXXXXXXXXXXX                        PAGE: 999
CONTRACTS DUE FOR SIGNING  FROM 99/99/9999 TO 99/99/9999
===============================================================================================================
-------------- PROSPECT--------------------------------- PROPERTY ----------------------BOOKING -------------------DUE DATE       OVERDUE
ID         NAME                                          ID       RECEIPT NO. DATE            ADVANCE          (DAYS)
===============================================================================================================
999999                                                   XXXXXX   XXXXXXXXX  99/99/9999    9,999,999,999.99    999/99/999       999
NAME :    XXXXXXXXXXXXXXXXXXX  (50) XXXXXXXXXXXXXXXXXXXXXXXXX
ADDRESS:  XXXXXXXXXXXXXXXXXXX  (50) XXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXX  (50) XXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXX  (50) XXXXXXXXXXXXXXXXXXXXXXXXX
          CITY :  XXXXXXXXXXXXXXXXXXXXX  ZIP: XXXXXX
          PHONE: XXXXXXXXXXXXXXXXXXXX    FAX: XXXXXXXXXXX
---------------------------------------------------------------------------------------------------------------
999999                                                   XXXXXX   XXXXXXXXX  99/99/9999    9,999,999,999.99    999/99/999
NAME :    XXXXXXXXXXXXXXXXXXX  (50) XXXXXXXXXXXXXXXXXXXXXXXXX
ADDRESS:  XXXXXXXXXXXXXXXXXXX  (50) XXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXX  (50) XXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXX  (50) XXXXXXXXXXXXXXXXXXXXXXXXX
          CITY :  XXXXXXXXXXXXXXXXXXXXX  ZIP: XXXXXX
          PHONE: XXXXXXXXXXXXXXXXXXXX    FAX: XXXXXXXXXXX
---------------------------------------------------------------------------------------------------------------

===============================================================================================================
**END OF REPORT**


Sort Order        : Project, Booking_receipt_no
Tables used       : Booking_advance, Prospect
Report Width      : 132 columns.
```

Figure E13 Report Design of Contracts Due For Signing

```
REPORT NAME : XXXXXXXXXXXXXXXXXXXXXXXXX  VERSION: XXXXXXXXXXXXX
RUN BY : XXXXXXXX (USER-ID) ON: 99 XXX 9999 99:99
=================================================================================================================

XXXXXXXXXXXXX COMPANY NAME CHAR (50) XXXXXXXXXXXXXXXX          DATE: 99/99/9999
XXXXXXXXXXXXX PROJECT NAME CHAR (50) XXXXXXXXXXXXXXX           PAGE: 999
SALES COMMISSION REPORT  FOR SALES EXECUTIVE XXX TO XXX FROM 99/99/9999 TO 99/99/9999
=================================================================================================================
DATE         PROPERTY  CONTRACT     CONTRACT AMOUNT    CHEQUES RECEIVED
     ID                NUMBER
=================================================================================================================
EXECUTIVE CODE : XXX      XXXXXXXXXXXXX NAME IN ENGLISH    CHAR(50) XXXXXXXXX
                         XXXXXXXXXXXXXX NAME IN THAI CHAR(50) XXXXXXXXXXXXXXX

99/99/9999   XXXXXX      XXXXXXXXX 9,999,999.99      X

----------------------------------------------------------------------------------------------------------------
          COMMISSION   MIN.  RANGE   SALE AMOUNT    COMMISSION      COMMISSION
          CODE         QTY.                         RATE
----------------------------------------------------------------------------------------------------------------
             X         99   99-99    9,999,999.99    99.99          9,999,999.99
             X         99   99-99    9,999,999.99    99.99          9,999,999.99
             X         99   99-99    9,999,999.99    99.99          9,999,999.99

                       TOTAL :      99,999,999.99                  99,999,999.99
          ------------------------------------------------------------------------


=================================================================================================================
**END OF REPORT**


Sort Order       : Project, Executive_code, Product_code
Tables used      : Sales_contract, Sales_executive_commission
Report Width     : 132 columns.
```

Figure E14 Report Design of Statement Of Sales Executives Commission For Sales Executive

```
REPORT NAME : XXXXXXXXXXXXXXXXXXXXXXXX  VERSION: XXXXXXXXXXXXX
RUN BY : XXXXXXXX (USER-ID) ON: 99 XXX 9999 99:99
========================================================================================================================
XXXXXXXXXXXXX COMPANY NAME CHAR (50) XXXXXXXXXXXXXXXX                              DATE: 99/99/9999
XXXXXXXXXXXXX PROJECT  NAME CHAR (50) XXXXXXXXXXXXXXXX                             PAGE: 999
STATEMENT OF SALES EXECUTIVES COMMISSION FOR SALES EXECUTIVE  XXX TO XXX FROM 99/99/9999 TO 99/99/9999
========================================================================================================================
EXECUTIVE CODE : XXX   XX(NAME IN ENGLISH       CHAR(50) )  XXXXXXXXXXXXXXXXXXXXX
               XXX(NAME IN THAI  XXX  CHAR(50) )XXXXXXXXXXXXXXXXXXXXXXXXX

PROPERTY TYPE : XX   XXXXXXXXX (30) XXXXXXXXXXXX
              : XX   XXXXXXXXX (30) XXXXXXXXXXXX
------------------------------------------------------------------------------------------------------------------------
        COMMISSION    MIN.    MAX.    COMMISSION              AMOUNT        TOTAL AMOUNT
        CODE          QTY.    QDTY.   RATE
------------------------------------------------------------------------------------------------------------------------
 SALE
 ------
        X          999999  999999    99.99           99,999,999,999.99

             X     999999  999999    99.99                 99,999,999,999.99
                                                           ------------------      99,999,999,999.99
 RENT
 ------
        X          999999  999999    99.99           99,999,999,999.99

             X     999999  999999    99.99                 99,999,999,999.99
                                                           ------------------      99,999,999,999.99
 LEASE
 ------
        X          999999  999999    99.99           99,999,999,999.99

             X     999999  999999    99.99                 99,999,999,999.99
                                                           ------------------      99,999,999,999.99
                                                                                   ------------------
                                                           TOTAL :                 99,999,999,999.99
                                                                                   ------------------

========================================================================================================================
*** END OF REPORT ***


Sort order        : Executive_code, Property_type, Product_code, Product_code
Table used        : Sales_contract, Sales_executive_commission
Report Width      : 132 Columns
```
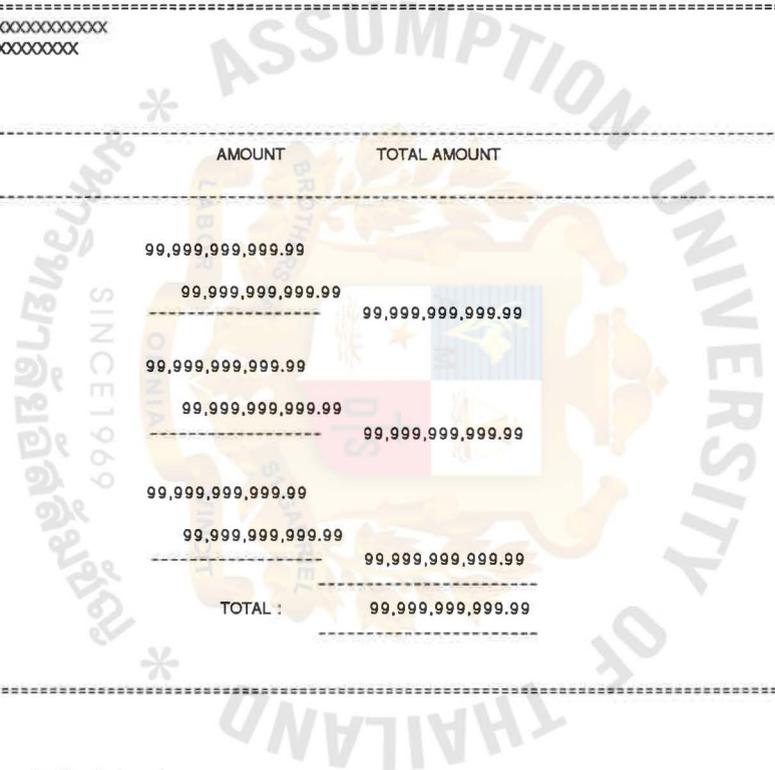
Figure E15 Report Design of Statement Of Sales Executives Commission For Sales Executive