

Practical Development of Information System in Business Context: Sales Support System for Big Yon Company

Mr. Witthaya Jinnam - Olan

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of the Course BC 4500 280 Hour Training Program
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Intern:

Mr. Witthaya Jinnam - Olan

Advisor:

A. Jitti Thongmuang

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

Approval Committee:

(A. Jitti Thongmuang) Advisor

(A. Patamate Damphitsanupan)
Chairperson

(A. Kritsada Bumpenboon)

Member

(A.Rattiporn Luanrattana) Member

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Advisor: A. Jitti Thongmuang

BC 4500 280-HOUR TRAINING PROGRAM WRITE-UP Prepared by Mr. Witthaya Jinnam - Olan

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I. INTRODUCTION

1.1 Background of Organization

Big Yon Company was established in January 2000 by Miss Wilaiwan J. and her partners. The main business of Big Yon Company is on used car trading include buying, selling and performing service for customer

Since the beginning of the company, sales volume is expanding as well as number of competitors also increased by more then triple. The company need to increase work performance efficiency is the main reason to be able to compete with other competitor effectively. So, the quality of service should be improve and better for customers.

There are 4 main departments in the company Marketing, Customer Service, Financial, and Inventory departments. Sales Support System is developed under work co-ordinating between Marketing department and Customer Service as show in organization chart and department chat as bellows.

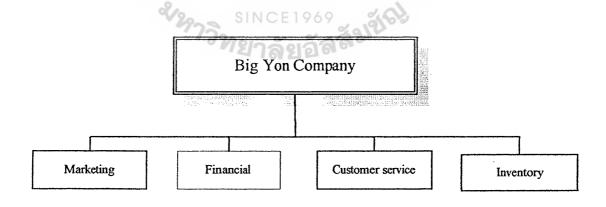


Figure 1.1 Organization Chart.

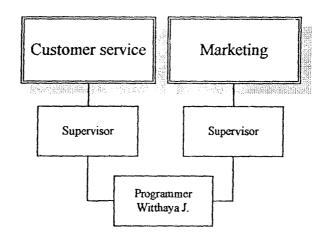


Figure 1.2 Department chart

1.2 Objectives of the system:

- (1) To understanding existing system
- (2) To analyze current problems
- (3) To develop current system to solve current problems.
- (4) To increase staff's performance and reduce time and errors.
- (5) To make systematic documentation for future reference.
- (6) To implement the system in the real working context.

1.3 Scope of the system:

- (1) To collect customer and his/her used car information.
- (2) To provide necessary information according to requirement
- (3) To generate report to support decision making and serve future plan
- (4) To support sales activity

1.4 PROJECT PLAN:

The tentative plan for this project: "Big Yon Company: Sales Support System" is exhibited in Table 1-1

No. Task Name		September				October				November				December				
INO.		T WAN TARIFF		2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
	I.	Analysis of the Existing System																
1.		Study the Existing System																
2.		Identify the Existing Problems																
3.		Existing Context Diagram																
4.	·	Existing Data Flow Diagram																
	II.	Preliminary Investigation						****	1					1	*			
5.		Define the objectives and scope																
6.		Hardware Requirements																
7.		Software Requirements		F	58													
	III.	Analysis and Design of the Proposed System																
8.		Entity-Relationship Diagram																
9.		Database Design																
10.		Data Flow Diagram					M											
11.		Functional Description	X				YA											
12.		Interface Design	A	AW														
13.	Report Design																	
	IV.	Implementation of the Proposed System			الا		Varie		1									
14.		Coding	Qe.		- 6	GAB	RIEL					di w		ال سائلة				
15.		Testing																
16.		Documentation ABOR																

Table 1-1 Project plan or Scheduled for develop and implement for Bigyon Company: Sales Support System

II. THE EXISTING SYSTEM

2.1 Background of Existing System

Since Company started business, it relies up on paper- manual system as the result of it is difficult to setup certain kind of standard. The performance is hardly evaluated. It quite often that with this system produce very poor to error as much as duplicate of effort.

Staff must provided information according to customer's required when customer visited the company. Staff must let customer to view all available used cars and provided information about its.

Senior staff take care customer by let customer to office and provide information, such as condition term, financial and others information to customer include suggest used car for customer.

It is possible for customer to sign contract immediately but contract is not complete. Customer has to submit personal documents such as copy of personal id card and others documents include payment. Customer can make only once payment or periodic payment according to the contract.

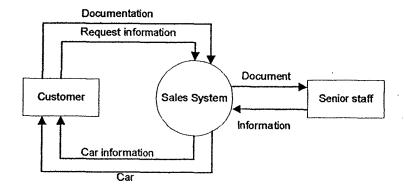


Figure 2.1 Context diagram of existing system

2.2 Problem Definition

(1) Lack of information and Immediately

According to paper-manual system, it required time for staff to flow data or information according through all process. Customer always wastes time for waiting staff prepare information. It affects all system process, and decrease performance efficiency of the system.

(2) Difficulties in information Integration for management review

According to manual system, data or information have separate away from each others, for example customer information is kept by marketing department while car information is kept by inventory department. When marketing department need car information or car information is old, staff has to find car information from Inventory department. Staff has to waste time to find information from different department and information always out of date.

(3) Waste time and Inaccuracy of Information

According to problem (1) and (2) the results of problems show that staff have to waste time to complete the process and make information flow through the system. According to problem (2), car information that keeps by marketing department might not same car information that keeps by inventory department or information is out of date. Staff must waste time to up date it. According to manual system, staff might cause error on information record easily.

III. THE PROPOSED SYSTEM

3.1 System Specification

(1) Hardware Requirements

Table 3-1 Hardware Requirements

HAREWARE	SPECIFICATION
CPU	Pentium 4 1.5 GB
RAM	256 MB
Hard disk	40 GB R S

Pentium III 1 GHz should be powerful enough to use in business. After compare price of Pentium III1 GHz. After compares Pentium III 1.5 GHz with other CPU in market. The result shows that Pentium 4 1.5 GHz is the appropriate CPU with competitive price and can support future applications.

In order to gain full benefit of CPU performance, RAM 256 MB is recommend for working corporate with CPU. To store data and applications to use in business, hard disk should large enough to store all of then. Hard disk 40 GB suitable to use in business because it appropriate hard dish with competitive price when compare with others.

(2) Software Requirements

Table 3-2 Software Requirements

SOFTWARE	SPECIFICATION
Operating System	Windows ME or Windows XP
Application	Microsoft office XP
- ippiiduoii	Bigyon's Sales Support System program

Operating System should be Windows Me or Windows XP is recommended, because Bigyon's Sales System program is works under Windows's environment. For another reason, Windows use graphic user interface to communicate with user. Every one can use it more easily and it is one of most popular operating system.

Microsoft office XP is basic application, it's also popular to use in business. It provide convenient for user to create their own work more easily and support others work in office.

Bigyon's Sales Support System program is custom program that create according to Sales Support System. It use to apply in business for Big Yon Company.

3.2 System design

(1) Dataflow Diagram

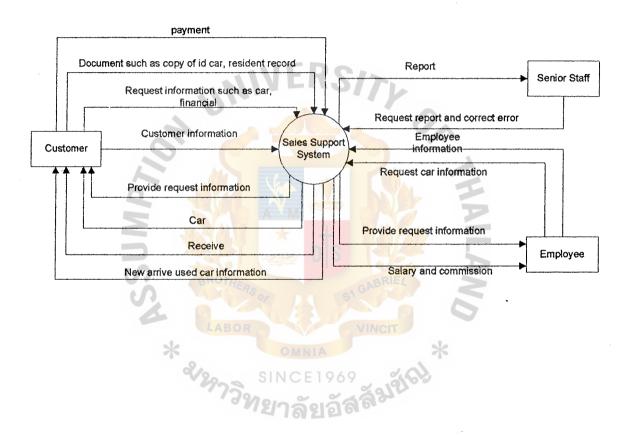


Figure 3.1 Data Flow Diagram - Context diagram

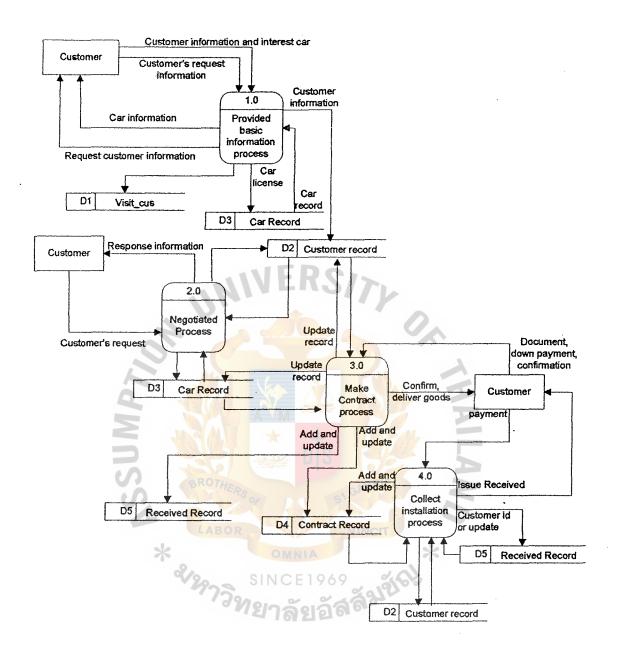


Figure 3.2 Dataflow diagram – Level 0

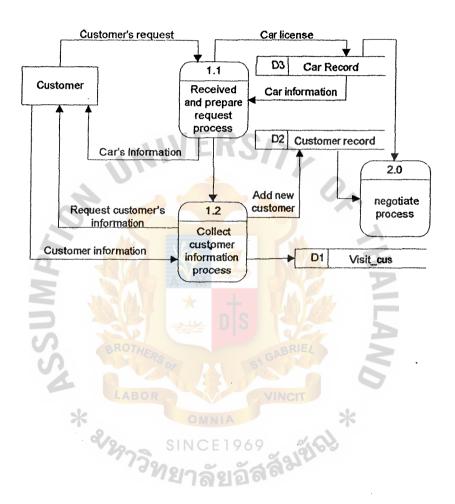


Figure 3.3 Data Flow Diagram – Level 1 for Process 1

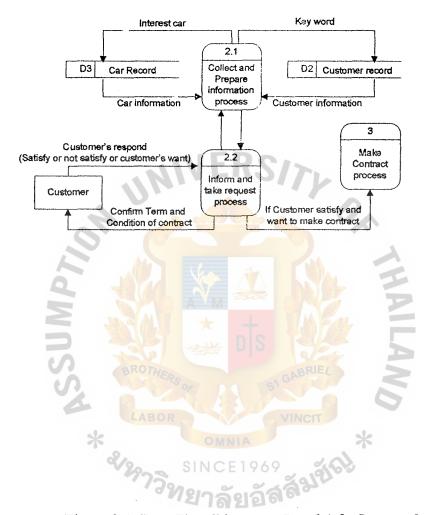


Figure 3.4 Data Flow Diagram – Level 1 for Process 2

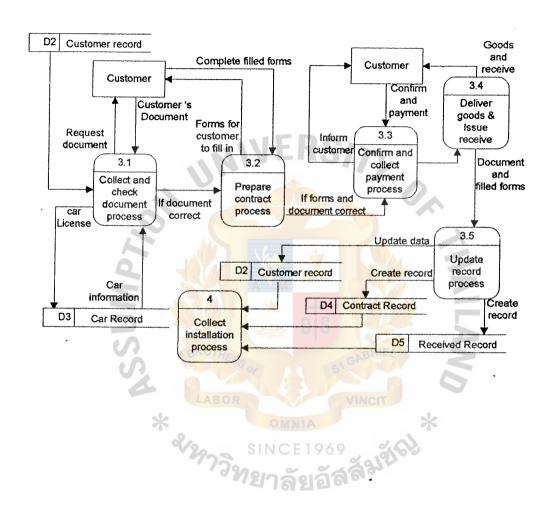


Figure 3.5 Data Flow Diagram – Level 1 for Process 3

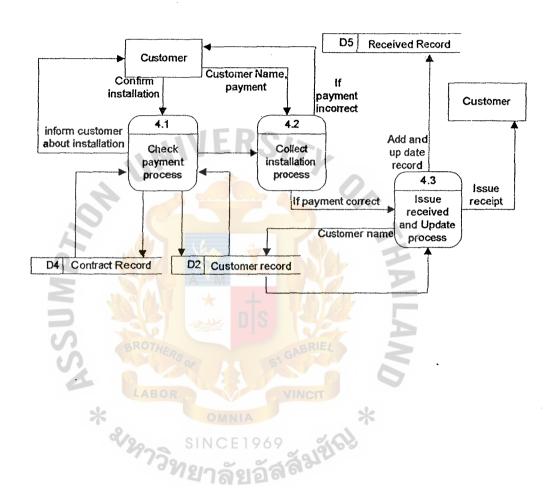


Figure 3.6 Data Flow Diagram - Level 1 for Process 4

(2) Entity-Relationship Diagram

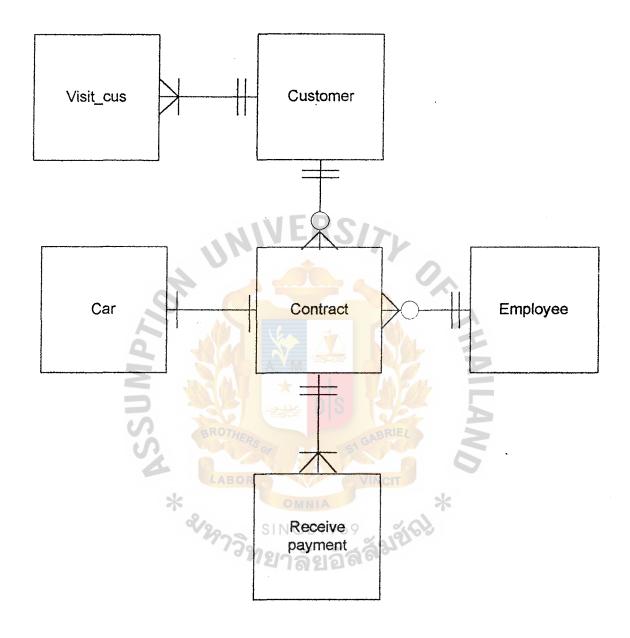


Figure 3.7 Entity - Relationship Diagram

(3) Database Design

Database is group of data or real fact that collect together for specific purpose. It is also a central source of data; it is mean that database can be share by many users. There are many advantages of database design that reduce redundancy of data, reduce Data inconsistency and fast to retrieve and up date data and etc. There are 5 tables of database that used in this system showed bellow.

1. Customer table

Customer table is a table which collects information of customer such as customer name, address, phone number and etc. Customer id, Customer name can be use as index to search customer record

2. Car table

Cartable is a table which collects information about used car. It contain car information which available to sales and sold out. Car_id is primary key to identify the record and also used car license as index to search car record

3. Contract table

Contract table keep information about contract such as contract id, contract date, also includes car id, customer id and employee id. contract id, customer_id, car_lecense can be use as index to search contract record

4. Visit_cus table

Visit_cus table keeps records when customer visit Big Yon Company.

It will collect customer name and contract address, phone number and car trademark or car model that customer want to see or customer's prefer.

5. Receive payment

Receive_payment is table that collect information about payment of customer include installation of financial. Some customer might pay once at time, but most customers prefer to pay installation monthly. This table is used full for check payment of customer.

6. Employee

Employee table is keep record of employees both existing employee and expelled employee. This table use associate with contract table and receive_payment to evaluate staff performance by check how many cars that each employee can sales.

(Database Design is exhibited in Appendix A)

ROTHER SINCE 1969

SINCE 1969

(4)Process Specification

Table 3-3 Process Specification for Process 1.0

Process Name:	Provide basic information process
Data In:	(1) Customer information
	(2) Customer request
111	(3) Car information
Data Out:	(1) Customer information
OF C	(2) Car information
	(1) Receive request from customer
N SA	(2) Prepare information and hand to customer
Process:	(3) Request customer information
BROTHER	(4) If new customer then add new customer
LABOR	(5) Up date Visit_cus file
Attachment:	(1) Customer
3739	(2) Data Store D1
	(3) Data Store D3
	(4) Process 2.0

Table 3-5 Process Specification for Process 1.2

Process Name:	Collect customer information process
Data In:	(1) Customer information
Data Out:	(1) Customer information
	(1) Request customer information from customer
10.	(2) Check customer
Process:	(3) If existing customer then add and
1100035.	update data store D1
6	(4) If new customer then add new customer (data
Z A	store D2) and add and update data store D1
Attachment:	(1) Customer
BROTHER	(2) Data Store D1
LABOR	(3) Data Store D2
* 2/2/22	(4) Process 1.1

Table 3-7 Process Specification for Process 2.1

Process Name:	Collect and prepare Information Process
Data In:	(1) Car Information
	(2) Customer information
Data Out:	(1) Car Information
	(2) Customer Information
. 11	(3) Prepare information for customer
101	(1) Collect car information from data store
Process:	(2) Collect customer information from data store
4	(3) Prepare information for customer
Attachment:	(1) Data Store D2
3	(2) Data Store D3
BROTHER	(3) Process 2.2

Table 3-8 Process Specification for Process 2.2

Process Name:	Inform and take request process
Data In:	(1) Information which prepare for customer from
	process 2.1
in.	(2) Feed back or request from customer
Data Out:	(1) Information which prepare for customer from
OF	process 2.2
	(1) Take Information which prepare for customer
N N	from process 2.2 to customer
3	(2) Receive feedback from customer
Process:	(3) if customer not satisfy term and condition then go
LABOR	back to process 2.1
* 3/29759	(4) if customer satisfy term and condition then let go
7739	to Process 3.0
Attachment:	(1) Customer
	(2) Process 2.1
	(3) Process 3.0

Table 3-9 Process Specification for Process 3.0

Process Name:	Make Contract process
Data In:	(1) Customer information
	(2) Documentation from customer
	(3) Car information
	(4) Payment from customer
	(5) Confirm from customer
Data Out:	(1) Payment information
	(2) Inform customer
	(3) Goods
7	(4) Contract record information
MF	(5) Car information
3	(1) Collect and Check customer's document
Process:	(3) If document incorrect that request document from customer
	(4) Give contracts form to customer to complete and collect it
	(6) If contract incorrect then ask customer to correct it
	(7) Collect payment from customer and deliver goods to customer
	(8) Keep all documents and contract form in storage and update
	Receive Record and add new contract record
Attachment:	(1) Customer
	(2) Data Store D4
	(3) Data Store D5

Table 3-10 Process Specification for Process 3.1

Process Name:	Collect and check document process
Data In:	(1) Customer's documents
	(2) Car information
, N	(3) Customer information
Data Out:	(1) All customer's documents
01	(2) Car information
	(3) Customer information
	(1) Ask customer for document before make contract
3	(2) Check customer's document
Process:	(3) if documents incorrect then ask customer for
LABOR	required documents
* 2/2/23	(4) If documents correct then go to next process
Attachment:	(1) Customer
	(2) Data Store D3
	(3) Process 3.2

Table 3-11 Process Specification for Process 3.2

Process Name:	Prepare contract process
Data In:	(1) Contracts forms
114.	(2) Car information
nu.	(3) Customer information
Data Out:	(1) Complete Contract forms
	(2) Car information
	(3) Customer's documents
	(4) Customer information
S THERS	(1) Ask customer to complete contract.
LABOR	(2) Check contract forms
Process:	(3) if contract form incorrect or incomplete then
N. E.	ask customer to complete it
	(4) If contract correct then go to next process
Attachment:	(1) Customer
	(2) Process 3.1
	(3) Process 3.3

Table 3-12 Process Specification for Process 3.3

Process Name:	Confirm and collect payment process
Data In:	(1) Customer's document
	(2) Complete contract forms
	(3) Car information
	(4) Customer information
Data Out:	(1) Customer's document
0	(2) Complete contract forms
	(3) Car information
Z M	(4) Payment
3	(5) Customer information
S	(1) Confirm customer about contracts
LABOI	(2) Ask collect payment from customer
Process:	(3) if payment incorrect then inform customer about
V2973	incorrect payment again
	(4) if payment correct then go to next process
Attachment:	(1) Customer
	(2) Process 3.2
	(3) Process 3.4

Table 3-13 Process Specification for Process 3.4

Process Name:	Deliver goods and issue receive process
Data In:	(1) Customer's document
	(2) Complete contract forms
	(3) Car information
	(4) Payment
	(5) Customer information
Data Out:	(1) Customer's document
nia	(2) Complete contract forms
OF C	(3) Car information
5	(4) Payment
Z M	(5) Received for customer
3	(6) Copy of receive
BROTHER	(7) Customer information .
LABOR	(8) Goods (Used car)
* 2200	(1) check document and contract again ensure that
7739	contract forms, document collect and payment
D	collect
Process:	(2) Issue received to customer
	(3) Deliver goods to customer
	(4) Submit all document to next process
Attachment:	(1) Customer
	(2) Process 3.3
	(3) Process 3.5

Table 3-14 Process Specification for Process 3.5

Process Name:	Update Record process
Data In:	(1) Customer's document
	(2) Complete contract forms
	(3) Car information
	(4) Payment
	(5) copy of received
in.	(6) Customer information
Data Out:	(1) Contract information
OF	(2) Received information
	(1) Check all document again
Z A	(2) Update customer information from customer's
Process:	document
BROTHER	(3) Create new contract record .
LABOR *	(4) Add new received payment record
Attachment:	(1) Data Store D2
7739	(2) Data Store D4
	(3) Data Store D5
	(4) Process 3.4

Table 3-15 Process Specification for Process 4.0

Process Name:	Collect installation process
Data In:	(1) Contract information
	(2) Receive information
	(3) Payment
Data Out:	(1) Received of payment
	(2) Payment information
HUN	(1) Check contract record that which contract is not complete of installation
0, 6	(2) Check history of payment or installation
Process:	(3) Inform Customer to make payment or installation
WINSS BROTHER	(4) If customer make payment then issue received to customer
	(5) Up date received record
Attachment: 4ABO	(1) Customer VINCII
* ² /2975.	(2) Data Store D4
7739	(3) Data Store D5

Table 3-16 Process Specification for Process 4.1

Process Name:	Check Payment Process
Data In:	(1) Contract Information
	(2) Received Information
Data Out:	(1) Received information
. 11	(2) Contract Information
A	(1) Check contract which complete or not complete
OF	installation
5	(2) If not complete installation or over date of
Process:	installation then inform customer about
3	installation and appoint customer to make
BROTHERS	installation of the control of the c
LABOR	(3) Keep note to the next process
Attachment:	Process 4.2
7739	Data Store D2
	Data StoreD4

Table 3-17 Process Specification for Process 4.2

Process Name:	Collect Installation Process
Data In:	(1) Payment of installation
	(2) Customer information
Data Out:	(1) Payment of installation
	(2) Customer information
	(1) Check payment of installtion
UN	(2) If incorrect then inform customer about incorrect
Process:	payment
	(3) If payment correct then go to next process
M	
Attachment:	Process 4.1
BROTHER	Process 4.3 GABRIEA
LABOR	Data Store D2

Table 3-18 Process Specification for Process 4.3

Process Name:	Issue received and Update Process
Data In:	(1) Payment of installation
	(2) Customer information
Data Out:	(1) Installation Information
UN	(2) Customer information
0 0	(1) Check customer information
Process:	(2) Add and update installation record
Z M	(3) Issue received of installation to customer
Attachment:	Process 4.2
BROTHE	Data Store D2 CARRIEZ
LABOI	Data Store D5
2/2973	SINCE 1969 ที่ยาลัยอัสลังชั่งป่

(5) Data Dictionary

Table 3-19 Data Dictionary of Sales Support System process

Field Name	Meaning
Add and update	Information or data that used to up date record
Car information	Information about car. It can be license number, expire
	date of license, year of car register and etc.
Car license	License of car that issued by department of land transport
Car Record	Record of information about car
Confirm	Confirm of customer or staff, make sure that information
6	correct
Customer information	Information about customer such name, surname, address
M	and etc of customer
Customer's request-	Information which customer want to know it's can car
information	information, or term of condition about trading or
4	agreement and etc
Deliver goods	After contract and down payment complete then staff will
	deliver key of car to customer
Document	Document that customer have to prepare for make
	contracts
Down payment	Money that customer have to pay when make contract.
Issue received	Received that issue and give to customer after customer
	make payment
Payment	Method of payment can be cash, check etc.
Response information	Information that prepare for customer according to
	customer's request

(6) Interface Design

Interface Design is design interface of program that used to communicate between user and computer and allow user access database easier. It also increase productivity of staff and reduce error

1. Add customer form

This form is used to add new customer only. It contain name, address and phone number of customer.

2. Main Administration form

This form is showing menu that like to others form which used to add, modify and delete record. Before access this form user have to identify them self by enter name and password at Login Admin form.

3. Car Administration form

This form is used to add, delete and update information and also keep secrete information such as cost of car. Only administrator can view, add or modify record, it can access this form by select of option at Admin Main form

4. Car information form

This form contain information not secrete level information about used cars.

User also can search information about it. It's show car's information in both in store and sold out.

5. Change password form

This form allows administrator or person who can access secret information level can change password.

6. Employee Information form

This form contains basic information of all employees. User can only view employee information. It also link to commission form.

7. Employee administration form

This form contains all information about employee. Only administrator can access this form by select Employee Admin form at Admin Main form

8. Financial information

This form is used to negotiate with customer user have to input 4 data that use to calculate. The result show financial term.

9. Contract Form

This form is used to view and add contract information. This form used to keep record of contract after customer sigh all contract forms. Only add and view allow to active in this form. For modify and update data can active by use Contract admin form

10. Customer Form

This form is used to keep more information about customer such as customer's ID card number (Thai resident number, passport number), office address

11. Main Form

This form is used as main program. It can link to all other others form by click at toolbar

12. Commission Form

Commission Form show information about employee can sales car and also calculates commission. The commission show only contract which not pay commission. There are 2 options for user can choose.

13. Login Administration

This form allow administrator can access to Admin Main Menu, but administrator must input 2 priorities to login

14. Make payment

This form provide for record information when customer make payment or pay installation.

15. Pay Add Item form

This form will show information be fore add list into Make payment form

16. Payment information

This form show information about payment of each customer who make contract.

17. Receive Administration form

This forma allow administration add, delete, or change all information about payment of customer

18. Show all payment form

This form show all record of payment of every customer. This form will only show by select option from Receive admin form

19. Visit cus form

This form is record information when customer come and visits Bigyon company. It's also record which car that customer interested.

(Interface Design is exhibited in Appendix B)

(7) Report Design

(1) Car report

Use to view total car inventory. It's easy form senior staff to check quantity of car. It's can help senior staff determine to order new car or not.

(2) Sales Car report (Contract report)

This report contents information about car that was sold out. It can help senior staff to determine the future of used car. They also know which car model is popular or not.

(3) Employee commission report

This report content information about each employee and how many car that they sold. It's show ability of each employee.

(4) Installation report

This report show installation of each contact then it easier form senior to know how many contract complete installation or not, which contract over due date. So, Senior can inform customer immediately to make installation.

(5) Visit customer report

This report content how many customers have been visited Big you company. Senior staff can used this report to determine future used car market or apply new strategy into business

(6) Customer report

This report contents information about customers. Senior staff can use this report to contact customer or inform customer such as there is cars arrival or used it to analyze market.

(Report Design is exhibited in Appendix C)

IV. SYSTEM IMPLEMENTATION

4.1 Overview of the System Implementation

The new system will be implemented with DIRECT CHANGE OVER. There are many reason that first, the old system operated manually, so the new system can be immediately operated. Second, there is no effect to the old system after implemented new system because the new system is developed from old system. Big Yon Company has never used a computer to operate their jobs, they write down everything on the paper and all transaction is recorded separately according by department. The new system will let every thing more easily like one stop service, because the new system will act like data center, allow user can access to data base and retrieve information that they want but not allow them change database or see secret level information (limited access to database).

4.2 Test Plan

Top-down testing methodology is applied for testing software. Top-down testing where starts with the most abstract component and works downwards. User will test main program and then test subprogram. There are 9 parts of program that 1.Visit_customer, 2.Customer information, 3.Car information, 4.Contract information, 5.Employee information, 6.Administration, 7. Data report, 8. Financial information and 9 payment.

First, user have to test visit customer part and it sub function or sub programs after finished then test another parts program thought all parts of program. User must recommend that the programs that user satisfy enough or not, before apply into business and keep recommendation to develop the program

V. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Sales Support System can use to apply into business immediately in order to increase employee's performance and use to support sales activity. Sales Support System developed from old system and gather data in one place under concept "one stop service" Sales Support System can provide information immediately according to the request of information.

Program that used to support the systems also designed to cover all need information need. Staff can use program Sales support system to present information to customer. Senior staff can use this information (data report) for future prediction of business.

Data or Information that records by used Sales Support System program will act like datacenter and also can use as reference data for all departments because all information flow pass Sales Support System and all information is kept and retrieved immediately. Staff does not waste precious time to update information manually and data always update immediately.

5.2 Recommendations

Sales Support System is used only one computer act like datacenter. Every one can come and retrieve information that they need. The system worked best when one person come and retrieves information once at a time if every one wants to retrieve data at the same time, it might cause lack of data flow problem again.

Lack of data flow can be reduce by apply computer network into business by use one computer as database server and use others computer as client computer. Every one can retrieve information by immediately.



Table A-1 Customer Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key	Check	Key Type
1	CustomerID	Interger	Y	Y		Contract, Car,visit_cus		Primary Key
2	Title	varchar (5)						Attribute
3	ContactFirstname	varchar (50)						Attribute
4	ContactLastname	varchar (80)			Y			Attribute
5	DOB	date			Y			Attribute
6	ID_type	varchar (50)			Y			Attribute
7	ID_number	Integer		WEI	Y >			Attribute
8	Issue _by	varchar (50)			Y			Attribute
9	Issue_date	date			Y			Attribute
10	Expire_date	date			Y			Attribute
11	Address	varchar (50)						Attribute
12	Province	varchar (50)						Attribute
. 13	Pastal code	varchar (6)		A V _M		- 39		Attribute
14	Phonenumber	Integer(9)	Male M		1 17/16	SM :		Attribute
15	Office_name	varchar (50)			SY			Attribute
16	Office_address	varchar (50)	aROTU.		Y			Attribute
17	Office_phone	Integer(9)		OF 1 D. G	Y	3		Attribute
18	Fax Number	Integer(9)			Y			Attribute
19	E-Mail address	varchar (50)	CEABOR		Y			Attribute
20	Note	Varchar	٥	OMNI	Y			Attribute

Table A-2 Car Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to	Check	Key Type
1	Car_id	Interger	Y	Y		Contract		Primary Key
2	LicenseNo	Var char(50)						Attribute
3	Province	Var char(50)						Attribute
4	Trade_mark	Var char(50)						Attribute
5	Madel_car	Var char(50)						Attribute
6	Type_car	Var char(50)		WE	RCIS			Attribute
7	Year	Var char(4)		777 -				Attribute
8	Color	Var char(50)						Attribute
9	Frame_no	Var char(50)						Attribute
10	Engine_no	Var char(50)						Attribute
11	Regis_expire_date	date			4			Attribute
12	Old_license	Var char(50)	THE STATE		Y			Attribute
13	Old_province	Var char(50)	TAN COLUMN		Y			Attribute
14	Customer_id	integer	MANAGE		nle R			Foreign key
15	Total_cost	integer	3/2/2					Attribute
16	Set_price.	integer	SKOTH	PS 05	el GAB			Attribute
17	Min_selling_price	integer						Attribute
18	Memo	Var char(255)	LABO	R	YVIN			Attribute



Table A-3 Contract Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to	Check	Key Type
1	Contract_id	Interger	Y	Y		Receive_payment	,	Primary Key
2	Contract_type	Var char (50)						Attribute
3	Car_id	Integer				Car		Foreign Key
4	Customer_id	Integer				Customer		Foreign Key
5	Contract_date	date						Attribute
6	Memo	Var char (255)		WE	Y			Attribute
7	EmployeeID	Integer			344)	Employee		Foreign Key
8	Downpayment	Integer						Attribute
9	Princeple of loan	Integer						Attribute
10	Interest	Integer						Attribute
11	Period_install	Integer		N/a		1 / ₂ = = = = = = = = = = = = = = = = = = =		Attribute
12	Amount_install	Integer						Attribute
13	Start_date	date						Attribute
14	EndDate	date	3 VST					Attribute
15	Pau_com_yesno	Boolean(yes,no)	Mary 1		1 19			Attribute
16	Complete_install	Boolean(yes,no)	BIO THER	lae La	G1 GABN	7 3		Attribute

Table A-4 Visit_cus Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to	Check	Key Type
	Vistited_id	Interger	Y	Y				Primary Key
	Date	date						
	Unefficient_customer	Boolean(yes,no)			Y			
	Customer_id	Integer						Foreign Key
	Car_trademark	Var cahr (50)			Y			
	Car_model	Var cahr (50)	10.	MA	Y			
	Car_type	Var cahr (50)			Y			
	Budget	Integer			Y			
1	Memo	Var cahr (255)			Y			



No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to	Check	Key Type
	Received_id	Interger	Y	Y				Primary Key
	Invoice_id							Attribute
	Contract_id							Foreign Key
	Customer_id							Foreign Key
	Paydate							Attribute
	Payment_descrition			ME	2015			Attribute
	Payment_section							Attribute
	Payment amount		V					Attribute
•	Employee_id							Attribute



Table A-6 Employee Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign Key to	Check	Key Type
1	EmployeeID	Integer	Y	Y		Contract, Receive_payment		Primary Key
2	Title	Var char						Attribute
3	Firstname	Var char						Attribute
4	LastName	Var char			·			Attribute
5	ID_type	Var char						Attribute
6	ID_number	Integer						Attribute
7	Address	Var char	211	ME	221			Attribute
8	Province	Var char			44			Attribute
9	Postal_code	Integer						Attribute
10	Homephone	Integer						Attribute
11	MobilePhone	Integer						Attribute
12	Birthday	Date	A (129)	1/20x		A. E.		Attribute
13	DateHired	Date						Attribute
14	Lastday_hired	Date	SMT					Attribute
15	position	Var char						Attribute
16	Salary	Integer			19/9/			Attribute
17	Emer_contract	Var char	BRUTHER		GA GABR			Attribute
18	Emer_phone	Integer						Attribute
19	Username	Var char	LABOR		VINCI			Attribute
20	Password	Var char		OMNI	у	*		Attribute
21	Expelled	Boolean(yes,no)	20	SINCE	969 y			Attribute
22	Note	Var char(255)	1739	101_~	zz y			Attribute



	Add New Custom	er
Customer_id:	1 21 Tide :	
ContactFirstName:	Surname	
Address:		
Province:	Posta	Code:
PhoneNumber:	Moblei_p	hone:
EmailAddress:		
È,	Add New Record	Cancel
(A)		
S	SINCE 1969	CIT CIT

Figure B-1 Add New Customer form

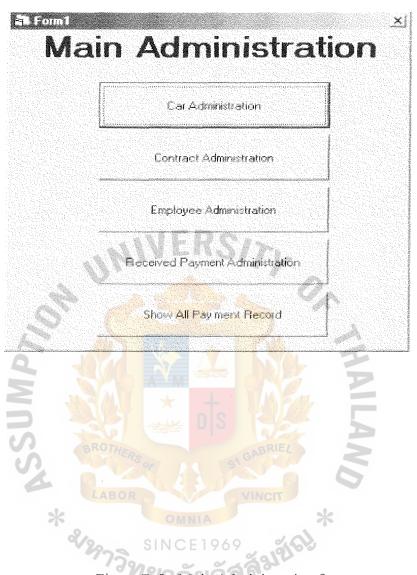


Figure B-2 Main Administration form

Customer id: FirstName: Chararek LastName: Sanstworngsiri Address:			Lar	Informati	on		
Trademark: Toyota Model Hitta Tiger Type: Pickup License expire 13/2/2544 Frame no: Lors 114211 Engine no: 41165319 Color: Violet Set_price: 150000 Owner Information Customer id: FirstName: Charack LastName: Santtworkgair! Address: 322423423 PhoneNumber: Mobile phone: Memo:	Car Profile ——						
Frame no: L00-881489 Engine no: 4016889 Color: Violat Set_price: 150000 Owner Information Customer id: FirstName: Chararak LastName: Sansworngsri Address: 123423423 PhoneNumber: Memo: Search (< First Last>>) Car License Car D Search next (< Previous Next>>)	Carid: 1	LicenseNo:	กง-5241	Province:	ลุตรภา	ü Yı	ear 1995
Owner Information Customer id: FirstName: Charack LastName: Sameworkgari Address: 123423423 PhoneNumber: Mobile phone: Memo: Search (<< First Last>>) Car License Car ID Search next (<< Previous Next>>)	Trademark: Toyota	Model	Histor Tiger	Type:	Picky	License e	xpire: [13/2/2544
Customer id: FirstName: Charack LastName: Sanstworngsri Address: 123423423 PhoneNumber: Memo:	Frame no:	Engine no:	4016680	Color.	Violet	Sel_pri	ice: 150000
Address:	Owner Information						
Mobile phone: Memo: Search Key word Search (< First Last>>) Car License Car D Search next (< Previous Next>>)	Customer id:	FirstName:	Chnerek	LastNa	me:	Sacronomysii	salami
Search Key word Search << First Last >> Add to contract Car License Car ID Search next << Previous Next >>	Address: [77,473.17		sidensia en	Phone	lumber:		enterent .
Search Search Search Search next Search ne	Mobile phone:	Memo:			elaria sanguny garakeni biring k	Sandalah dagan sekamenda da kanaka da ka	Americania.
Search Search Search Search next Search ne	Sarch						
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CA Previous Wext > 3			and the same of th	IS CHS		Lastzz	Add to contract
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		and the second of the second o	next	<< Previo	us	Next >>	
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		and the second of the second o	next	<< Previo	M.S.	Next>>	
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BROTHERS CABRIEL		and the second of the second o	next	Previous D S	us	Next>>	
BROTHERS OF ST GABRIE!		and the second of the second o	next	C Previo	us	Next >>	
BROTHERS OF ST GABRIE!	Car Model	Dwner ROTHE			BRIE	Next >>	
* CHILLA	Car Model	Dwner ROTHE		D S	BRIE		
* SINCE 1969	Car Model	Dwner ROTHE		D S	BRIE		

Figure B-4 Car Information form

Change Password		X)
User name:		
Current Password:	. O.K	• •
	Cancle	•
New Password:	. anthonous constraints are constraints	
RE-enter New password:		• • •



Figure B-5 Change Password form

	imployee Informa	atrion
Personal Inform		
EmployeelD:	DENNYA MAF 基 語	
Title:	FirstName:	
Address: (Province:
PostalCode:	HomePhone:	. 10788-04
Employed Info	mation	
DateHired.	Lastdair_hired	Salary
Emergency Cor	ıtracı	
mande at the ten Toronto and the state of the American pro-		
얼마나 얼마나 뭐 하나 나라를 하는 것이다.		Phone:
mergcy Contact Name: Notes:	Emergey Contact	Pione:
mergcy Contact Name: Notes:		
mergcy Contact Name: Notes:	Emergey Contact	
mergcy Contact Name: Notes:	Emergey Contact	
mergcy Contact Name: Notes:	Emergey Contact	
mergcy Contact Name: Notes:	Emergey Contact	
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mergcy Contact Name: Notes:	Emergey Contact	
mergcy Contact Name: Notes:	Emergey Contact	
mergcy Contact Name: Notes:	Emergey Contact	
mergcy Contact Name: Notes:	Emagcy Contact vious Next > Last	

Figure B-6 Employee Information form

机乳状 机二氢硫矿 隐文 法统统 灰铁 化加强压缩 蘇門					
E	mploye	e Admir	nistratio	n Form	
^p ersonal Ini	ormation	EmployeelD:			
Title		FirstName:		LastName:	
ID_type:		ID_number:		Bithdate:	
: Address:			en e	Province:	a proper a salamini de la comune
PostalCode:		HomePhone:			
mentaced I	nêama atia				
imployed I				gen anna danner	
DateHired:		Lastdair_hired:		Salary:	in elektrik e
mergency	Contract				
nergcy Contact Name	×]	* Emerge	cy Contact Phone:		
Notes		Source, é les écitelles de la librar de la constant	atifactalitaisatea (alemania)	1878) e je jejski glovise akome gliko	iki esimilkelleri esi
Notes Add	Delete	Update	Cancle		
		Update	Cancle		
		Update Next >	Cancle Last > j		
Add	Delete				

Figure B-7 Employee Administration form

F il	nancial C	alculator	
Required Information			
Dealing price or price of car:	Bath	Interest rate:	% (Per Cent)
Down Payment:	Bath Fe	riod of installation:	Months
Dealing Price Down payment Interest F	Reate Periods	Installation	7 4 4 8 8 7 7 8 6 7 8 6 7 8 6 8 8 8 8 8 8 8 8
얼굴들이 하는 일을 다시 그들은 이 이번 생각이 되었다. 이 이 없는데 이번	经工作证据 化双氯化物 医有足术 经工作 医二氏征 医电线性		
			Financial Calculation



Coetract Inform	olice		Financial Info	medion			
Contract id T	Casted type: Trading Age	ome Contract date: 26/11/2002	Sales price	350000	Somest.	2	Cakralate
Customer Infor	mation		Downpayment.	4000	Period install	24	
Custome_id 1	Lastivane	Topic Street, Tables Co.	Amount of Loans	645000	Monthly installation:	45225	
			Start date:	26/11/2002	End date:		
Car Information						<u> 15 a han 1 a Chefagalla</u> History Havagalla Ch	
Carid: [Owner:		Sales Persei				
Licensello:	Province:		EmployeeID: 1 FirstName:	and the second s	LestName		Employer search
Search			Messo:				
ey word Text1	Contract	Date C Carlicense C Customes Name		Add	Cencle		
Search	Search next		and ver Film	Za Provious:	Next >>	Last 33	



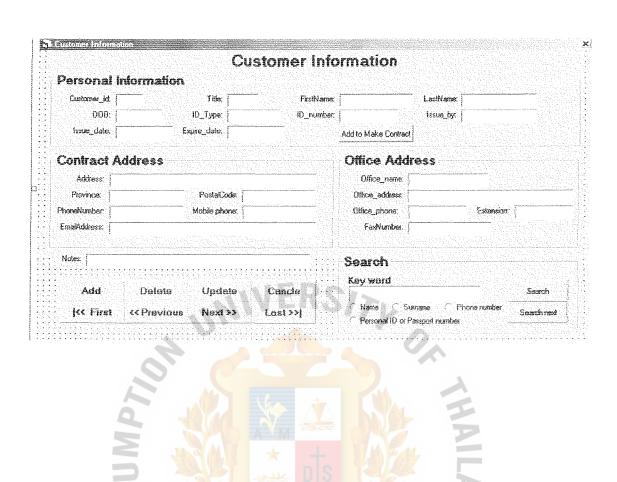


Figure B-10 Customer Information form



Figure B-11 Main Menu Form

Eomi				Addition Control of the Control of t	
	Salary	and Sales	s Commiss	ion	
EmployeeID:					
::::Name	First Name		Last Name:		ogygan jermingunga Stabin, stabigan uningan pinyebaga
Position:	entatum kitalumian kun erinten eritarian interiorian kanalainian kanalainian kanalainian kanalainian kanalaini	annipaapunininkisto	Salary:		
Contract id	Contract date	LicenseNo	Province	Sales price	Com Paid
4 4 Commission	an List				1818
Contract Count	na parametra per bankan da k		. Total Sales =		,
Calculate by	count contract		Calculate fro	ım total sales	
1 contract paid:	2000		% total Sales.	3	
commission		Calculate	commission:		Calculate
Total			Total		
			CAR		
	v and Comm	ission		Cancel	
Paid Sala	Can replant management				and the second s
Paid Sala					
Paid Sala		OWNIA			
Paid Sala		OMNIA SINCE1			
Paid Sala		SINCE 1	Commission f	orm	

tor Login
O.K.
.:::: Change Password :
Cancle [



Figure B-13 Login Administration

ake payment					
		łake Payment			
Contract Infor	mation	Custamer f	nformation		
Contract id:	Contract date:	Customer id:	galisticashtifusiquidasidaendifini		
		FirstName:		Surname:	
Car Informatio		Address:		Service Company	
Carid	LicenseNo.	Province		PostaCode;	
Invoice ID	Current install:	Downpayment:	Venezione Construir di prider di Statut Construire	Amount_install:	
Invoice id Co	ntract id Customer id Paydate	Payment descrition	Payment section	Pavmen amount E	majayee id
	PI		MAL.	全	
	N N			P	
	SROTHER			P	
	LABOR			5	
	LABOR *		*	5	
	* & \$199739	OMNIA SINCE 1969	*		

Figure B-14 Make Payment form

lake payment	Add Paymei	nt List	
Invoice_id:	Paydate:		dH:
Customer_id:	FirstName:		
Address:			
Receive_id De	scrition:	Section:	Amount:
	entering to the second		
Employee_id:	: : f Installation p	ayment :: (Others payment
	ADD THIS LIST	:: " CA	NCEL

Figure B-15. Pay Add Item form

			Mark Care and Care an	Constant of the Constant of th			
		Receiv	e Payme	ent Inforr	nation		
Contract Inform	ation			Customer In	oformation —		
Contract id:	Contract date:			Customer_id:			
Car Information			N. Sandya, edia adam da pasa ana ana ana ang at taon ang at ta	FiretName:	and a second control of the second of the se	Surname:	atapitapan pauliteit tari patina paina krandra kindata
Card T	Licenselva:	and the second s		Address:			
	LUDINATO			Province		PostalCode:	
Sales_price:		Downpayment		Search			
Period_install:	تنزيد مستدينين بيرسوسويدينين	Amount_install:	-	Key word		Search	Search Next
Start_date		End_date:		Customer Na	ame / Car Licens		
	tractid Custo	merid Pevdate	Payment descriti		18	- I	mount Employee id
•							
41.415							
	ation Navigator	Next >>	Last>4		a Make Pa	man r	<u> </u>
A P P P P P P P P P P P P P P P P P P P		Next >>	Last>#	SGABR	Make Pa	ment =	<u> </u>
A P P P P P P P P P P P P P P P P P P P		Next >> {	Lustry 1	S GABBU	Make Pa	macrat #	
A P P P P P P P P P P P P P P P P P P P		Next >> ABOR	Last >4 1	VINCE	Make Pa	poent #	

Figure B-16 Receive Payment Information form

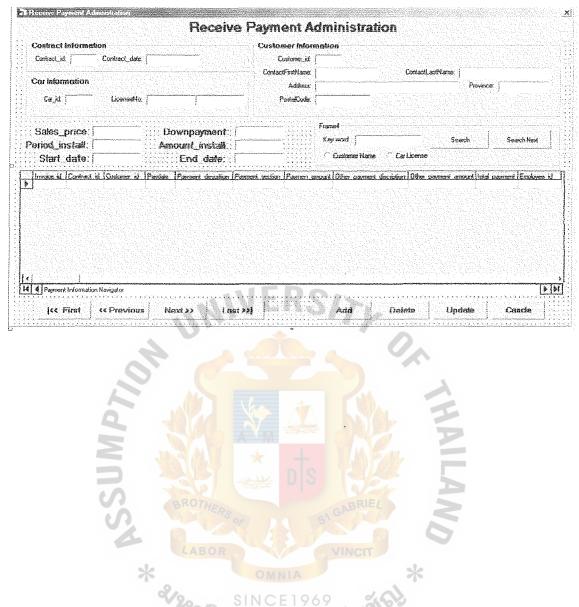


Figure B-17 Receive Payment Administration form

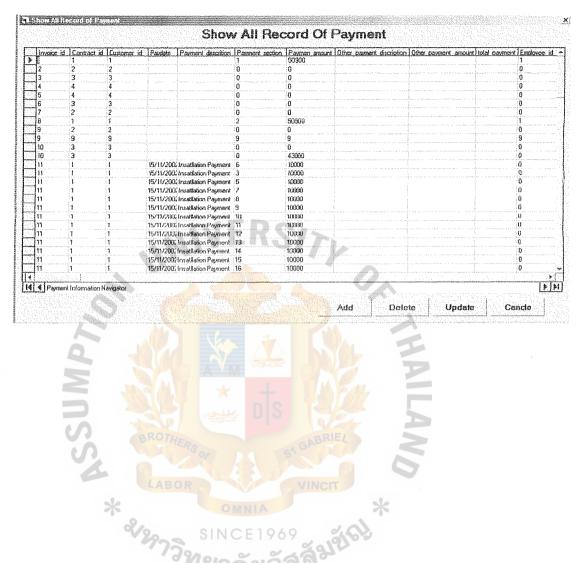


Figure B-18 Show All Record form



Figure B-19 Visited Customer Record form



135/ Udon-dusadee Rd. Mark kheeng Udonthaini 41000 Ph. 042223036

Cars Available in Stock Report

Car_id:	LicenteNe:	Ergine_ne:	Frame_ne:	Trade_mark:	Model_car:
s	ภอ-8548 กรุงเทพมหานคร	C¥2988978	CV2988970	Toyota	Starlet
•	กง-3248 จุดรธานี	4G15NFTAL-2I	CB2ASNC-10279	Toyota	Calona
7	กท-6789. จุดรฐานี	9098765654	12345.789	Toyata	Celera



Figure C-1 Car report

135/Udon-dusadee Rd. Mark kheang Udonthaini 41000 Ph. 042223036

Contract Report

Contract_id: 1

Contract_date: 26/11/2082

Contract_type: Trading Agreement

Customer Information report

Customer_id: 1

ContactFirstName: Chinarak

Sanuworngsiri

Car Information report

Car_id: 1

LicenseNo:

กง-5241 อุดรธานี

Frame_no: L80-601480

Engine_no: 4016580

Trade mark

Financial Information report

Downpayment:	Princeple of loan:	Interest rate:	Period_install:	Amount_instalt
4003	645000	4 1	24	46225

Start_date: 26/11/2002

End_date:

Installation status:

Incomplete

Sales person Information report

EmployeelD: 1

Employee Name: SenSuk

NaGrieng

Figure C-2 Sales Car report (contract report)

135/ Udon-dusadee Rd. Mark kheang Udonthaini 41000 Ph. 042223036

Employee with Sales Report

EmployeelD: 1 FirstName: Sa	SanSuk	NaGrieng	Salary:	9000
-----------------------------	--------	----------	---------	------

Contract_id:	Contract_date:	LicenseNo:	Sales_price:	
1	26/11/2002	กง-5241 อุดระกนี	360000	
Total contracts:	1	Total Sales:	360000	



Figure C-3 Employee commission report

135/ Udon-dusadee Rd. Mark kheang Udonthaini 41000 Ph. 042223036

Contract_id: 4

Contract_date: 20/11/2002

Period_install: 24

Customer_jd: 10

Customer name:

Krisada Yumpenboon

Car_id: 5

LicenseNo:

ภฉ-8548 กรุงเทพมหานคMonthly install: 22667

Invoice_id:	Paydate:	Payment_descriti	Payment_section:	Paymen_amount:
23	20/11/2002	Down payment	1	22667
23	20/11/2002	Insatllation Payment	174	22667
Total Installations			45334	



Figure C-4 Installation report

135/ Udon-dusadee Rd. Mark kheang Udonthaini 41000 Ph. 042223036

Customer Report Group

Customer_id: 1

Customer Name: Chinarak

Sanuworngsiri

PhoneNumber:

Moblei_phone:

Car_trademark:

Carmodel:

Toyota

Hilux

Toyota

Hikus Tiger

Nissan

Cefiro



Figure C-5 Visit customer report

135/ Udon-dusadee Rd. Mark kheang Udonthaini 41000 Ph. 042223036

Customer report

Customer_id: 10

Title: Mr.

Customer Name: Krisada

Bumpenboon

DOB:

1/1/2515

ID_Type: Resident id

ID_number:

3677585756398

Issue_date:

Expire_date:

Address: 113/45 Ram khum Heang Huamark Bangkapi

Ðkk

10240

PhoneNumber: 2567899

Moblei_phone: 19827665

Office_address: Rankhumheang Rd.Office_address: Rankhumheang Rd.

25676754

Office_phone: 28393948 12343

FaxNumber:

EmailAddress:

Notes:

Figure C-6 Customer report

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