Customer Information System for Banking

By

Ms. Suvanna Trongtorsak

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

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

March, 1999

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Project Title Customer Information System for Banking

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Academic Year 1999

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ABSTRACT

This project is a customer information system of BM bank. Every division can link all information from the center. In the old system, each division cannot retrieve any information from other divisions. The old system is a batch processing which uses stand-alone computer, which cannot share any information among divisions. Many computers are used. Therefore, the new system is set up for providing the same information for all divisions. In addition, there are not enough officers to serve the customers.

The new system is on line processing with which all divisions can share and link data at the customer information center.

After designing the new system, it is tested for all operations. It is accepted and will replace the old one.

In the future, the system may be developed for a better working system but this depends on the cost or expenditure of development and implementation.

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I. INTRODUCTION

1.1 Background of the Project

At present, each bank's earning from net interest is dropping, therefore the bank tris to seek other sources of income. There are many ways for increasing income such as fees, service charge from ATM Cardholder and Credit Cardholder. Nowadays, each bank is competing seriously. They try to launch new services which can serve their customers' latest needs.

Although the bank increases new services, the old services should be developed for up to date, fast and easy use.

For this project, customer information is a centralized system for each service through database sharing which reduces redundancy of information in the bank, approves application in a short time, has more security and reduces the amount of paper work. There is no conflict of customer information in each department or division because it is unique.

This project is developed from the existing system. The objectives of this project are to solve the problem of data error, reduce a lot of time consumption for service and reduce cost in the system. The planning of this project includes consider action of officer, system, hardware and software. The proposed system is designed for security. And it is designed for LAN configuration and on-line processing.

1.2 Objective of the Project

The project's objectives are :

1. To study the existing system of the savings account system, current account system, fixed account system, ATM cardholder system, credit cardholder system, and loan system.

2. To analyze the existing system of the savings account system, current account system, fixed account system, ATM cardholder system, credit cardholder system, and loan system.

3. To develop each system (savings account system, current account system, fixed account system, ATM cardholder system, credit cardholder system, and loan system), test between each system.

4. To design date on the database, input screens, output screens and reports for the year of 2000.

1.3 Scope of the Project

Customer Information System is a system to collect customer data such as deposits and loan. The scope will cover the following parts :

1. Creation of Database of customer information.

2. Ability to link each application to other application for checking information.

3. Ability to share database of customer information from the center, and update or modify in the center, in order to make customer information unique.

4. Protection for creating data or modifying data.

5. Ability to design date in the database, input screens, output screens and reports for the year of 2000.

1.4 Project Plan

1. Feasibility Study

- Define the subject, scope and objective.
- Identify existing system problems.
- Identify project justification.
- Perform the task identification.

2. Survey Organization and Gather General Information

- Review existing document and forms.
- Review the policies and procedures.
- Survey existing facilities.
- Survey attitude of staffs towards changing to the new system.

3. Existing System Analysis

- Develop data flow diagram.
- Identify current problem.
- Identify areas for improvements.

4. Define User Requirements

- Identify need of information.
- Identify kind of reports.

5. System Design of the Proposed System

- Data dictionary
- Menu design
- Screen design

6. Identify System Requirement

- Hardware requirements.
- Software requirements.

7. Cost and Benefit Analysis for the Proposed System

- Define Cost of the proposed system.
- Analyze benefit compares with the existing system.

8. Project Implementation

- Testing
- Conversion
- Training

Activities	MONTH 1				MONTH2				MONTH3				MONTH4				MONTH5			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
SYSTEM ANALYSIS																				
- Analyze existing system																				
- Identify the area under study																				
DETAIL ANALYSIS & DESIGN																				
- Define new system requirement																				
- Data flow diagram																				
- Data store																				
- Data dictionary																				

Figure 1.1. Gantt Chart of Implementation Plan (1st Phase)

Activities	MONTH 1				MONTH2				MONTH3				MONTH4				MONTH5			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
IMPLEMENTATION																				
- Module Specification																				
- Programming																				
- Report Layout																				
- Screen layout																				
- Data conversion																				
- Testing																				
- Training																				
- Acceptance test																				
- Production																				
- Documentation																				

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Figure 1.2. Gantt Chart of Implementation Plan (2nd Phase)

II. EXISTING SYSTEM

2.1 Background of the Organization

The BM Bank has been established, with the objectives of promoting public savings, and developing savings. At first, BM Bank has two types of deposit services which are current account deposit and fixed account deposit.

The bank's operations grew over the period of time resulting in higher deposits and loans. In order to support the rapidly changing economic situation and technology, the bank has improved itself to progress into the new era of modern banking. There were various improvements of BM bank such as adjustment of internal organization structure, the change of the old computer system to a centralized system, human resources development, and aggressive marketing. The bank's objective focus on the continuous business and service development.

The BM Bank has developed technology for a long time. The use of modern technology is to ensure fast and efficient service to satisfy the customers. It also helps to improve the general performance and working co-ordination, reducing lost time and working procedures.

In other ways, the bank has kept improving its service systems as well as eloping new services all the time in order to provide convenience for customers nd meet the customers' needs efficiently. The bank aims to provide impressive service for customer and to create a good image of itself while setting up more branches both locally and abroad. This is the preparation for the economical growth which keeps going. The bank also aims to enhance its capacity in providing service and increasing new service to customers' satisfaction.

While the situation and trend are changed, the bank faces the high competition especially with overseas entrepreneurs in the money market world in the

which keeps going. The bank also aims to enhance its capacity in providing service and increasing new service to customers' satisfaction.

While the situation and trend are changed, the bank faces the high competition especially with overseas entrepreneurs in the money market world in the near future. Therefore, the bank has promptly adjusted and increased the potentiality of the organization to meet the demands of modern business and to be ready for overseas financial institutions by improving the operation, reducing the production costs and expenses, using new and modern technology equipment for working system, developing skills and expertise of personnel and finding new way and system for running business. Now the bank has been ready at all levels of the service with foreign financial institutions.

The total number of the BM bank's domestic branches is 175 branches which are in Bangkok metropolitan area and 98 branches are in the up country. The head office of BM Bank is located in Bangkok metropolis.

Both hardware and software of BM Bank are developed continuously for modern technology and today's circumstances.

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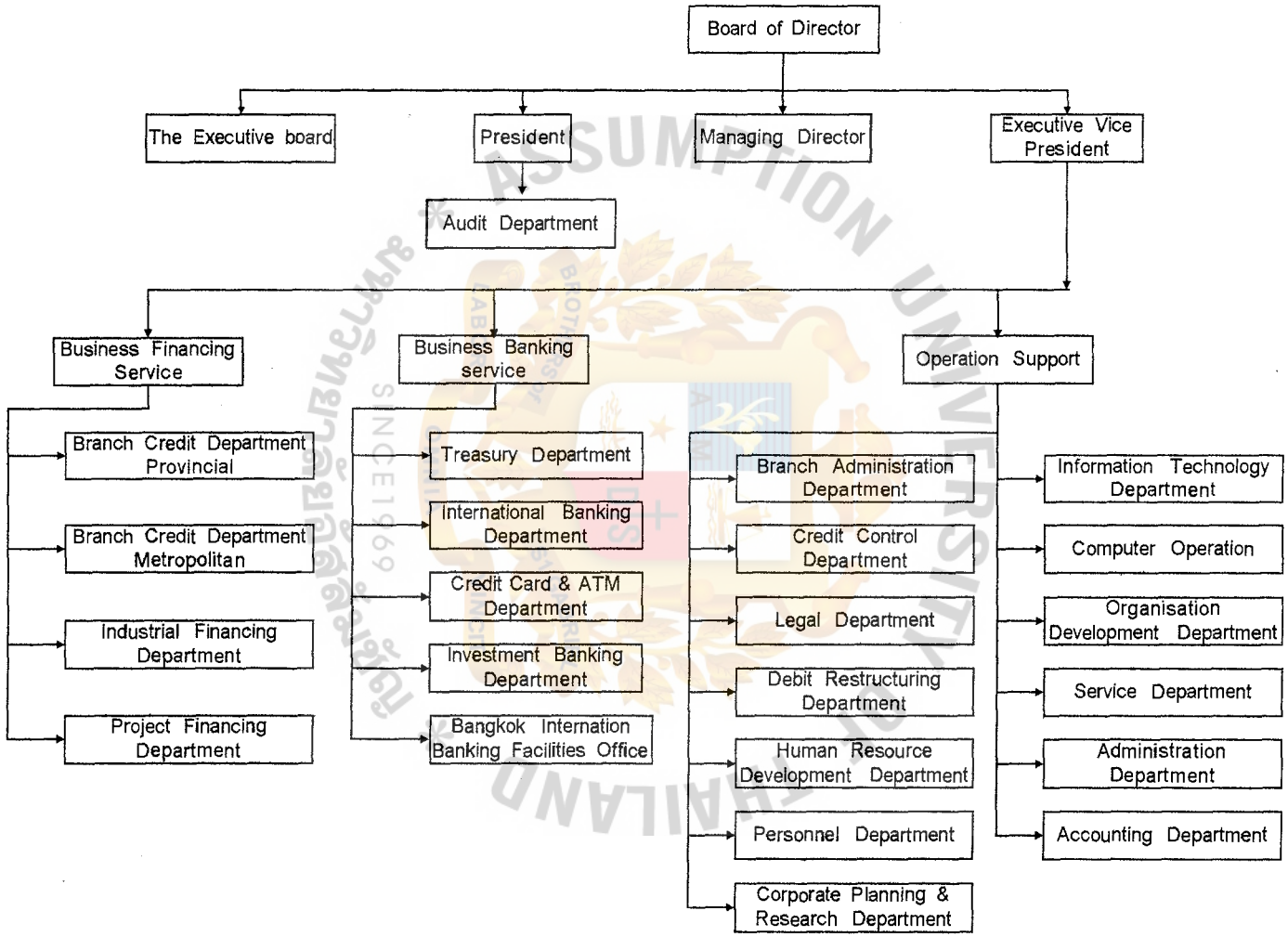

Figure 2.1. Organization Chart of BM Bank

2.2 The Existing System of the Project

In the existing system, each applicant who wants to get a new application or change status (e.g. account addition, account change, status change of cardholder) will fill in the application form of BM Bank. The requests will be accepted and it will be given to the customer within two or three weeks. Each application system (e.g. ATM cardholder system, LOAN system etc.) has many steps to check and verify data manually.

The existing system makes the expansion of work effect directly the increase of manpower. So, the proposed system tries to convert all the transactions to the computerized system.

The existing system can be summarized in terms of Context Diagram as shown in figure 2.2 and in the data flow diagram as shown in figure 2.3.

2.2.1 The Existing System Details

Process 1 : Process application form

The customers are required open application or change information. They will fill in data in the application form and send it to the officer.

The officer will check the application form personally. If it is incomplete, or has not any document that is required, it will be sent back to the customer to complete the application form or additional document is requested.

Process 2 : Request statement

For some applications that require statement of account, the division or branch will request a statement of account from the computer department.

Process 3 : Classified Request

After the application has been approved, it will be separated to new application form and change status form.

Process 4 : Check New Application Record

The number of new application is decided and keyed into the computer. If the data is filled in completely, it will process.

Process 5 : Verity Request For changing information

Customer the status is checked. If status is invalid, the form will be denied. And if the status is valid, it will be approved, keyed in and processed

Process 6 : Check Data

Process information from the new application and changing information application is checked. If it is incorrect, it will be modified.

The report from the new application will be checked with the new application form such as the spelling of the first name, middle name, last name etc. If information is incorrect, the officer will correct it and process.

Process 7 : Update Master File

Correct information will be updated in master file. If some records cannot be updated, the system will reject these records. So, the officer will check the information again.

Process 8 : Generate Report

Final reports that are completely update will be generated and sent to each division for checking and for reference.

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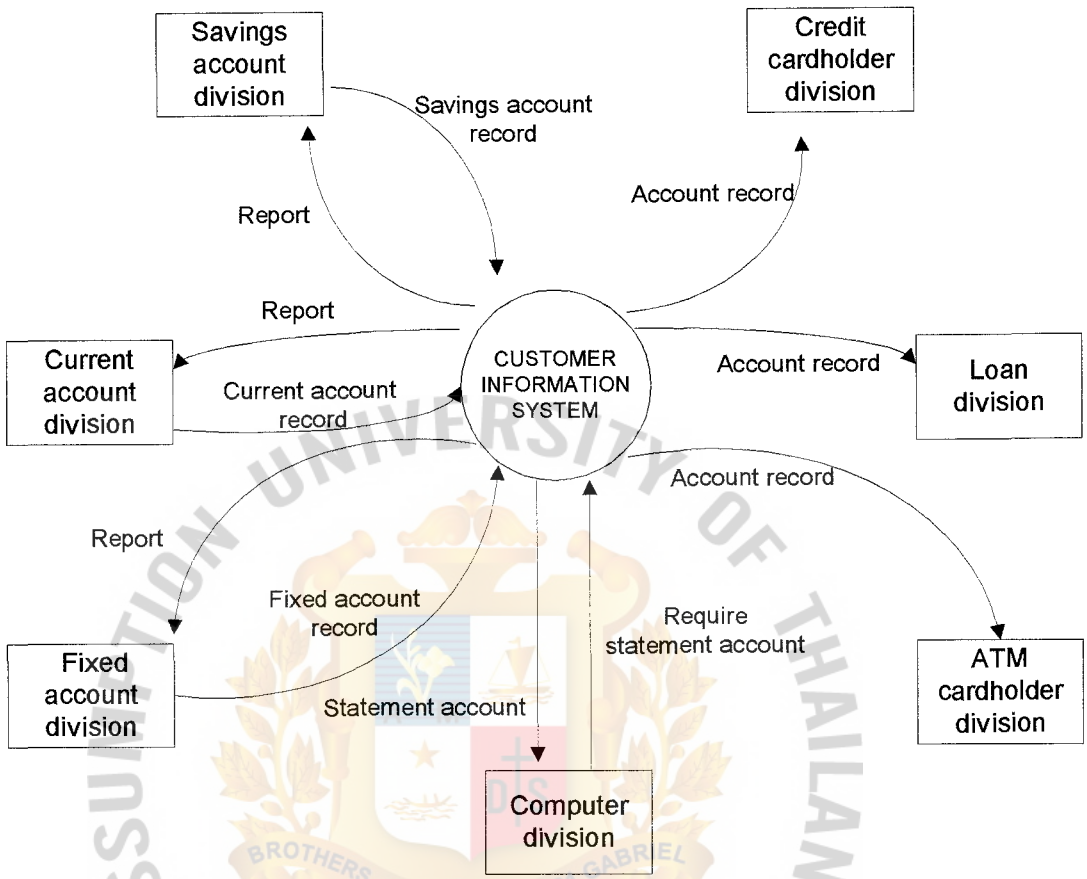

Figure 2.2. Context Diagram of the Existing System

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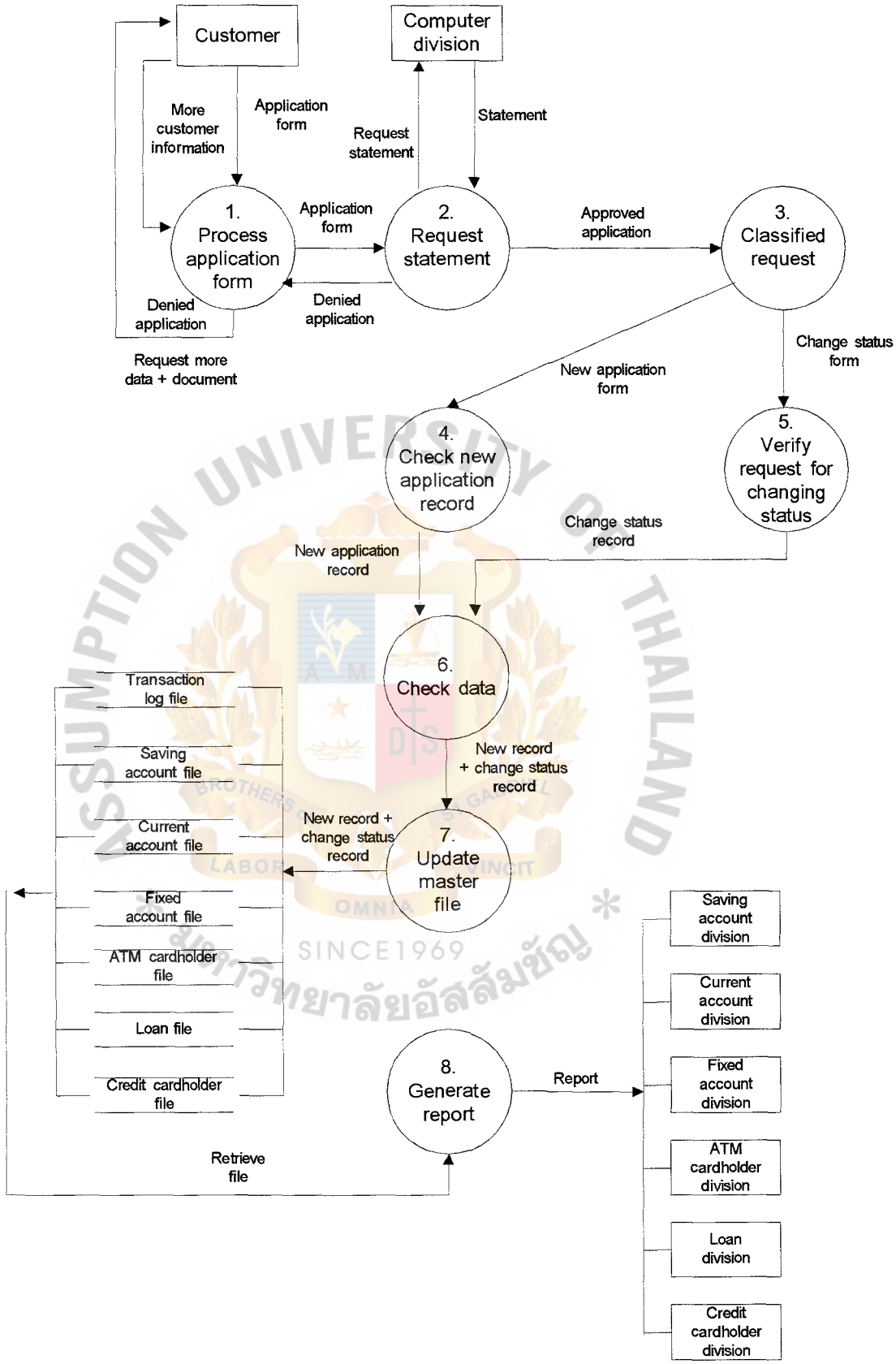

Figure 2.3. DFD Level 0 of the Existing system

2.3 Current Problems and Areas for Improvements

The current problems of the existing system, can be identified as follows :

1. Security, convenience and time problem.

At present, each division has to use data from another division for considering the application form from the customer. Requesting detail of customer's information among divisions or branches (head office to branch, branch to branch or division) takes much time. During the process documents sometimes get lost.

The proposed system should design database for sharing infomation with every division. Each division can use customer's information in the same database and look at other information in all divisions on the screen for approving the request of the application form.

2. Processing problem.

The existing system is a batch processing which is so difficult to find error of data. It can be found only at the end of the batch.

So, the batch processing is changed and developed to online processing which is interactive. When the officer keys in error of data, the screen will show the error and the officer can change the data correctly.

3. Step of work problem

The existing system has many steps of work. When the error occurs, the officer or user cannot know what steps are incomplete. In this case, only the programmers know the logic and steps of work so they can find the errors. Sometimes, the error is caused from the complicated steps of work.

The proposed system will reduce the steps of work.

4. Document problem

Nowadays, there are no hand book of working or solving problem. If the officers resign or move to other divisions, the new officers have to learn the steps of work by themselves.

The proposed system will prepare which necessary document is part of the system document, programming document, operation document, access document and review document.

5. Budget and media problem

The existing system has many steps of work and it will consume much storage room for saving data or information. The storage devices are magnetic tape, magnetic disk (used on mainframe system) and diskette (used on microcomputer).

The proposed system will reduce the steps of work; therefore the storage devices are also reduced.

6. Resource problem

The existing system is batch processing. The resource such as tape drive, disk drive or printer, may be used at the same time because of many steps of work.

The proposed system is on line processing so duplicate works are cut off and it also reduces the use of resource at the same time.

III. THE PROPOSED SYSTEM

3.1 User Requirements

After defying the problems by interviewing the customers, and other bank staffs who are concerned with this system in order to get their recommendation and requirements of the new system, the requirements are as follows :

1. The system should help to reduce redundancy and the amount of paper work.

2. The use of program should be easy and friendly in operations.

3. The system should have document which consists the flow of work, the step of the work including a procedure area for improvement.

4. The language of query should be nearly natural language. The users do not need to learn how to use the program.

5. The system should produce more accurate, more reliable and less redundant information.

6. The system should share database.

7. The system should print various kinds of reports for checking on time.

8. The system should reduce steps of work.

3.2 System Design

3.2.1 The Proposed Functions

The proposed functions of the proposed system are as follows :

Process 1.1 : Check customer data

After receiving the application from customer, the officer will check customer data and customer document such as request for new credit card, supporting

document that consists of statements of salaries, statements of accounts, identification card copies or other imported and necessary document.

Process 1.2 : Request More Requirements

Incomplete application forms will be sent back to customers for requesting additional information or document. After receiving them, the application forms will be sent back for checking customer data again.

Process 1.3 : Accept Application

Complete application form is accepted for checking. Some application forms cannot be approved because of limitations or the minimum salary for credit card. So the application will be denied.

Process 2.1 : Approve the application

The authorized officers signed the application form that was approved then the application will be sent to the next step.

Process 2.2 : Classified Request

The application forms are classified into two groups. The first is the new application and the other is the changing information applications.

Process 3.1 : Key information to generate CIF NO

Customer information number is generated automatically after filling customer information. It consists of first name, middle name and last name. The middle name has no effect on generating customer information number.

Process 3.2 : Check CIF NO.

Customer information number is generated from customer information. It consists of 14 characters as shown in Appendix D (D.1)

Customer information number is shown on screen. Then the office will take customer information number to retrieve customer information file. If customer information is not found, the system will generate customer information record. If it is found in the customer information file and it is the same number, the offices will

check the details of customer information such as first name, last name etc. If details are not the same, customer information number will regenerate customer information number. If the details are the same, it does not need to generate.

Process 3.3 : Regenerate CIF NO.

If the customer information number is duplicate but
The details are different, the customer information number will be generated.

Process 3.4 : Generate CIF NO. record

After generating customer information number, the system will create customer information record. After, the officer key information which consists of address, telephone, birth date, nationality, tax number and occupation.

Process 3.5 : Add new CIF NO. record

New customer information record will be recorded in the customer information master file.

Process 4.1 : Key in new applications

New applications are divided in credit or debit applications that are used to check each application in the other process.

Process 4.2 : Check status and account

This process will check status and bank account that depend on customer application.

Process 4.3 : Check digit from application type

Every application will be calculated for checking digits. If the digits are invalid, it will be sent to check and key in again.

Process 4.4 : Check application

If the new application that the customer applies for exists in the master file, it will be rejected.

Process 5.1 : Retrieve and check CIF NO.

Retrieve CIF NO. from CIF file and check CIF NO. between CIF NO. of transaction record and CIF NO. of the CIF File.

Process 5.2 : Check status

In checking the status between the required status of the customer and the status in the system, if the requirement of the customer cannot be processed, that status is invalid. The changing status form will be sent to the next step.

Process 5.3 : Approve data for change

The validity of changing status will have been approved by the authority. If the authorized officer cannot approve, such as customer has credit cardholder and requires up to credit limit but the customer's salary is below the amount that the bank requires, changing status form will be sent to process the application form. And the changed status has approved by the authority will be sent to process update master file.

Process 6.1 : Update master file

The new application record and change status record have been approved by authorized officer will be sent to update mater file.

Process 6.2 : Write Log file

After writing to the master file, that transaction will be written in the log file. The log file is used for checking when an error occurs in the master file. The log file shows the time, date, terminal number, user id which logs in the terminal.

Process 7.1 : Prepare file

Retrieve file to generate report.

Process 7.2 : Generate report

Generate report and send to each division.

3.2.2 Data Dictionary

Data dictionary contains information about data and procedures. Data dictionary is represented in Appendix E

3.2.3 User Interface Design

The user interface designs are the designs of the entire output screens for the system. The user interface design is represented in Appendix B

3.2.4 Output Reports

The output reports are the reports that are generated by the system. The output reports are represented in Appendix C

3.2.5 File Layout

The design of files includes decisions about the nature and content of the files itself. It shows field name, type of field name, length of field name and number of decimal of field name. The file layout is represented in Appendix D

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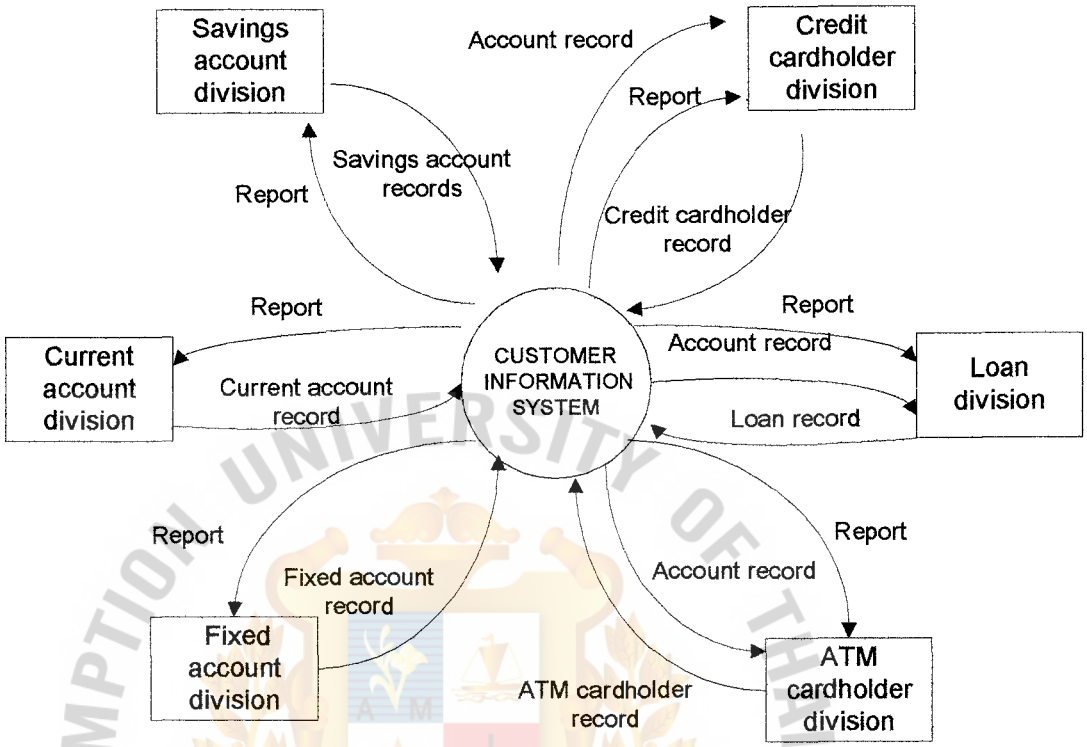

Figure 3.1. Context Diagram of the Proposed System

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Context Diagram of the Proposed System

When a division receives customer application, it will put all details into the customer information center system that gathers all information of all customers. The CIF NO. will be the key word liking all the divisions together. Every adding information, modifying or canceling record will be processed in the customer information center. Moreover, each division can use or retrieve the customer information from the system.

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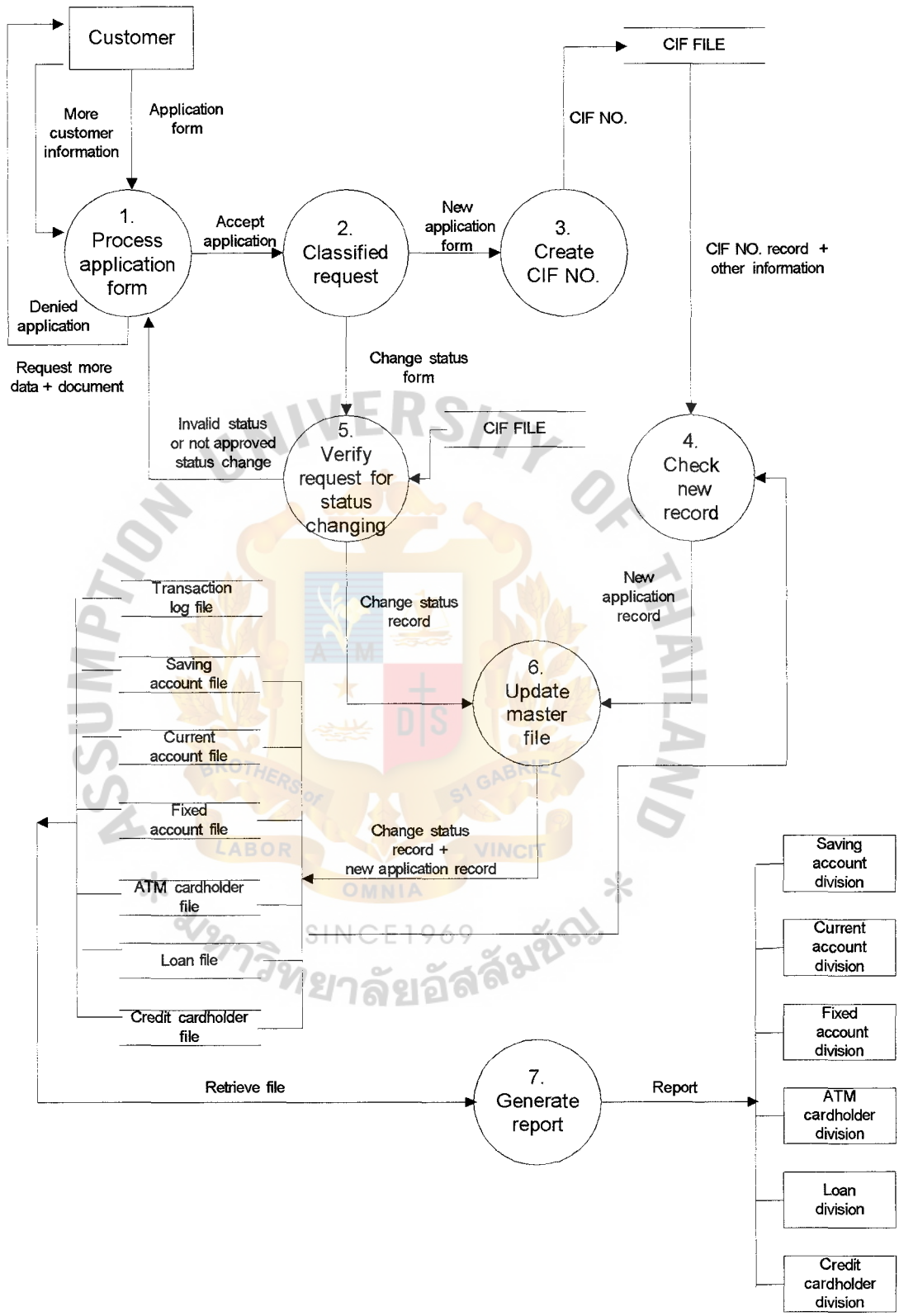

Figure 3.2. DFD Level 0 of the Proposed System

3.3 Hardware and Software Specification

There are two parts of configurations, one is hardware configuration and the other is software configuration.

3.3.1 Hardware Specification

1. Server

- Microcomputer

(Model Suggestion : LASER ULT M24 PII 23-3232 FW)

- CPU Intel Pentium II 233 MHZ.
- Harddisk 2 GB
- RAM 32 MB
- Fixed Disk Drive 1.44 MB
- L2 Cache on CPU
- SVGA Color monitor 17"
- NIC 10/100 MB/S

2. Workstation

The workstation must be provided in 4 departments including :

- ATM department : 2 units
- Creditcard department : 2 units
- LOAN department : 2 units
- Branch (1 Branch) : 2 units

- Microcomputer

(Model Suggestion : LASER STD M24 MMX P16-1621)

- CPU Intel Pentium 166 MHZ.
- Harddisk 1 GB
- RAM 16 MB
- NIC 10/100 MB/S
- 512 KB Cache

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- SVGA Color monitor 14"

- Fixed Disk Drive 1.44 MB

3. Printer : 4 units

- Print server 1 unit

- Dot matrix printers

(Suggestion : EPSON LQ-670 (24 Pins, 132 C, 337 CPS, 8KB))

4. UPS : 1 unit

(Suggestion : Smart UPS 100 VA)

5. Wiring

- UTP Cat 5

- Ethernet Hub : 16s, 16 port smart Ethernet Hub 10-base T (1 unit)

- LAN card : Elthercombo -16 (MAX Elthernet Adapter, with RJ 45 and AUI connector) for 8 terminal , 1 file server and 1 printer server (10 units)

- RJ 45 : for 8 terminal, 1 file server, 1 print server (20 units)

3.3.2 Software Specification

1. Netware 4.11, 10 users license

2. Programs use for connect Network system

- Netware Dos Requester

- Communication Protocol

- Link Support Layer

- LAN Driver

3. Microsoft Window NT

4. Access 7.0

3.4 Network Configuration

The network configuration in the proposed system is LAN (Local Area Network). It will be sharing application system, application program and database or printer.

The Components of LAN for the Proposed System

Hardware

- File server. It deals with storing application system, application program and database for sharing to each workstation.
- Workstation. There are personnel computer, monitor and printer.
- Network Board or NIC (Network Interface Card). It connects the commnucation between workstation with network.
- HUB. It connects computer and computer equipment.

Cable Media

- UTP Cat 5 (Unshielded Twist Pair)

Network Operating Software

- Microsoft Windows NT

LAN Topology

- The LAN topology of the proposed system is Ring topology. The advantages of the topology are easy installation and maintenance.

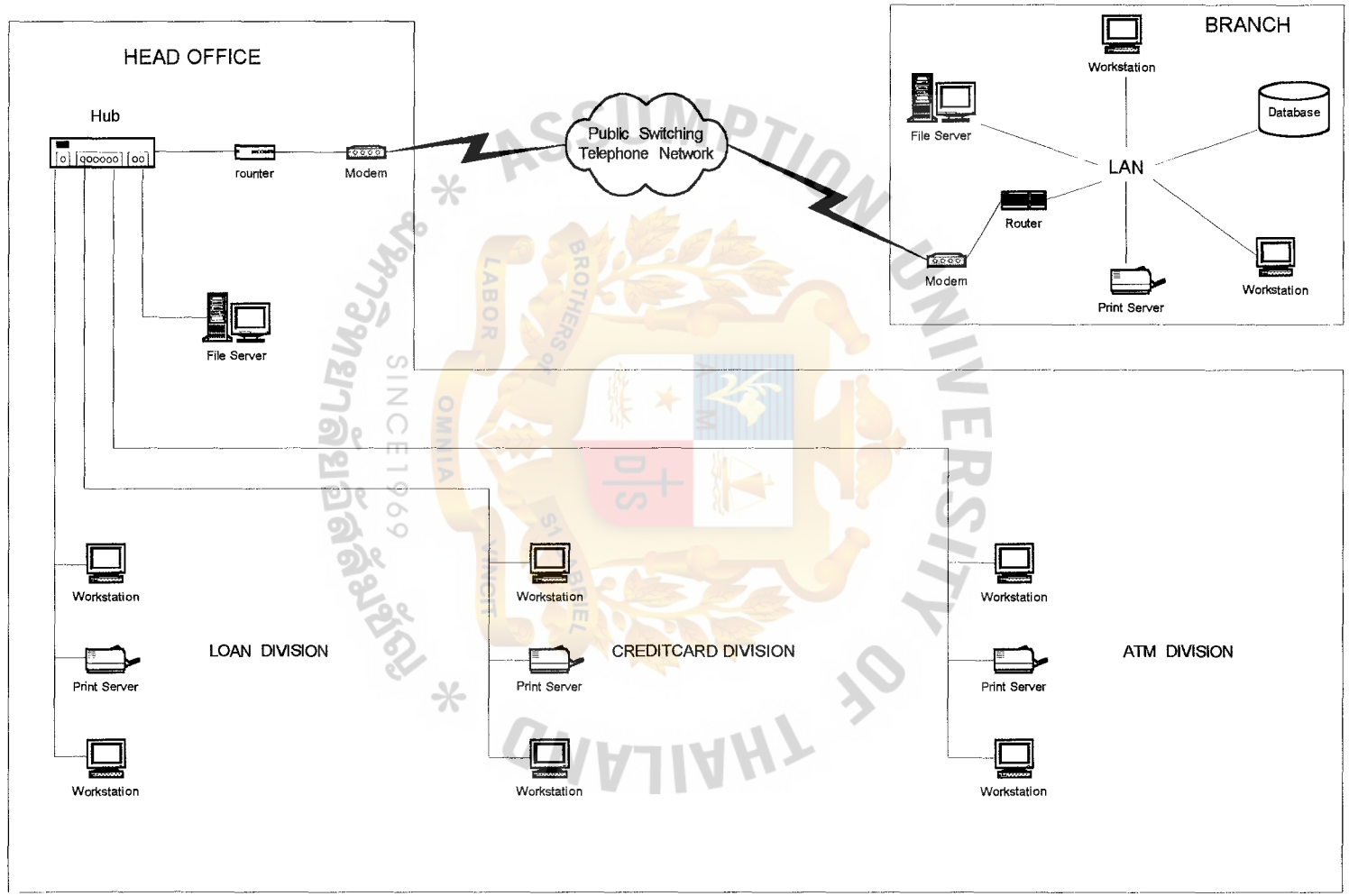

Figure 3.3. Netowrk Configulation for the Proposed System

3.5 Security and Control

3.5.1 The Security for the CIF System is designed for two main purposes :

- Software and data security
- System security

Software and date security

The access control to system's data files have to be classified and limited for each group. The data of the system is classified by using screen. All screens of each application can be classified into 4 categories; additional screen, inquiry screen, update screen and deletion screen. Some users can get access only to one type of screen, partial or mixed up.

The input to this system should be valid data. The program will check step by step such fields as the field of data that is not numeric, blank fields, invalid digit or duplicate data.

The Internal program control that enforces security restrictions such as access limitation to a database program, that does not allow users to change the data by themselves except the authorized users.

System security

In the system, to prevent data loss or to accommodate unpredictable accidents that can happen to the system, back-up procedure is designed to recover programs and the data may be lost from any disasters. There are 3 steps of back-up processing. Each step is explained in the following section :

1. Daily back-up : at the end of the day, system operator will backup data of both before and after batch processing. The back-up tapes will be 2 copies. The first copy is kept in the computer room and the other will be stored at another place, such as another building. This process can prevent loss from fire. The data files are kept for 2 weeks and can be recovered by using this back-up.

2. System back-up : the operators will back up the whole system at the end of the week. The back up includes both system program and all data files. There are 2 copies for system back-up. The copies will be kept separately. The first copy is kept in the computer room and the other will be stored at another place such as another building.

3. Paper back-up : all input forms and source documents have to be kept in one place and have to reconcile with the system reports everyday. This will prevent any missing transaction.

3.5.2 The controls can be identified as follows :

- System design controls
- System controls

System design controls

- System specifications

Criteria for measuring processing activity and resource performance should be established. Such criteria serve to direct system design and to provide a basis for comparison when the complete system is tested.

- Data validation routines

The system must provide assurance that the content and value of data are correct to permit reliable processing and usable output. Data integrity is especially important in programs that affect the processing of sensitive data.

- File integrity checks

The system must provide assurance that all data files contain current, complete, and accurate records (i.e., that no records have been inadvertently added or dropped from the file, and that file contents have not been erroneously altered). File integrity checks must apply to data processed once as well as data processed repeatedly.

- Recovery and reconstruction procedures

The system must be able to recovered from processing interruptions and the data base reconstructed after any malfunction. With few exceptions, recovery and reconstruction must take place during the recovery time allocated in the systems processing schedule, and then the means to continue processing on an emergency or reduced-capacity basis must be developed.

System controls

All systems should incorporate the following specific control requirements :

- Data must not be lost when transfer data in the system.
- Data may not be changed without proper authorization.
- A means for identifying, locating, and correcting error must exist.
- Timely and proper entry of corrections to error must be provided.
- Recycled records entry of corrections to error must be provided.
- Recycled records must be properly accounted for.
- Output must be complete and accurate.
- Assets must be protected.
- Complete and accurate job instructions must be provided.
- Complete and accurate program documentation must exist.
- Program modifications must be recorded, properly tested, and authorized.
- Records retention requirements must be established and adhered to.
- Pertinent regulations and standards must be followed.
- A plan of organization must exist to provide appropriate segregation of responsibilities.
- All operations must be adequately supervised.
- Personnel must be adequately and effectively trained.
- Proper scheduling of job must be maintained.

- Proper system maintenance must be performed by a group that has adequate technical and functional experience.

- Backup and recovery procedures must exist.

3.6 Cost and Benefit Analysis

3.6.1 Cost analysis

The general, cost and benefit analysis should be considered for the proposed system as follows :

- Investment Costs (show at table 3.1)
- Implementation Costs (show at table 3.2)
- Annual Operating Costs (show at table 3.2)

3.6.2 Benefit analysis

Tangible Benefit

The proposed system provides tangible benefits as follows :

- Salary for 2 persons (@ 18,000 * 2 * 12)	432,000	Baht
- Bonus (AVG. : 5 / year)	180,000	Baht
- Miscellaneous	80,000	Baht
Total Saving Cost	692,000	Baht

Intangible Benefit

The proposed system provides intangible benefit as follows :

- Better management report. With the Proposed System, every workstation can print report.

- Increase efficiency and accuracy of the system.

- More satisfied employees.

- Reduce cost of inventories, operation and management.

- Reduce paper work, some reports shown on screen need not be printed out.

- The computerized system will eliminate the duplication of works, provide more precise, accurate and suitable information for management for supporting decision making.

Payback Analysis

Determines the time it takes for benefits to initial investment. The company can calculate how long it takes for the benefits to pay back the costs incurred during development.

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

$$= \frac{\text{Investment}}{\text{After - Tax yearly saving}}$$

Where

P = Payback period

I = Investment cost

T = Corporate tax rate in percent (30%)

R = Tangible benefits subtract by operating cost

The payback period of the proposed system can be calculated as follows :

I = 1,094,140

R = 692,000 - 250,000 = 442,000

$$P = \frac{1{,}094{,}140}{(1\text{-}0.3) \times 442{,}000}$$

= 3.54 years

NPV (Net Present Value)

The net present value of an investment alternative is considered the prefered cost-benefit technique. From Table ... , after discounting all costs and benefits and subtract the sum of the discounted costs from the sum of the discounted benefits where NPV = 570,860.

Cost-benefit analysis detemines if a project or solution will be cost-effective, if lifetime benefits will exceed lifetime costs. In this case, NPV that can be derived from developing the proposed system is 570,860 Baht. So we should accept this project.

ROI (Return On Investment Analysis)

The ROI analysis technique compares the lifetime profitability of the project. The ROI for a potential solution or project is calculated as follows :

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

$$= \frac{3{,}266{,}900 - 2{,}696{,}040}{2{,}696{,}040}$$

$$= 21\ \%$$

Annual ROI is calculated if the lifetime of the system yields an average ROI of 4.2 % per year.

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Table 3.1. Investment Costs, Implementation Costs

Description	Unit	Price (Baht)	Total (Baht)
1. Investment Costs			
Hardware			
- File server	1	100,000	100,000
- Workstation	8	50,000	400,000
- Printer	4	14,000	56,000
- LAN card	8	2,500	20,000
- Hub	1	32,000	32,000
- UTP Cat 5	300 m.	9	2,700
- UPS	1	32,000	32,000
- Printer server	1	16,000	16,000
- RJ-45	16	40	640
- Modem	2	5,400	10,800
Software			
- Netware 4.11			80,000
- Dos 6.22			33,000
- Window 95			76,000
- Access 7.0			165,000
	Total Investment Costs		1,024,140
2. Implementation Costs			
- Training Costs			20,000
- Development Cost			50,000
	Total Implement Costs		70,000

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Table 3.2. Annual Operating Costs

Description	Unit	Price (Baht)	Total (Baht)
- Maintenance cost			180,000
- Miscellaneous cost (Paper, ribbon, etc.)			60,000
Total Annual Operation Cost			250,000

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Table 3.3. Costs and Benefits of the Proposed System (Bahts)

Cash flow description	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
- Investment, Implementation, andAnnual Operating Cost	1,344,140					
- Implementation and Annual Operating Cost		320,000	342,400	366,400	403,000	443,300
- Discount factors of 12 %		0.89	0.80	0.71	0.64	0.57
- Time-adjusted costs (current or present values)	1,344,140	284,800	281,600	274,900	257,900	252,700
- Cumulative lefetime time-adjusted costs		1,628,940	1,910,540	2,185,440	2,443,340	2,696,040
- Benefits Cost	0	692,000	795,800	899,300	1,016,200	1,148,300
- Discount factors of 12 %		0.89	0.80	0.71	0.64	0.57
- Time-adjusted benefit (current or present values)	0	615,900	636,600	638,500	650,400	654,500
- Cumulative lifetime benefit		615,900	1,252,500	1,891,000	2,541,400	3,195,900

Table 3.4. Net Present Value Analysis of the Proposed System (Bahts)

Cash flow description	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total
- Investment, Implementation, andAnnual Operating Cost	1,344,140						
- Implementation and Annual Operating Cost		320,000	342,400	366,400	403,000	443,300	
- Discount factors of 12 %		0.89	0.80	0.71	0.64	0.57	
- Present value of costs	1,344,140	284,800	281,600	274,900	257,900	252,700	
- Total present value of costs							2,696,040
- Benefits Cost	0	692,000	795,800	899,300	1,016,200	1,148,300	
- Discount factors of 12 %		0.89	0.80	0.71	0.64	0.57	
- Present value of costs	0	615,900	636,600	638,500	650,400	654,500	
- Total present value of benefits							3,195,900
NET PRESENT VALUE							499,860

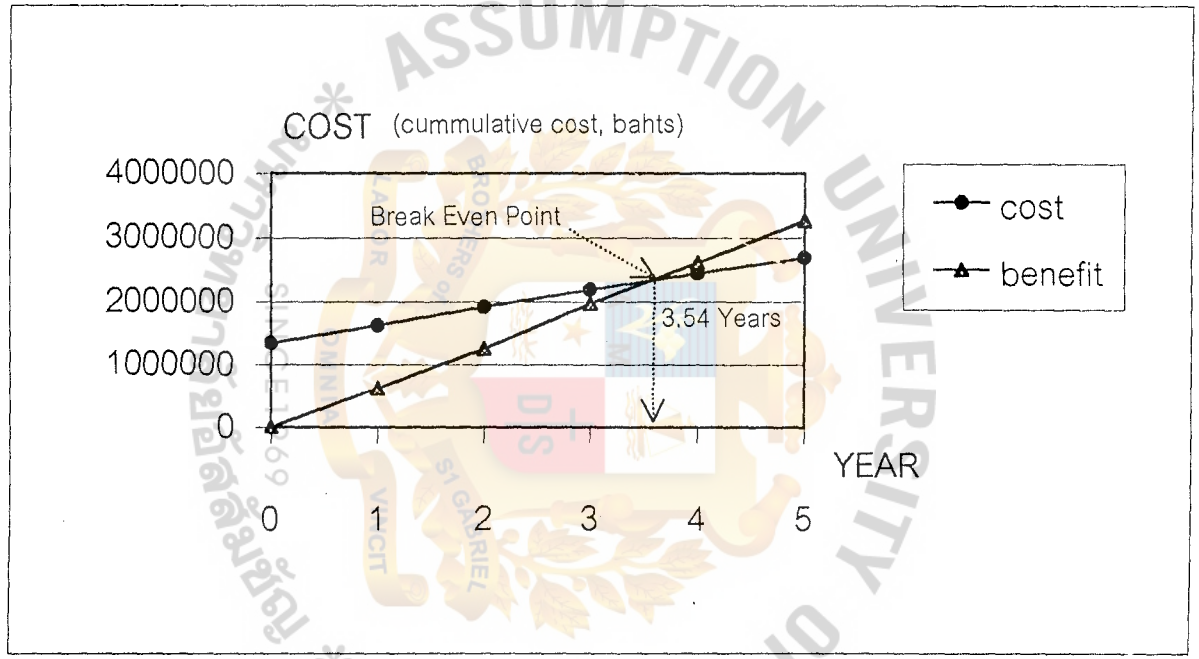

Figure 3.4. Payback Analysis Compares the Costs and Benefits

Of the Proposed System

IV. PROJECT IMPLEMENTATION

4.1 Project Implementation Plan

Implementation is the process of assuring that the information system is operational and then involving well trained users in its operation. In this project, the primary role of the analyst is overseeing implementation by correctly estimating the time needed, and then supervising the installation of equipment for traditional systems, information centers, training of users and converting files and database to the new system.

Implementation is required after the new system was designed. The steps of Implement are as follows :

- Preliminary Investigation
- Determination of system requirement
- Design of system
- Development of software

Preliminary Investigation

- To analyze each old system (savings account system, current account system, fixed account system, ATM cardholder system, credit cardholder and loan system).

- To analyze the steps of work and identify the problem of each system.

Determination of system requirement

After analyzing then determining of system requirement.

Design of system

First, plan the objective of the project, then design the new system. The system has been divided into many modules according to the data flow chart of the new system. The details of these modules are presented separately as process number, process name, purposes and input / output of each process as follows :

1. Process application form
2. Classified request
3. Create CIF NO.
4. Key in new application
5. Verify request for status change
6. Update master file
7. Generate report

Development of software

- Create Database structure
- Create Database for test
- Create structure of system for user (menu) connected with database
- Create screen for input and output of data
- Create report
- Test of connection, screen of input , output and report with database for test
- Create Database of production
- Correct file update error with reversal transactions rather than adjust entries whenever possible.

4.2 Testing

Obstacle of development is invalid data entry that directly affects another subsystem and division which uses the data. Error or invalid data should be found immediately and must ensure that the system has security to input the data. So, before implementing the proposed system, the system should be tested carefully in any way that means the testing should be concerned with all inputs or programming.

For testing, after the program has already been developed, the programmer will completely test every step. A user who uses the software will test it again. If an error has been found, the user will send error to the programmer for resolution after the programmer and the user have already tested every step. And the auditor will test again.

The new system can process production run. The new system is run concurrently with the old one for about one month and compare the output of the new system with that of the old one. The output of the new system and of the old one will produce the same output.

After that, if the new system has no problem, the old one will stop processing.

During the long time of testing, we should not forget the following :

- Production files should not be used to test the system.

- Production files and programs should be maintained separately from testing files and programs.

- Data files storage area should be separates from the production area.

Before implementing, we should prepare a working proceeding process and train system operator and users.

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V. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The proposed system that is designed for the customer information system, helps to solve some problems. For example, processing problem in the existing system is a batch processing which has more steps of work and is not interactive and uses more resources. The new one is more secure both in operation and in processing. This system uses many computer terminals which are widely scattered. Not only throughout a single building but also covering the upcountry areas. Therefore, the security of the proposed system using a password that is assigned differently to allow the authorized users all the different levels of access. The Passwords are also changed frequently.

The Local Area Network (LAN) designed for customer information system and processing of the proposed system is on line so that the system can support many users who can use computers at the same time and share information. It is so convenient, fast, efficient and accurate. It reduces steps of work and resources for processing.

However, every division of BM bank has to key in CIF NO. that is used for linking all data of the customers. It consumes much time and many officers or users are needed to key in and check the accuracy of information of each customer. One customer will have only one CIF NO. although he or she has many types of application. If customer information is checked incorrectly, CIF NO. will have more than one number. The customer information will be inaccurate and may be a course of incorrect consideration for a new application of a customer.

The proposed system can generate various kinds of reports that help with making decision of the management level and support the organization with planning

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customer service development.

5.2 Recommendations

1. There is a password and a user ID for each user in the proposed system. In case of moving to and transferring from a division, user ID. and password should be changed or deleted.

2. A user that do as not use or operate the system within the limited times, will be deleted and renamed expired user ID. number automatically.

3. The customer information in the database should be investigated and checked neatly and carefully in order to make it unique.

4. The proposed system will be operated in all branches of BM bank, so the users should have knowledge and skill of operating. It also should have training courses for the users.

5. The proposed system should have the handbook, user manual or basic problem solving information such as specification of hardware and software, trouble shooting.

6. The proposed system should have encryption and decryption for sensitive data that will be transmitted through the telephone line.

7. The users in each division will be divided into groups to key in, check, test the information during the conversion of the system.

8. The existing system should be copied for back up information to prevent error when transferring the system.

APPENDIX A

Data Flow Diagram

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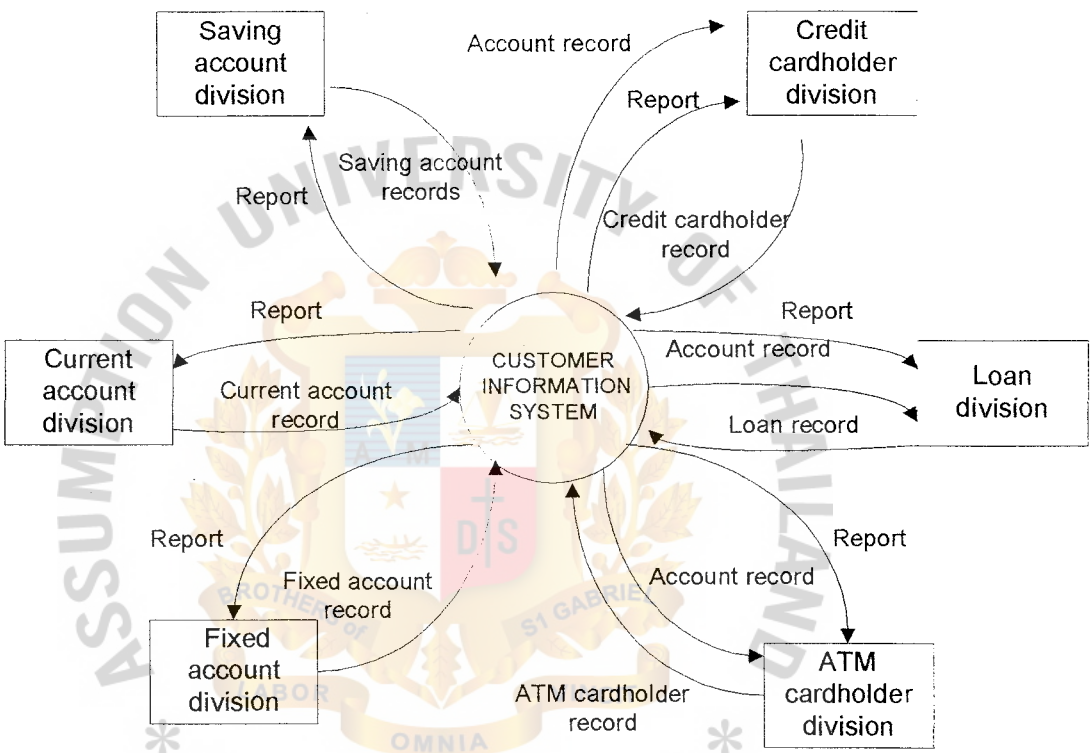

Figure A.1. Context Diagram of Proposed System

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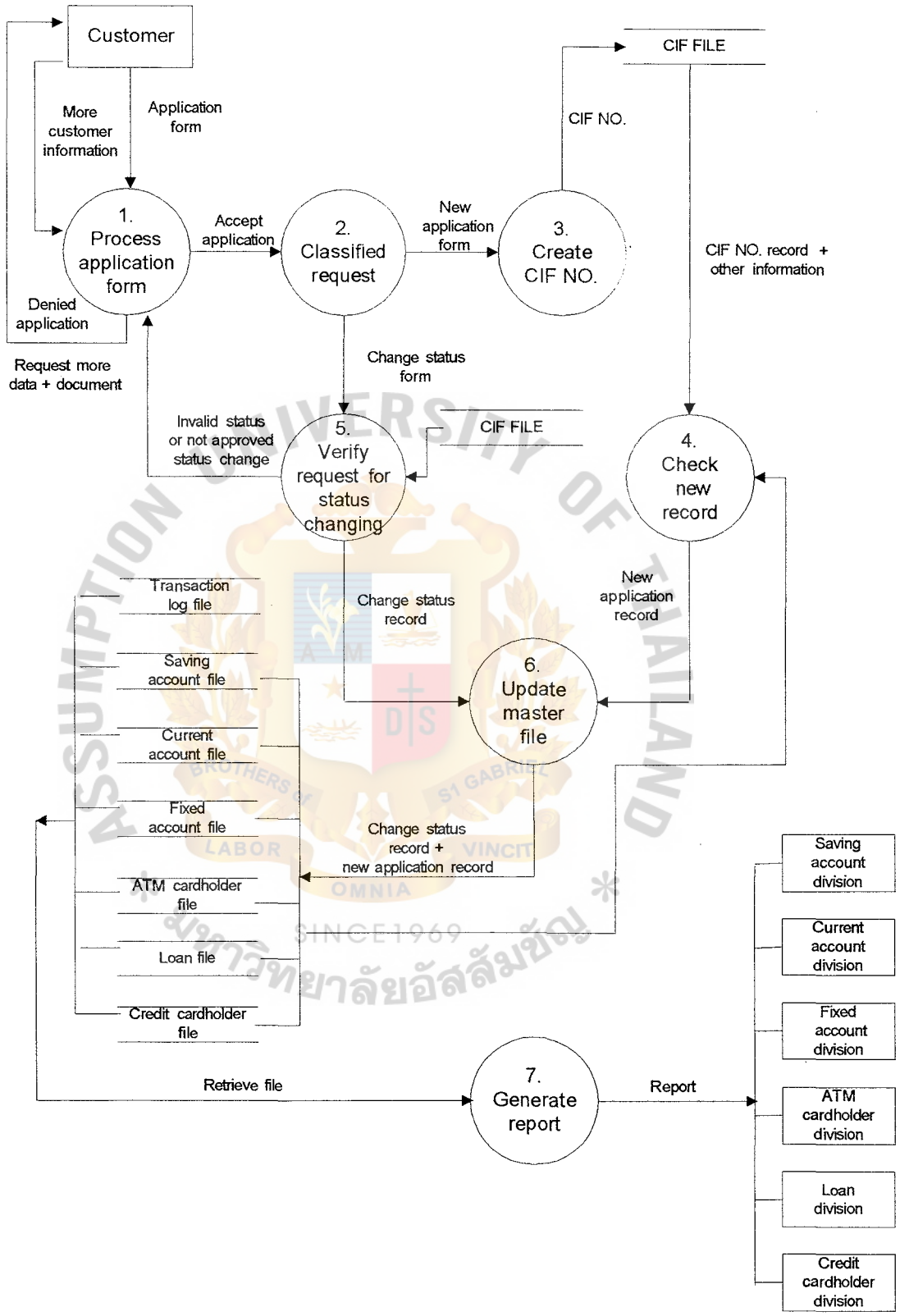

Figure A.2. DFD Level 0 of Proposed System

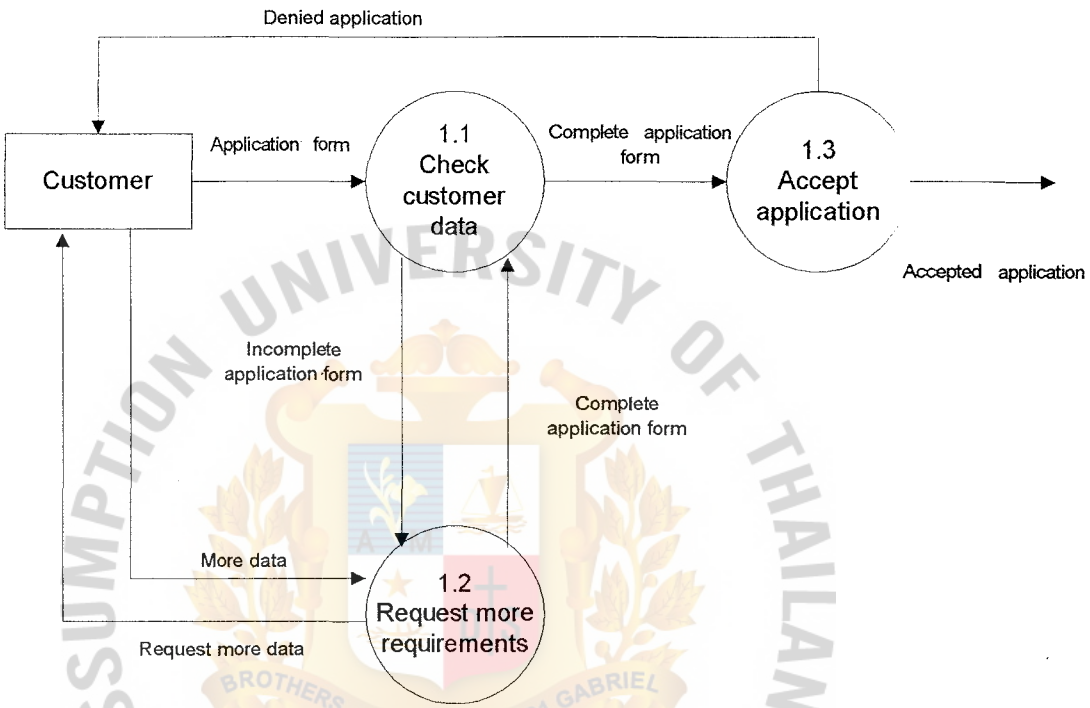

Figure A.3. DFD Level 1 of Proposed System : Process application form

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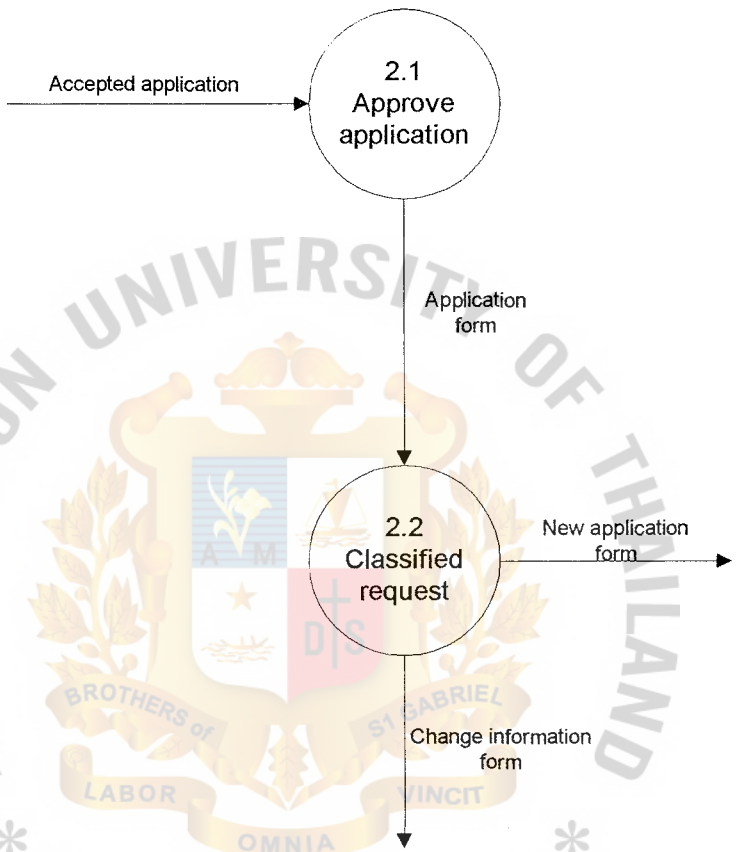

Figure A.4. DFD Level 1 of Proposed system : Classified request

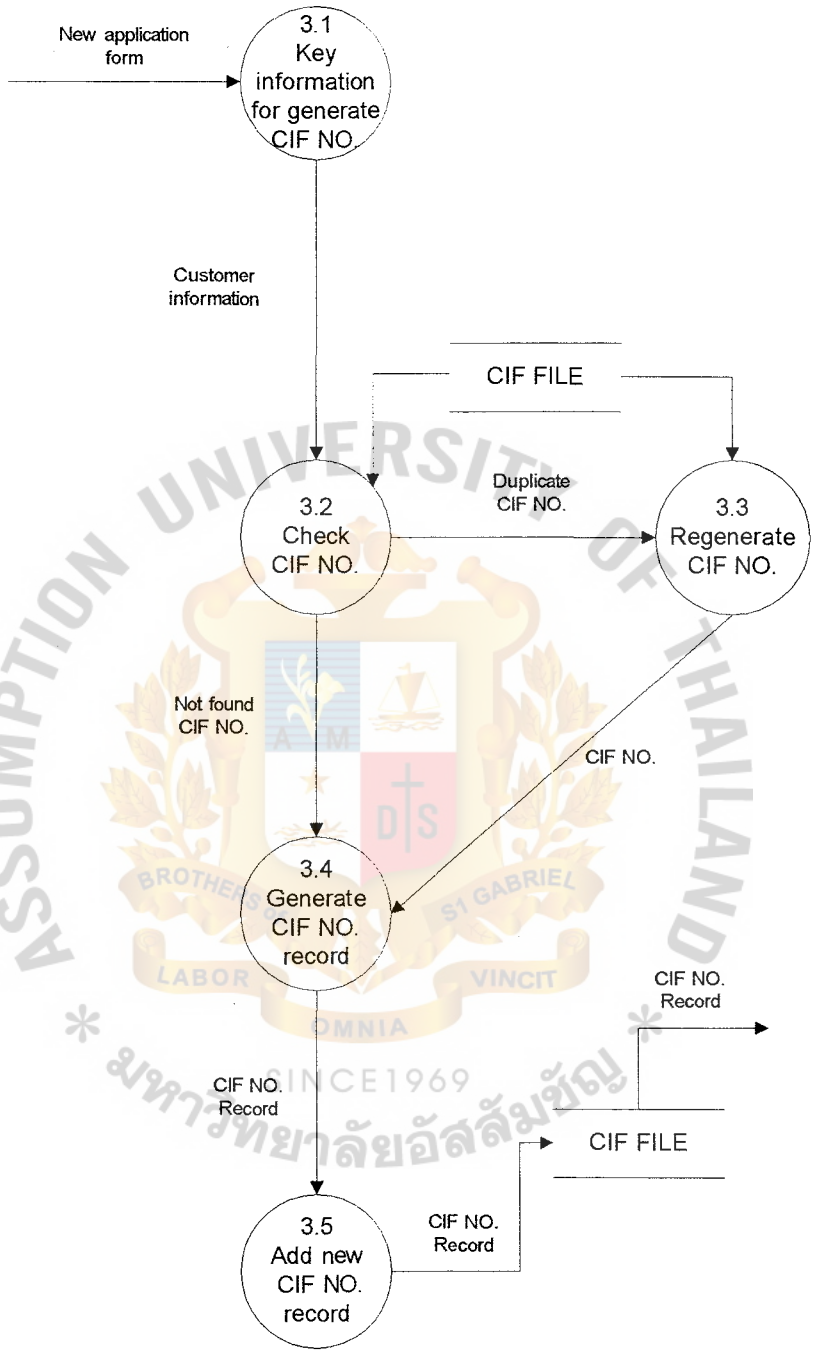

Figure A.5. DFD Level 1 of Proposed system : Create CIF NO.

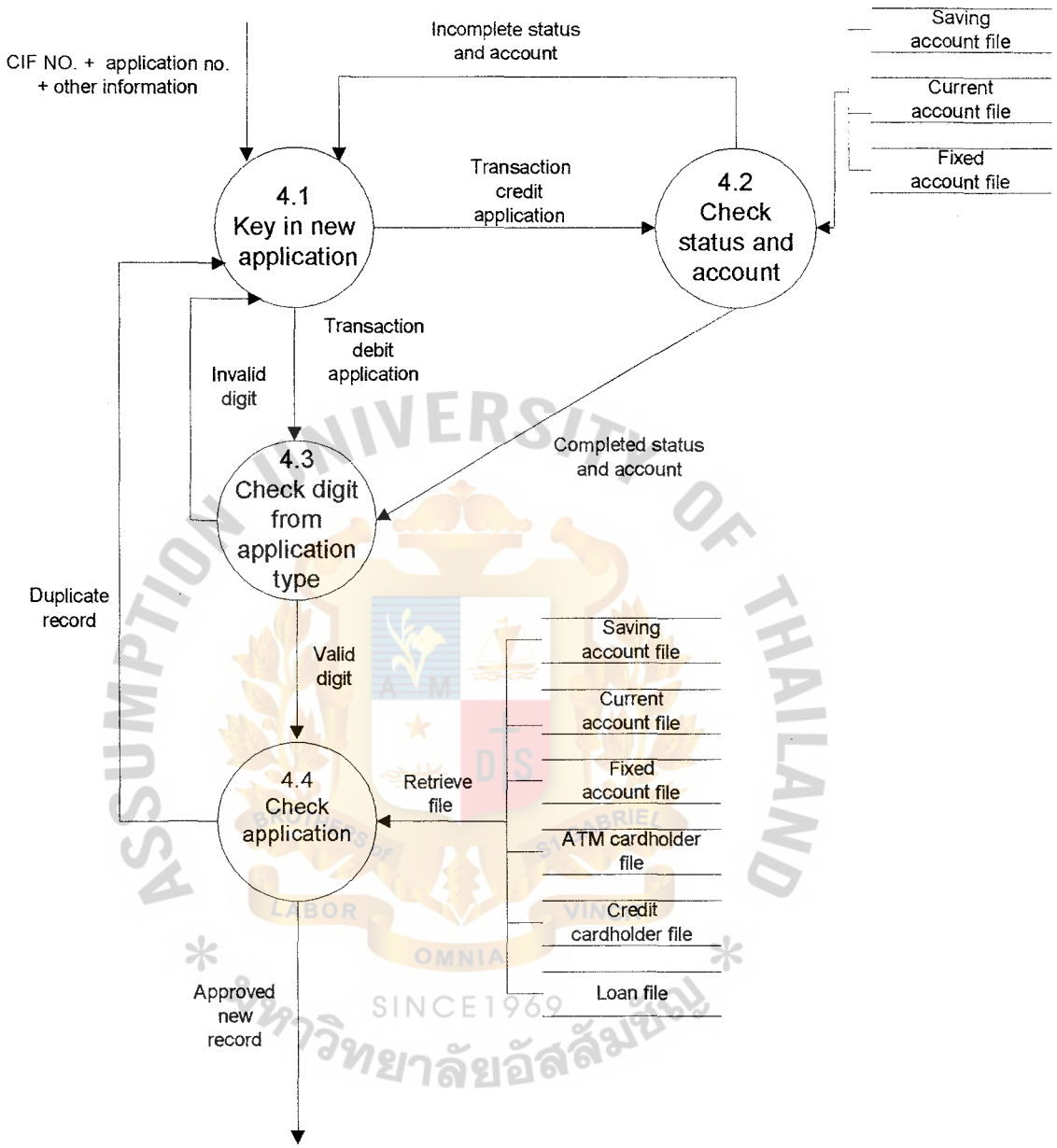

Figure A.6. DFD Level 1 of Proposed system : Check new record

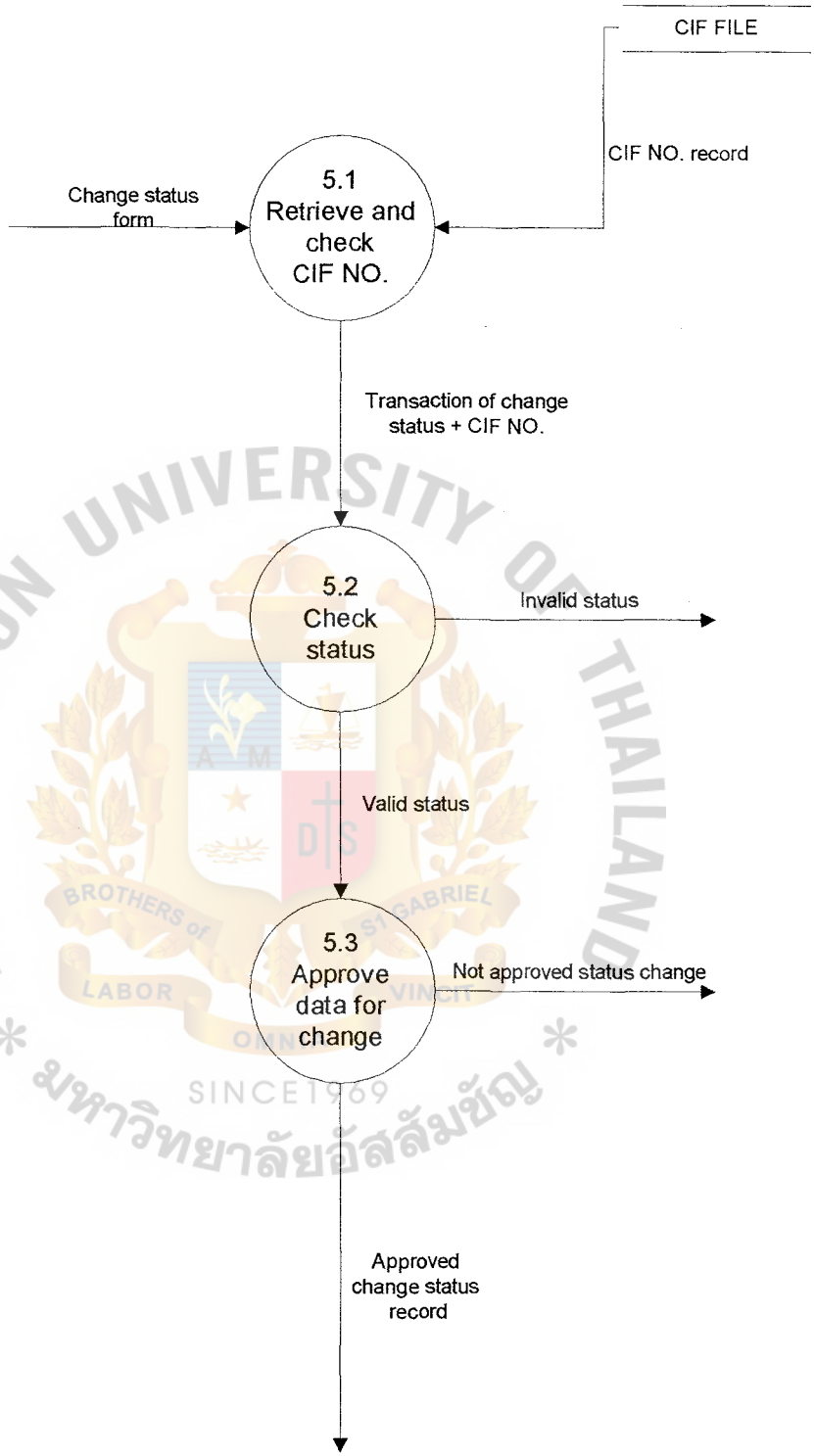

Figure A.7. DFD Level 1 of Proposed system : Verify request for status changing

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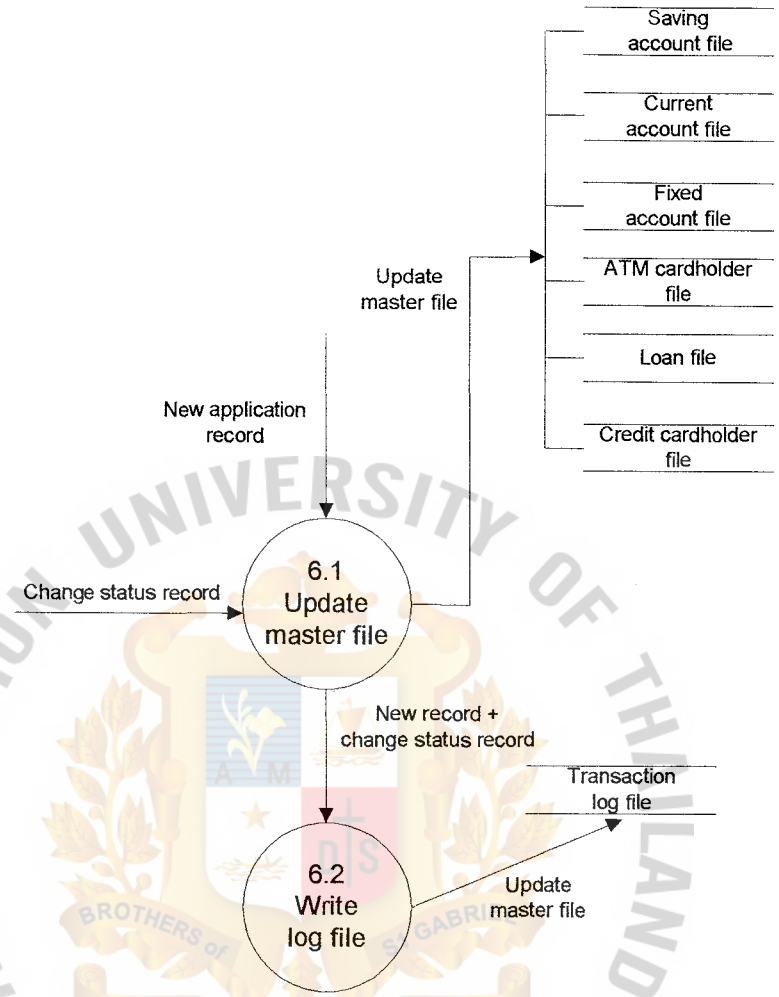

Figure A.8. DFD Level 1 of Proposed system : Update Master file

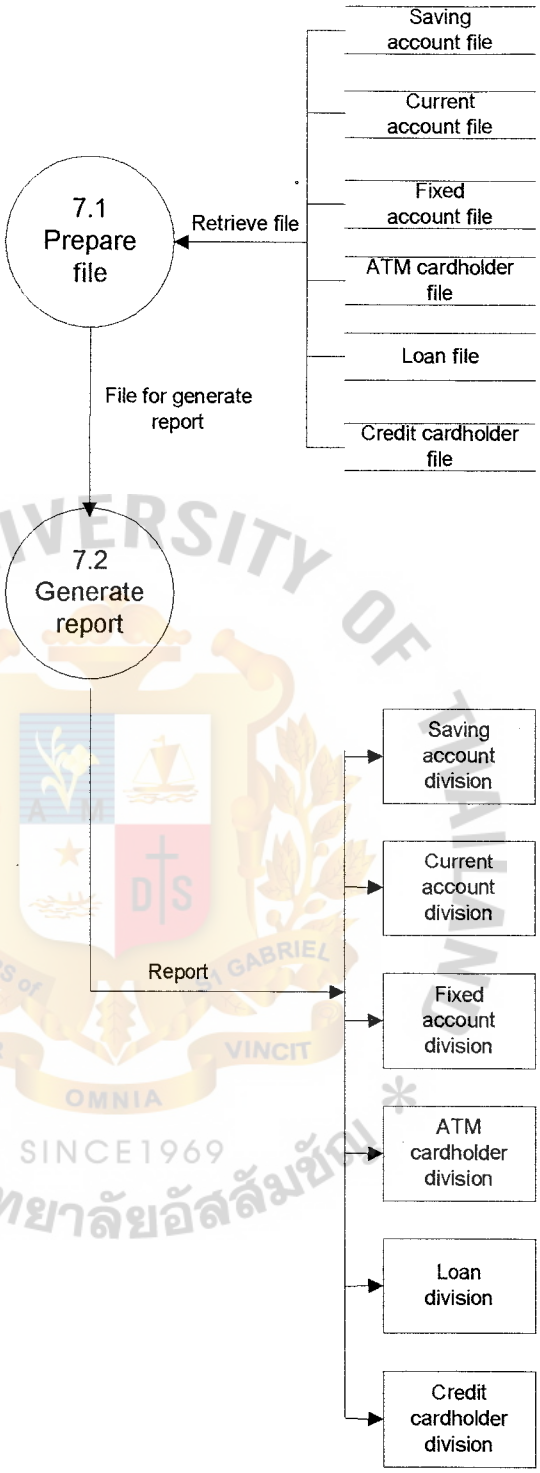

Figure A.9. DFD Level 1 of Proposed system : Generate report

APPENDIX B

Screen Design

ASSUMPTION UNIVERSITY OF THAILAND
BROTHERS of S1 GABRIEL
LABOR VINCIT OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

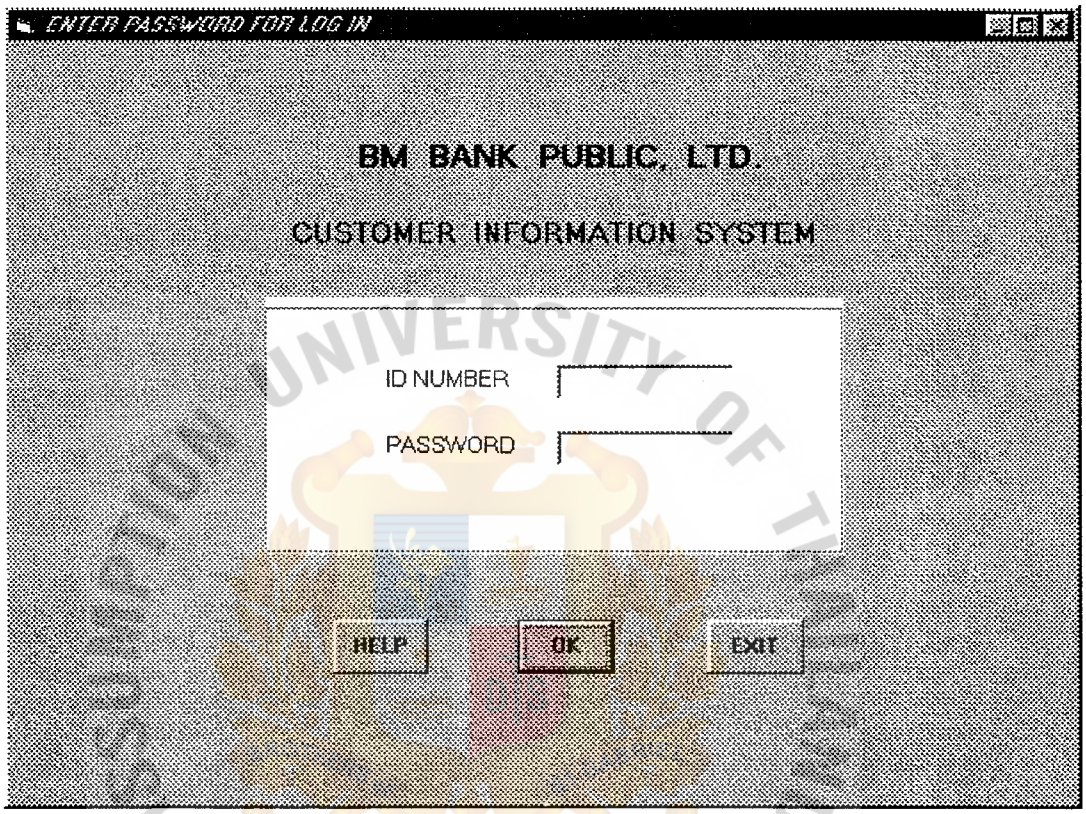

Figure B.1 . Log In Menu

LABOR VINCIT OMNIA SINCE 1969

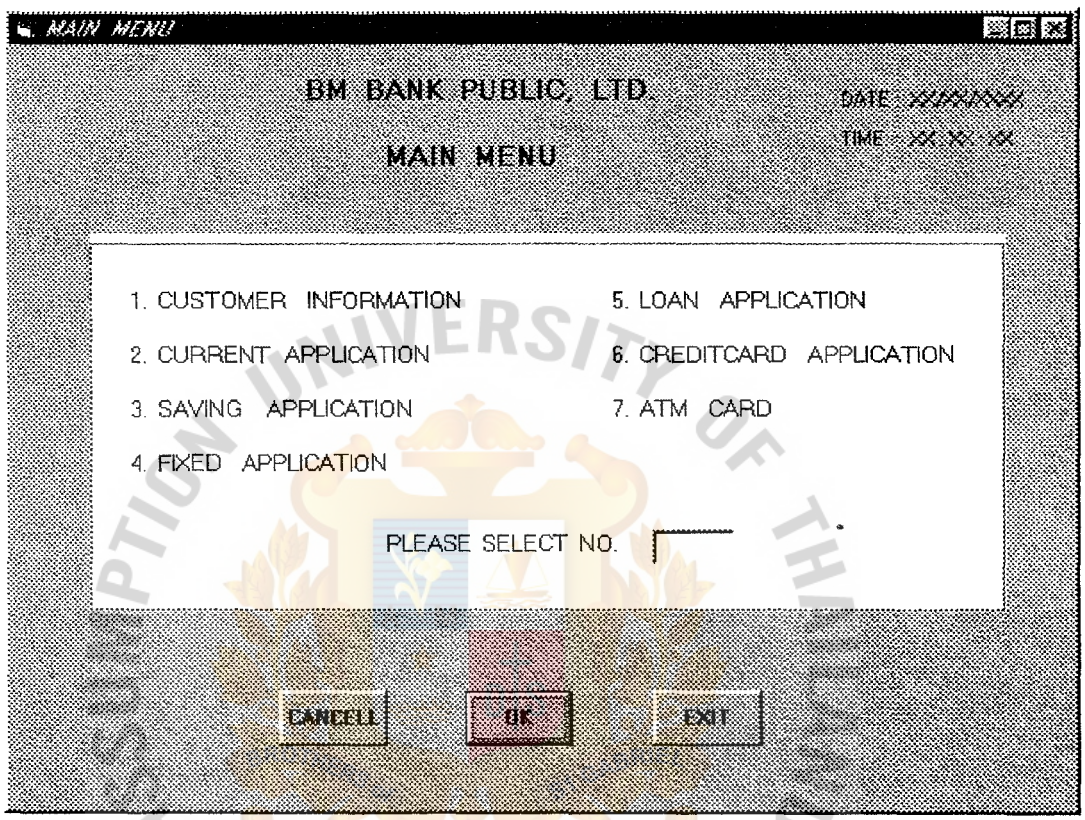

Figure B.2. Main Menu

LABOR VINCIT OMNIA SINCE1969 มหาวิทยาลัยอัสสัมชัญ

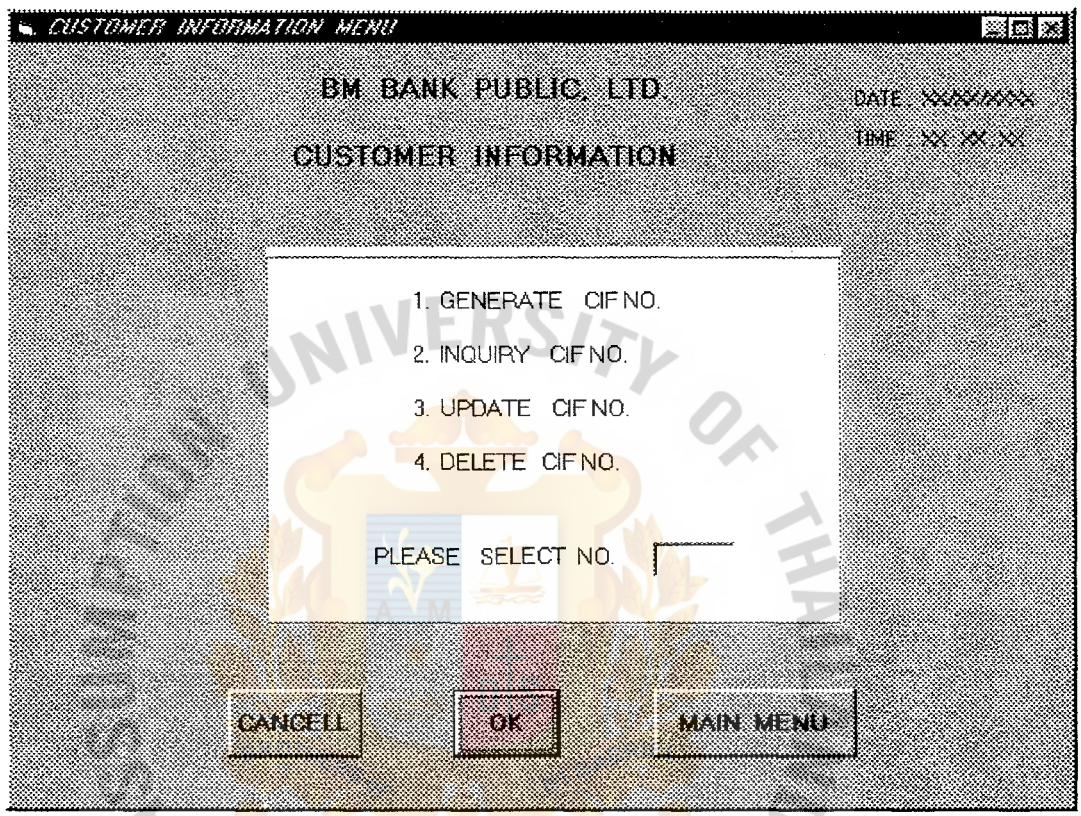

Figure B.3. Customer Information Menu

LABOR VINCIT
OMNIA
SINCE1969

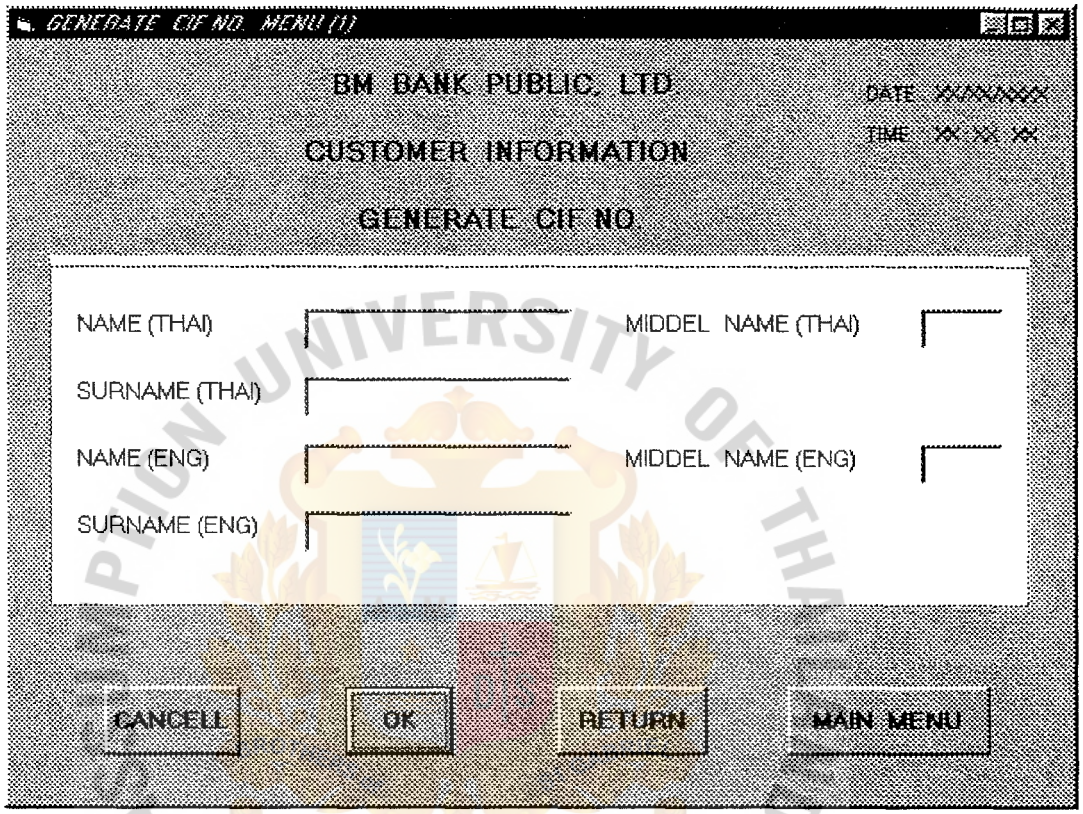

Figure B.4. Generate CIF NO. Menu (1)

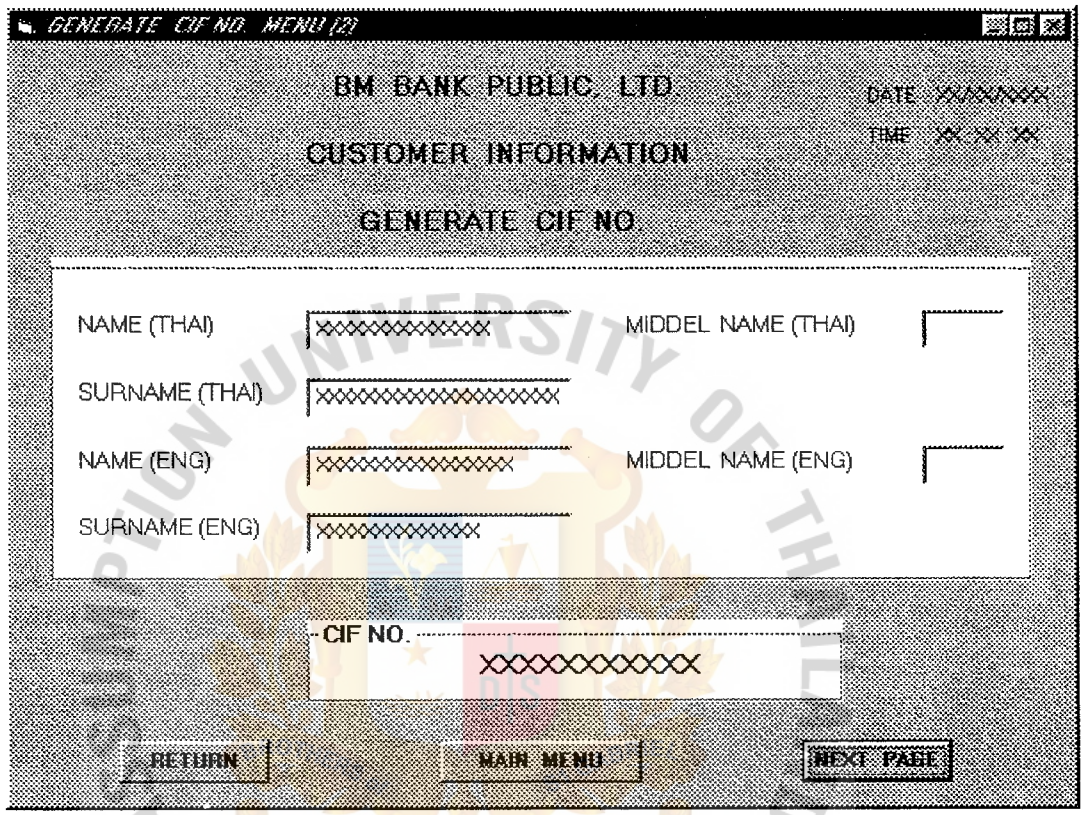

Figure B.5. Generate CIF NO. Menu (2)

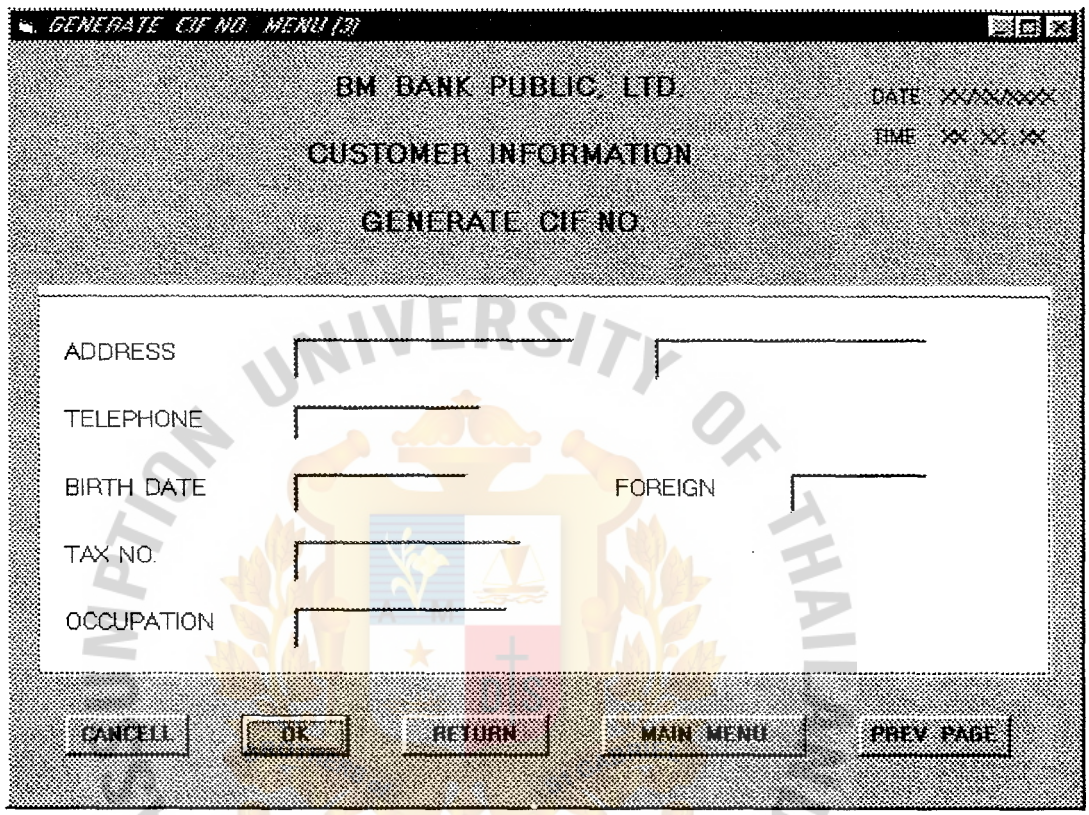

Figure B.6. Generate CIF NO. Menu (3)

LABOR VINCIT OMNIA SINCE 1969

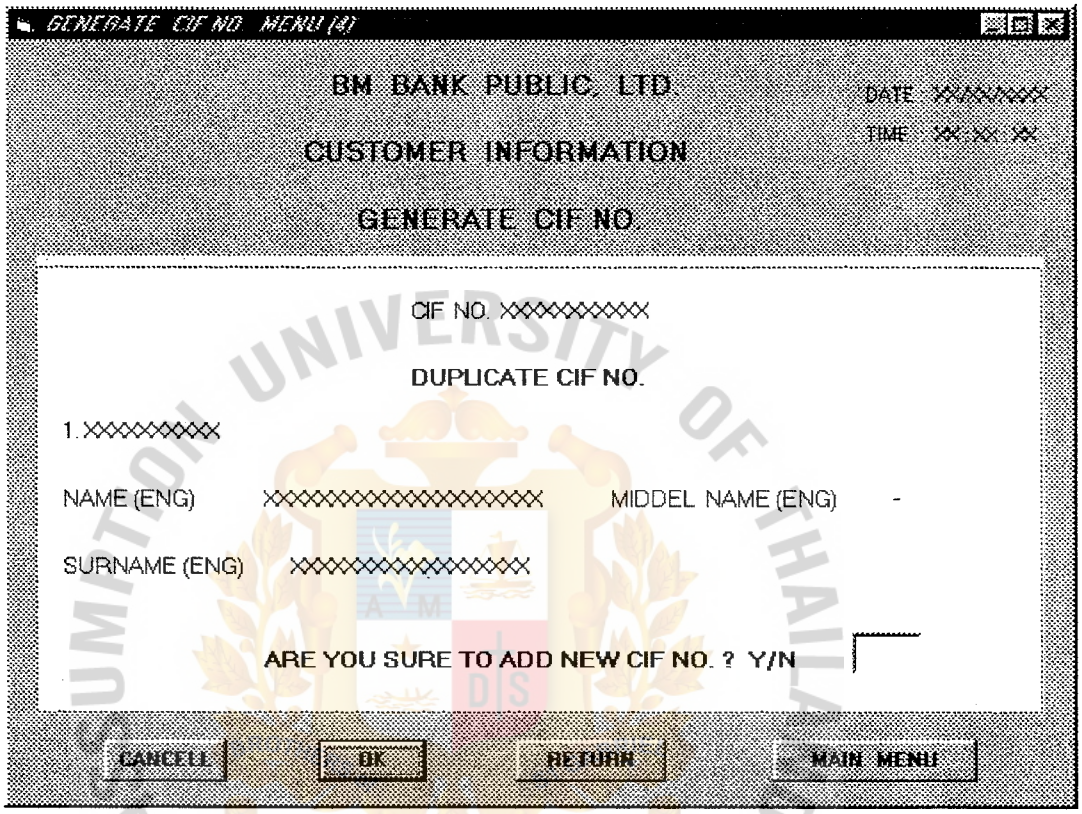

Figure B.7. Generate CIF NO. Menu (4)

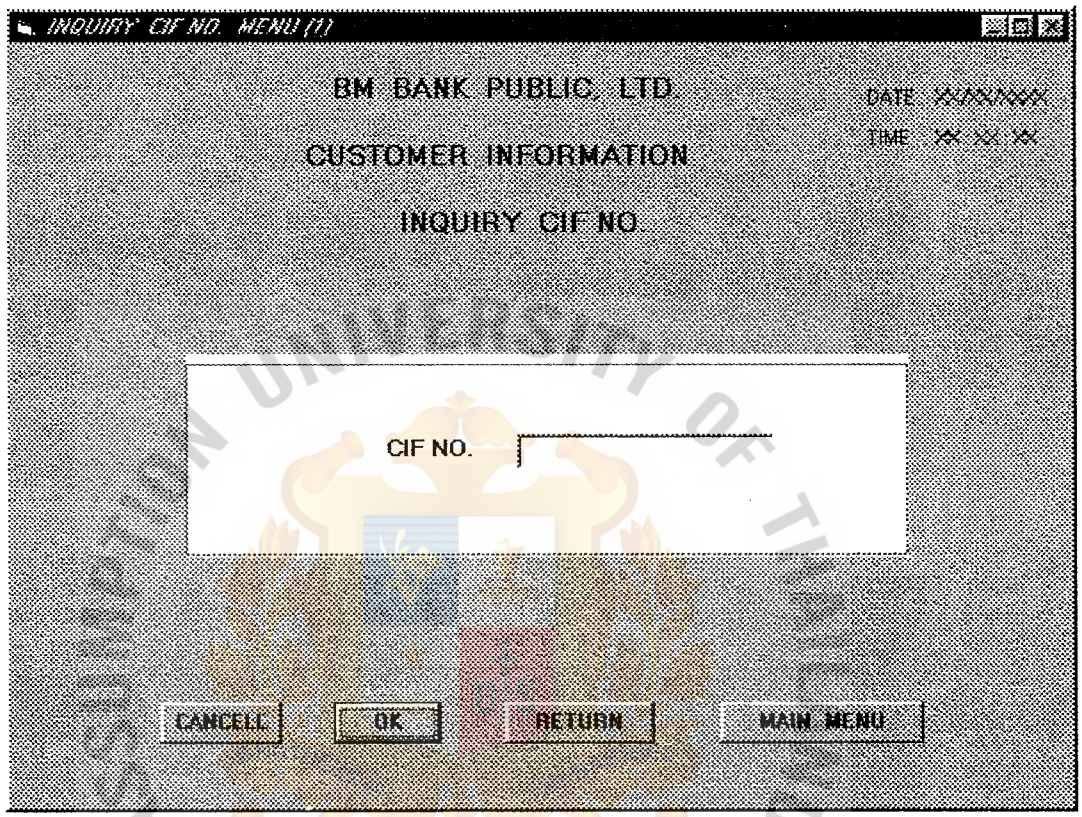

Figure B.8. Inquiry CIF NO. Menu (1)

AUAC
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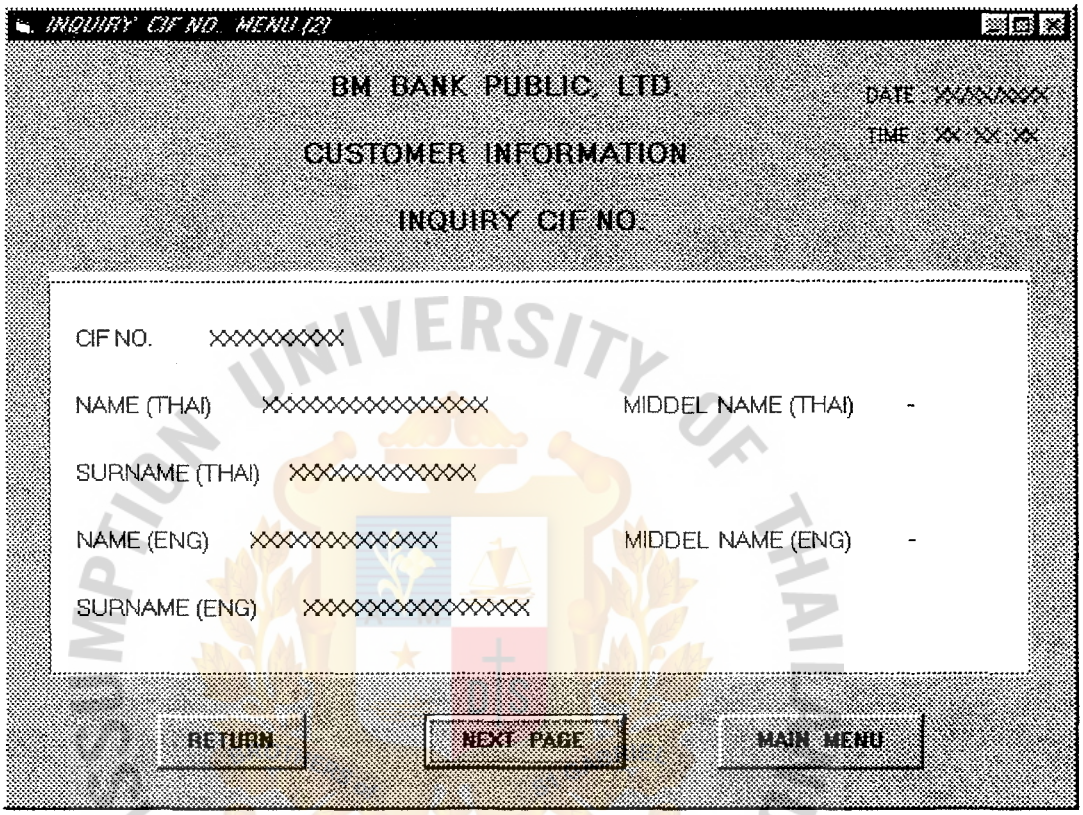

Figure B.9. Inquiry CIF NO. Menu (2)

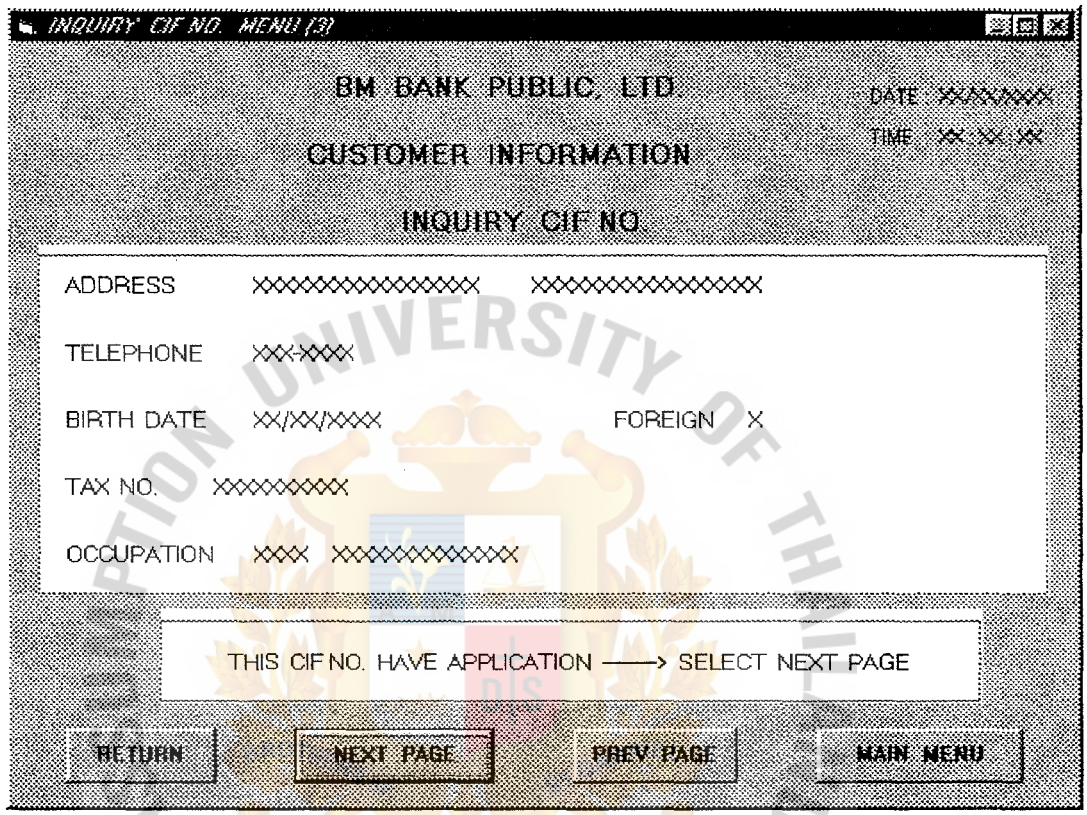

Figure B.10. Inquiry CIF NO. Menu (3)

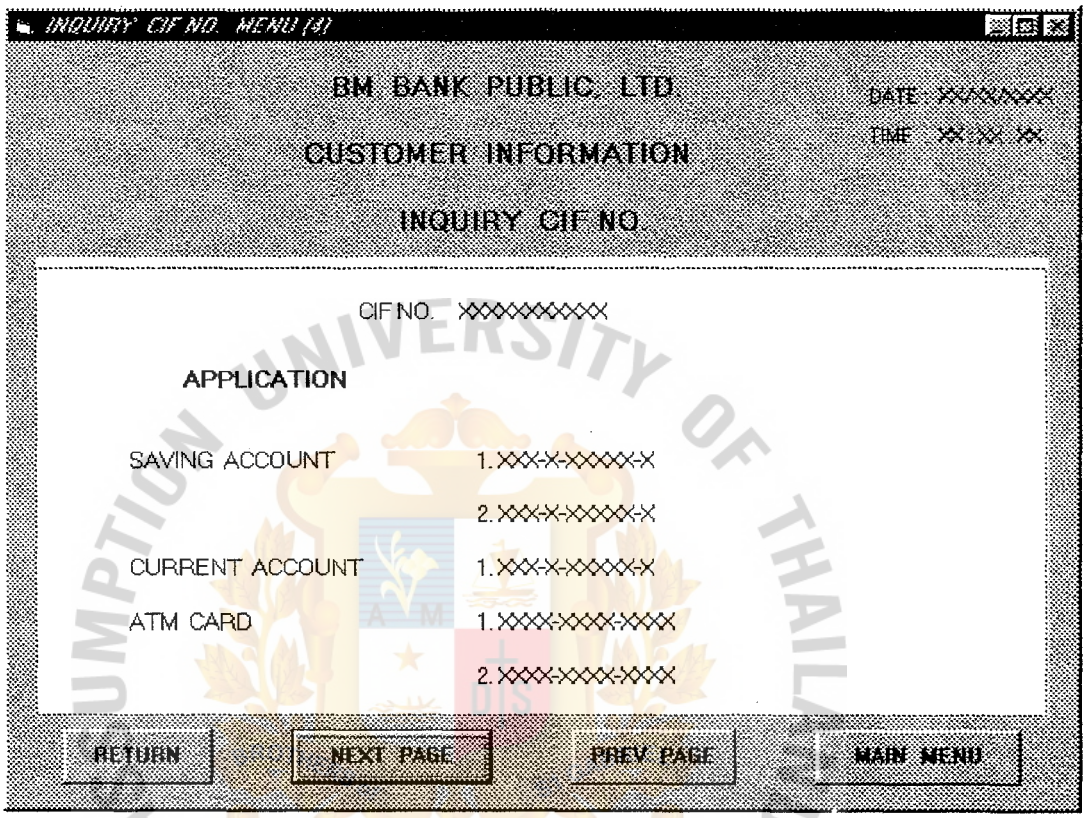

Figure B.11. Inquiry CIF NO. Menu (4)

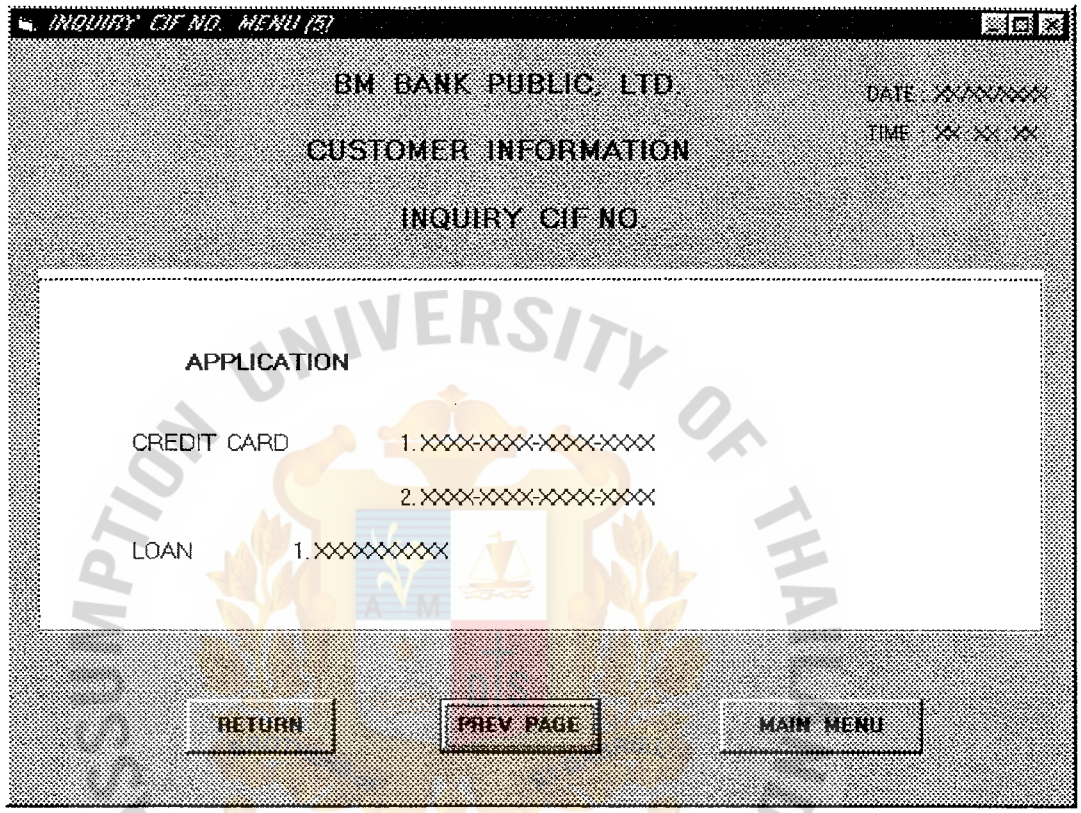

Figure B.12. Inquiry CIF NO. Menu (5)

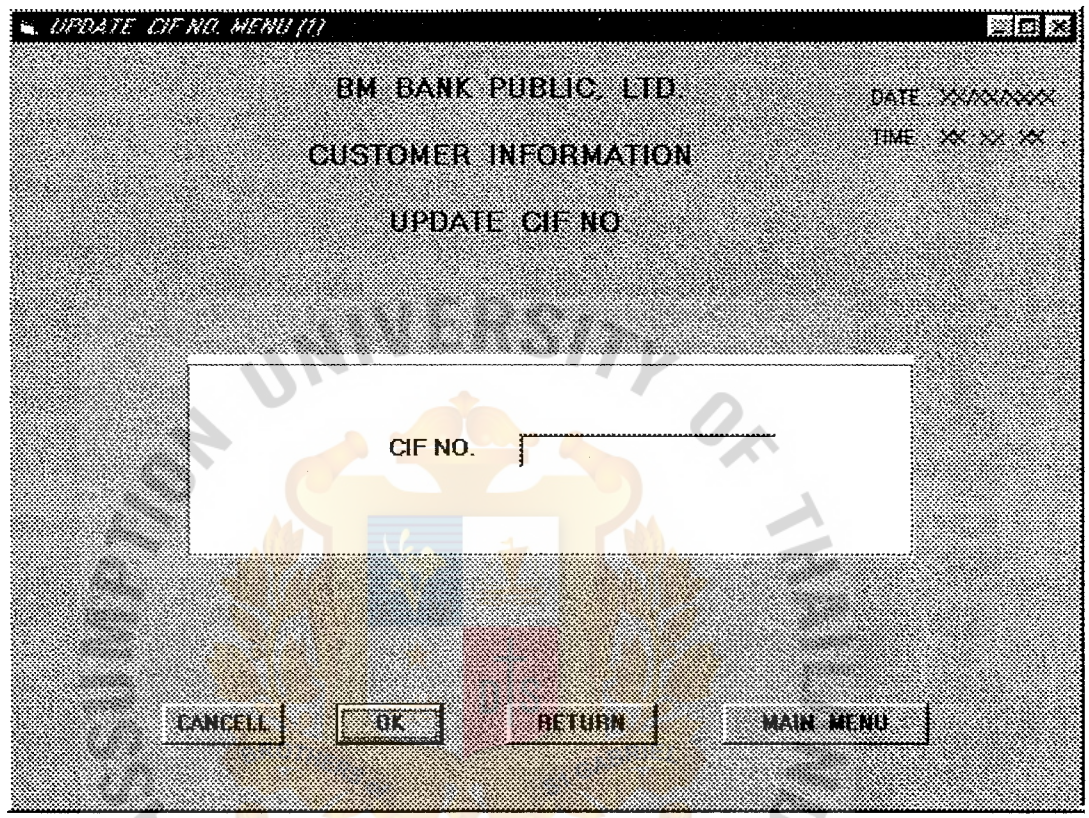

Figure B.13. Update CIF NO. Menu (1)

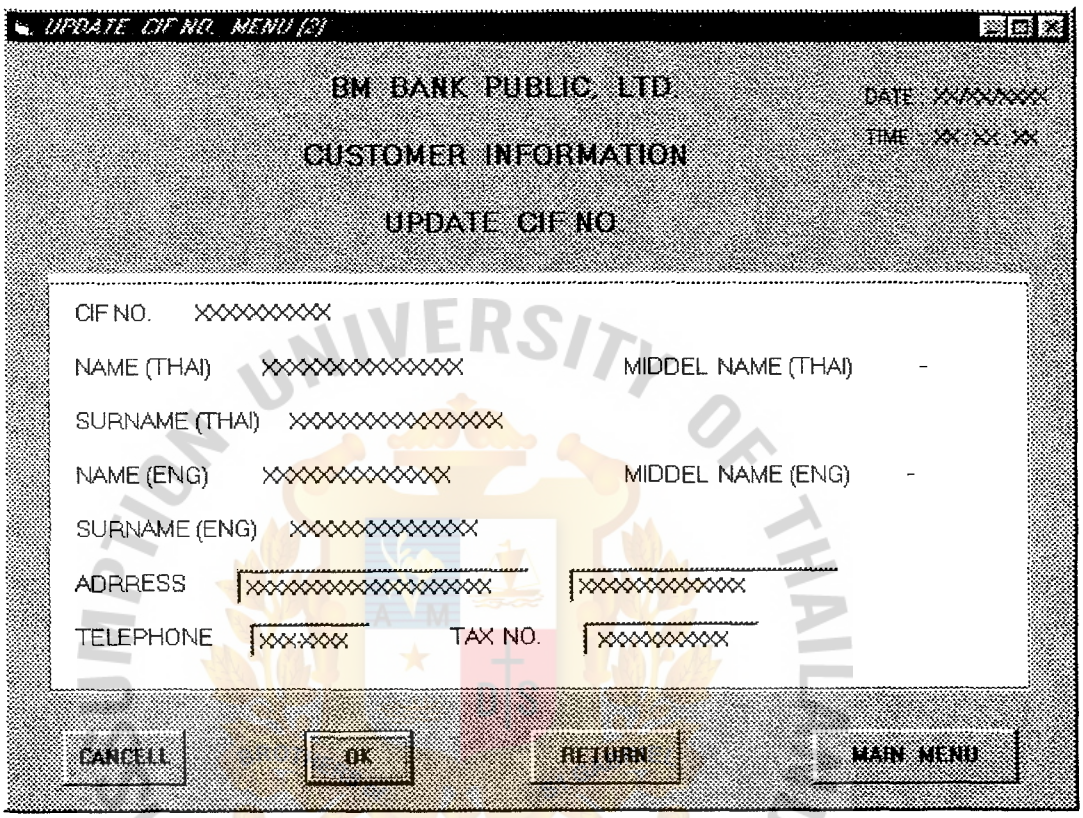

Figure B.14. Update CIF NO. Menu (2)

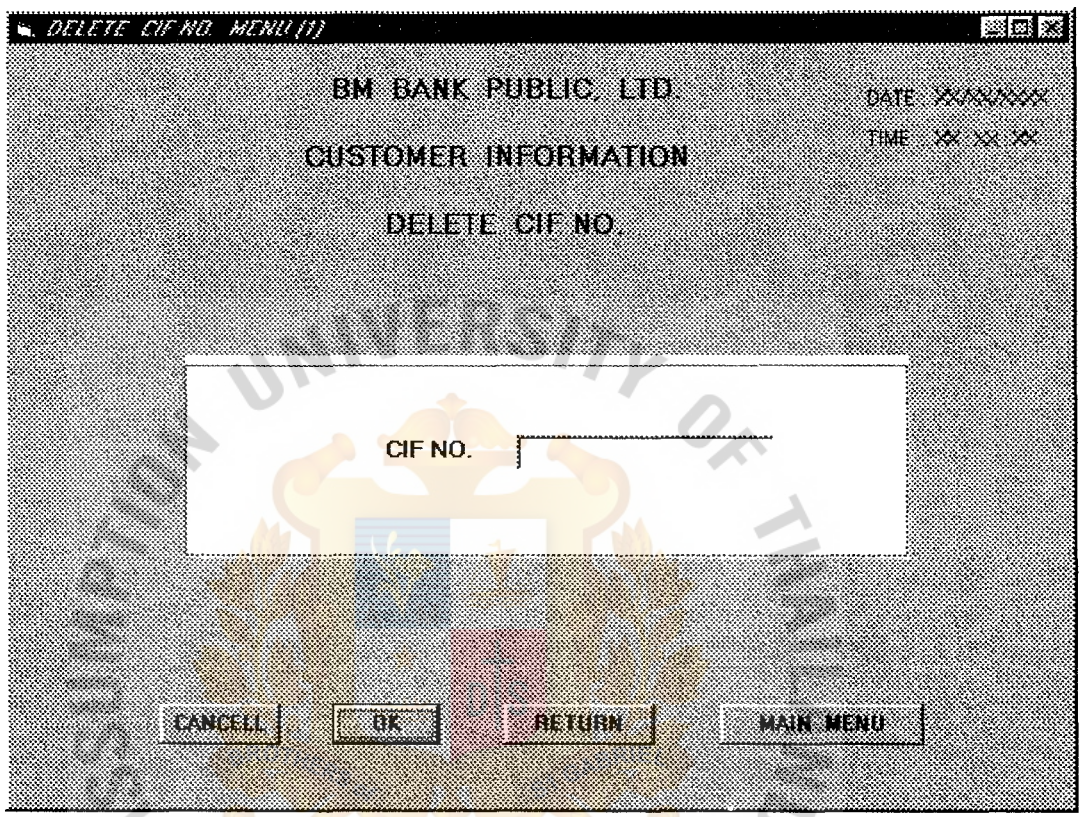

Figure B.15. Delete CIF NO. Menu (1)

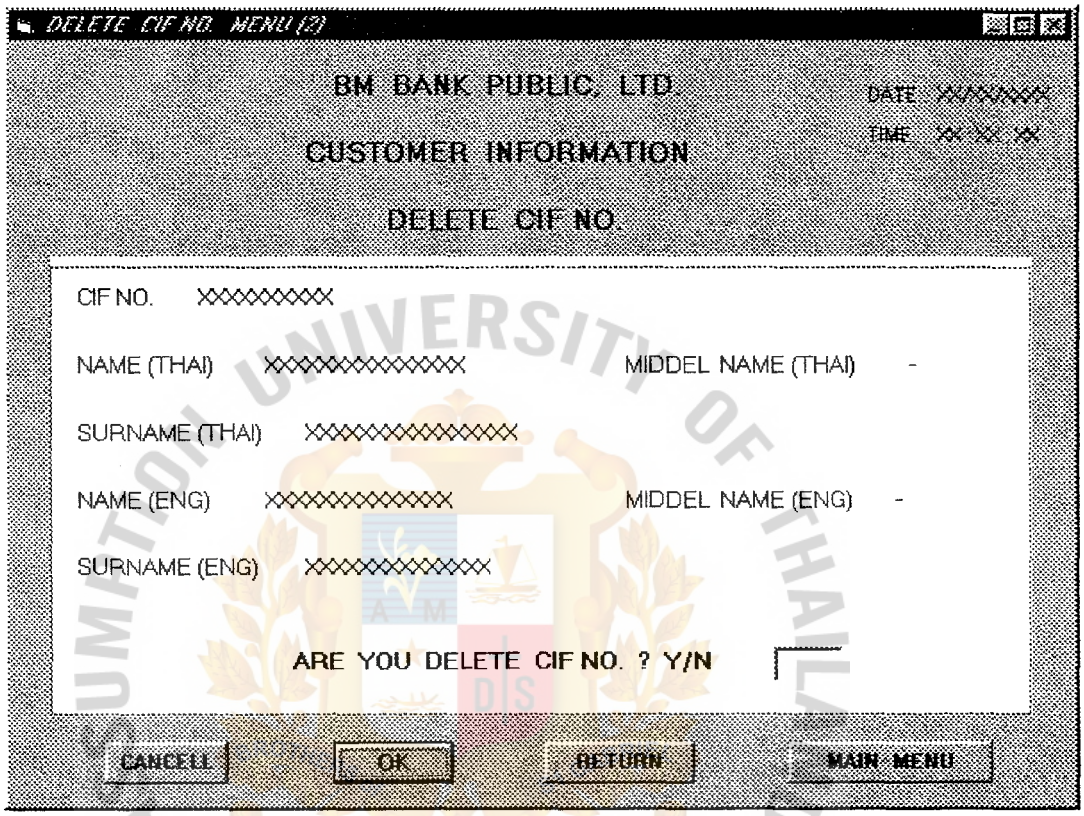

Figure B.16. Delete CIF NO. Menu (2)

ASSUMPTION UNIVERSITY OF THAILAND
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SINCE 1969
มหาวิทยาลัยอัสสัมชัญ

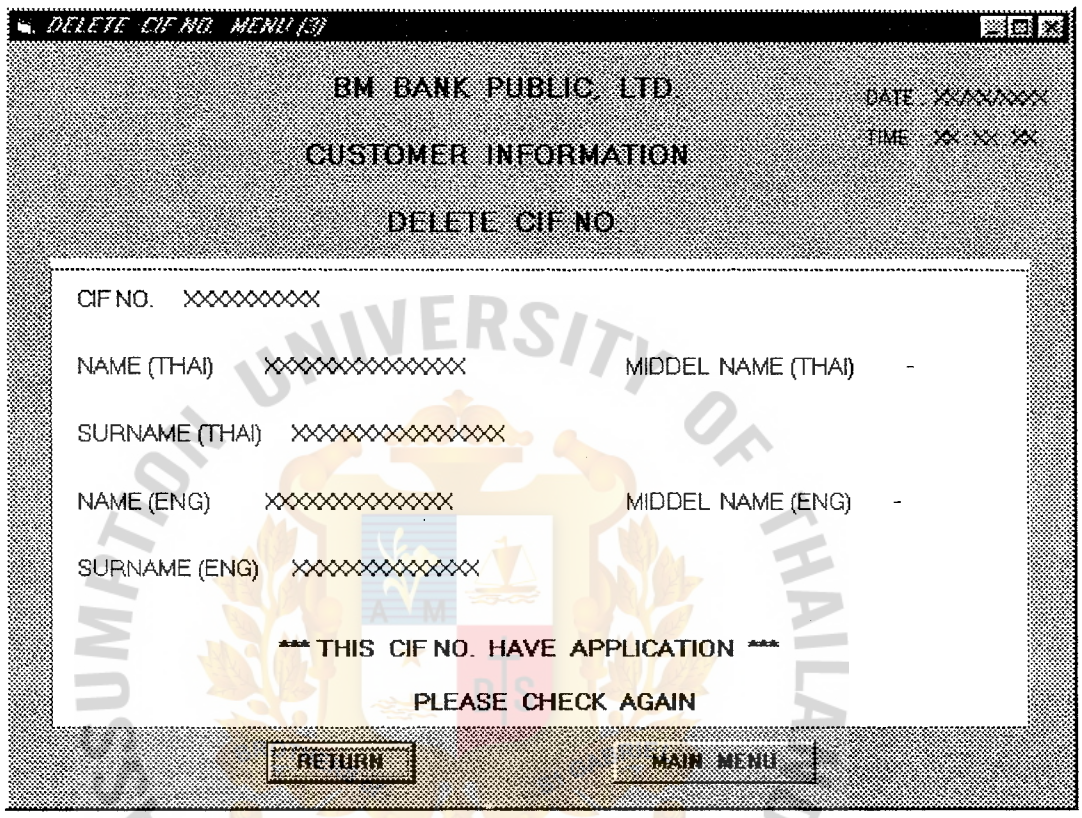

Figure B.17. Delete CIF NO. Menu (3)

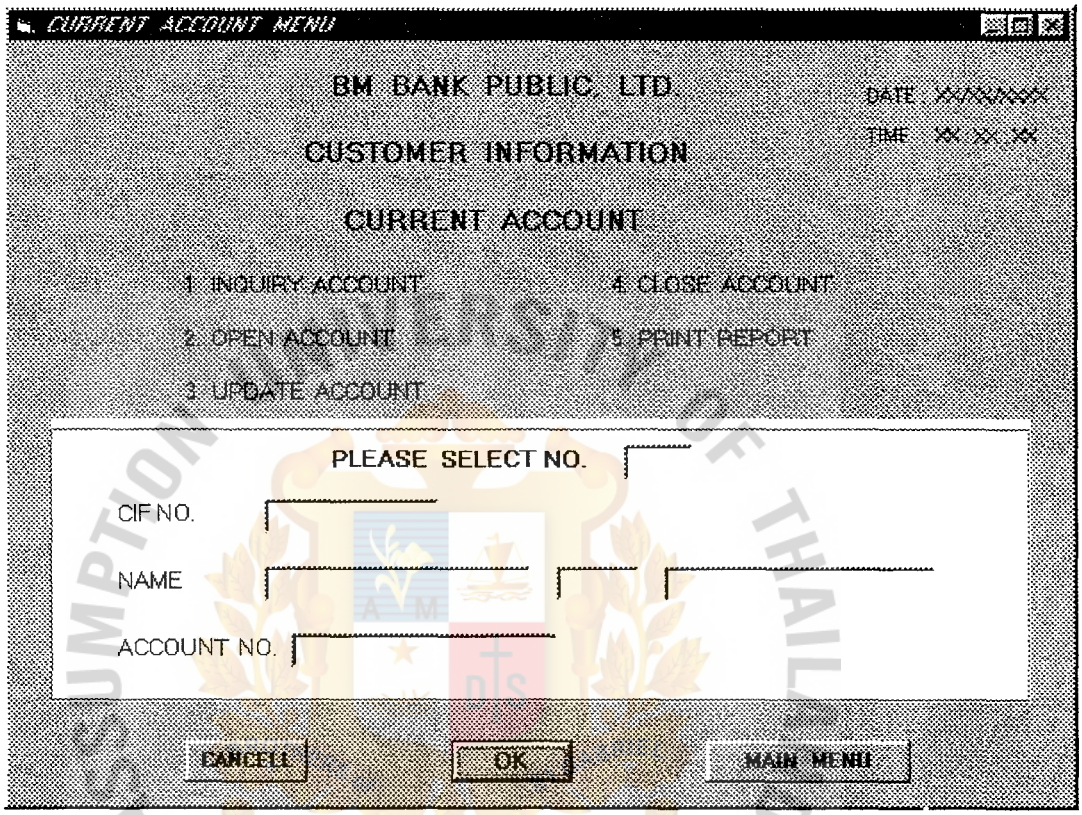

Figure B.18. Current Account Menu

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
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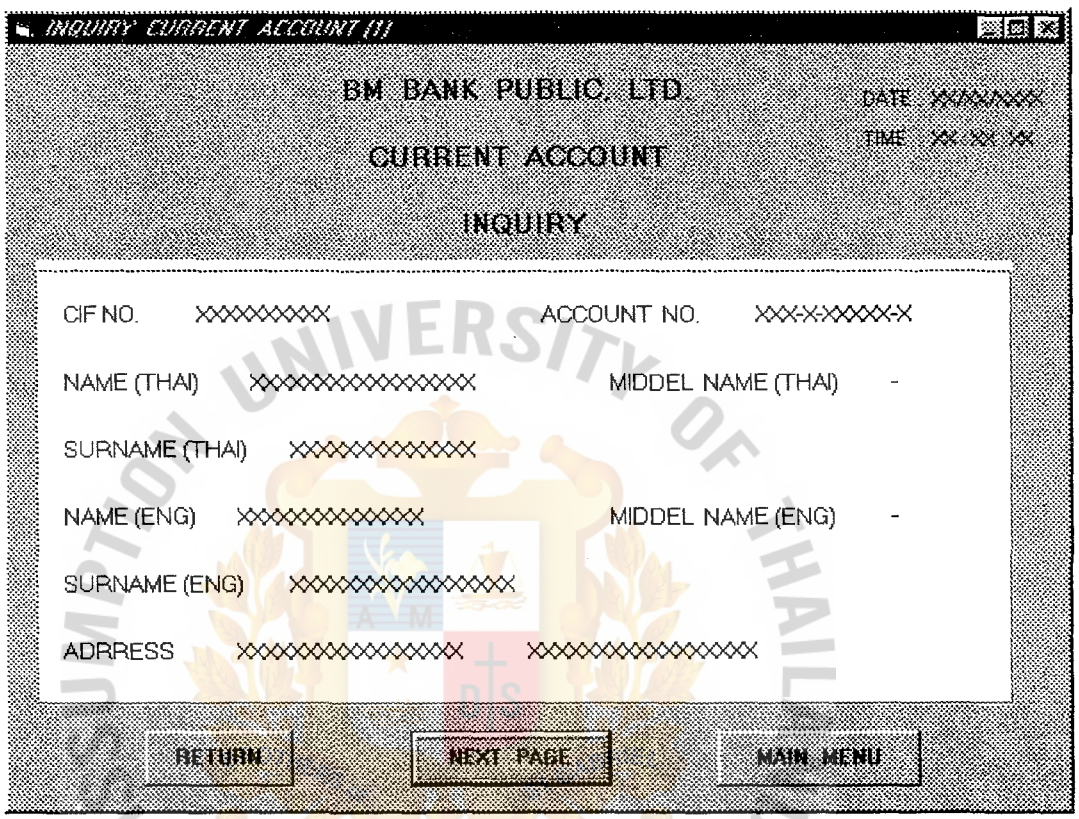

Figure B.19. Inquiry Current Account (1)

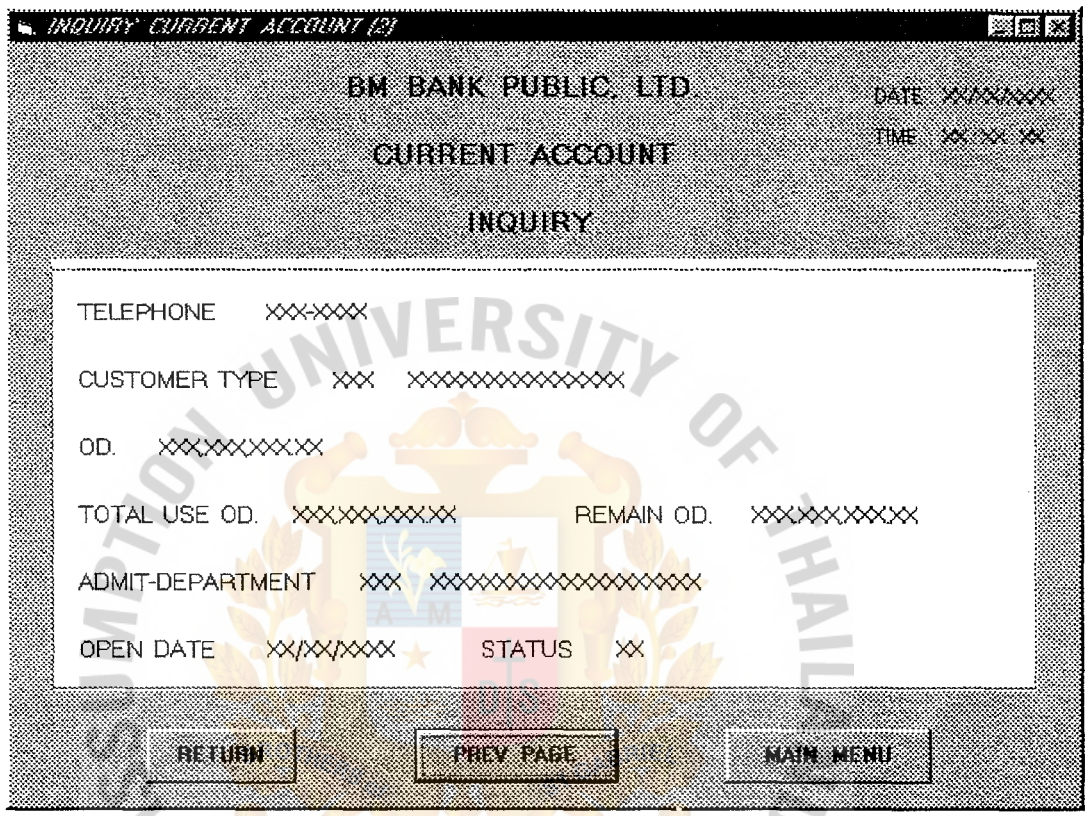

Figure B.20. Inquiry Current Account (2)

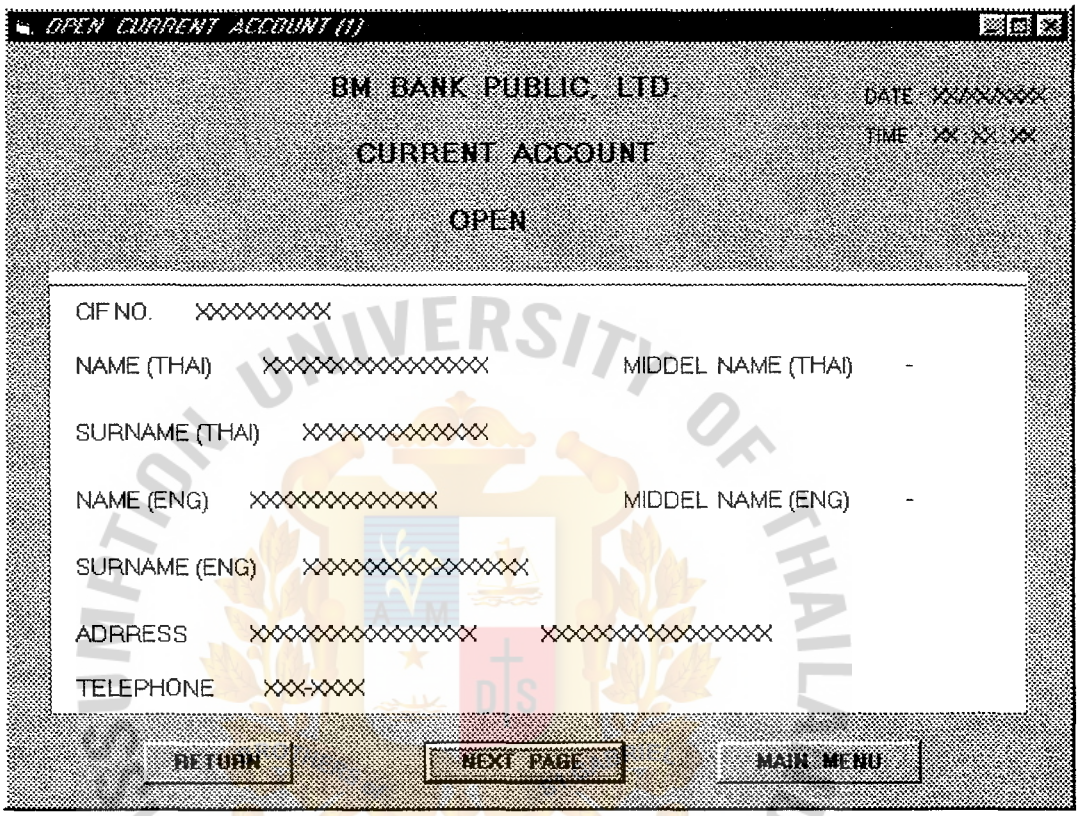

Figure B.21. Open Current Account (1)

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
มหาวิทยาลัยอัสสัมชัญ

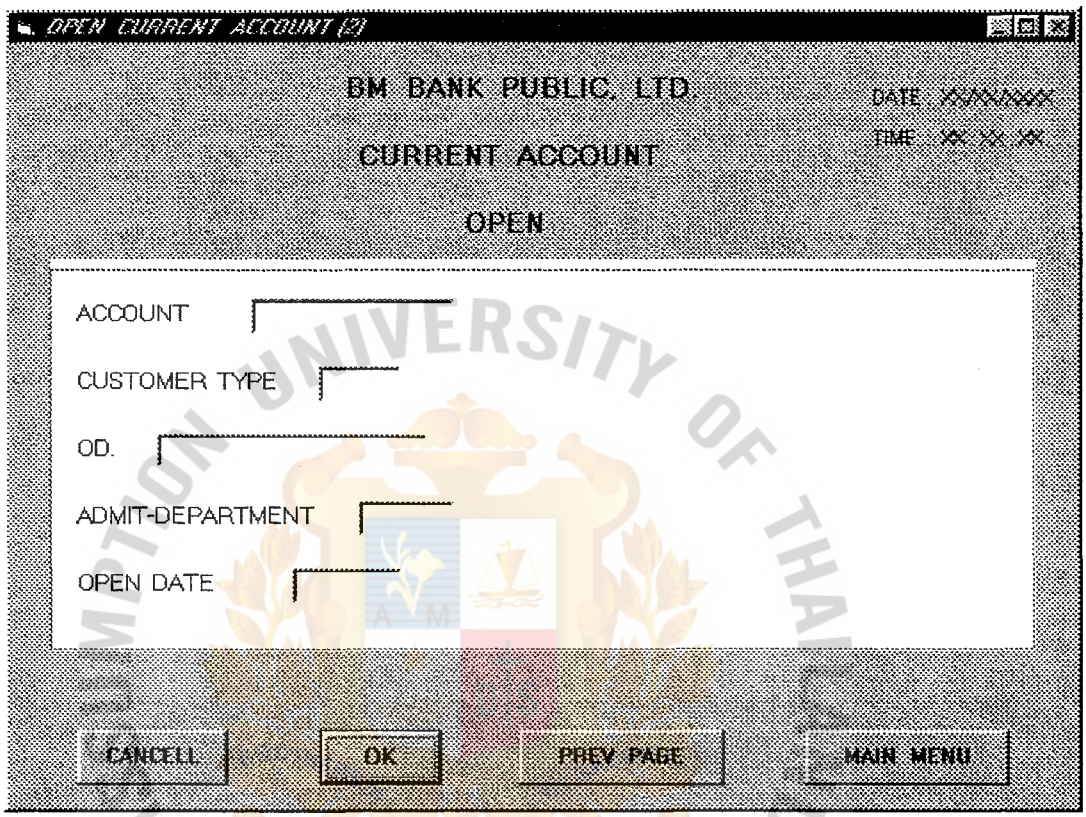

Figure B.22. Open Current Account (2)

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT
OMNIA
มหาวิทยาลัยอัสสัมชัญ

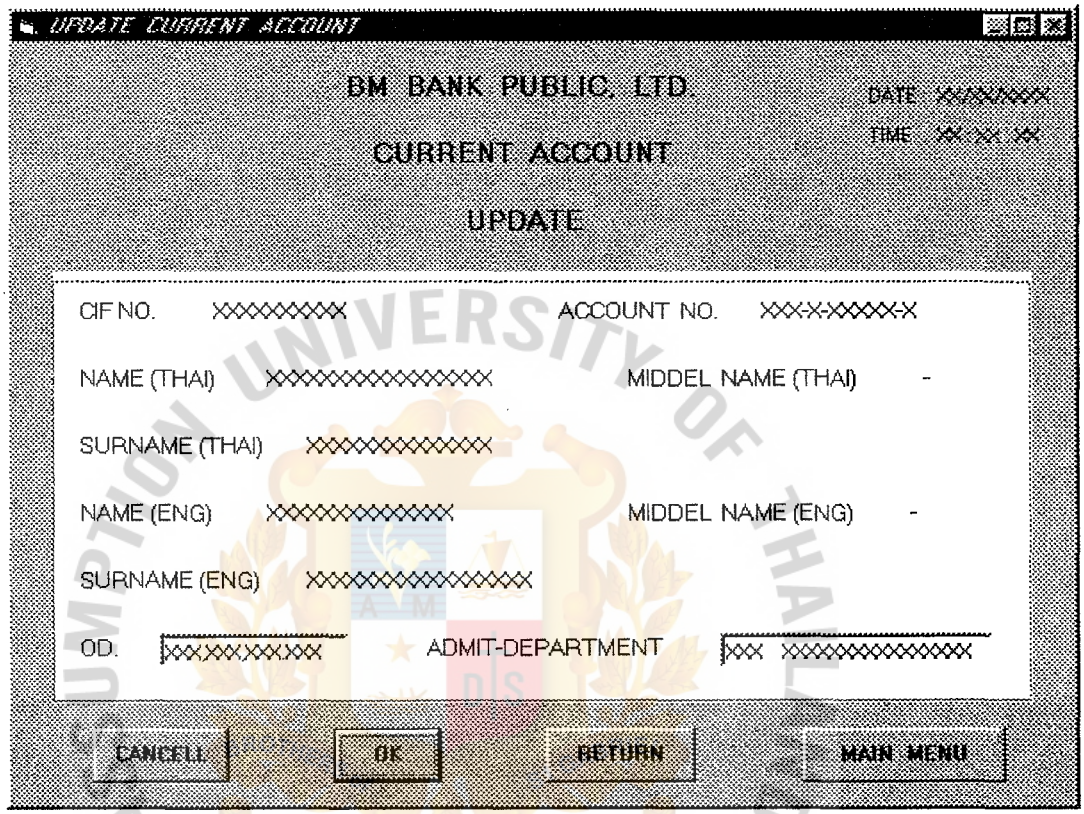

Figure B.23. Update Current Account

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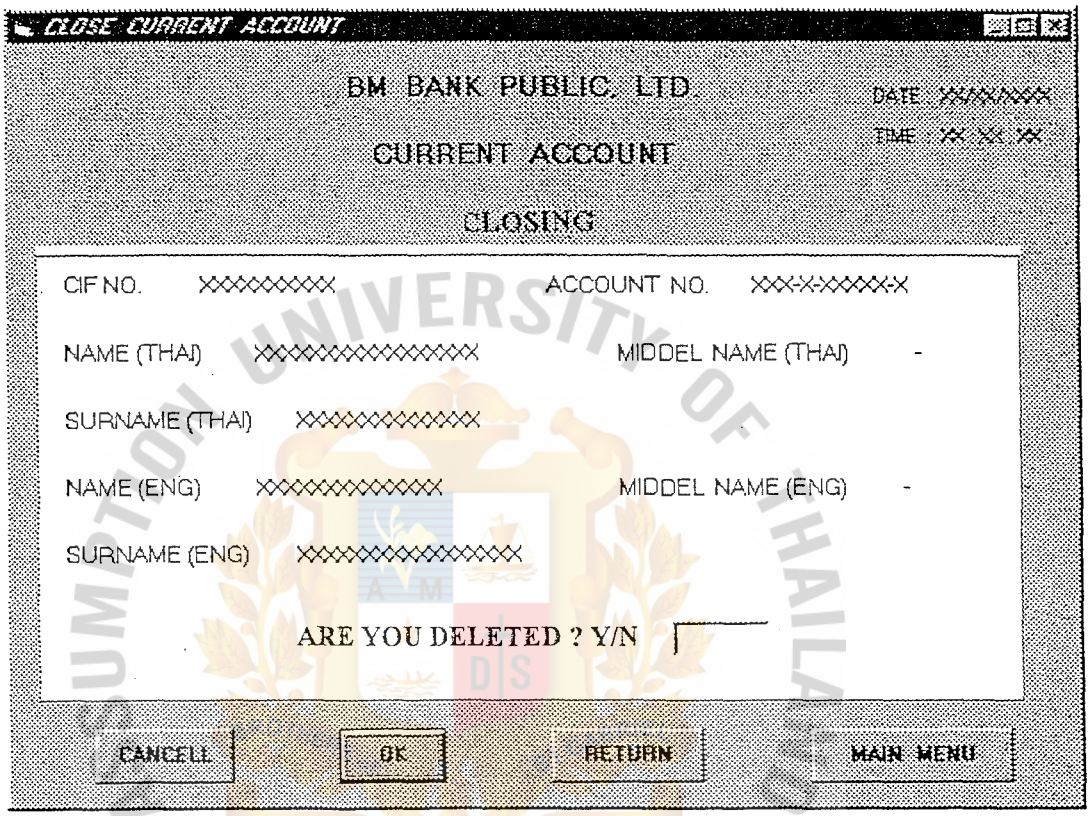

Figure B.24. Closing Current Account

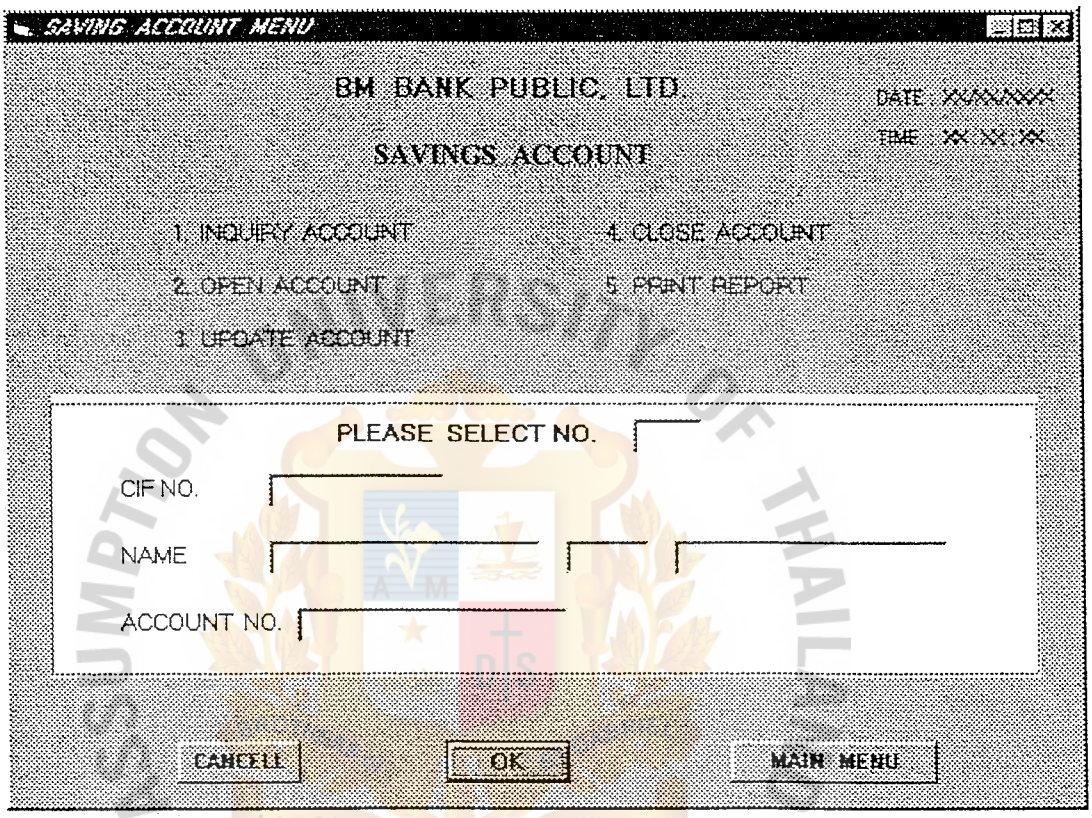

Figure B.25. Savings Account Menu

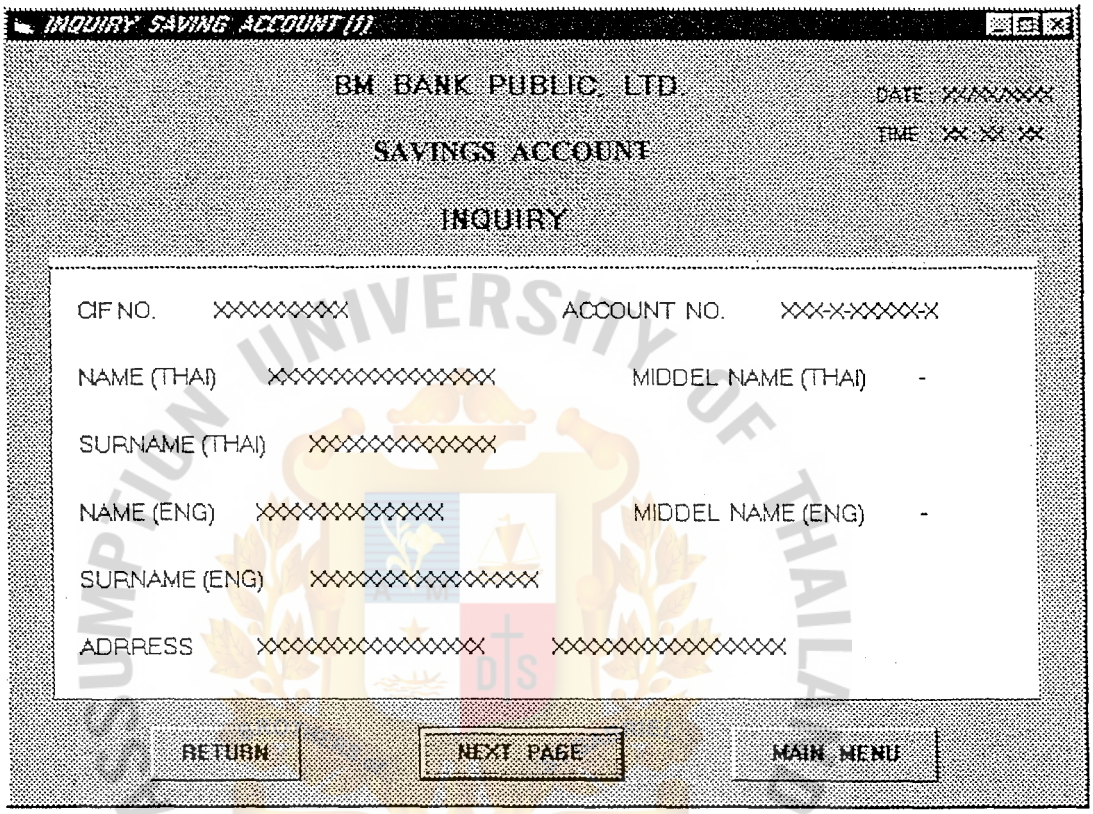

Figure B.26. Inquiry of Savings Account (1)

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LABOR VINCIT OMNIA
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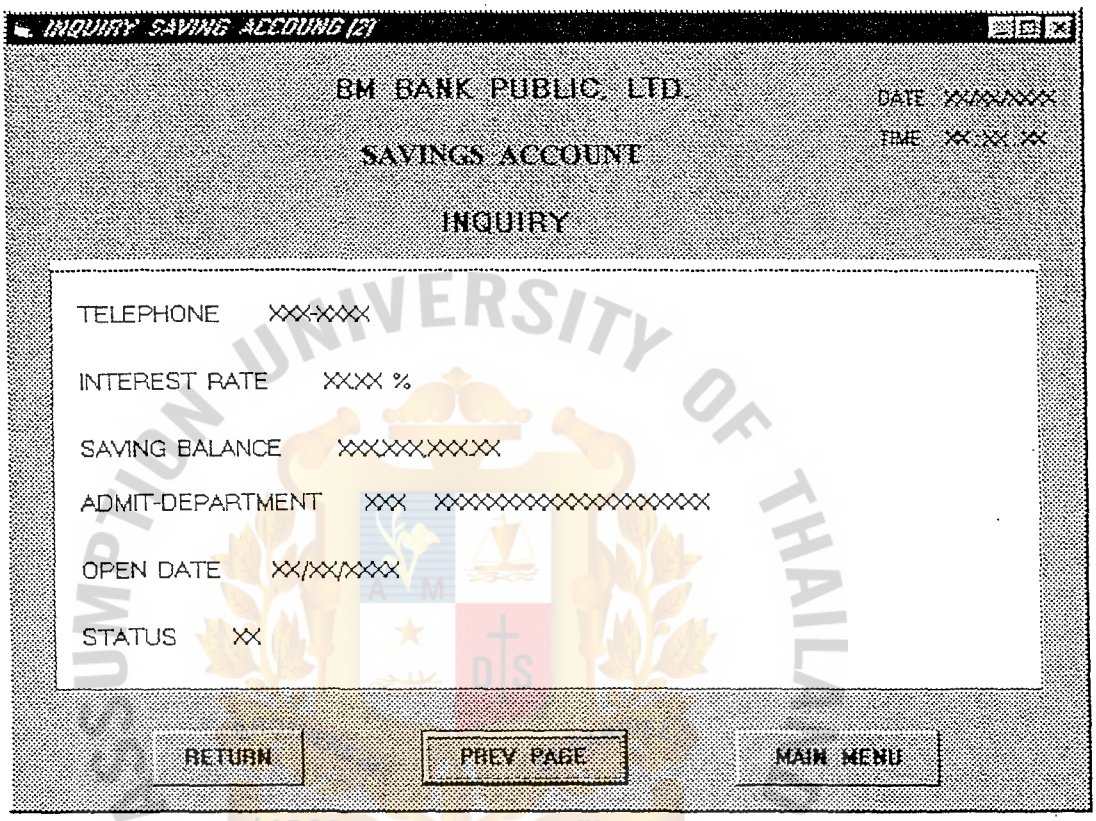

Figure B.27. Inquiry of Savings Account (2)

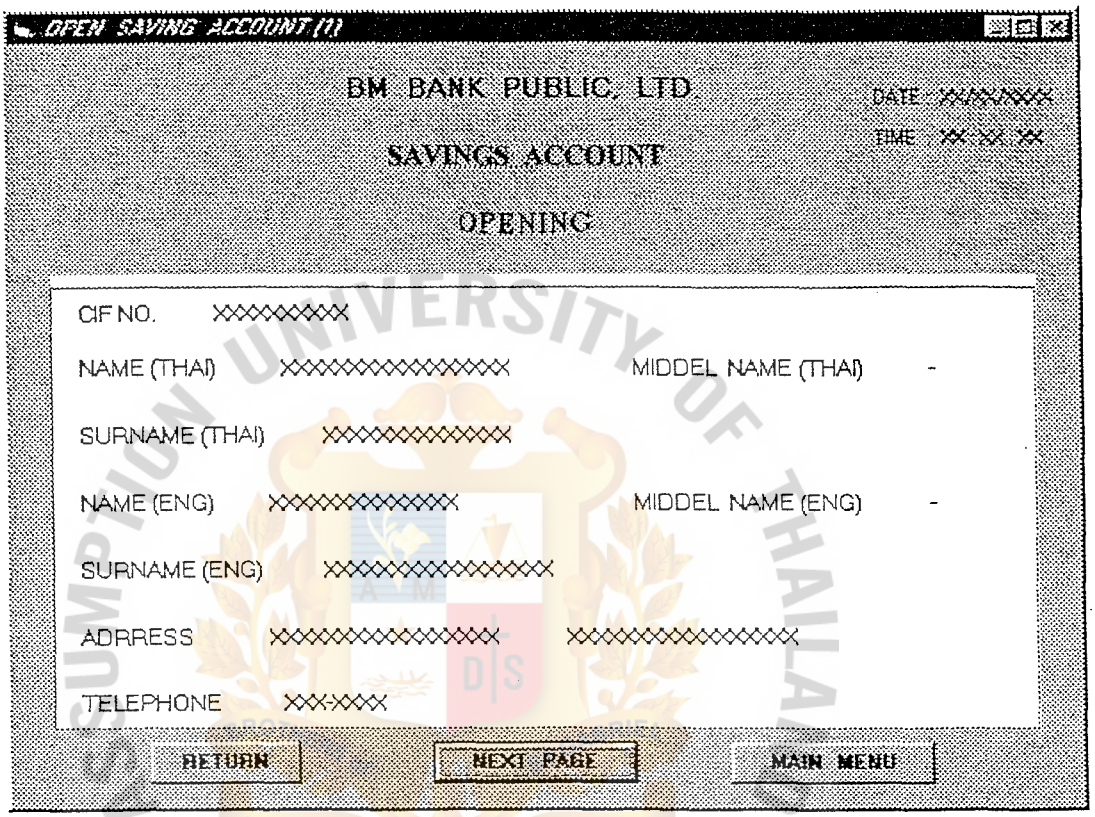

Figure B.28. Opening Savings Account (1)

UTCC UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

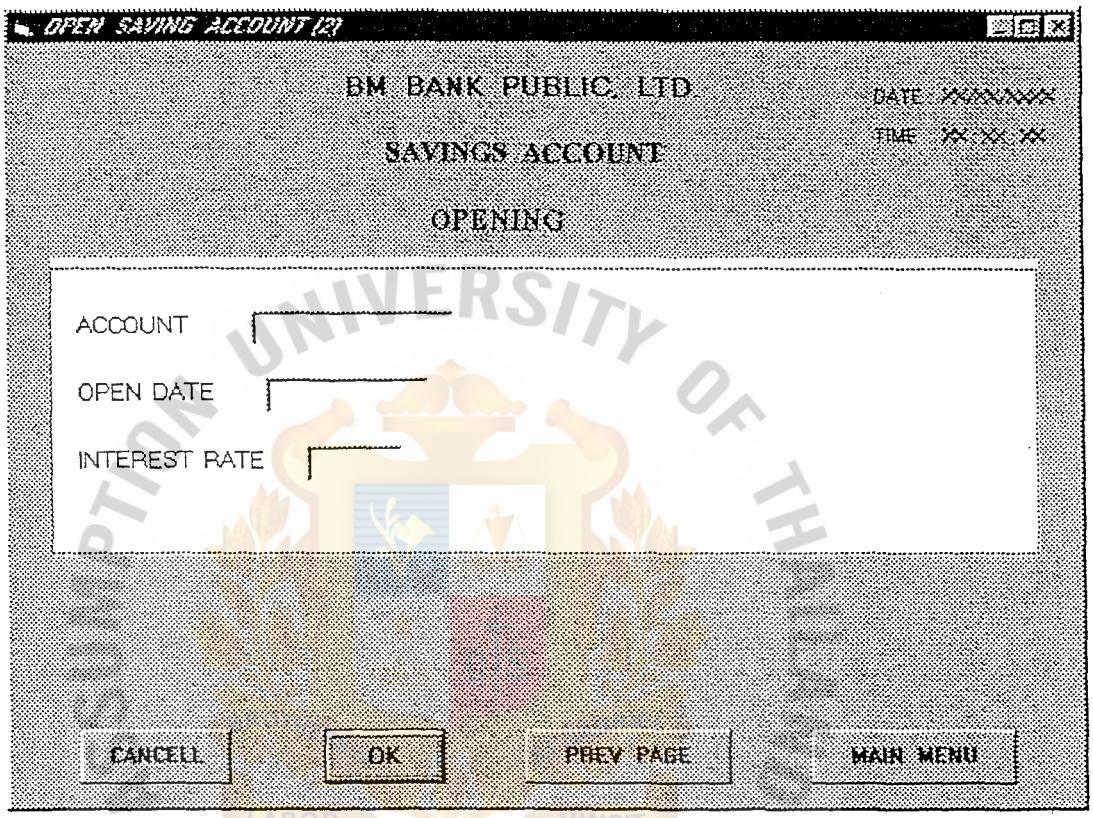

Figure B.29. Opening Savings Account (2)

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

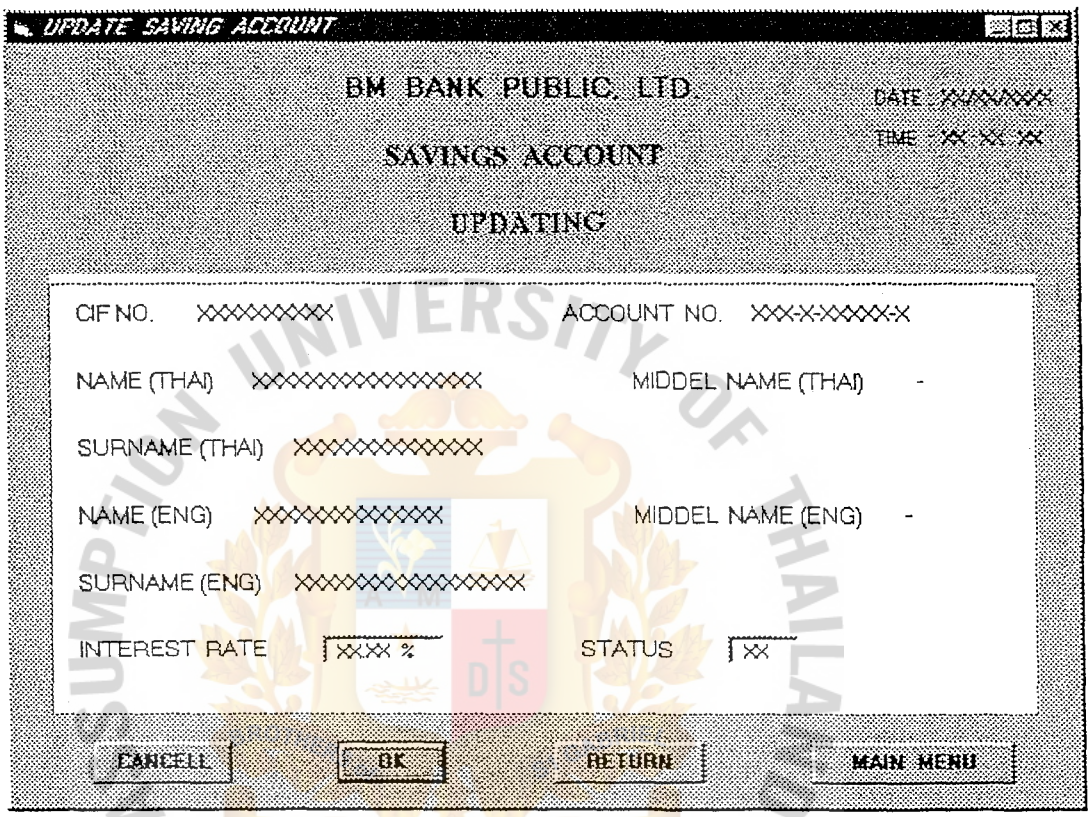

Figure B.30. Updating Savings Account

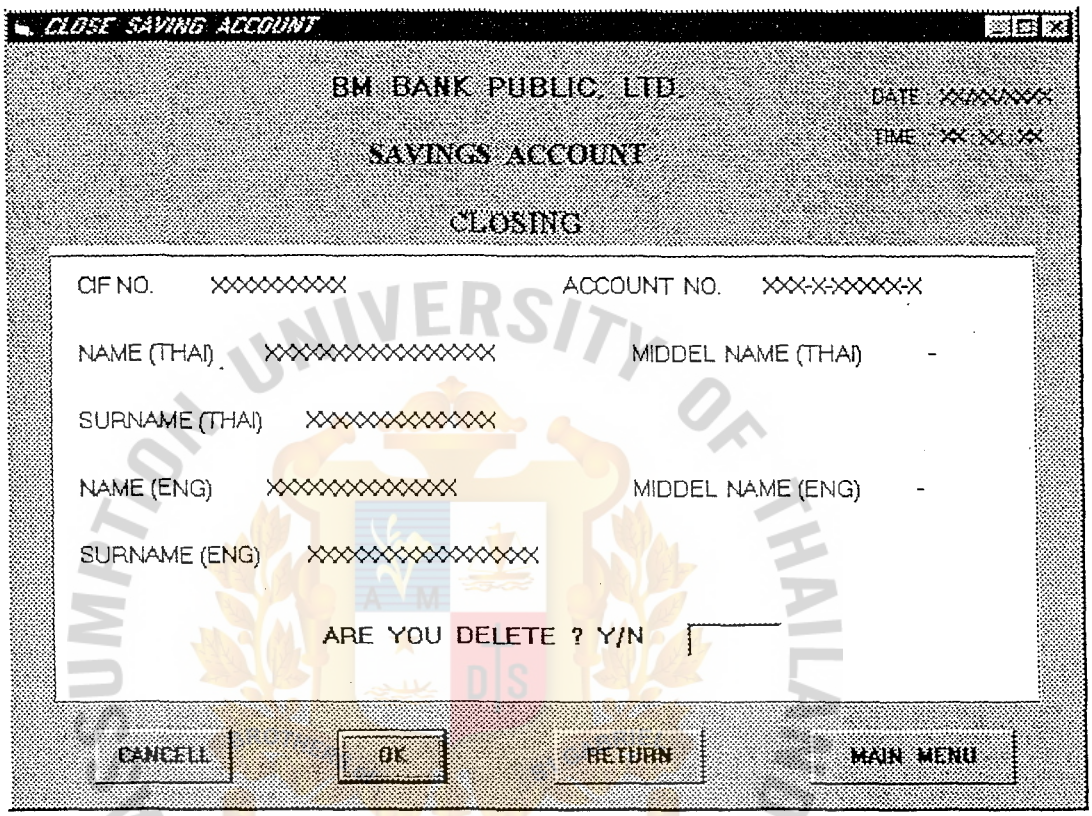

Figure B.31. Closing Savings Account

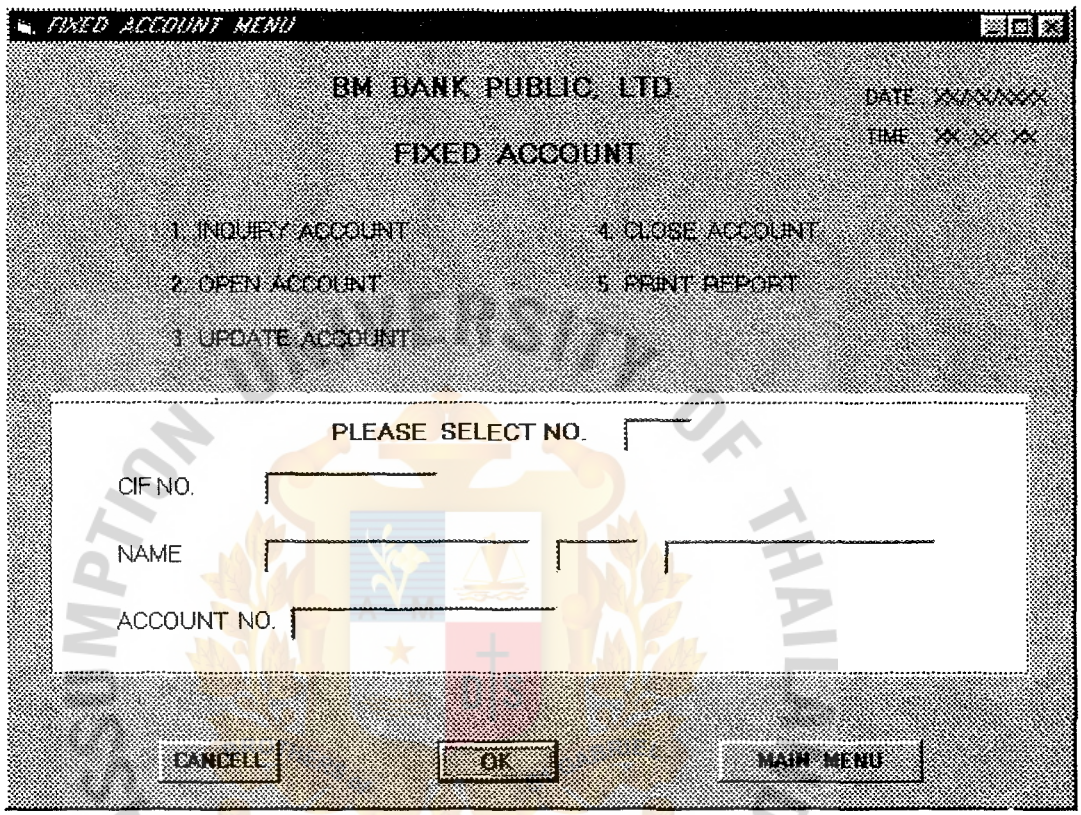

Figure B.32. Fixed Account Menu

LABOR VINCIT OMNIA
มหาวิทยาลัยอัสสัมชัญ

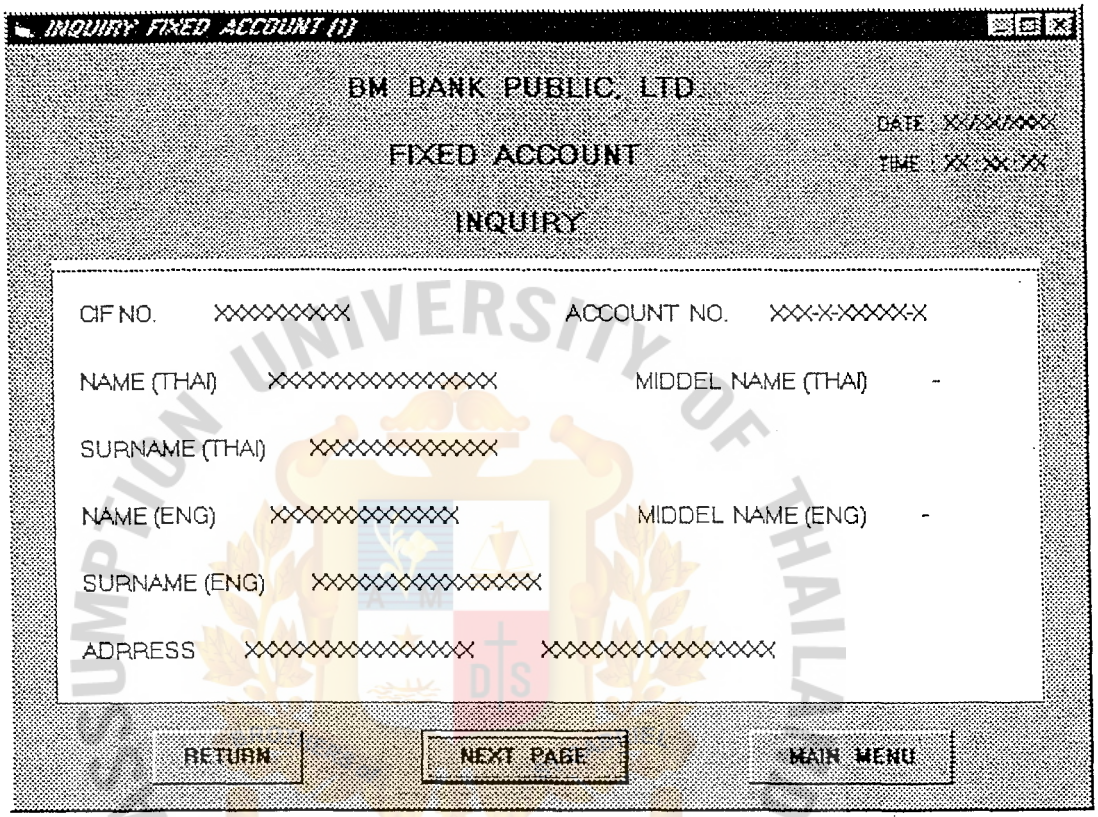

Figure B.33. Inquiry of Fixed Account (1)

LABOR VINCIT OMNIA SINCE1969

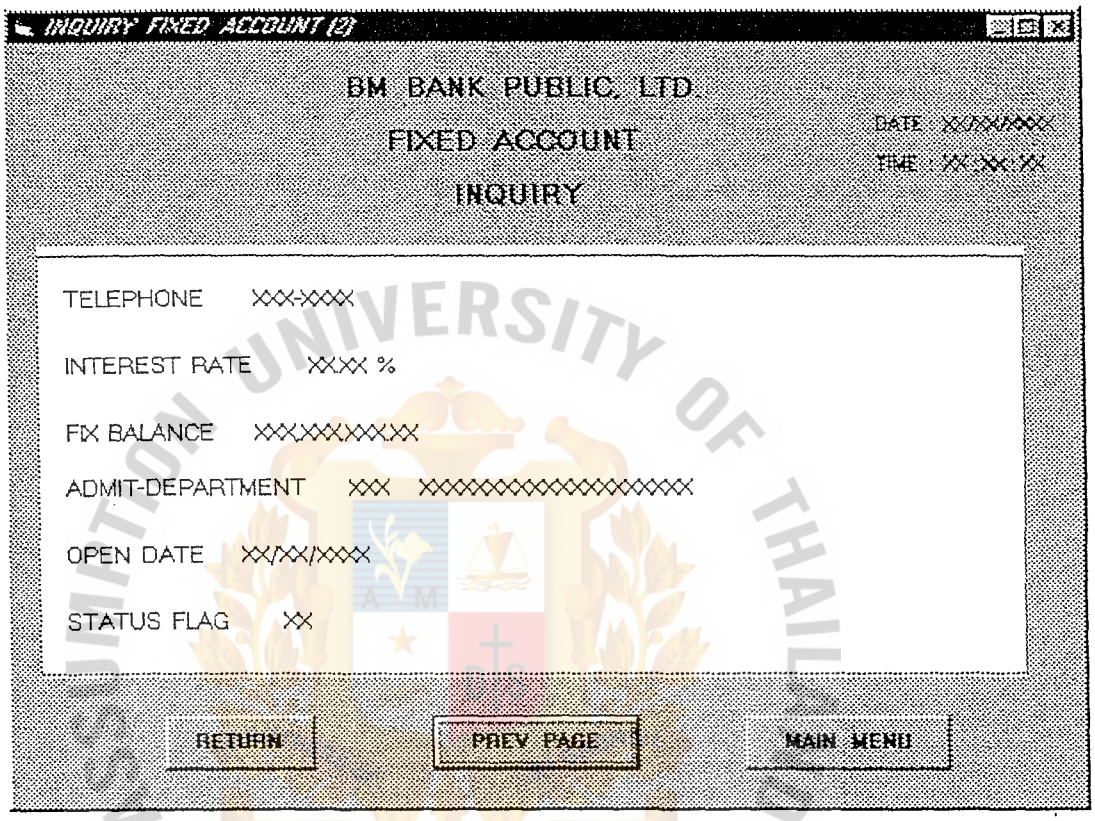

Figure B.34. Inquiry of Fixed Account (2)

UNIVERSITY OF THAI CHAMBER OF COMMERCE
LABOR VINCIT
OMNIA
SINCE 1969
มหาวิทยาลัยอัสสัมชัญ

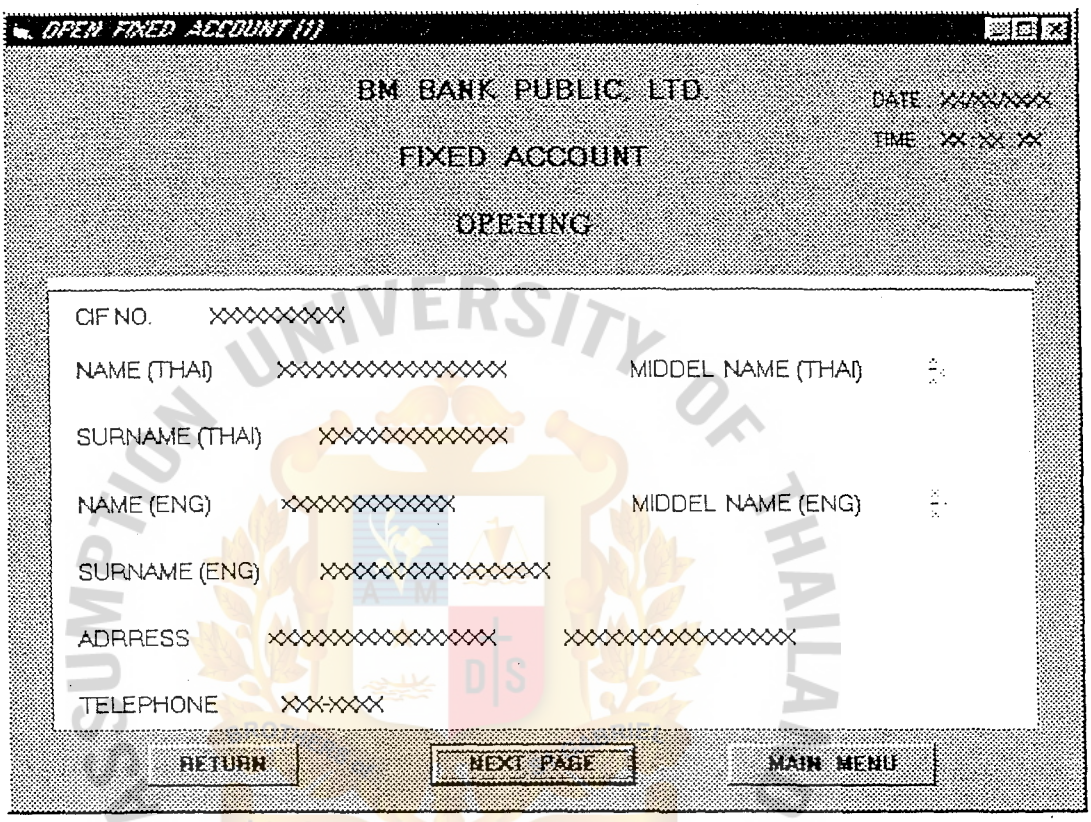

Figure B.35. Opening Fixed Account (1)

UNIVERSITY OF THAI CHAMBER OF COMMERCE
LABOR VINCIT OMNIA
SINCE1969
มหาวิทยาลัยหอการค้าไทย

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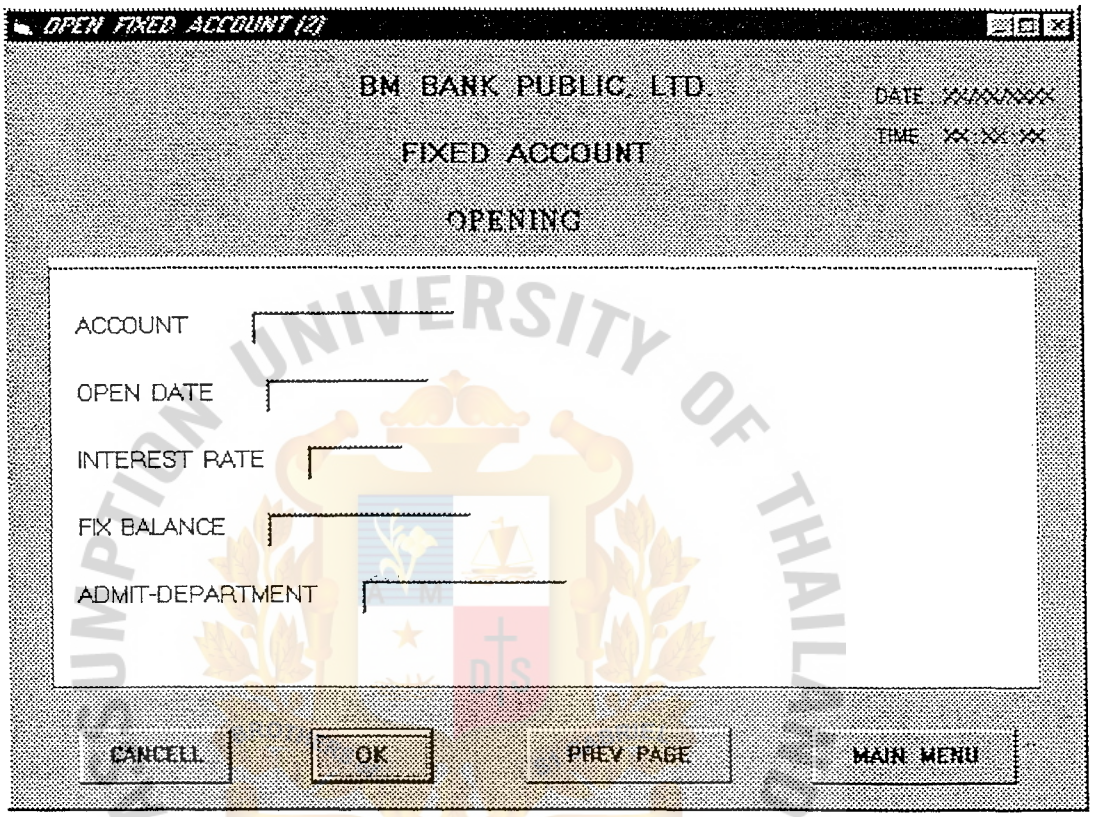

Figure B.36. Opening Fixed Account (2)

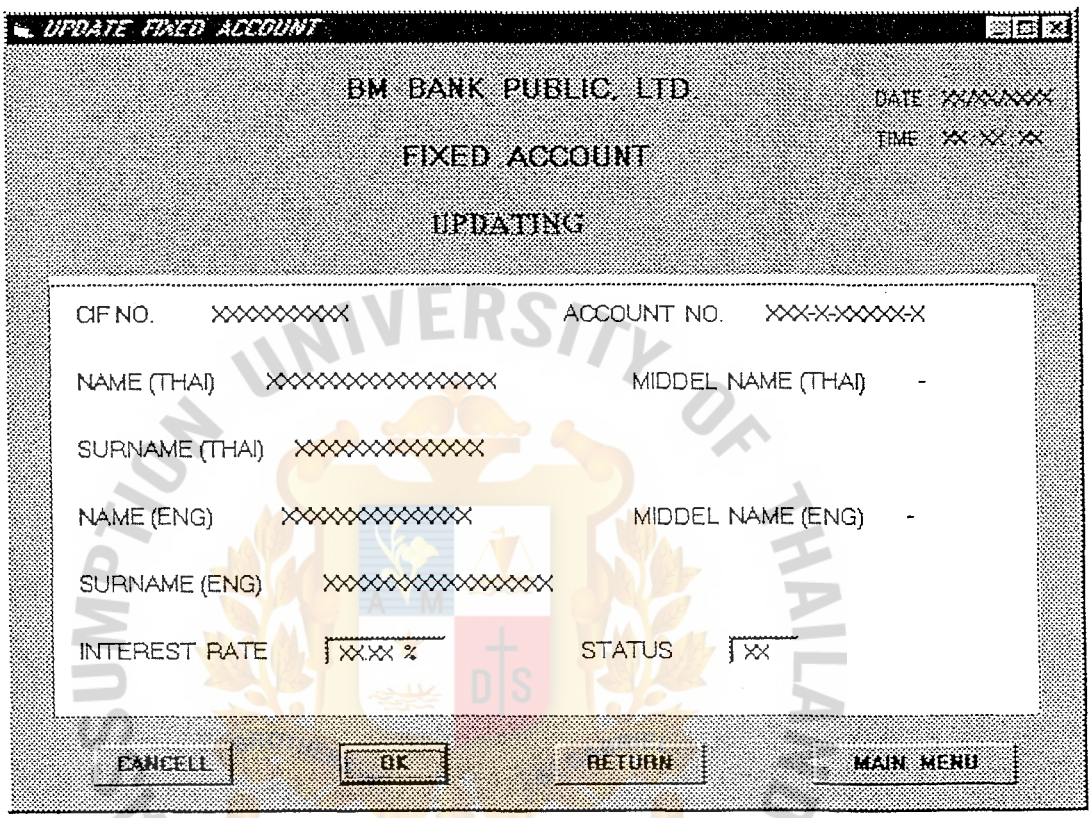

Figure B.37. Updating Fixed Account

UNIVERSITY OF THAI CHAMBER OF COMMERCE
LABOR VINCIT OMNIA
SINCE 1960
มหาวิทยาลัยหอการค้าไทย

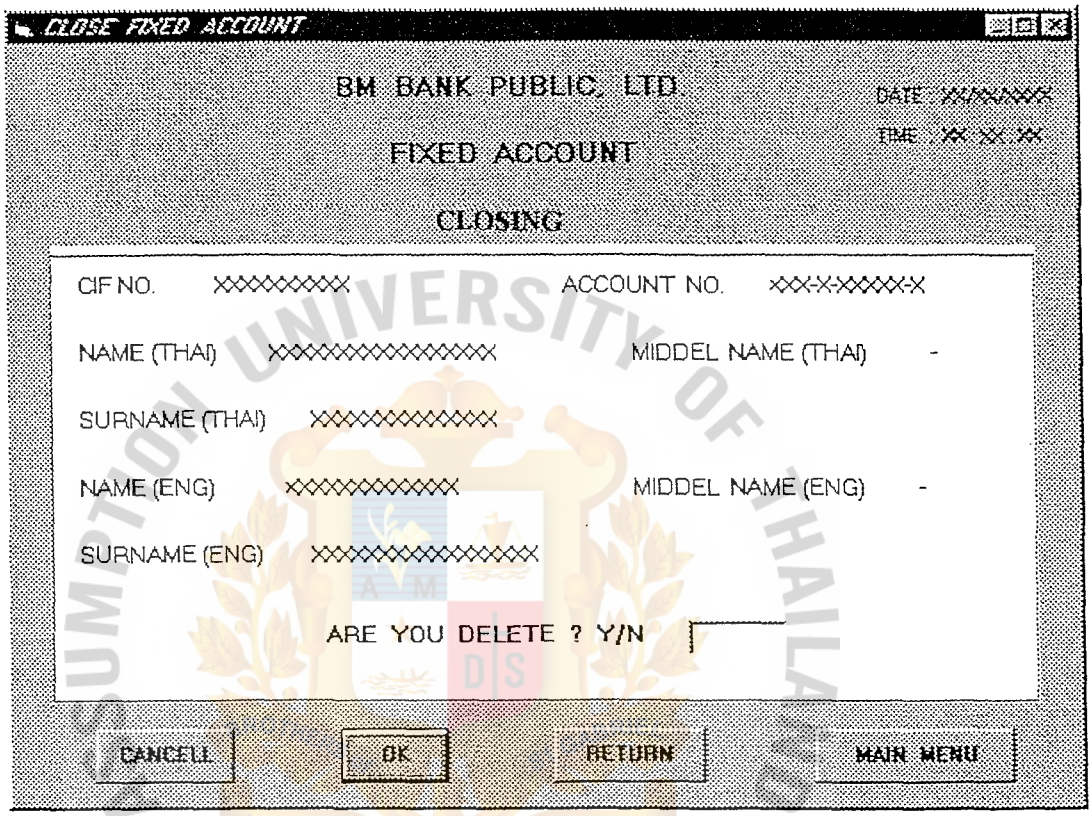

Figure B.38. Closing Fixed Account

UNIVERSITY OF THAILAND
LABOR VINCIT
OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

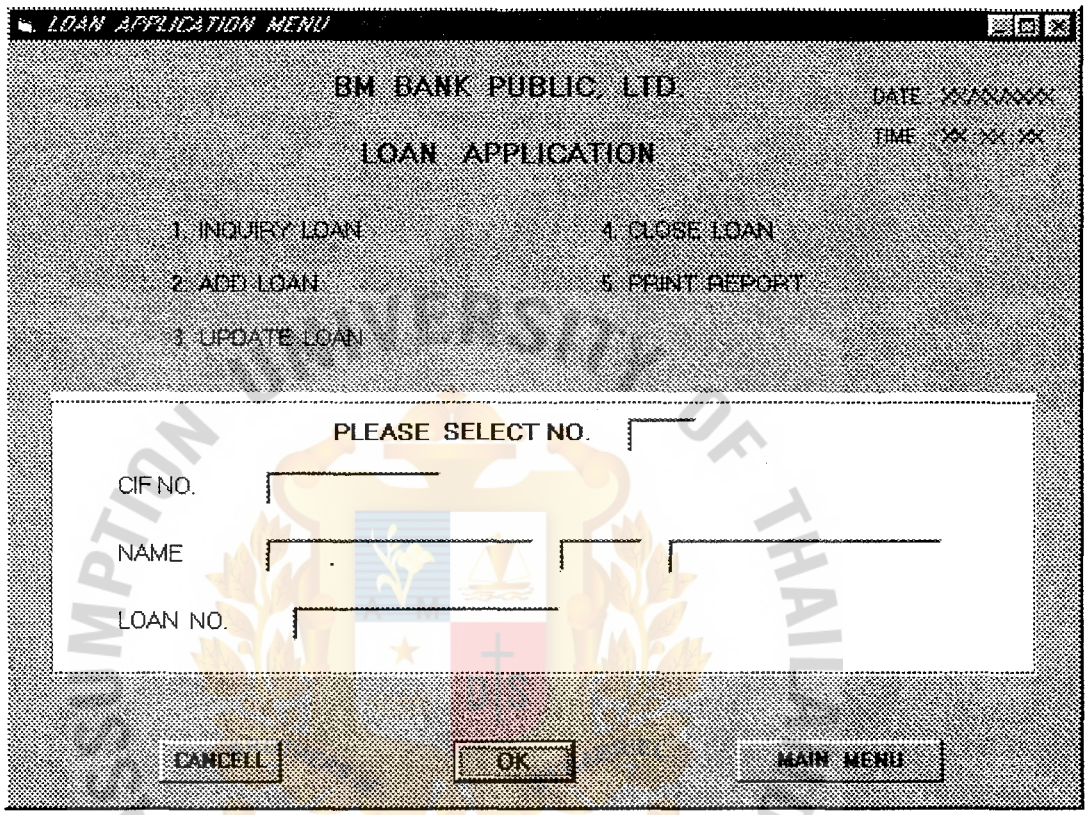

Figure B.39. Loan Application Menu

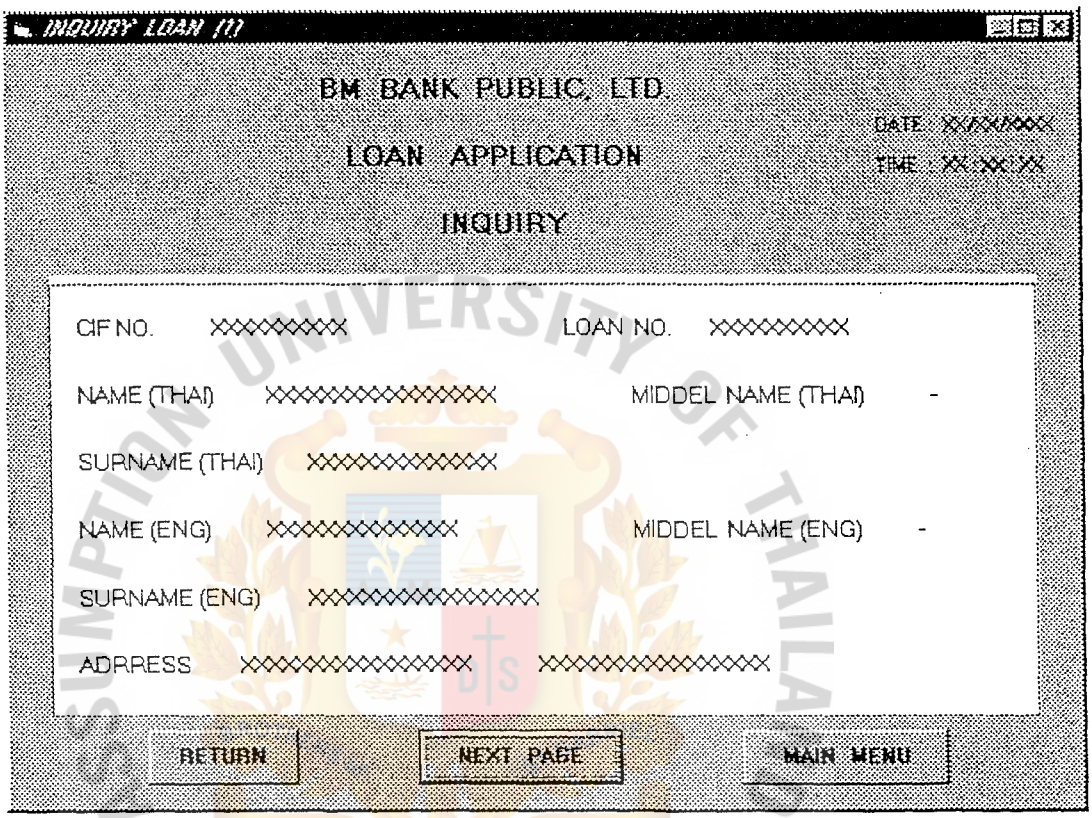

Figure B.40. Loan Inquiry (1)

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA SINCE1969
มหาวิทยาลัยอัสสัมชัญ

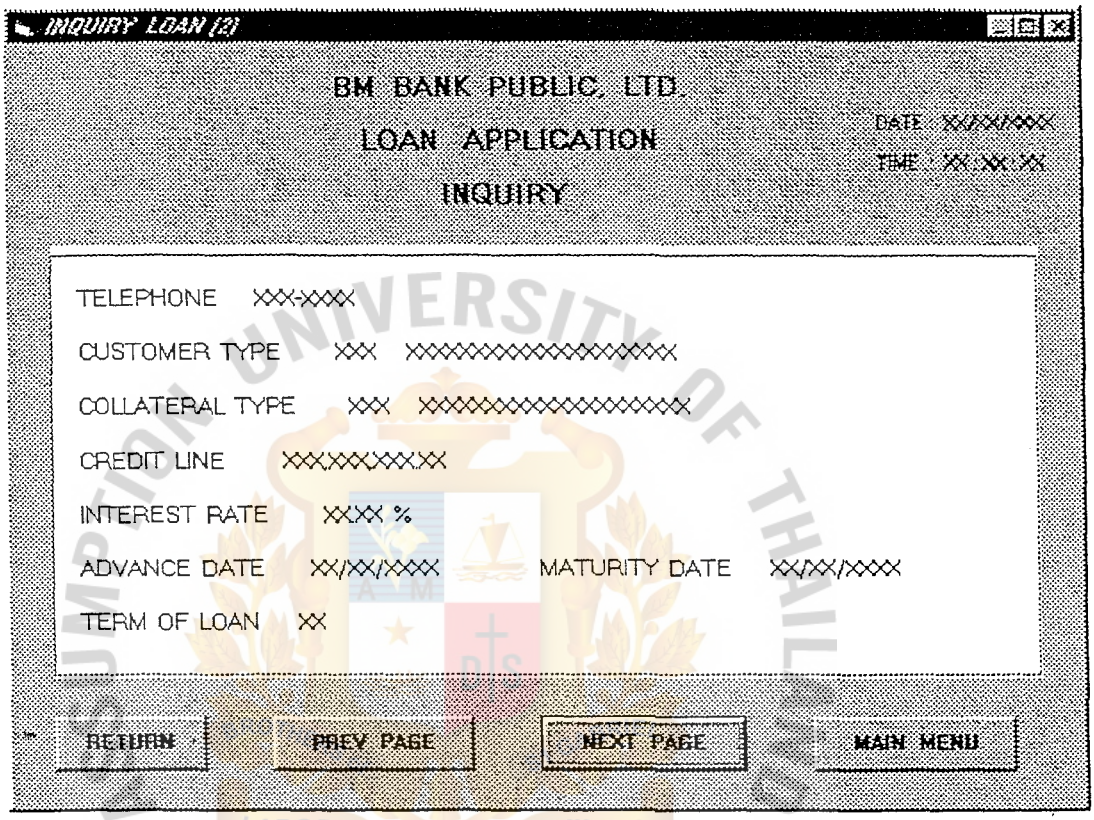

Figure B.41. Loan Inquiry (2)

UNIVERSITY OF THAIL
LABOR VINCIT
OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

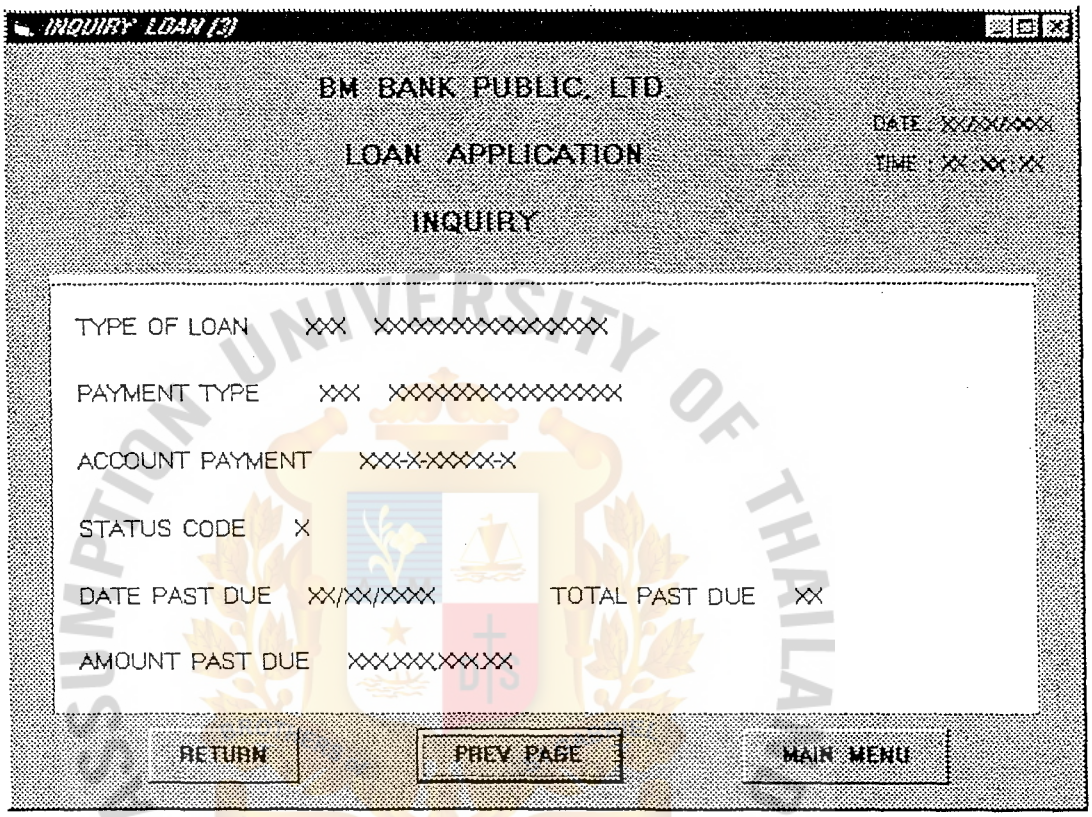

Figure B.42. Loan Inquiry (3)

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

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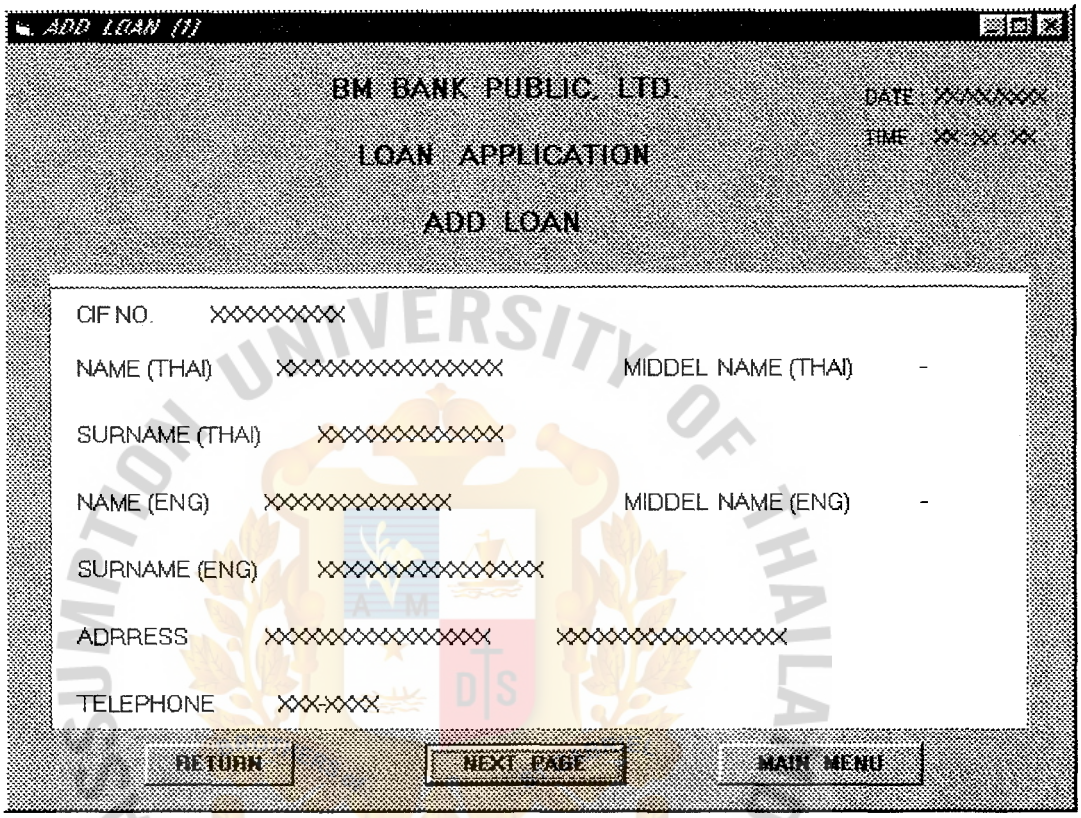

Figure B.43. Add Loan (1)

Figure B.44. Add Loan (2)

ARTS UNIVERSITY OF THAILAND
LABOR VINCIT
OMNIA
SINCE 1969
มหาวิทยาลัยอัสสัมชัญ

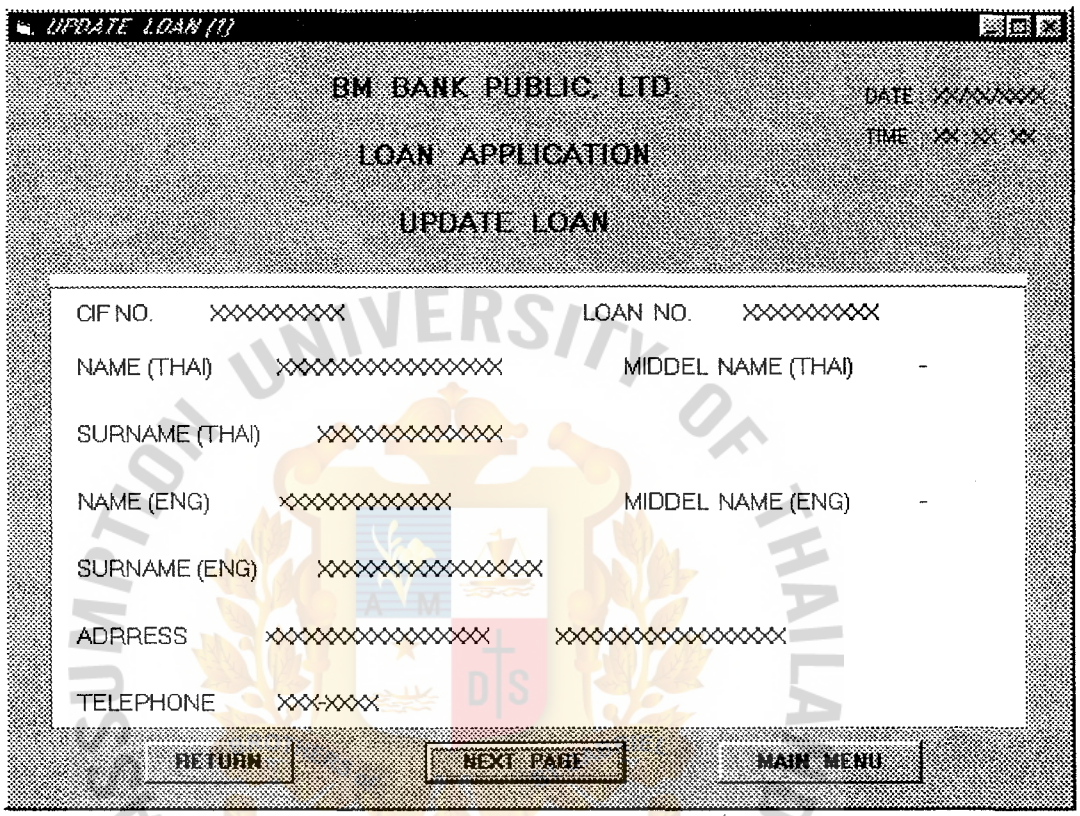

Figure B.45. Update Loan (1)

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LABOR VINCIT
OMNIA
SINCE 1969
มหาวิทยาลัยอัสสัมชัญ

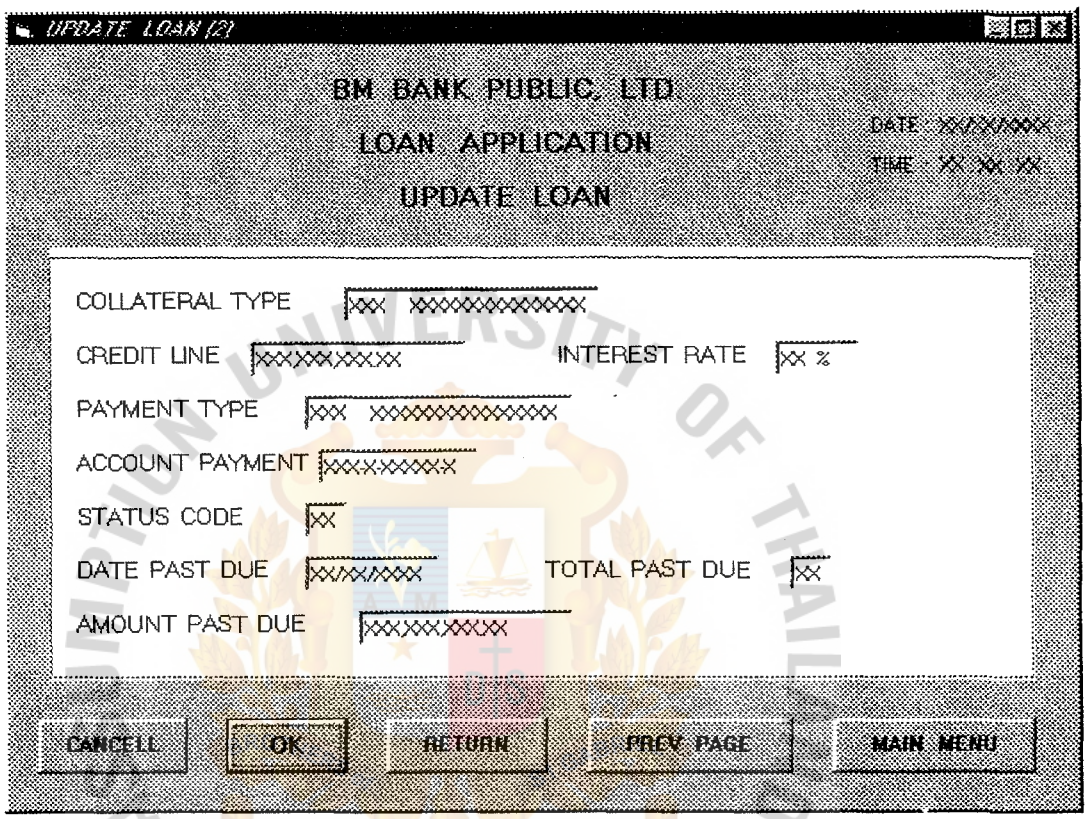

Figure B.46. Update Loan (2)

LABOR VINCIT
OMNIA
SINCE 1969
มหาวิทยาลัยอัสสัมชัญ

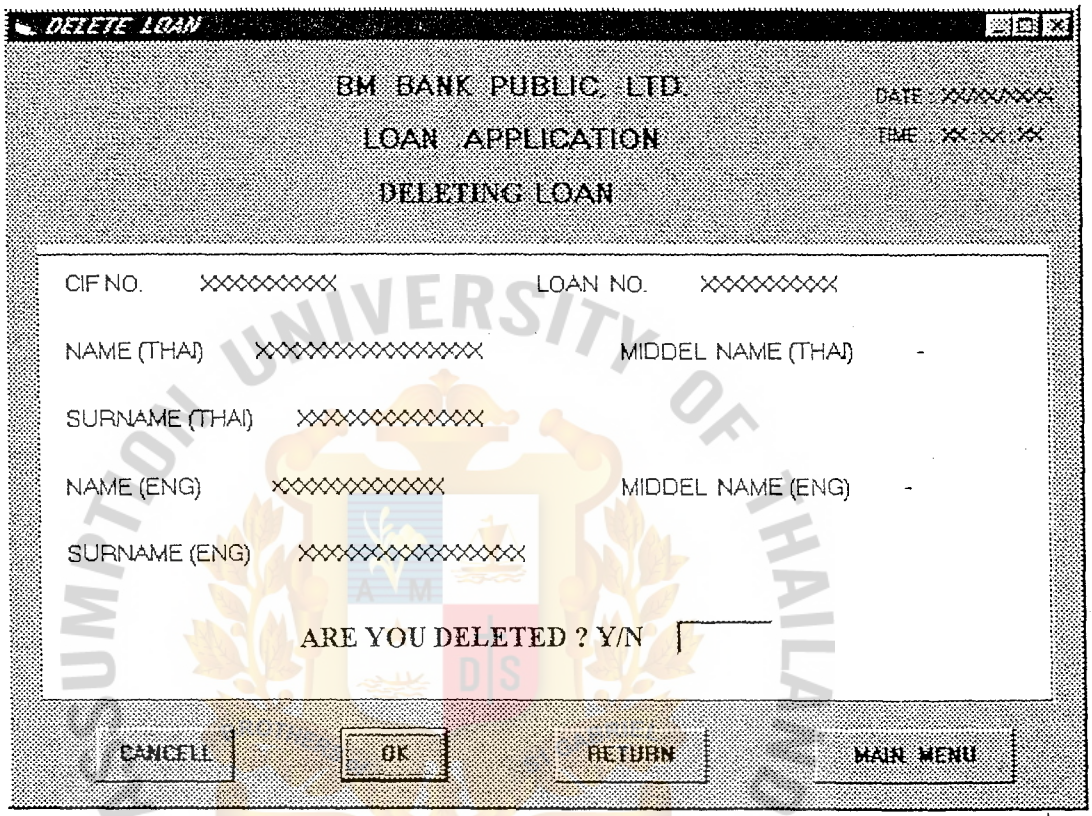

Figure B.47. Deleting Loan

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA SINCE1969
มหาวิทยาลัยอัสสัมชัญ

ABAC
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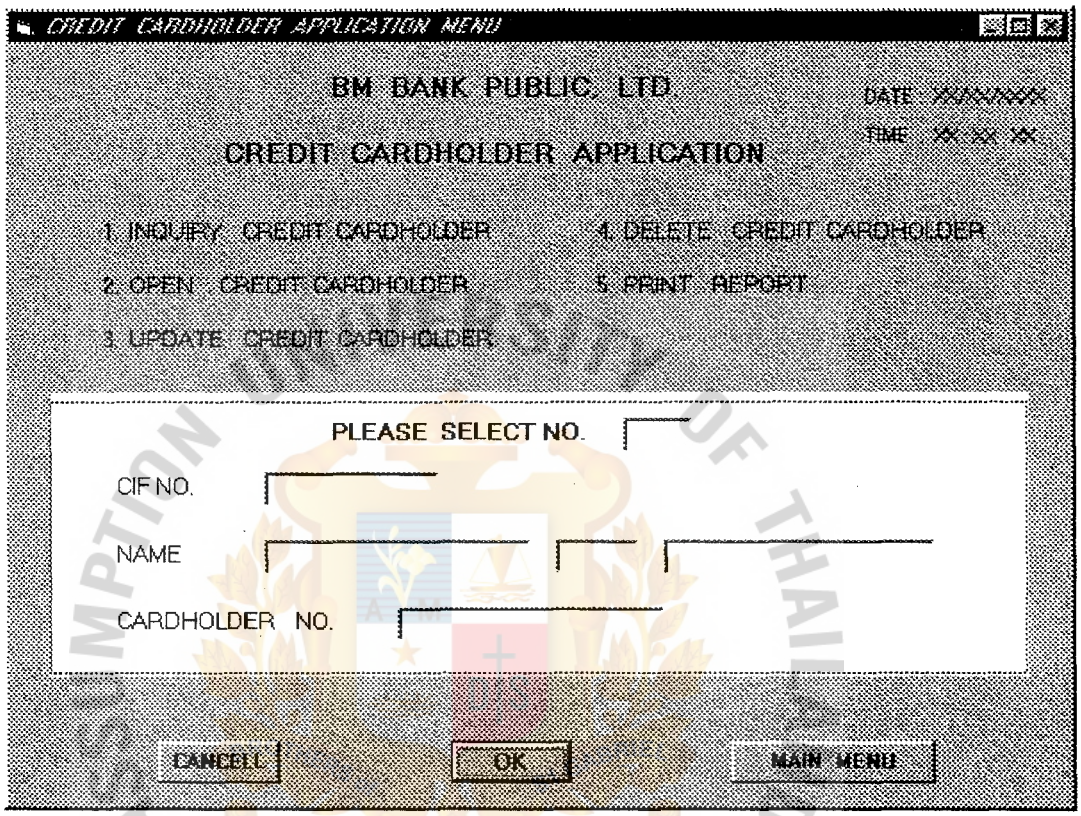

Figure B.48. Credit Cardholder Application Menu

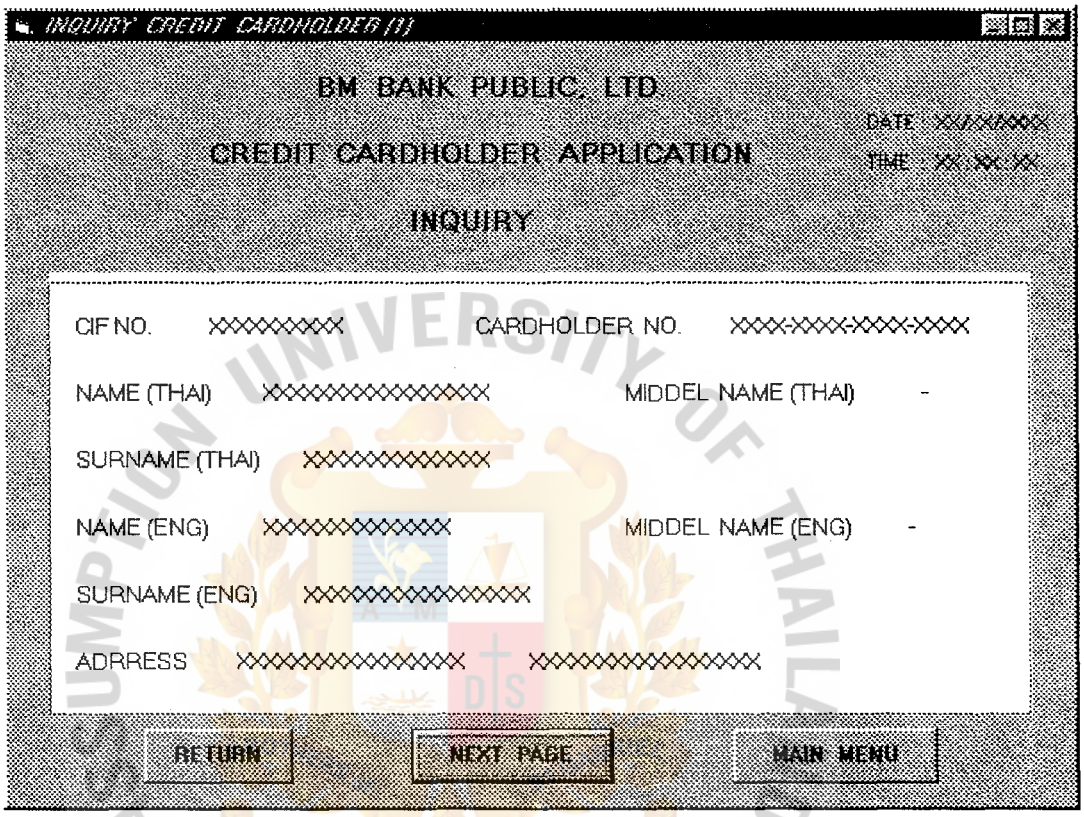

Figure B.49. Inquiry Credit Cardholder (1)

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
มหาวิทยาลัยอัสสัมชัญ

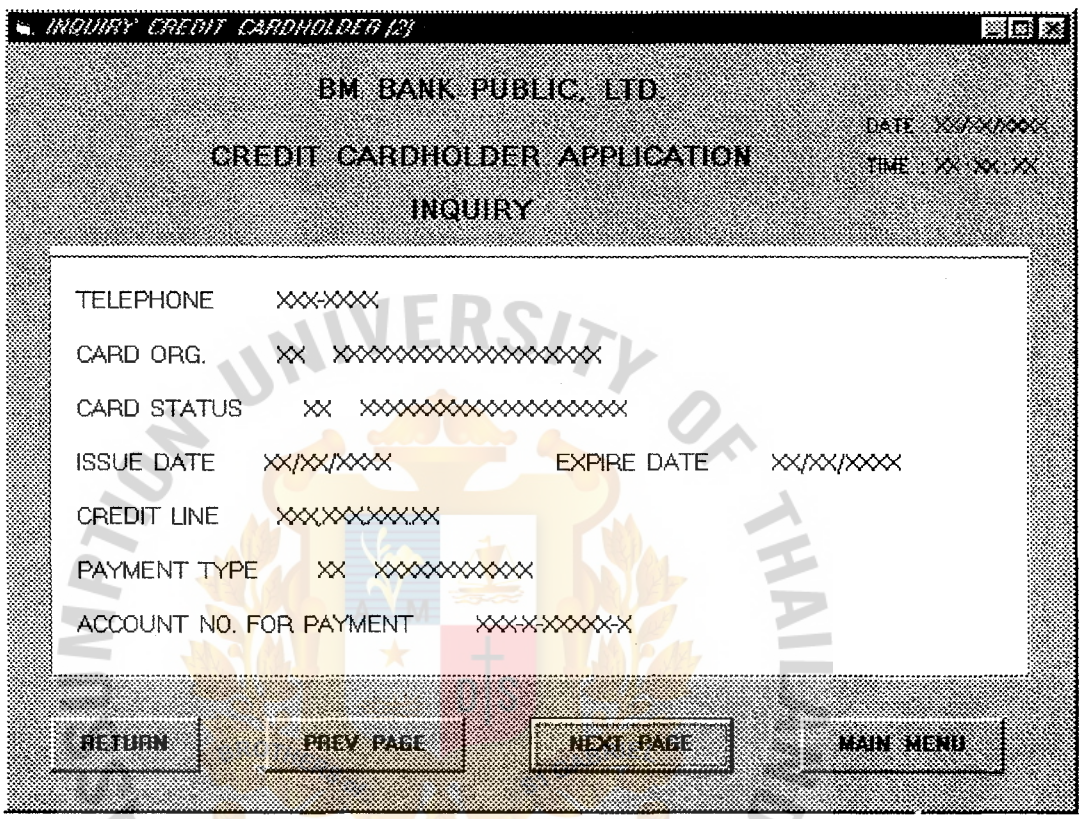

Figure B.50. Inquiry Credit Cardholder (2)

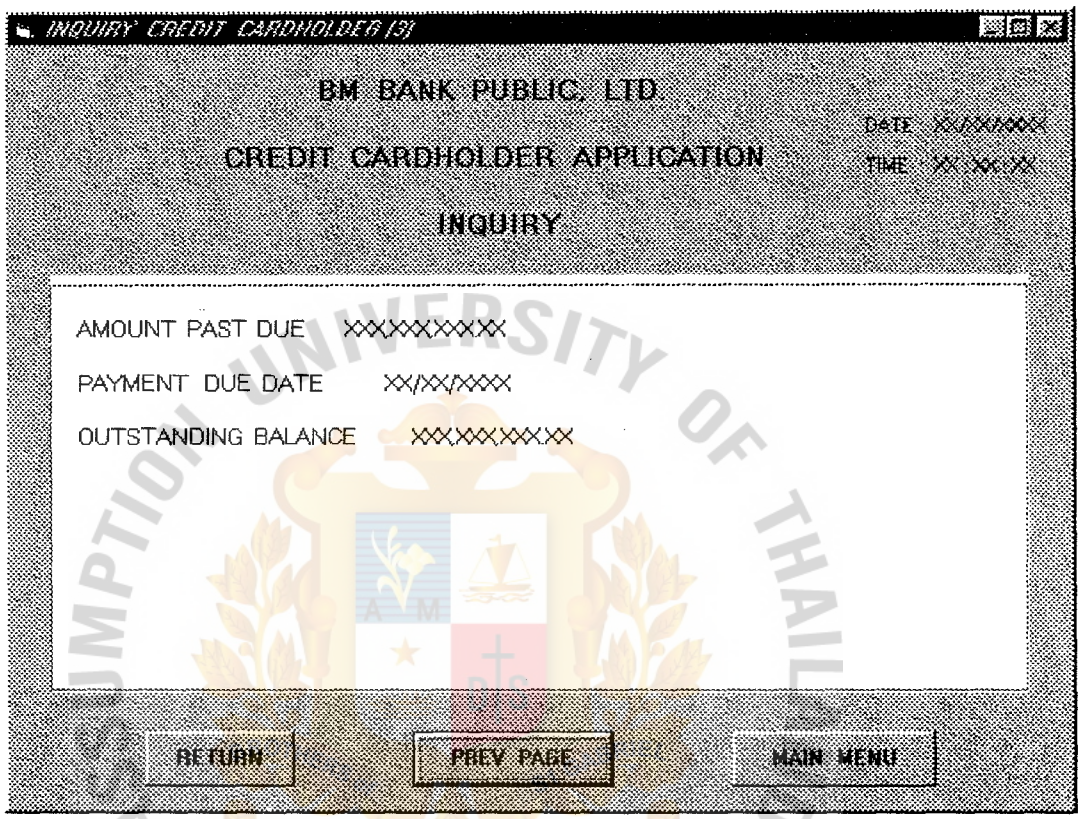

Figure B.51. Inquiry Credit Cardholder (3)

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
มหาวิทยาลัยอัสสัมชัญ

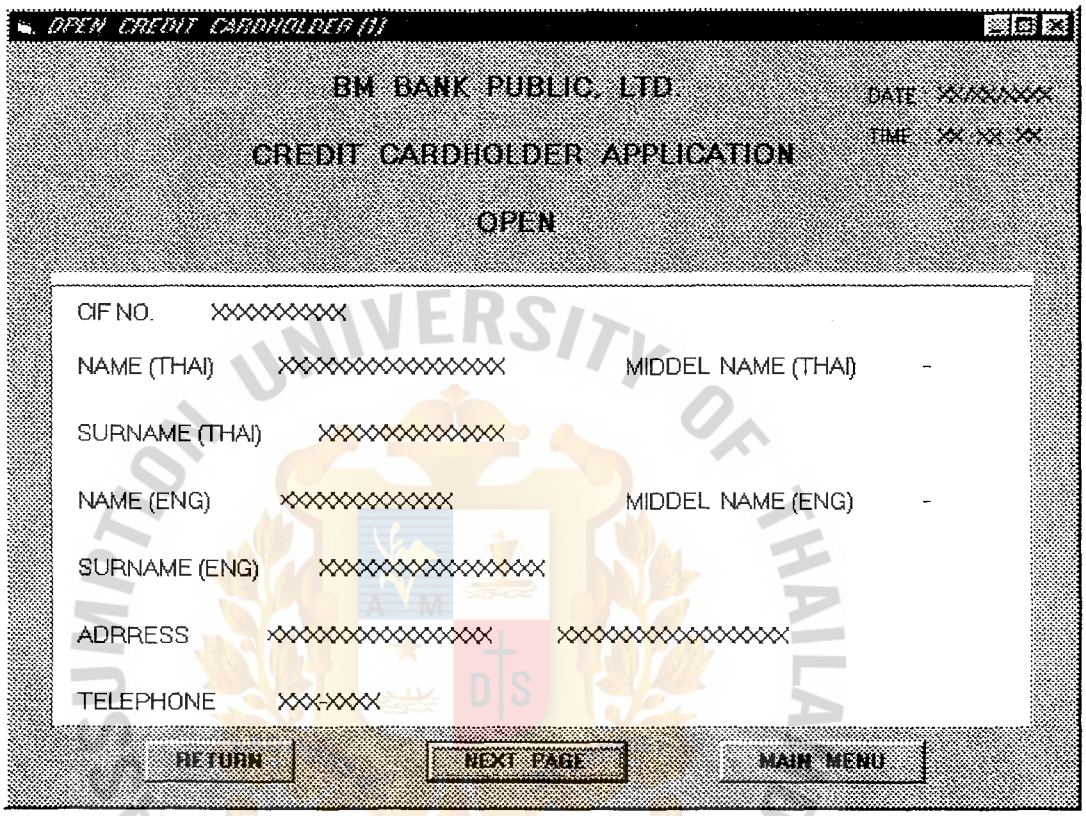

Figure B.52. Open Credit Cardholder (1)

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT
OMNIA
มหาวิทยาลัยอัสสัมชัญ

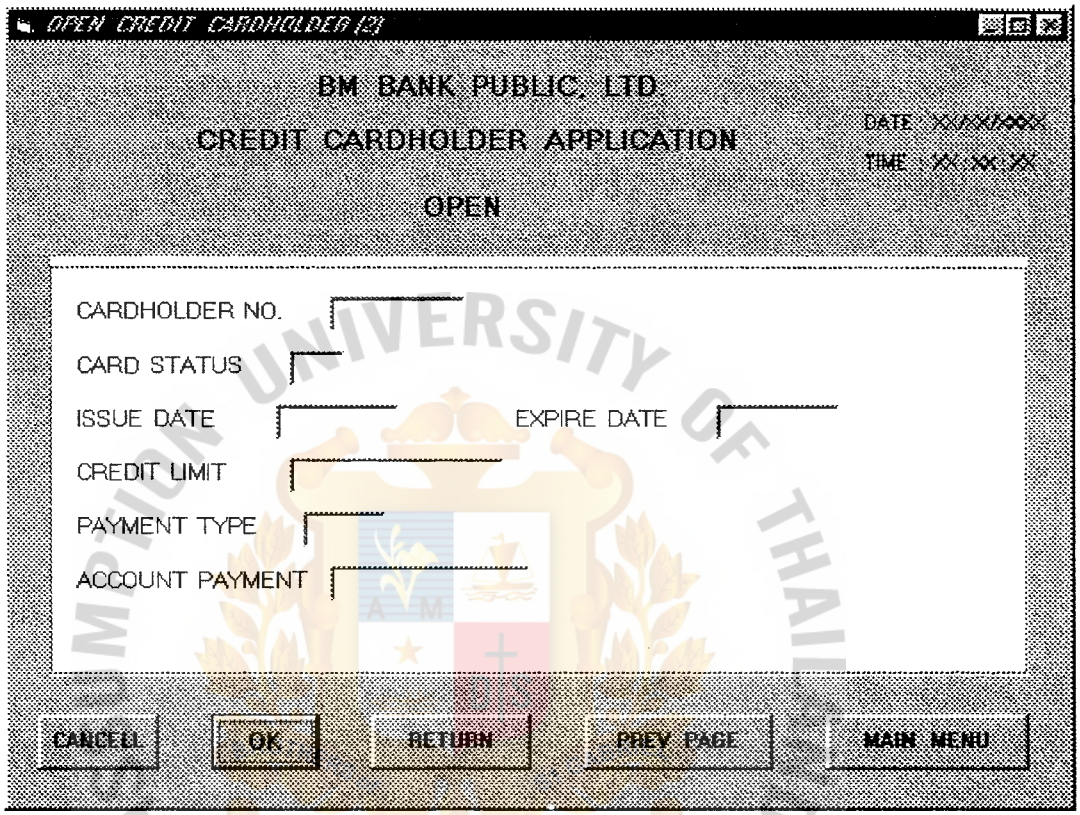

Figure B.53. Open Credit Cardholder (2)

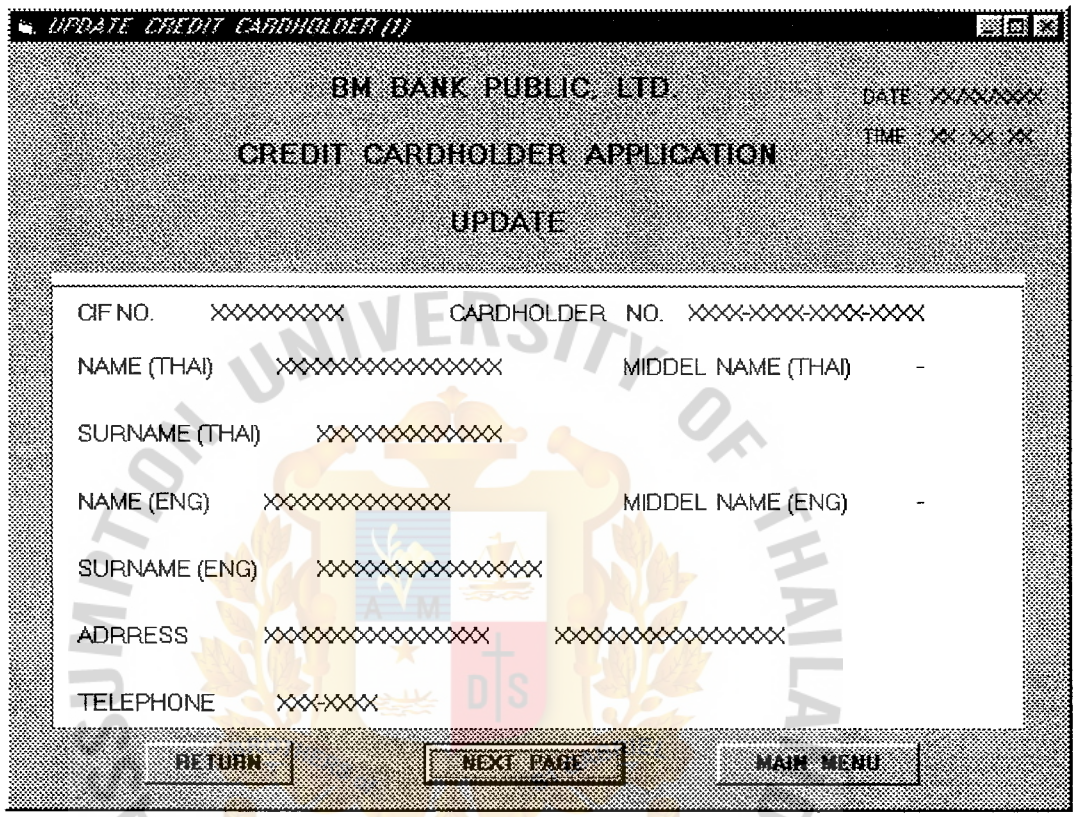

Figure B.54. Update Credit Cardholder (1)

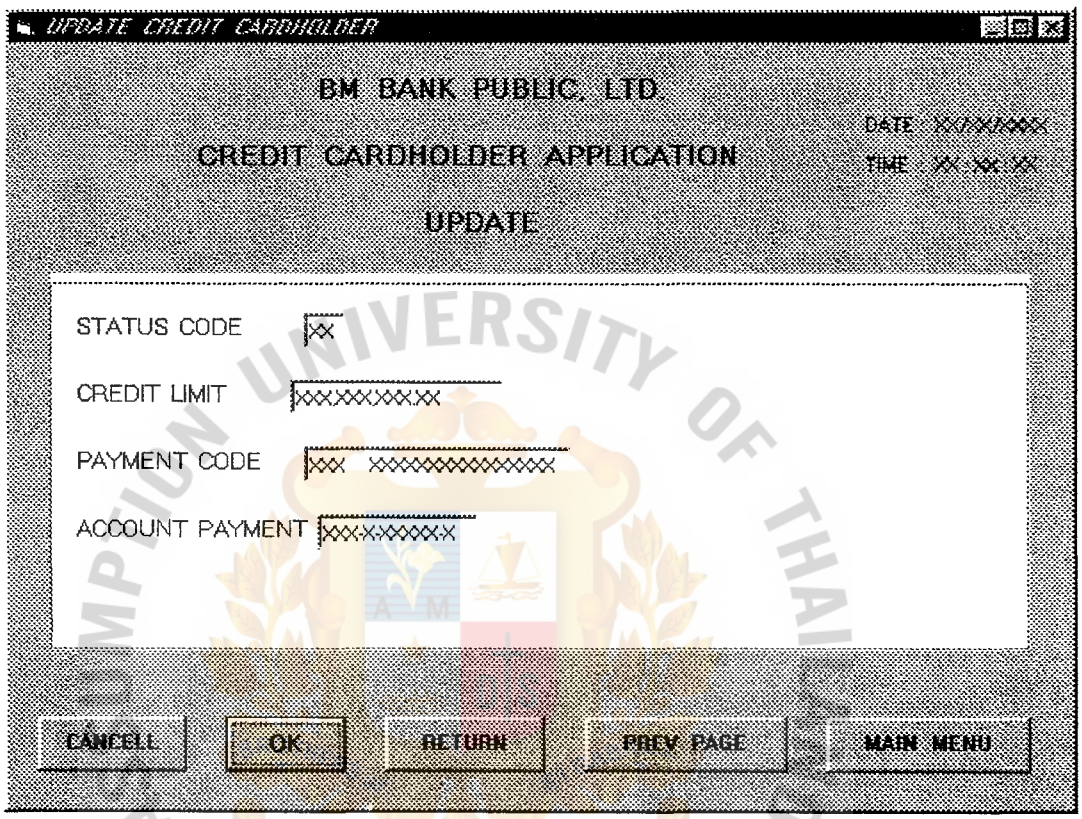

Figure B.55. Update Credit Cardholder (2)

LABOR VINCIT OMNIA SINCE 1969

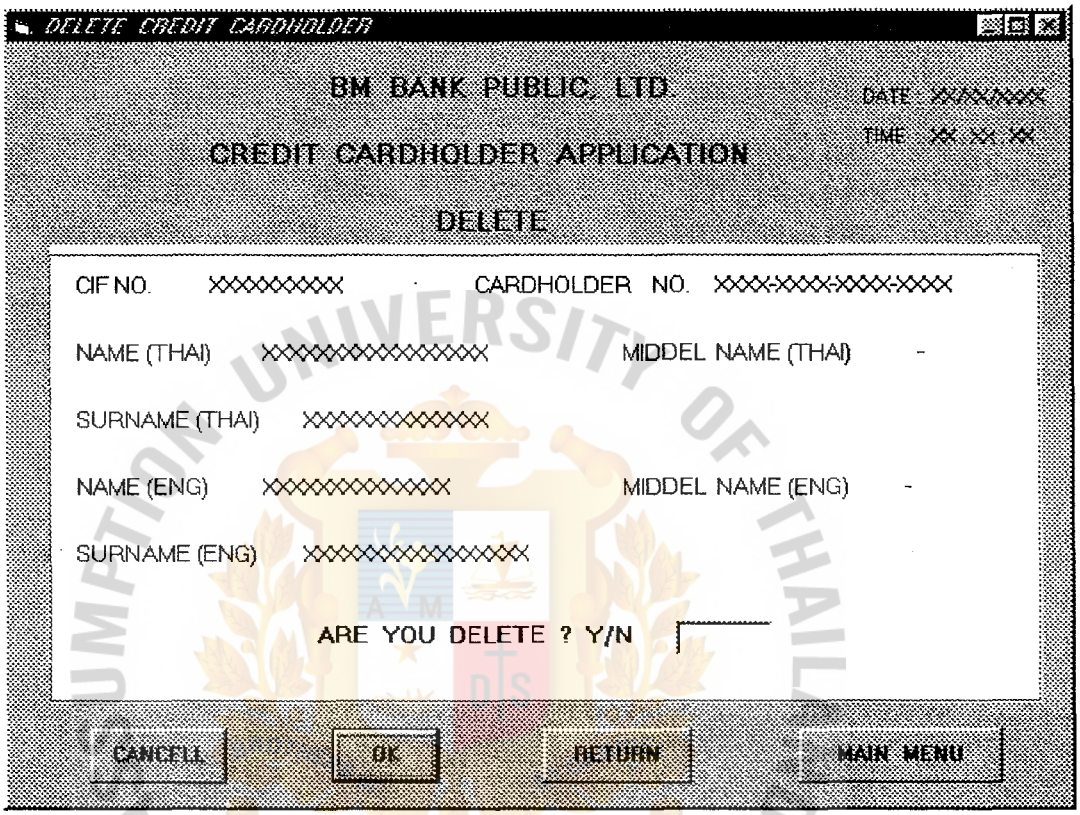

Figure B.56. Delete Credit Cardholder

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT
OMNIA
มหาวิทยาลัยอัสสัมชัญ

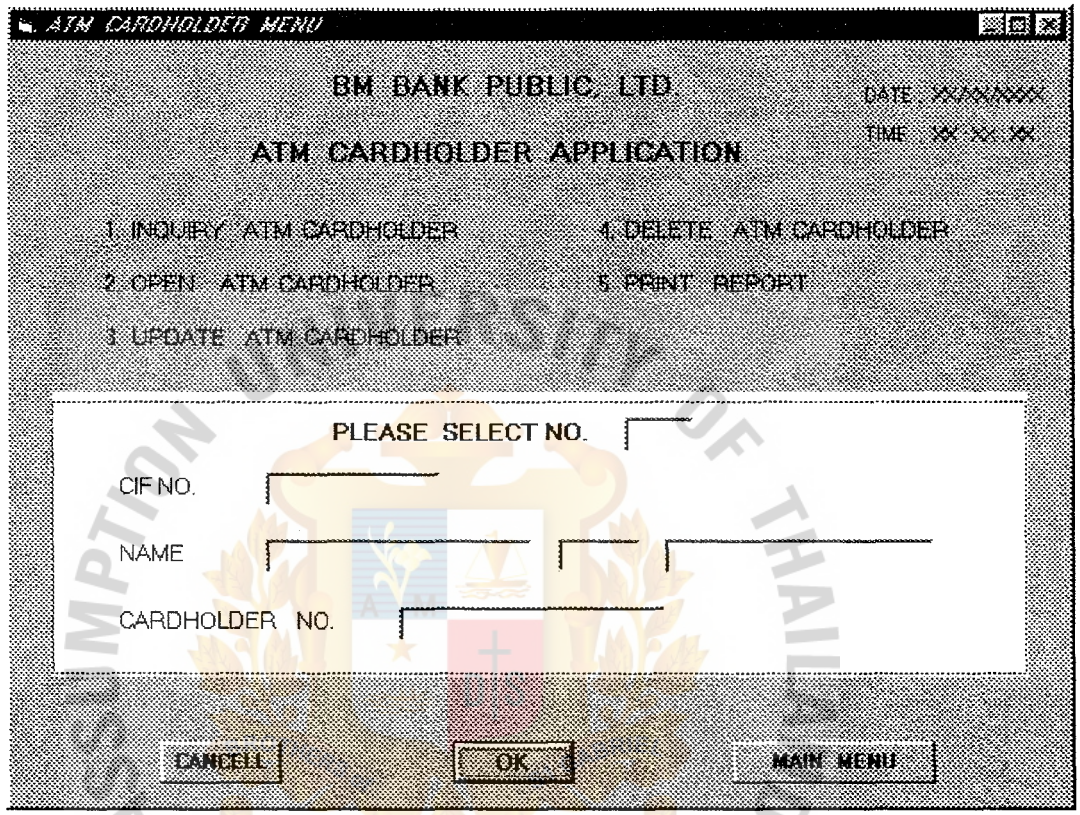

Figure B.57. ATM Cardholder Menu

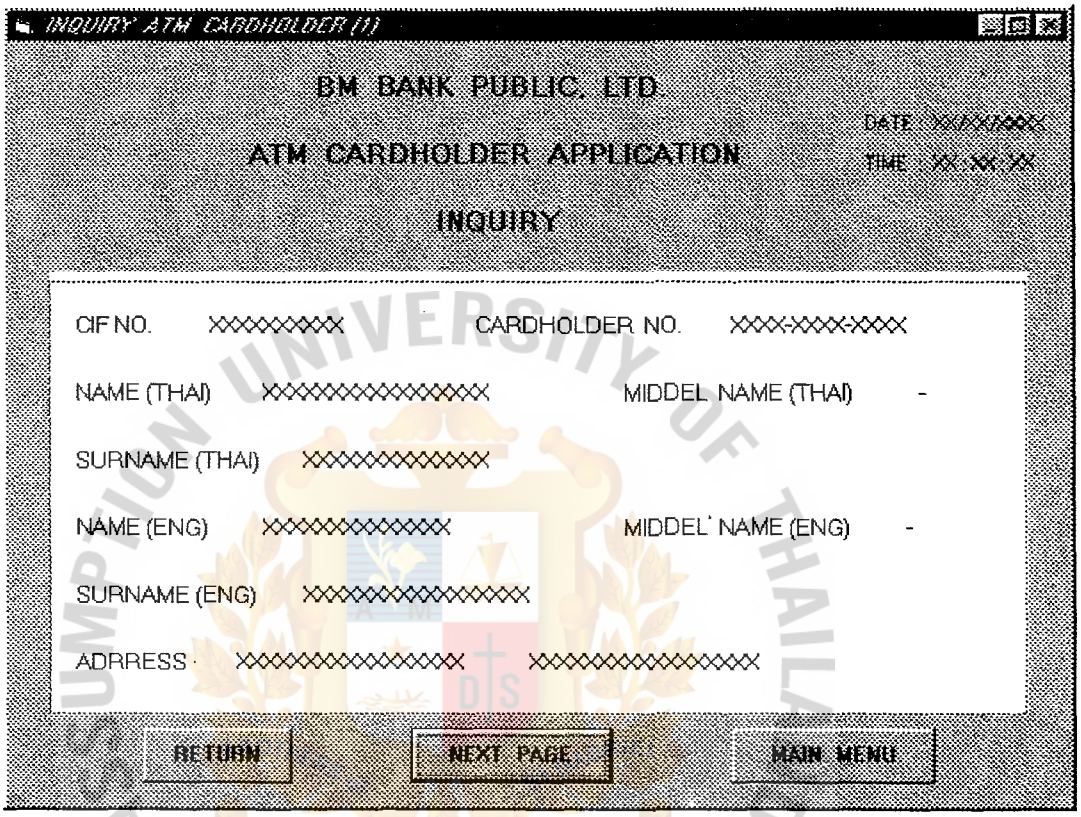

Figure B.58. Inquiry ATM Cardholder (1)

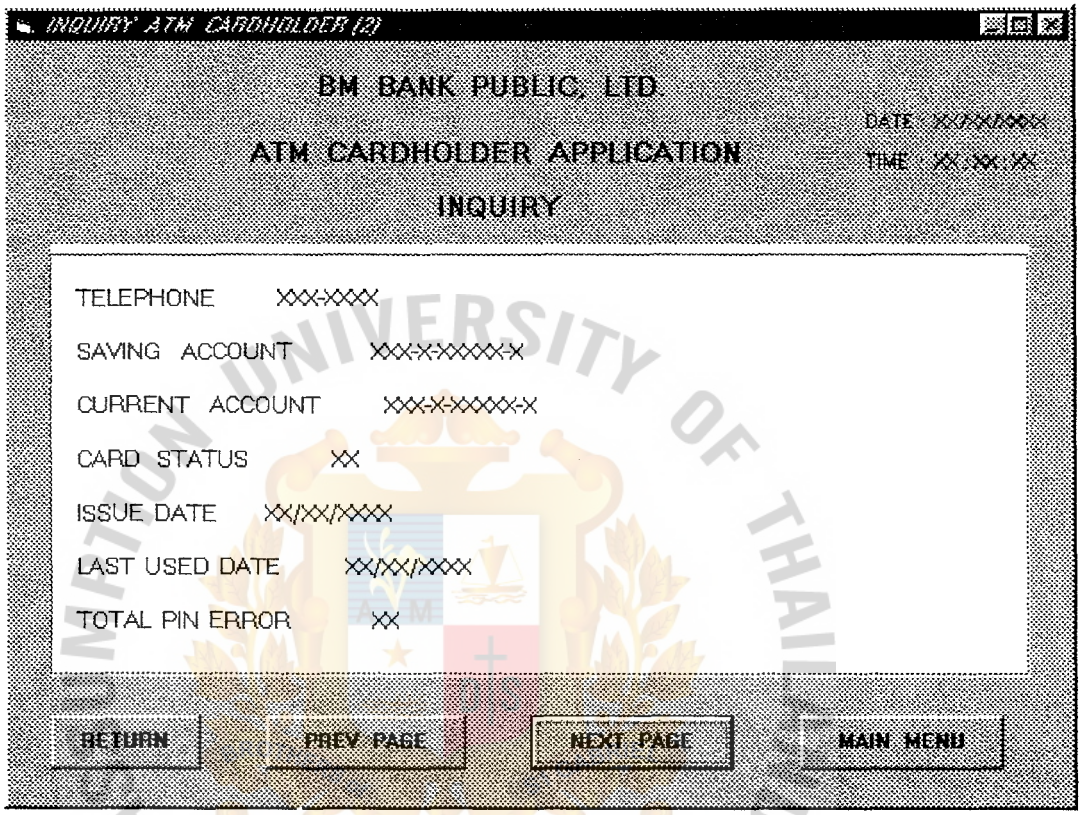

Figure B.59. Inquiry ATM Cardholder (2)

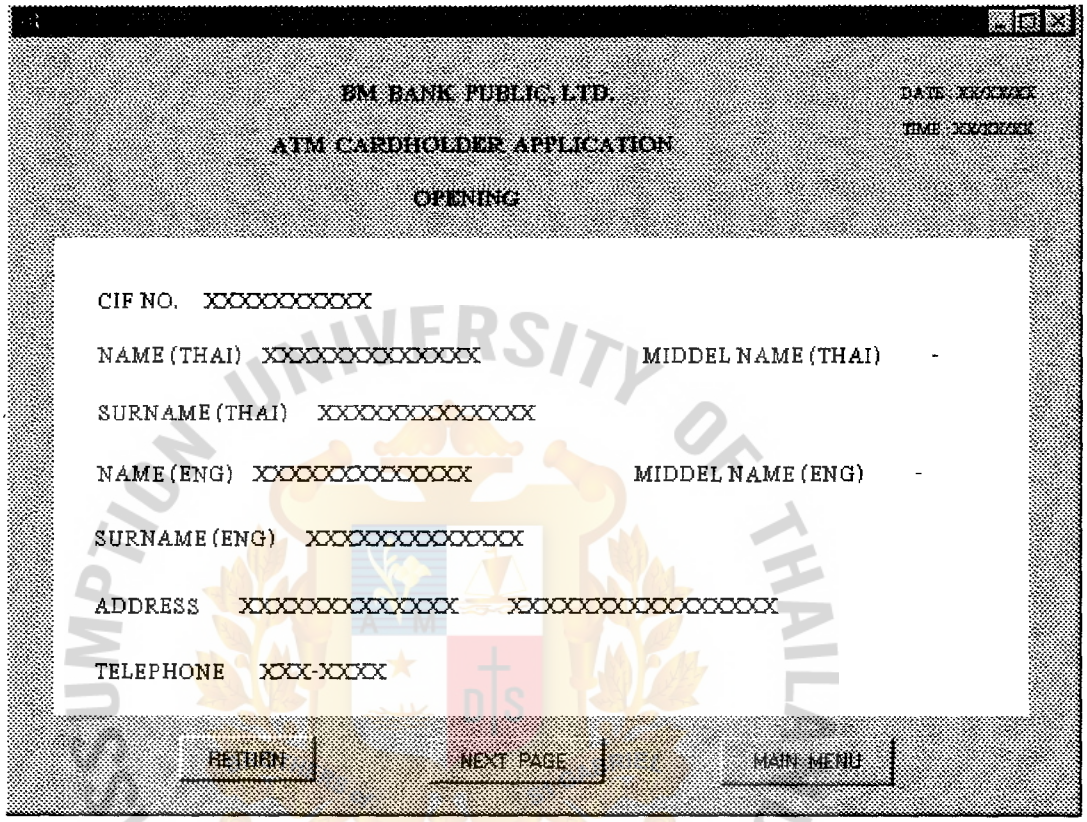

Figure B.60. Opening ATM Cardholder (1)

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
SINCE 1969
มหาวิทยาลัยอัสสัมชัญ

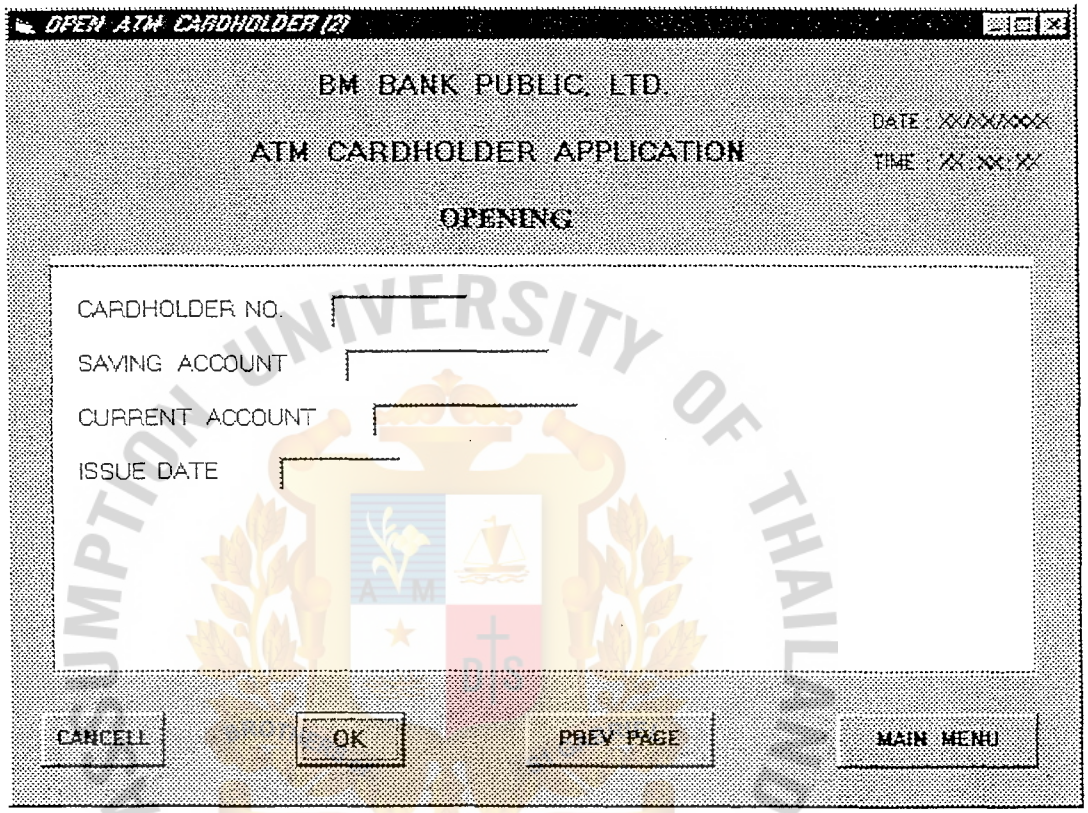

Figure B.61. Opening ATM Cardholder (2)

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

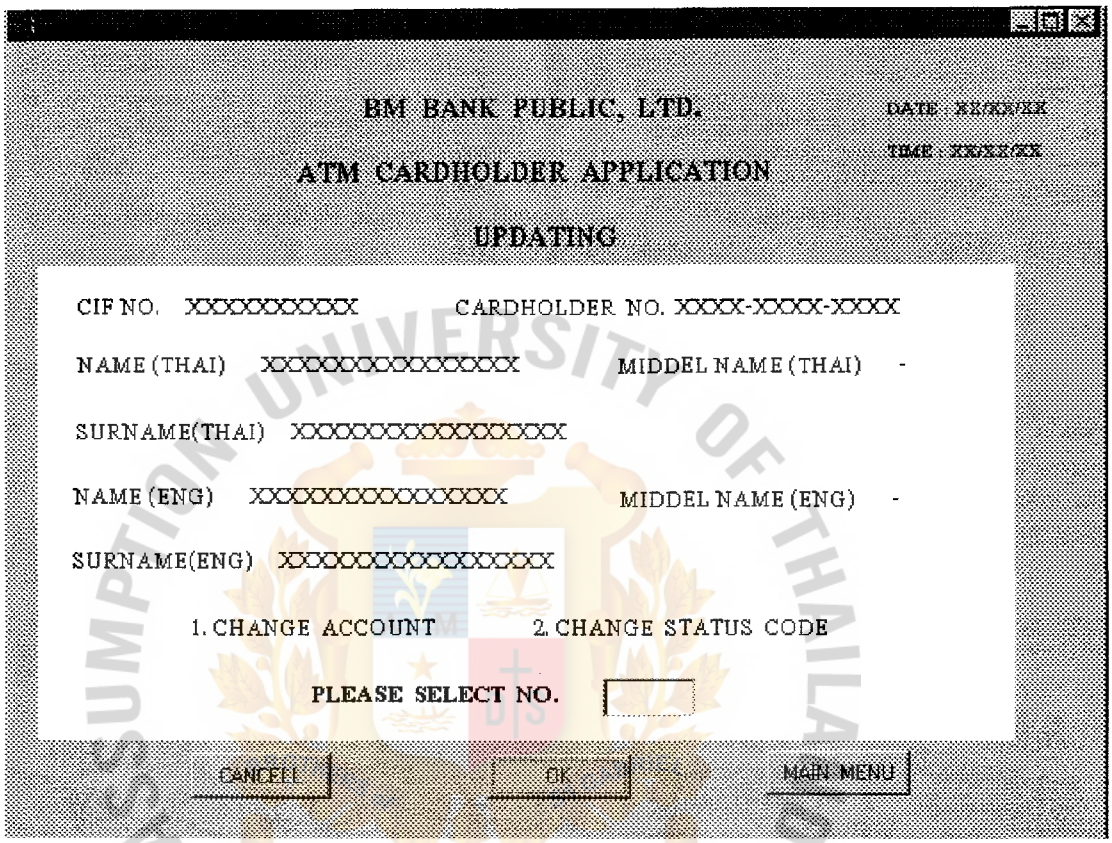

Figure B.62. Updating ATM Cardholder (1)

LABOR OMNIA VINCIT
SINCE 1969
มหาวิทยาลัยอัสสัมชัญ

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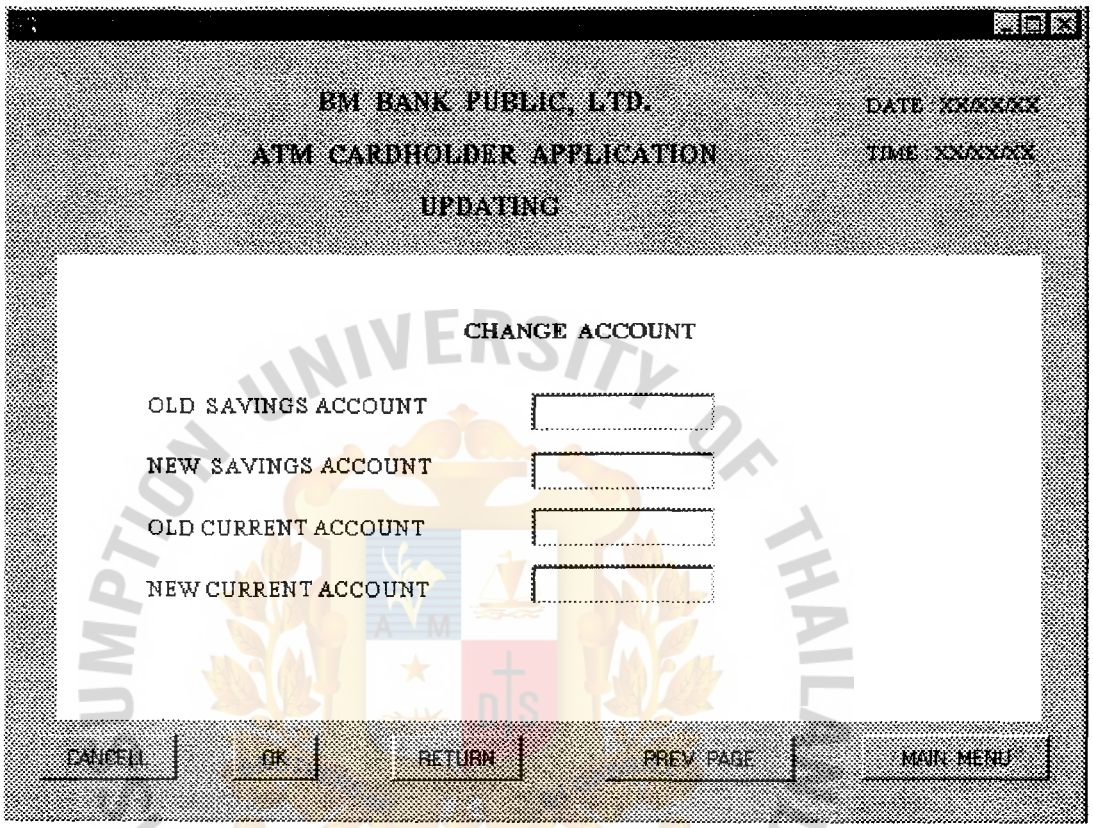

Figure B.63. Updating ATM Cardholder (2)

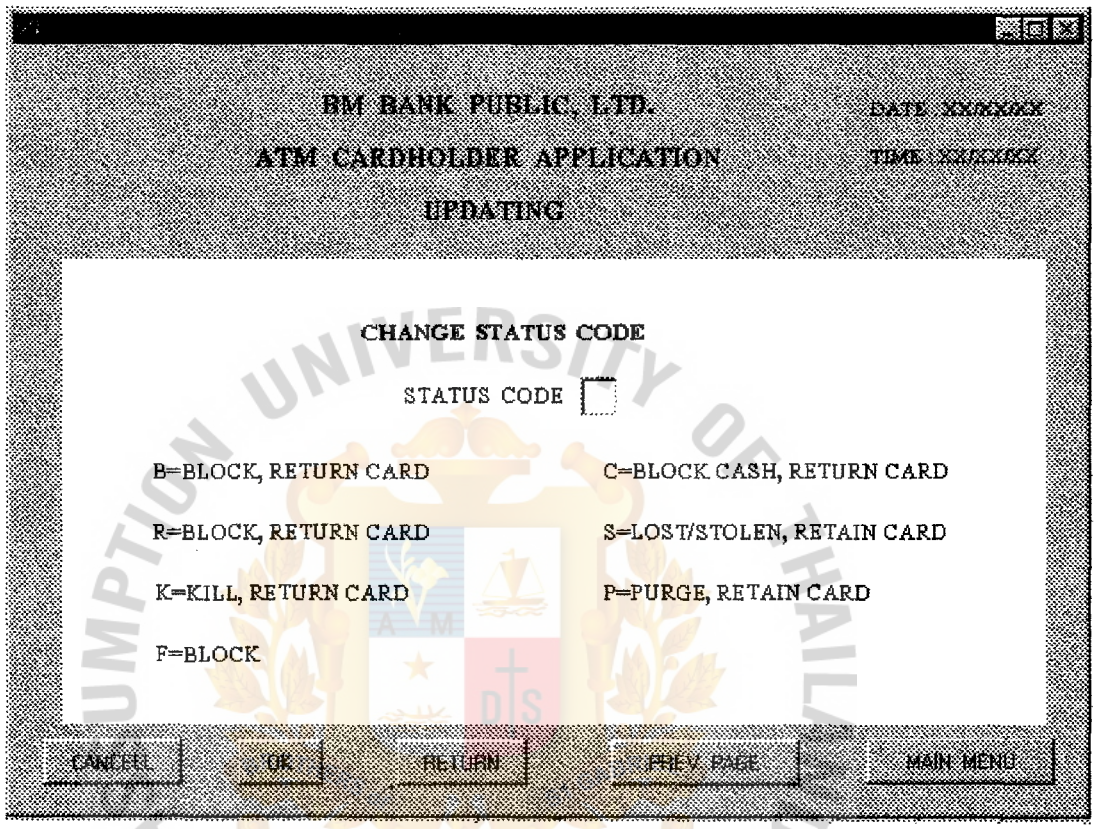

Figure B.64. Updating ATM Cardholder (3)

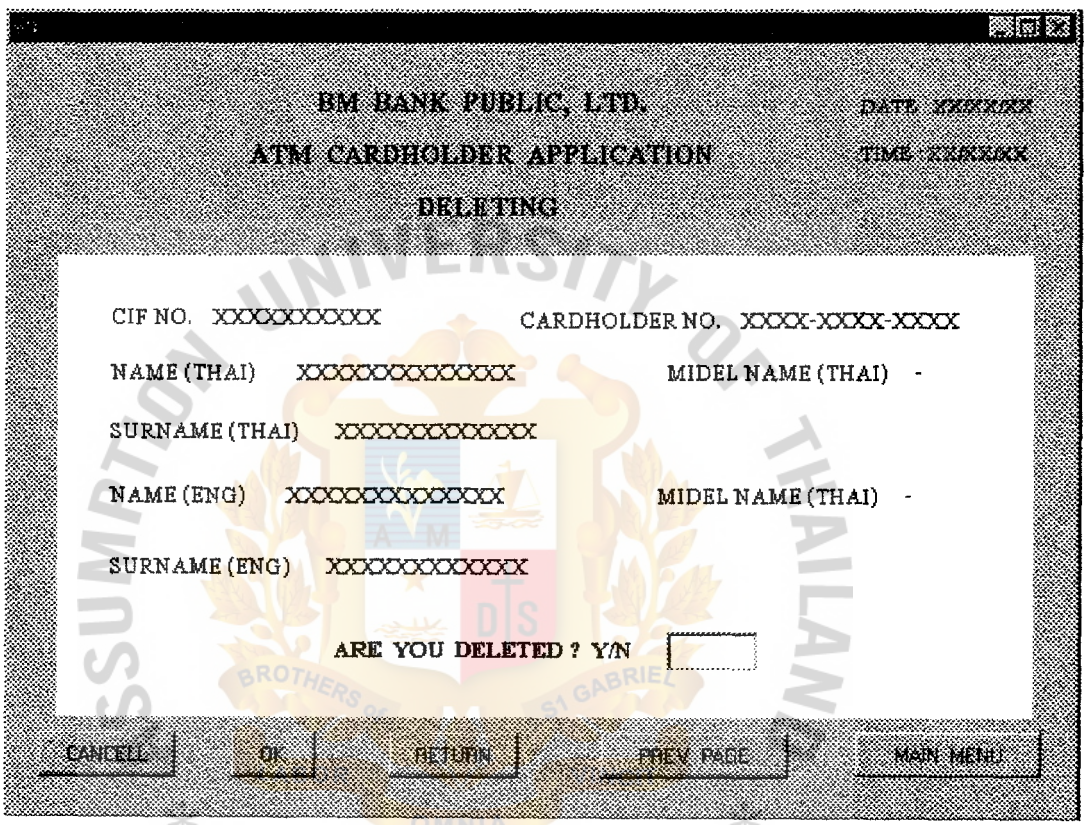

Figure B.65. Deleting ATM Cardholder

APPENDIX C

Output Report

ASSUMPTION UNIVERSITY OF THAILAND
BROTHERS of ST GABRIEL
LABOR VINCIT OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

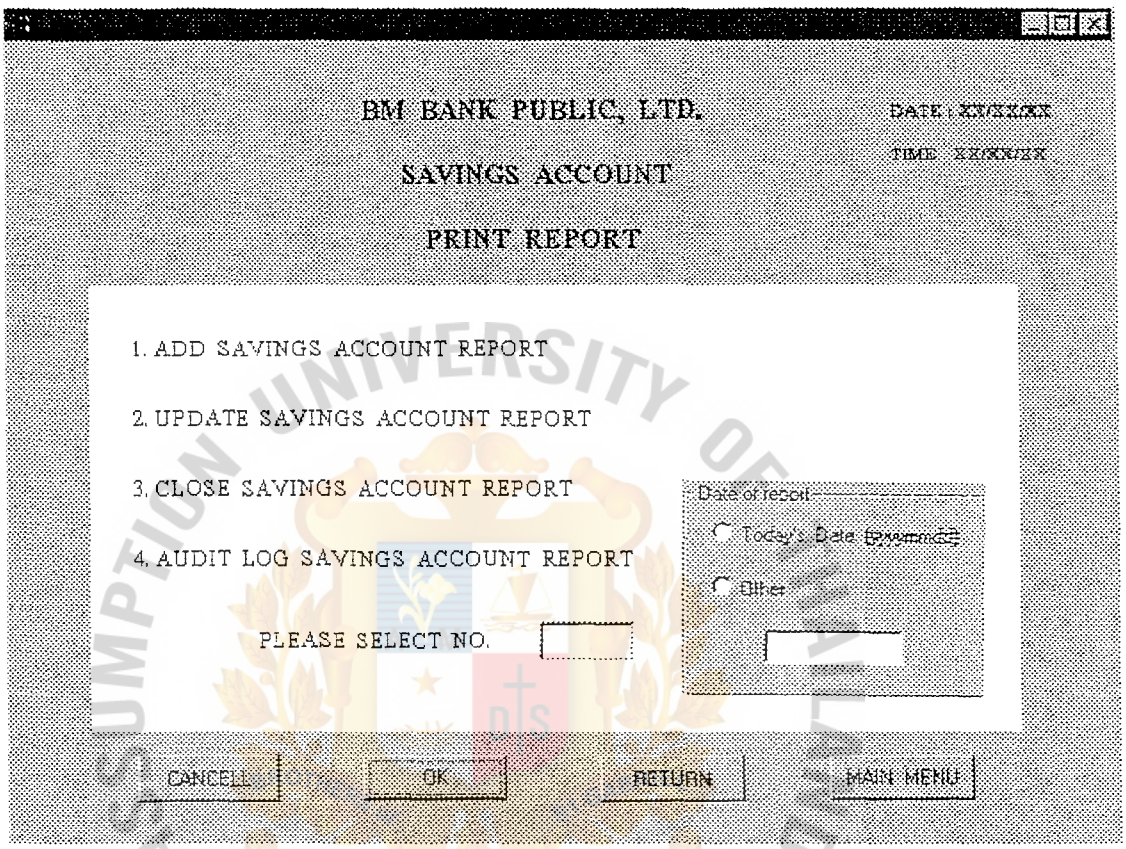

Figure C.1. Print Report Savings Account

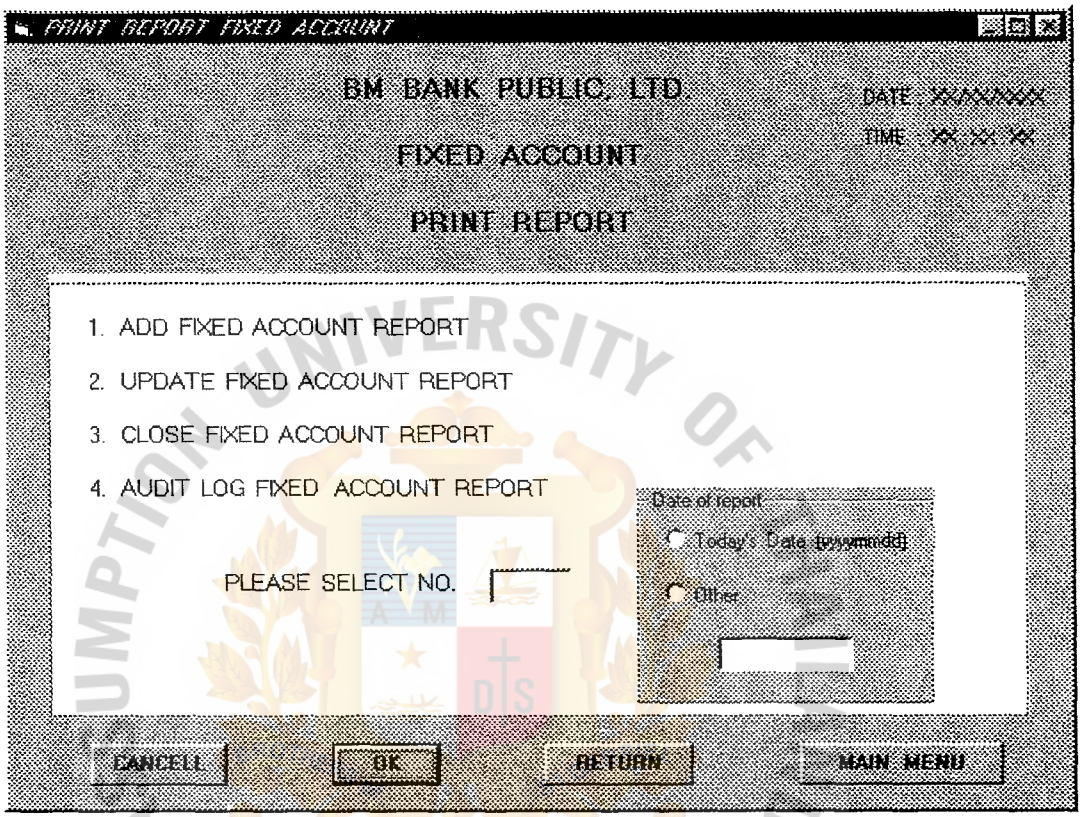

Figure C.2. Print Report Fixed Account

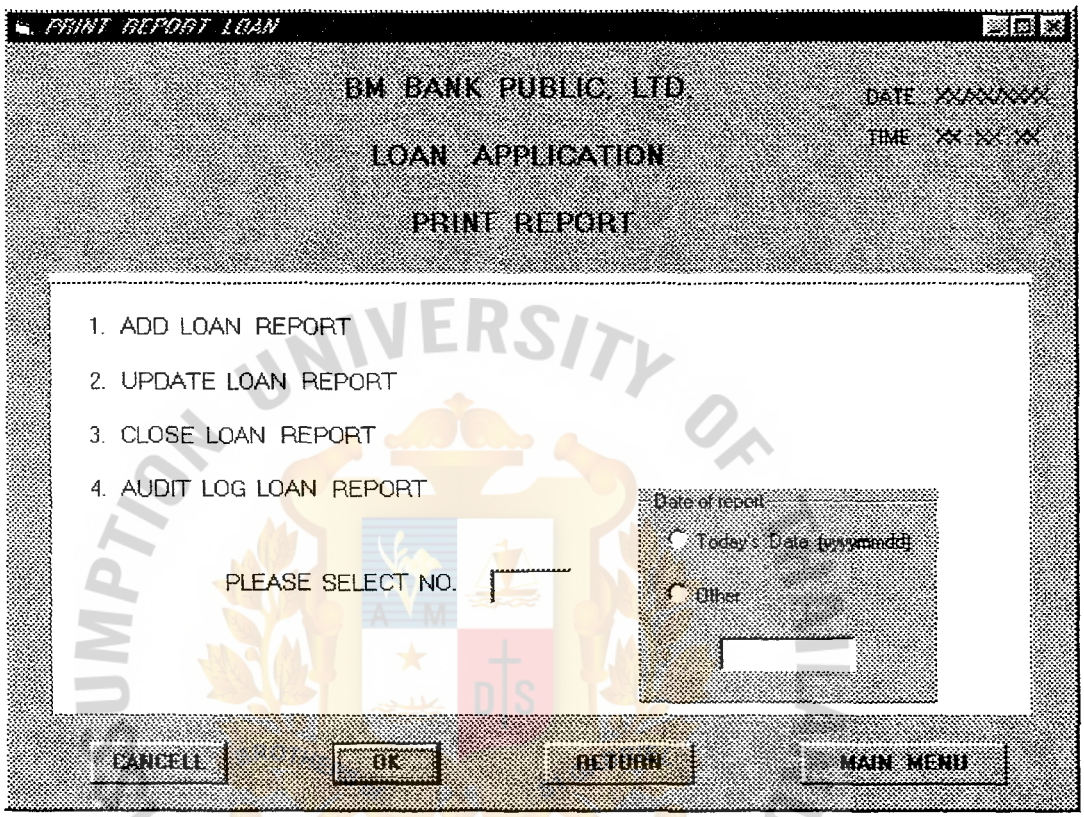

Figure C.3. Print Report Loan

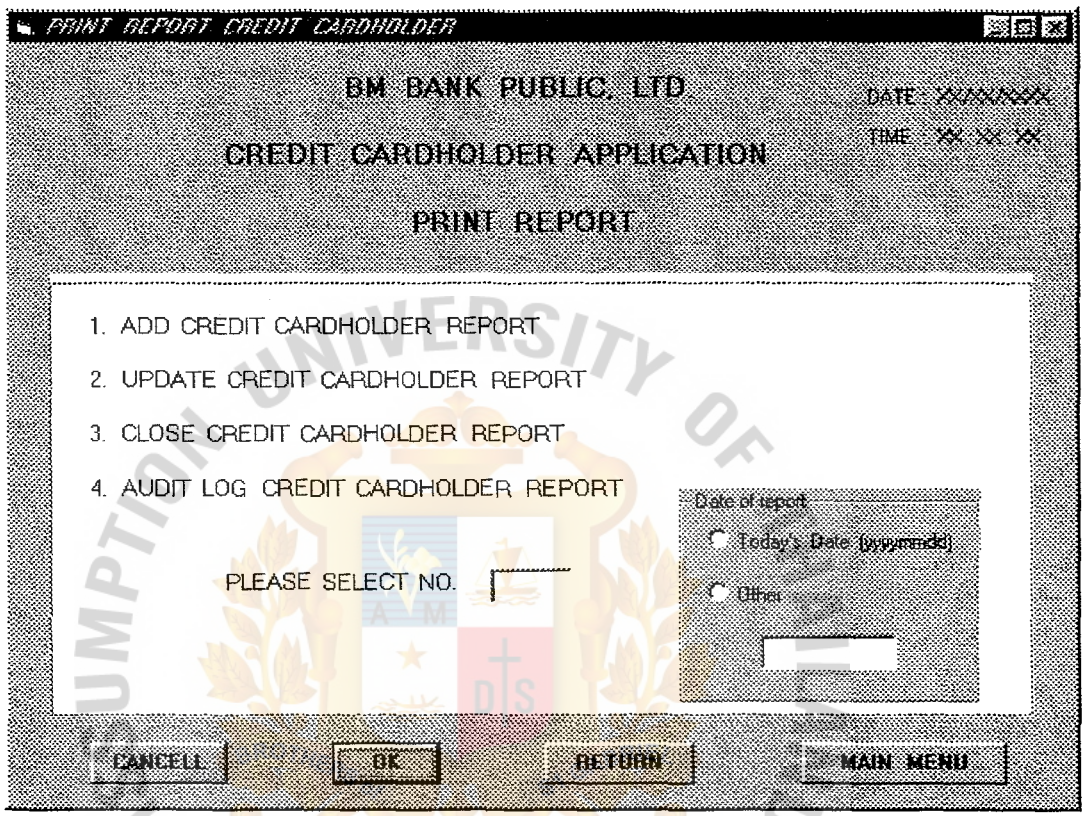

Figure C.4. Print Report Credit Cardholder

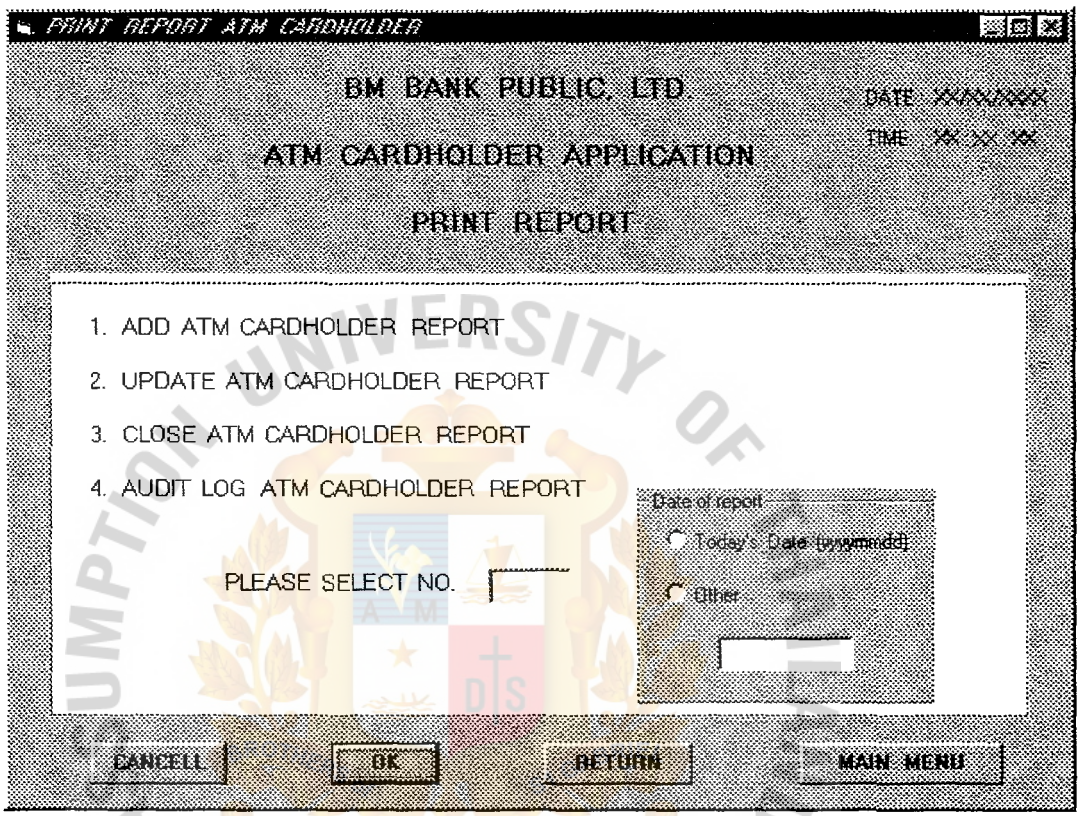

Figure C.5. Print Report ATM Cardholder

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
มหาวิทยาลัยอัสสัมชัญ

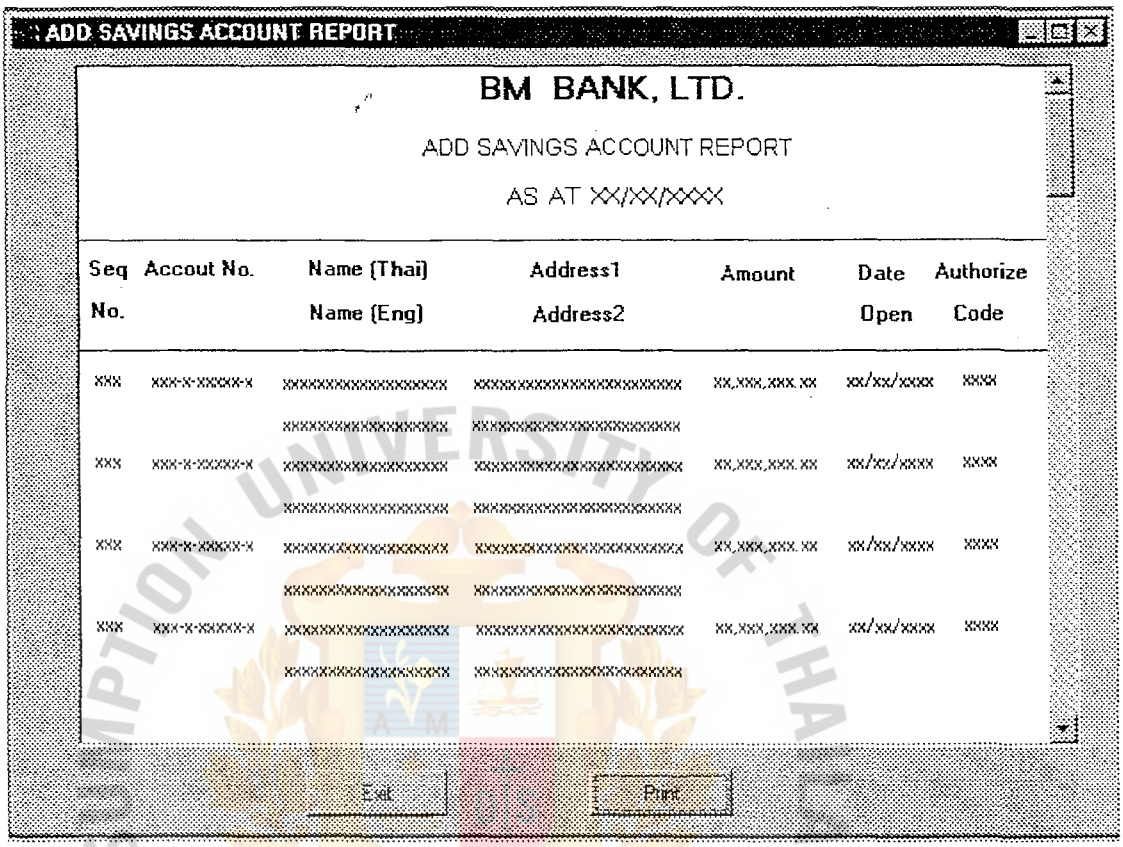

Figure C.6. Add Savings Account Report

ASSUMPTION UNIVERSITY OF THAILAND
BROTHERS of LABOR ST GABRIEL VINCIT OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

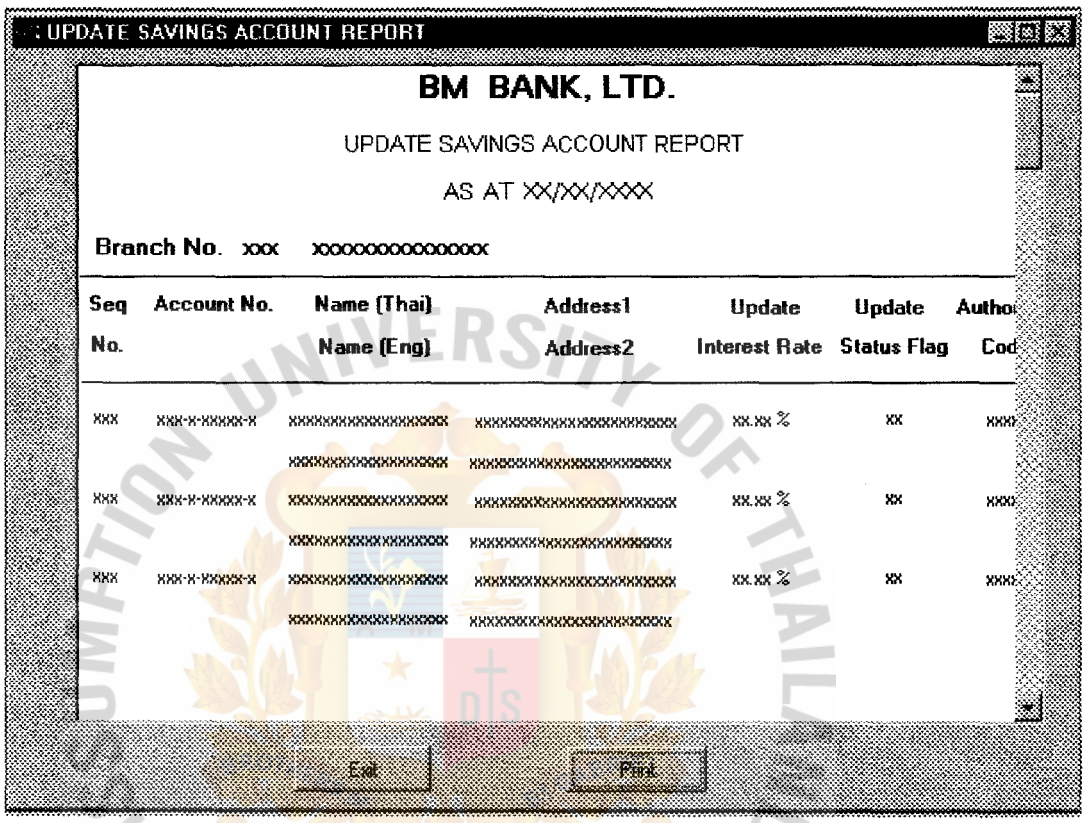

Figure C.7. Update Savings Account Report

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
SINCE 1969
มหาวิทยาลัยอัสสัมชัญ

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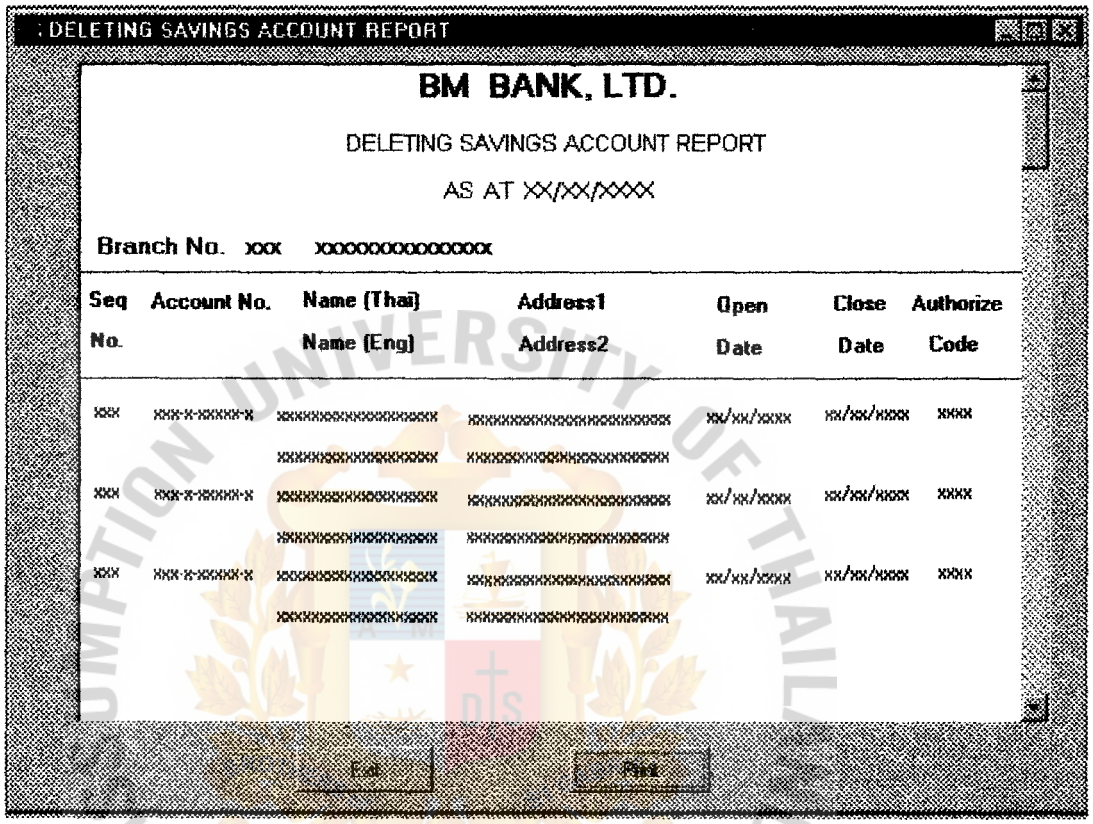

Figure C.8. Deleting Savings Account Report

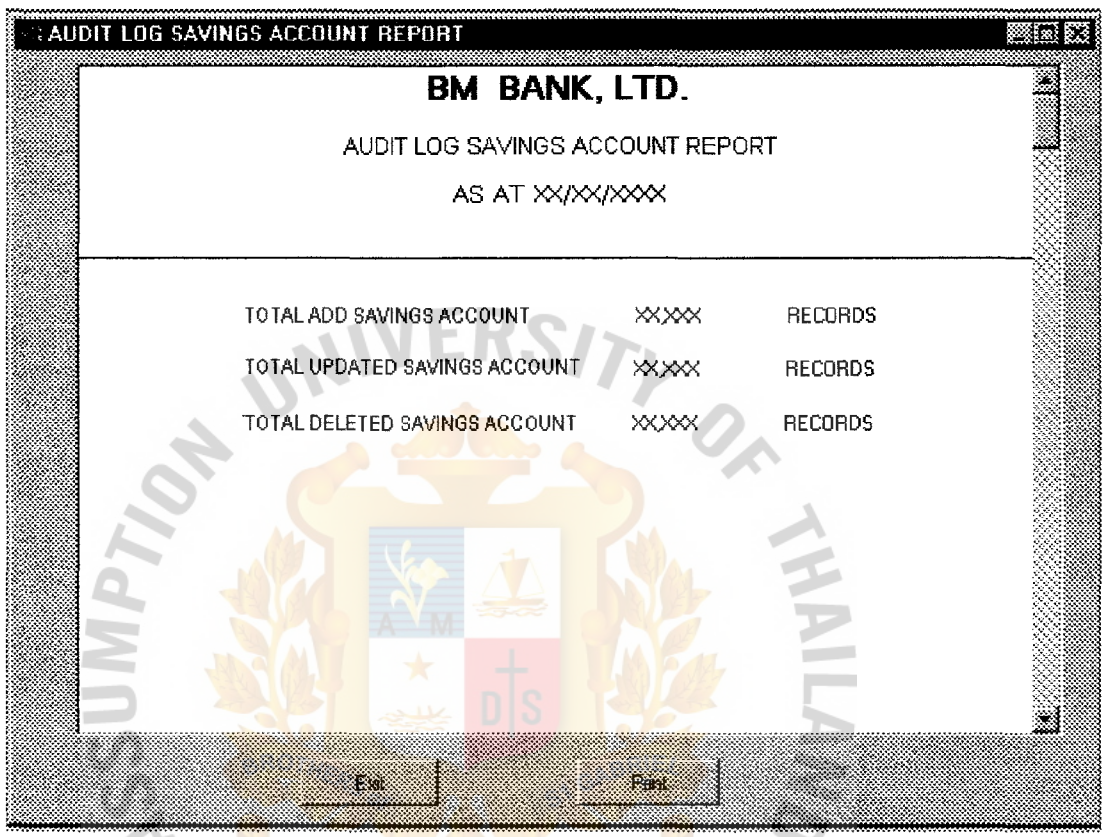

Figure C.9. Audit Log Savings Account Report

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
มหาวิทยาลัยอัสสัมชัญ

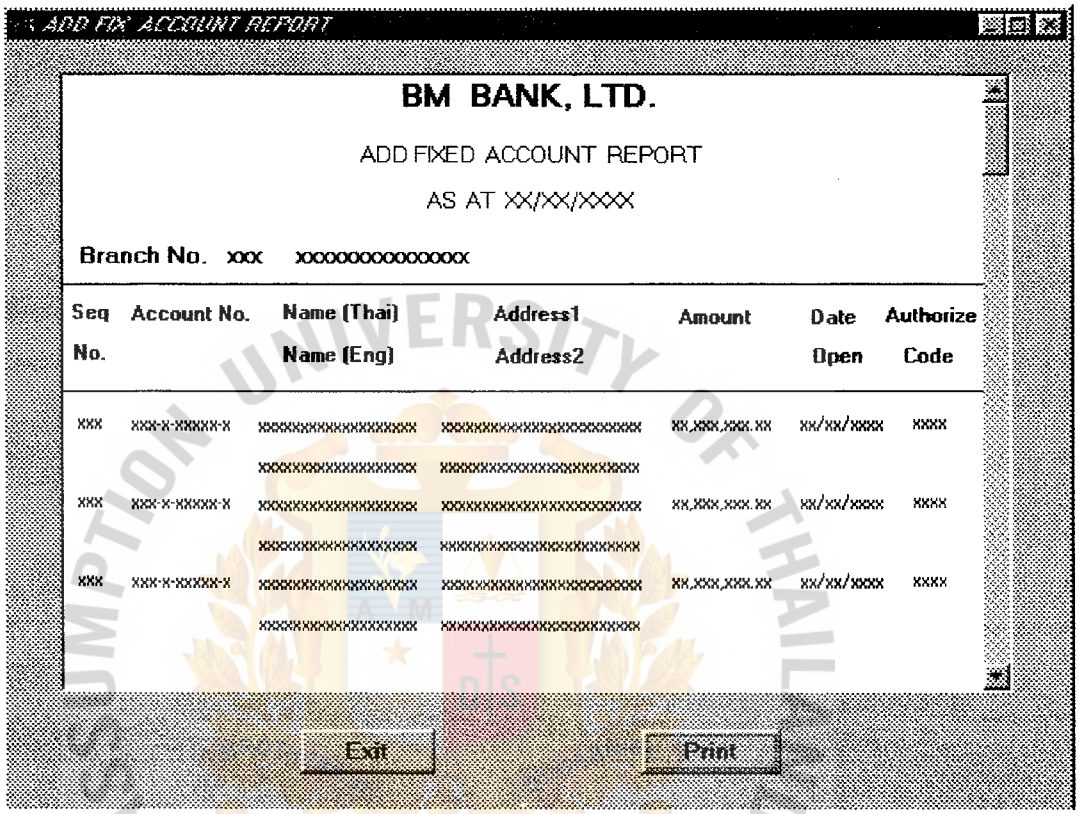

Figure C.10. Add Fixed Account Report

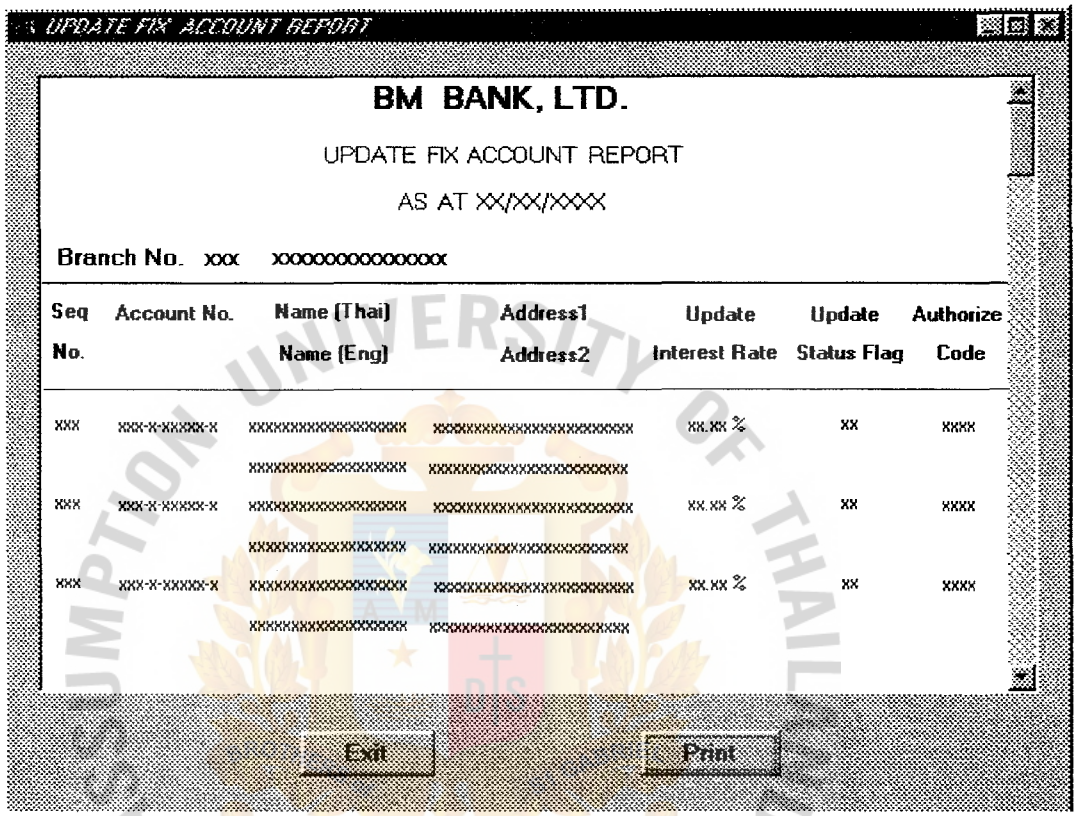

Figure C.11. Update Fixed Account Report

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT
OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

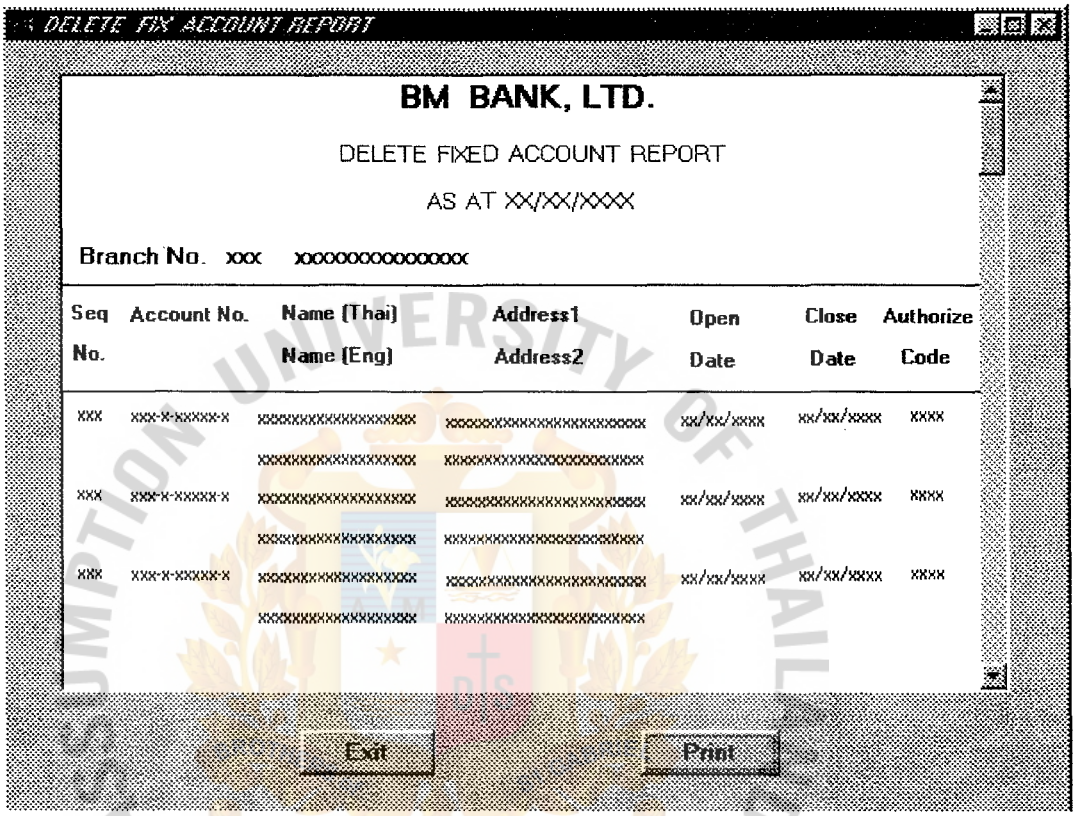

Figure C.12. Delete Fixed Account Report

Figure C.13. Audit Log Fixed Account Report

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
SINCE 1969
มหาวิทยาลัยอัสสัมชัญ

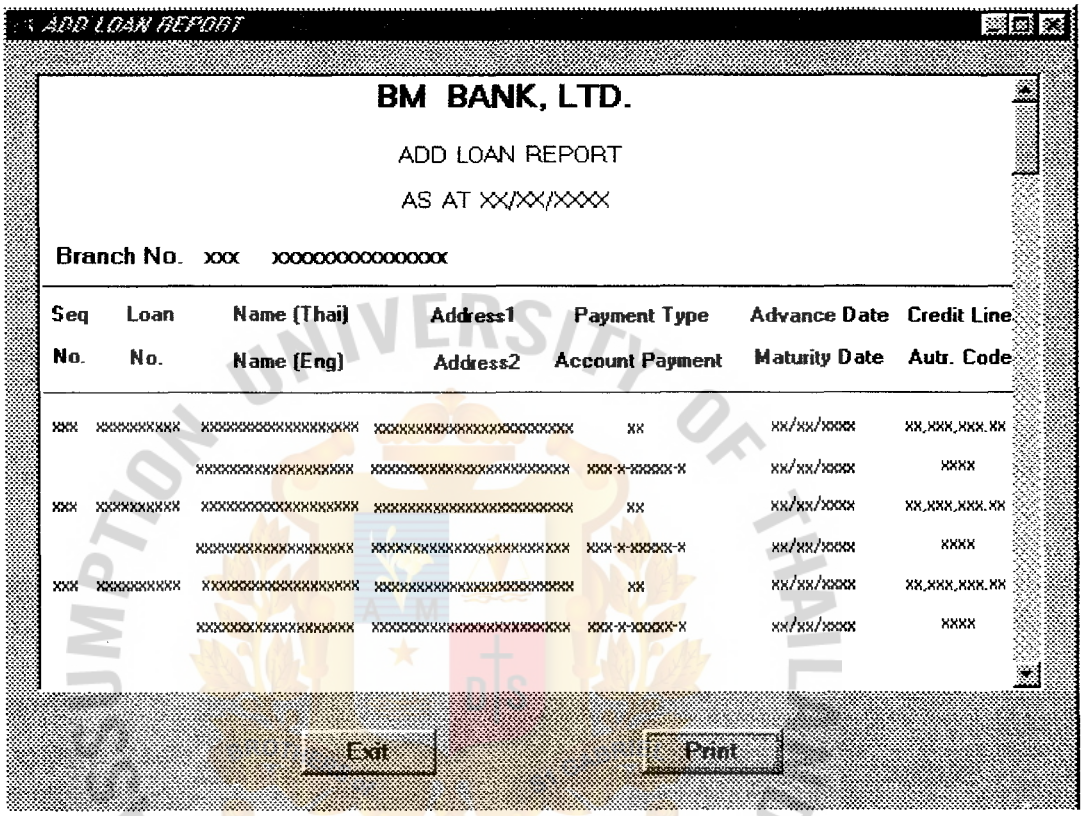

Figure C.14. Add Loan Report

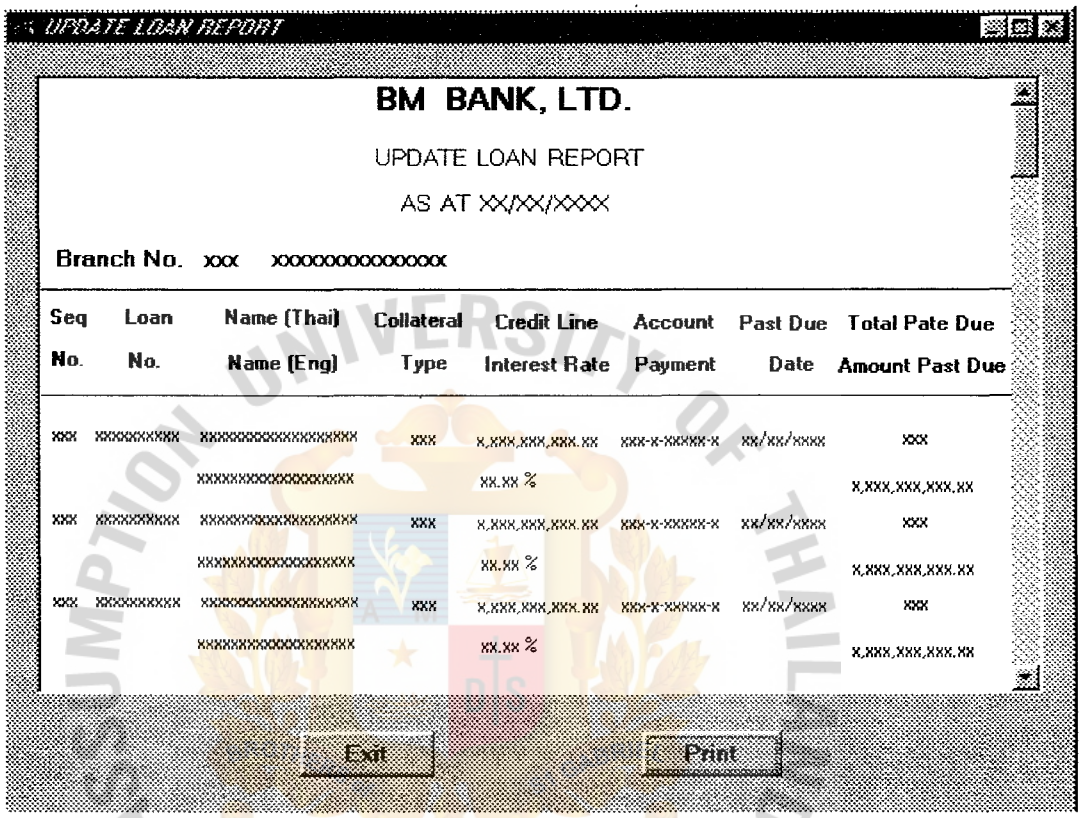

Figure C.15. Update Loan Report

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

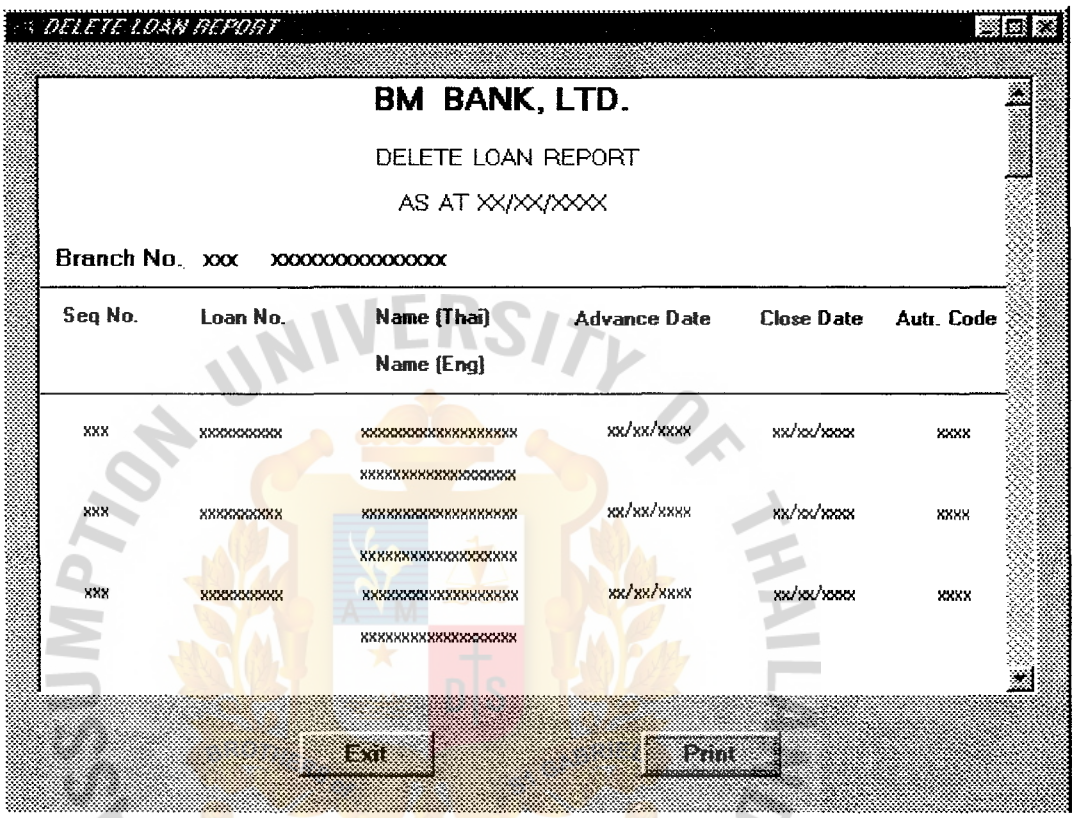

Figure C.16. Delete Loan Report

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
มหาวิทยาลัยอัสสัมชัญ

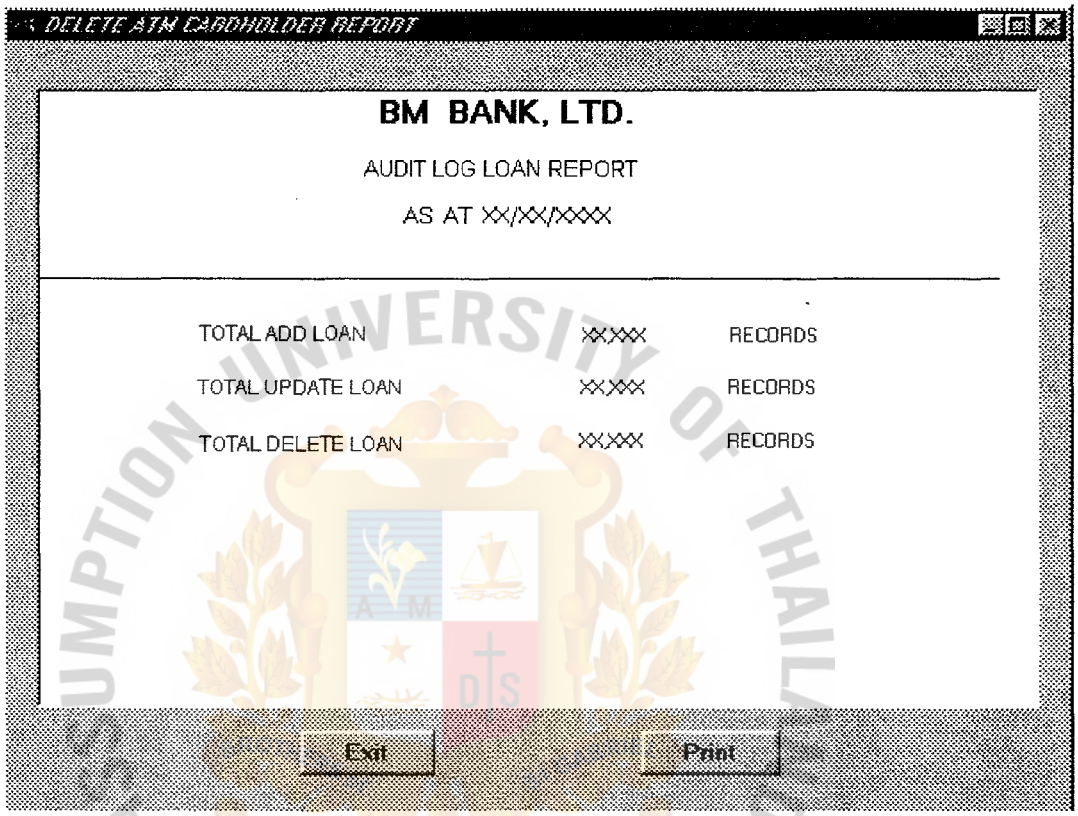

Figure C.17. Audit Log Loan Report

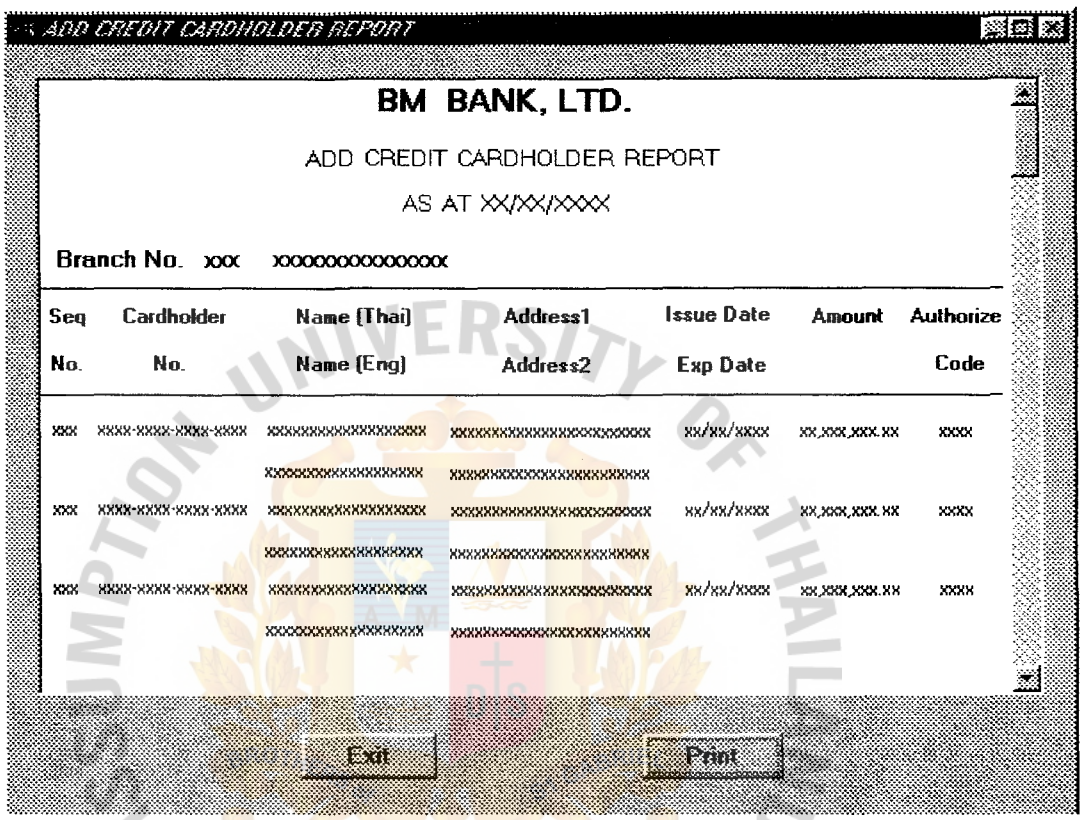

Figure C.18. Add Credit Cardholder Report

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
มหาวิทยาลัยอัสสัมชัญ

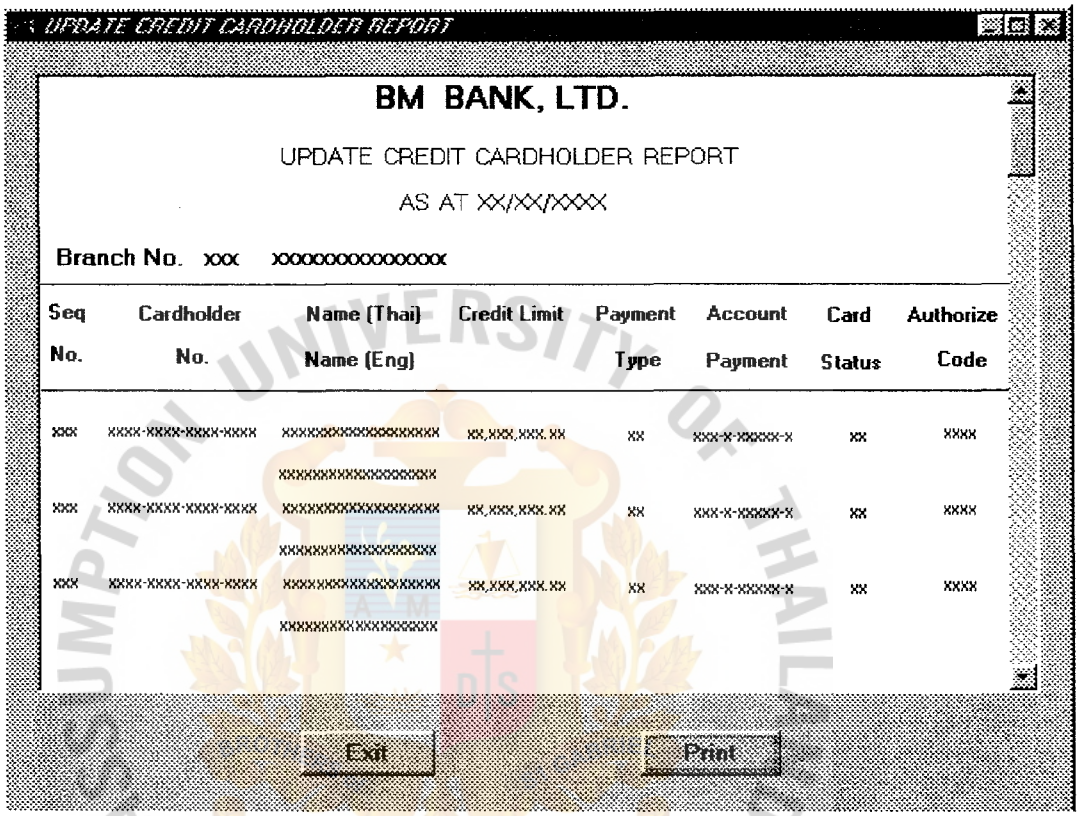

Figure C.19. Update Credit Cardholder Report

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

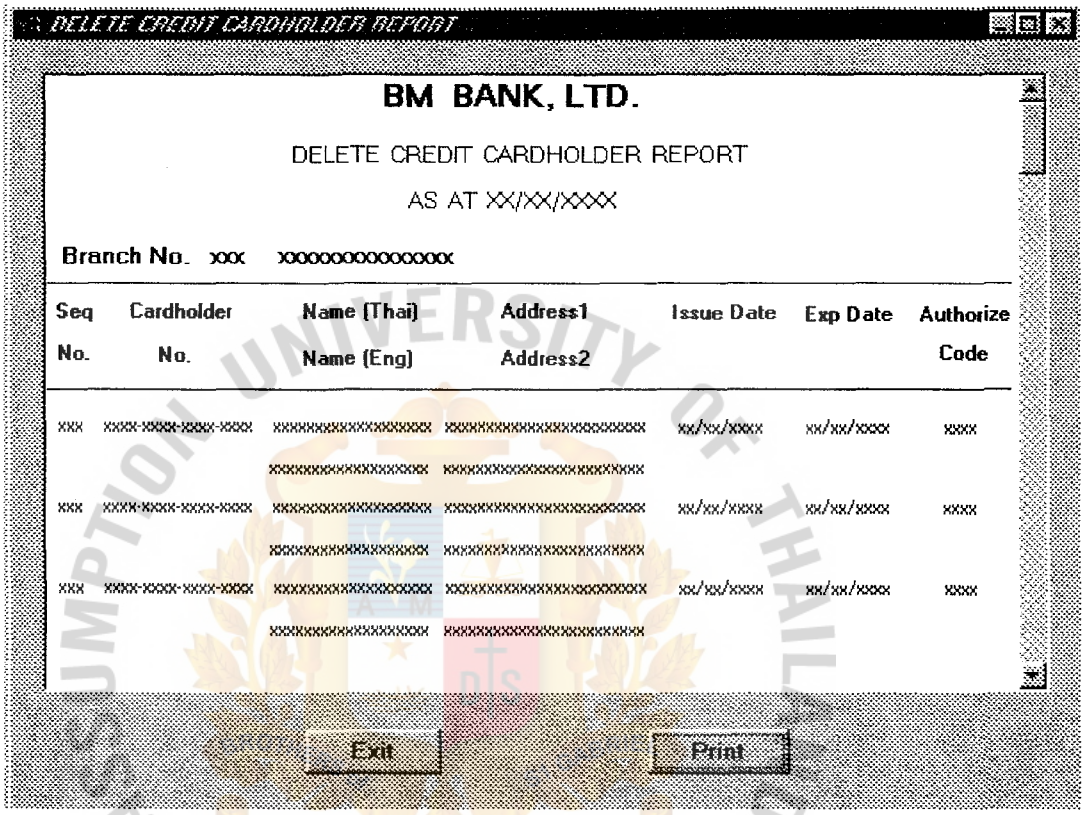

Figure C.20. Delete Credit Cardholder Report

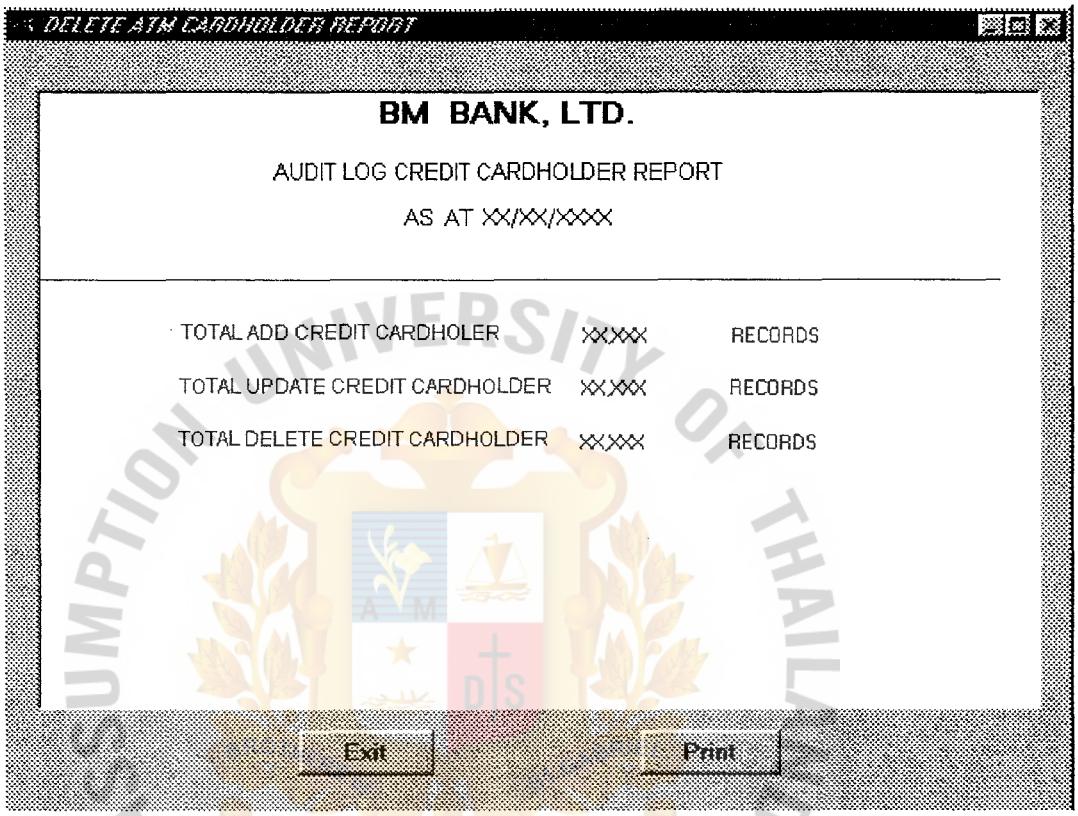

Figure C.21. Audit Log Credit Cardholder Report

ASSUMPTION UNIVERSITY OF THAILAND
LABOR VINCIT OMNIA
มหาวิทยาลัยอัสสัมชัญ

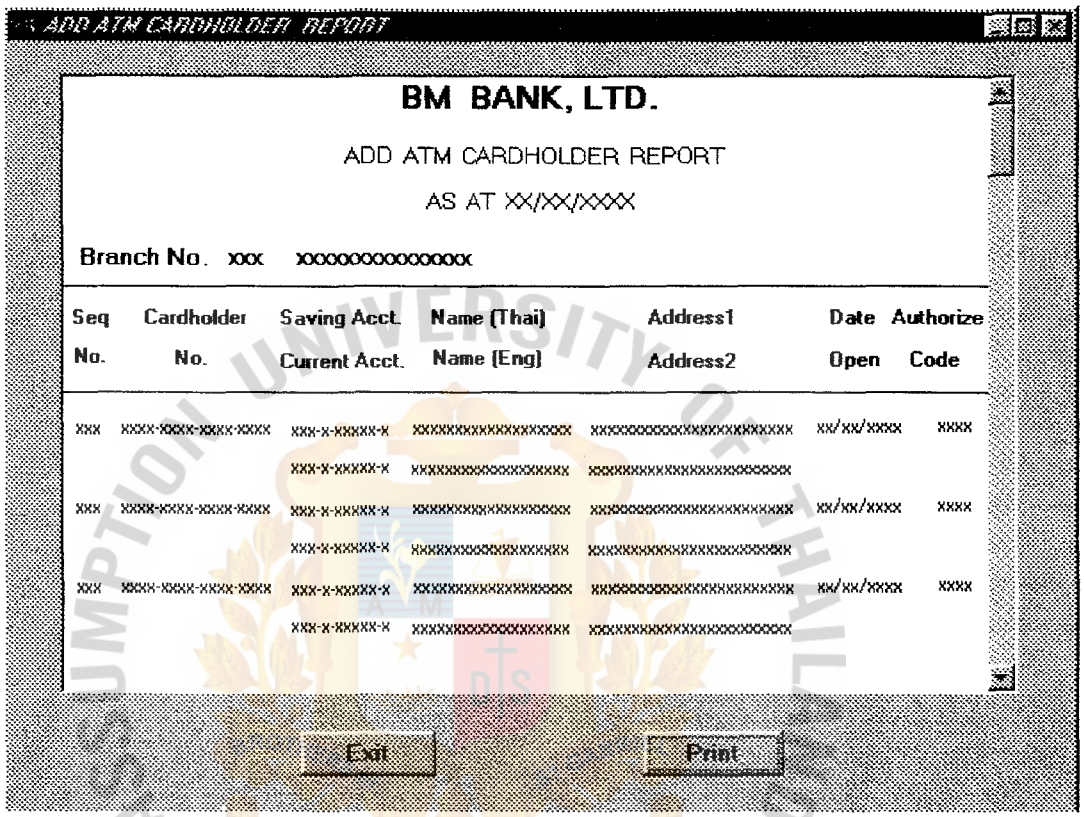

Figure C.22. Add ATM Cardholder Report

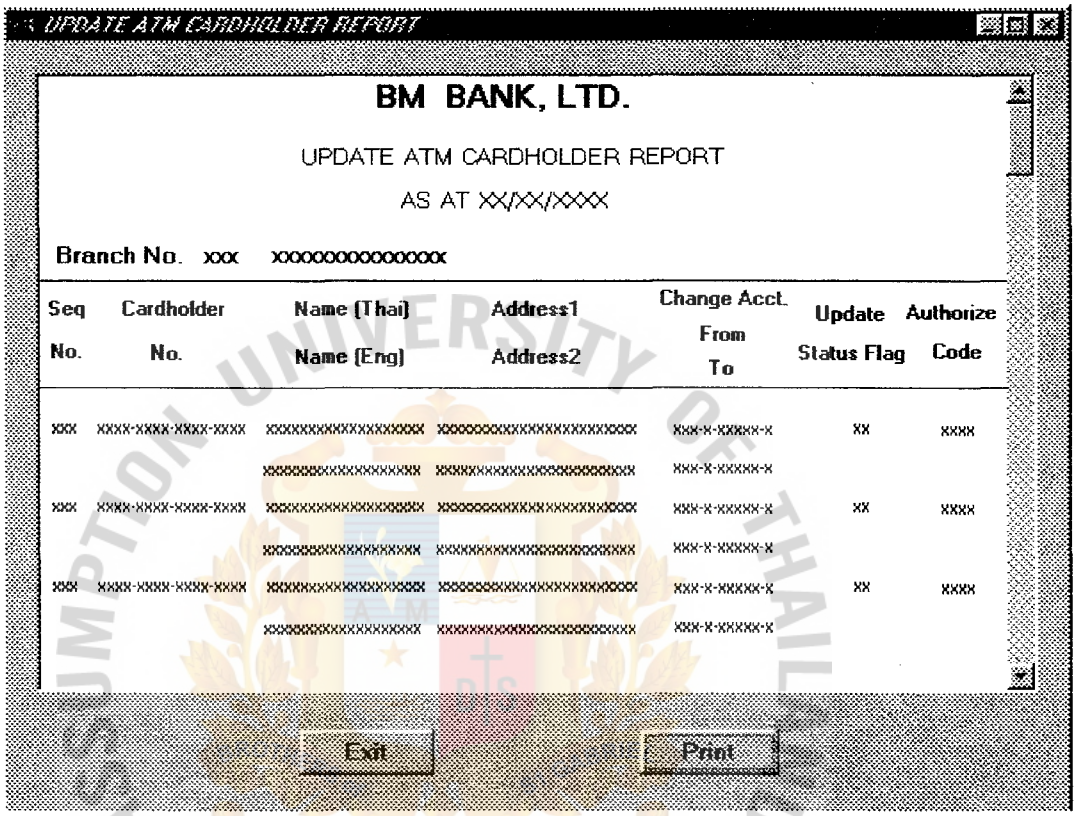

Figure C.23. Update ATM Cardholder Report

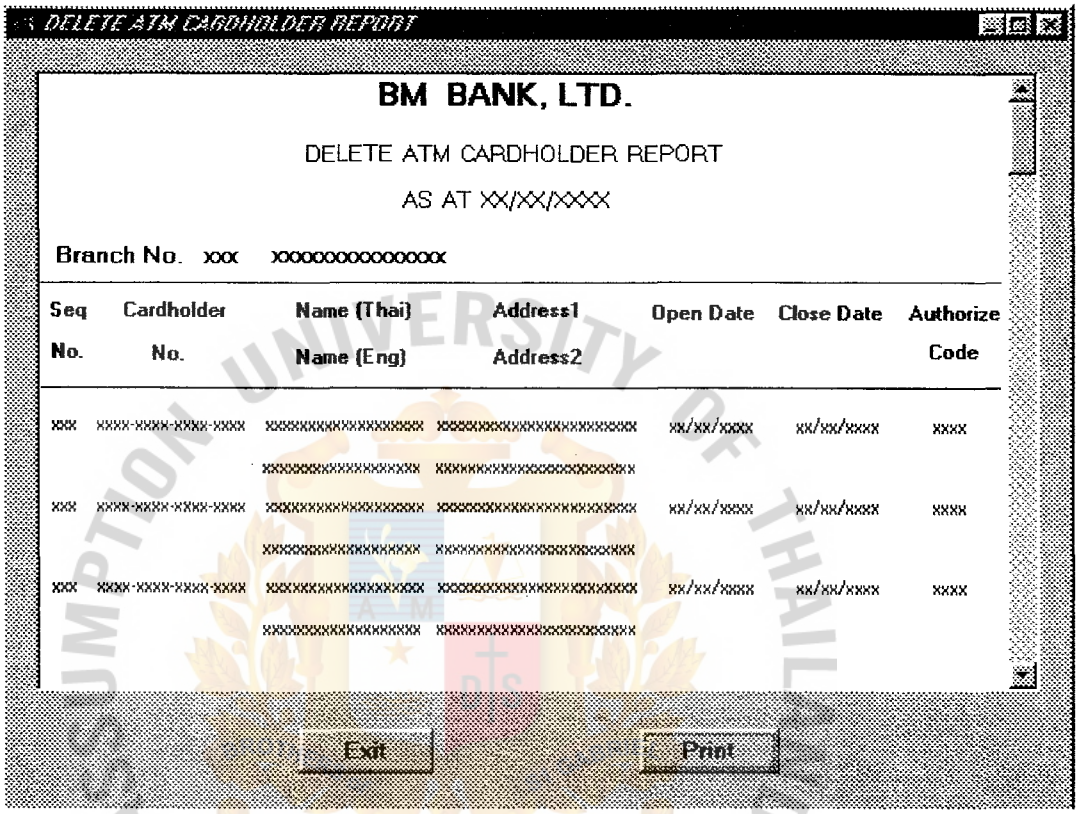

Figure C.24. Delete ATM Cardholder Report

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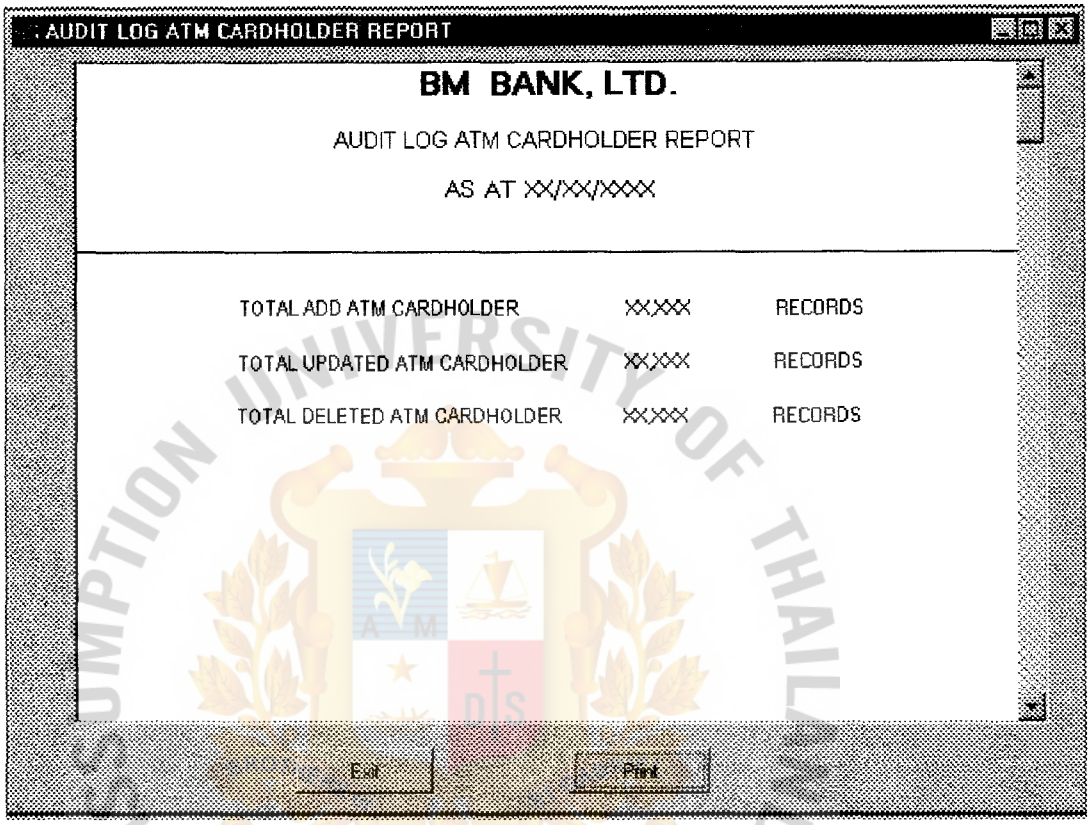

Figure C.25. Audit Log ATM Cardholder Report

BM BANK, LTD.

MONTHLY REPORT OF JANUARY 1999

Branch no. xxx xxxxxxxxxx

Date	New Current Account		Closed Current Account		New Savings Account		Closed Savings Account	
	Total Record	Total Amount	Total Record	Total Amount	Total Record	Total Amount	Total Record	Total Amount
01/01/1999								
:								
:								
:								
:								
:								
:								
:								
31/01/1999								

Figure C.26. Management Report

BM BANK, LTD.

MONTHLY REPORT OF JANUARY 1999

Branch no. xxx xxxxxxxxxx

Date	New Fixed Account		Closed Fixed Account		New Loan		Closed Loan	
	Total Record	Total Amount	Total Record	Total Amount	Total Record	Total Amount	Total Record	Total Amount
01/01/1999								
:								
:								
:								
:								
:								
:								
:								
31/01/1999								

Figure C.27. Management Report

BM BANK, LTD.

MONTHLY REPORT OF JANUARY 1999

Branch no. xxx xxxxxxxxxx

Date	New Credit Cardholder	Closed Credit Cardholder	New ATM Cardholder	Closed ATM Cardholder
	Total Record	Total Record	Total Record	Total Record
01/01/1999				
:				
:				
:				
:				
:				
:				
:				
31/01/1999				

Figure C.28. Management Report

BM BANK, LTD.

3 MONTHS' STATISTICS REPORT

Period : January - March 1999

Branch No.	New Current Account		Closed Current Account		New Savings Account		Closed Savings Account	
	Total Record	Total Amount	Total Record	Total Amount	Total Record	Total Amount	Total Record	Total Amount

Figure C.29. Management Report

BM BANK, LTD.

3 MONTHS' STATISTICS REPORT

Period : January - March 1999

Branch No.	New Fixed Account		Closed Fixed Account		New Loan		Closed Loan	
	Total Record	Total Amount	Total Record	Total Amount	Total Record	Total Amount	Total Record	Total Amount

Figure C.30. Management Report

BM BANK, LTD.

3 MONTHS' STATISTICS REPORT

Period : January - March 1999

Branch No.	New Credit Cardholder Total Record	Closed Credit Cardholder Total Record	New ATM Cardholder Total Record	Closed ATM Cardholder Total Record

Figure C.31. Management Report

BM BANK, LTD.

6 MONTHS' STATISTICS REPORT

Period : January - June 1999

Branch No.	New Current Account		Closed Current Account		New Savings Account		Closed Savings Account	
	Total Record	Total Amount	Total Record	Total Amount	Total Record	Total Amount	Total Record	Total Amount

Figure C.32. Management Report

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BM BANK, LTD.

6 MONTHS' STATISTICS REPORT

Period : January - June 1999

Branch No.	New Fixed Account		Closed Fixed Account		New Loan		Closed Loan	
	Total Record	Total Amount	Total Record	Total Amount	Total Record	Total Amount	Total Record	Total Amount

Figure C.33. Management Report

BM BANK, LTD.

6 MONTHS' STATISTICS REPORT

Period : January - June 1999

Branch No.	New Credit Cardholder Total Record	Closed Credit Cardholder Total Record	New ATM Cardholder Total Record	Closed ATM Cardholder Total Record

Figure C.34. Management Report

BM BANK, LTD.

12 MONTHS' STATISTICS REPORT

Period : January - December 1999

Branch No.	New Current Account		Closed Current Account		New Savings Account		Closed Savings Account	
	Total Record	Total Amount	Total Record	Total Amount	Total Record	Total Amount	Total Record	Total Amount

Figure C.35. Management Report

BM BANK, LTD.

12 MONTHS' STATISTICS REPORT

Period : January - December 1999

Branch No.	New Fixed Account		Closed Fixed Account		New Loan		Closed Loan	
	Total Record	Total Amount	Total Record	Total Amount	Total Record	Total Amount	Total Record	Total Amount

Figure C.36. Management Report

BM BANK, LTD.

12 MONTHS' STATISTICS REPORT

Period : January - December 1999

Branch No.	New Credit Cardholder Total Record	Closed Credit Cardholder Total Record	New ATM Cardholder Total Record	Closed ATM Cardholder Total Record

Figure C.37. Management Report

APPENDIX D

File Layout

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Table D.1. File name : CUSTOMER INFORMATION

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CIF_NO	C	14		Customer information number
2	CIF_TNAME	C	36		Customer name (Thai)
3	CIF_ENAME	C	36		Customer name (English)
4	CIF_ADDR1	C	35		Address
5	CIF_ADDR2	C	35		Address
6	CIF_TELEPHONE	C	20		Telephone number
7	CIF_BIRTH_DATE	N	8		Customer's birth date
8	CIF_TAX	N	10		Tax number
9	CIF_FOREIGN	C	1		Customer type
10	CIF_OCCU	C	4		Customer's occupation

NOTE

- Customer Information Number

  14C has a detail :

  6C = Customer's last name + 2C = Total customer's last name

  + 1C = Customer's first name + 2C = Total customer's first name

  + 1C = Customer's middle name + 2C = Running number

- Customer type

  Y = Foreign

  N = Thai

Table D.2. File name : CIF_OCCU

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CODE	C	4		Code of customer's occupation
2	DESCRIPTION	C	30		Description

NOTE

- Code of customer's occupation

1000 = Government official
1100 = Teacher
1200 = Nurse
1300 = Doctor
4100 = Policeman
4200 = To work for money
4300 = Student
4400 = Other

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Table D.3. File name : CA

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CA_NO	N	10		Current account number
2	CA_CIF_NO	C	14		Customer information number
3	CA_OD	N	10	2	OD.
4	CA_TOTAL_USED	N	10	2	Total of used
5	ADMIT_DEPARTMENT	C	4		Admit department
6	CUS_TYPE	C	3		Customer type
7	CA_OPEN_DATE	N	8		Opening date (dd/mm/yyyy)
8	CA_CLOSE_DATE	N	8		Closed date (dd/mm/yyyy)
9	CA_TR-DATE	N	8		Transaction date (dd/mm/yyyy)
10	ACCOUNT_STATUS	C	2		Account status

NOTE

- Current account number

10N has a detail :

3N = Branch no. + 1N = Current type

+ 5N = Running number + 1N = Check digit

Table D.4. File name : ADMIT_DEPARTMENT

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CODE	C	4		Code of admit - department
10	DESCRIPTION	C	30		Description

NOTE

- Code of Admit department

0100 = Office of the president 0125 = Shareholder div.

0125 = Shareholder div.

1800 = Branch credit dept. provincial

1900 = Branch credit dept. metropolitan

0001 = Ho.

0002 = Donmuang Br.

:

.

0149 = Singburi Br.

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Table D.5. File name : CUS_TYPE

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CODE	C	4		Code of customer type
2	DESCRIPTION	C	30		Description

NOTE

- Code of customer type

100 = Covernment 200 = Business

300 = General Juristic Entity 400 = Individuals

500 = Non-taxable

Table D.6. File name : CA_TR-DATE

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CA_TR_DATE	N	8		Transaction date
2	CA_DEBIT	N	10	2	Account debit
3	CA_CREDIT	N	10	2	Account credit
4	CA_INTEREST	N	2	2	Interest rate

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Table D.7. File name : ACCOUNT STATUS

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CODE	C	2		Status code of account
2	DESCRIPTION	C	30		Description

NOTE

- Status code of account

10 = Debits not acception
20 = Non-resident account
30 = Can not debit over limit
40 = Dormant account debit
45 = Dormant account credit
50 = Call the superviser
60 = Inactive account for a period
70 = Account close

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Table D.8. File name : SA

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	SA_NO	N	10		Savings account number
2	SA_CIF_NO	C	14		Customer information number
3	SA_BAL	N	10	2	Savings account balance
4	ADMIT_DEPARTMENT	C	4		Admit department
5	SA_OPEN_DATE	N	8		Opening date (dd/mm/yyyy)
6	SA_CLOSE_DATE	N	8		Closed date (dd/mm/yyyy)
7	SA_TR_DATE	N	8		Transaction date
8	ACCOUNT_STATUS	C	2		Account status

Table D.9. File name : SA_TR_DATE

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	SA_TR_DATE	N	8		Transaction date
2	SA_DEBIT	N	10	2	Account debit
3	SA_CREDIT	N	10	2	Account credit
4	SA_INTEREST	N	2	2	Interest rate

Table D.10. File name : FX

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	FX_NO	N	10		Fixed account number
2	FX_CIF_NO	C	14		Customer information number
3	FX_BAL	N	10	2	Fixed account balance
4	AMIT_DEPARTMENT	C	4		Admit department
5	FX_OPEN_DATE	N	8		Opening date (dd/mm/yyyy)
6	FX_CLOSE_DATE	N	8		Closed date (dd/mm/yyyy)
7	FX_TR_DATE	N	8		Transaction date
8	ACCOUNT_STATUS	C	2		Account status

Table D.11. File name : FX_TR_DATE

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	FX_TR_DATE	N	8		Transaction date
2	FX_DEBIT	N	10	2	Account debit
3	FX_CREDIT	N	10	2	Account credit
4	FX_INTEREST	N	2	2	Interest rate
5	FX_TYPE	C	1		Type of fix account

Table D.12. File name : FX_TYPE

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CODE	C	1		Type code of fix account
2	DESCRIPTION	C	30		Description

NOTE

- Type code of Fix account

  1 = 3 months

  2 = 6 months

  3 = 9 months

  4 = 12 months

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Table D.13. File name : LOAN

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	LN_NO	C	10		Loan number
2	LN_CIF_NO	C	14		Customer information number
3	LN_TYPE	C	2		Type of loan
4	LN_COLLATERAL	C	3		Type of collateral
5	LN_CUS_TYPE	C	4		Type of customer
6	LN_CREDIT_LINE	N	10	2	Credit line
7	LN_INTEREST	N	2	2	Interest rate
8	LN_ADVANCE_DATE	N	8		Advance date
9	LN_MATURITY_DATE	N	8		Maturity date
10	LN_TERM	N	2		Term of loan
11	LN_DTE_PASTDUE	N	8		Date of past due
12	LN_PAST_DUE	C	4		Past due
13	PAY_TYPE	C	3		Type of payment
14	LN_PAY_ACCT	N	10		Account payment
15	LN_STATUS	C	2		Status of loan

NOTE

- Loan number

10C has a detail :

3C = Branch no. + 7C = Running number

Table D.14. File name : LN_TYPE

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CODE	C	1		Type code of Loan
2	DESCRIPTION	C	30		Description

NOTE

- Type code of Loan

10 = Housing Loan

15 = Housing Life insurance premium

20 = Commercial Loan

30 = Staff Loan

31 = Staff Housing Loan

32 = Staff Housing Maintenance Loan

33 = Staff Car Loan

34 = Staff Motor-cycle Loan

35 = Staff Telephone Loan

36 = Staff Others Loan

40 = Agricultural Loan

50 = Other Loan

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Table D.15. File name : LN_COLLATERAL

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CODE	C	1		Type code of collateral
2	DESCRIPTION	C	30		Description

NOTE

- Type code of collateral

001 = Land

002 = Land and building

003 = Building

004 = Fixed deposit account

005 = Other

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Table D.16. File name : PAST_DUE

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CODE	C	1		Type code of past due
2	DESCRIPTION	C	30		Description

NOTE

- Type code of past due

001 = Past due 1 month

002 = Past due 2 months

003 = Past due 3 months

004 = Past due 4-5 months

005 = Past due > 6 months

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Table D.17. File name : PAY_TYPE

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CODE	C	1		Type code of payment
2	DESCRIPTION	C	30		Description

NOTE

- Type code of past due

  001 = Cash

  002 = Account

  003 = Other

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Table D.18. File name : LN_STATUS

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CODE	C	1		Status code
2	DESCRIPTION	C	30		Description

NOTE

- Status code

01 = Notice being sent

02 = Legal action

03 = Being judged

04 = Debt over due

05 = In the process of recovering

06 = In search of property

07 = Seize of property

08 = Sold by public auction

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Table D.19. File name : CREDIT_CARDHOLDER

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CR_NO	N	16		Cardholder number
2	CR_CIF_NO	C	14		Customer information number
3	CR_ORG	C	2		Card organization
4	CR_ISSUE_DATE	N	8		Issue date (dd/mm/yyyy)
5	CR_EXP_DATE	N	8		Expire date(dd/mm/yyyy)
6	CR_CREDIT_LIMIT	N	10	2	Credit limit
7	PAY_TYPE	C	3		Type of payment
8	CR_PAY_ACCT	N	10		Account payment
9	CR_PAY_DUEDATE	N	8		Payment due date
10	CR_OUT_BAL	N	10	2	Outstanding balance
11	CR_AMT_PASTDUE	N	10	2	Amount past due
12	CR_TR_DATE	N	8		Transaction date
13	CR_CARD_STATUS	C	1		Card status

NOTE

- Cardholder number

16N has a detail :

4N = Type of card (VISA OR MASTER CARD)

+ 11N = Running number + 1N = Check digit

Table D.20. File name : CR_ORG

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CODE	C	1		Organization code
2	DESCRIPTION	C	30		Description

NOTE

- Organization code

01 = Principle Card

02 = Supplementary Card

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Table D.21. File name : CR_TR_DATE

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CR_TR_DATE	N	8		Transaction date
2	CR_TR_TYPE	C	30		Transaction type
3	CR_TR_AMT	N	10	2	Transaction amount
4	CR_MERC_NAME	C	30		Merchant name

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Table D.22. File name : CR_CARD_STATUS

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CODE	C	1		Status code
2	DESCRIPTION	C	30		Description

NOTE

- Status code

  O = Out of credit

  B = Block

  K = Kill

  S = Lost / stolen

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Table D.23. File name : ATM_CARDHOLDER

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	ATM_CARD_NO	N	16		Cardholder number
2	ATM_CIF_NO	C	14		Customer information number
3	ATM_SA	N	10		Saving account
4	ATM_CA	N	10		Current account
5	ATM_ISSUE_DATE	N	8		Issue date (dd/mm/yyyy)
6	ATM_LAST_USED	N	8		Last used date
7	ATM_PIN_TOTALERR	N	1		Total error of pin
8	ATM_CARD_STATUS	C	1		Card status
9	ATM_TR_DATE	N	8		Transaction date

NOTE

- Cardholder number

16N has a detail :

9N = Bank code + 6N = Running number

+ 1N = Check digit

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Table D.24. File name : ATM_CARD_STATUS

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	CODE	C	1		Status code
2	DESCRIPTION	C	30		Description

NOTE

- Status code

B = Block, Return card

S = Lost / Stolen, retain card

R = Block, Retain card

P = Purge, Retain card

K = Kill, Retain card

F = Block

C = Block cash, Retain card

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Table D.25. File name : ATM_TR_DATE

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	ATM_TR_DATE	N	8		Transaction date
2	ATM_TR_TIME	N	6		Transaction time
3	ATM_TERM_NO	N	4		Terminal number
4	ATM_TR_TYPE	C	30		Transaction type

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Table D.26. File name : ATM_TERM_NO

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	TERMINAL_NO	N	4		Terminal number
2	LOCATION	C	30		Location

NOTE

- Teminal number

0001 - 0999 = Metropolitan terminal

1000 - 1999 = Provincial terminal

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Table D.27. File name : TRANSACTION_LOG_FILE

FIELD	FIELD NAME	TYPE	WIDTH	DEC	DESCRIPTION
1	TRANS_DATE	N	8		Transaction date
2	TRANS_TIME	N	6		Transaction time
3	TRANS_TYPE	C	2		Type of transaction
4	TRANS_ACCT	N	10		Transaction of account
5	TRANS_AMOUNT	N	10	2	Transaction amount
6	TRANS_FLAG	C	2		Transaction flag

NOTE

- Transaction flag

  02 = Withdraw by ATMs

  04 = Withdraw by BOOK

  06 = Withdraw by EDC

  08 = Deposit by ATMs

  10 = Deposit NO BOOK

  12 = Deposit by BOOK

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APPENDIX E

Data Dictionary

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Data Dictionary

Transaction_log_file = 1{transaction_record}n

Transaction_record = Trans_date + trans_time + trans_type + trans_account + trans_amount + trans_flag

CIF_file = * Customer Information File *

= 1{CIF_record}n

CIF_record = Customer_information_number + customer_thai_name + customer_eng_name + address + telephone + birth_date + tax_number + foreign + occupation

Customer_thai_name / Customer_eng_name = First_name + {middle_name} + last_name

Current_account_file = 1{Current_account_record}n

Current_account_record = Current_account_number + customer_information_number + OD. + use_total + admit_department + customer_type + open_date + close_date + transaction_date + account_status

Savings_account_file = 1{Saving_account_record}n

Savings_account_record = Saving_account_number + customer_information_number + account_balance + admit_department + open_date + close_date + transaction_date + account_status

Fixed_account_file = 1{Fixed_account_record}n

Fixed_account_record = Fixed_account_number + customer_information_number + account_balance

+ admit_department + open_date + close_date +
transaction_date + account_status

Loan_file = 1{Loan_record}n

Loan_record = Loan_number + customer_information_number +
type_of_loan + type_of_collateral + credit_line
+ interest_rate + advance_date + maturity_date +
term_of_loan + date_of_past_due + past_due +
type_of_payment + loan_status

Credit_cardholder_file = 1{Credit_cardholder_record}n

Credit_cardholder_record = Credit_cardholder_number +
customer_information_number +
card_organization + issue_date + expire_date +
credit_limit + type_of_payment +
account_payment + payment_due_date +
outstanding_balance + amount_past_due +
transaction_date + card_status

ATM_cardholder_file = 1{ATM_cardholder_record}n

ATM_cardholder_record = ATM_cardholder_number +
customer_information_number + saving_account
+ current_account + issue_date + last_used_date
+ total_error_of_pin + card_status +
transaction_date

Application form = * The BM Bank's form that the customer has filled
in new application *

New application form = * Look at Appendix F *

Change status form = * Look at Appendix F *

CIF NO. = * The customer information number *

Accepted Application = * The customer's application form that has already

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been verified *

Transaction Credit application = * The transaction of customer has identified which type of request (Credit transaction)

Transaction Debit application = * The transaction of customer has identified which type of request (Debit transaction)

Retrieve file = * Retrieve file from the master file *

Other information = * Other information from customer information record including CIF NO. and application *

Application new record = * Accept request for new application record *

Approved change status record = * Accept request for status changing *

Duplicated record = The record has been in the master file *

Update master file = Update master file as requested by the customer *

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APPENDIX F

Process specification

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PROCESS SPECIFICATION

Process 1.1 : Check customer data

BEGIN

GET Application form from custormer

CHECK Customer data from application form

IF Incomplete application

THEN Send to proccess 1.2

ELSE Send to proccess 1.3

ENDIF

END

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Process 1.2 : Request more requirements

BEGIN

RECEIVE Incomplete application form from process 1.1

REQUEST More data to customer

CUSTOMER Send back complete data

IF Customer sends complete data

THEN Send complete application form to process 1.3

ENDIF

END

Process 1.3 : Accept application

BEGIN

RECEIVE Complete application form from process 1.1

IF Application is approved

THEN Accept application and send customer information record

ELSE Deny application

ENDIF

END

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Process 2.1 : Approve the application

BEGIN

RECEIVE Application

IF Complete application

THEN Send application form to process 2.2

END

Process 2.2 : Classified request

BEGIN

RECEIVE Application form

IF New application

THEN Send new application form to process 3

ELSE Send status changing form to process 5

ENDIF

END

Process 3.1 : Key information for generating CIF NO.

```
BEGIN
        RECEIVE New application form from 2.2
        DO WHILE NOT_END_OF_RECORD
              CHECK_MISSING field(i) of Info_record
              IF field(i)  =  zeroes or blanks
                 THEN Display  "PLEASE KEY IN APPLICATION"
                        GET field(i)
                        PUT field(i) to info_record
                        CONTINUE
              ENDIF
        ENDDO
END
```

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Process 3.2 : Check CIF NO.

```
BEGIN
        RECEIVE Customer information
        GET 6 Character of last name
        PUT L_NAME
        COMPUTE Total amount of last name
        PUT TOTAL_L_NAME
        GET 1 Character of first name
        PUT F_NAME
        COMPUTE Total amount of first name
        PUT TOTAL_F_NAME
        GET 1 Character of middle name
        PUT M_NAME
        RUNNING_NO  =  000
        CIF_NO  =  L_NAME & TOTAL_L_NAME & F_NAME &
                   TOTAL_F_NAME & M_NAME & RUNNING_NO
 END
        GET CIF_FILE
        IF  CIF_NO  not found
            THEN  go to process  3.4
            ELSE  go to process  3.5
        ENDIF
END
```

Process 3.3 : Regenerate CIF NO.

BEGIN

RECEIVE Customer information

GET 6 Character of last name

PUT L_NAME

COMPUTE Total amount of last name

PUT TOTAL_L_NAME

GET 1 Character of first name

PUT F_NAME

COMPUTE Total amount of first name

PUT TOTAL_F_NAME

GET 1 Character of middle name

PUT M_NAME

RUNNING_NO = 000

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Process 3.4 : Generate NO.

BEGIN

RECEIVE CIF_NO.

PUT CIF_NO + CIF_TNAME + CIF_ENAME + CIF_ADDR1 +
CIF_ADDR2 + CIF_TELEPHONE + CIF_BIRTH_DATE +
CIF_TAX + CIF_FOREIGN + CIF_OCCU

END

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Process 3.5 : Add new CIF NO. record

BEGIN

RECEIVE CIF_NO

RECORD CIF_NO + CIF INFORMATION to CIF FILE

END

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Process 4.1 : Key in new application

BEGIN

RECEIVE CIF NO. + APPLICATION NO. + OTHER INFORMATION

from process 3

IF Not credit application

THEN Go to process 4.3

ELSE Go to process 4.2

ENDIF

END

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Process 4.2 : Check status and account

```
BEGIN
        CASE OF CREDIT APPLICATION
        GET Savings account file, Current account file,
              Fixed account file, Cardholder creditcard file, Loan file
        IF LOAN_RECORD
           THEN LOAN_ACCOUNT  =  SA_NO OR CA_NO OR FA_NO
                   CREDIT_CARD_STATUS  NOT = Out of credit
                   Go to process 4.3
        ENDIF
        IF CREDITCARD_RECORD
           THEN CREDITCARD_ACCOUNT  =  SA_NO OR CA_NO
                                       OR FA_NO
                   LOAN_STATUS  NOT = Out of credit
                   Go to process 4.3
        ENDIF
        CASE OF DEBIT APPLICATION
              Go to process 4.3
END
```

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Process 4.3 : Check digit from application type

```
BEGIN
        GET Number_Application
        COMPUTE  DIGIT from Number_Application
        IF DIGIT ERROR
           THEN DISPLAY  "DIGIT ERROR PLEASE CHECK AGAIN"
        ENDIF
END
```

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Process 4.4 : Check application

```
BEGIN
    CASE OF NEW_APPLICATION_RECORD
      CASE SAVINGS_RECORD
        GET SAVINGS_ACCOUNT FILE
          IF SA_NO  in the SAVING_ACCOUNT FILE
            THEN DISPLAY "DUPLICATE SAVING ACCOUNT"
                 DISPLAY "PLEASE CHECK AGAIN"
          ENDIF
    CASE CURRENT_RECORD
      GET  CURRENT_ACCOUNT  FILE
        IF CA_NO  in the CURRENT_ACCOUNT FILE
          THEN  DISPLAY "DUPLICATE CURRENT ACCOUNT"
                DISPLAY "PLEASE CHECK AGAIN"
        ENDIF
    CASE FIXED_RECORD
      GET FIXED_ACCOUNT  FILE
      IF FX_NO in the FIX_ACCOUNT FILE
        THEN DISPLAY "DUPLICATE FIX ACCOUNT"
             DISPLAY "PLEASE CHECK AGAIN"
      ENDIF
    CASE ATM_RECORD
      GET CARDHOLDER_ATM  FILE
      IF ATM_RECORD  in the CARDHOLDER_ATM FILE
        THEN DISPLAY "DUPLICATE CARDHOLDER ATM"
             DISPLAY "PLEASE CHECK AGAIN"
      ENDIF
    CASE CREDIT_CARD_RECORD
```

```
        GET CARDHOLDER_CREDITCARD  FILE
        IF CREDIT_CARD_NO  in the
          CARDHOLDER_CREDITCARD  FILE
          THEN DISPLAY "DUPLICATE  CARDHOLDER CREDITCARD"
                DISPLAY "PLEASE CHECK AGAIN"
        ENDIF
    CASE LOAN_RECORD
        GET LOAN  FILE
        IF LOAN_RECORD  in the LOAN FILE
          THEN DISPLAY "DUPLICATE LOAN"
                DISPLAY "PLEASE CHECK AGAIN"
        ENDIF
END
```

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Process 5.1 : Retrieve and check CIF NO.

```
BEGIN
        RECEIVE CIF_RECORD
        GET CIF_FILE
        IF CIF_RECORD =  CIF_FILE
           THEN go to process  5.2
           ELSE DISPLAY ' CIF NO. NOT FOUND IN CIF FILE'
                DISPLAY ' PLEASE CHECK CIF NO. AGAIN'
        ENDIF
END
```

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Process 5.2 : Check status

BEGIN

RECEIVE Status information for changing

IF Status update not complete

THEN DISPLAY "STATUS WILL UPDATE ERROR"

ELSE Go to process 5.3

ENDIF

END

Process 5.3 : Approve data for change

```
BEGIN
        RECEIVE  Status information to change
        IF STATUS_APPROVE  = COMPLETE
           THEN go to  PROCESS  6.1
           ELSE DISPLAY  "NOT APPROVED TUS CHANGE"
        ENDIF
END
```

Process 6.1 : Update master

```
BEGIN
        CASE OF Application_record
            CASE SA_APP
                    ADD SAVINGS record to SAVINGS ACCOUNT FILE
                        go to   process 6.2
            CASE CA_APP
                    ADD CURRENT record to CURRENT ACCOUNT FILE
                        go to process 6.2
            CASE FA_APP
                    ADD FIXED record to FIXED ACCOUNT FILE
                        go to process 6.2
            CASE ATM_CARD_APP
                    ADD ATM CARD record to ATM CARD FILE
                        go to process 6.2
BEGIN
        CASE CREDIT_CARD_APP
                ADD CREDIT CARD record to CREDIT CARD file
                    go to process 6.2
        CASE LOAN_APP
                ADD LOAN record to LOAN FILE
                        go to   process 6.2
END
```

Process 6.2 : Write log file

BEGIN

RECEIVE New_record

RECEIVE Change_status_record

IF Update master file = complete

THEN Write transaction log file

END IF

END

Process 7.1 : Prepare file

BEGIN

READ (CIF File, CA File, SA File, FIX File, LOAN File,

CREDIT CARD File, ATM File)

END

Process 7.2 : Generat report

BEGIN

GET DATE

GET MASTER_FILE

CREATE Report

PRINT Report

END

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APPENDIX G

Application Form

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Table G.1. Deposit Application Form

Branch	**BM BANK ,LTD.** DEPOSIT APPLICATION FORM	DATE ..../..../....

Account type .....

First Name (Thai) .....Middle Name ..... Last Name .....

First Name (Eng) .....Middle Name ..... Last Name .....

Address .....

.....

Telephone number .....

Occupation .....

Tax number .....

- Have you ever had other application in this Bank ?

☐ NO. ☐ YES. .....

( )

Signature

*** STAFF ONLY ***

☐ APPROVE - Account no. .....

☐ DISAPPROVE

☐ REMARK .....

.....

.....

( )

Signature

Date .../.../...

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Table G.2. ATM Cardholder Application Form (For New Cardholder)

Branch	**BM BANK ,LTD.** ATM CARDHOLDER APPLICATION FORM FOR NEW CARDHOLDER	DATE ..../..../....

First Name (Thai) .....Middle Name ..... Last Name .....

First Name (Eng) .....Middle Name ..... Last Name .....

Address .....

.....

Telephone number .....

Occupation .....

Tax number .....

Savings Account ..... Current Account .....

Do you ever have other application in this Bank ?

☐ NO. ☐ YES. .....

( )

Signature

***** STAFF ONLY *****

☐ APPROVE - Cardholder no. .....

☐ DISAPPROVE

☐ REMARK .....

.....

.....

( )

Signature

Date .../.../...

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Table G.3. ATM Cardholder Application Form (For Change Status)

Branch	**BM BANK ,LTD.** ATM CARDHOLDER APPLICATION FORM FOR CHANGE STATUS OF CARDHOLDER	DATE ..../..../....

First Name (Thai) .....Middle Name ..... Last Name .....

First Name (Eng) .....Middle Name ..... Last Name .....

Address .....

.....

Cardholder No. .....

From account ..... To account .....

☐ Add account - Account no. .....

☐ Change account - From account ..... To account.....

☐ Change status of cardholder - From status ..... To status .....

( )

Signature

***** STAFF ONLY *****

☐ APPROVE

☐ DISAPPROVE

☐ REMARK .....

.....

.....

( )

Signature

Date .../.../...

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Table G.4. Credit Cardholder Application Form (For New Cardholder)

Branch	**BM BANK ,LTD.** CREDIT CARDHOLDER APPLICATION FORM FOR NEW CARDHOLDER	DATE ..../..../....

First Name (Thai) .....Middle Name ..... Last Name .....

First Name (Eng) .....Middle Name ..... Last Name .....

Address .....

.....

Telephone number .....

Occupation .....

Tax number .....

- What application do you wish to request ?

☐ Visa Card

☐ Gold ☐ Classic

☐ Master Card

☐ Gold ☐ Classic

☐ Card organization

☐ Principle card ☐ Supplementary card

- What payment type would you like ?

☐ Account - Account no. .....

☐ Cash ☐ Other

- Have you ever had other application in this Bank ?

☐ NO. ☐ YES. .....

( )

Signature

Date .../.../...

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Table G.5. Credit Cardholder Application Form (For New Cardholder)

Branch	**BM BANK ,LTD.** CREDIT CARDHOLDER APPLICATION FORM FOR NEW CARDHOLDER	DATE ..../..../....

***** STAFF ONLY *****

☐ APPROVE

- Cardholder no. .....
- Credit line .....

☐ DISAPPROVE

☐ REMARK .....

.....

.....

( )

Signature

Date .../.../...

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Table G.6. Credit Cardholder Application Form (For Change Status)

Branch	**BM BANK ,LTD.** CREDIT CARDHOLDER APPLICATION FORM FOR CHANGE STATUS OF CARDHOLDER	DATE ..../..../....

First Name (Thai) .....Middle Name ..... Last Name .....

First Name (Eng) .....Middle Name ..... Last Name .....

Address .....

.....

Telephone number .....

Cardholder no. .....

- What change do you wish to request ?

☐ Change card status

- From status ..... - To status .....

☐ Change payment type

☐ Account - Account no. .....

☐ Cash ☐ Other

☐ Change Credit Line

- Old Credit Line .....

- New Credit Line .....

( )

Signature

Date .../.../...

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Table G.7. Loan Application Form (For New Loan)

Branch	**BM BANK ,LTD.** LOAN APPLICATION FORM	DATE ..../..../....

First Name (Thai) .....Middle Name ..... Last Name .....

First Name (Eng) .....Middle Name ..... Last Name .....

Address .....

.....

Telephone number .....

Occupation .....

Tax number .....

Type of loan .....

Collateral type .....

Term of loan .....

Customer type .....

- Do you want payment type ?

☐ Account - Account no. .....

☐ Cash ☐ Other

- Do you ever have other application in this Bank ?

☐ NO. ☐ YES. .....

( )

Signature

Date .../.../...

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Table G.8. Loan Application Form (For New Loan)

Branch	**BM BANK ,LTD.** LOAN APPLICATION FORM	DATE ..../..../....

***** STAFF ONLY *****

☐ APPROVE

- Loan no. .....
- Credit Line .....

☐ DISAPPROVE

☐ REMARK .....

.....

.....

( )

Signature

Date .../.../...

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Table G.9. Loan Application Form (For Change Status)

Branch	**BM BANK ,LTD.** LOAN APPLICATION FORM FOR CHANGE STATUS	DATE ..../..../....

First Name (Thai) .....Middle Name ..... Last Name .....

First Name (Eng) .....Middle Name ..... Last Name .....

Address .....

.....

Telephone number .....

Loan no. .....

- What change do you wish to request ?

☐ Change callateral type

- Old callateral type .....

- New callateral type .....

☐ Change payment type

☐ Account - Account no. .....

☐ Cash ☐ Other

☐ Change Card status

- From status .....

- To status .....

☐ Change Credit Line

- Old Credit Line .....

- New Credit Line .....

( )

Signature

Date .../.../...

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Table G.10. Loan Application Form (For Change Status)

Branch	**BM BANK ,LTD.** LOAN APPLICATION FORM FOR CHANGE STATUS	DATE ..../..../....

***** STAFF ONLY *****

☐ APPROVE

☐ DISAPPROVE

☐ REMARK .....

.....

.....

( )

Signature

Date .../.../...

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