



Asset Information System for Assumption University

By

Ms. Christmas Sathianwarraporn

A Final Report of the Three - Credit Course
CE 6998 Project

Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master of Science
in Computer and Engineering Management
Assumption University

May 1999

MS (CEM)
St. Gabriel's Library_i

ASSET INFORMATION SYSTEM FOR ASSUMPTION UNIVERSITY

by
Ms. Christmas Sathianwarraporn

A Final Report of the Three-Credit Course
CE 6998 Project

Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master of Science
in Computer and Engineering Management
Assumption University


May 1999


Project Title	Asset Information System for Assumption University
Name	Ms. Christmas Sathianwarraporn
Project Advisor	Prof.Dr.Srisakdi Charmonman
Academic Year	May 1999


The Graduate School of Assumption University has approved this final report of the three-credit course, CE 6998 PROJECT, submitted in partial fulfillment of the requirements for the degree of Master of Science in Computer and Engineering Management.

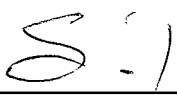
Approval Committee:

(Prof.Dr.Srisakdi Charmonman)
Chairman and Advisor


(Dr. Chamnong u hirapanich)
Dean


(Assist.Prof Dr.Boonmark Sirinaovakul)
Member


(Dr. Prapon Phasukyud)
Member


(Assoc.Prof.Somchai Thanyong)
MUA Representative

May 1999

ABSTRACT

Assumption University is one of the most famous universities in Thailand. The university was formally established in June 1972 in the name of Assumption Business Administration College or ABAC. It is located at Ramkhamhaeng 24 Rd., Huamark, Bangkok, Bangkok 10240 Thailand.

The Asset Management System is a manual process. This system was once redesigned and operated as a computerized system but it was not successful. The reason why the system has to be redesigned again, this time, is because of the great volume of the asset and is preparing for the new campus at Bang Na. The existing system encounters many problems such as long processing time, late delivered report, and so on. The proposed system introduces the barcode technology so as to facilitate the overall processes and to reduce human error in data entry process.

The new system is developed by using top-down structured analysis and design technique. To maximize the investment, all existing hardware and software are determined and evaluated for the system utilization. The proposed system provides accuracy, to timely, and complete information needed for management and other users.

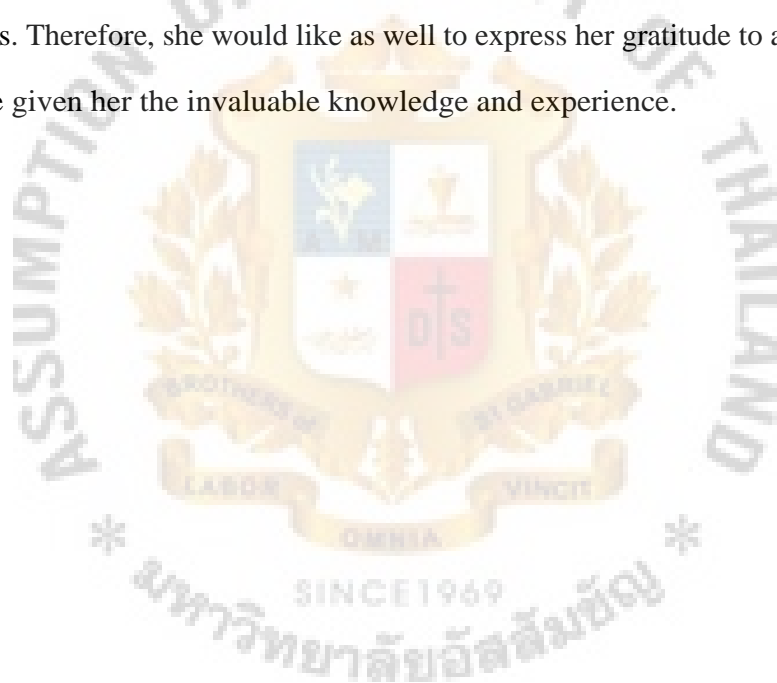
ACKNOWLEDGEMENTS

The contribution of many people brings success to this project. The author appreciates their cooperation and advice.

First of all, she would like to express her sincere gratitude to her advisor, Prof. Dr. Srisakdi Charmonman, for his constant encouragement and invaluable suggestions and guidance.

The author is very pleased to work with staff and management of Assumption University and thanks for their information and cooperation.

This acknowledgment cannot be completed if she does not mention to her instructors. Therefore, she would like as well to express her gratitude to all of his instructors who have given her the invaluable knowledge and experience.



St. Gabriel's Library

TABLE OF CONTENTS

<u>Chapter</u>	<u>Page</u>
ABSTRACT	
ACKNOWLEDGEMENTS	ii
LIST OF FIGURES	
LIST OF TABLES	ix
I. INTRODUCTION	1
1.1 Background of the Organization	1
1.2 Scope of the Project	10
1.3 Objectives of the Project	11
1.4 Deliverable	12
1.5 Project Schedule	13
II. EXISTING SYSTEM	15
2.1 Background of the Existing System	15
2.2 Existing Business Function	15
2.3 Problem Identification	19
III. THE PROPOSED SYSTEM	21
3.1 The Proposed System Overview	21
3.2 User Requirements	22
3.3 System Analysis and Design	23
3.4 System Configuration	26
3.5 Cost/Benefit Analysis	27
3.6 Security and Control	29
IV. PROJECT IMPLEMENTATION	32
4.1 Coding	32
4.2 Testing	32
4.3 Installation	33
4.4 Training	34
4.5 Post Implementation and Evaluation	34

<u>Chapter</u>	<u>Page</u>
V. CONCLUSIONS AND RECOMMENDATIONS	35
5.1 Conclusions	35
5.2 Recommendations	36
APPENDIX A ANALYSIS OF THE EXISTING SYSTEM	39
APPENDIX B ANALYSIS OF THE PROPOSED SYSTEM	50
APPENDIX C DESIGN OF THE PROPOSED SYSTEM	78
APPENDIX D DATABASE DESIGN OF THE PROPOSED SYSTEM	90
APPENDIX E SCREEN DESIGN OF THE PROPOSED SYSTEM	102
APPENDIX F REPORT DESIGN OF THE PROPOSED SYSTEM	112
BIBLIOGRAPHY	124



LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1.1 Organization Chart of Office of Financial Management	8
1.2 Organization Chart of Assumption University	9
2.1 Context Diagram of the Existing System	17
2.2 Level 0 Data Flow Diagram of the Existing System	18
3.1 Proposed Context Diagram	24
3.2 Proposed Level 0 Data Flow Diagram	25
3.3 Basic System Configuration	28
3.4 The Example of Client/Server System Configuration	28
3.5 Cost/Benefit Comparison Chart	31
A.1 Context Diagram of the Existing System	40
A.2 Level 0 DFD of the Existing System	41
A.3 Level 1 DFD of Process 1 of the Existing System	42
A.4 Level 1 DFD of Process 2 of the Existing System	43
A.5 Level 1 DFD of Process 3 of the Existing System	44
A.6 Level 1 DFD of Process 4 of the Existing System	45
A.7 Level 1 DFD of Process 5 of the Existing System	46
A.8 Level 1 DFD of Process 6 of the Existing System	47
A.9 Level 1 DFD of Process 7 of the Existing System	48
A.10 Level 1 DFD of Process 8 of the Existing System	49
B.1 Context Diagram of the Proposed System	51
B.2 Level 0 DFD of the Proposed System	52
B.3 Level 1 DFD of Process 1 of the Proposed System	53

<u>Figure</u>	<u>Page</u>
B.4 Level 1 DFD of Process 2 of the Proposed System	54
B.5 Level 1 DFD of Process 3 of the Proposed System	55
B.6 Level 1 DFD of Process 4 of the Proposed System	56
B.7 Level 1 DFD of Process 5 of the Proposed System	57
B.8 Level 1 DFD of Process 6 of the Proposed System	58
B.9 Level 1 DFD of Process 7 of the Proposed System	59
B.10 Level 1 DFD of Process 8 of the Proposed System	60
B.11 Level 1 DFD of Process 9 of the Proposed System	61
B.12 Level 1 DFD of Process 10 of the Proposed System	62
C.1 Top Level Structure Chart of the Proposed System	79
C.2 Detail Structure Chart of Process 1 of the Proposed System	80
C.3 Detail Structure Chart of Process 2 of the Proposed System	81
C.4 Detail Structure Chart of the Process 3 of Proposed System	82
C.5 Detail Structure Chart of Process 4 of the Proposed System	83
C.6 Detail Structure Chart of Process 5 of the Proposed System	84
C.7 Detail Structure Chart of Process 6 of the Proposed System	85
C.8 Detail Structure Chart of Process 7 of the Proposed System	86
C.9 Detail Structure Chart of Process 8 of the Proposed System	87
C.10 Detail Structure Chart of Process 9 of the Proposed System	88
C.11 Detail Structure Chart of Process 10 of the Proposed System	89
E.1 Windows Logon Screen	103
E.2 Application Logon Screen	103
E.3 User Maintenance Screen	103

<u>Figure</u>	<u>Page</u>
E.4 Main Window and Main Menu of the Application	104
E.5 File Menu of the Application	104
E.7 Application Menu of the Application	105
E.6 Edit Menu of the Application	105
E.8 Application : Asset Maintenance Menu of the Application	106
E.9 Application : Report Menu of the Application	106
E.10 Application : Options Menu of the Application	107
E.11 Windows Menu of the Application	107
E.12 Help Menu of the Application	108
E.13 About the Application Screen	108
E.14 Inspection Information Input Screen	109
E.15 Asset Card's General Information Screen	110
E.16 Asset Card's Cost Center Information Screen	110
E.18 Asset Card's Repairing Information Screen	111
E.17 Asset Card's Depreciation Information Screen	111
F.1 Asset Card Report by Asset Item	113
F.2 Asset Card Report by Department	114
F.3 Daily Received Asset Report	115
F.4 Asset Item Listing Report	116
F.5 Asset Status Report	117
F.6 Asset Repairing Information Report	118
F.7 Inventory of Asset Report	119
F.8 List of Required Asset Report	120

<u>Figure</u>	<u>Page</u>
F.9 Depreciation of Asset Report	121
F.10 Supplier Listing Report	122
F.11 Asset Holding Report	123



LIST OF TABLES

<u>Table</u>	<u>Page</u>
1.1 Project Schedule Plan	14
3.1 Cost/Benefit Comparison Table	30
3.2 Authorization Level of the System	31
D.1 List of User Table	91
D.2 List of Asset Info Header Table	91
D.3 List of Asset Info Item Table	91
D.4 List of Supplier Table	92
D.5 List of Cost Center Table	92
D.6 List of Asset Main Table	93
D.7 List of Asset_Supplier Table	93
D.8 List of Inventory Table	93
D.9 List of Asset Card Table	94
D.10 List of Asset Transfer Table	94
D.11 List of Asset_Repair Table	95
D.12 List of Request Head Table	95
D.13 List of Request Item Table	95

I. INTRODUCTION

1.1 Background of the Organization

1.1.1 Historical Background

ABAC, or Assumption University as it is now known, was originally initiated in 1969. It was formally established in June 1972 and accredited by the Ministry of Education and the Ministry of University Affairs in May 1975. The University is administered by the Montfort Brothers of St. Gabriel, a worldwide Catholic Religious Order devoted to education and philanthropic activities. The Congregation operates fourteen educational institutions in Thailand.

The University employs English as the official medium of instruction and has foiiiiial links and cooperation agreements with a large network of international institutions of higher learning in America, England, Australia, Belgium etc. for scholastic exchange and research programs.

The University has a student body of more than 17,000 including a fairly large complement of foreign students drawn from 42 countries of the world. It also has a high-calibered faculty, a truly international community of scholars and professionals representing diverse academic disciplines, different fields of business and many government organs and these arrangements help considerably in bringing students into close touch with pragmatic aspects of life.

1.1.2 Philosophy

In loyalty to its Christian mission, Assumption University stands for

- the inculcation of respect for the three institutions of the Nation: Religion, Country, the King and a democratic way of life.

- the belief that a man justifies himself and his existence by the nobility of his work
- the commitment to be a light that leads men towards the true source of all knowledge and life.

1.1.3 Objectives and Policies

Assumption University exists for the main purpose of serving the nation by providing scientific and humanistic knowledge, particularly in the business education and management science through research and interdisciplinary approaches. To this end it aims at forming intellectually competent graduates who

- are morally sound, committed to acting justly, and open to further growth.
- appreciate freedom of expression, imbibe right attitudes and ideologies through a carefully integrated curriculum of Ethics, Science, Languages and Business Management.
- achieve academic excellence through hard work, critical thinking, and effective decision-making

1.1.4 Accreditation

The University is fully accredited by the Ministry of University Affairs. Its graduates enjoy the privileges accorded to State University graduates. Its academic standards are accepted by the Civil Service Commission of Thailand.

Assumption University is recognized in the U.S.A. and other countries and transfer credits from the University are accepted by foreign universities.

Graduates from the University can pursue advanced Degrees anywhere in the world.

Assumption University is listed in the Handbook of Universities and other Institutions of the *International Association of Universities* in Paris, France.

The University is recognized by:

- The Association of Christian Universities and Colleges in Asia (ACUCA)
- The Association of Southeast Asian Institution of Higher Learning (ASAIHL)
- The International Federation of Catholic Universities.

1.1.5 Medium of Instruction

English is the officially approved medium of instruction at the University. Five courses are in the Thai language but only for Thai speaking students. Students whose native tongue is not Thai follow the same courses in English.

1.1.6 Non-Discrimination

Assumption University does not discriminate in its programs and activities against any person because of race, color, ethnic origin, ancestry, religion, age and sex. This non-discriminate policy applies to admissions, employment, treatment of individuals, and access to programs. Inquiries concerning this policy may be directed to the Personnel officer or the Office of the Registrar.

1.1.7 Library

Assumption University maintains 4 large libraries with over 200,000 volumes and subscribes to about 550 journals and periodicals. In addition to the study facilities provided for students and instructors in the main libraries, there are reading areas in many other locations. To name but a few these are: the Catholic Education Council library, the Catholic library, the graduate student Lounge, the Guidance and Counseling library, the Faculty lounge, and the International Center.

1.1.8 Health Services

Assumption University provides health services in the Martin De Tours Hall. Students are responsible for making arrangements for their own health care except in case of

emergency. Registered nurses are on duty Monday through Friday from 8:00 a.m. to 4:30 p.m. and are available for emergencies, first aid, and medical counseling.

Students, faculty and staff members with medical problems are encouraged to keep their files active at the Health Center regarding the nature of their problems so that appropriate action can be taken in the event of an emergency.

1.1.9 Placement Office

The Placement Office furnishes students and alumni with advice and on campus services regarding career planning and employment. The goal of such services is to merge the interests of students and employers to their mutual benefit. Students who are graduating may register for interviews with representatives from business organizations and governmental agencies. Services provided by this Office are provided free of charge to all Assumption University students.

1.1.10 Food Service and Cafeterias

Several catering facilities are available to faculty, staff and students throughout the campus. Contractor-operated facilities are in operation daily from 7:00 a.m. to 8:00 p.m. (Hours may change during semester break)

1.1.11 Center for Research in Business

CRIB was established to provide research services to Thailand's business community. Through the use of the expertise available to faculty, staff, and student body, it also aims at promoting a closer relationship between academics and practising business people so as to gain mutual advantage. All students can utilize the services of this Center for their own research papers.

1.1.12 Center for Institutional Research

The Center for Institutional Research (CIR) of Assumption University was established

in 1982 and has developed into what it is today. The main functions of the Center are as follows:

- Conduct and manage research projects concerning ABAC operations periodically. The factual information obtained from such studies are used as inputs for decision making concerning long-term planning and administration;
- Create and design basic research concerning Higher Education;
- Provide consultation about research design and methodology and statistical package to instructors for academic research or for practical application in classroom instruction;

1.1.13 Computer Center

The Assumption University Computer Center strives to acquaint students with the use of computers as tools for working with large quantities of information in high technology environments. Its general activities are under the direction of the Director of the Computer Center. In addition to supplying instruction in the use of computer facilities to students and faculty, the Center also assists them with classwork and research activities involving complex computations and intricate data processing.

1.1.14 Press

The ABAC press prints all the University publications, ABAC journal, Newsletter, etc., and offers opportunities and facilities for publication of outstanding research papers as an incentive for both faculty and students to conduct high quality research and write excellent reports upon such work.

1.1.15 Bookstore

The bookstore provides a wide range of magazines, periodicals educational

equipment, textbooks and professional books usually not available at regular commercial bookstores.

1.1.16 International Center

The international Center, directly under the Office of the President, is engaged in multinational activities to promote understanding, cooperation, and unity among the teaching staff and student community with backgrounds foreign to Thailand.

The Center emphasizes the following international dimensions of the University through its counseling services:

- cultural contribution to campus life by various nationalities represented.
- opportunity for the students to learn and coexist.

The center is located adjacent to the Martin De Tours building and Dr.Choop Plaza and has its own full-time staff.

1.1.17 Campus Ministry, Chapel & Religious Center

The Campus Ministry is designed for the Catholic community and makes use of a spacious and beautiful Chapel where as the Religious Center is soul-searching pursuit of the true source of all knowledge and life. Space is provided for each community applying to establish a house of meditation and prayer.

1.1.18 English Language Center (ELC)

Assumption University since its inception has used English as its medium of instruction. Today, with 14,000 students hailing from 40 nations and faculty drawn from more than twenty-five countries, the use of English is becoming not only the language of instruction but the language of communication as well. Therefore, English is an essential need of: the students, the faculty and the University. To help meet their language training needs, the ELC was established.

Mission. The mission of the ELC is to support the English language programs and Departments of English at Assumption University by acting as a basic language training, testing and research center. The ELC is also tasked to develop and operate ad hoc, tailor-made training programs for the Thai business community.

Organization. The ELC is directly under the Vice-president for Academic Affairs and is headed by a director. The director is assisted by two deputies: one is charged with the responsibility for internal programs, and the other oversees the external programs. The program director for test, evaluation and computer applications also reports to the ELC Director. Individual programs have a program coordinator. The program coordinators report directly to their respective deputies.

Staffing. The ELC staff mirrors the University's multicultural community. Currently, the Center finds synergy in its Thai, American, Australian, British, Burmese, and Indian educators. As a team, they can draw on a wealth of international and Thai experiences to insure that the programs meet the demanding University standards.

Programs. The ELC has a number of continuing programs and courses, and upon demand can design and conduct ad hoc training programs for the business community. To mention a few:

English Immersion 300 and 600. These courses are designed for students requiring extensive language training prior to entry into ABAC or prior to studying abroad. The course is offered each semester.

A 45-hour **conversation and discussion** course is designed to give individuals a considerable amount of practice in speaking the English language. The course is open to non-ABAC professionals who desire to practice speaking English. It is offered twice each semester.

Pre-English basic courses. These courses are designed for students who need additional training in the basics prior to undertaking the Universities rigorous standard four semesters of English. These courses are offered each semester. In addition to the above, many other special purpose courses such as TOEFL, GMAT, and GRE preparation are offered. Other courses of an experimental or special nature are given to meet students, staff and university needs, and to explore new methodologies and teaching techniques. These courses are generally offered upon demand, providing a minimum class size can be arranged.

Future Initiatives. In addition to moving ahead with its current programs, the ELC is in the process of exploring, evaluating, acquiring and testing a host of interactive computer programs for use by both the University and the private sector. It is expected that some of these programs will be developed and made available on the A.U. Internet sometime in 1995.

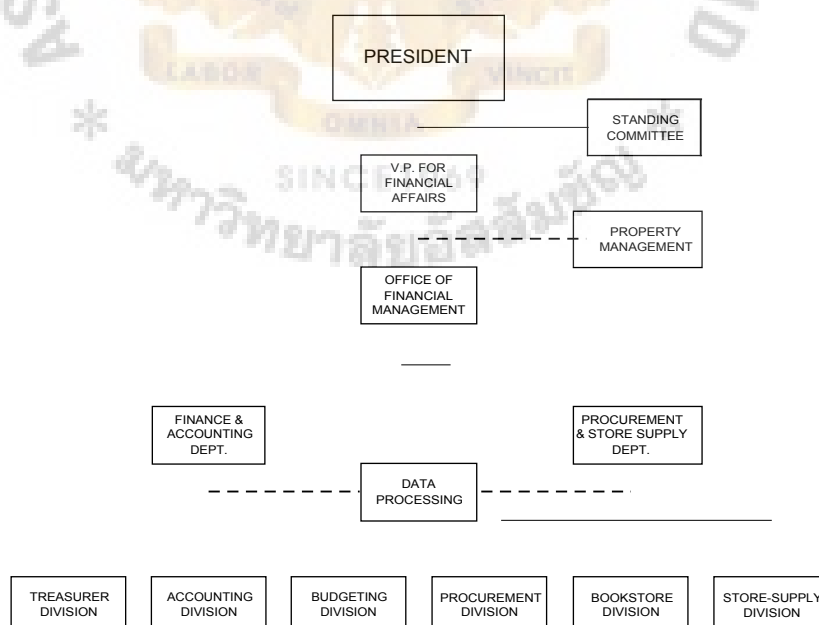


Figure 1.1. Organization Chart of Office of Financial Management.

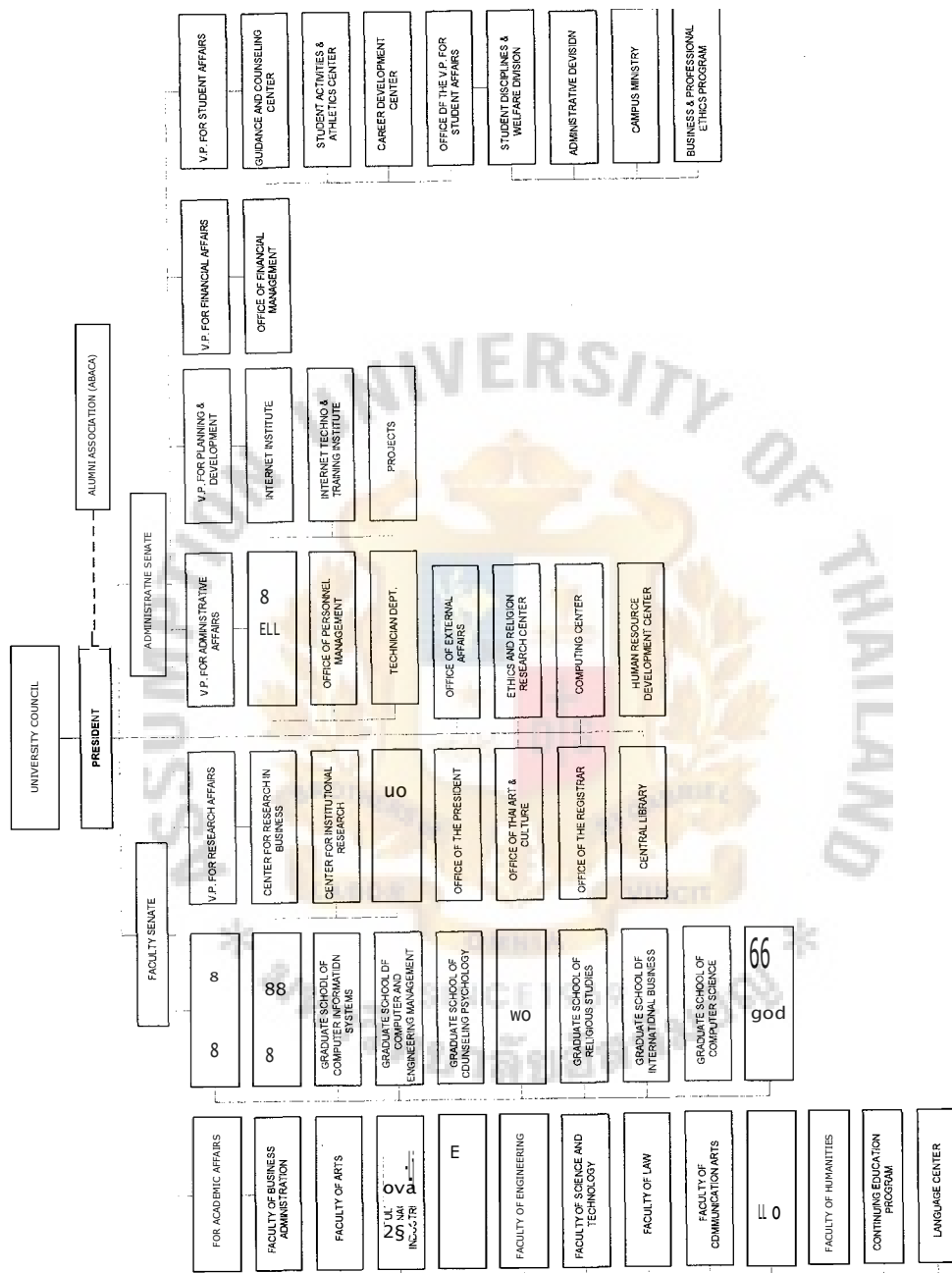


Figure 1.2. Organization Chart of Assumption University.

1.1.19 Organization Chart

This project is written for the ABAC Hotel, therefore the major concern of this project is in this department. The figure 1.1 shows the organization chart of the ABAC Hotel of Assumption University and the next, figure 1.2, shows the organization chart of Assumption University as a whole.

1.2 Scope of the Project

This project focuses only on the asset management and asset tracking. It will not consider the process of asset purchasing and inspection. But in this project, these above processes will be mentioned as they are interconnected to provide system accuracy and reduce work load to the system. The input data of this system mostly come from the Inspection Department.

When the existing system is evaluated, the result is unacceptable. This is because the manual system cannot guarantee anything to the management. The information of the purchased asset cannot be monitored. The only way to check the existing assets is in the annual checking process which will issue all information about assets to every department and wait for their response. The other weakness is that the asset code must be rearrange every year and this process would take a very long time to finish.

The proposed system will take care of the monitoring function of the assets. The advantages and features of the system are as follows:

- Complete information of an asset will be recorded. This includes the information of supplier, brand name, model, serial No., and so on.
- Each asset will have its own asset code to ease the monitoring of an asset. This means that an asset can be tracked one by one. So, the status of each asset can be set separately to ensure the accuracy of the information.
- The asset availability in the inventory can be easily checked out. This will

1484

help the officer to monitor the inventory status and reduce time and cost of work. Instead of travelling through the inventory store, the officer can easily log in to the system and retrieve the required available information.

- The system can ease the purchasing process as it can report the suppliers' status. This is because the information system designed in the system have the ability to support the information sharing and interchange with the related system such as the Purchasing System and Inspection System.
- The depreciation can be automatically done after assigning the depreciation method. So, the user can know exactly the remaining value of an asset and the system can then report the list of assets that has the remaining value below the set salvage value to be disposed.
- Each asset can have its own proper depreciation method to ensure system accuracy. This makes the system more flexible because each asset usually may be suitable for a depreciation method than the others.

1.3 Objectives of the Project

The main objective of the project is to develop a computerized system for the asset tracking and management for Assumption University. The reason is because the number of asset employed in the university is quite high while the overall processes are done manually. There are just few people doing this job and it is impossible to keep track of the assets.

And to develop the computerized system, the problems as well as the user requirements have to be defined . The project will complete only when most problems have been solved and meet its user requirements. The following is the list of the project's objectives.

- To transfer the inspection data from the inspection department automatically as one of the inputs of the system.
- To keep information of the purchased asset and to report the status of a required asset when needed.
- To calculate the depreciation of an asset and depends on its proper depreciation method.
- To report the inventory status to support the decision making process of the Purchasing Department.
- To ease the annual checking process by using the barcode technology.
- To support the cost calculation of using asset for each department.
- To take advantages of the campus network to transfer information within the department and throughout the department.
- To employ the data encryption technology to ensure the security of the system.
- To be the year 2000 compliance application.

1.4 Deliverable

The deliverables for the Asset Management System are as follows:

1. An application developed by using PowerBuilder. This application is compiled in the 32-bit version of PowerBuilder version 5.0 and it is recommended to run in Windows 95 or Windows NT.
2. The complete document of the system includes all processes from problem identification in the existing system to the analysis and design of the proposed system. The document illustrates the use of graphical models such as Context Diagram, Data Flow Diagram, Structure Chart, and so on as tools.
3. Screen layouts of the program. This is the illustration of the user interface used in the system. And as mentioned earlier, the Graphical User Interface is

employed in the system therefore the 32-bit operating system with GUI control interface is required.

4. Examples of hard copy report. These reports are pre-formatted for the ease of the users and it comes directly from the user requirements. These reports can be reformatted as needed by using the new point-and-click report generator module installed in the system. The following are examples of the reports:

- Asset Card Information Report Sorted by Item
- Asset Card Information Report Sorted by Department
- Asset Availability Report
- Daily Received Asset Report
- Depreciation and Present Value of Asset Report
- Asset Meet the End of Useful Life or Zero Value Report
- Disposed Asset Report
- Etc.

1.5 Project Schedule

The project plan is represented in Gantt Chart as shown in table 1.

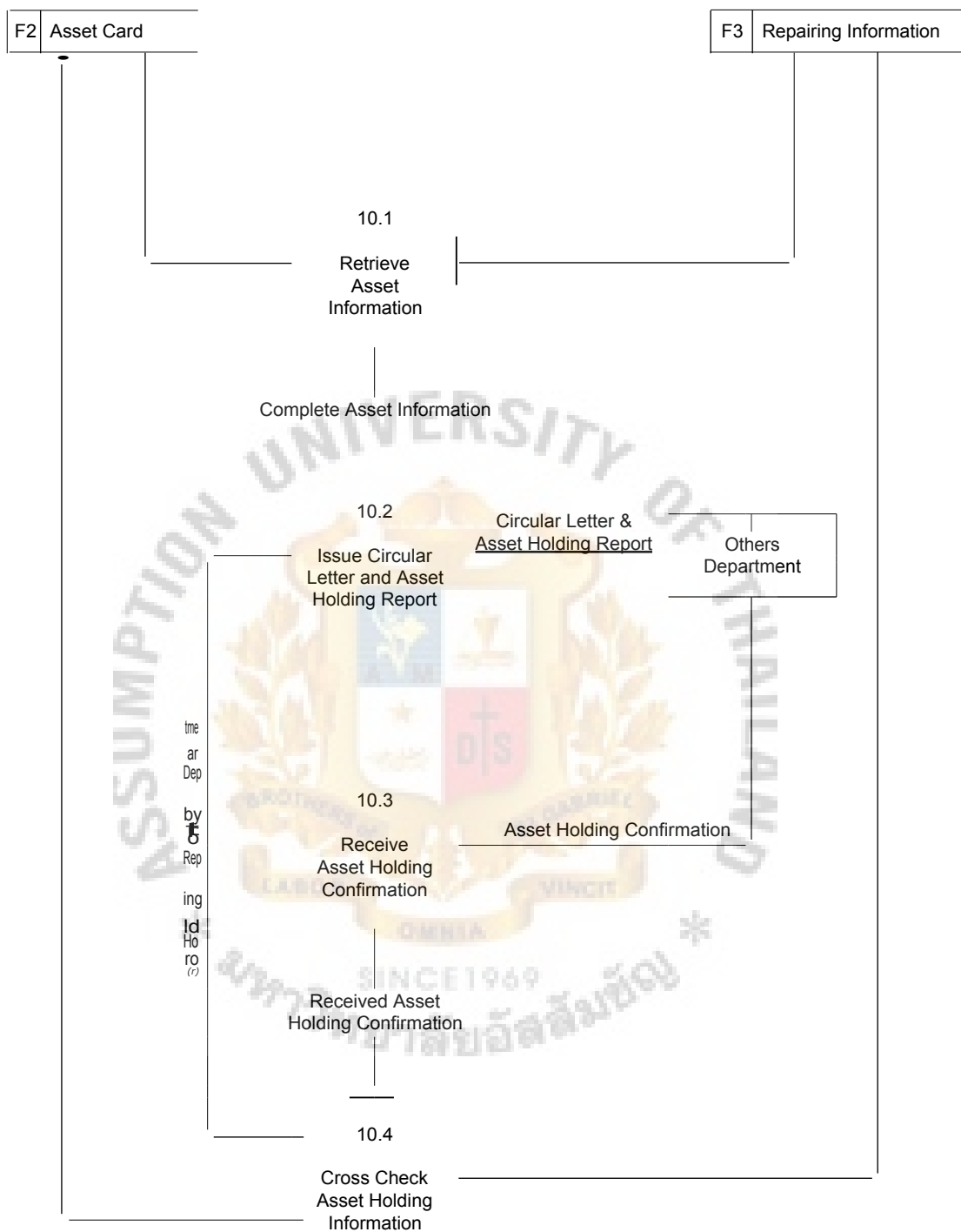


Figure B.12. Level 1 DFD of Process 10 of the Proposed System.

Process Specification

Process 1.0 Receive and Check Asset Information

Process 1.1 : Receive Asset Information

Begin

Repeat

Enter "Input Asset Data"

Until End of Input Data

End.

Process 1.2 : Verify Asset Information

Begin

Do While .not. End of asset data

Get asset_data

Read asset_item in asset card File

If asset_data .not. in asset_item

Error Message "Input data was not asset or new asset
type!"

Select "Create New Asset Item"

If Create Asset Item

Enter "Asset Item Information"

Write asset_item to File

End If

End If

If Input Data in asset_item or Create New Asset Item

Select "Depreciation Method"

Display "Asset Verification Complete"

End If

End Do

End.

Process 1.3 : Make Copy of Asset Information

The officer takes the inspection information document from the inspection division and makes 2 photocopies.

Process 1.4 : Store Asset Information

Begin

Write verified asset to asset information File

If File Write Error

Error Message "File Write Error"

Else

Display "Complete Update File"

End If

End.

Process 2.0 Prepare Asset Card

Process 2.1 : Retrieve Asset Information

Begin

Do While .not. EOF(asset_information)

Read asset_information File

If File Read Error

Error Message "File Read Error"

Else

Display asset infot_nation

End If

End Do

End.

Process 2.2 : Categorize Asset Information by Item

Begin

Do While .not. EOF(asset information)

Get asset information

End Do

Sort asset_information by Item

End.

Process 2.3 : Automatic Assign Asset Code

Begin

Get asset item

Search asset_item in asset card File

last_serial no = last serial no + 1

asset code = asset_item + Str(purchase_date) + last_serial no

End.

Process 2.4 : Identify Cost Center and Location

Begin

Display asset_information

Enter "Asset Cost Center", not null

Enter "Installed Location", not null

End.

Process 2.5 : Record Asset Card

Begin

Do While .not. EOF(asset information)

Read asset information File

If File Read Error

Error Message "File Read Error"

Else

Get asset code

Get cost center

Get location

Write asset card File

If File Write Error

Error Message "File Write Error"

End If

End If

End Do

End.

Process 3.0 Produce Daily Received Asset Report

Process 3.1 : Retrieve Asset Card Information

Begin

Do While .not. EOF(asset card)

Read asset card File

If File Read Error

Error Message "File Read Error"

Else

Display asset_card

End If

End Do

End.

Process 3.2 : Reformat Complete Asset Information

Begin

Do While .not. EOF(asset_card)

Get asset_card

End Do

Sort asset_card by received date

Enter "Date of Receive", not null, Default = Today

Get asset_card in date of receive

Save sorted_asset card in Temporary File

End.

Process 3.3 : Issue Daily Asset Report

Begin

Get sorted asset_card

Enter "Report Date", not null, Default = Today

Print "Daily Received Asset Report"

End.

Process 4.0 Receive Asset Repairing Information

Process 4.1 : Collect Asset Repairing Information

Begin

Get repairing_data from Inspection Department

Get repairing_data from Computing Center

Get repairing_data from AU Net

Combine repairing_data

End.

Process 4.2 : Search Asset Card

Begin

Get repairing_data

Get asset code

Search asset code in asset card File

If .not. Found

Error Message "Not Correct Asset Code"

Else

Get asset card

End If

End.

Process 4.3 : Check Asset and Its Repairing Information

Begin

Get repairing_data

Get asset card

Compare cost_center from repairing_data and asset card

If cost center .not. Identical

Error Message "Information Conflict!!!"

Else

Mark flag As verified repairing_data

End If

End.

Process 4.4 : Store Repairing Information

Begin

Do While .not. EOF(repairing_data)

Write repairing information File

If File Write Error

Error Message "File Write Error"

Else

Display repairing _information

End If

End Do

End.

Process 5.0 Receive Returned Asset

Process 5.1 : Check Returned Asset Physical Status

The officer checks and grades the physical appearance of the returned asset.

Process 5.2 : Keep Information of Returned Asset

Begin

Repeat

Enter "Returned Asset Data"

If .not. End of Input Data

Write inventory of asset File

If File Write Error

Error Message "File Write Error"

Else

Display inventory_of asset

End If

End If

Until End of Input Data

End.

Process 5.3 : Update Asset Status in Asset Card

Begin

Do While .not. EOF(inventory_of asset)

Read inventory_of asset

If File Read Error

Error Message "File Read Error"

Else

Write asset card File

If File Write Error

Error Message "File Write Error"

Else

Display asset_card

End If

End If

End Do

End.

Process 6.0 Check Asset Availability

Process 6.1 : Receive Asset Availability Inquiry

Begin

Repeat

Enter "Asset Availability Inquiry"

Until End of Input Data

End.

Process 6.2 : Receive Asset Request

Begin

Repeat

Enter "Asset Request"

Until End of Input Data

End.

St. Gabriel's Library

Process 6.3 : Check Available Inventory

Begin

Get availability inquiry

Search asset_item in inventory of asset File

If .not. Found

Mark flag As unavailable

Else

Mark flag As available

End If

Get required_asset

Search asset_item in inventory_of asset File

If .not. Found

Mark flag As unavailable

Else

Mark flag As available

End If

End.

Process 6.4 : Issue Availability Report

Begin

Get available asset

Sort available set by asset_item

Enter "Report Date", not null, Default = Today

Print "Asset Availability Report"

End.

Process 6.5 : Reject Asset Request

Begin

If Input Data is required_asset .and. .not. available

Delete asset_request

End If

End.

Process 6.6 : Store Verified Asset Request

Begin

Repeat

Write asset_request File

If File Write Error

Error Message "File Write Error"

Else

Display asset_request

End If

Until End of required_asset

End.

Process 7.0 Send Required Asset

Process 7.1 : Retrieve Verified Asset Request

Begin

Do While .not. EOF(asset_request)

Read asset_request File

If File Read Error

Error Message "File Read Error"

Else

Get flag

If flag is .not. complete

Save asset_request in Temporary File

End If

End If

End Do

End.

Process 7.2 : Check Asset Physical Status

The officer checks and grades the physical appearance of the returned asset.

St. Gabriel's Library

Process 7.3 : Update Inventory Information

Begin

Do While .not. EOF(inventory of asset)

Get asset item

If asset item = item request

Mark inventory_of asset.flag As sent item

Mark asset_request.flag As completely sent

End If

End Do

End.

Process 7.4 : Update Asset Card

Begin

Get asset_code

Search asset code in asset card File

Enter "New Cost Center", not null

Enter "New Installation Location", not null

Write asset_card File

If File Write Error

Error Message "File Write Error"

Else

Display asset_card

End If

End.

Process 7.5 : Send Asset to Required Department

The officer final check the required asset for the final correction. If everything is completely done, the officer will call the related department to install the asset at required location. After the installation, the officer will check for the location again whether it is same as stated in the asset card file.

Process 8.0 Calculate Asset Depreciation

Process 8.1 : Retrieve Asset Information

Begin

Do While .not. EOF(asset card)

Read asset card File

If File Read Error

Error Message "File Read Error"

Else

Display asset card

End If

End Do

End.

Process 8.2 : Estimate Asset Depreciation

Begin

Get depreciation type

time_of usage = Today - receive date

Case = 1

$\text{depreciation} = (\text{unit cost} - \text{salvage value}) / \text{useful life}$

$\text{total_depreciation} = \text{depreciation} \times \text{time_of usage}$

Case = 2

$\text{depreciation} = (\text{unit cost} - \text{total_depreciation}) \times 100 / \text{useful life} \times 2$

If time of usage > last_calculation

$\text{total_depreciation} = \text{total depreciation} + \text{depreciation}$

End If

Otherwise

Error Message "Depreciation Type Error!"

End Case

End.

Process 8.3 : Evaluate Book Value

Begin

Do While .not. EOF(asset card)

Read asset card File

If File Read Error

Error Message "File Read Error"

Else

book value = unit cost - total depreciation

Write asset_card File

If File Write Error

Error Message "File Write Error"

Else

Display asset_card

End If

End If

End Do

End.

Process 9.0 Dispose Asset

Process 9.1 : Receive Asset Disposal Request

Begin

Get dispose_data from Others Department

Get dispose_data from Computing Center

Get dispose_data from AU Net

Combine dispose_data

End.

Process 9.2 : Receive Zero Value Asset

Begin

Get asset_card which book value = 0

End.

St. Gabriel's Library

Process 9.3 : Verify Present Value of Asset

Begin

Get asset_code which will be disposed

Search asset code in asset card File

If .not. Found

Error Messafe "Asset Code not Found!"

Else

book_value = unit cost - total depreciation

Display book_value

End If

End.

Process 9.4 : Check Disposed Asset Physical Status

The officer checks and grades the physical appearance of the assets which is required to be disposed.

Process 9.5 : Delete Disposed Asset

Begin

Enter "Asset Physical Status"

Enter "Approve Disposal"

If disposal_approved

Mark flag As delete

Write asset card File

If File Write Error

Error Message "File Write Error"

Else

Display asset_card

End If

End If

End.

Process 10.0 Annual Asset Check

Process 10.1 : Retrieve Asset Information

Begin

Do While .not. EOF(asset card)

Read asset card File

If File Read Error

Error Message "File Read Error"

Else

Search asset_code in repairing informtion File

Display asset_card

Display repairing information

End If

End Do

End.

Process 10.2: Issue Circular Letter and Asset Holding Report

Begin

Get asset_card

Sort asset_card by cost_center

List Unique cost_center

Repeat

Report "Circular Letter"

Report "Asset Holding Report" group by cost_center

Until End of cost center List

End.

Process 10.3 : Receive Asset Holding Confirmation

Begin

Repeat

Enter "Asset Holding Data"

Until End of cost_center List

End.

Process 10.4 : Cross Check Asset Holding Information

Begin

Get holding report

Get holding_confirmation

Compare asset_code from holding_report and holding confirmation

If asset_code .not. Identical

Error Message "Asset Conflict! !"

Report "Asset Conflict"

Else

Mark repairing_information.flag As annual_check complete

Write repairing_information File

If File Write Error

Error Message "File Write Error"

Else

Mark asset_card.flag As annual check complete

Write asset_card File

If File Write Error

Error Message "File Write Error"

Else

Display asset_card

End If

End If

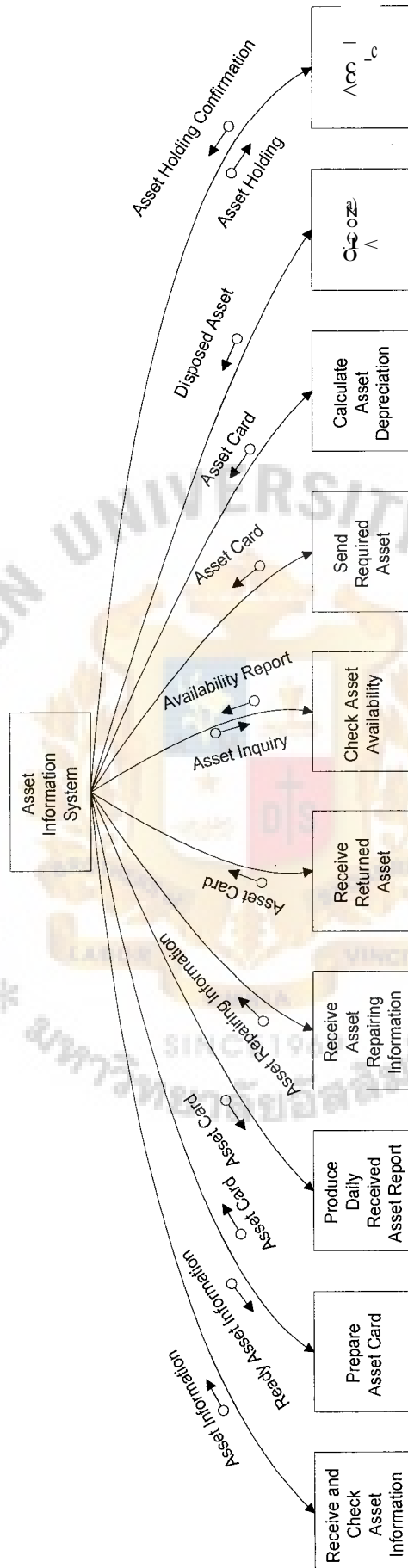
End If

End.



APPENDIX C

DESIGN OF THE PROPOSED SYSTEM



Top Level Structure Chart of the Proposed System.

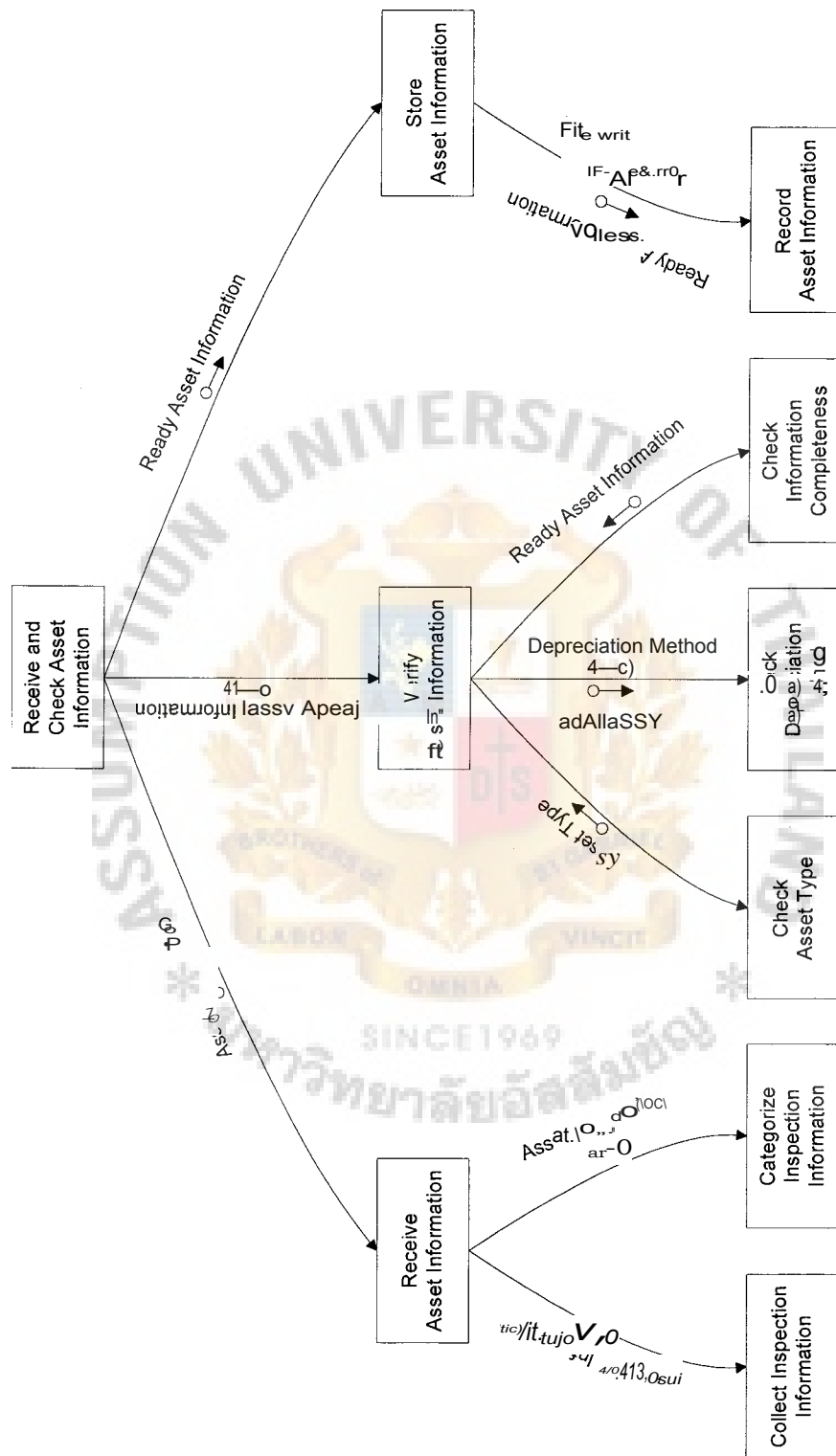
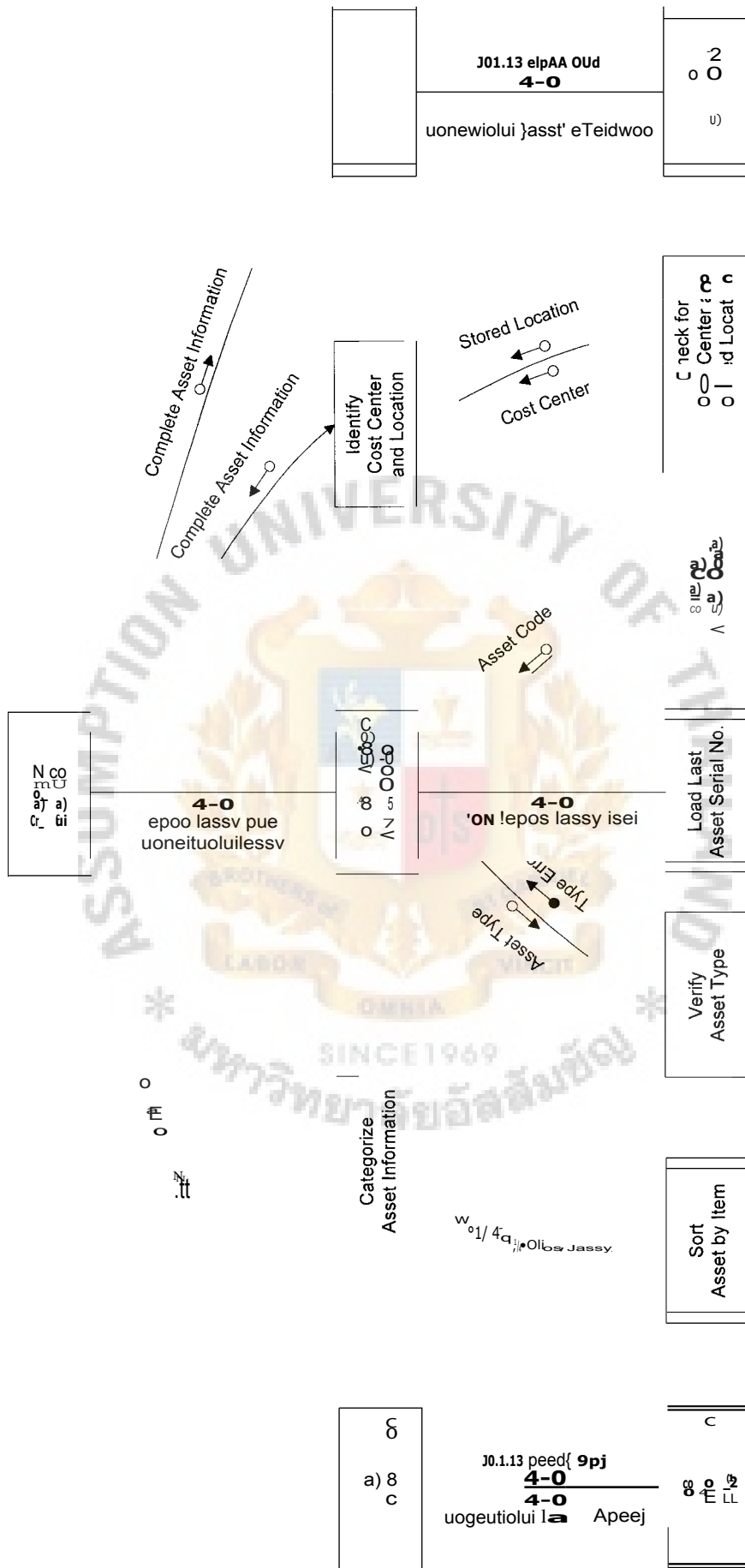


Fig 1. Detail Structure Chart of Process 1 of the Proposed System.



Detail Structure Chart of Process 2 of the Proposed System.

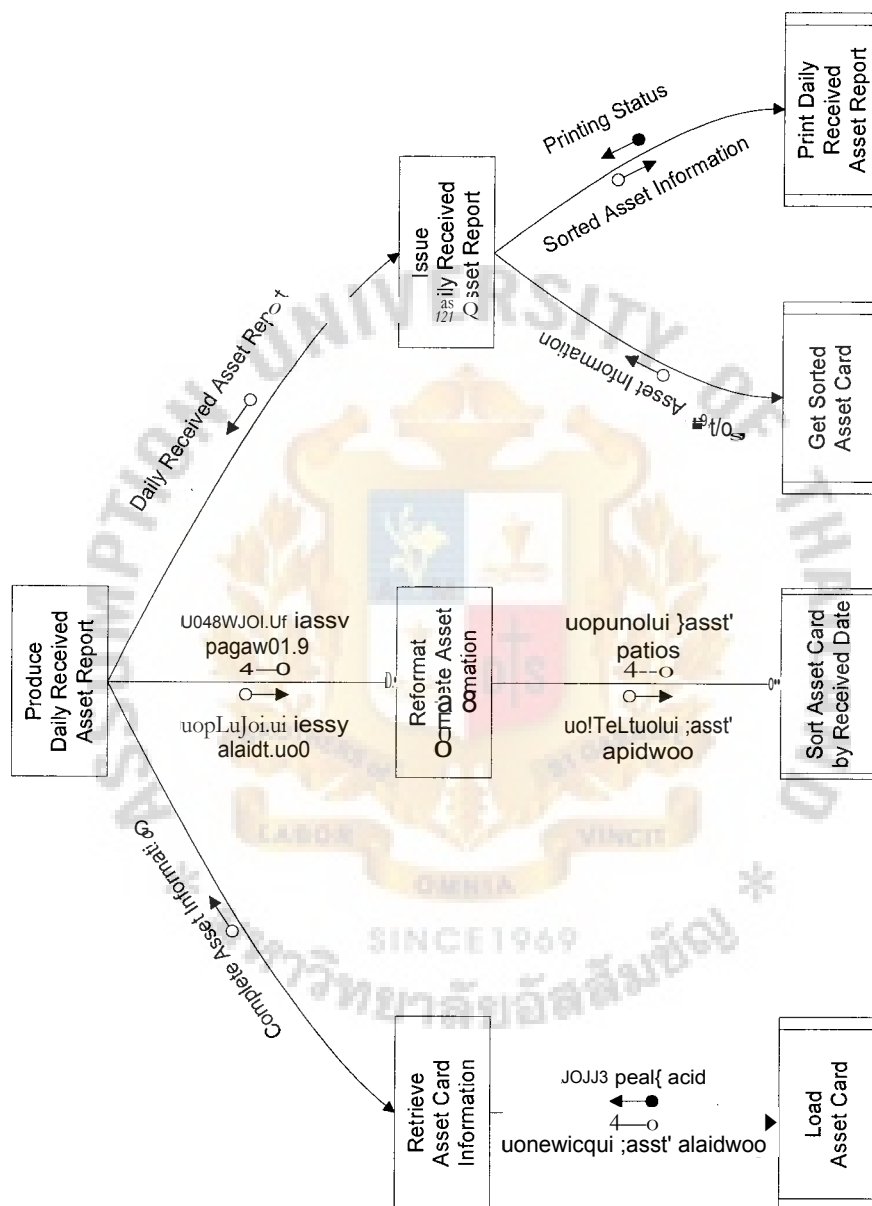
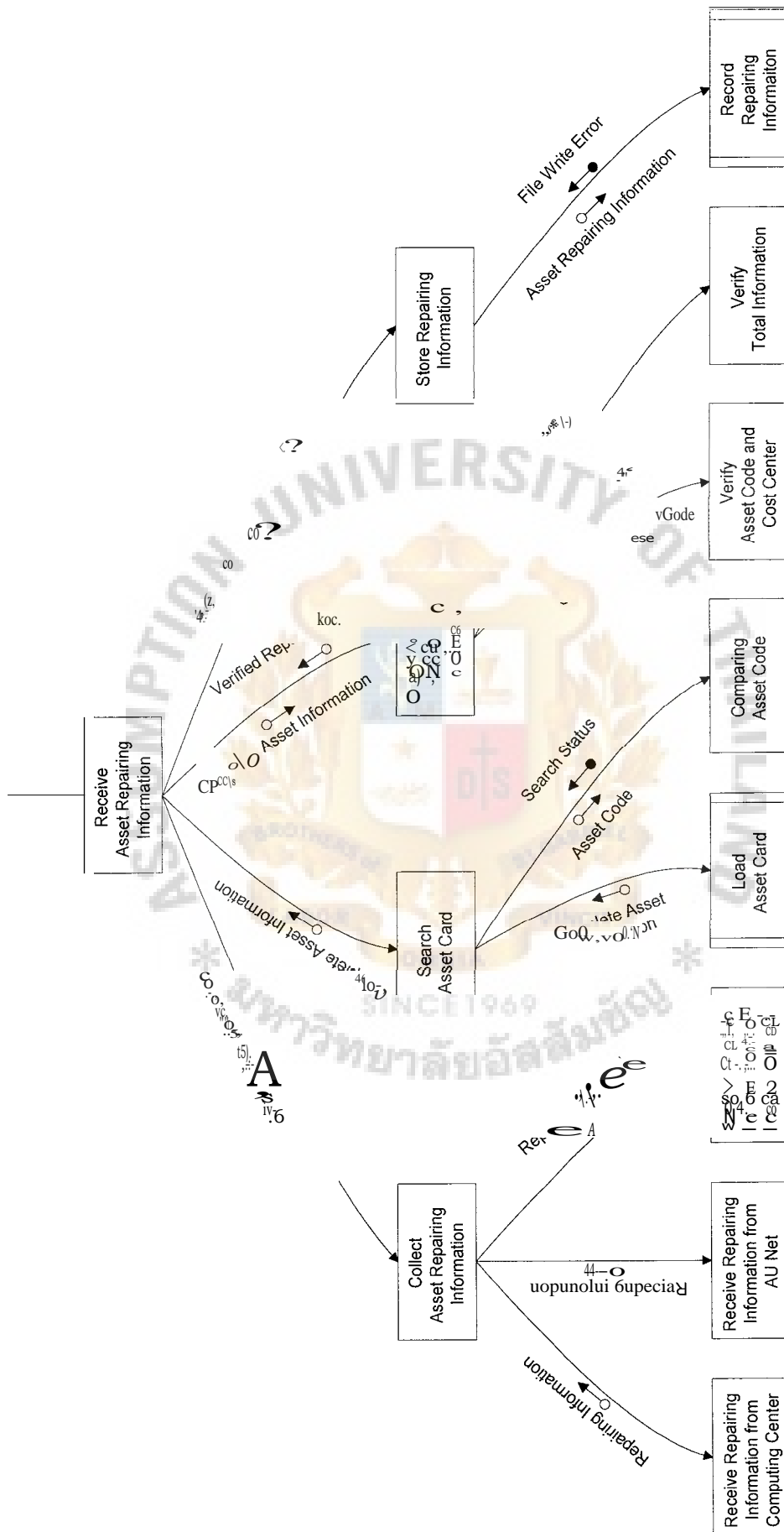
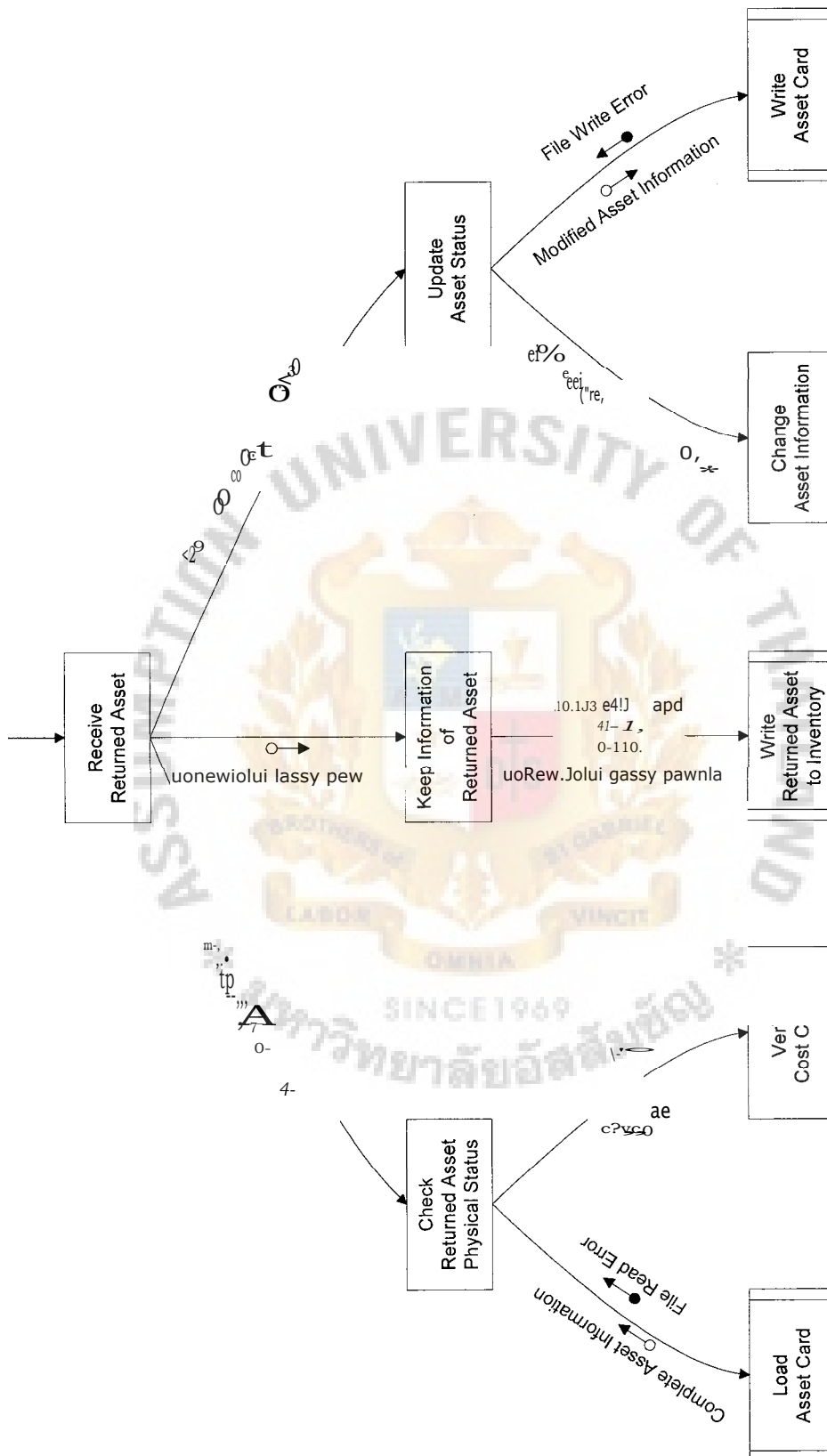


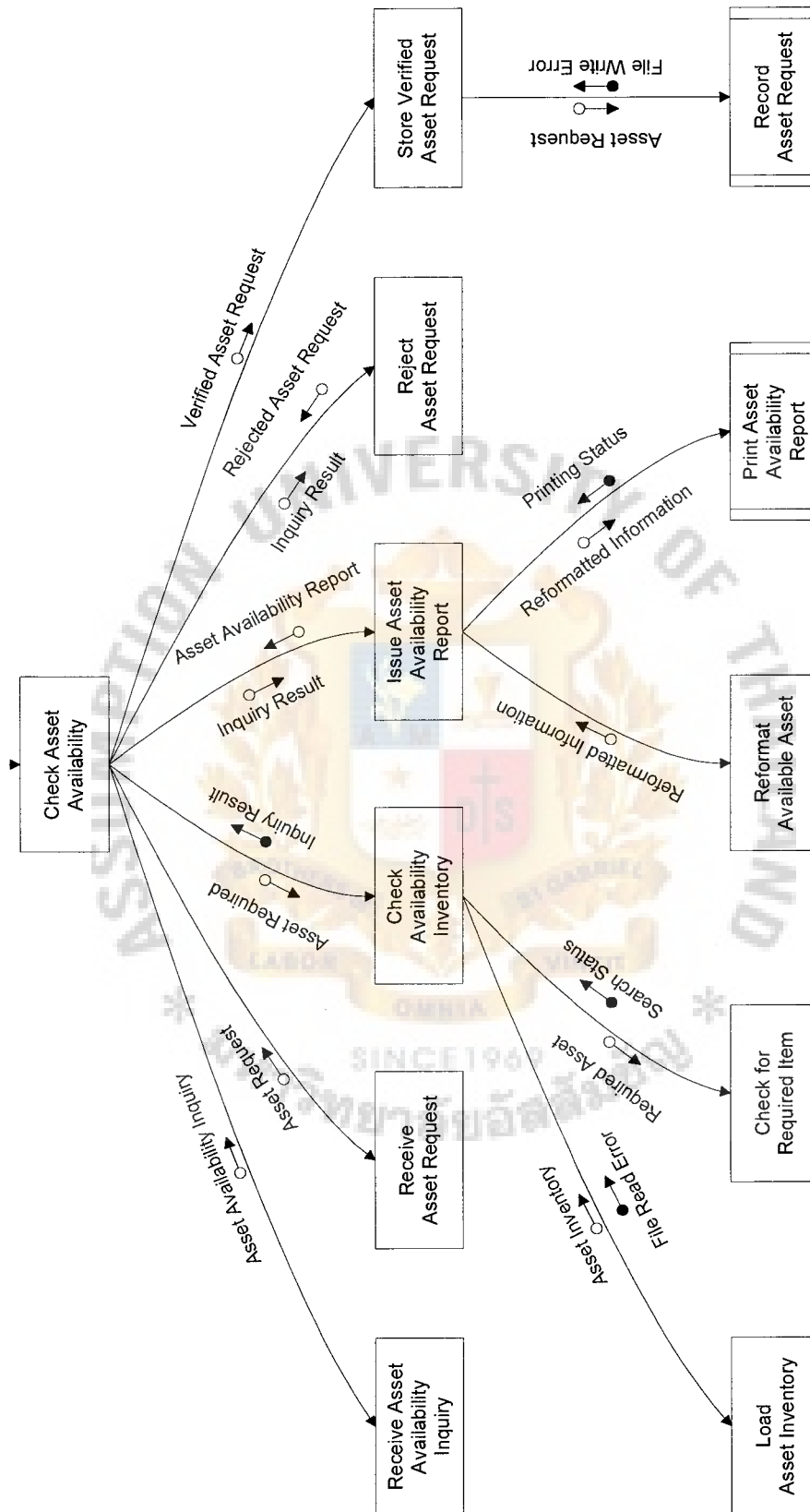
Figure C.4. Detail Structure Chart of the Process 3 of Proposed System.



Detail Structure Chart of Process 4 of the Proposed System.



Detail Structure Chart of Process 5 of the Proposed System.



Detail Structure Chart of Process 6 of the Proposed System.

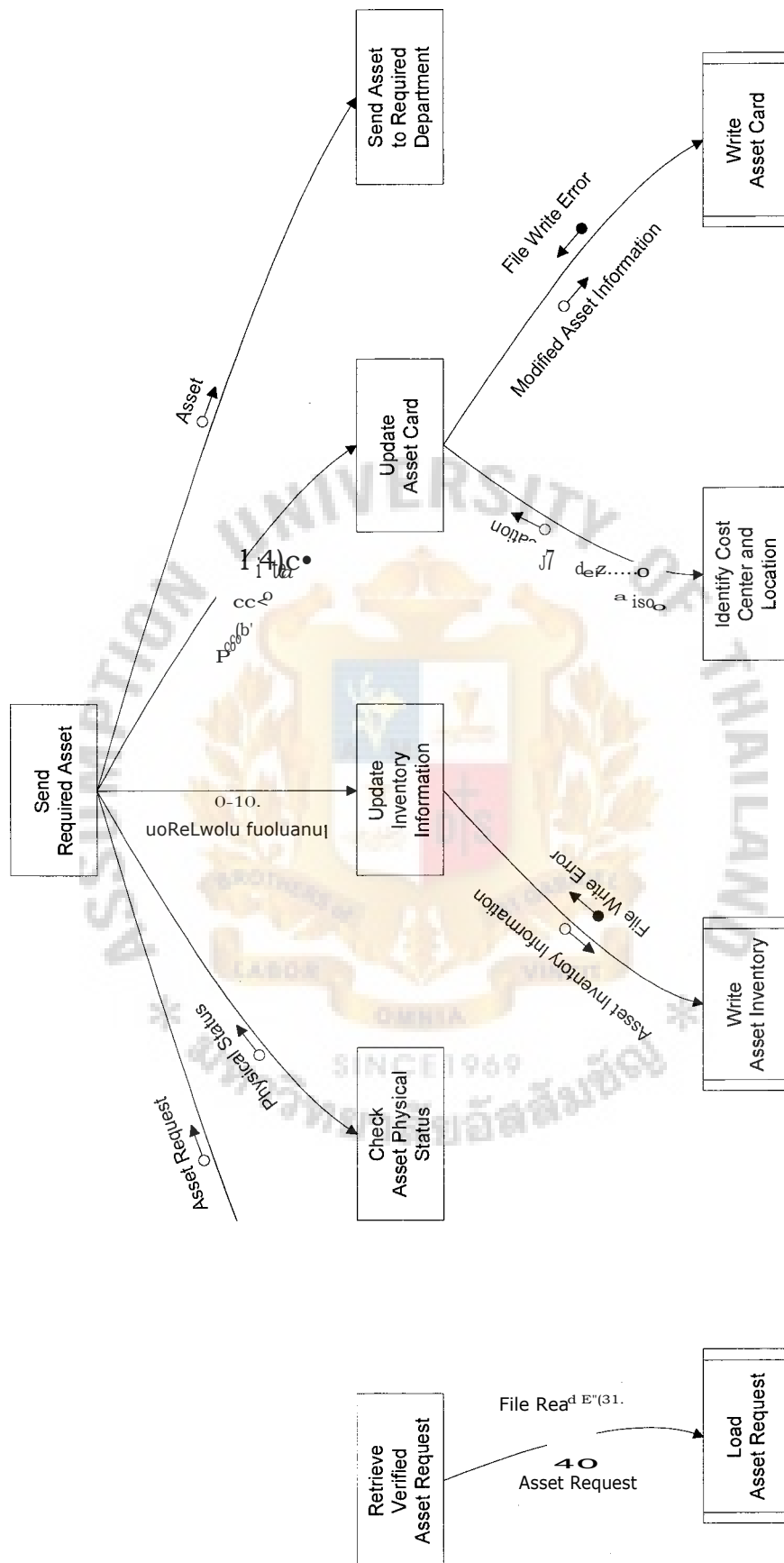
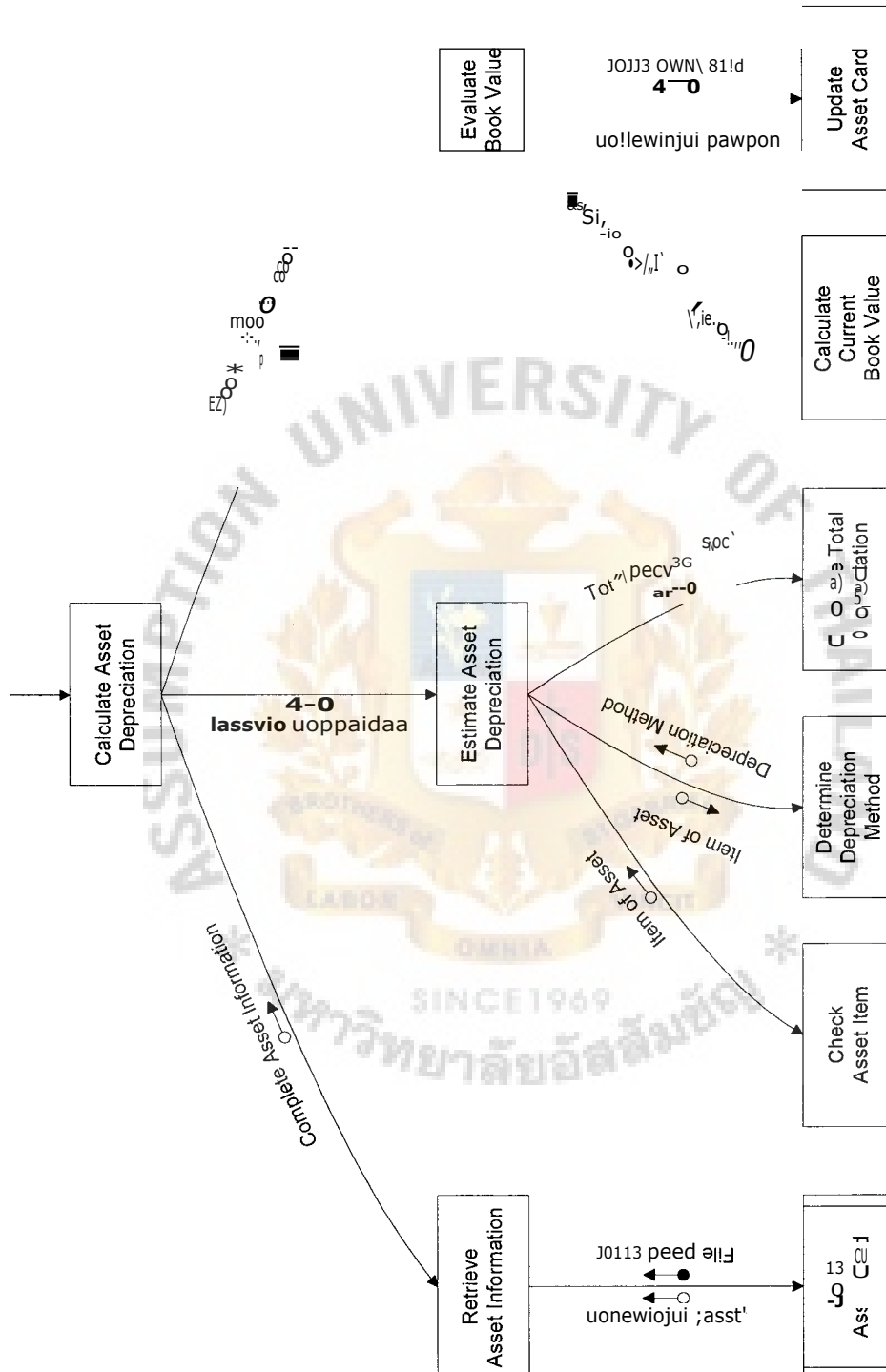


Figure C.8. Detail Structure Chart of Process 7 of the Proposed System.



Detail Structure Chart of Process 8 of the Proposed System.

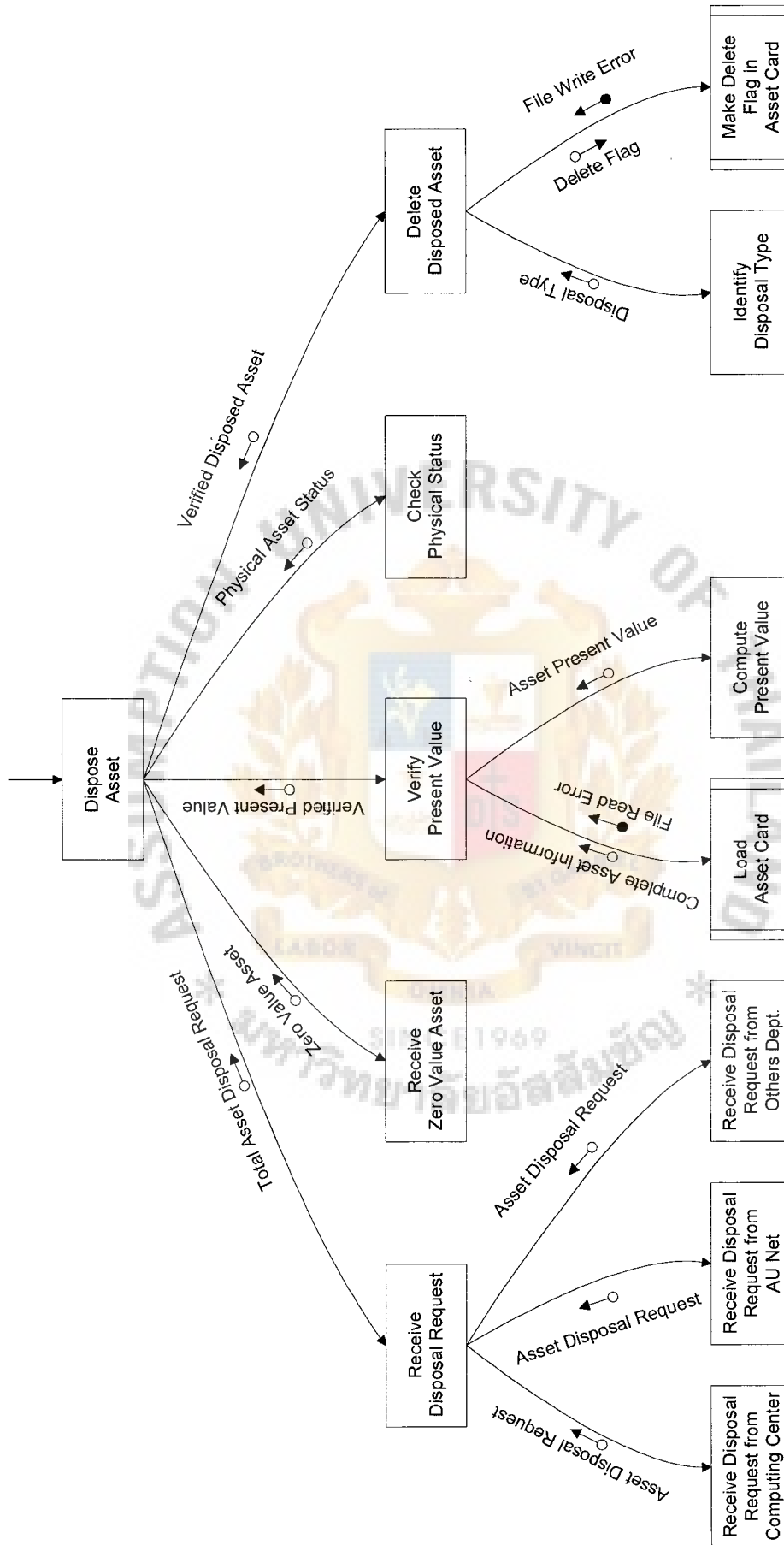
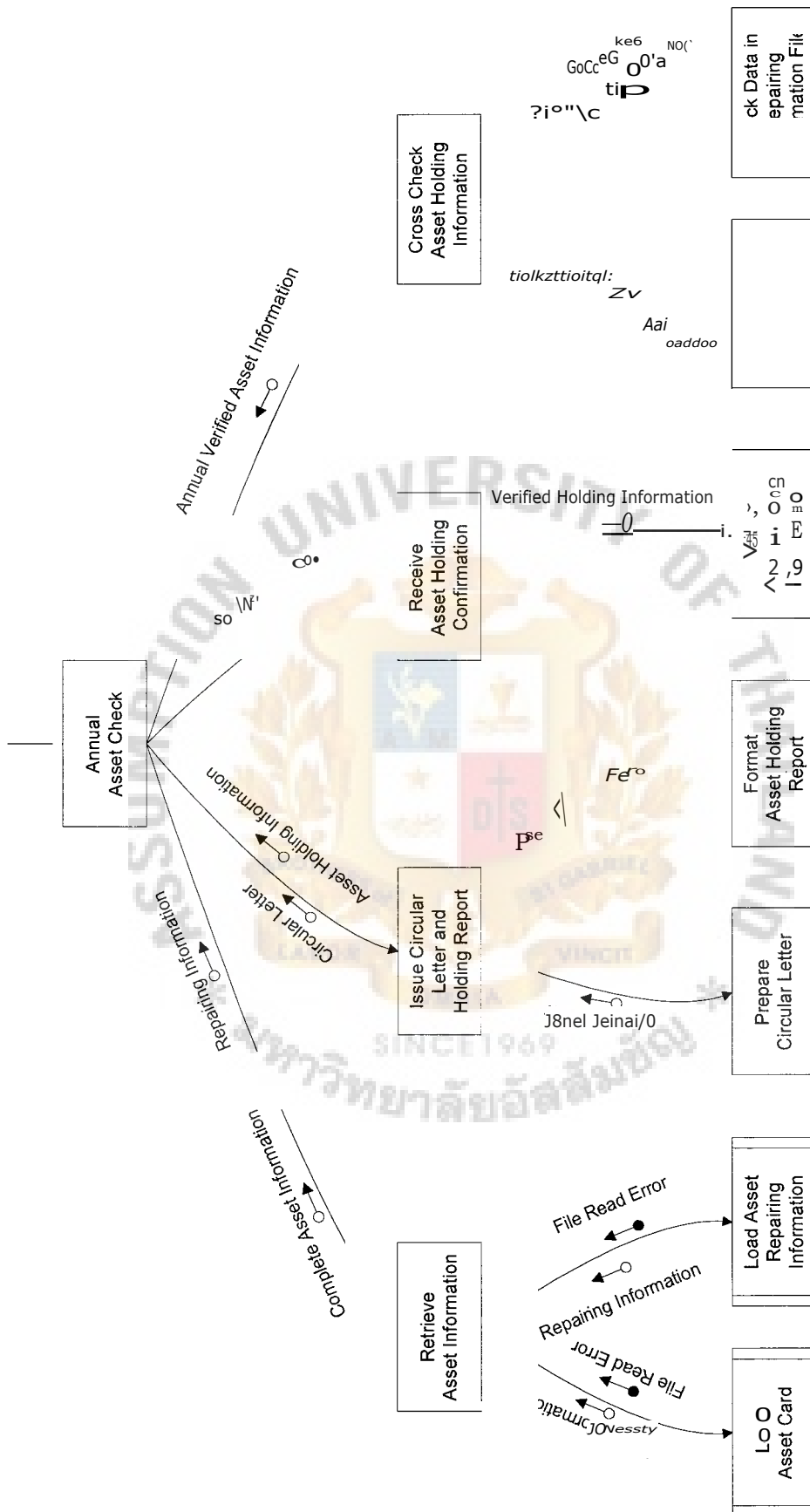


Figure C.10. Detail Structure Chart of Process 9 of the Proposed System.



Detail Structure Chart of Process 10 of the Proposed System.



APPENDIX D

DATABASE DESIGN OF THE PROPOSED SYSTEM

Table D.1. List of User Table.

No.	Field Name	Data Type	Length	Decimal Place
1	User No	Character	5	
2	Name	Character	45	
3	Status	Character	1	
4	Level	Character	1	
5	Password	Character	20	
6	Flag	Character	1	

Table D.2. List of Asset Info Header Table.

No.	Field Name	Data Type	Length	Decimal Place
1	RR No	Character	12	
2	Date	Date	10	
3	Supplier Code	Character	12	
4	Due Date	Date	10	
5	Type	Character	1	
6	PR_No	Character	12	
7	PO No	Character	12	
8	INV No	Character	12	
9	Flag	Character	1	

Table D.3. List of Asset Info Item Table.

No.	Field Name	Data Type	Length	Decimal Place
1	RR No	Character	12	
2	RR Line No	Numeric	2	0
3	Item Code	Character	5	
4	Description	Character	35	
5	Quantity	Numeric	6	0
6	Unit Cost	Numeric	10	2
7	Remark	Character	30	
8	Flag	Character	1	

Table D.4. List of Supplier Table.

No.	Field Name	Data Type	Length	Decimal Place
1	Supplier_Code	Character	12	0
2	Company	Character	45	
3	Trade Reg_No	Character	10	
4	Tax Reg_No	Character	10	
5	Street	Character	40	
6	District	Character	25	
7	Province	Character	25	
8	Zip_Code	Character	5	
9	Country	Character	20	
10	Telephone	Character	25	
11	Facimile	Character	15	
12	Contract_1	Character	45	
13	Mobile_1	Character	9	
14	Pager_1	Character	11	
15	Contract_2	Character	45	
16	Mobile_2	Character	9	
17	Pager_2	Character	11	
18	Level	Character	1	
19	Default Credit	Numeric	3	
20	Remark	Varchar	250	
21	Flag	Character	1	

Table D.5. List of Cost_Center Table.

No.	Field Name	Data Type	Length	Decimal Place
1	Cost_Center	Character	4	
2	Department	Character	35	
3	Location	Character	20	
4	Chair Person	Character	45	
5	Extension	Character	6	
6	Contract_1	Character	45	
7	Contract_2	Character	45	
8	Flag	Character	1	

Table D.6. List of Asset Main Table.

No.	Field Name	Data Type	Length	Decimal Place
1	Asset_Item	Character	5	
2	Asset Desc	Character	35	
3	Last Serial_No	Numeric	5	0
4	Quantity	Numeric	7	0
5	In_Order	Numeric	6	0
6	In Stock	Numeric	6	0
7	Remark	Varchar	250	
8	Flag	Character	1	

Table D.7. List of Asset Supplier Table.

No.	Field Name	Data Type	Length	Decimal Place
1	Asset_Item	Character	5	
2	Supplier Code	Character	12	
3	Status	Character	1	
4	Service Level	Character	2	
5	Last_Purchase	Date	10	
6	Last_Contract	Date	10	
7	Flag	Character	1	

Table D.B. List of Inventory Table.

No.	Field Name	Data Type	Length	Decimal Place
1	Asset_Code	Character	15	
2	Asset_Item	Character	5	
3	Store_Location	Character	20	
4	Return_Date	Date	10	
5	Return_Center	Character	4	
6	Flag	Character	1	

St. Gabriel's Library

Table D.9. List of Asset Card Table.

No.	Field Name	Data Type	Length	Decimal Place
1	Asset_Code	Character	15	
2	Asset_Item	Character	5	
3	Date_Receive	Date	10	
4	Cost_Center	Character	4	
5	Location	Character	20	
6	Brand	Character	20	
7	Model	Character	15	
8	Supplier Code	Character	12	
9	Supplier_Serial	Character	15	
10	Unit_Cost	Numeric	10	2
11	Depre Type	Character	1	
12	Useful Life	Numeric	3	0
13	Salvage Value	Numeric	10	2
14	Total_Depre	Numeric	10	2
15	Physical_Status	Character	2	
16	Move_Times	Numeric	2	0
17	Repair Times	Numeric	2	0
18	In Stock	Logical	1	
19	Remark	Varchar	250	
20	Flag	Character	1	

Table D.10. List of Asset Transfer Table.

No.	Field Name	Data Type	Length	Decimal Place
1	Asset_Code	Character	15	
2	Transfer_Order	Numeric	2	0
3	Transfer_Date	Date	10	
4	Cost_Center	Character	4	
5	Location	Character	20	
6	Flag	Character	1	

Table D.11. List of Asset Repair Table.

No.	Field Name	Data Type	Length	Decimal Place
1	Asset_Code	Character	15	
2	Repair Order	Numeric	2	0
3	Repair_Date	Date	10	
4	Ext Useful Life	Numeric	2	0
5	Repair Desc	Character	40	
6	Flag	Character	1	

Table D.12. List of Request Head Table.

No.	Field Name	Data Type	Length	Decimal Place
1	Request No	Character	12	
2	Date	Date	10	
3	Cost Center	Character	4	
4	Remark	Varchar	250	
5	Flag	Character	1	

Table D.13. List of Request_Item Table.

No.	Field Name	Data Type	Length	Decimal Place
1	Request No	Character	12	
2	Request Line No	Numeric	2	0
3	Asset Item	Character	5	
4	Quantity	Numeric	6	0
5	Flag	Character	1	

Data Dictionary

character	= [IA-Z1,1a-zi]
Numeric	= [0-9]
Logical	= [True,False]
date	= [day-month-year]
day	= [1-31]
month	= [1-12]
year	= [1-9999]
Asset	*Asset*
Asset Availability Inquiry	*The inquiry about the availability of a specified asset*
Asset Availability Report	*The report that lists the asset available in the inventory*
Asset Card File	= { Asset Card }
Asset Card	Asset code + Asset Item + Date_Receive + Cost Center + Location + Brand + Model + Supplier code + Supplier_Serial + Unit_Cost + Depre_type + Useful Life + Salvage_Value + Total_Depre + Physical status + Move_Times + Repair Times + In Stock + Remark + Flag
Asset_code	= *Code of each asset and it is unique to only one asset* { Character } * Character length : 15 *
Asset Item	= *Type of the asset* { Character } *Character length : 5*
Date_Receive	= *Date of receiving the asset from supplier* { date }

	Date length 10
Cost Center	= *The department that responsible to the cost of the asset* { Character} *Character length : 4*
Location	= *The installation location of the asset* { Character} *Character length : 20*
Brand	*Brand Name of the asset* { Character} *Character length : 20*
Model	*Factory model code of the asset* { Character} *Character length : 15*
Supplier Code	*The code of the supplier given for ease of reference* { Character} *Character length : 12*
Supplier Serial	= *The serial number of the asset given by the supplier* { Character} *Character length : 15*
Unit Cost	*Cost of one unit of asset* { Numeric} *Numeric length 10, Decimal 2*
Depre_type	= *The proper depreciation method of the asset* { Character} * Character length : 1*
Useful life	= *The estimated useful life of the asset* { Numeric } *Numeric length 3*
Salvage_value	= *The end value of the asset at the end of its

	useful life*
	{Numeric }
	Numeric length 10, Decimal 2
Total_Drepre	= *Total depreciation value of the asset*
	{Numeric }
	Numeric length 10, Decimal 2
Physical_Status	= *The physical appearance of the asset*
	{ Character }
	Character length : 2
Move Times	= *The number of times that the asset has been moved*
	{Numeric }
	Numeric length 2
Repair Times	= *The number of times that the asset has been repaired*
	{Numeric }
	Numeric length 2
In Stock	= *The status to show whether or not the asset is available in the inventory*
	{Logical }
Remark	= { Character }
	Character length : 250
Flag	= *Flag status of the record*
	{ Character }
	Character length : 1
Asset Holding Confirmation	= *The information received from the department to confirm the asset holding information*
Asset Information File	= { Asset Information }
Asset Information	= { Asset Info Header } + { AssetInfoitem }
Assetinfo Header	= RR No + Date + Supplier Code + Due Date

	+ Type + PR_No + PO No + INV_No + Flag
Asset_Infoitem	= RR No + RR_Line_No + Item Code + Description + Quantity + Unit_Cost + Remark + Flag
RR No	= *The document used in the inspection process* {Character} * Character length : 12 *
Date	= {date} *Date length 10*
Due Date	*The date when the payment is due* {date} *Date length 10*
Type	= *The type of document* {Character} * Character length : 1 *
PR_No	= *The reference number of Purchase Requisition* {Character} *Character length : 12*
PO No	*The reference number of Purchase Order* {Character} * Character length : 12 *
INV No	= *The reference number of Invoice* {Character} *Character length : 12*
RR Line No	= *The line number of the item in the RR* {Numeric} *Numeric length 2*
Item Code	Alias of Asset Item
Description	= {Character} *Character length : 35*

Quantity	= {Numeric} *Numeric length 6*
Asset Repairing Information	= *The repairing information of the asset*
Asset Request File	{Asset Request}
Asset Request	- {Request_Head} + {Request Item}
Request_Head	Request No + Date + Cost Center + Remark + Flag
Request_Item	Request_No + Request Line No + Asset Item + Quantity + Flag
Request_No	= *The reference number of the document* {Character} *Character length : 12*
Request_Line_No	*The line number of the item in the asset request document* {Numeric } *Numeric length 2*
Asset with Zero Book Value	*Asset that has the book value equals to zero*
Circular Letter & Asset Holding Report	{Circular Letter} + {Asset Holding Report}
Circular Letter	*The letter issued to every department that is holding the asset to notify about the annual checking*
Asset Holding Report	- *The report that lists the asset held by a department*
Daily Received. Asset Report	*The daily report that shows the information of the received asset on a day*
Inventory of Asset File	- {Inventory of Asset}
Inventory of Asset	Asset code + Asset Item + Store_Location + Return Date + Return Center + Flag
Store_Location	= *The location that the asset is kept* {Character}

St. Gabriel's Library

	Character length : 20
Return Date	= *The date when the asset is returned* { date } *Date length 10*
Return Center	= *The former responsibility center* { Character } *Character length : 4*
Rejected Asset Request	= *The asset request that cannot make it complete as the required asset is not available*
Repairing Information File	= { Repairing Information }
Repairing Information	Asset Code + Repair_Order + Repair_Date + Ext Useful_Life + Repair_Desc + Flag
Repair_Order	= *The number of times that the asset is repaired* { Numeric } *Numeric length 2*
Repair_Date	*The date of repairing* { date } *Date length 10*
Request to Dispose Asset	= *The document used to ask the permission to dispose the unusable asset or lost of asset*
Ext Useful Life	*The number of time that the asset is estimated to be extended* { Numeric } *Numeric length 2*
Repair_Desc	*The repairing information and the spare part usage* { Character } *Character length : 40*
Returned Asset	= *The asset that is returned to the inventory*




APPENDIX E

SCREEN DESIGN OF THE PROPOSED SYSTEM

Enter Network Password

nQ



Enter your network password for Microsoft Networking.

User name: 'Sem

Cancel

Password:

Figure E.1. Windows Logon Screen.

Logon Screen

REHM

User ID.

Fern

User Name

Jirawatana Aurkara.wa.

Password

OK

Cancel

Figure E.2. Application Logon Screen.

User Maintenance

RUM

User ID.

Sem

User Name

Jirawatana Aurkaraw a

Status

Active

Level

Level - 9

OK

Cancel

Figure E.3. User Maintenance Screen.

Figure E.4. Main Window and Main Menu of the Application.

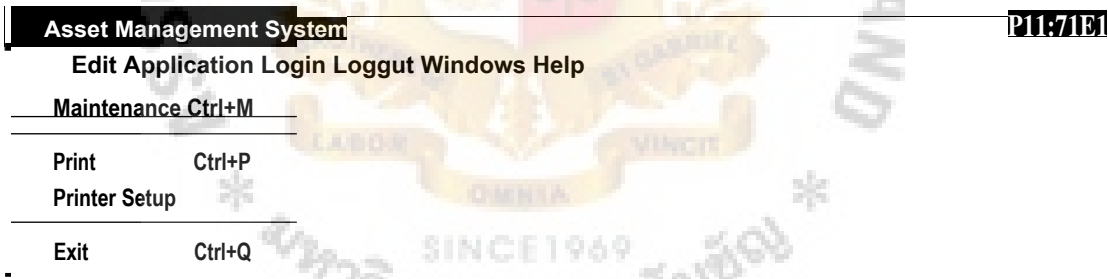


Figure E.5. File Menu of the Application.

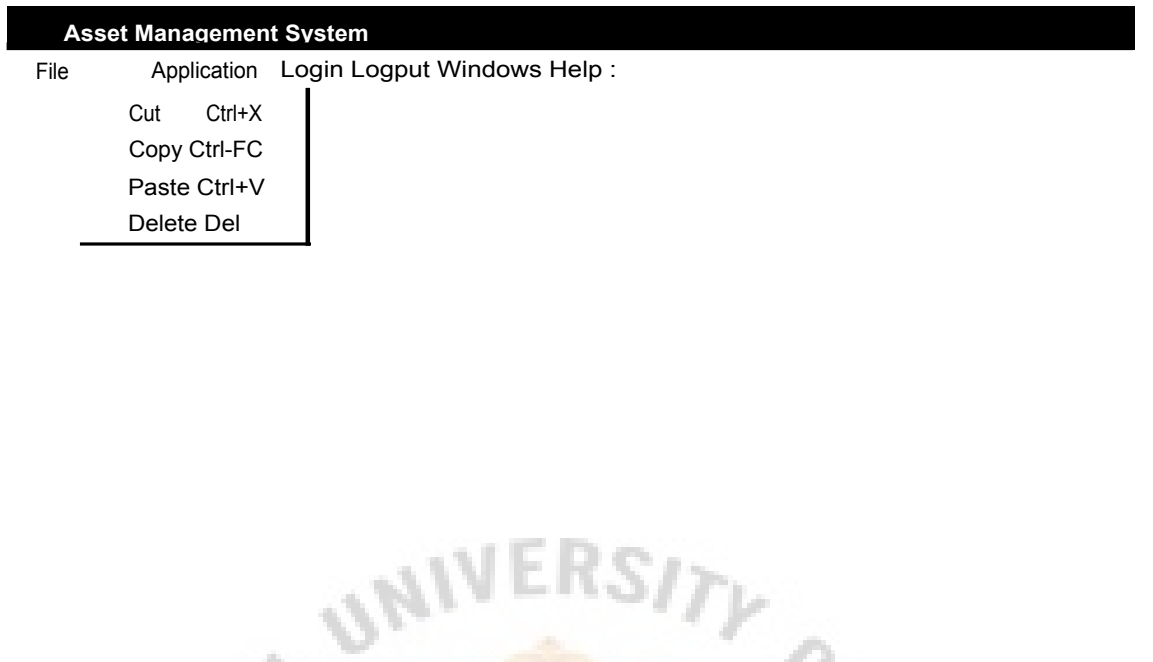


Figure E.6. Edit Menu of the Application.



Figure E.7. Application Menu of the Application.

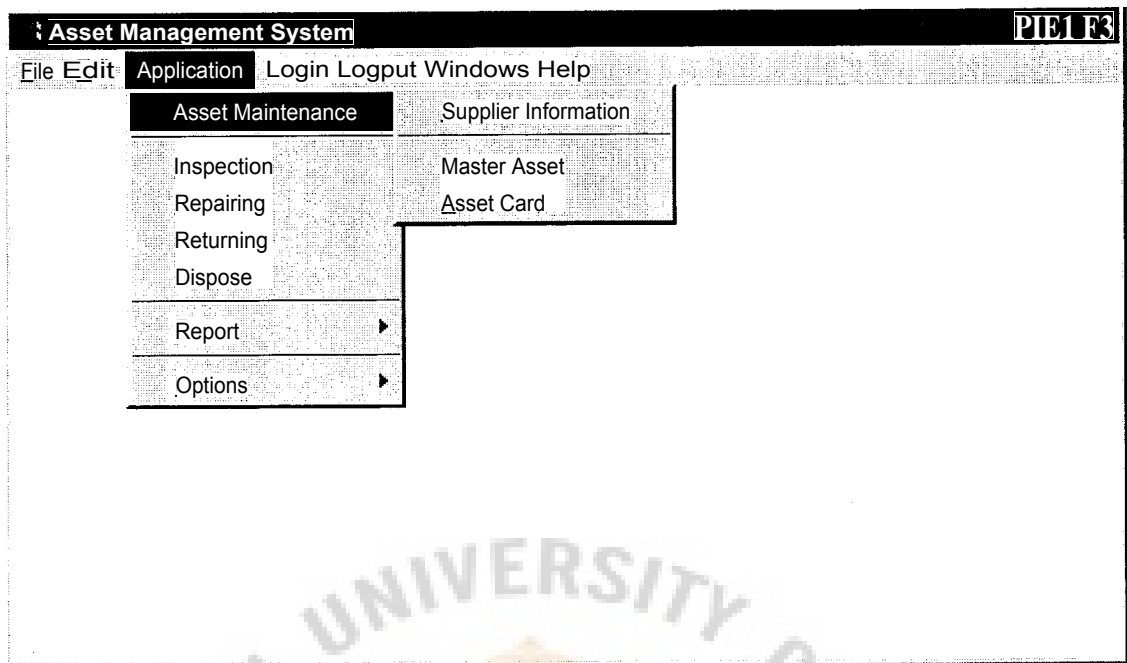


Figure E.8. Application : Asset Maintenance Menu of the Application.

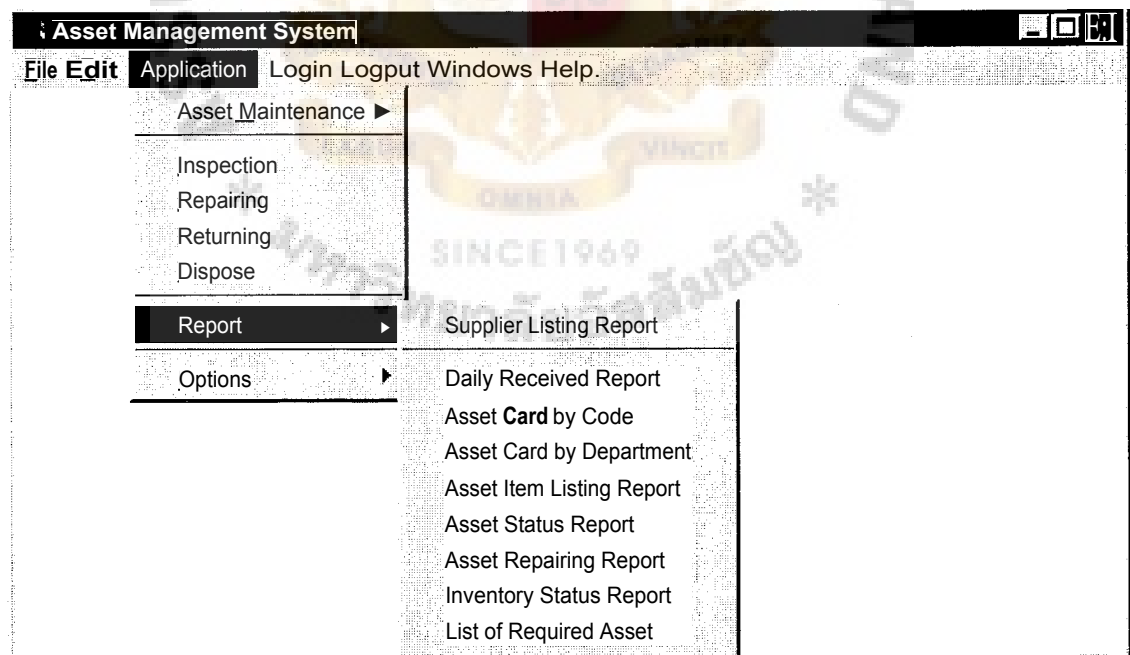


Figure E.9. Application : Report Menu of the Application.

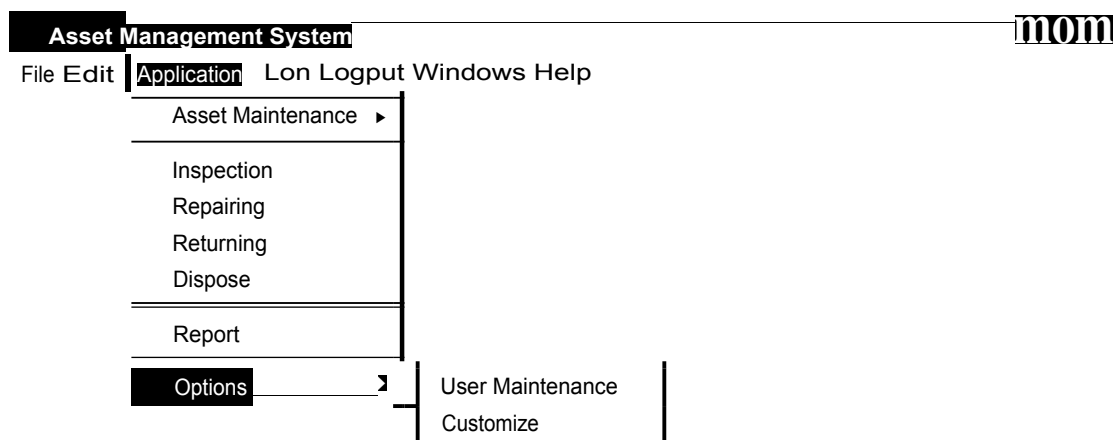


Figure E.10. Application : Options Menu of the Application.

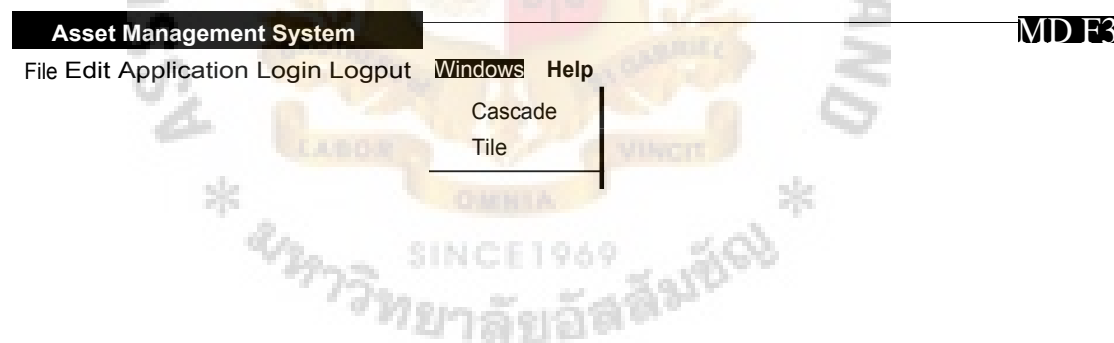


Figure E.11. Windows Menu of the Application.

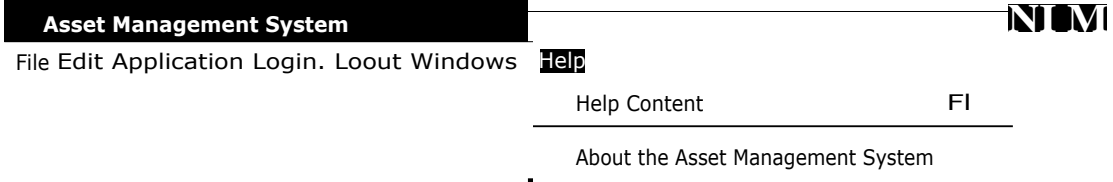


Figure E.12. Help Menu of the Application.

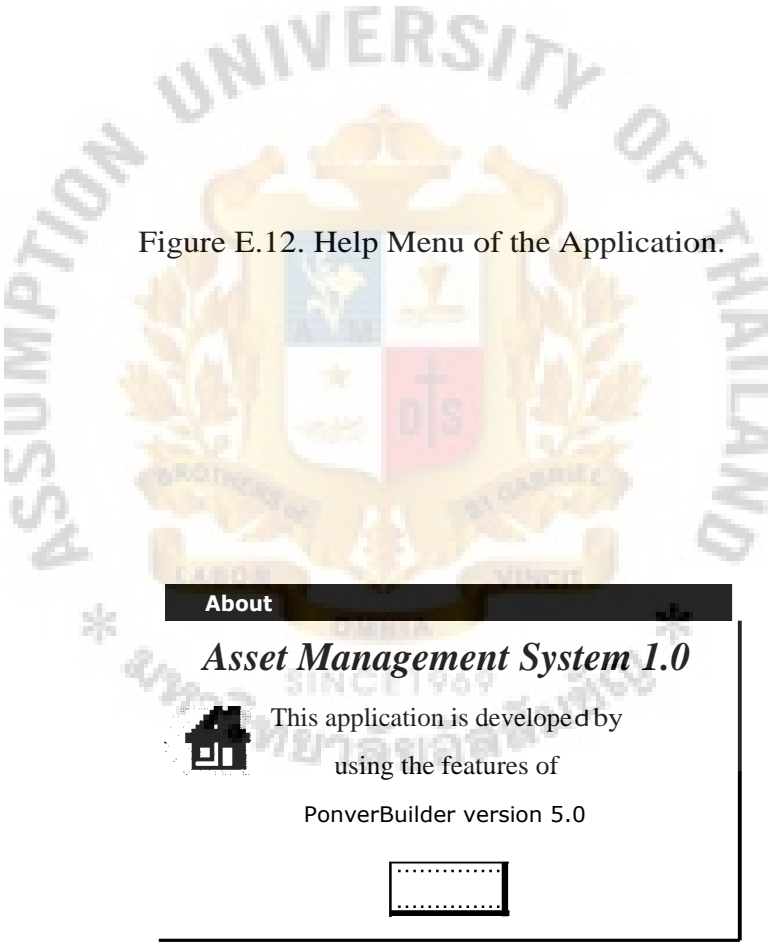


Figure E.13. About the Application Screen.

Inspection Information

Supplier Code		P.R. No.
		P.O. No.
Purchase <input type="checkbox"/> Hire <input checked="" type="checkbox"/> Repair <input type="checkbox"/> Transfer <input type="checkbox"/> Contract <input type="checkbox"/>		Invoice No.
Due Date		Number
Item(s)		Date
<div> <div>Information Line N o. 01</div> <div>Information Line N o. 02</div> <div>Information Line N o. 03</div> <div>Information Line N o. 04</div> <div>Information Line N o. 05</div> <div>Information Line N o. 06</div> <div>Information Line No. 07</div> <div>Information Line N o. 08</div> <div>Information Line N o. 09</div> <div>Information Line N o. 10</div> <div>Information Line N o. 11</div> <div>Information Line N o. 12</div> <div>Information Line N o. 13</div> <div>Information Line N o. 14</div> <div>TryEntynAfinri Tina Mn 1 'S</div> </div>		
First	Previous	Next
		Last

Figure E.14. Inspection Information Input Screen.

Inspection Information
HEM

Asset Card

Asset Code

Item

General

Cost Center

Depreciation

Repairing

Received Date

Purchase From

Brand

Model

Serial No.

Unit Cost

First

Previous

Next

Last

Exit

Figure E.15. Asset Card's General Information Screen.

Inspection information
11E/1E

Asset Card

Asset Code

Item

71 General
j. Cost Center
RI Depreciation
Repairing

Responsibilities Cost

Code

Name

Location

Asset Installation Locaiton

First

Previous

Next

Last

Exit

Figure E.16. Asset Card's Cost Center Information Screen.

Inspection Information
MEM

Asset Card

Asset Code:

Item:

☒ General
☐ Cost Center
☒ Depreciation
☒ Repairing

Depreciation Type:

Set and Calculated Value

Useful Life:

Current Depreciation:

Salvage Value:

Total Depreciation:

Book Value:

First
Previous
• Next
Last (
Exit

Figure E.17. Asset Card's Depreciation Information Screen.

Inspection Information
REIM

Asset Card

Asset Code:

Item:

7 General
4 Cost Center
Depreciation) Rep

Repairing History

Repair Order	Repair Date	Description	Extended Useful Life
Line 1			
Line 2			
Line 3			
Line 4			
Line 5			
Line 6			
Line 7			

First
Previous
Alert I
Last -
Exit

Figure E.18. Asset Card's Repairing Information Screen.



APPENDIX F

REPORT DESIGN OF THE PROPOSED SYSTEM

St. Gabriel's Library

Asset Card

Item Code _____

Date 99/99/9999

Item Name _____

Page : 99

Date Receive	Asset Code	Responsibilities Center		Brand	Model	Supplier	Unit Cost
		Code	Location				

Figure F.1. Asset Card Report by Asset Item.

Asset Card

Department Code _____
 Department Name _____

Date 99/99/9999
 _____ Page : 99

Date Receive	Asset Code	Install Location	Description	Brand	Model	Supplier	Unit Cost

Figure F.2. Asset Card Report by Department.

[illegible]

115

Asset Item Listing Report

Date 99/99/9999

Page : 99

Item Code	Description	Last Serial No.	Remark

Figure F.4. Asset Item Listing Report.

Asset Status Report

Date 9⁹/9/9999

Page : 99

Item Code	Description	Last Serial No.	Quantity		
			On Hand	In Order	In Stock

Figure F.5. Asset Status Report.

Inventory of Asset Report

Asset Item _____

Date 99/99/9999

Description _____

Page : 99

Item No.	Asset Code	Store Location	Returning Information	
			Date	Cost Center

Figure F.7. Inventory of Asset Report.

List of Required Asset Report

Date 99/99/9999

Page : 99

Item No.	Request No.	Cost Center	Asset Item	Description	Quantity

Figure F.8. List of Required Asset Report.

St. Gabriel's Library

Depreciation of Asset Report

Date 99/99/9999

	X RA
	O-4
	6 Q
	V= 8
	Z.
	4 t
	G
	P -4 >
	-4
	I d
	Z 4
Responsibilities Center I	Location
	/ c)
	7 4
	it A 7 9
	15 8
	1d A Z

Depreciation of Asset Report.

a)
bA
4-4

Supplier Listing Report

Date 99/99/9999

Page : 99

Supplier Code	Company	Telephone	Facimile	Status Level	Credit Term	Remark

Figure F.10. Supplier Listing Report.

Asset Holding Report

Cost Center Code _____

Date 99/99/9999

Cost Center Name _____

Page : 99

Asset Code	Asset Item	Description	Brand	Model	Installation Location	Flag

Figure F.11. Asset Holding Report.

BIBLIOGRAPHY

1. Down E., and Clare P. Coe I., Structured Systems Analysis and Design, Method: Application and Context, Prentice Hall Inc., 1988.
2. Kendall, Kenneth E., and Kendall E. Julie, Systems Analysis and Design (2nd Edition), Prentice Hall Inc., 1992.
3. Loomis, and Mary E.S., The Database Book, Macmillan Publishing Company.
4. Martin, James and Odell, and James J., Object-Oriented Analysis and Design, Prentice-Hall, 1992.
5. Page-Jones, and Meilir, The Practical Guide to Structured Systems Design (2nd Edition), Yourdon Press, 1988.
6. Pfleeger, and Charles P., Security in Computing, Prentice Hall Inc., 1989.
7. Senn, and James A., Analysis and Design of Information Systems (2nd Edition), McGraw-Hill Publishing Company, 1989.
8. Yourdon Edward, Modern Structured Analysis, Prentice Hall Inc., 1989.

St. Gabriel's Library