Finance and Budgeting Information System for Assumption University

by

Mr. Sanga Songmuang

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

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

March, 2000
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Assumption University

March 2000
The Graduate School of Assumption University has approved this final report of the three credit course, CS 6998 System Development Project, submitting in partial fulfillment of the requirements for the degree of Master of Science in Computer Information Systems.

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March 2000
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, Bangkapi, Bangkok 10240 Thailand.

For the Finance and Budgeting System is currently a manual process. This system has been designed 6 years ago. It is not reliable enough because it always hangs-up and is very slow to generate reports due to a large amount of data. The 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, is because of the great volume of data and in preparation for the new campus at BangNa. The existing system encounters many problems such as long a processing time and late delivery of reports. The proposed system introduces barcode technology so as to facilitate the overall processes and to reduce human error in the data entry process.

The new system is developed by using a top-down structured analysis and design technique. To maximize the investment, all existing hardware and software are identified and evaluated for the system utilization in the new system. The proposed system provides accuracy, timeliness, and complete information needed to management and other users. Implementation of the new system will consume significant budget at the beginning. The break even point is 4.88 years after the system is up and running. This system has been successfully tested and implemented by using PowerBuilder version 5 as its front end and Microsoft SQL server 6.5 as its back end. The reason why the new system was designed in Client/Server Based is because of the large amount of data in the Office of Financial Management, so we have to use a stable system.

The new system is also designed to integrate with and access the other systems of the Office of Financial Management.
ACKNOWLEDGEMENTS

In completing this project the writer has been indebted to many persons especially his instructors, friends, and the staff of Office of Financial Management of Assumption University who have provided information and cooperation. The writer appreciates their cooperation and advice.

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Thanks are due to colleagues, Ms. Norranuch Paikeaw, Ms. Mattana Loonpol, Ms. Kanokorn Kannoy, Ms. Varangkana Seingsuttuvong, and Mr. Sanga Rujipongpai who gave much-needed assistance along the way in doing this project and thanks for their providing information and cooperation.

This acknowledgement cannot be completed if it does not mention the writer’s instructors. Therefore, he would like as well to express his gratitude to all of his instructors who have given him invaluable knowledge and experience. And since it is impossible to thank them all, but he can only hope that those he has forgotten will be forgiving.
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I. INTRODUCTION

1.1 Background

The Finance Department is an important department of every university, especially for medium and large universities. To be a large organization, there must be a standard in receiving and paying money for insiders and outsiders. The main purpose of finance is to control the use of money, receiving money in an effective way, and summarizing the receiving and paying of money accurately and in a timely manner, so that the data can be used by the accounting & budgeting department.

The Accounting & Budgeting Department is another important part of the university. Getting approval of a budget for various projects is related to the finance function. Getting information for different projects is very important as this information will be used for upper management decisions.

Assumption University is one of the largest Universities in Thailand and there are numerous departments to provide services to staffs, teachers, and students. The Accounting & Budgeting Department and Finance Department are under Office of Financial Management and their functions are to provide for receiving money, paying money and budgeting management for all departments in the University. A part of this division has implemented a computerized system 6 years ago. Now, this department has decided to use a new computerized system to serve a growing number of staffs and new emerging departments. The new computerized system will have a centralized database in which data are shared among departments in order to access the data and to reduce data redundancy. The new system will also use the benefits of the campus network to share data among departments that are at different location within the campus.

1.2 Objectives

The objectives of Finance and Budgeting System are as follows:
To automate the financial process

To automate the budgeting process

To obtain users' requirements for information processing

To design the input and output according to user's requirements

To develop the system that can follow the status of each financial and budgeting inquiry

To design a local area network which can be supported by a campus network of the university

To increase the efficiency and performance of the department

To lower the cost of transactions and maintenance

To provide management with timely, meaningful and reliable financial information which will affect management's decision making for planning and controlling in order to achieve the organization plans and goals

To provide more timely information

To develop the MIS for the organization

1.3 Scope of Project

The project will cover the basic requirements of the Accounting and Budgeting Department, which are summarized as follows:

To plan the finance and budgeting process for all inquiries within the company to optimize the use of time and money

To record and trace the status of all finance and budgeting information

To produce reports and responses to queries about finance and budgeting, projects record etc.

To keep records of projects' performance to evaluate them for further projects
1.4 Deliverables

The deliverables for the finance and Budgeting System are as follows:

(1) An application that is developed by Power Builder
(2) Screen layout for user interface
(3) Various hard copy format
(4) Daily Report for Finance Department
(5) Daily Report for Budgeting Department
(6) Daily Report for Summarizing receiving money
(7) Daily Report for Summarizing paying money
(8) Insiders appointment documents
(9) Outsiders appointment documents
(10) Receipt
(11) Monthly Report for Finance Department
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Figure 1.1. Gantt Chart of Project Plan.
II. THE EXISTING SYSTEM

2.1 Background of the Organization

2.1.1 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 formal 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 programmes.

The University has a student body of more than 17,000 including a fairly large complement of foreign students drawn from 42 countries around the world. It also has a high-caliber 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.

2.1.2 Philosophy

In loyalty to its Christian mission, Assumption University stands for:

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

(2) the belief that a man justifies himself and his existence by the nobility of his work

(3) the commitment to be a light that leads men towards the true source of
all knowledge and life.

2.1.3 Objectives and Policies

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

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

2.1.4 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:

(1) The Association of Christian Universities and Colleges in Asia (ACUCA)
(2) The Association of Southeast Asian Institution of Higher Learning (ASAIHL)
(3) The International Federation of Catholic Universities.
2.1.5 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.

2.1.6 Non-Discrimination

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

Facilities and Services

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, the International Center.

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.
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.

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)

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 businessmen so as to gain mutual advantage. All students can utilize the services of this Center for their own research papers.

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:

1. Conduct and manage research projects periodically concerning ABAC operations. The factual information obtained from such studies are used as inputs for decision making concerning long-term planning and administration;

2. Create and design basic research concerning Higher Education;

3. Provide consultation about research design and methodology and
statistical packages to instructors for academic research or for practical application in classroom instruction;

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.

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.

Bookstore

The bookstore provides a wide range of magazines, periodicals, educational equipment, textbooks and professional books usually not available at regular commercial bookstores.

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:

1. cultural contribution to campus life by various nationalities represented.
2. opportunity for the students to learn and co-exist.

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

Institute English Language Education (IELE)

Assumption University since its inception has used English as its medium of instruction. Today, with 17,000 students hailing from 42 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 need, the IELE was established.

Mission: The mission of the IELE 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 IELE is also tasked to develop and operate ad hoc, tailor-made training programs for the Thai business community.

Organization: The IELE 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 IELE Director. Individual programs have a program coordinator. The program coordinator report directly to their respective deputy.

Staffing: The IELE 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 IELE 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 arrange.

Future Initiatives. In addition to moving ahead with its current programs, the IELE 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 Au Internet sometime in 1995.
Figure 2.1. Assumption University Organization Chart.
Figure 2.2. Office of Financial Management Organization Chart.
2.2 **Existing Business Functions**

(1) Control receiving and paying process within University

(2) Control budgeting process

(3) Keep budget data for further requirements

(4) Calculate payments and distribute receipts

(5) Issue an appointment document for insiders and outsiders

(6) Support decision making for the management level

(7) Issue reports for Financial Management office

(8) Assign budget number

(9) Assign receipt number automatically

(10) Verify project or budget

(11) Verify petty cash data

(12) Verify I.O.U. Data

(13) Issue reports for receiving products daily / monthly / yearly

(14) Issue reports for paying products daily / monthly / yearly

(15) Summarize reports for Accounting & Budgeting Department

(16) Summarize reports for Finance Department

2.3 **Current Problems and Areas for Improvement**

Certain problems occurred are stated as follows:

(1) The existing computer system is not suitable with the current tasks. Because the system was designed 6 years ago, the users continue to add requirements.

(2) Data are kept in several documents and need to be cross-checked manually to verify accuracy. Thus, it decreases the efficiency and is a waste of time. Errors may also occur at this stage when data are not recorded in all documents and that makes errors occur.

(3) The system is not reliable and causes problems. It often hangs up or generates incorrect reports.
(4) Data used with the system cannot be used or shared with other departments.

(5) There are various documents in the workflow and that causes tasks to slow down. The use of computerized system will help speed up the process.

(6) The existing system does not support the Y2K problem.

2.4 Existing System

In order to set their budget, all departments at Assumption University send budget requisition documents to the Financial Management Department. A committee is improved to that budget requisition document. If the budget information is correct, the budget will be accepted; otherwise, it will be rejected. The Accounting & Budgeting Department’s officer will keep a record of the budget in a file and then they will write daily reports, monthly reports or yearly reports for upper level management.

Budget items are separated into two categories, one for outsiders (supplier) and the other for insiders (staff, faculty and student in University).

When the Procurement Department approves a Purchasing Order (P.O.), it will send the completed document from outsiders (supplier), Procurement Department to business Activity & Property Management Department. The Procurement Department for the outsiders to make an appointment with them for payment.

The University departments often request Petty Cash, I.O.U., and send the requisition for Petty Cash or I.O.U. After Office of the Financial Management receives the requisition, they will evaluate the requisition. If the requisition is reasonable, it will be accepted; otherwise, it will be rejected. The Procurement Department uses the approved requisition to issue an internal appointment document for the insiders to make an appointment, as in the case of a student paying for something, for example an application form, fine. The finance duties are to issue a receipt for them.
After insiders send a paying requisition, the officer must issue the receipt for the insiders and they have to issue the daily report, monthly report or yearly report for their division and for the upper level management.
Figure 2.3. Context Diagram for Finance and Budgeting System (Existing System).
Figure 2.4. DFD for Accounting and Budgeting System Level 0 (Existing System).
Figure 2.5. DFD for Budgeting Process Level 1 (Existing System).
Figure 2.6. DFD for Initiate Project Process Level 2 (Existing System).
Figure 2.7. DFD for Budget Requisition Process Level 2 (Existing System).
Figure 2.8. DFD for Payment Process Level 1 (Existing System).
Figure 2.9. DFD for Petty Cash Process Level 2 (Existing System).
Figure 2.10. DFD for Petty Cash Initiate Process Level 3 (Existing System).
Figure 2.11. DFD for Petty Cash Update Process Level 3 (Existing System).
Figure 2.12. DFD for I.O.U. Process Level 2 (Existing System).
Figure 2.13. DFD for I.O.U. Initiate Process Level 2 (Existing System).
Figure 2.14. DFD for I.O.U. Clearing Process Level 3 (Existing System).
Figure 2.15. DFD for Financing Process Level 2 (Existing System).
Figure 2.16. DFD for Cash Receive Process Level 1 (Existing System).
Figure 2.17. DFD for Internal Receive Process Level 2 (Existing System).
Figure 2.18. DFD for Add Internal Receive Process Level 3 (Existing System).
Figure 2.19. DFD for Update Internal Receive Process Level 3 (Existing System).
Figure 2.20. DFD for Internal Receive Process Level 2 (Existing System).
Figure 2.21. DFD for Add External Receipt Process Level 3 (Existing System).
Figure 2.22. DFD for Update External Receipt Process Level 3 (Existing System).
2.5 Existing Computer System

The existing computer system for Accounting and Budgeting department are as follows:

Hardware

SUN SERVER ENTERPRISE E 250
CPU INTER CELERON 366
- CPU 366 MHz
- SD Ram 100 MB
- H/D 32 GB

Dot Matrix Printer
- Epson 1170i
- 2170i
- LQ-570+

Laser Printer
- HP LaserJet 5P
- LaserJet 2100TN
- EPSON LQ-300

Hub

UPS 10 KVA

Software

- Accounting and Finance Application
- Informix
- DOS 6.22
- Microsoft Windows 98
- Microsoft Office
III. THE PROPOSED SYSTEM

3.1 Users Requirements

3.1.1 Input Requirements

(1) Record data Daily for

(a) New project / Budget
(b) Budget Requisition
(c) Budget Modification document
(d) I.O.U. Requisition
(e) Petty Cash Requisition
(f) Clearance document for I.O.U.
(g) Clearance document for Petty Cash
(h) Payment requisition document
(i) Receipt record (external use)
(j) Approved complete P.O.

(2) Record Master data

(a) Cost Center data
(b) Project Data
(c) Supplier Information
(d) Employee Information
(e) System User Information
(f) Receive detail data

3.1.2 Output Requirements

(1) Daily Report for Deposit bank
(2) Receipt
(3) Advance Payment
(4) Internal and External appointment document
(5) Daily Cash Receive report
(6) Monthly Cash Receive report
(7) Management summarize Cash Receive report
(8) Substitute for a Bill
(9) Cost Center Report
(10) Supplier information Report
(11) Employee information Report
(12) System user information Report
(13) Project Report
(14) Budget Report
(16) I.O.U. Summarize report
(17) Daily Petty cash Report
(18) Petty Cash Summarize report
(19) Outsiders payment report
(20) Insiders payment report
(21) Receipt report

3.2 System Design

3.2.1 Data Flow Diagram

The proposed system is presented by using data flow diagrams as a tool for structured analysis and design. The new system design divides the whole system into three processes as follows:

Process 1. Budget Process

This process is under the Accounting & Budgeting Department. Other departments submit new project document for budget initiation. The Office of Financial Management forms a committee to evaluate the project.
If the project is reasonable or correct, the committee will accept the project; otherwise, they will reject the project. When the project is approved, the officer will enter the project name and details into the budget file and then OFM will generate reports for the management level and for their department. For the budget requisition, the Financial Management Office's officer will key-in the data and the payment requisition is sent to Payment Process (Process 2) if the project owner requests more money for project. And if money is to be returned, they have to send the clearance document to Receive Process (Process 3). After completing the daily task, the officer must generate a report for their department and upper level of management.

Process 2. Payment Process

This process is under the Finance Department. The Procurement Department has to send the correct information to confirm that the supplier has completely sent the product to the university. The Finance Department will approve the confirmation document for the Procurement Department again and then they will key-in to the payment file and generate daily or monthly report for their department/other departments and for upper level management.

For the petty cash requisition, the other departments will request petty cash. They have to send the petty cash requisition to the Financial Management Office. The Financial Management Office will set up the committee to evaluate the petty cash request. If petty cash requisition is correct and reasonable, they will approve it; otherwise, they will reject it. The officer will key-in the approved petty cash information into the petty cash file and generate daily/monthly reports for their own division or for the upper level of management.

If the others department request more money for their petty cash fund, they have to send a requisition document for more money. The Financial Management Office will approve the document, update data in petty cash file, and then send the information to the next Payment Process (Process 2) for paying money process.
For the I.O.U. requisition, the others department will request I.O.U. They have to send the I.O.U. requisition to the Financial Management Office. The Financial Management Office will set up the committee to evaluate the I.O.U.. If the I.O.U. requisition is correct and reasonable they will approve it; otherwise, they will reject it. The officer will key-in the approved I.O.U. data into the I.O.U. file and generate daily/monthly reports for their department or for the upper level of management.

If the I.O.U. owner uses I.O.U. money more than what is in the I.O.U. fund, they have to request more money from the financing process in Payment (Process 2). And if the I.O.U. owner uses I.O.U. money less than what is in the I.O.U. fund, they have to return the money to the financing process in Receiving Payment (Process 3). The Financial Management Office's officer has to key-in the update or clearing I.O.U. data into the I.O.U. file.

Process 3. Receive Process

This process is under the Finance Department. When student/staff/faculty must pay for something, for example, the student wants the incomplete transcript, he has to go to the Financial Management Office and pay the incomplete transcript fee, and then the Financial Management Office's office prints a receipt for them. The student takes the receipt for printing incomplete transcript to the Registrar Office.

When Finance Department receives the payment requisition from insiders (staff/faculty/student), they have to key-in the data into the receive file and then they issue a receipt for the insiders. If some payment requisition is incorrect, the officer has to update into the receive file. Daily report must be issued every day to summarize the cash receive for the upper level of management and for their department.

3.2.2 Other System Design

DATAFLOW DIAGRAM (APPENDIX A)
PROCESS SPECIFICATION (APPENDIX B)
DATABASE DESIGN (APPENDIX C)
3.3 Hardware Requirement

3 Workstations:
- CPU INTER CELERON 366 MHz
- RAM 100 MB
- HD 32 GB
- Drive 1.44 MB
- Monitor 15”
- Ethernet Network Interface Card 10/100

4 Printers:
- Dot Matrix Epson LQ 1170i
- Laser printer HP 6P

3.4 Software Requirement

- Microsoft Windows NT 4.0
- Adaptive Server Enterprise for Windows NT
- Microsoft Windows 98

- Accounting and Budgeting Information Software
- Oracle 7.3 DBMS

3.5 Security and Controls

The proposed system has three levels of a user verification process as mentioned earlier in this chapter. These user verification processes require the authorized user name and password. But using only the user verification does not guarantee one hundred percent security. The system also provides a concept of user level. For this system, the users of the system will be divided into ten levels of authorization as follows:
### Table 3.1. Authorization of the System.

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
<th>RN</th>
<th>WN</th>
<th>RS</th>
<th>WS</th>
<th>PW</th>
<th>UM</th>
<th>NM</th>
<th>DM</th>
<th>AM</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Unauthorized User</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>Guest</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>Data Entry</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>Officer</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>Senior Officer</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>Supervisor</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>6</td>
<td>Network Administrator</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>7</td>
<td>Database Administrator</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>8</td>
<td>System Administrator</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>9</td>
<td>Division Manager</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Moreover, the data encryption and decryption engine is installed in the system as well. This ensures more security level to the system. The database will store only encrypted data. And to make the information readable, the correct decryption module must be chosen to do the data conversion.

The user authentication and manipulation should be implemented so that the secrecy, integrity, and availability of the assets of computing system are accessible, modified, and available to the authorized parties.

The personal computer, which we use in this system, has the same basic security. We have designed the system security as presented below.
Machine Security:

The physical protection from fire, intrusion, unauthorized person, and environmental hazard must be designed. We need to have the computer room locked for security.

Terminal Security:

Each user must have his/her own password of ID in order to access to the system. They can access only the permitted program. Some programs must have the security password to modify or change information. Destructive and potentially harmful functions need some authentication procedure.

Program Security:

For application software, the unification technique must be used when putting data to ensure minimum errors and to check the terminal identification (node ID in terms of network identification) before performing the specified function.

Furthermore, configuration management will prevent software deletion so that the software is not accidentally deleted, destroyed, or replaced. However, object program needs to have some security measures against illegal patching by human being (programmers) or by other programs (virus, worm, and Trojan horses).

Database Security:

The system analyst and programmers should design the security to database in which it cannot be not only accessed by the unauthorized parties but also deleted by environmental facings such as power failure or misuse. The system analyst will control the whole database system and can change the password whenever desired. Each user has his/her specific task to read, write, delete, and change information in the database. Audibility will be implemented in order that the system analyst can track anyone who accesses the information.
3.6 Cost and Benefit Analysis

3.6.1 Cost Analysis

In analyzing the cost of the new proposed system, we can divide the total cost into 3 categories: investment cost, the implementation cost and the annual operation cost.

(1) The investment cost

The investment cost consists of consists of 2 components: hardware and software cost. The detail of hardware and software specification are shown in the topic of hardware and software requirements.

(a) Hardware Cost

- 1 set of Sun Server 700,000 Baht
- 14 sets of Workstation 392,000 Baht
- 1 set of Hub 22,700 Baht
- 3 sets of Laser Printer 35,000 Baht
- 3 sets of Dot Matrix 25,500 Baht

Total Hardware Cost 1,175,200 Baht

(b) Software Cost

- 25 sets of Informix Dinamic Server 395,900 Baht

Total Software Cost 395,900 Baht

Total Investment Cost (1,175,200 + 395,900 ) = 1,571,100 Baht

(2) Implementation Cost

- Software Development & Training 900,000 Baht

Total Implementation Cost 900,000 Baht

(3) Annual Operating Cost

- Facilities (Diskettes, Toner, Paper, and etc.) 316,850 Baht

Total Annual Operating Cost 316,850 Baht
3.6.2 Benefit Analysis

The benefits of Finance and Budgeting Information System can be divided into two categories: The first one is tangible benefit and the second is intangible benefit.

(1) Tangible Benefit

(a) Reducing overtime expense 360,000 Baht

For manual system, it normally pays overtime wage about 30,000 baht per month.

The computerized system will reduce the overtime expense about 360,000 baht per year (Baht 30,000*12)

(b) Saving salary of officer 480,000 Baht

Due to the reduction from 12 officers to 8 officers, the yearly salary cost saving is about 480,000 bath. (Baht 10,000*4*12)

(c) Reducing massive equipment 200,000 Baht

Total tangible benefit (360,000+480,000+200,000) =1,040,000 Baht

(2) Intangible Benefit

(a) To improve decision process by providing faster access to information.

(b) To reduce the duplication of work.

(c) To improve the efficiency of operation.

(d) To provide up to date information when needed.

(e) To track the status of the fire insurance process.

(d) To report the information to management for helping in decision-making.
3.6.3 Calculations of Payback Period

Payback Period = \frac{I}{(1 - T) R}

I = Investment Cost

R = average annual return on the investment

T = Corporate tax rate in percentage (30%) (tangible benefit subtracted by operating cost)

Payback Period = \frac{2,471,100}{(1 - 0.3) (1,040,000 - 316,850)}

= 4.88 years

Payback period (after tax) for the proposed system is 4.88 years.
Table 3.2. Cost of the Existing System.

<table>
<thead>
<tr>
<th>Cost items</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1. Manpower</td>
<td></td>
</tr>
<tr>
<td>- 12 Officers (10,000x12x12)</td>
<td>1,440,000</td>
</tr>
<tr>
<td>- O.T. Payment</td>
<td>360,000</td>
</tr>
<tr>
<td>(10% increasing/year)</td>
<td></td>
</tr>
<tr>
<td>(10% increasing/year)</td>
<td></td>
</tr>
<tr>
<td>Total (Baht)</td>
<td>2,116,850</td>
</tr>
<tr>
<td>Accumulative Cost (Baht)</td>
<td>2,116,850</td>
</tr>
</tbody>
</table>
Table 3.3. Cost of the Proposed System.

<table>
<thead>
<tr>
<th>Cost items</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1. Investment Cost</td>
<td></td>
</tr>
<tr>
<td>- Hardware Cost</td>
<td>1,175,200</td>
</tr>
<tr>
<td>- Software Cost</td>
<td>395,900</td>
</tr>
<tr>
<td>- Implementation Cost</td>
<td>900,000</td>
</tr>
<tr>
<td>2. Manpower (8 Officers)</td>
<td>960,000</td>
</tr>
<tr>
<td>(10% increasing/year)</td>
<td></td>
</tr>
<tr>
<td>3. Maintenance Cost (HW,SW)</td>
<td>157,900</td>
</tr>
<tr>
<td>4. Facilities &amp; Utilities (10% increasing/year)</td>
<td>78,950</td>
</tr>
<tr>
<td>Total (10% increasing/year)</td>
<td>3,667,950</td>
</tr>
<tr>
<td>Accumulative Cost (Baht)</td>
<td>3,667,950</td>
</tr>
</tbody>
</table>
Comparison between Cost of the Existing System and Cost of the Proposed System

Accumulative Cost (Baht)

25,000,000
20,000,000
15,000,000
10,000,000
5,000,000

- 2 Years 10 Months

Break Even Point

1 2 3 4 5 6 7
Years

Figure 3.1. Break-Even Chart.

= Existing System

= Proposed System
3.7 Network Design

The University has already contains the network and there are hubs at every building. Therefore, we can use a central database in order to share one department’s data with another department. Budgetting and Accounting Department contains one server and connects to 2 workstations. Two Printers are connected through a print server for the propose of sharing.

Figure 3.2. Network Configuration.
3.8 Overview of Implementation

The reasons that why project need more control from the project management during the project development are as follows:

(1) To estimate the money, time and people required during the project development.

(2) To control time consumed and result received from the project development.

Moreover, the project management should be the coordinator of the project development that coordinates the people in the company. The project plan that includes project analysis, project design and project implementation, can be represented by Gantt chart as shown in the Figure 1.1.

3.9 Test Plan and Result

Testing should not be done only after finishing the implementation step because this can result in a big mistakes. Testing should be done during the requirements analysis and if there are any mistakes, they can be detected it earlier. That is cheaper than correction errors later. After the testing, conversion and installation must be carried out by the development team.

Conversion is the task of translating the existing files, input forms and databases to the new format designed in the new system. Thus, the conversion plan needs to be developed, preferably as soon as the user implementation model is completed, and must consider the following issues:

Users often prefer using the existing system to be run parallel with the new system to ensure its result before it is completely converted to the new system. In some cases, there is a large volume of existing data to be converted, the project team should convert them incrementally.

For data in the existing system which is in an automated form, it may be possible to convert the existing files to the new format files. During the conversion process, error detection and error correction, which may occur from the existing system should
be considered.

There are 4 methods of conversion:

(1) Parallel System: Operate the existing system along with the new system.

(2) Direction Conversion: Direct conversion means that the old system is completely replaced by the new one. The organization relies fully on the new system.

(3) Pilot System: Pilot system is working version of system implemented in one part of the organization. Based on feedback, changes are made and the system is installed in the rest of the organization by one of the other methods.

(4) Phase-In: Phase in is a gradual implementation of the system across all users.
IV. CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

A computer system is very powerful while the price is lower. This is true because the turnover for a processor is very short. Even though the computer system is relatively low in its price but to make use of the computer system effectively is not an easy task.

This proposed system tries to overcome all the problems that exist in the system by using modern computer technology. The power and computational speed of the computer is the heart of this system. The computer is used to keep a very large amount of information. It is used to search and retrieve the needed data, make calculation, and so on, to complete the task.

At Assumption University, MIS is widely used almost everywhere. The internet, intranet is established on the campus. Computer technology has become the baseline of the academic program.

As the MIS is introduced in the University, manual systems like the existing one then must be redesigned to become computerized systems.

Barcode is used in the system for the purpose of increasing the speed of assigning asset code and also used to reduce human error. Many processes are performed automatically instead of using people. These processes including assigning asset code, depreciation calculation, asset disposal. The above mentioned tasks are the major tasks of the system and they control the accuracy of the system. By transforming these tasks to a computerized system, the result is much better system performance.

The proposed system is designed and developed in a networking environment to ensure the outstanding performance on the network. Moreover, this system is initially designed as the client/server application; therefore, this system can work well in client/server platforms. This includes all open system client/server platforms even it is the two-tier, three-tier, or the multi-tier client/server system.
The application written in this project will be running as the front-end application while the database server can be installed elsewhere. As the client/server system, the network and the security on the network must be considered.

This system can be used with many database management systems over many systems. This includes all types of computer systems, micro computer, mini computer, mainframe, and even the super computer system.

In the micro computer system, as this project is initially designed, all SQL manager DBMS can be used as the database server. This application provides all database gateways to connect to the host as the native gateway and the ODBC gateway. For the larger computer system, only the native database gateway will be provided.

In the first state, the system was created using the ODBC gateway and can connect to the Sybase SQL anywhere. The native gateway is completely tested in the beta release of this project. The test system used Oracle version 7.3, and Sybase version 11 running on Windows NT as the database server.
Table 4.1 shows the time sent on each process of the proposed system compared with the existing system. It shows that each process of the proposed system spends less time than each process of the existing system which has to pass many manual work steps. This can be explained as that the proposed system is more efficient and effective than the existing system.

Table 4.1. The Degree of Achievement of the Proposed System.

<table>
<thead>
<tr>
<th>Process</th>
<th>Existing System</th>
<th>Proposed System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Process</td>
<td>1 hr.</td>
<td>30 mins.</td>
</tr>
<tr>
<td>Inquiry Process</td>
<td>15 mins.</td>
<td>5 mins.</td>
</tr>
<tr>
<td>Payment Process</td>
<td>10 mins.</td>
<td>5 mins.</td>
</tr>
<tr>
<td>Modification Process</td>
<td>15 mins.</td>
<td>5 mins.</td>
</tr>
<tr>
<td>Printing Process</td>
<td>5 mins.</td>
<td>5 mins.</td>
</tr>
<tr>
<td>Total</td>
<td>1 hr. 45 mins.</td>
<td>50 mins.</td>
</tr>
</tbody>
</table>

4.2 Recommendations

The project is to completely change the existing system to the computerized system. The officers may be confused in the process of the new system. Some new functions are installed into the system and to make it effective, training must be more concentrated.

The Accounting and Budgeting Information system is to dependent on the manual system. Manual system activities can be reduced if users trust in the security of the new system. If users accept Electronic Signature, the efficiency of the system can improve. To provide more confidence for users, the Database Management System should have ability to encrypt data and keep a Log File for important modifications. Backing up data should be performed every day, and make sure that the data is stored in the media. The disadvantage of the above security is the more investment is needed and system maintenance is more difficult.
The task of the Finance Department relates with the Procurement Department such as when P.O. has been approved by the Director of the Finance Department, then the Purchase Order has to be classified by the Store Supply Department. In this case, a flowing document between the department is unnecessary. The system should connected to the Internet or Intranet; the system can deliver information or report to other departments by using the campus network. The system should contract with supplier/staff/lecturer/officer by using Internet, for example ordering products through the Internet. This system is the first system of the Office of Financial Management which is designed by using Client/Server technology. Other systems can share the resource and data with the system. The system should be modified to join with other applications. In the future, a firewall should be established to protect the data and the system.

In the System Specification section, the hardware requirements are discussed. Figure 3.2 depicts the hardware interconnection. The hardware stated can be changed to the proper configuration, as the switching box can be eliminated if the print server is installed. For the most effective system, the R/F barcode reader or a barcode reader that has the ability to store data are recommended. This is because it can be carried out everywhere to check the validity of the asset, especially the one with data storage. The input data can be stored in the device and the data will be transferred to the system when it is connected to the base station.

As for the computerized system, the backup procedure must be considered. An accident can occur at any time and data may be lost. It is impossible to completely recover the data without the backup. There are several ways of backing up the information. One of the most popular ways is using the Tape Backup unit. All information will be recorded onto a magnetic tape or DAT tape. The backup process can be set to start and stop automatically as scheduled. And to ensure data security, the tape must be kept in safe a place.

In the near future, the new campus at Bang Na will be open. As this system is designed in the client/server environment, the network reliability and security is much more
important. When the system is connected to the network, it is recommended that the system should have two persons responsible for the following tasks respectively:

(1) System Administrator: This is the one who is responsible for the system as a whole. The responsibility of this person is to maintain the system and make it running free of errors. The system administrator will also be responsible for the network and the network security. This is very important when the client/server system is being set up and to have both campuses being able to connect to each other to share the data.

(2) Database Administrator: This person is responsible, as its name suggests, for the database management system. The database administrator must set up the database, user authorization, and tune up the database to its maximum utilization. And if the system is installed as a distributed database system, he must responsible for the data replication method as well.
Figure A.1. Context Diagram for Finance and Budgeting System.
Figure A.2. DFD for Finance and Budgeting System Level 0.
Figure A.3. DFD for Budget Process Level 1.
Figure A.4. DFD for Initiate Project Process Level 2.
Figure A.5. DFD for Budget Requisition Process Level 2.
Figure A.6. DFD for Payment Process Level 1.
Figure A.7. DFD for Petty Cash Process Level 2.
Figure A.8. DFD for Petty Cash Initiate Process Level 3.
Figure A.9. DFD for Petty Cash Update Process Level 3.
Figure A.10. DFD for I.O.U. Process Level 2.
Figure A.11. DFD for I.O.U. Initiate Process Level 3.
Figure A.12. DFD for I.O.U. Update Level 3 (Clearing).
Figure A.13. DFD for Add Payment Data Level 3.
Figure A.14. DFD for Update Payment Data Level 3.
Figure A.15. DFD for Cash Receive Process Level 1.
Figure A.16. DFD for Internal Receive Process Level 2.
Figure A.17. DFD for Add Internal Receive Process Level 3.
Figure A.18. DFD for Update Internal Receive Process Level 3.
Figure A.19. DFD for Internal Receive Process Level 2.
Figure A.20. DFD for Add External Receipt Process Level 3.

Payment Requisition Document (income) -> Receiving Detail -> Verify Requisition Document 3.2.1.1 -> Key Receiving Detail 3.2.1.2 -> Valid Record -> Add Receipt Record 3.2.1.3 -> Receipt Data

Cost Center

Verified Document

Generating Report 3.2.1.4

Receiving Summary Report
Figure A.21. DFD for Update External Receipt Process Level 3.
PROCESS SPECIFICATION

PROCESS 1  Budget Process
BEGIN

Get Budget Data

IF New Budget Data
Call Initiate Project
ELSE

IF Old Budget Data
Call Budget Requisition
ELSE
Write ERROR MESSAGE
ENDIF

ENDIF
END

PROCESS 1.1  Initiate Project Process
BEGIN

Get New Project Information
Verify New Project
IF New Project Valid
Approve New Project
Add New Project to Project File
ELSE
Reject Project
ENDIF
Generate Report
END
PROCESS 1.2  
Budget Requisition Process

BEGIN

Get Budget Requisition Information for Project
Verify Budget Requisition
IF Budget Requisition Information Valid
    Approve Budget Requisition Information
    Update Project to Project File
ELSE
    Reject Budget Requisition Information
ENDIF
Generate Report

END

PROCESS 2  
Payment Process

BEGIN

Get Payment Data
IF Petty Cash Data
    Call Petty Cash
ELSE
    IF I.O.U. Data
        Call I.O.U.
ELSE
    IF Treasuring Data
        Call Treasuring
ELSE
    Write ERROR MESSAGE
ENDIF
ENDIF

END
BEGIN
Get Petty Cash Requisition Document
IF New Petty Cash Requisition
   Call Petty Cash Initiate
ELSE
   IF Old Petty Cash Requisition
      Call Petty Cash Update
   ELSE
      Write ERROR MESSAGE
   ENDIF
ENDIF
END

PROCESS 2.1.1  Petty Cash Initiate Process
BEGIN
Get New Petty Cash Requisition
Verify New Petty Cash Requisition
IF New Petty Cash Requisition Valid
   Approve Petty Cash Requisition
   Add New Petty Cash Requisition to Petty Cash File
   Generate Appointment Document
   Generate Report
ELSE
   Rejected Petty Cash Requisition
ENDIF
PROCESS 2.1.2 Petty Cash Update Process

BEGIN

Get Petty Cash Requisition Document
Verify Petty Cash Requisition Document
IF Petty Cash Requisition Document Valid
    Approve Petty Cash Requisition Document
    Update Petty Cash Requisition to Petty Cash File
    Generate Appointment Document
    Generate Report
ELSE
    Rejected Petty Cash Requisition
ENDIF
END

PROCESS 2.2 I.O.U. Process

BEGIN

Get I.O.U. Requisition Document
IF New I.O.U. Requisition Document
    Call I.O.U. Initiate
ELSE
    IF I.O.U. Clearing Document
        Call I.O.U. Update
    ELSE
        Write ERROR MESSAGE
    ENDIF
ENDIF

END

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PROCESS 2.2.1  I.O.U. Initiate Process
BEGIN
    Get New I.O.U. Requisition Document
    Verify New I.O.U. Requisition Document
    IF New I.O.U. Requisition Valid
        Approve I.O.U. Requisition
        Add New I.O.U. Requisition to I.O.U. File
        Generate Appointment Document
        Generate Report
    ELSE
        Rejected I.O.U. Requisition
   ENDIF
END

PROCESS 2.2.2  I.O.U. Update Process
BEGIN
    Get I.O.U. Clearing Document
    Verify I.O.U. Clearing Document
    IF I.O.U. Clearing Document Valid
        Approve I.O.U. Clearing Document
        Update I.O.U. Clearing Document to I.O.U. File
        Generate Appointment Document
        Generate Report
    ELSE
        Rejected I.O.U. Clearing Document
   ENDIF
END
PROCESS 2.3 Financing Process

BEGIN

Get Payment Data

IF New Payment Data

Call Add Payment Data

ELSE

IF Old Payment Data

Call Update Payment Data

ELSE

Write ERROR MESSAGE

ENDIF

ENDIF

END

PROCESS 2.3.1 Add Payment Data Initiate Process

BEGIN

Get New Payment Data

Verify New Payment Data

IF New Payment Data Valid

Add New Payment Data to Payment File

Generate Appointment Document

Generate Report

ELSE

Write ERROR MESSAGE

Reject New Payment Data

ENDIF

END
PROCESS 2.2.2 Update Payment Data Process

BEGIN

Get Payment Data

IF Payment Data Cancel

Update Payment Data to Payment File

Generate Report

ELSE

Write ERROR MESSAGE

ENDIF

END

PROCESS 3 Receive Process

BEGIN

Get Receive Document

IF Payment Requisition

Call Internal Receive

ELSE

IF External Receipt

Call External Receive

ELSE

Write ERROR MESSAGE

ENDIF

ENDIF

END
PROCESS 3.1 Internal Receive Process

BEGIN

Get Payment Requisition Document

IF New Payment Requisition

Call Add Internal Receive

ELSE

IF Canceled Payment

Call Update Internal Receive

ELSE

Write ERROR MESSAGE

ENDIF

ENDIF

END

PROCESS 3.1.1 Add Internal Receive Process

BEGIN

Get New Payment Requisition

Verify New Payment Requisition

IF New Payment Requisition Valid

Approve Payment Requisition

Add New Payment Requisition to Receive File

Generate Report

ELSE

Rejected Payment Requisition

ENDIF

END
PROCESS 3.1.2 Update Internal Receive Process

BEGIN

Get Canceled Payment Document

Verify Canceled Payment Document

IF Document Valid

Update Canceled Document to Receive File

Generate Report

ELSE

Write ERROR MESSAGE

ENDIF

END

PROCESS 3.2 External Receive Process

BEGIN

Get External Payment Requisition Document

IF New External Payment Requisition

Call Add External Receive

ELSE

IF Canceled External Payment

Call Update External Receive

ELSE

Write ERROR MESSAGE

ENDIF

ENDIF

END
PROCESS 3.2.1  Add External Receive Process
BEGIN
Get New External Payment Requisition
Verify New External Payment Requisition
IF New External Payment Requisition Valid
    Approve External Payment Requisition
    Add New External Payment Requisition to Receive File
    Generate Report
ELSE
    Rejected External Payment Requisition
ENDIF
END

PROCESS 3.2.2  Update External Receive Process
BEGIN
Get Canceled External Payment Document
Verify Canceled External Payment Document
IF Canceled External Payment Document Valid
    Update Canceled External Document to Receive File
    Generate Report
ELSE
    Write ERROR MESSAGE
ENDIF
END
Amount = "{Numeric} *Numeric length: 10, Decimal 2*"
Approved = {Character} *[Y/N]*
Approved_date = {Date} *Date Length: 8*
Approved_date = {Date} *Date Length: 8*
Bank = {Character} *Character Length: 20*
Bank_branch = {Character} *Character Length: 20*
BO_Flag = {Character} *Character Length: 1*
Budget_amount = "{Numeric} *Numeric Length: 10, Decimal 2*"
Chair_Person = {Character} *Character Length: 45*
Character = "[A-Z],[a-z],[!@#$%^&*()_+;:;"\'!{}[]\,./?%]"
Clearance_date = {Date} *Date Length: 8*
Clearance_date = {Date} *Date Length: 8*
Clearance_date = {Date} *Date Length: 8*
Clearance_date = {Date} *Date Length: 8*
Company = {Character} *Character Length: 45*
Complete_Flag = {Character} *Character Length: 1*
Contract_1 = {Character} *Character Length: 45*
Contract_1 = {Character} *Character Length: 45*
Contract_2 = {Character} *Character Length: 45*
Contract_2 = {Character} *Character Length: 45*
Coordinator = {Character} *Character Length: 35*
Cost_Center = *Table for Cost Center Data* Cost_Center_Code +
Department + Location + Chair_Person + Extension +
Contract_1 + Contract_2 + Flag
Cost_center = {Character} *Character Length: 4*
Cost_center = {Character} *Character Length: 4*
Cost_center = {Character} *Character Length: 4*
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Character Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost_center</td>
<td>Cost Center File</td>
<td>4</td>
</tr>
<tr>
<td>Cost_Center_File</td>
<td>Cost Center Code</td>
<td>4</td>
</tr>
<tr>
<td>Cost_Center_Code</td>
<td>Cost Center Code</td>
<td>4</td>
</tr>
<tr>
<td>Country</td>
<td>Country Code</td>
<td>20</td>
</tr>
<tr>
<td>Date</td>
<td>[dd/mm/yy]</td>
<td></td>
</tr>
<tr>
<td>Day</td>
<td>[1-31]</td>
<td></td>
</tr>
<tr>
<td>dd</td>
<td>Day</td>
<td></td>
</tr>
<tr>
<td>Default_Credit</td>
<td>Default Credit</td>
<td>3</td>
</tr>
<tr>
<td>Delivery Place</td>
<td>Delivery Place</td>
<td>20</td>
</tr>
<tr>
<td>Department</td>
<td>Department</td>
<td>35</td>
</tr>
<tr>
<td>Dept_Code</td>
<td>Dept Code</td>
<td>20</td>
</tr>
<tr>
<td>Description</td>
<td>Description</td>
<td>35</td>
</tr>
<tr>
<td>District</td>
<td>District</td>
<td>25</td>
</tr>
<tr>
<td>Employee Information File</td>
<td>Employee Information File</td>
<td></td>
</tr>
<tr>
<td>Employee_code</td>
<td>Employee code</td>
<td>6</td>
</tr>
<tr>
<td>Employee_Information</td>
<td>Employee Information Table</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employee code + Employee name + Employee surname +</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Status + Position + Office + Extension number</td>
<td></td>
</tr>
<tr>
<td>Employee_name</td>
<td>Employee name</td>
<td>20</td>
</tr>
<tr>
<td>Employee_surname</td>
<td>Employee surname</td>
<td>30</td>
</tr>
<tr>
<td>Extension</td>
<td>Extension</td>
<td>6</td>
</tr>
<tr>
<td>Extension_number</td>
<td>Extension number</td>
<td>4</td>
</tr>
<tr>
<td>Faximile</td>
<td>Faximile</td>
<td>15</td>
</tr>
<tr>
<td>Flag</td>
<td>Flag</td>
<td>1 For Cost Center</td>
</tr>
</tbody>
</table>
Flag = {Character} *Character Length: 1 For Project_header Table*
Flag = {Character} *Character Length: 1 For Supplier Information*
Flag = {Character} *Character Length: 1 For User Table*
Flag = {Character} *Character Length: 1 For PO_header Table*
Flag = {Character} *Character Length: 1 For PO_Detail Table*
Flag = {Character} *Character Length: 1 For Petty_Cash_Header Table*
Flag = {Character} *Character Length: 1 For Petty_Cash_Detail Table*
Flag = {Character} *Character Length: 1 For IOU_Header Table*
Flag = {Character} *Character Length: 1 For IOU_Detail Table*
Flag = {Character} *Character Length: 1 For Outsiders_payment Table*
Flag = {Character} *Character Length: 1 For Insiders_payment Table*
Flag = {Character} *Character Length: 1 For Receive_data Table*
Flag = {Character} *Character Length: 1 For Receive_Header
Table*

Flag = {Character} *Character Length: 1 For Receive_Detail

Table*

I.O.U. = {IOU_Header} + {IOU_Detail}

I.O.U. File = {I.O.U}

Insiders payment = {Insiders_payment}

Insiders payment file = {Insiders payment}

Insiders_code = {Character} *Character Length: 5*

Insiders_payment = *Table for Insiders_payment* Insiders_code + Cost_center + Amount + Payment_date + Remark + Clearance_date + Flag

IOU_code = {Character} *Character Length: 5*

IOU_code = {Character} *Character Length: 5*

IOU_Detail = *Table for IOU_Detail* IOU_Code + Item_description + Amount + Clearance_date + Flag

IOU_fund = "{Numeric} *Numeric length: 10, Decimal 2"*

IOU_Header = *Table for IOU_Header* IOU_Code + Cost_Center + IOU_fund + Approved_date + Flag

Item_description = {Character} *Character Length: 35*

Item_description = {Character} *Character Length: 35*

Item_description = {Character} *Character Length: 35*

Item_no = {Character} *Character Length: 2*

Level = {Character} *Character Length: 1*

Level = {Character} *Character Length: 1*
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>{Character} <em>Character Length: 20</em></td>
</tr>
<tr>
<td>nm</td>
<td>{month}</td>
</tr>
<tr>
<td>Mobile_1</td>
<td>{Character} <em>Character Length: 9</em></td>
</tr>
<tr>
<td>Mobile_2</td>
<td>{Character} <em>Character Length: 9</em></td>
</tr>
<tr>
<td>Modi.Flag</td>
<td>{Character} <em>Character Length: 1</em></td>
</tr>
<tr>
<td>month</td>
<td>[1-12]</td>
</tr>
<tr>
<td>Name</td>
<td>{Character} <em>Character Length: 45</em></td>
</tr>
<tr>
<td>No</td>
<td>{Character} <em>Character Length: 20</em></td>
</tr>
<tr>
<td>Numeric</td>
<td>[0-9]</td>
</tr>
<tr>
<td>Office</td>
<td>{Character} <em>Character Length: 10</em></td>
</tr>
<tr>
<td>Outsiders_payment</td>
<td>{Outsiders_payment}</td>
</tr>
<tr>
<td>Outsiders_payment_file</td>
<td>{Outsiders_payment}</td>
</tr>
<tr>
<td>Outsiders_code</td>
<td>{Character} <em>Character Length: 5</em></td>
</tr>
<tr>
<td>Outsiders_payment</td>
<td><em>Table for Outsiders_payment</em> Outsiders_code + Supplier_code + Amount + Payment_date + Remark + Clearance_date + Flag</td>
</tr>
<tr>
<td>P.O.</td>
<td>{PO_Header} + {PO_Detail}</td>
</tr>
<tr>
<td>P.O. File</td>
<td>{P.O}</td>
</tr>
<tr>
<td>Pager_1</td>
<td>{Character} <em>Character Length: 11</em></td>
</tr>
<tr>
<td>Pager_2</td>
<td>{Character} <em>Character Length: 11</em></td>
</tr>
<tr>
<td>Paid_by</td>
<td>&quot;{Character} *Character Length: 1 [A - Cash, B - Cheque, C - Cashier Order, D - Credit Card]&quot;</td>
</tr>
<tr>
<td>Particular</td>
<td>{Character} <em>Character Length: 35</em></td>
</tr>
<tr>
<td>Password</td>
<td>{Character} <em>Character Length: 20</em></td>
</tr>
<tr>
<td>Payment</td>
<td>{Character} <em>Character Length: 1</em></td>
</tr>
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</tr>
<tr>
<td>Payment_date</td>
<td>{Date} <em>Date Length: 8</em></td>
</tr>
</tbody>
</table>

94
Petty Cash    =  {Petty_Cash_Header} + {Petty_Cash_Detail}
Petty Cash File  =  {Petty Cash}
Petty_cash_code  =  {Character} *Character Length: 5*
Petty_cash_code  =  {Character} *Character Length: 5*
Petty_Cash_Detail  =  *Table for Petty_Cash_Detail* Petty_cash_Code +
                        Item_description + Amount + Clearance_date + Flag
Petty_cash_fund  =  "{Numeric} *Numeric length: 10, Decimal 2*"
Petty_Cash_Header  =  *Table for Petty_Cash_Header* Petty_Cash_Code +
                        Cost_Center + Petty_cash_fund + Approved_date + Flag
PO_Category    =  {Character} *Character Length: 2*
PO_Date        =  {Date} *Date Length: 8*
PO_Detail      =  *Table for PO_Detail* PO_No + PO_Item_No +
                        Particular + Quantity + Unit_Cost + Amount + Flag
PO_Header       =  *Table for PO_Header* PO_No + PR_No +
                        PO_Category + PO_Date + Supplier_Code +
                        Quotation_Date + Supplier_Delivery_Date +
                        Delivery Place + Dept_Code + Proj_Code +
                        PO_Total + Payment + Process_Flag + Complete_Flag +
                        Modi_Flag +
                        BO_Flag + Flag
PO_Item_No    =  {Character} *Character Length: 2*
PO_No          =  {Character} *Character Length: 12*
PO_No          =  {Character} *Character Length: 12*
PO_Total       =  "{Numeric} *Numeric Length: 13, Decimal 2*"
Position       =  {Character} *Character Length: 40*
PR_No = {Character} *Character Length: 12*
Process_Flag = {Character} *Character Length: 1*
Proj_Code = {Character} *Character Length: 20*
Project = {Project_Header} + {Project_Detail}
Project_File = {Project}
Project_code = {Character} *Character Length: 4*
Project_code = {Character} *Character Length: 4*
Project_Detail = *Table for Project Item* Project_Code +
Item_description + Budget_amount + Remark
Project_end = {Date} * Date Length: 8*
Project_Header = *Table for Project Header data* Project_Code +
Project_Name + Cost_Center_Code + Project_Start
+ Project_end + Approved + Coordinator + Flag
Project_name = {Character} *Character Length: 35*
Project_start = {Date} * Date Length: 8*
Province = {Character} *Character Length: 25*
Quantity = {Numeric} *Numeric length: 6*
Quotation_Date = {Date} * Date Length: 8*
Receipt = {Receipt_Header} + {Receipt_Detail}
Receipt_File = {Receipt}
Receipt_date = {Date} * Date Length: 8*
Receipt_Detail = *Table for Receipt_Detail* Receipt_no + Item_no +
Receive_code + Flag
Receipt_Header = *Table for Receipt_Header* Receipt_no +
Receipt_date +
Receive_from + Total_amount + Paid_by + Bank +

96
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**Table for Receive data**: Receive_code + Description + Cost_center + Amount + Remark + Flag

**Table for Supplier Information**: Supplier_Code + Company + Trade_Reg_No + Tax_Reg_NO + Street
+ District + Province + Zip_Code + Country +
Telephone + Facimile + Contract_1 + Mobile_1 +
Pager_1 + Contract_2 + Mobile_2 + Pager_2 +
Level + Default_Credit + Remark + Flag

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<tr>
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Table C.2. Project Header.

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Table C.3. Project Detail.

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Table C.5. Employee Information.

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### Table C.7. P.O. Header.

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Table C.9. Petty Cash Header.

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Table C.10. Petty Cash Detail.

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<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Amount</td>
<td>Numeric</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Clearance_date</td>
<td>Date</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Flag</td>
<td>Character</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table C.11. I.O.U. Header.

<table>
<thead>
<tr>
<th>No.</th>
<th>Field Name</th>
<th>Data Type</th>
<th>Length</th>
<th>Decimal</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IOU_code</td>
<td>Character</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Cost_center</td>
<td>Character</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>IOU_fund</td>
<td>Numeric</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Approved_date</td>
<td>Date</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Flag</td>
<td>Character</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table C.12. I.O.U. Detail.

<table>
<thead>
<tr>
<th>No.</th>
<th>Field Name</th>
<th>Data Type</th>
<th>Length</th>
<th>Decimal</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IOU_code</td>
<td>Character</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Item_description</td>
<td>Character</td>
<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Amount</td>
<td>Numeric</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Clearance_date</td>
<td>Date</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Flag</td>
<td>Character</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table C.13. Outsiders Payment.

<table>
<thead>
<tr>
<th>No.</th>
<th>Field Name</th>
<th>Data Type</th>
<th>Length</th>
<th>Decimal</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Outsiders_code</td>
<td>Character</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Supplier_code</td>
<td>Character</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Amount</td>
<td>Numeric</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Payment_date</td>
<td>Date</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Remark</td>
<td>Character</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Clearance_date</td>
<td>Date</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Flag</td>
<td>Character</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table C.14. Insiders Payment.

<table>
<thead>
<tr>
<th>No.</th>
<th>Field Name</th>
<th>Data Type</th>
<th>Length</th>
<th>Decimal</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Insiders_code</td>
<td>Character</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Cost_center</td>
<td>Character</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Amount</td>
<td>Numeric</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Payment_date</td>
<td>Date</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Remark</td>
<td>Character</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Clearance_date</td>
<td>Date</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Flag</td>
<td>Character</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table C.15. Receive Data.

<table>
<thead>
<tr>
<th>No.</th>
<th>Field Name</th>
<th>Data Type</th>
<th>Length</th>
<th>Decimal</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Receive_code</td>
<td>Character</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Description</td>
<td>Character</td>
<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Cost_center</td>
<td>Character</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Amount</td>
<td>Numeric</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Remark</td>
<td>Character</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Flag</td>
<td>Character</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table C.16. Receipt Header.

<table>
<thead>
<tr>
<th>No.</th>
<th>Field Name</th>
<th>Data Type</th>
<th>Length</th>
<th>Decimal</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Receipt_no</td>
<td>Character</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Receipt_date</td>
<td>Date</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Receive_from</td>
<td>Character</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Total_amount</td>
<td>Numeric</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Paid_by</td>
<td>Character</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Bank</td>
<td>Character</td>
<td>20</td>
<td></td>
<td>A - Cash</td>
</tr>
<tr>
<td>7</td>
<td>Bank_branch</td>
<td>Character</td>
<td>20</td>
<td></td>
<td>B - Cheque</td>
</tr>
<tr>
<td>8</td>
<td>No</td>
<td>Character</td>
<td>20</td>
<td></td>
<td>C - Cashier Order</td>
</tr>
<tr>
<td>9</td>
<td>Flag</td>
<td>Character</td>
<td>1</td>
<td></td>
<td>D - Credit Card</td>
</tr>
</tbody>
</table>
Table C.17. Receipt Detail.

<table>
<thead>
<tr>
<th>No.</th>
<th>Field Name</th>
<th>Data Type</th>
<th>Length</th>
<th>Decimal</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Receipt_no</td>
<td>Character</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Item_no</td>
<td>Character</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Receive_code</td>
<td>Character</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Flag</td>
<td>Character</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX D
SCREEN DESIGN
Figure D.1. System Login Menu.
Figure D.2. Program Login Menu.
Figure D.7. Application Menu.
Figure D.11. Report / Daily Menu.
Figure D.13. Report / Ad Hoc Menu.
Figure D.14. System Menu.
Figure D.16. Input Budget Data.
Figure D.17. Input I.O.U. Data.

<table>
<thead>
<tr>
<th>Supplier Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.O.U. Data</td>
</tr>
<tr>
<td>Item No.</td>
</tr>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Approval Date</td>
</tr>
<tr>
<td>Amount</td>
</tr>
<tr>
<td>Clearance Date</td>
</tr>
<tr>
<td>Dept. Code</td>
</tr>
<tr>
<td>Cust. Code</td>
</tr>
</tbody>
</table>

Add, Delete, Update, Cancel, OK
Figure D.19. Input Receipt.
Figure D.20. Input Cost Center Information.
Figure D.22. Input Supplier Information (Detail).
Figure D.23. Input Supplier Information (Contractor 1).
Figure D.24. Input Supplier Information (Contractor 2).
Figure D.25. Input Employee Information.
Figure D.26. Input System User Information.
Figure D.27. Input Receive Data.
## Daily Cash Receipt Report

<table>
<thead>
<tr>
<th>RECEIPT NO.</th>
<th>PARTICULARS</th>
<th>AMOUNT (BAHT)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>BILL</td>
</tr>
<tr>
<td></td>
<td>BOOK STORE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CRIB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ABAC HOTEL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CENTRAL LIBRARY</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SCIENCE LIBRARY</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ABAC CAFETERIA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FRONT OFFICE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OTHER</td>
<td></td>
</tr>
</tbody>
</table>

| TOTAL       |                      |     |       |       |
| BALANCE BROUGHT FORWARD | DEPOSIT |     |       |       |
|             |                      |     |       |       |

<table>
<thead>
<tr>
<th>BALANCE CARRIED FORWARD</th>
<th>SUBMITTED BY</th>
<th>CHECKED BY</th>
<th>AUDITED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>...............</td>
<td>.............</td>
<td>.............</td>
</tr>
<tr>
<td>........................</td>
<td>../........./..</td>
<td>../........./..</td>
<td>../........./..</td>
</tr>
</tbody>
</table>

Figure E.1. Daily Cash Receipt Report.
### ASSUMPTION UNIVERSITY

#### DAILY CASH RECEIPT REPORT

**COST CENTER**..........................**CODE**

**DATE**....................................**FUND**

<table>
<thead>
<tr>
<th>RECEIPT NO.</th>
<th>PARTICULARS</th>
<th>AMOUNT (BAHT)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>BILL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL**

**BALANCE BROUGHT FORWARD**

**SUBMITTED TO OFFICE OF FINANCIAL MANAGEMENT**

( ) ( ) ( )

**BALANCE CARRIED FORWARD**

Enclosed here with are......................receipts.

**SUBMITTED BY**

............................

....../....../......

**CHECKED BY**

............................

....../....../......

**APPROVED BY**

............................

....../....../......

---

Figure E.2. Daily Cash Receipt Report (1).
Figure E.3. Substitute of Bill.
Figure E.4. Budget Requisition.
**ASSUMPTION UNIVERSITY**

**REPLENISHMENT REPORT**

TO: DIRECTOR, FINANCIAL MANAGEMENT OFFICE

<table>
<thead>
<tr>
<th>ACCOUNT NO.</th>
<th>ACCOUNT TITLE</th>
<th>AMOUNT (BAHT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTROL RES. ACT.</td>
<td>REIMBURSEMENT AMT.</td>
<td></td>
</tr>
<tr>
<td>IOU</td>
<td>CASH IN BOX</td>
<td></td>
</tr>
<tr>
<td>PETTY CASH FUND</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PREPARED BY ___________  APPROVED BY ___________

__/___/___  __/___/___

**Figure E.5.** Replenishment Report.
Assumption University
Office of Financial Management

Expense Requisition Form

No. ________
Date ________

Name-Surname ____________ I.D. Code ____________ Position ____________

Faculty / Department ____________ Fund ____________

Project ____________ Location ____________

To: Director, Office of Financial Management

Request for the payment:

In case of no receipt

Proof of payment [ ] Receipt [ ] Substitution of receipt (please specify) ________

Type of payment [ ] Cash [ ] Cheque paid for ____________

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

( ) Total

Your kind consideration will be highly appreciated

Note ____________________________________________

Requested by ___________________ Approved by ___________________ Approved by ___________________

( / / ) ( / / ) ( / / )

Figure E.6. Expense Requisition Form.
Figure E.7. Petty Cash Fund.
ADVANCED PAYMENT CLEARANCE

DATE ________

NAME, SURENAME: ___________________________ ID CODE: __________

DEPARTMENT: ___________________________ PROJECT: ___________________________

FUND: __________ LOCATION: __________

DETAILS OF PAYMENT

<table>
<thead>
<tr>
<th>NO.</th>
<th>REF. NO.</th>
<th>DESCRIPTION</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(..............................) TOTAL

AMOUNT OF ADVANCED PAYMENT: __________

☐ AMOUNT PAY BACK ☐ AMOUNT GRANTED: __________

CLEARANCE

________________________

(________________________) CHECKED BY: ___________________________

________________________

(________________________) APPROVED BY: ___________________________

Figure E.8. Advanced Payment Clearance.
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit Price</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**The Sum of**

<table>
<thead>
<tr>
<th>The Sum of</th>
<th>Total</th>
<th>1 Black = Student</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2 Pink = Office of Financial Management</td>
</tr>
</tbody>
</table>

**Office of Financial Management**

**Figure E.9. Receipt.**
ADVANCED PAYMENT

DATE ________

NAME, SURNAME ___________ ID. CODE _______ POSITION _______

DEPARTMENT _______________________________________

PROJECT _______________________________________

FUND ________ □ □ □ LOCATION ________________________ □ □ □

AMOUNT ________ BAHT □ PETTY CASH □ CHEQUE

DETAILS OF PAYMENT

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(..........................................................) TOTAL

FOR CLEARANCE OF ADVANCED PAYMENT SUBMIT RECEIPTS AT

FINANCIAL MANAGEMENT OFFICE DUE DATE __________________________

REQUESTED BY ___________ APPROVED ___________

(..................) (..................)

/.../....../..... /.../....../.....

POSITION ___________

APPROVED ___________

(..................)

/.../....../.....

DIRECTOR, FINANCIAL MGT. OFFICE

RECEIPIENT ___________

(..................)

/....../.....

Figure E.10. Advanced Payment.
ASSUMPTION UNIVERSITY

DAILY DEPOSIT TO THE BANK

AS OF ________________________

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>PARTICULARS</th>
<th>BILL</th>
<th>CHECK</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BOOK STORE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>CRIB</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>GRADUATE OFFICE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>LIBRARY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>CONTINUING EDUCATION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>FRONT OFFICE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>OTHERS (SPECIFY)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TOTAL

DEPOSITED ON __________

CHECK BY __________ RECEIVED BY __________

Figure E.11. Daily Deposit to the Bank.
APPENDIX F
SOURCE CODE
Application Source Code

SPBExportHeader$tbis.sra
SPBExportComments$Accounting & Budgeting Information System
forward
global transaction sqlca
global dynamicdescriptionarea sqlda
global dynamicstagingarea sqlsa
global error error
global message message
end forward
global type tbis from application
end type
global tbis tbis
on tbis.create
appname = "tbis"
message = create message
sqlca = create transaction
sqlda = create dynamicdescriptionarea
sqlsa = create dynamicstagingarea
error = create error
end on
on tbis.destroy
destroy( sqlca )
destroy( sqlda )
destroy( sqlsa )
destroy( error )
destroy(message)
end on

event open; SQLCA.DBMS = ProfileString("PB.INI","Database","DBMS","")
SQLCA.DbParm = ProfileString("PB.INI","Database","DbParm","")
CONNECT USING SQLCA;
open(main)
end event

$PBExportHeader$ud_delete.srf
global type ud_delete from function_object
end type

forward prototypes
global subroutine ud_delete (datawindow datawindows)
end prototypes

global subroutine ud_delete (datawindow datawindows); datawindows.DeleteRow(0)
end subroutine

$PBExportHeader$ud_retrieve.srf
global type ud_retrieve from function_object
end type

forward prototypes
global subroutine ud_retrieve (datawindow datawindows)
end prototypes
global subroutine ud_retrieve (datawindow
datawindows); datawindows.SetTransObject(SQLCA)
datawindows.Retrieve()
datawindows.Setfocus()
end subroutine

$PBExportHeader$ud_next.srf
global type ud_next from function_object
end type

forward prototypes
global subroutine ud_next (datawindow datawindows)
end prototypes
global subroutine ud_next (datawindow datawindows); datawindows.ScrollNextRow()
end subroutine

RECORD PREVIOUS FUNCTION

$PBExportHeader$ud_prior.srf
global type ud_prior from function_object
end type

forward prototypes
global subroutine ud_prior (datawindow datawindows)
end prototypes
global subroutine ud_prior (datawindow datawindows);datawindows.ScrollPriorRow()
end subroutine

UPDATE FUNCTION

$PBExportHeader$ud_update.srf

global type ud_update from function_object
end type

forward prototypes

global subroutine ud_update (datawindow datawindows)
end prototypes

global subroutine ud_update (datawindow datawindows);Integer li_ReturnCode
li_ReturnCode=datawindows.Update()
If li_ReturnCode>0 then
    COMMIT USING SQLCA;
else
    ROLLBACK USING SQLCA;
end if
end subroutine

MENU SOURCE CODE

$PBExportHeader$mainmenu.srm
forward

global type mainmenu from menu
end type

m_file from menu within mainmenu
end type

m_maintenance from menu within m_file
end type

m_ from menu within m_file
end type

m_print from menu within m_file
end type

m_printproperties from menu within m_file
end type

m_-1 from menu within m_file
end type

m_exit from menu within m_file
end type

m_file from menu within mainmenu

m_maintenance m_maintenance
m_ - m_ -
m_print m_print
m_printproperties m_printproperties
m_-1 m_-1
m_exit m_exit
end type

m_edit from menu within mainmenu
end type

m_cut from menu within m_edit
end type
type m_copy from menu within m_edit
end type

type m_paste from menu within m_edit
end type

type m_2 from menu within m_edit
end type

type m_find from menu within m_edit
end type

type m_replace from menu within m_edit
end type

type m_edit from menu within mainmenu
m_cut m_cut
m_copy m_copy
m_paste m_paste
m_2 m_2
m_find m_find
m_replace m_replace
end type

type m_recode from menu within mainmenu
end type

type m_add from menu within m_recode
end type

type m_delete from menu within m_recode
end type

type m_update from menu within m_recode
end type

type m_3 from menu within m_recode
end type

type m_first from menu within m_recode
end type

type m_end from menu within m_recode
end type

type m_next from menu within m_recode
end type

type m_previous from menu within m_recode
end type

type m_recode from menu within mainmenu

m_add m_add
m_delete m_delete
m_update m_update
m_-3 m_-3
m_first m_first
m_end m_end
m_next m_next
m_previous m_previous
end type

type m_application from menu within mainmenu
end type

type m_budget from menu within m_application
end type

type m_payment from menu within m_application
end type

type m_ioupayment from menu within m_payment
end type
type m_pettycashpayment from menu within m_payment
dend type

type m_payment from menu within m_application

m_ioupayment m_ioupayment

m_pettycashpayment m_pettycashpayment
dend type

type m_receiving from menu within m_application
dend type

type m_masterfileupdate from menu within m_application
dend type

type m_costcenter from menu within m_masterfileupdate
dend type

type m_supplierinformation from menu within m_masterfileupdate
dend type

type m_employeeinformation from menu within m_masterfileupdate
dend type

type m_userinformation from menu within m_masterfileupdate
dend type

type m_receivedata from menu within m_masterfileupdate
dend type

type m_projectdata from menu within m_masterfileupdate
dend type

type m_iou1 from menu within m_masterfileupdate
dend type

type m_pettycash1 from menu within m_masterfileupdate
dend type

type m_masterfileupdate from menu within m_application
m_costcenter m_costcenter
m_supplierinformation m_supplierinformation
m_employeeinformation m_employeeinformation
m_userinformation m_userinformation
m_receivedata m_receivedata
m_projectdata m_projectdata
m_iou1 m_iou1
m_pettycash1 m_pettycash1
end type
type m_application from menu within mainmenu
m_budget m_budget
m_payment m_payment
m_receiving m_receiving
m_masterfileupdate m_masterfileupdate
end type
type m_report from menu within mainmenu
end type
type m_daily from menu within m_report
end type
type m_depositereport from menu within m_daily
end type
type m_cashreceiptreport from menu within m_daily
end type
type m_cashreceiptbycostcenter from menu within m_daily
end type
type m_-5 from menu within m_daily
end type

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type m_pettycashdetail from menu within m_daily
end type

type m_ioudetail from menu within m_daily
end type

type m_insiderspayment from menu within m_daily
end type

type m_outsiderspayment from menu within m_daily
end type

type m_daily from menu within m_report
m_depositereport m_depositereport
m_cashreceiptreport m_cashreceiptreport
m_cashreceiptbycostcenter m_cashreceiptbycostcenter
m_-5 m_-5
m_pettycashdetail m_pettycashdetail
m_ioudetail m_ioudetail
m_insiderspayment m_insiderspayment
m_outsiderspayment m_outsiderspayment
end type

type m_monthly from menu within m_report
end type

type m_substituебforbill from menu within m_monthly
end type

type m_deposite from menu within m_monthly
end type

type m_cashreceive from menu within m_monthly
end type

type m_cashreceivebycostcenter from menu within m_monthly


