Practical Development of Information System in Business Context: Web Application for Blue Marine Interfreight Co., Ltd.

Mr. Prinya Janchaingam
Mr. Voraphot Ngamjetvorakul
Ms. Umpai Ruechataveeroongroj

Submitted in Partial Fulfillment
of the Course BC 4500 Information Systems Development
Bachelor's Degree of Business Administration
in Business Information System Program
Assumption University

December 2002

Project Name:	**Practical development of system in business context web application of BLUE MARINE Co.,ltd**
Developers:	Mr. Prinya Janchaingam Ms. Umpai Reuchataveeroongroj Mr. Voraphot Ngamjetvorakul
Advisor:	A.Vasa Burabhadeja
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The Department of Business Computer, ABAC School of Management has approved the aforementioned student's BC 4500 280-Hour Training Project, which includes complete documentation and program as a partial fulfillment of the requirements for the Bachelor's Degree of Business Administration in Business Computer

Advisory Committee:

(A.Vasa BurabhadejaAdvisor)
Advisor

(A.Patamate Darnphitsanupan)
Chairperson

(A.Krisee Vipulakom)
Member

(A.Somchai Chaowapatanawong)
Member

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Advisor A. Vasa Buraphadeja

PROJECT WRITE-UP
Prepared by
Mr. Prinya Janchaingam
Mr. Voraphot Ngamjetvorakul
Ms. Umpai Ruechataveeroongroj

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I. INTRODUCTION

1.1 Background of Organization

Blue Marine Interfreight Co., Ltd. Having operated as freight forwarder to handle sea-air export and import since early of year 2000. And nowadays, the company has about 18 employees work in organization. They provide service such as Import & export documentation, Customs clearance formalities, Project cargo handling, Inland Transportation container haulage throughout Thailand and Weekly Consolidation LCL and FCL services. Because this company is represented as freight forwarder that will provide only service and information to customers so all of operating process of this company is based on a lot of information as well as many of documentation.

Blue Marine Interfreight Co., Ltd. consists of 5 departments, that is, General Management, International Marketing, Accounting and Financial, Sale Department and IT Department. The web application that will be developed is under the IT Department. The following figures show the company's organization chart and department chart respectively

(1) Organization Chart

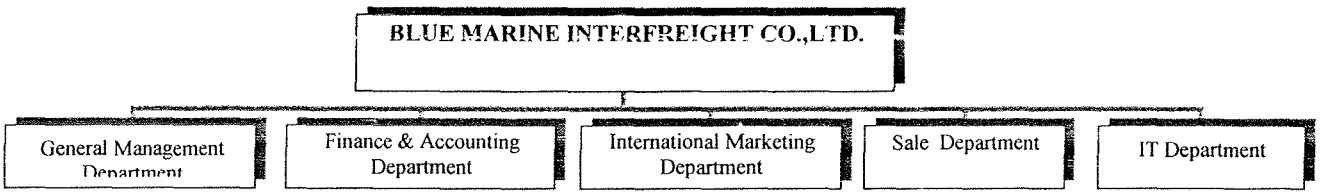

Figure 1-1 Organization Chart

(2) Department Chart

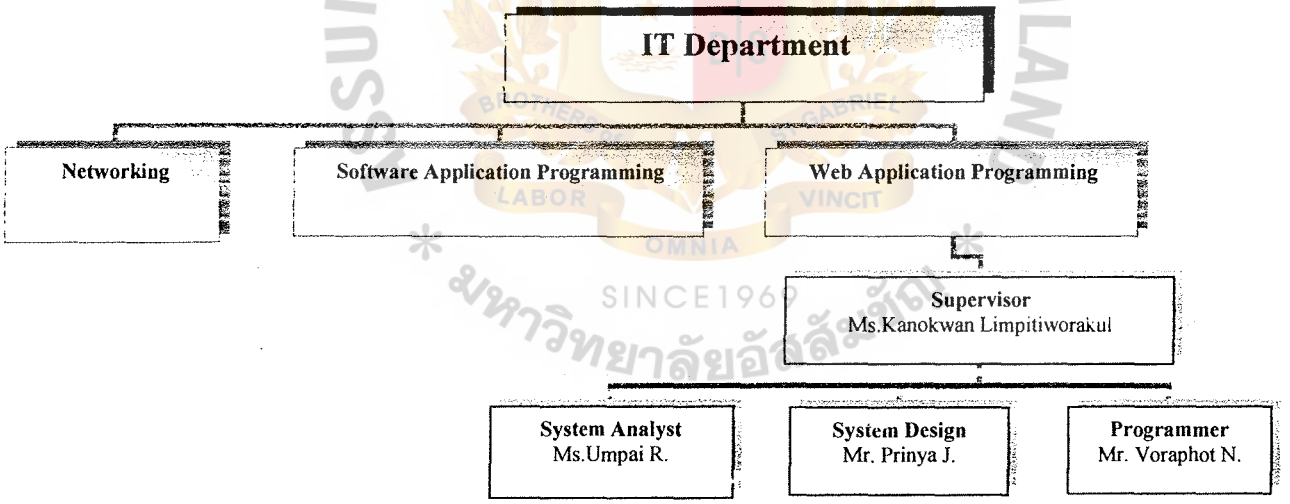

Figure 1-2 Department Chart

1.2 Objective of the system

The objectives of this system are as followed:

- To study the existing system for the understanding on the current operation.
- To analyze the causes of problems of the existing system.
- To define user requirements that will support and solve current problems.
- To improve tasks performance by reducing operational time and eliminating Errors.
- To make systematic documentation for future reference.
- To implement the system in the real working context.

1.3 Scope of the system

The following are the scopes of the system:

- To create web application that promote the company
- To add function that will provide services to customer such as Shipping services, online quotes.
- To add function E-mail box checking via web application.
- To add function that will provide more useful information to customers such as News & Events, Announcements, Events, Fact & Figures, Sailing Schedule.
- To add function that will make the customers to have a chance to interact
- With the company's web site such as web board, FAQ and etc.
- To add the function that will support company's management such as job Opportunities.
- To add the function that provide the links that will be useful for the customers as well as the company themselves.

1.4 Project Plan

The tentative plan for this project: "Web Application for Blue Marine Interfreight Co.,Ltd." is exhibited in Figure 1-3.

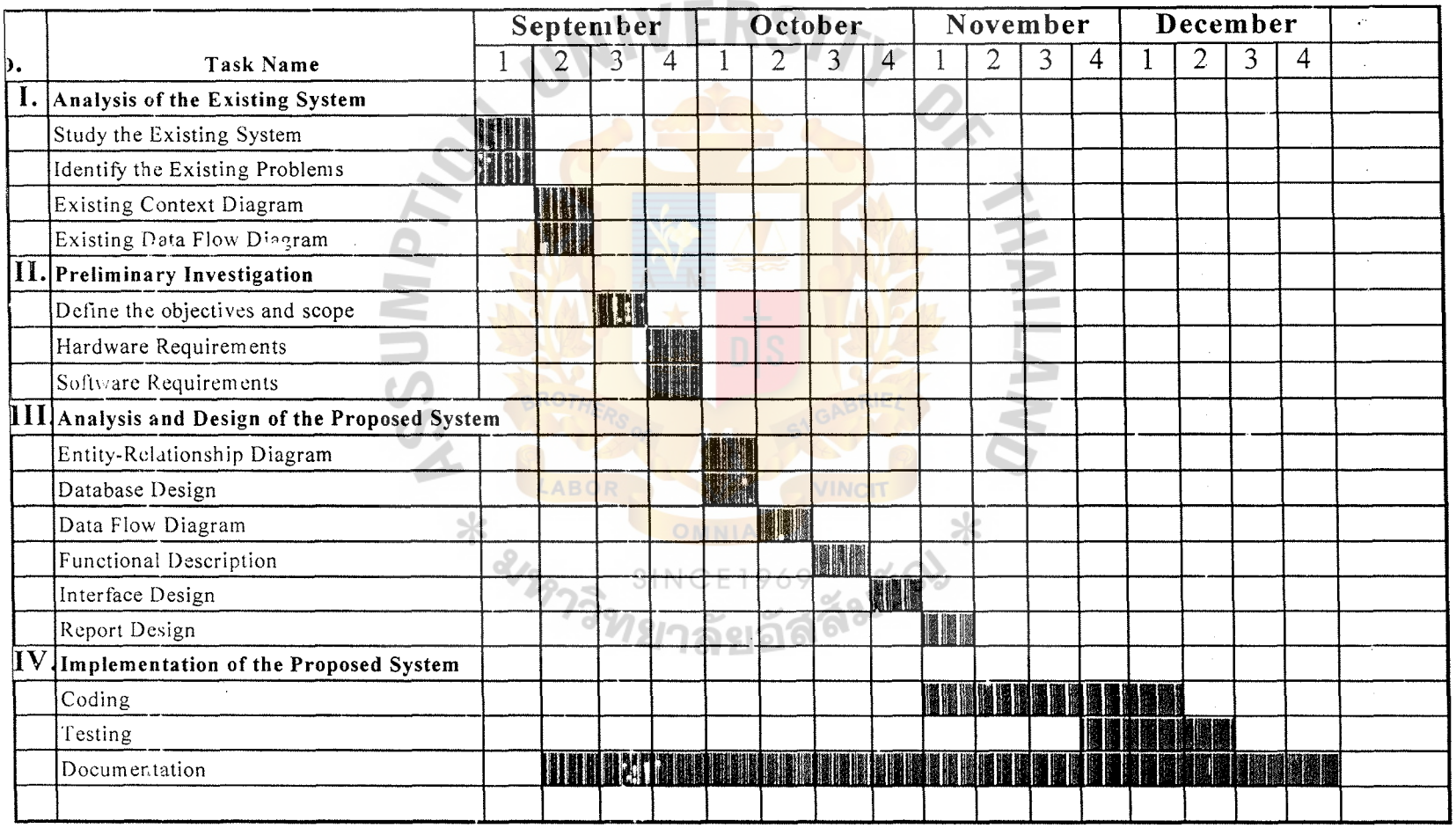

Figure 1-3 Project Plan

II. THE EXISTING SYSTEM

2.1 Back ground and Existing System

Blue Marine Interfrieght Co,. Ltd. has their own web application for 3 years. But the existing web application is static web application that only provide the company's information to promote the company but not any service providing to customer so this web application is not efficient used by customer as well as the company themselves. The figure 2-1 below shows the existing inventory management system.

Figure 2-1 Context Diagram of Existing System

2.2 Problem Definition

1) Inefficient used by the organization

The company has to carry a lot of paper work or document that they received from the customer because the existing website doesn't have the database to keep record their information. The duty of existing website is just to post the news of the company and rarely updated.

2) Inefficient used by customers

The existing website provides very few information so it make the users feel that no need to visit because they get nothing from login to this website.

3) Unattractive to customers

The existing web application is static web application which information doesn't up to date, and also not allow user to interact with the website. That may be the reason that most users are not willing to visit the website again.

III. THE PROPOSED SYSTEM

3.1 System Specification

(1) Hardware Requirements(minimum requirement)

Table 3-1 Hardware requirement

HARDWARE	SPECIFICATION
PROCESSOR	PentiumIII 1000 Mhz
MEMORY	256 MB SDRAM
Hard disk	10 GB 7200 RPM
Video Card	Nvidia TNT2 M32

(2) Hardware Requirements(recommended)

HARDWARE	SPECIFICATION
PROCESSOR	PentiumIV 1800 MHz
MEMORY	512 MB DDRRAM
Hard disk	20 GB 7200 RPM
Video Card	Nvidia TNT2 M32

(3) Hardware Requirements(client)

HARDWARE	SPECIFICATION
PROCESSOR	Duron 800MHz
MEMORY	128 MB SDRAM
Hard disk	10 GB 5400 RPM
Video Card	Nvidia TNT2 M32

(1) Software Requirement

Table 3-2 Software requirement

SOFTWARE	SPECIFICATION
Operating System	Microsoft Windows 98 or Microsoft Windows XP
Application	1. Microsoft Visio 2002 Professional 2. Macromedia Dreamweaver MX 3. Macromedia Flash MX 4. Adobe Photoshop 7.0 5. Internet explorer 6.0 6. Switch 2.0 7. Microsoft access 2002 (interface) 8. Microsoft access 2000 (format) 9. Internet information service (IIS5.1)

3.2 System Design

(1) Data Flow Diagram

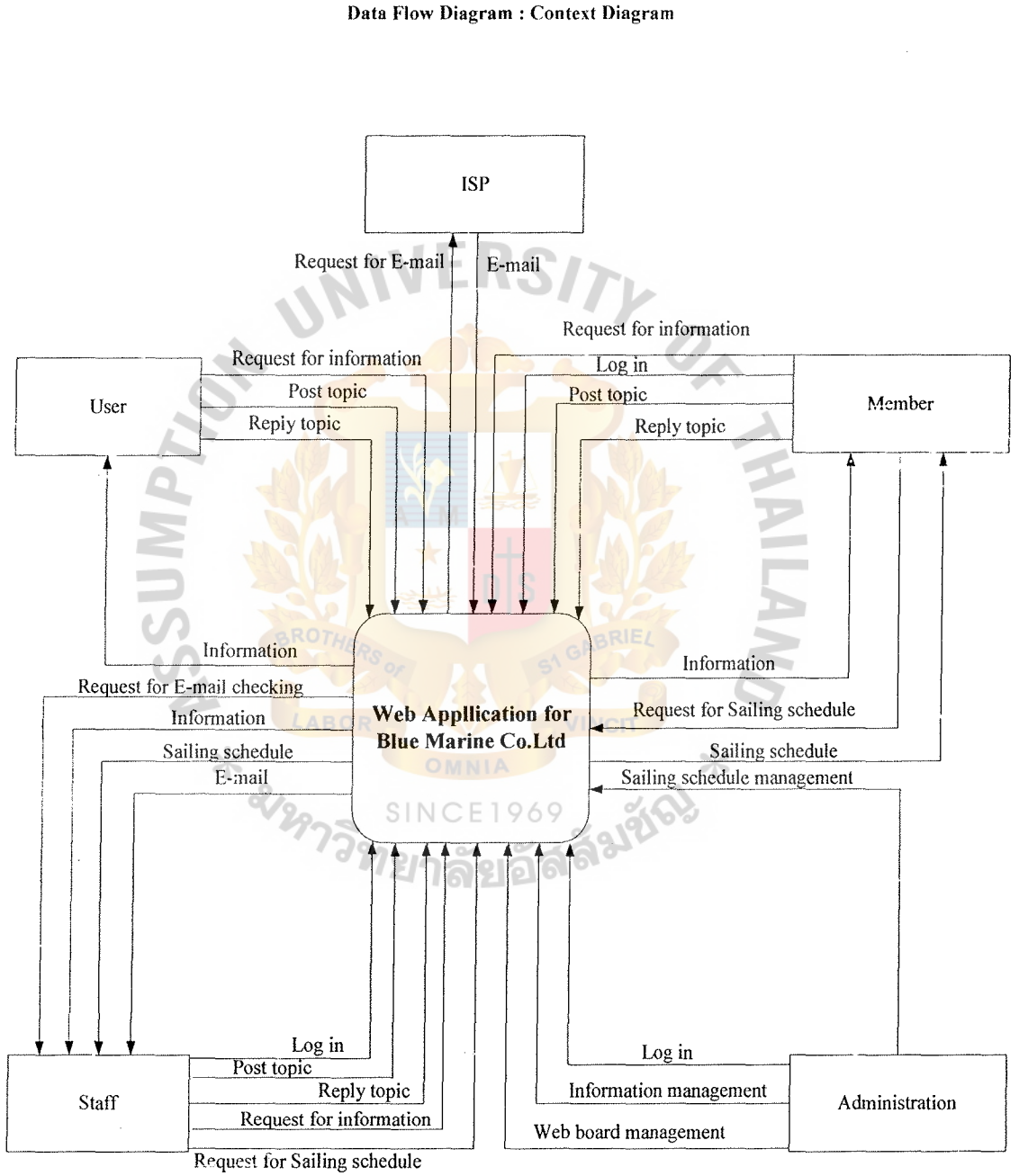

Figure 3-1 Context Diagram of Proposed System

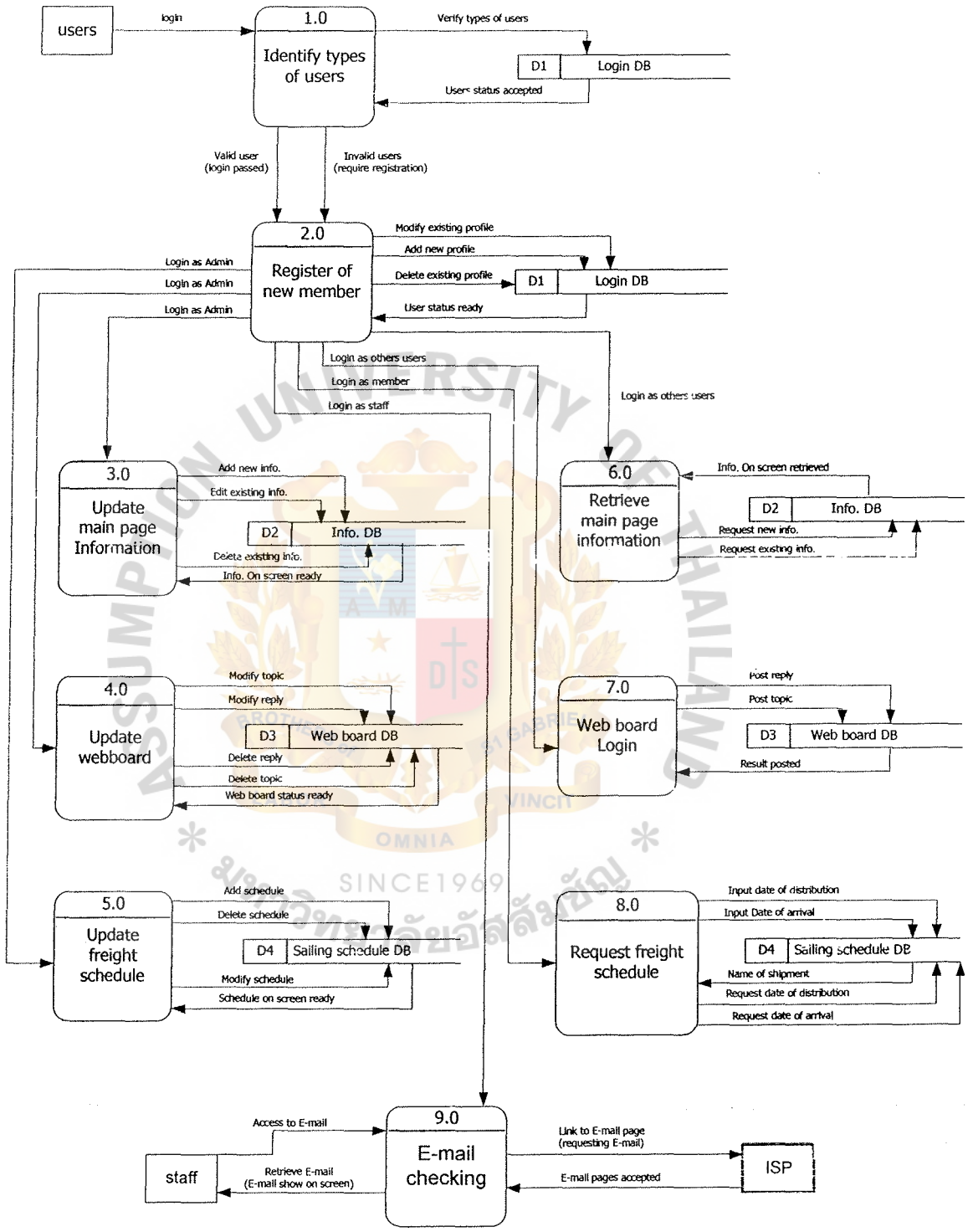

Figure 3.2 Data Flow Diagram – Level 0

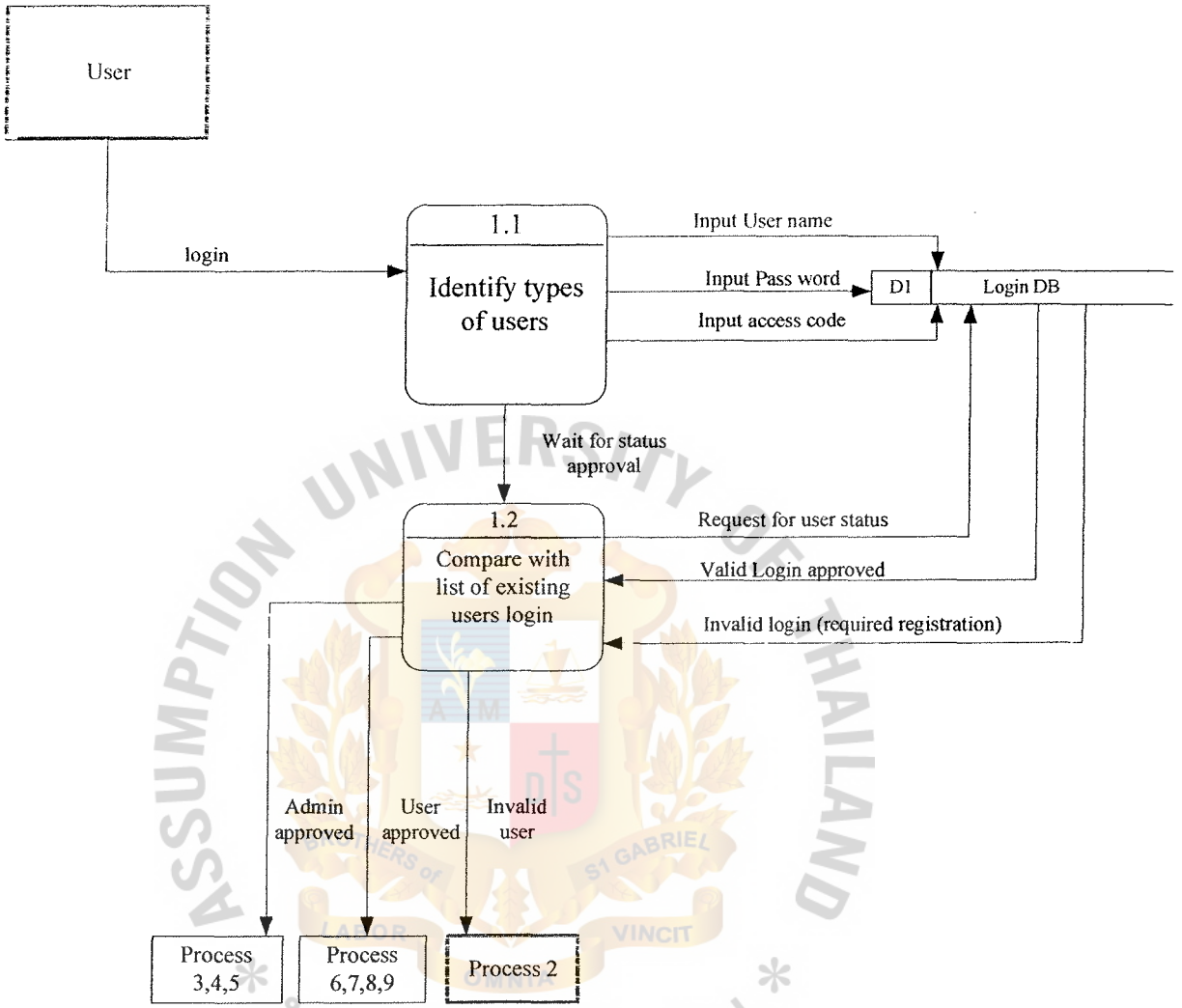

Figure 3-3 Data Flow Diagram – Level 1 Process 1

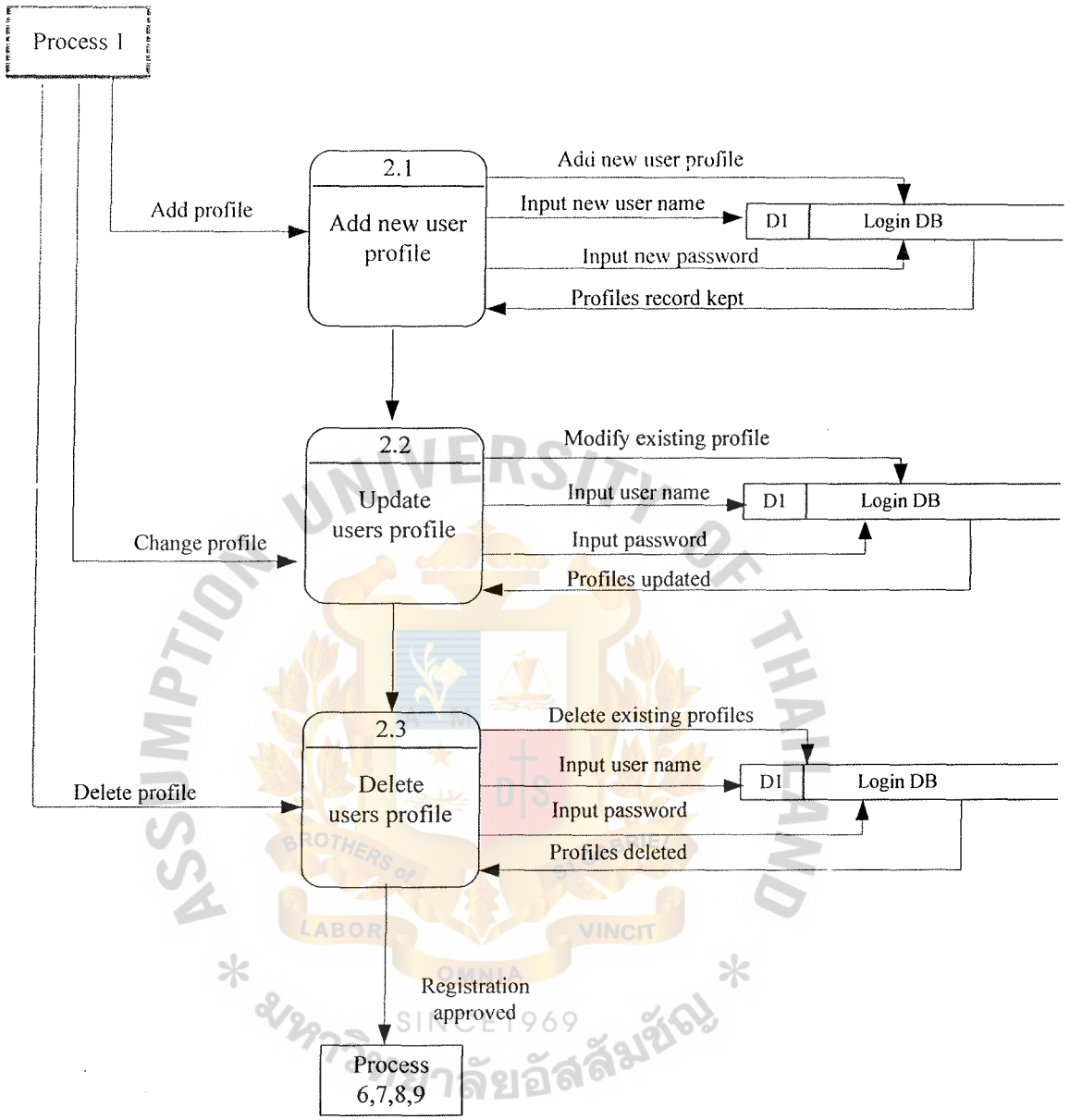

Figure 3-4 Data Flow Diagram – Level 1 Process 2

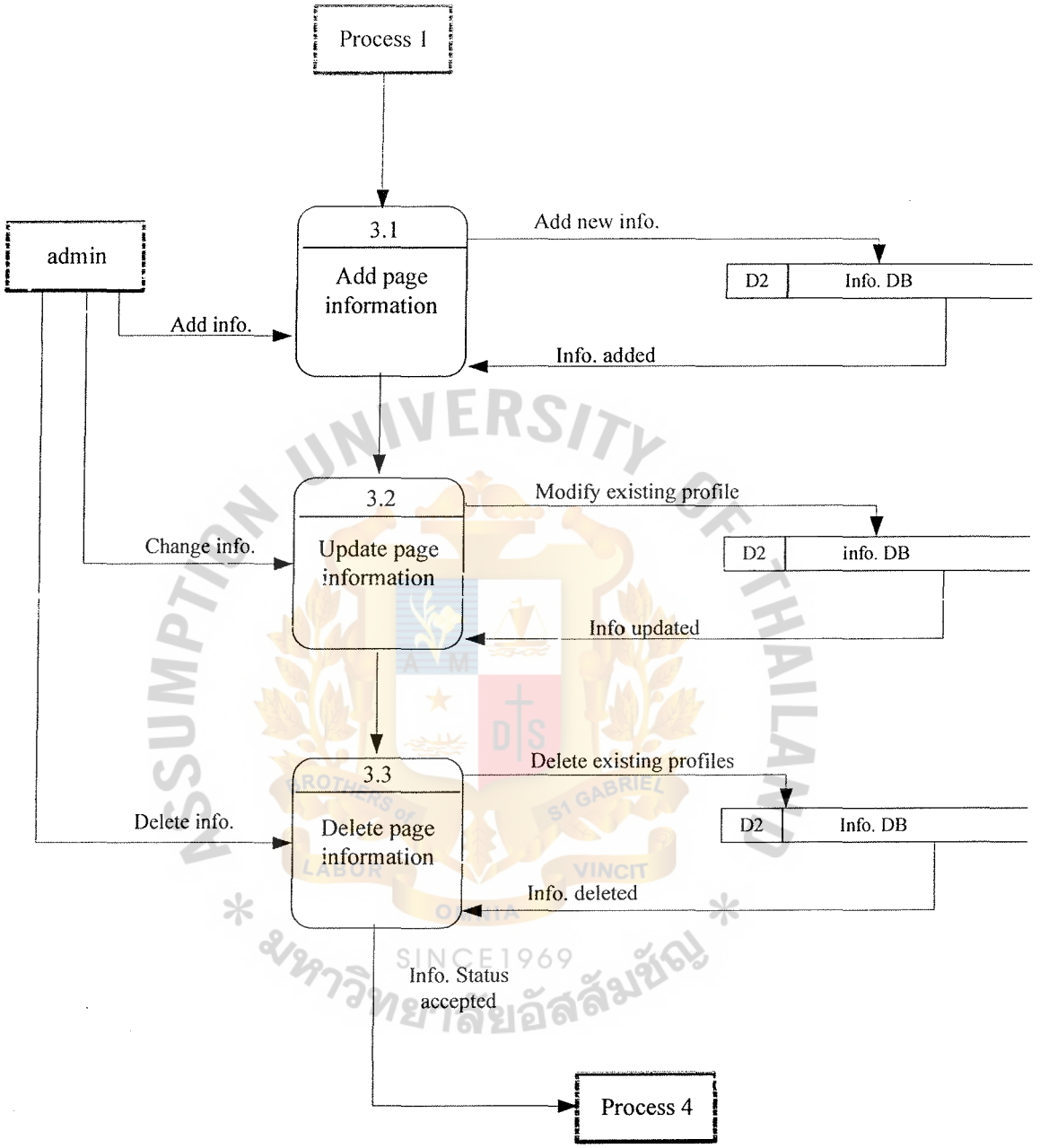

Figure 3-5 Data Flow Diagram – Level 1 Process 3

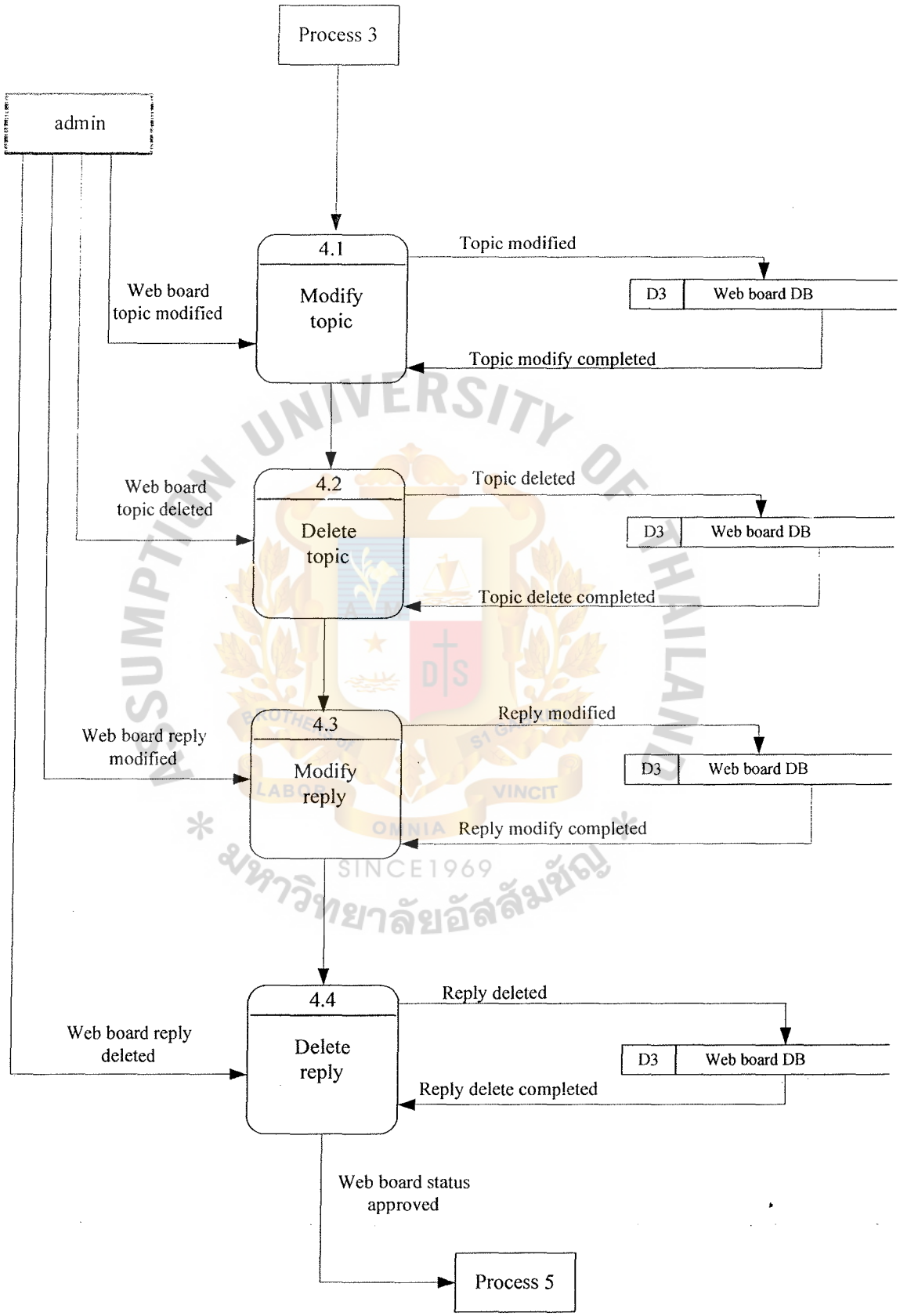

Figure 3-6 Data Flow Diagram – Level 1 Process 4

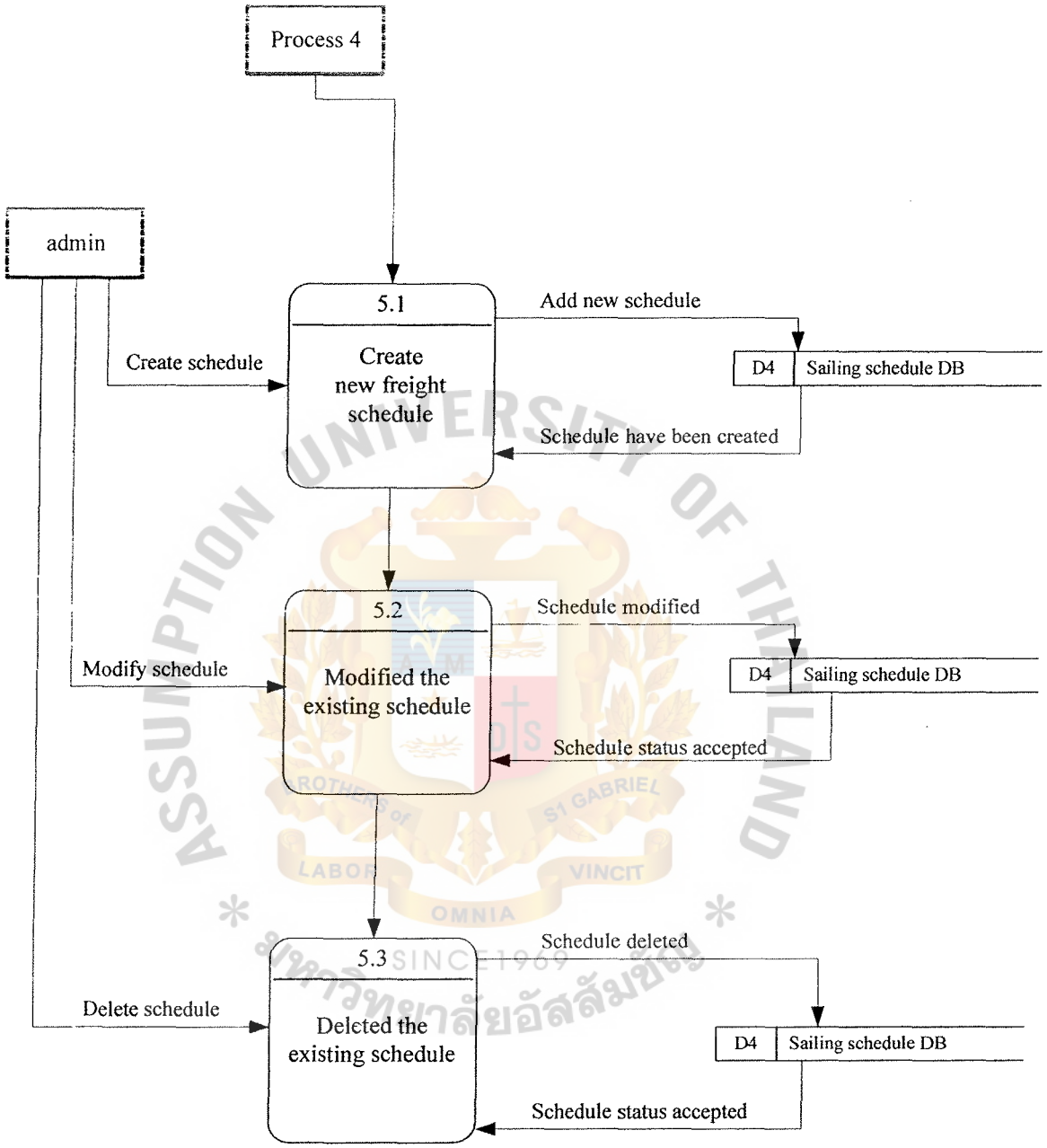

Figure 3-7 Data Flow Diagram – Level 1 Process 5

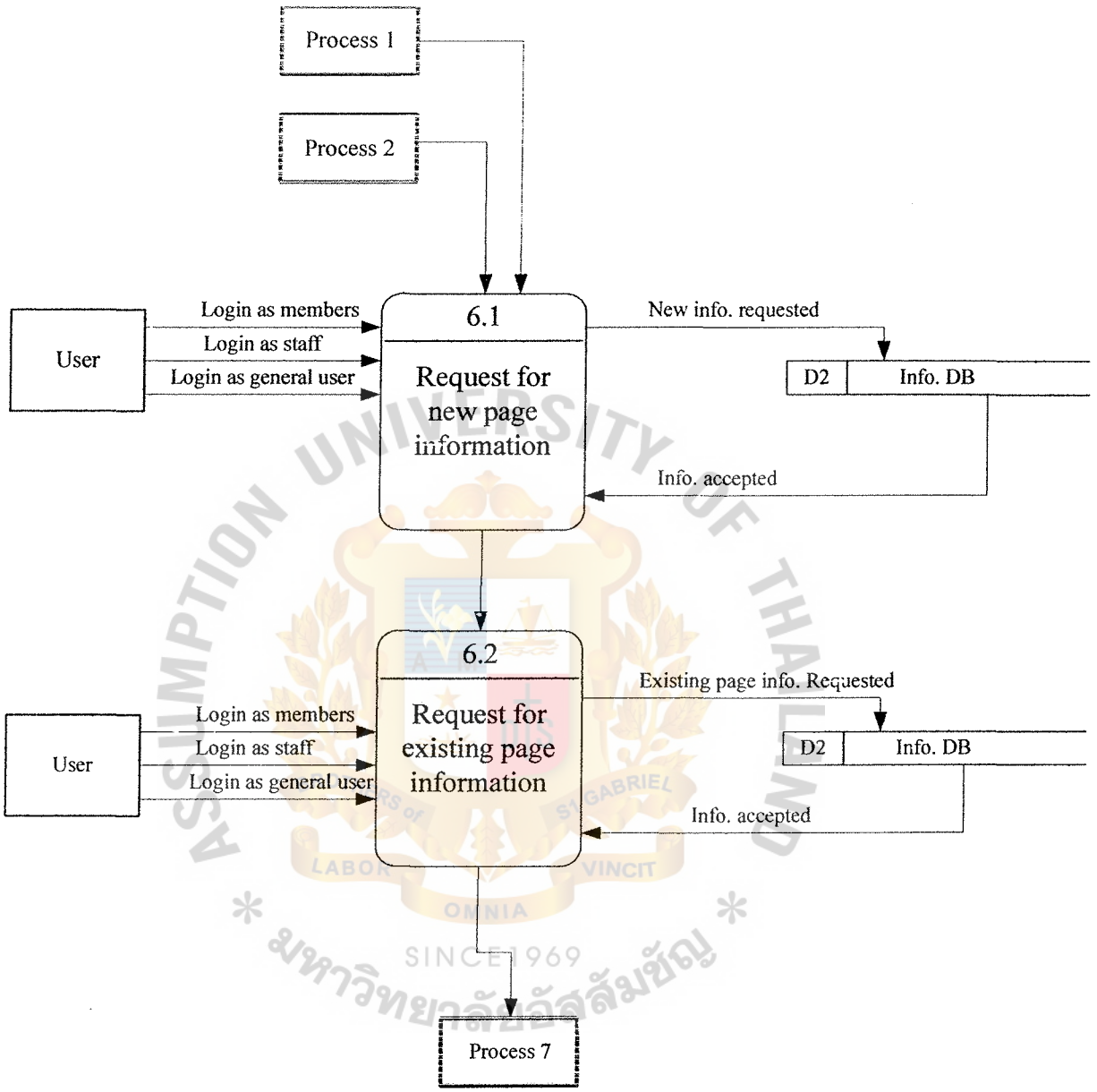

Figure 3-8 Data Flow Diagram – Level 1 Process 6

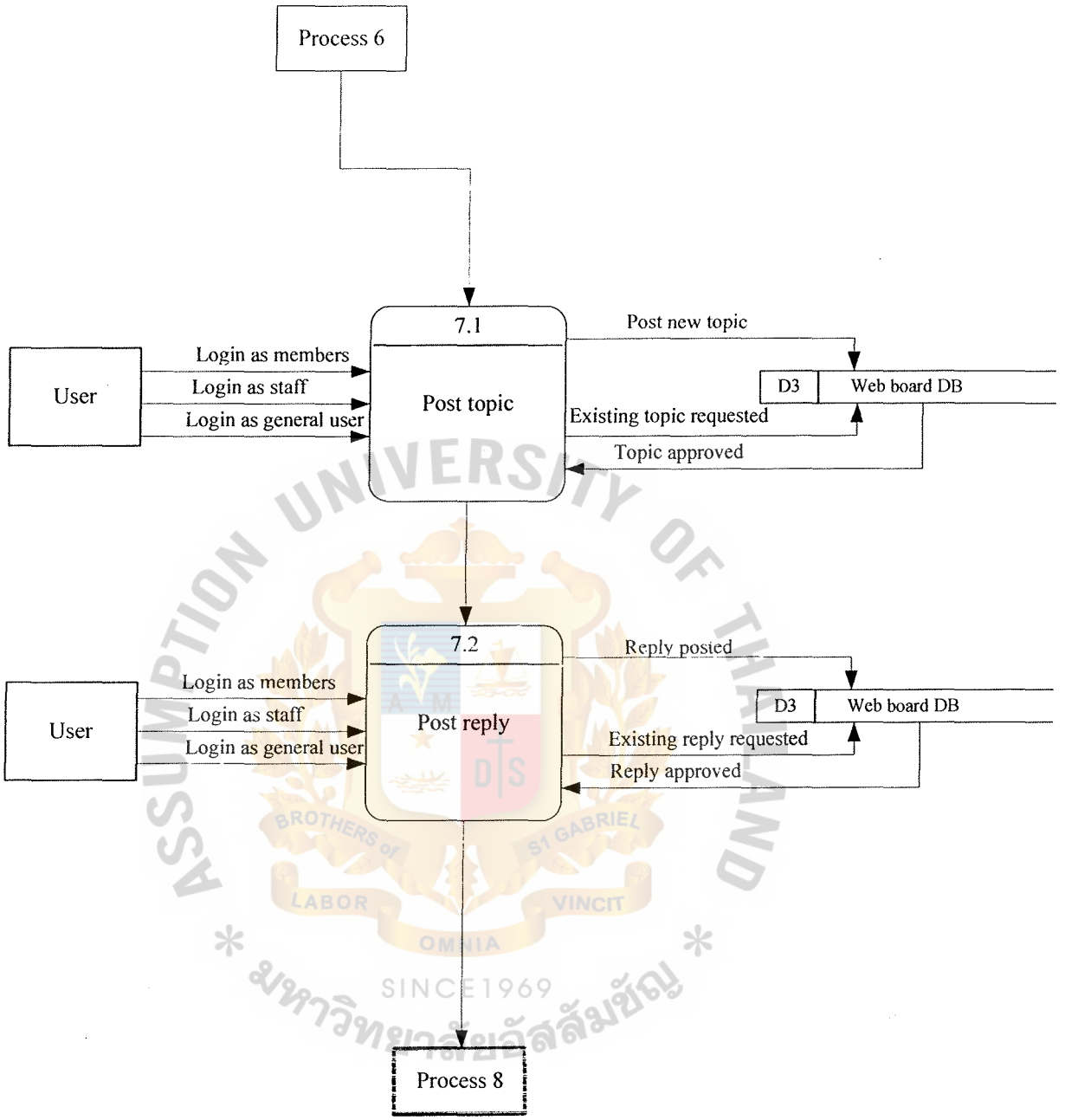

Figure 3-9 Data Flow Diagram – Level 1 Process 7

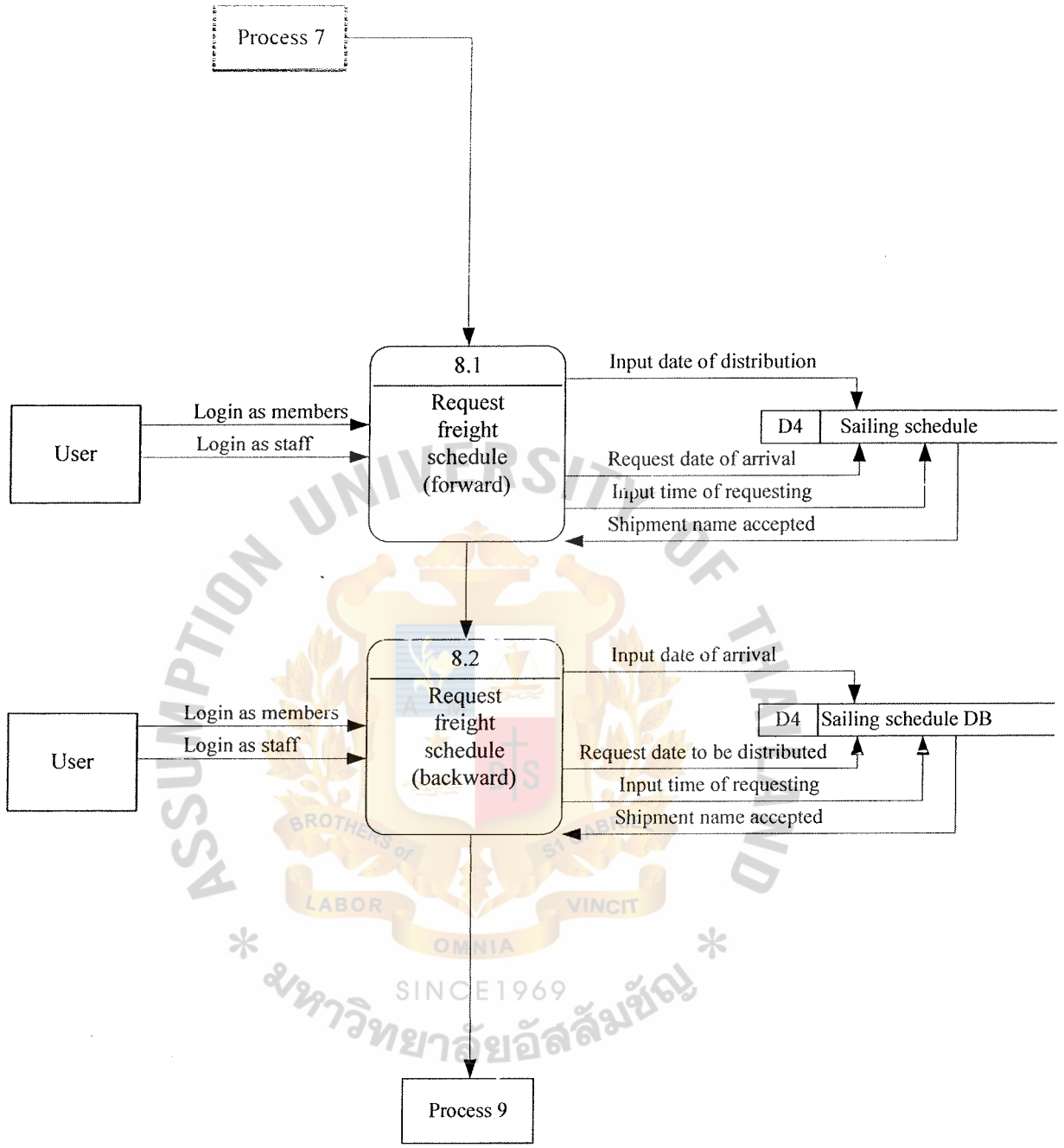

Figure 4-0 Data Flow Diagram – Level 1 Process 8

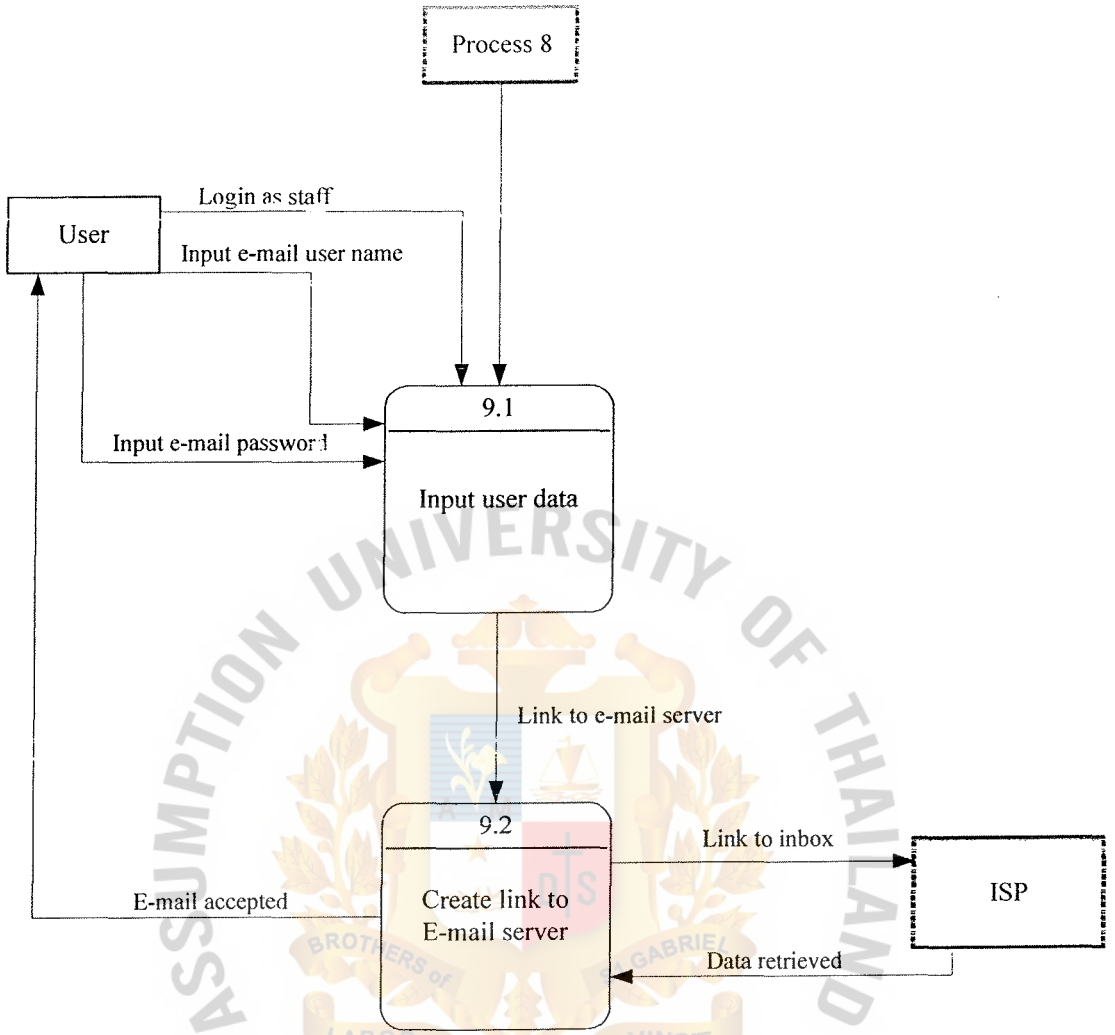

Figure 4-1 Data Flow Diagram – Level 1 Process 9

(2) Entity-Relationship Diagram

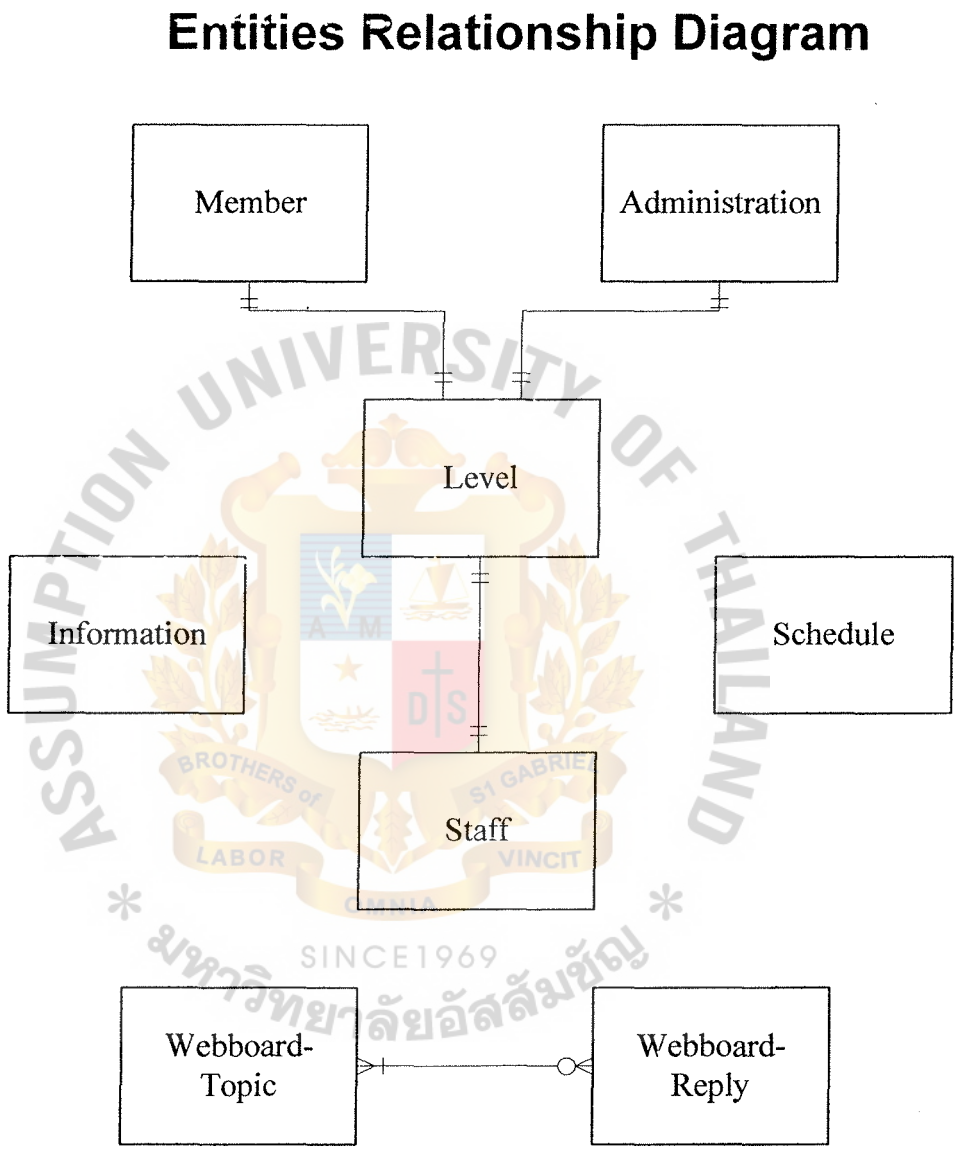

Figure 3-9 Entity-Relationship Diagram

(3) Database Design

This web application system is designed using relational database model that is a modern relational database management system which organizes and views all data in the form of tables or relations, provides powerful operation (such as incorporated with SQL) to manipulate data stored in the relations, and specify business rules that maintain the integrity of data when they are manipulated (Mcfadden, Hoffer & Prescott 1999: 204).

Each column of a table represents an attribute or characteristic of an entity. Each row of a table represents as instance of the entity. An important property of the relational model is that it represents logical relationships between entities by values stored in the columns of the corresponding tables.

Using logical database design also helps in transforming the conceptual data model (E-R diagram) to a logical data model (relational database). It represents entities as a relation and sets the identifier of the entity as primary key of the relation in order to be unique and single value in each row and some non-key attribute of the relation as foreign key to link between two relations. Then, it represents relationships and normalizes or refines the relations to avoid the problems of redundancy data and errors or inconsistencies when updating table that contains redundant data. Finally, it will merge the relations in order to minimize the redundancy of data (Coronel 1997: 157).

For this web application system, there are following eight tables or relations (Refer to Appendix A. for Database Design):

- **Administrator Table:** store the information that will generate the user as administrator such as ID, User name, Password.

- **Member Table:** store the general members' information and member logon information such as member Id, member user name, member password, name, surname,, sex ,age, address, telephone, mobile, fax, e-mail.
- **Staff Table:** store the staff log on information such as staff user name, staff password and access number.
- **Level Table:** store the information that will generate the type of users when they log on such as level Id, level user name, level password, level link Id, level.
- **Information Table:** store the general information that will be post on the web site which included information Id, text, type, and date.
- **Web board-Question Table:** store the information of each question of the web board that will included question Id, topic, question message, question name, question date/time, question read, answer date/time and answer count.
- **Web board-Answer Table:** store the information of the answers of each topic such as answer Id, answer name, answer message, answer date/time.
- **Sailing Schedule Table:** store the information about the sailing schedule that included sailing schedule Id, mother vessel, voyage, date closing, origin port, and destination port.

(4) Process Specification

Table 3-3 Process Specification for Process 1.1

Process Name:	Identify types of users
Data In:	(1) User login
Data Out:	(1) Input user name (2) Input password (3) Input access code (4) Wait for status approval
Process:	(1) Input user login requirement
Attachment:	(1) User (2) Data store D1 (3) Process 1.2

Table 3-4 Process Specification Process 1.2

Process Name:	Compare with list of existing users login
Data In:	(1) Wait for status approval (2) Valid login approved (3) Invalid login (required registration)
Data Out:	(1) Request for user status (2) Admin approved (3) User approved (4) Invalid user
Process:	(1) Result the status of user (2) distribute the user level (3) allow user to the next process (4) allow user to make registration
Attachment:	(1) Process 1.1 (2) Process 3.1 (3) Process 4.1 (4) Process 5.1 (5) Process 6.1 (6) Process 7.1 (7) Process 8.1 (8) Process 9.1 (9) Process 2.1 (10) Data Store D1

Table 3-5 Process Specification Process 2.1

Process Name:	Add new user profile
Data In:	(1) Profile record kept
Data Out:	(1) Add new user profile (2) Input new user name (3) Input new password (4) Change profile
Process:	(1) Add new user login profile (2) Let user choose their own user name (3) Let user choose their own password
Attachment:	(1) Process 1.2 (2) Data store D1 (3) Process 2.2

Table 3-6 Process Specification Process 2.2

Process Name:	Update users profile
Data In:	(1) Change profile (2) Profiles updated
Data Out:	(1) Modify existing profile (2) Input user name (3) Input password (4) Delete profile
Process:	(1) Let user to edit their own profile (2) User have to input their own username and password to login and change their own profile.
Attachment:	(1) Process 2.1 (2) Data store D1 (3) Process 2.3

Table 3-7 Process Specification Process 2.3

Process Name:	Delete users profile
Data In:	(1) Delete profile (2) Profiles deleted
Data Out:	(1) Delete existing profiles (2) Input user name (3) Input password (4) Registration approved
Process:	(1) Let the admin to delete the unused user profiles.
Attachment:	(1) Process 2.2 (2) Data store D1 (3) Process 6.1 (4) Process 7.1 (5) Process 8.1 (6) Process 9.1

Table 3-8 Process Specification Process 3.1

Process Name:	Add page information
Data In:	(1) User login as admin (2) Info. Added
Data Out:	(1) Add new info. (2) Change info.
Process:	(1) Let admin to add page information on the web.
Attachment:	(1) Process 1.2 (2) Data store D2 (3) Process 3.2 (4) User

Table 3-9 Process Specification Process 3.2

Process Name:	Update page info.
Data In:	(1) Change info. (2) Info. updated
Data Out:	(1) Modify existing profile (2) Delete info.
Process:	(1) Let admin to modify the page information
Attachment:	(1) Process 3.1 (2) Data store D2 (3) Process 3.3

Table 3-10 Process Specification Process 3.3

Process Name:	Delete page information
Data In:	(1) Delete info. (2) Info deleted
Data Out:	(1) Delete existing profiles (2) Info. Status accepted
Process:	(1) Admin can delete any unwanted information.
Attachment:	(1) Process 3.2 (2) Process 4.1 (3) Data store D2

Table 3-11 Process Specification Process 4.1

Process Name:	Modify topic
Data In:	(3) Topic modify completed
Data Out:	(1) Topic modified (2) Web board topic deleted
Process:	(1) Admin can edit the topic message
Attachment:	(1) Process 3.3 (2) Data store D3 (3) Process 4.2

Table 3-12 Process Specification Process 4.2

Process Name:	Delete topic
Data In:	(1) Web board topic deleted (2) Topic deleted completed
Data Out:	(1) Topic deleted (2) Web board reply modified
Process:	(1) Admin can delete the unwanted topic.
Attachment:	(1) Process 4.1 (2) Data store D3 (3) Process 4.3

Table 3-13 Process Specification Process 4.3

Process Name:	Modify reply
Data In:	(1) Reply modify completed (2) Web board reply modified
Data Out:	(1) Reply modified (2) Web board reply deleted
Process:	(1) Admin can edit any messages of reply.
Attachment:	(1) Process 4.2 (2) Data store D3 (3) Process 4.4

Table 3-14 Process Specification Process 4.4

Process Name:	Delete reply
Data In:	(1) Web board reply deleted (2) Reply deleted completed
Data Out:	(1) Reply deleted (2) Web board status approved
Process:	(1) Admin can delete the unwanted reply
Attachment:	(1) Process 4.3 (2) Data store D3 (3) Process 5.1

Table 3-15 Process Specification Process 5.1

Process Name:	Create new freight schedule
Data In:	(1) Schedule have been created
Data Out:	(1) Add new schedule
Process:	(1) Admin can add the freight schedule
Attachment:	(1) Process 4.4 (2) Data store D4 (3) Process 5.2

Table 3-16 Process Specification Process 5.2

Process Name:	Modify the existing schedule
Data In:	(1) Schedule status accepted (2) Modify schedule
Data Out:	(1) Schedule modified
Process:	(1) Admin can modify the freight schedule
Attachment:	(1) Process 5.1 (2) Data store D4 (3) Process 5.3

Table 3-17 Process Specification Process 5.3

Process Name:	Delete the existing schedule
Data In:	(1) Schedule status accepted (2) Delete schedule
Data Out:	(1) Schedule deleted
Process:	(1) Admin can delete the unwanted topic.
Attachment:	(1) Process 5.2 (2) Data store D4

Table 3-18 Process Specification Process 6.1

Process Name:	Request for new page information
Data In:	(1) Login as member (2) Login as staff (3) Login as general users (4) Info accepted
Data Out:	(1) New info requested
Process:	(1) User can request for new information on the web page.
Attachment:	(1) Process 1.2 (2) Process 2.3 (3) Process 6.2 (4) user (5) Data store D2

Table 3-19 Process Specification for Process 6.2

Process Name:	Request for existing page information
Data In:	(1) Info. accepted
Data Out:	(1) Request for existing info.
Process:	(1) User can request for old pages.
Attachment:	(1) Process 6.1 (2) Data store D2 (3) Process 7.1

Table 3-20 Process Specification for Process 7.1

Process Name:	Post topic
Data In:	(1) Login as member (2) Login as staff (3) Login as general user. (4) Topic approved
Data Out:	(1) Post new topic (2) Existing topic requested
Process:	(1) User can post their topic
Attachment:	(1) Process 6.2 (2) Data store D3 (3) Process 7.2 (4) User

Table 3-21 Process Specification for Process7.2

Process Name:	Post reply
Data In:	(1) Reply approved
Data Out:	(1) Post reply (2) Existing reply requested
Process:	(1) User can post their reply
Attachment:	(1) Process 8.1 (2) Process 7.1 (3) Data store D3

Table 3-22 Process Specification for Process 8.1

Process Name:	Request freight schedule (forward)
Data In:	(2) Login as member (3) Login as staff (4) Shipment name accepted
Data Out:	(1) Input date of distribution (2) Request date of arrival (3) Input time of requesting
Process:	(1) Member can input the date of packing (2) Calculate for date of arrival
Attachment:	(1) Process 7.2 (2) Data store D4 (3) User (4) Process 8.2

Table 3-23 Process Specification for Process 8.2

Process Name:	Request freight schedule (backward)
Data In:	(1) Shipment name accepted
Data Out:	(1) Input date of arrival (2) Request date to be distributed (3) Input time of requesting
Process:	(1) Member can check their date of packing (2) Member calculate by input their date of arrival
Attachment:	(1) Process 8.1 (2) Data store D4 (3) Process 9.1

Table 3-24 Process Specification for Process 9.1

Process Name:	Input user data
Data In:	(1) Login as staff (2) Input e-mail user name (3) Input e-mail password (4) e-mail accepted
Data Out:	(1) link to e-mail server
Process:	(1) input staff requirement to link to their e-mail server
Attachment:	(1) user (2) process 8.2 (3) process 9.2

Table 3-25 Process Specification for Process 9.2

Process Name:	Create link to e-mail server
Data In:	(1) link to e-mail server (2) data retrieved
Data Out:	(1) link to inbox (2) e-mail accepted
Process:	(1) Link to mail server and get the inbox page.
Attachment:	(1) process 9.1 (2) ISP (3) user

(5) DATA DICTIONARY

Table 3-26 Data Dictionary

WORD	MEANING
Add new info.	Admin can put the new information into the web page.
add new schedule	Admin can create new schedule in order to put the data into it.
add new user profile	The process which allow user to input new data login except access code.
add page information	The process, which allows admin to input the information into the web, page.
Change info.	Allow admin to update the web page information.
change profile	Allow user to change their existing login profile.
compare with list of customer login	The process which compare username to verify with the list of existing user.
Create link to e-mail server	Process will link the user to the e-mail server to get the e-mail.
Create new freight schedule	Process that allows admin to create the freight schedule for input data.
data retrieved	The e-mail page will be retrieved by the program and get the data.
Delete existing info.	The process allows admin to delete the unused information of the website.
Delete existing profiles	Just only admin can delete the unused users of the company.
Delete info.	The admin can delete the unwanted information of the website.
Delete profile	The admin can delete the unwanted user profiles of the company.
Delete reply	the admin can delete the unused reply on the web board DB
Delete the existing schedule	The admin can delete the unused schedule to keep space of sailing schedule.

WORD	MEANING
Delete users profile	Only admin can delete the user profiles of the company.
deleted schedule	The admin can delete the out of date schedule in order to keep space of the website.
e-mail accepted	Staff will get the data directly from their inbox interface.
existing reply requested	User can search for the old reply of the website.
existing topic requested	User can search for the old topic of the website.
Identify types of user	The process to verify types of user and checks the level of users.
info status accepted	The web page information is ready to show on the website.
Info. Added	The admin can input new information into the web page.
Info. DB	The database that keep all data about information of the website.
Info. Deleted	The admin can delete the page information.
Info. Accepted	The user has been provided the new and old information of the website.
Info. Updated	The information on the website has been modified.
input access code	Only the staff of the company can get the access code to login as staff.
input date of arrival	The date of shipment arrival.
input date of distribution	The date of shipment leaving from the ports.
input e-mail password	Staff has to input their unique password to login to the e-mail server.
input e-mail username	Staff has to input their unique username to login to the e-mail server.
input new password	User can input their preferable user login on their own.
input new username	User can input their preferable user login on their own.
input password	user login by input their username/password
input username	user login by input their username/password

WORD	MEANING
ISP	Internet service provider whom we link our website to.
link to inbox	The process will link to the user inbox pages.
Login	The process of entering to the system.
login DB	The database that keep all records of the users within the company.
Modify existing info.	The admin can edit the page information.
modify existing profile	The user can edit their own user profile.
modify reply	The admin can edit the reply of the web board.
modify schedule	The admin can edit the sailing schedule information.
modify the existing schedule	The admin can edit the old information of the sailing schedule.
modify topic	The admin can edit the message within the web board to prevent from harmful message.
New info. Accepted	User gets the new data from website.
New info. Requested	User request for the new information forms the web site.
post new topic	User post message topic on the web board.
post reply	user post the reply to the topic of the web board
Profile deleted	The admin will delete the unused user profile of the company.
Profile record kept	The user record profile has been kept to the login database.
Profile updated	the user profile have been modified
registration approved	The user have been distributed the levels and can logon to the system.
reply approved	The reply message has been posted on the web board.
reply delete completed	The process of delete the reply have been finished.
reply deleted	The reply message has been deleted out of the system.
reply modified	The reply message has been modified.
reply modify completed	The reply message has been modified completely.
request date of arrival	ask for the date that shipment will be arrived

WORD	MEANING
Request for existing info.	Search for the old information of the web page.
request for existing page information	Search for the old information of the web page.
request for new page information	Search for the new information of the web page.
request for user status	verify the types of the user and get the user level
request freight schedule	The process of calculates the date of shipment.
Input time of requesting	The member input the condition to calculate for shipment date and name.
Sailing schedule DB	The database of sailing contains all data about date and time of shipment.
schedule status accepted	The freight schedule has been ready to show on the website.
schedule deleted	The admin can delete the schedule data on the website.
schedule have been created	The information on the freight schedule has been modified.
schedule modified	The data on the freight schedule have been changed.
schedule status accepted	The data on the freight schedule is ready to show on screen.
shipment name accepted	The result of the schedule shows in the name of available shipment name.
topic approved	The topic message has been ready to show on screen.
Topic delete completed	The topic message has been delta completely.
Topic deleted	Admin can delete the topic message.
Topic modified	Admin can edit the topic message.
Topic modify completed	the topic message have been modify completely
update page information	The admin can edit the data on the web page.
update users profile	The user can edit their own user data of the web site.
user	The person who login to the system in order to execute the task.
user login as admin	the user pass the verify process and get the level as admin

WORD	MEANING
user login as member	the user pass the verify process and get the level as member
user login as staff	The user pass the verify process and get the level as staff.
valid login approved	The login process has been passed user can login to the system.
wait for status approval	the process will wait for the process to compare with the list of old users
web board DB	the database that contains the data about the topic and reply on the web board
web board reply deleted	The reply message has been deleted out of the system.
web board reply modified	the reply message have been edited
web board status approved	The web board information is ready to show on screen.
web board topic deleted	The topic message on the web board has been deleted.

(6) Interface Design

Almost of Blue Marine web site has the blue color in order to present the concept of "blue" as the company name. The interface designs (Refer to Appendix B. for Interface Design) will be are separated as

(6.1) **The general user session:** this page will be set as default in order to show the information and also the user such as administrators, staffs and members can log in from this page in order to go to their page which will provide more specific function. In this page the users can:

- See the information such as News & Event, Announcement, Facts& Figures, After work, and Job opportunities.
- Participate with the Blue Marine web board.
- Log in to the specific page.

(6.2) **The administrator session:** In the administrator part the administrators have to log in from the general user part by enter user name and password. When the administrator log in to the administrator part, They can operate the function as:

- Update and modify all of information.
- Add or delete as well as modify the information of staffs and members.
- Add, delete, and modify the web board.
- Add, delete and modify the sailing schedule.

(6.3) **The member session:** the member can also log in from the first page by enter the user name and password. The member part is familiar with the general

user part except the member part will has sailing schedule function and some information that will reserved for the member and staff. In this part the user can:

- See the information such as News & Event, Announcement, Facts& Figures, After work, and Job opportunities.
- Participate with the Blue Marine web board.
- See the sailing information and information of container

(6.4) **The staff session:** In the staff part, the staffs also have to log in from the first page by enter the user name and password. The staff part is familiar with the member part except the staff part will has e-mail checking function for the staff to checking their mail from the mail server. In this part the user can:

- See the information such as News & Event, Announcement, Facts& Figures, After work, and Job opportunities.
- Participate with the Blue Marine web board.
- Check e-mail from mail server.

IV. SYSTEM IMPLEMENTATION

4.1 Overview of the system implementation

This web application system is implemented by writing "an implementation plan that outlines all forth coming events, showing activities, times, and events." (Edwards 1993: 426). The implementation plan (Refer to Figure 1.3.) is used with the conversion strategy of "direct changeover" which means that on a specific date, the old system is dropped and the new system is put into use. Direct changeover can only be successful if extensive testing is done before hand, and it works best when some delays in processing can be tolerated." (Kendall & Kendall 1999: 846)

Direct changeover be selected because the old system is not complicated one and it should be terminated directly and replace by the new one that is more effective. The advantage is great because the new web application is the dynamic but the old web application is static which is not any effect with the company's system and also the new web application has the administrator session that will support the administrator operation such as update, delete, modify the information of the web site. The administrator can be any staff that has some computer skill but not the professional one. Therefore, the company may no need to hire more staff.

4.2 Test Plan

"The most useful and practical approach is with the understanding that testing is the process of executing a program with the explicit intention of finding errors, that is, making the program fail." (Senn 1989: 717). "The objective of system testing is to verify that the software is of high quality." (Eliason 1990: 547).

The white box and black box will be used to test the system in order to reduce or eliminate the high risk of direct changeover. "White box testing will look inside a module to determine which tests to run." "Black box testing concentrates on system inputs and outputs, holding to the view that one need only looks at inputs or outputs to a module to determine which test run." (Eliason 1990: 548)

For white box testing, the logic or a sequential segment being set of instructions of each module that performs a specific function is tested separately. It will start from smallest module to largest module. For black box testing, it focuses on what the program should do and how it should perform under various conditions according to the specified requirements and objectives. Also, it will examine the limits or capacity of system, and validity of data in order to ensure valid results or an error message will pop-up or exit from system (Senn 1989: 719-728; Eliason 1990: 548-552). This system uses "live test data which are data that are actually extracted from organization files" and "artificial test data which are created solely for test purpose, since they can be generated to test all combinations of formats and values" for testing (Senn 1989: 728-729). For example, the field of telephone should be set to numeric field so user cannot input alphabet characters, the quantity of each ordered product can not exceed the number of products in a particular lot, all quantity or price fields in transaction cannot be saved if they are negative and an alert box should pop up for warning and so on.

Validating input transactions

"Validating input transactions is largely done through software, which is the programmer's responsibility, but it is important that the systems analyst know that common problems might invalidate a transaction. Businesses committed to quality will include validity checks as part of their routine software" (Kendall 2001: 727) Two main problems can occur with input transactions: submitting the wrong data the system or asking the system to perform an unacceptable function.

Submitting the wrong data.

"This error is usually an accidental one, but it should be flagged before data are processed." (Kendall 2001: 727)

Asking the system to perform an unacceptable function.

"The second error that invalidates input transactions is asking the system to perform an unacceptable function." (Kendall 2001: 727)

Validating input data

"It is essential that the input data themselves, along with the transactions requested, are valid. Several tests can be incorporated into software to ensure this validity. We consider 4 possible ways to validate input." (Kendall 2001: 727)

Test for Missing Data.

The first kind of validity test examines data to see if there are any missing items. For some situations, all data items must be present. (Kendall 2001: 727)

Test for Correct Field Lengths.

"A second kind of validity test checks input to ensure it is of the correct length for the field." (Kendall 2001: 728)

Test for Class or Composition.

The test for class or composition validity test checks to see that data fields that are supposed to be exclusively composed of numbers do not include letters and vice versa. (Kendall 2001: 728)

Cross - Reference Checks.

Cross-reference checks are used when one element has a relationship with another one. To perform a cross-reference check, each field must be correct in itself. (Kendall 2001: 729)

V. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

We created this website according to the user requirement in order to provide more interactive information of the company which old website can just only provide the static website which provide static interface and information. The good point of this web site is to provide dynamic information to every user type by type and can calculate for the time on the schedule.

Anyway we find out that most of the users have no experience about using the website, so we provide the guidelines on it step by step. This will make this website to be more ease to use. Our groups hope that this website will give some advantage to the user and if there is any complaint, contact to us and we'll try to fix it as fast as we can.

5.2 Recommendation

From running our program to the business, it can create the ease of use to most users because of the reliability of the result, the security of the user login which can help to create the awareness of the customer of this company, the web board that the users can post for any information that they want to know. And the program also provide the news and events which can inform to the user to make them up to date to the company activities.

Finally the program can let the member to know the details about the freight information which not so many company can provide this kind of information to the users by let them input the date that they want to leave from and the date of arrival of their packages. The program will automatically calculate the result and give the date to the user as the result date.

Our group hope that this program would give some advantages to the users in some ways.

APPENDIX A
DATABASE DESIGN

Table A-1 Member Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign key to table	Check	Key Type
1	MemId	int (10)	Y	Y				Primary Key
2	MemUname	varchar (10)		y				Attribute
3	MemUpass	varchar (10)		Y				Attribute
4	MemName	varchar (30)						Attribute
5	MemSurname	varchar (40)						Attribute
6	MemSex	varchar (6)						Attribute
7	MemAge	varchar(7)			Y			Attribute
8	MemAddress	varchar(80)						Attribute
9	MemTel	int (10)		Y				Attribute
10	MemMobile	int (10)		Y				Attribute
11	MemFax	int (10)		Y	Y			Attribute
12	MemMail	varchar(30)		Y				Attribute
13	MemQuestion	varchar(40)						Attribute
14	MemAnswer	varchar(25)						Attribute
15	A1	varchar(10)						Attribute
16	A2	varchar(10)						Attribute
17	A3	varchar(10)						Attribute
18	A4	varchar(10)						Attribute

Table A-2 Staff Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign key to table	Check	Key Type
1	Access No.ID	int(10)	Y	Y				Primary Key
2	StUname	varchar(10)						Attribute
3	StUpass	varchar(10)						Attribute

Table A-3 Administrator Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign key to table	Check	Key Type
1	AdmId	int(10)	Y	Y				Primary Key
2	AdmUname	varchar(10)						Attribute
3	AdmUpass	varchar(10)						Attribute

Table A-4 Level Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign key to table	Check	Key Type
1	LvlId	int(10)	Y					Primary
2	LvlUname	varchar(10)						Attribute
3	LvlUpass	varchar(10)						Attribute
4	LvlLinkId	varchar(10)				Admin, Member, Staff		Attribute
5	LvlLevel	varchar(10)						Attribute

Table A-5 Information Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign key to table	Check	Key Type
1	InfoId	int(10)	Y	Y				Primary Key
2	InfoType	varchar(2)						Attribute
3	InfoDatepost	int(5)						Attribute
4	InfoTopic	varchar(34)						Attribute
5	InfoDesc	varchar(...)						Attribute
6	InfoSource	varchar(30)			y			Attribute

Table A-6 Web board Question Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign key to table	Check	Key Typ
1	QuesId	int(10)	Y	Y		Webboard-Answer		Primary Key
2	QuesTopic	varchar(50)						Attribute
3	QuesMessage	varchar(...)						Attribute
4	QuesRead	varchar(10)						Attribute
5	QuesName	varchar(30)						Attribute
6	QuesDate/Time	Date/Time						Attribute
7	AnswerDate/Time	Date/Time						Attribute
8	AnswerCount	Date/Time						Attribute

Table A-7 Web board Answer Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign key to table	Check	Key Type
1	AnsId	int(10)	Y	Y				Primary Ke
2	AnsName	varchar(30)						Attribute
3	AnsMessage	varchar(...)						Attribute
4	AnsDate/Time	Date/ Time						Attribute

Table A-8 Schedule Table

No.	Field Name	Field Type	Index	Unique	Nullable	Foreign key to table	Check	Key Type
1	ScId	int(10)	Y	Y				Primary Key
2	ScMother	int(5)						Attribute
3	ScVoy	int(5)						Attribute
4	ScClose	int(5)						Attribute
5	ScBKK	int(5)						Attribute
6	ScLCB	int(5)						Attribute
7	ScHKG	int(5)			Y			Attribute
8	ScKHH	int(5)			Y			Attribute
9	ScTXG	int(5)			Y			Attribute
10	ScKEL	int(5)			Y			Attribute
11	ScTYO	int(5)			Y			Attribute
12	ScYOK	int(5)			Y			Attribute
13	ScNGO	int(5)			Y			Attribute
14	ScOSA	int(5)			Y			Attribute
15	ScUKB	int(5)			Y			Attribute
16	ScOIT	int(5)			Y			Attribute

APPENDIX B
INTERFACE DESIGN

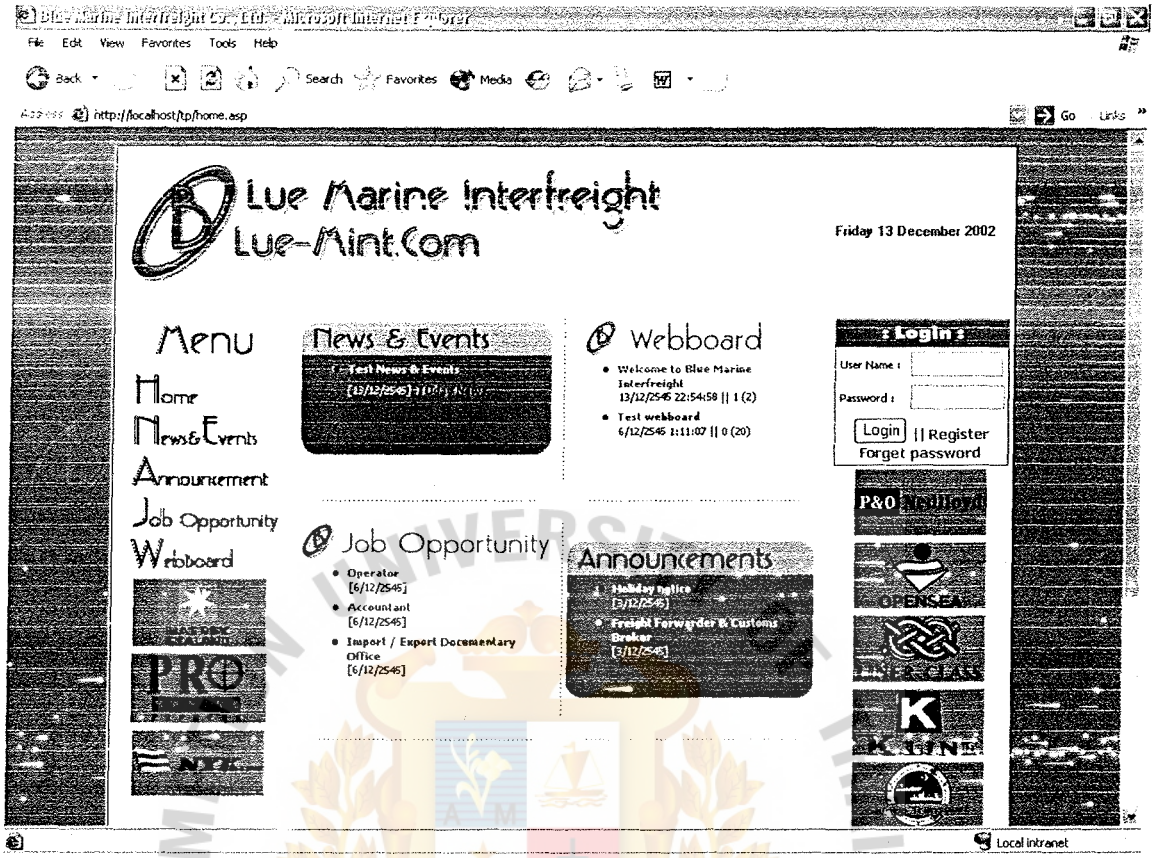

Figure B-1 Home page for general user

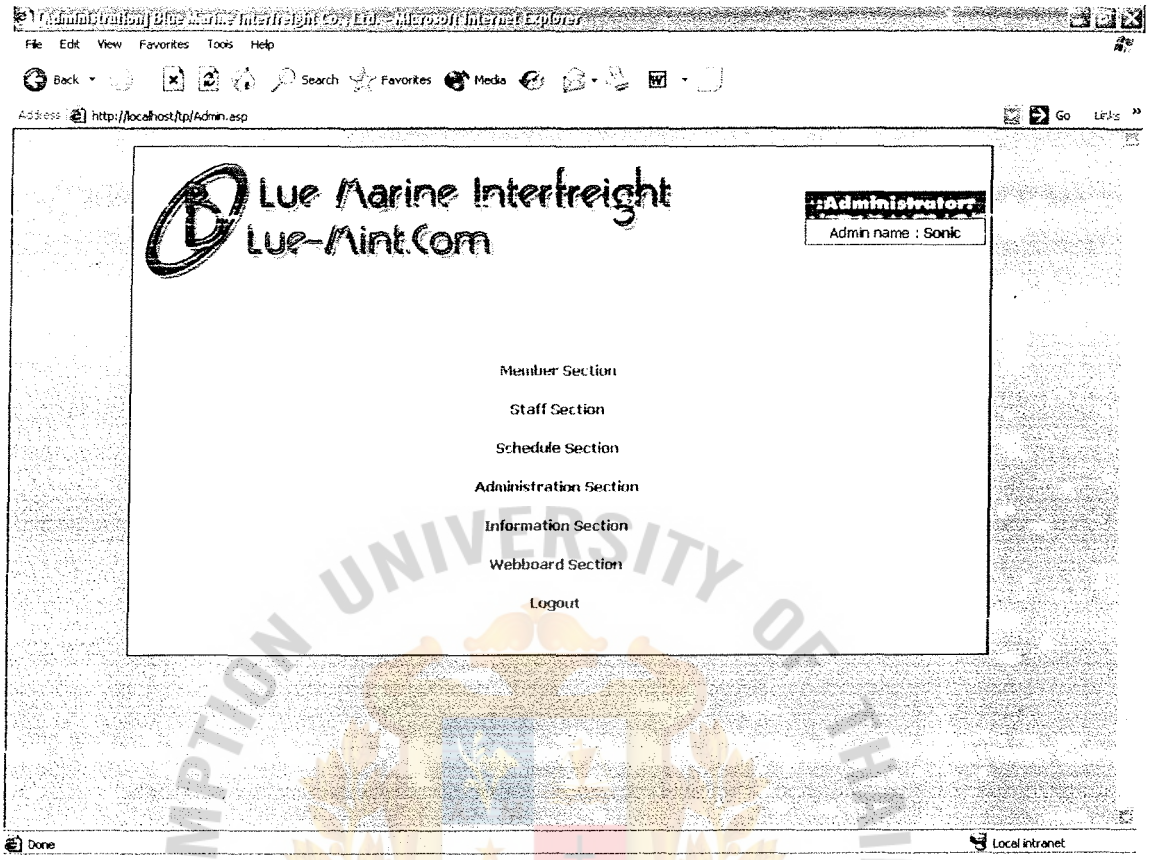

Figure B-2 Administrator page

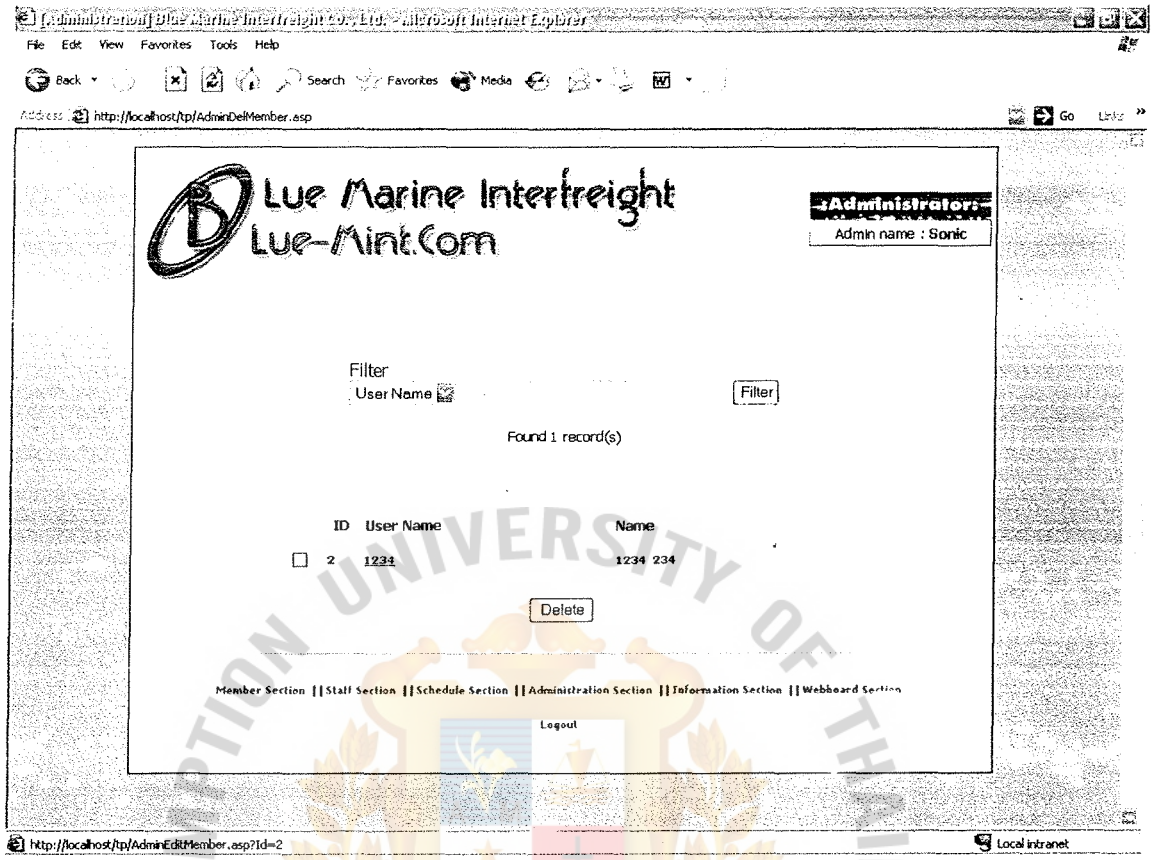

Figure B-3 Administrator edit member page

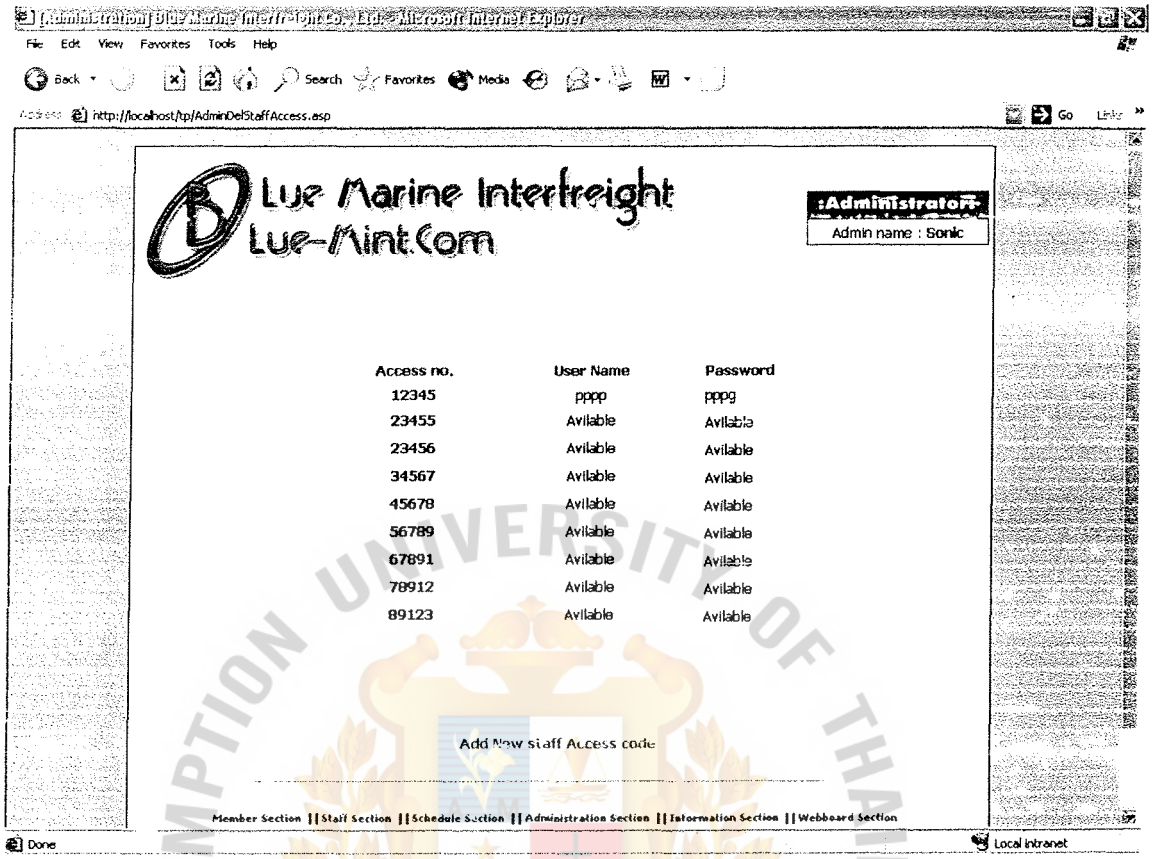

Figure B-4 Administrator edit staff page

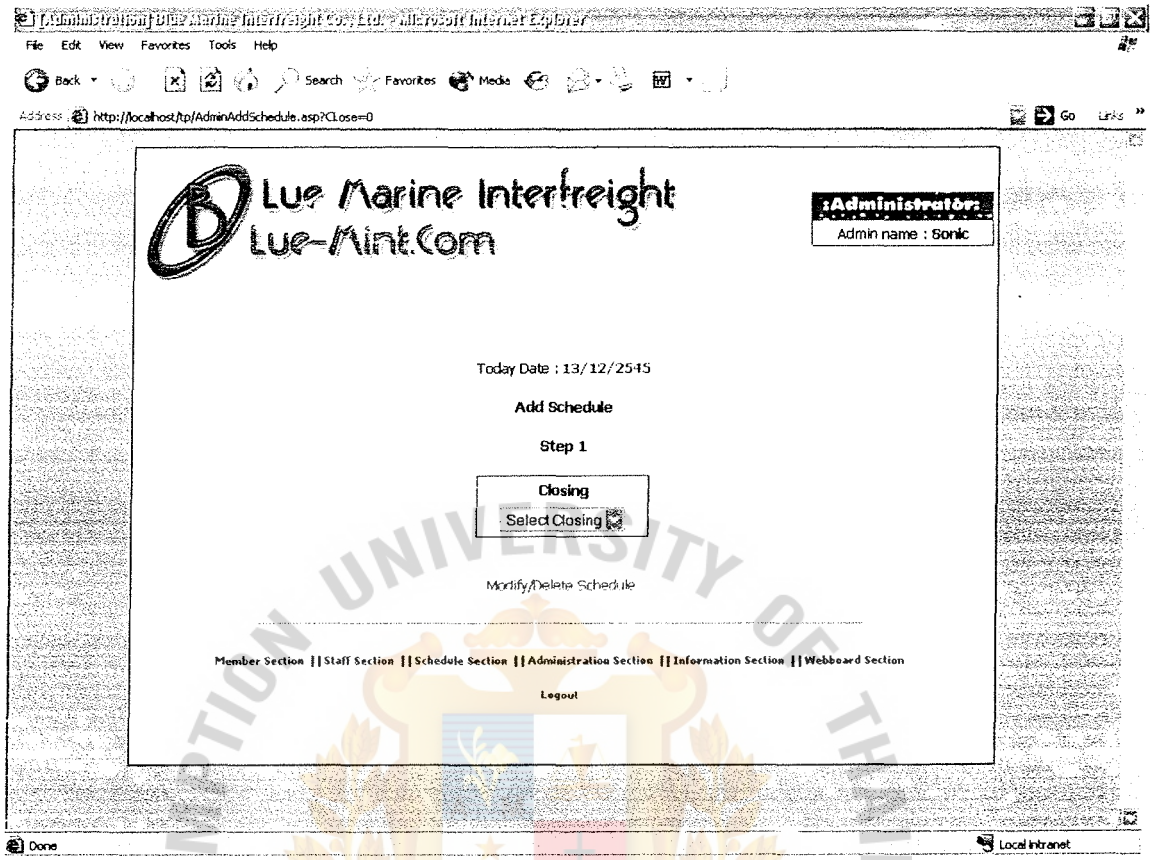

Figure B-5 Administrator add schedule page

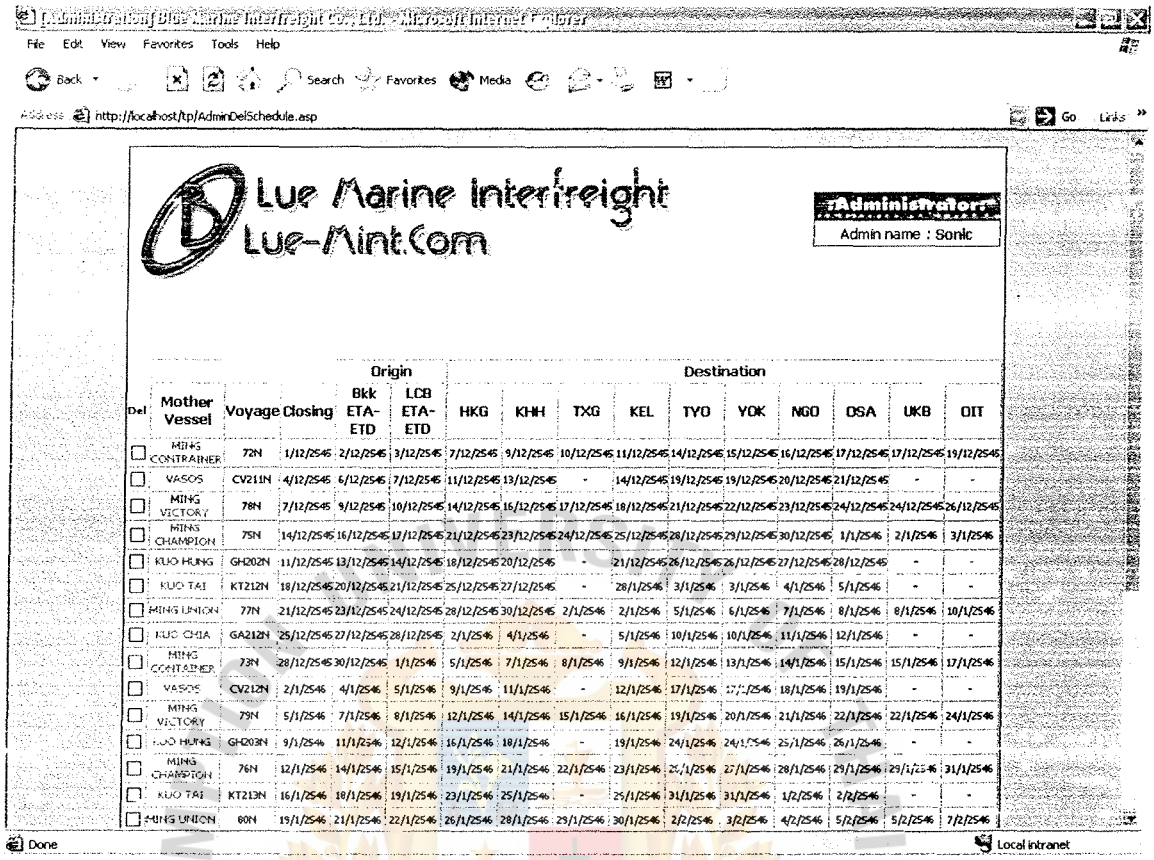

Figure B-6 Administrator edit schedule page

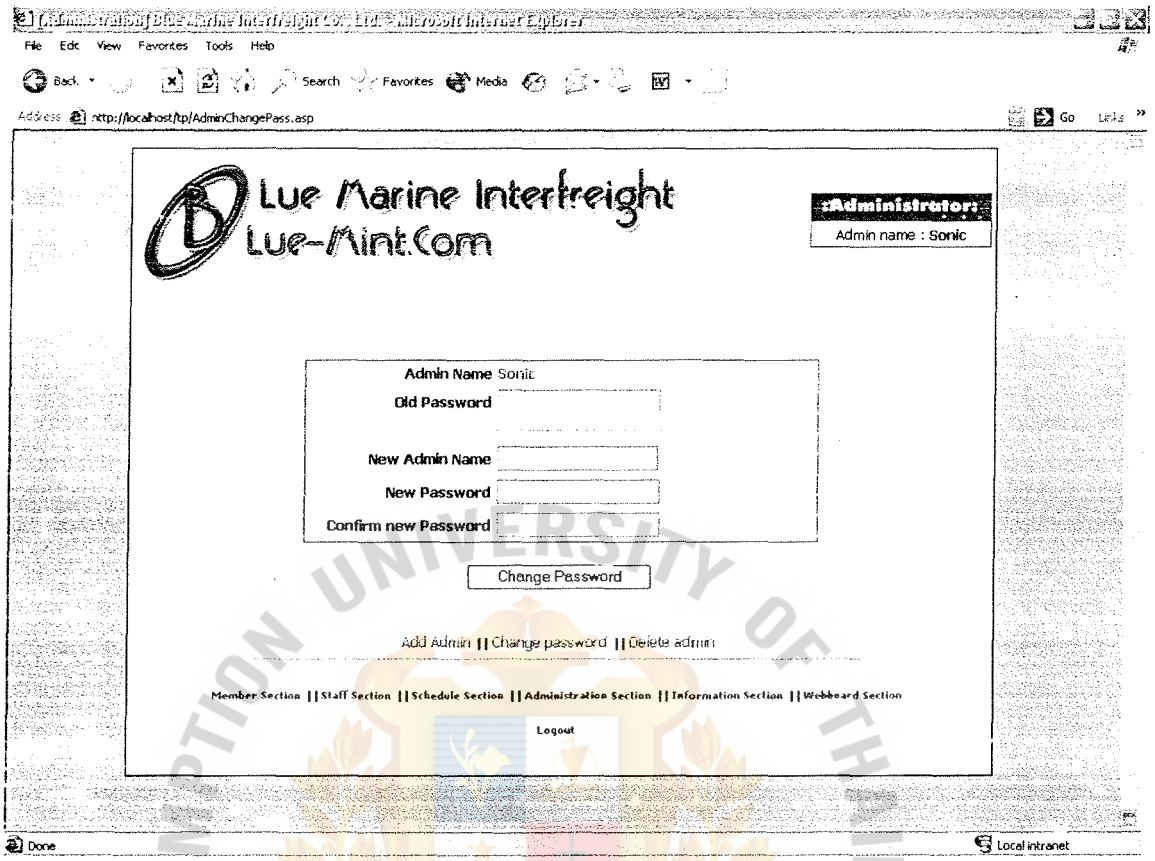

Figure B-7 Add administrator page

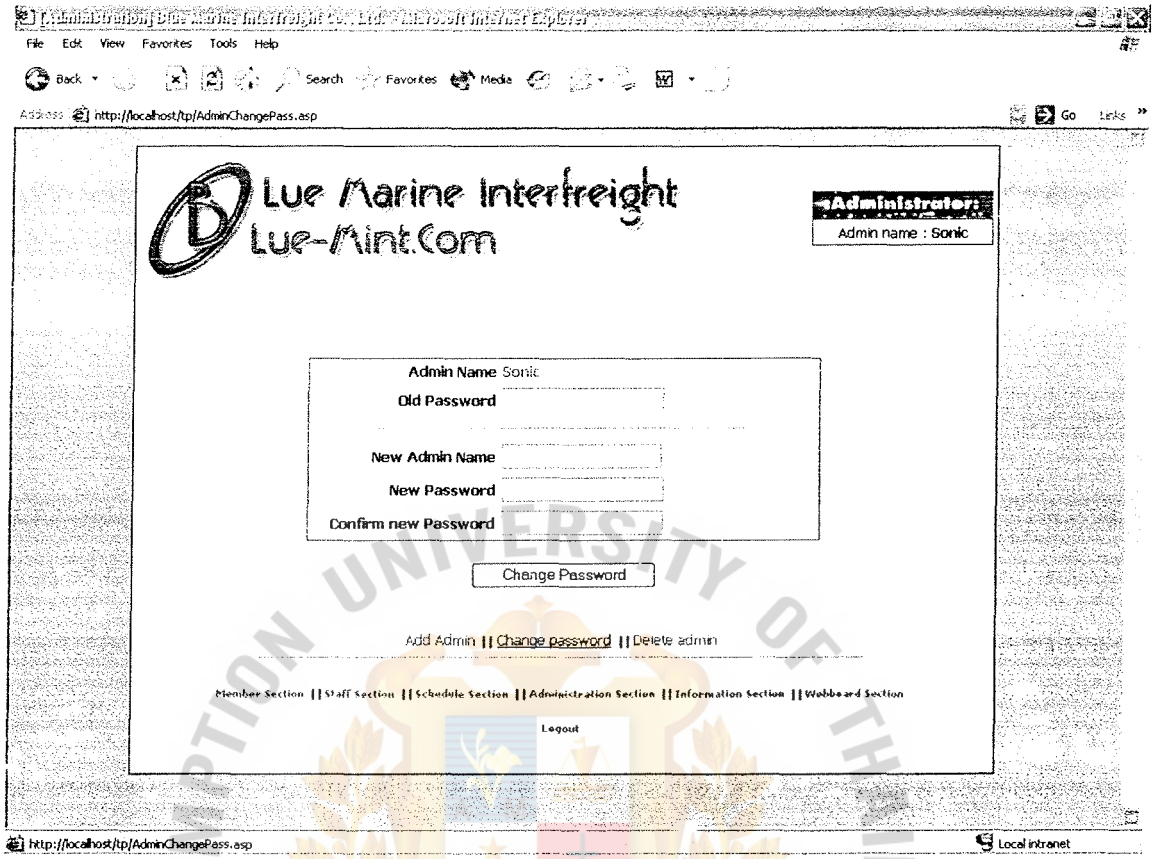

Figure B-8 edit administrator page

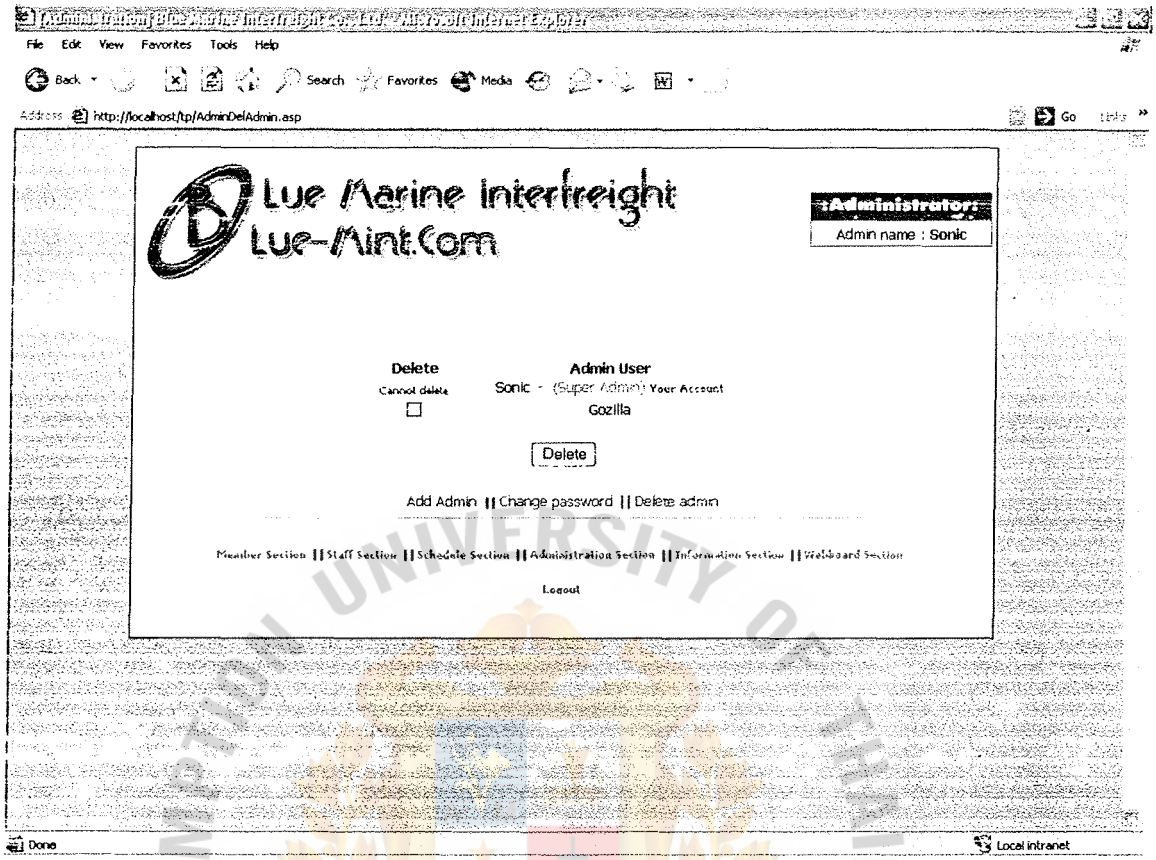

Figure B-8 Delete administrator page

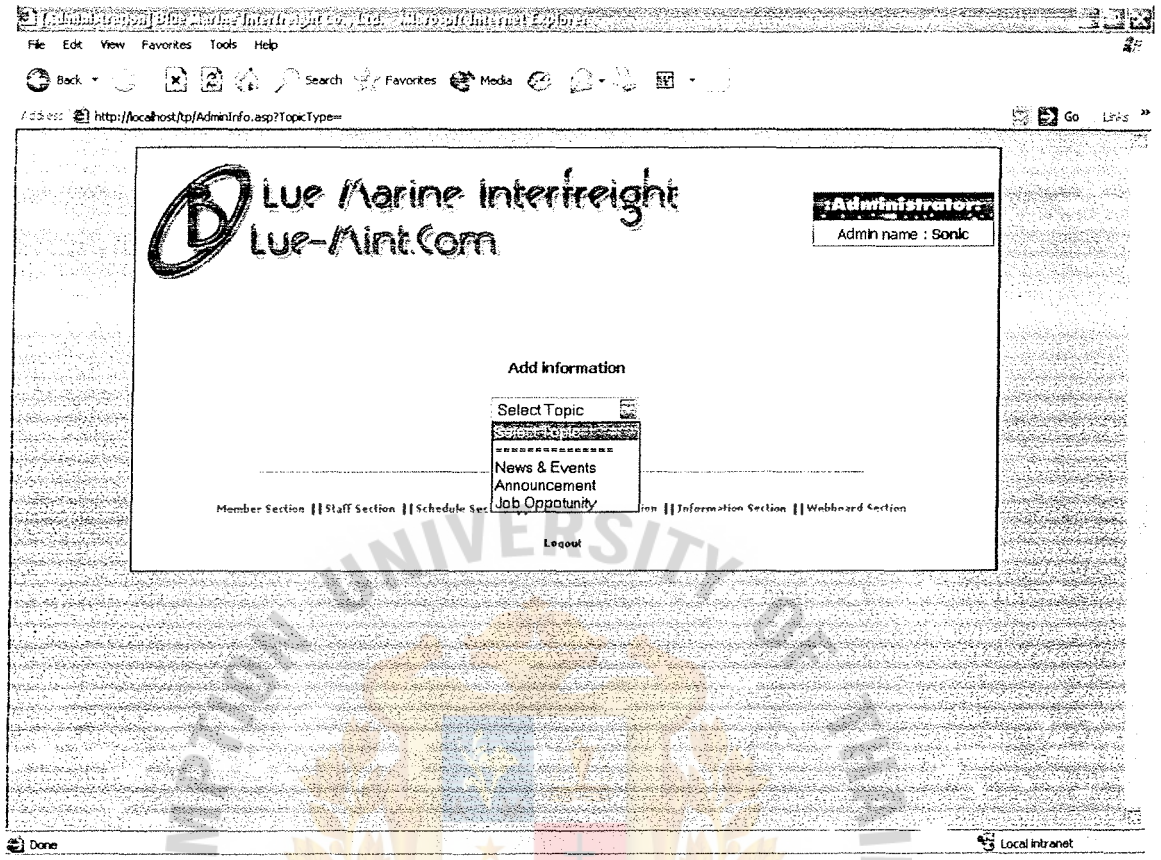

Figure B-10 Administrator add information page

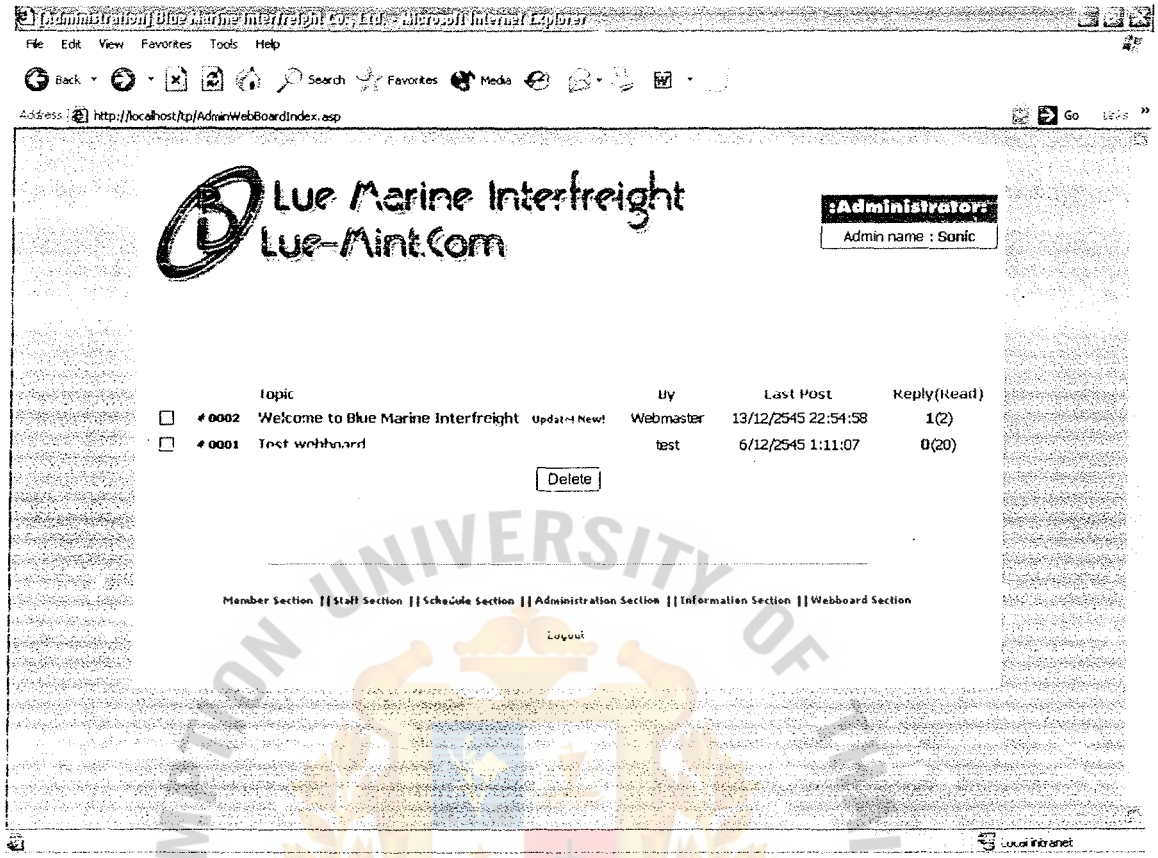

Figure B-11 Administrator delete web board page

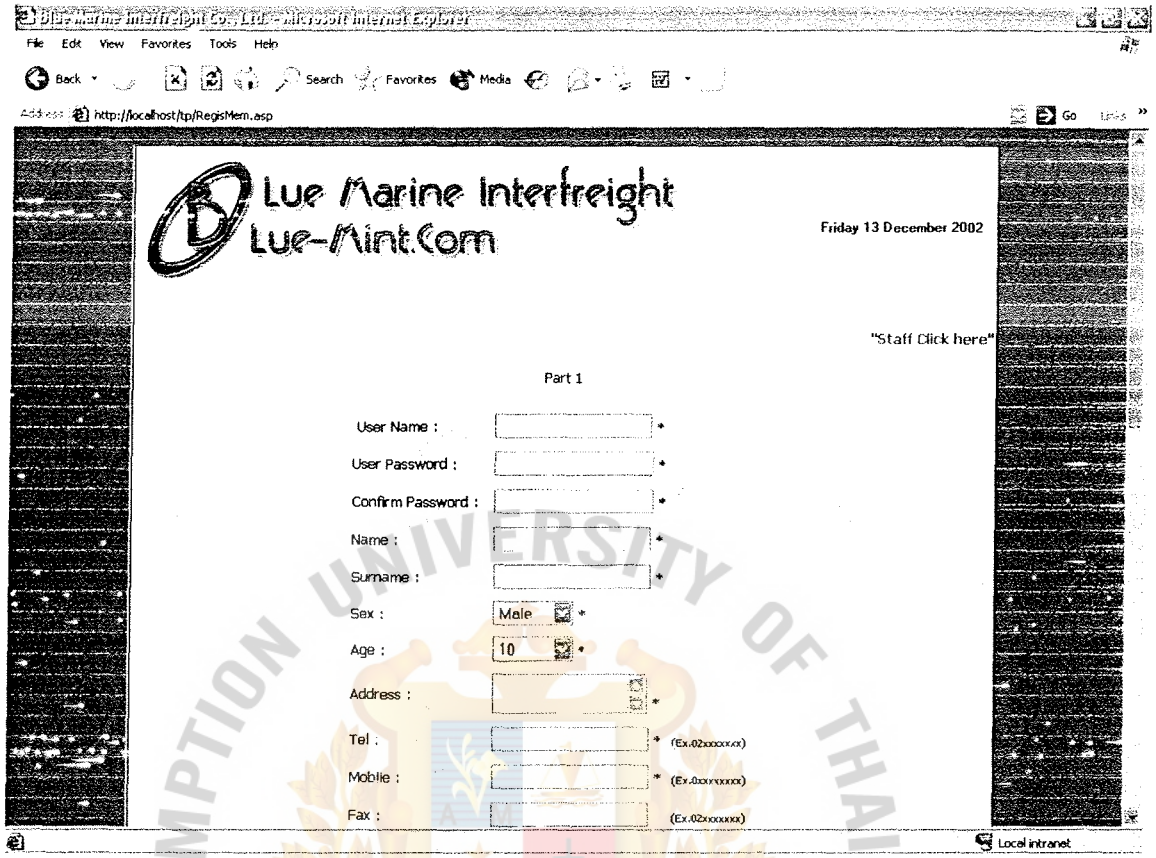

Figure B-12 Member registration page

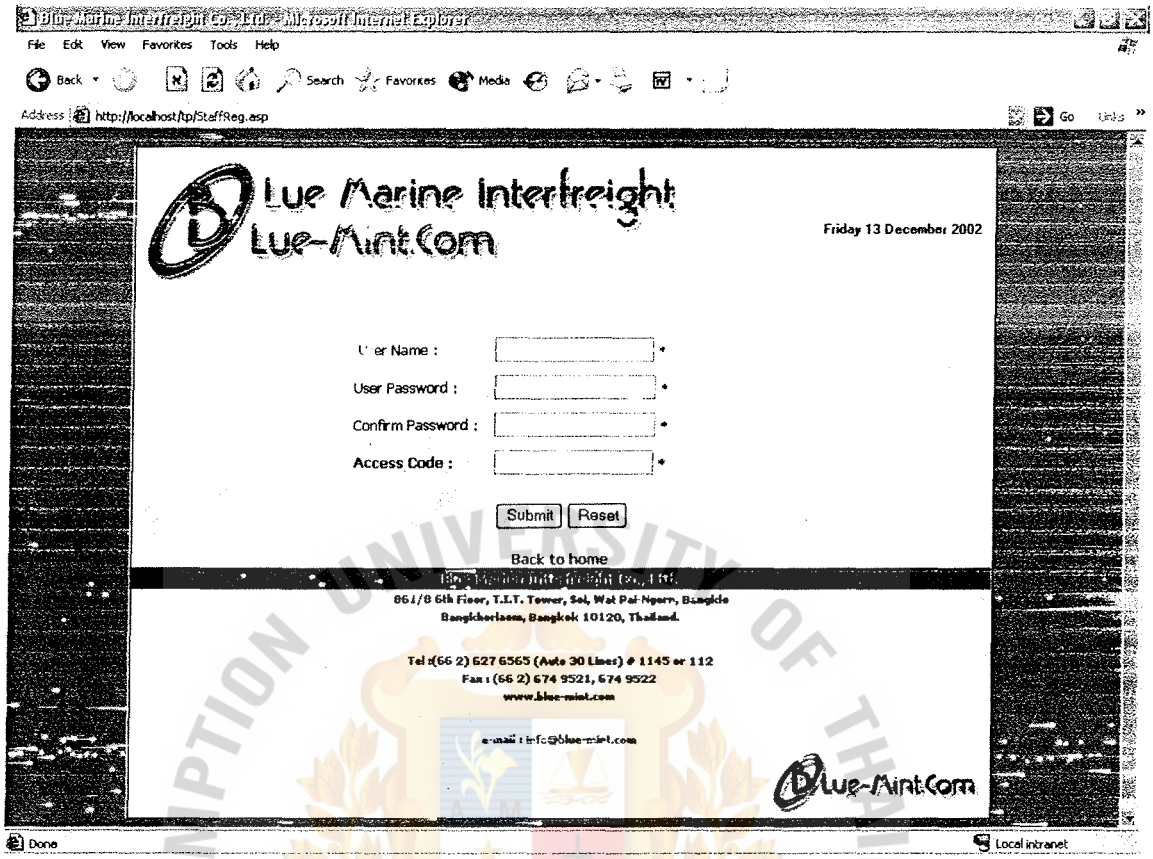

Figure B-13 Staff registration page

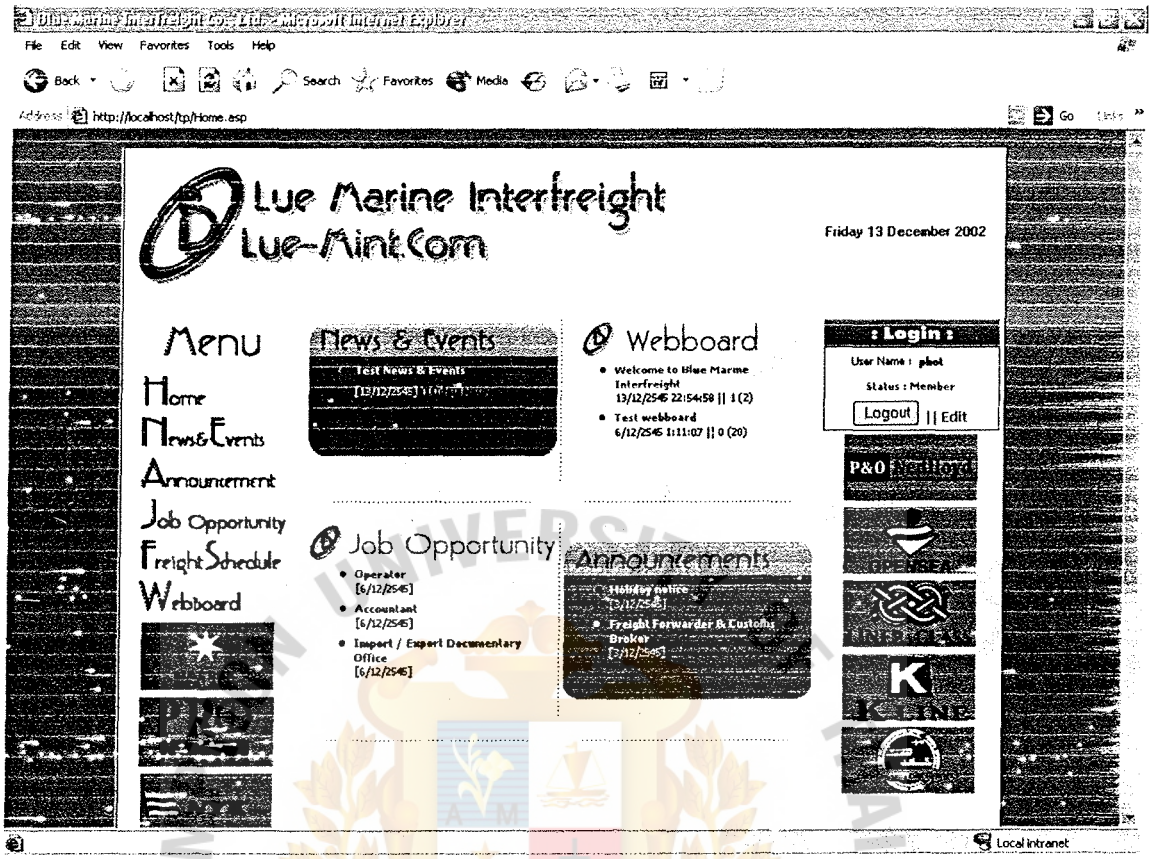

Figure B-14 Home page for member

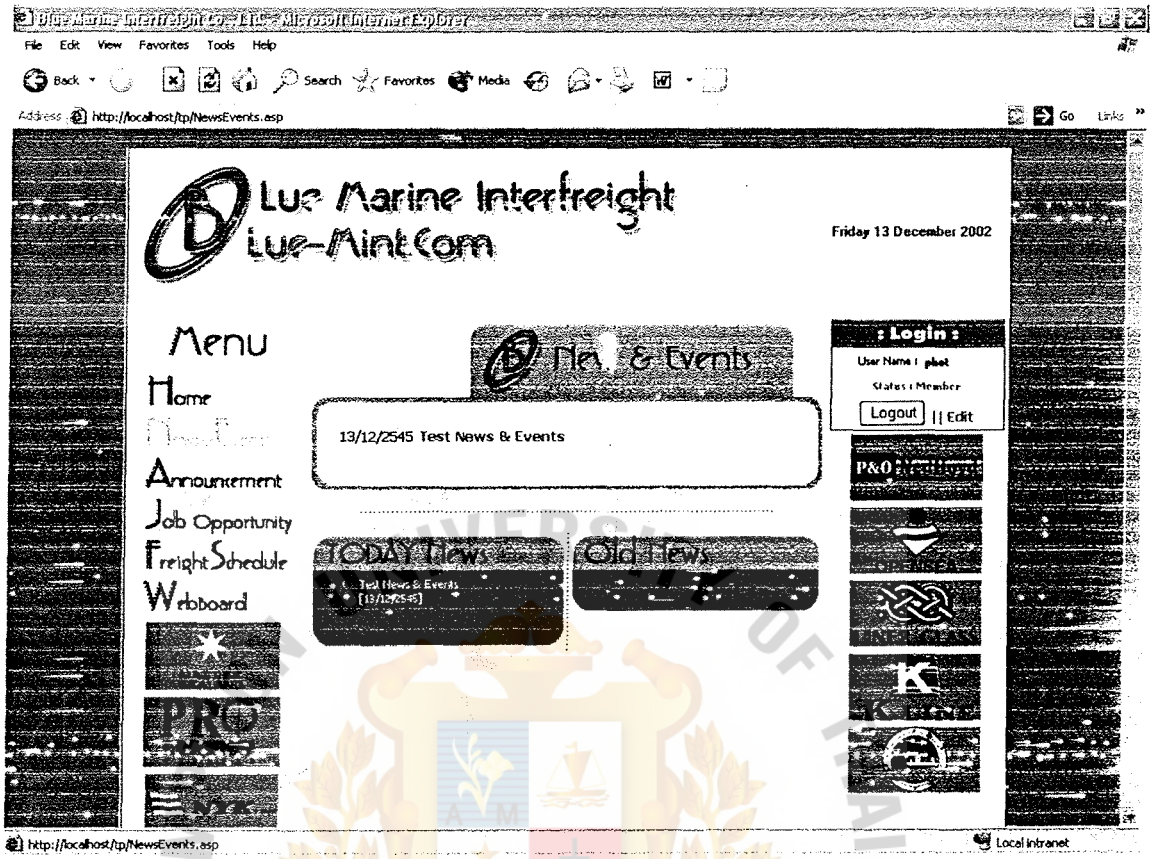

Figure B-15 News & events page

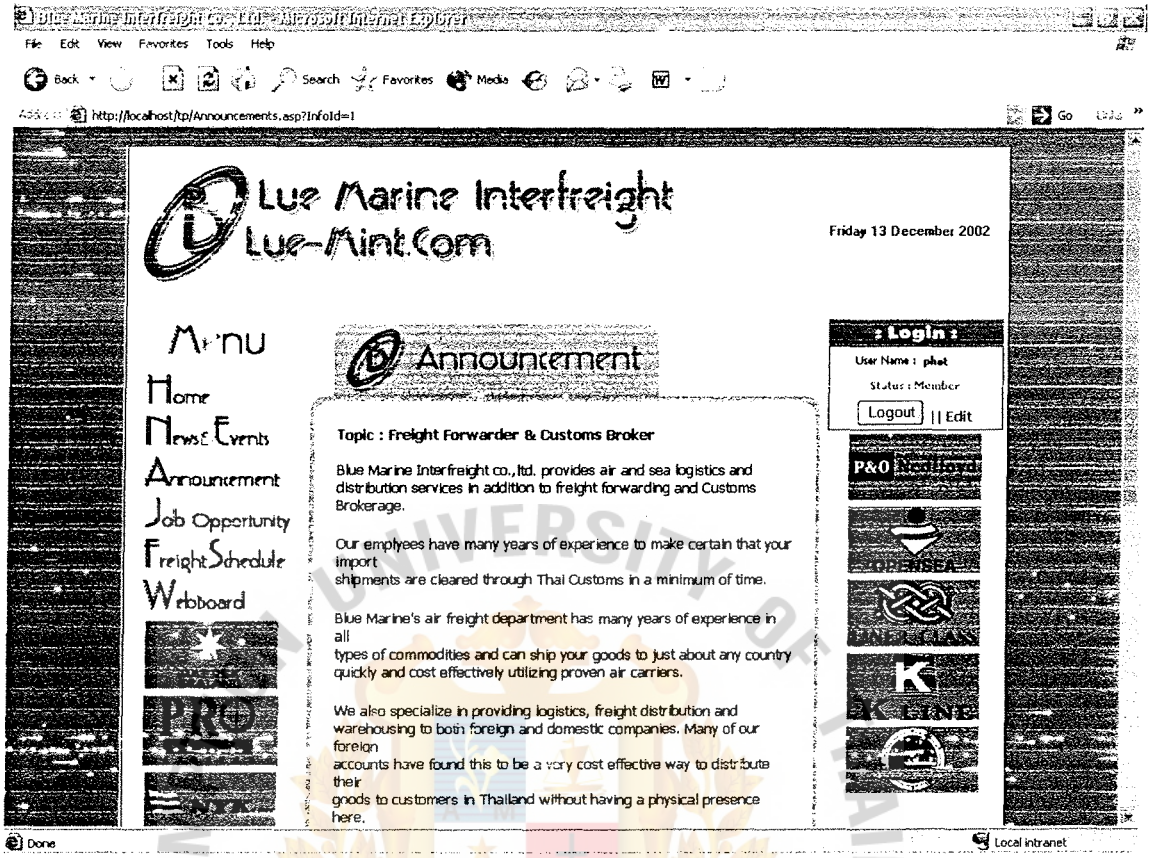

Figure B-16 Announcement page

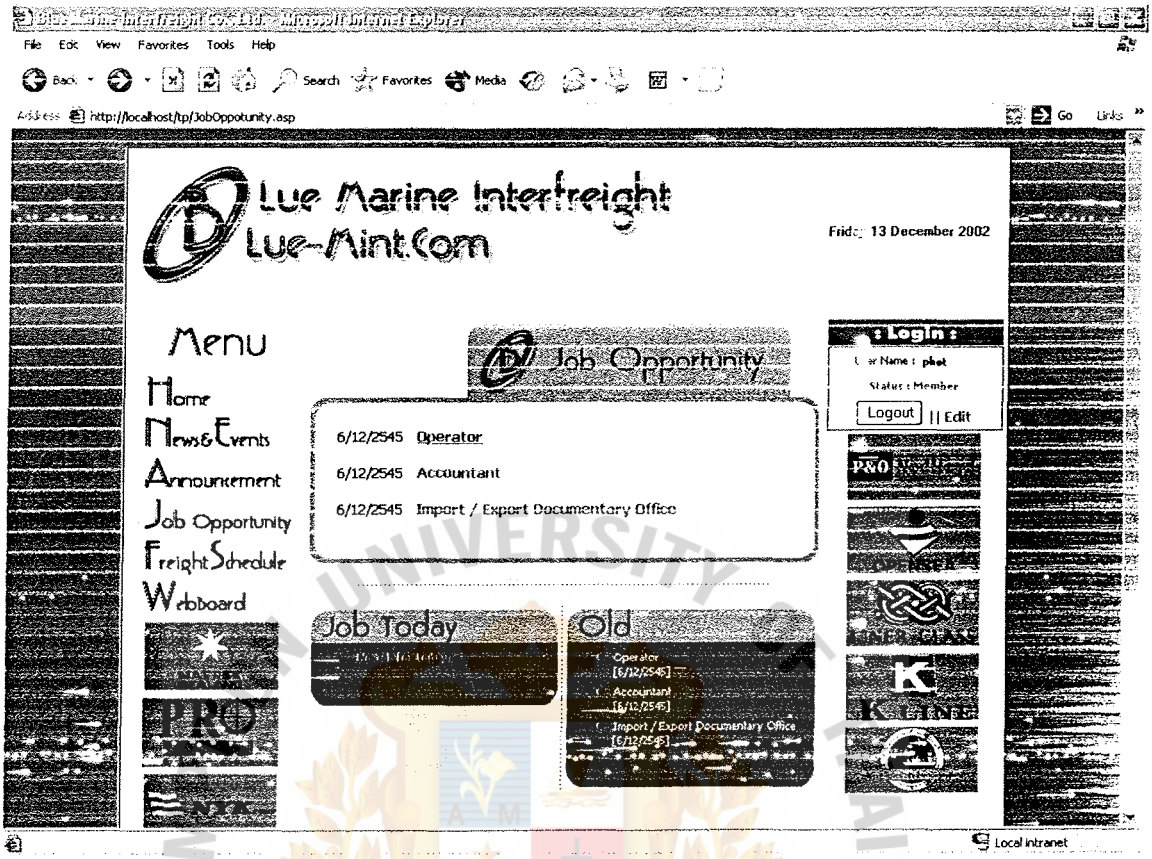

Figure B-17 Job opportunity page

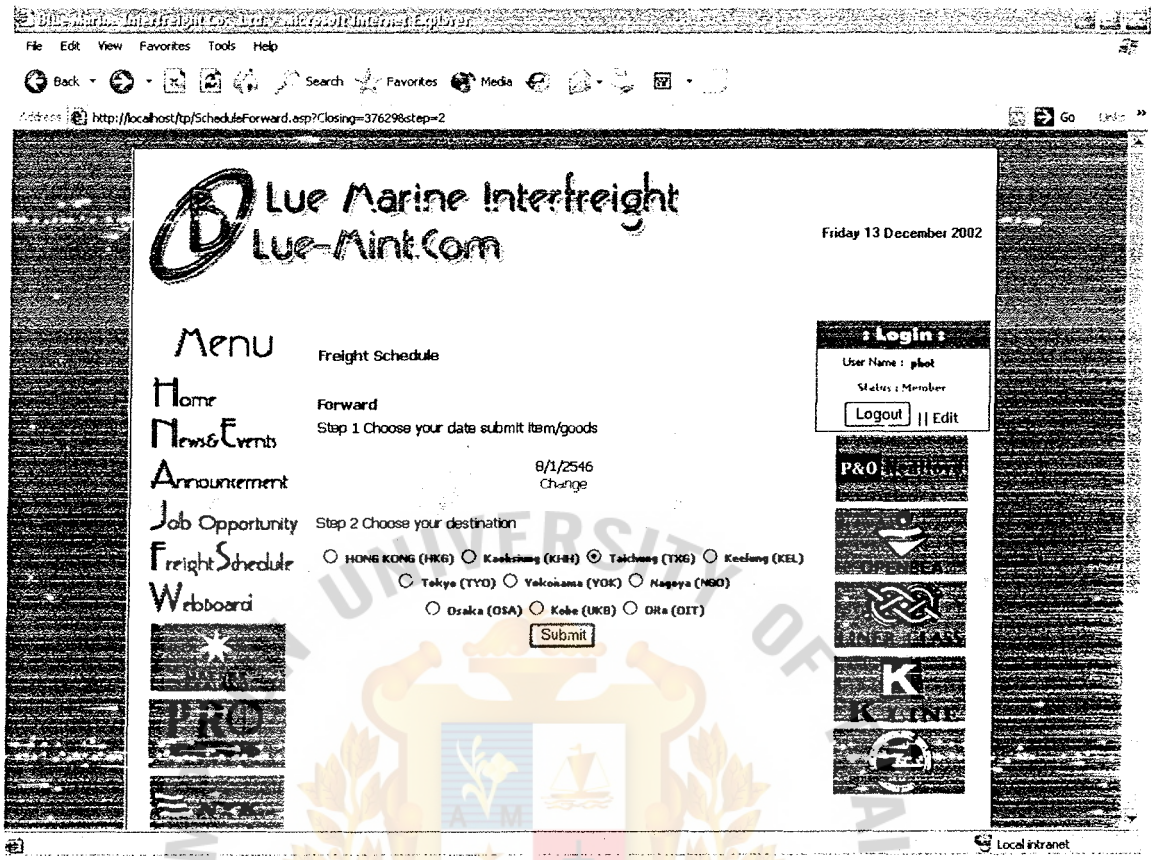

Figure B-18 Check schedule page

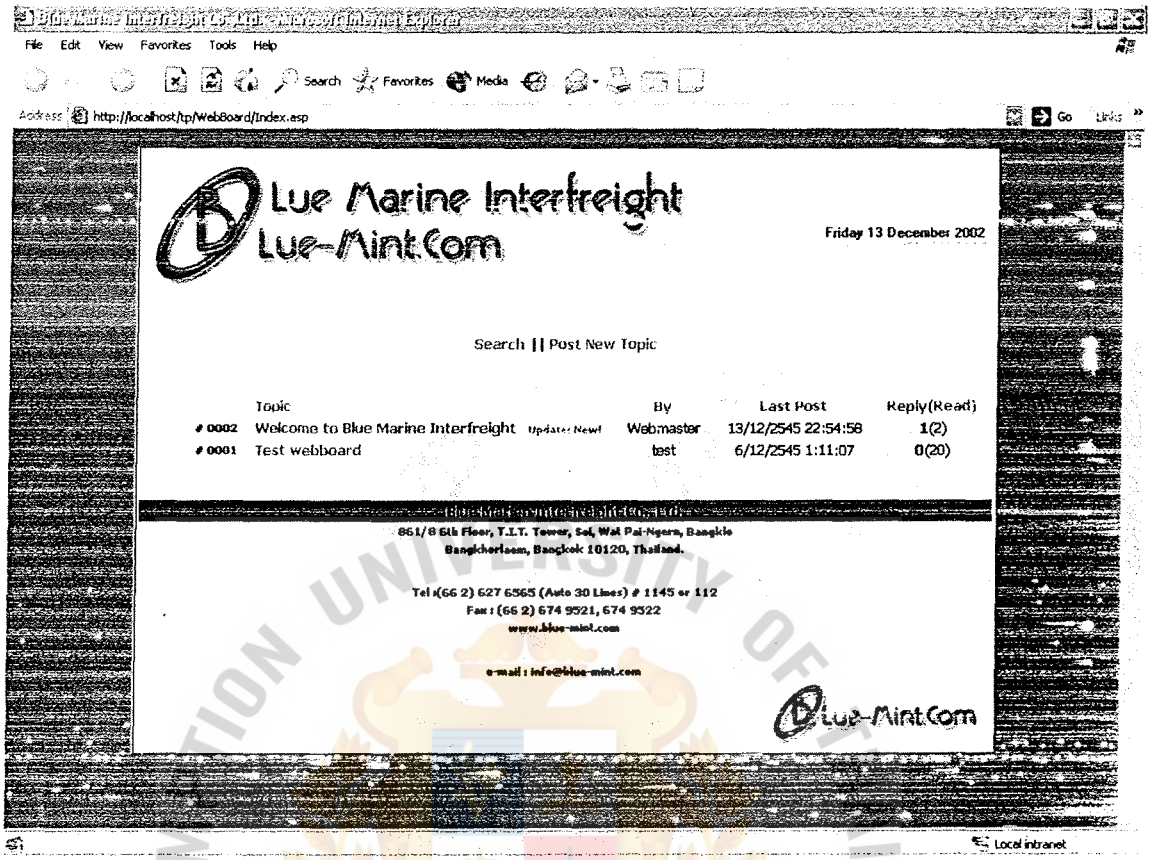

Figure B-19 Web board page

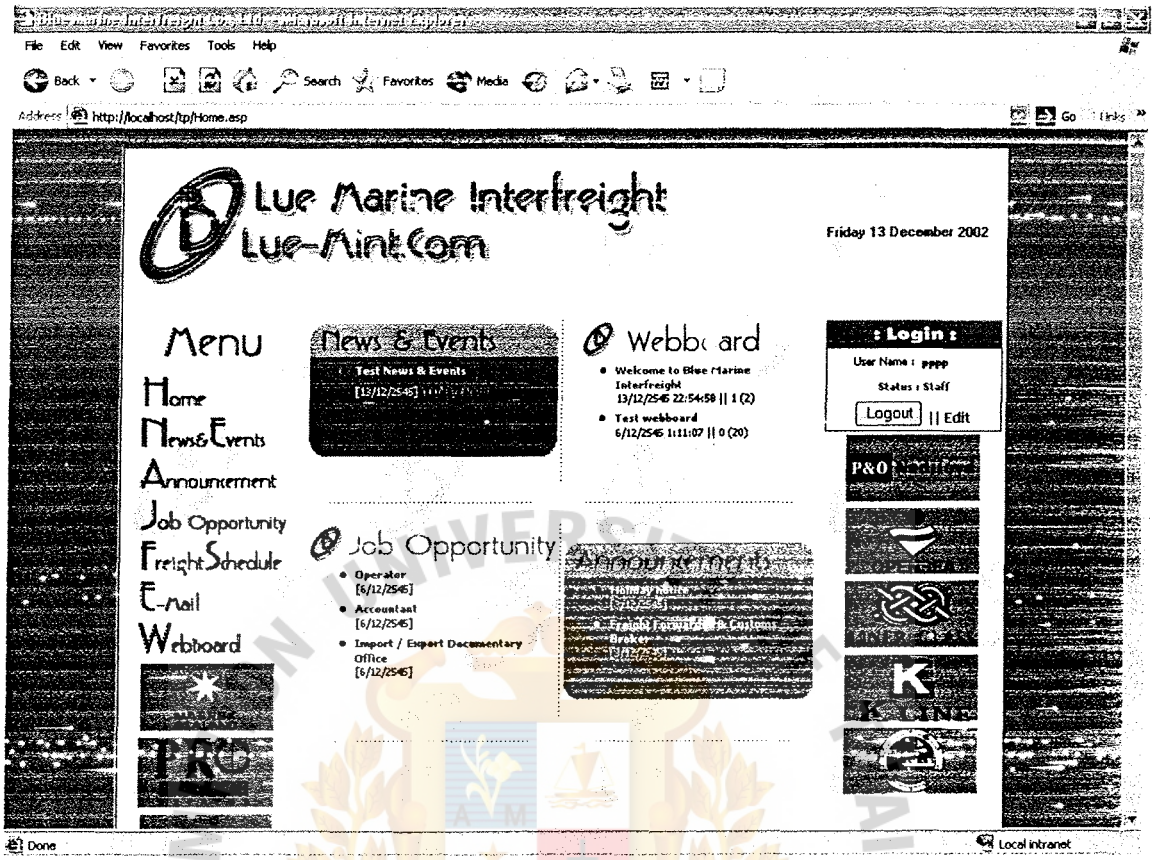

Figure B-20 Home page for staff

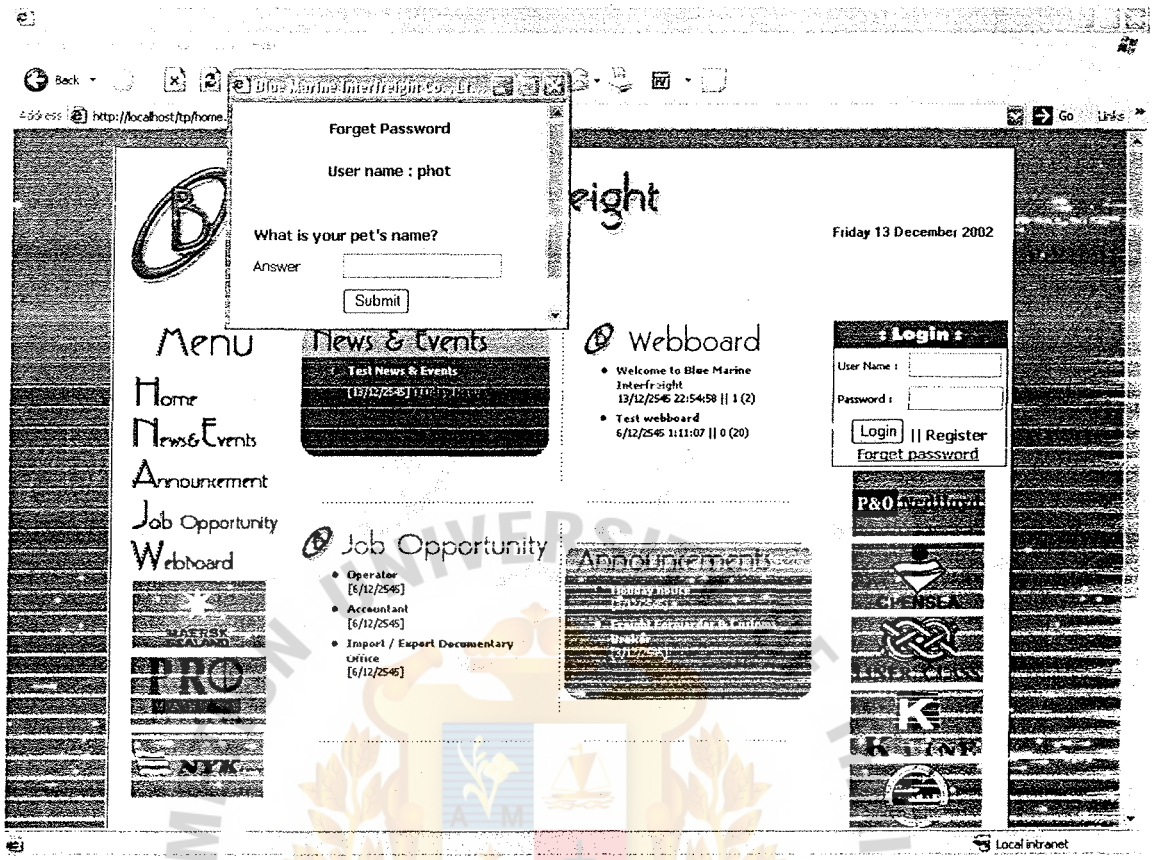

Figure B-21 Forget password page

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