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**Viðskipta - og raunvísindadeild**

# **Final Year Project Dissertation 2007**

**Liang Sun**

# Saga - Container booking and management system

Liang Sun

Supervisor: Dr. Nik Whitehead

School of Computing,  
Faculty of Business and Science, University of Akureyri.

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the award of the degree BSc.

I hereby declare that this final report is all my own work, except as indicated  
in the text:

Signature \_\_\_\_\_

Date 13 / 04 / 2007

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## **Abstract**

This document is the dissertation for the final year project module LOK0283. The project supervisor is Dr. Nik Whitehead. The project name is Saga - Container booking and management system, the web site of the project is <http://saga.liangcity.com>.

This document contains information of the requirement analysis, design, implementation, testing of the container booking and management system. The project finished and web site release successfully.

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## **I. Introduction**

An effective logistic operation and management system can reduce manual workload, cut down on errors, and finally improve service levels for shipping carriers and their customers. This database driven web based container booking and management system provides a wide range of transportation processes. It can make the work processes easy and effectively from booking, documentation, cargo tracking, and equipment management to shipment management.

The development of the Internet increases and speeds up the demand of customers e-commerce services. Building up a centralized e-commerce system was one step towards extending the existing offer by including online services. Combining full range of logistics services via one single interface can enabled you to turn into the leading integrated logistics services.

By use this system, shipping carriers can simplify internal processes by using IT technologies, the operation more efficiently and decrease processing costs.

In order to rapidly and efficiently respond customer requirements, use this web based system to support your shipping business requirements with useful functionalities on a 24 hour per day availability. The system contributes significantly to improved efficiencies in business executions for shipping carriers, logistic company or customers.

## **II. Requirement Gathering**

### ***1. Background reading***

For gather the software requirements, first, I read some documents of existing systems and go through the existing systems.

INTTRA is an e-business platform. They launched Universal Carrier Access (UCA) enabling all shippers and forwarders to reach all carriers, it open to shipper, forwarders and carriers. Shippers and forwarders can make booking to different carriers by the platform. Carriers can also send feedback information to shippers and forwarders.





**Figure 1 Workflow of container transport operation [1]**

Figure 1 show the major components of a container booking and management system. Shipper or customer book the container by there own system or by INTTRA, INTTRA transfer the shipping instruction to shipping line, shipping line use the information to make booking list and loading plan, then make bills of lading after container loaded on vessel and generate manifest and other documents. Shipper or consignee can track the container information by the system. This system gives the general information for a container manager system for shipping line. Some of functions in my system may base on this system. [2]

Another system, FIS (Freight information system) used by Hapag-Lloyed, FIS is a shipping carrier documentation system. It is similar with INTTRA, but only used by Hapag-Lloyed, it is not a open system, in booking module, it can accept booking request from shipper, then send booking number with booking confirmation after accept the booking request, then documentation module can use this information to make bills of lading. Documentation module can be use to generate report.

Shipper, forwarder, consignee can use web site to trace container information, check vessel schedule information or download Sea Waybill, etc.

My system is used for shipping carrier, shipper send a shipping order to shipping carrier, after booking information inputted into the system, system will generate a booking number, and the booking number can be use for further operation for the cargo.

After booking information inputted into the system, shipping carrier may create report base on the information, for example, booking list. After vessel departs from the port, the system can make bills of lading and manifest. Fright information also saves into the database, it may be export to other accounting or ERP system, but this is not a function in the system now.

In the main time, shipper, forwarder or consignee can trace the cargo information after they get the booking number, such as, the position of the cargo, status, container number, depart date, arrive date, etc.

Further statistic report can be generating by the system, such as containers list by loading port, by destination port by vessel, etc.

## **2. Interview**

After read some background information of logistic process, I interview my friends, Ms Qiuli Luan, who is a documentation manager working for Wallenius Wilhelmsen Logistic China Ltd., she work for this company for more than eight years, she has many experiences with documentation, operation process and customers requirement for the computer booking and management system.

A fast responds, easy use and user friendly interface is most important for a booking and management system. User needs input or transfer huge volume of documents day by day, a fast responds system can reduce processing time and improve operation quality.

The system must easy for user to input and retrieve information, simply and manfully menu is very important, user need to input all shipment information, and retrieve lots of different shipment information according to request, they need to know where they should go, and the system menu do not miss lead the user.

User friendly is also important, some of customers are not computer expert, they only know basic computer operation knowledge, a user friendly interface can let user easy to find the information they needed.

### **3. Document sampling**

Paper documents give a good idea of what is happening in the current work processes, and also provide supporting evidence for the information gathered from background reading and interview.

By analysing the documents, I can know what information the user needs from the system, the inputs and outputs from processes, also the documents format of the output.

## **III. Design**

### **1. Time table**

A good design needs a good planning, before starting to work for design, I made a time table for this project, the first phase will focus on analysis, software requirements and design, the second phase will develop the web application, and testing it.

Appendix A is the time table. The time table is created by Microsoft Project. Microsoft Project is very useful business software that allows the user to plan a project, produce schedules, allocate tasks and resources, and generate reports. It allows users to update these as the project progresses. [3]

The project is divided into proposal, analysis/software requirements, design, development, testing, and final system five phases.

### **2. Software and hardware**

#### **2.1 Apache Web Server**

This is a web application. The system can be run on any web server that supports PHP. For this project, I will use Apache web server. Apache has been the most popular web server on the Internet since April 1996. [4] Apache web server is easy to set up and configure and commonly used with PHP and MySQL. Apache web server is free.

## **2.2 MySQL**

This is a database driven web application. MySQL is the most popular open source database in the world. [5]

Use MySQL with PHP and Apache web server can implement highly interactive webs application with user customization, searchable databases.

MySQL is free. The web server used to host the web site only support MySQL 4.0, so my system will use MySQL 4.0 as database.

## **2.3 PHP**

PHP is very popular general-purpose server side scripting language. Combining it with HTML makes it very powerful. PHP currently will load into Apache, and work with MySQL.

According to NetCraft surveys, PHP is now the most popular module for the Apache server and in total running on something like two million Web sites. [6]

Apache web server, MySQL, and PHP work together can produce dynamic, data-driven web application.

## **2.4 XAMPP**

XAMPP is an easy to install Apache Distribution for Windows. The package includes the Apache web server, MySQL, PHP. XAMPP will only use for developing the application, and not use in the web server to host the web site.

## **2.5 Macromedia Dreamweaver**

Macromedia Dreamweaver will be used to develop the web application. It is easy to use, and has powerful abilities integrated with PHP.

## **2.6 PHPRunner**

PHPRunner can build visually appealing web interface for MySQL database, PHP Runner is a simple but useful program for easily previewing a PHP file without saving or uploading it to a server.

## **2.7 Browsers**

Internet Explore will be used for web client. Internet Explore is commonly used browser. The web application will support Internet Explore 6 and Internet Explore 7.

## **2.8 Operating system**

The operating system used to develop and test the project is Windows XP. Windows XP is the commonly used operating system. The web application will develop and implement on computer which use Windows XP. The web server used to host the web site use Windows NT.

## **2.9 Software conclusion**

Apache web server, MySQL, PHP, Dreamweaver, PHPRunner, will used to develop the web application, Windows XP will be the operation system for both develop and Windows NT will be the implement operating system. Internet Explore 6 and Internet Explore 7 will be the client to visit the web application by end users.

## **3. Functional design**

After talk with the experts in shipping carrier, I study the work processes in Figure 1 again and find out the details functions I need for each requirement. Then I design the menu of the system to list out all the functions need in the system. Figure 2 is the menu map created by MindManager.

The first function needed is creating a booking, so in Booking, there is Main booking which will list booking, there you can create, edit, view or delete booking. Review inquiry can search a booking by booking number or other key word, such as vessel name or port name. Three report can be generate by Reports, in booking phase, there are Detailed cargo booking report, Vessel revenue summary report and Summary container booking report.

After booking input into the system, system will generate a unique booking number; booking number will be primary key in the database.

In Receiving menu, you can create, view, edit or delete receiving. There is more report available in receiving, such as Fumigation report, Dangerous cargo manifest, Loading list, Non-container loading list, Reefer loading list, Vessel revenue summary and Booking not received report.

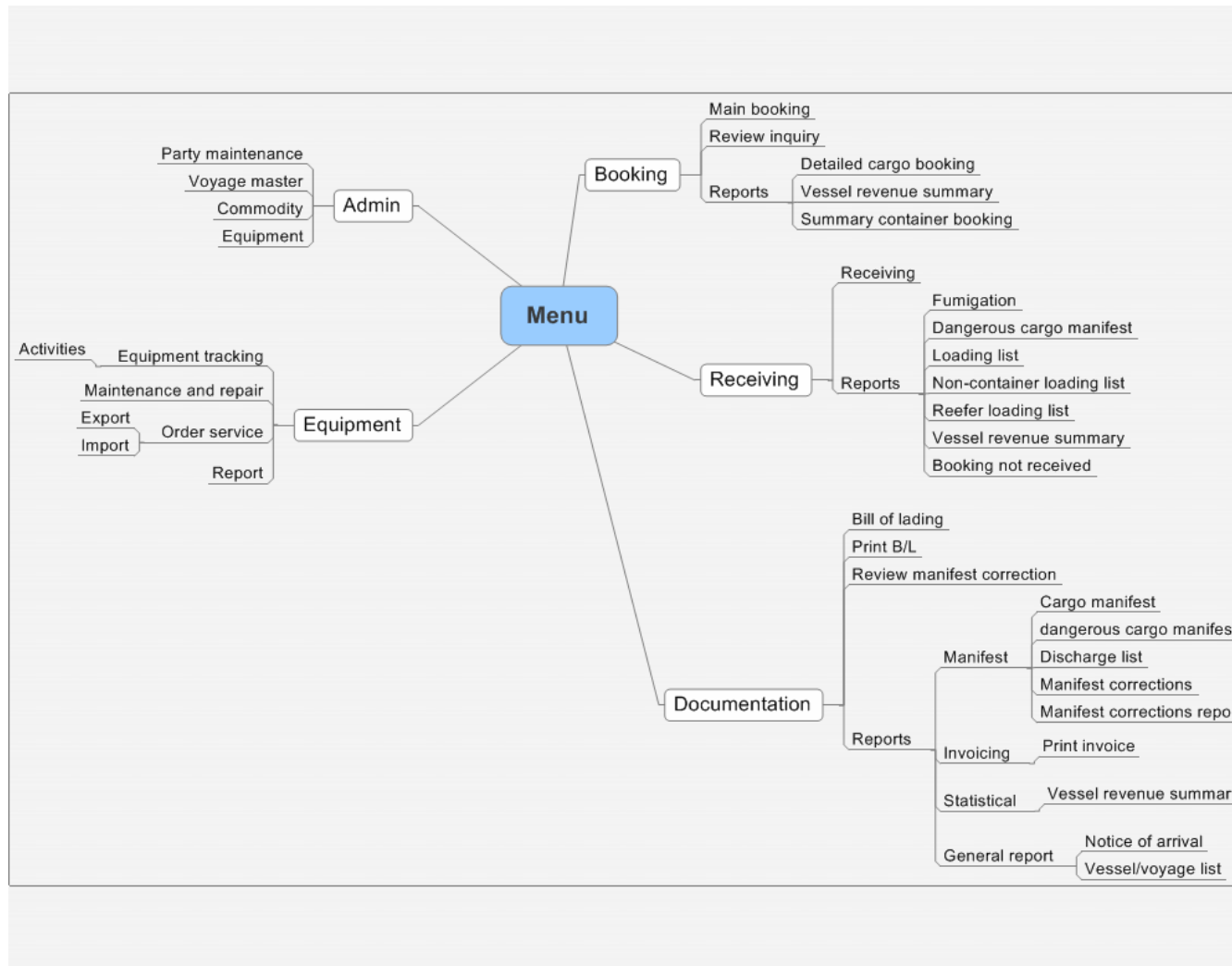


Figure 2 System menu

In Documentation menu, there are Bills of Lading, which can create bill of lading, also can edit, view, delete or print Bill of Lading. More reports in documentation menu. After cargo shipped, the freight can be invoiced and print out the invoice. A Statistical report can generate Vessel revenue summary report. Notice of arrival and Vessel/Voyage list are in Admin menu.

Equipment control is important for shipping carrier; equipment tracking can use for find the container information, such as where is the container now, what condition of the container? Activities can record the correct activities, such as empty, or loaded by customer, etc. If container damaged, Maintenance and repair can request repair and record the details information. If do not have enough container or too many container that do not need, Export/Import Order service can request export or import container or other equipment. A report of container movement or condition can be generating by Report.

Vessel information can be manage in Admin menu, voyage master can manage vessel voyage and schedule information, Party maintenance can manage customer information, cargo information can be managed by Commodity, new container can be create recorder by Equipment menu.

#### ***4. Database design***

After find out the functions, I designed the database schema.

I use Top-down design method to design the database schema. First I identify logical groupings of attributes into relations, such as, booking, receiving, Bill of lading, revenue, customer, cargo description, vessel and port, next investigating the relations and the relationships of each attribute.

A good database design should semantics of the attributes, reducing redundant values, reducing the null values and disallowing the possibility of generating spurious tuples. [7]

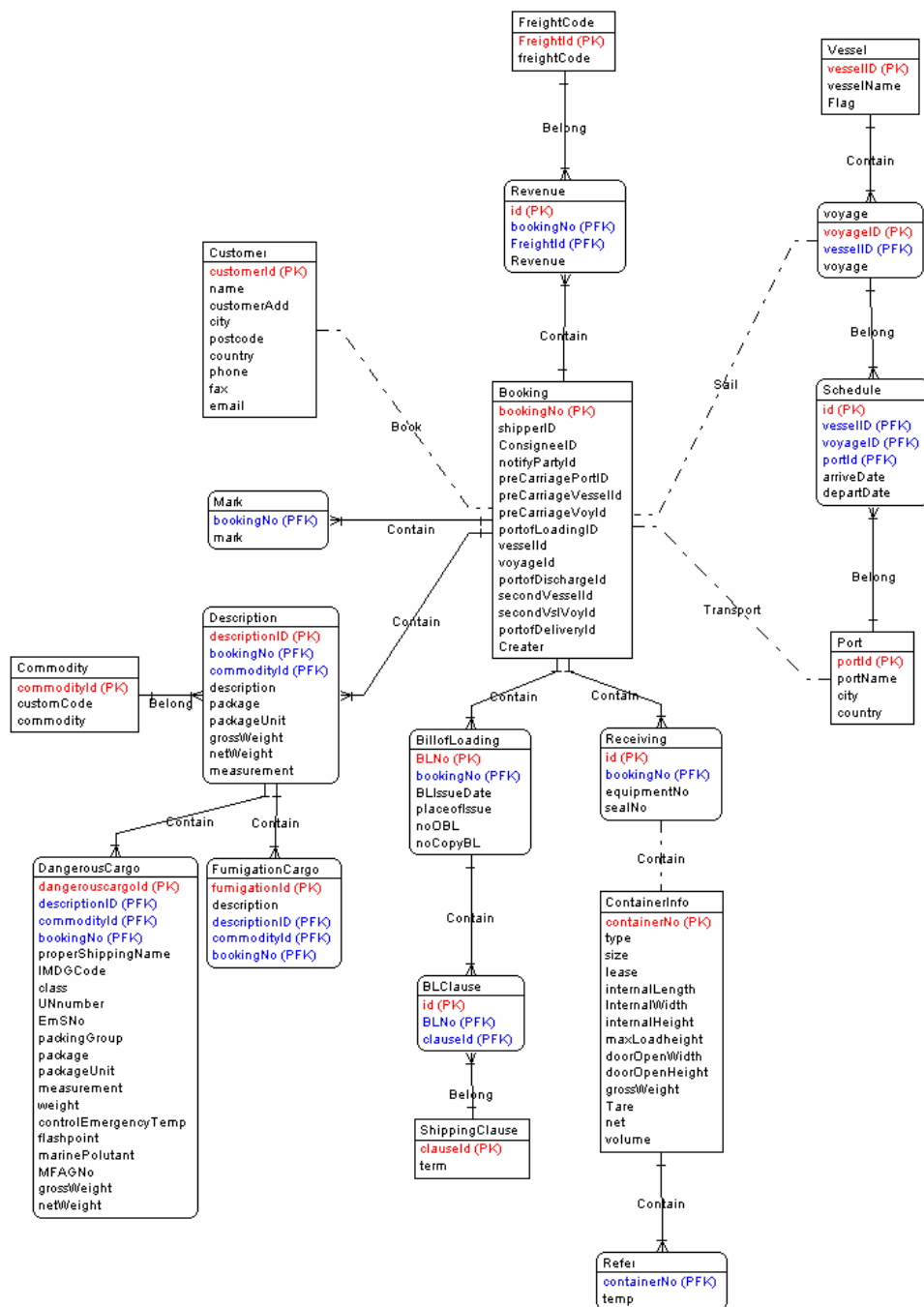
In the database schema, the meaning of the Booking relation is clear, it is a shipment that shipper booked with shipping line. The bookingNo is the primary key to indicate the shipment.

Figure 3 is the database schema.

Normalisation of data is a process of analysing schemas based on their primary keys and functional dependencies in order to minimise redundancy, minimise insertion, deletion and update anomalies. [7]

[1.1]

[2.1]



[1.2]

[2.2]

Figure 3 Database schema



Normalization is the process of simplifying the design of a database so that it achieves the optimum structure.

Normalization theory gives us the concept of normal forms to assist in achieving the optimum structure. The normal forms are a linear progression of rules that you apply to your database, with each higher normal form achieving a better, more efficient design.

The normal forms are:

- First Normal Form
- Second Normal Form
- Third Normal Form
- Boyce Codd Normal Form
- Fourth Normal Form
- Fifth Normal Form [8]

All the column values are atomic in my database schema, so it meets the First Normal form (1NF). In the database schema, very non-key column is full dependent on the primary key; this is what Second normal Form (2NF) required. All non-key columns are mutually independent, this meet the Third Normal Form (3NF). So my database schema implemented the third Normal Form.

Generally, most database designers do not attempt to implement anything higher than Third Normal Form. [8]

## **5. Storyboard**

I designed the all the functions, which can implement to menu of the system, also I designed the database, and then I need an interface to link the functions and database. I use storyboard to explain the relation of each function, and describe how the system works.

Appendix B is the Storyboard. It is the process of making a rough outline of what the system will include before it is actually created.

## IV. Implementation

### 1. System overview

The web site use PHP to access the database and combined with standard HTML.

First, I registered the domain name for the web site: <http://saga.liangcity.com>, and set up the web server.

Next I created the database according to the database diagram, Appendix C is the SQL script to create the database, execute the script to create the database in the web server, and then the MySQL database can be run on the web server.

Then I upload the PHP files and all other files need for the web site to the web server.

When you access the web site, it will forward to a login to ask you input username and password, after login to the system, according to the design, there is a main menu, which include Booking, Receiving, Documentation, Equipment and Admin five sub-menus. Figure 4 is the main menu after login.

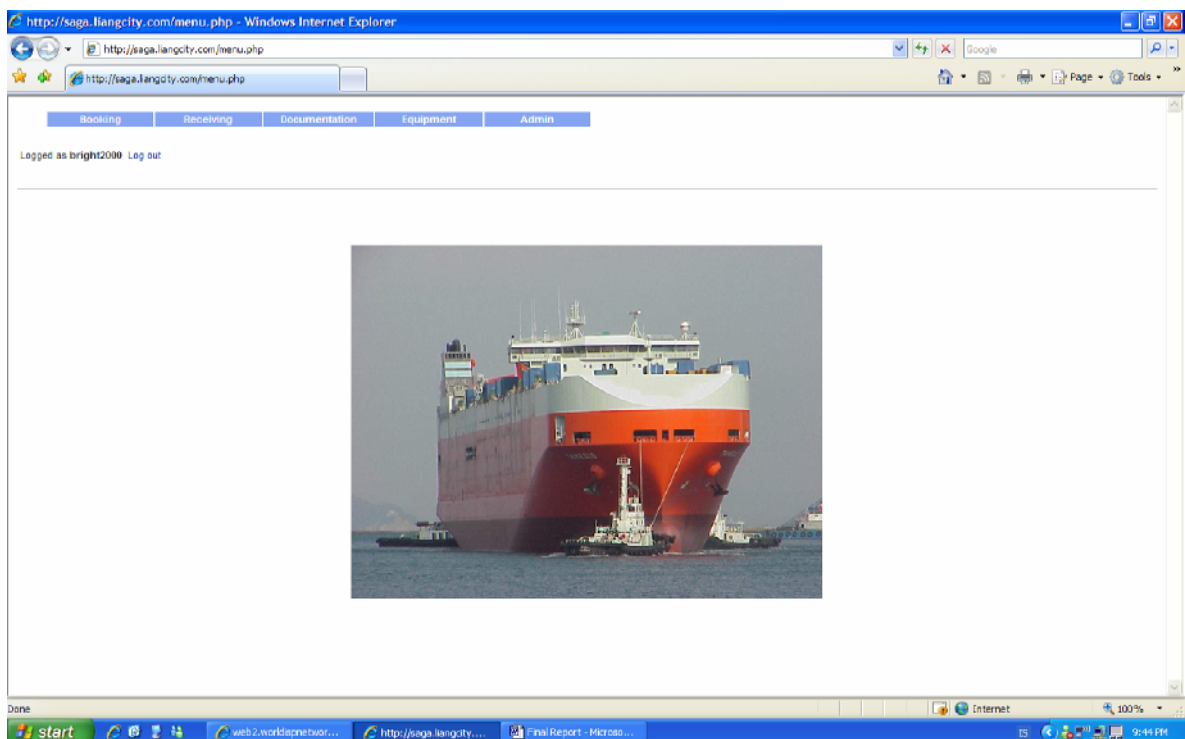


Figure 4 Main menu

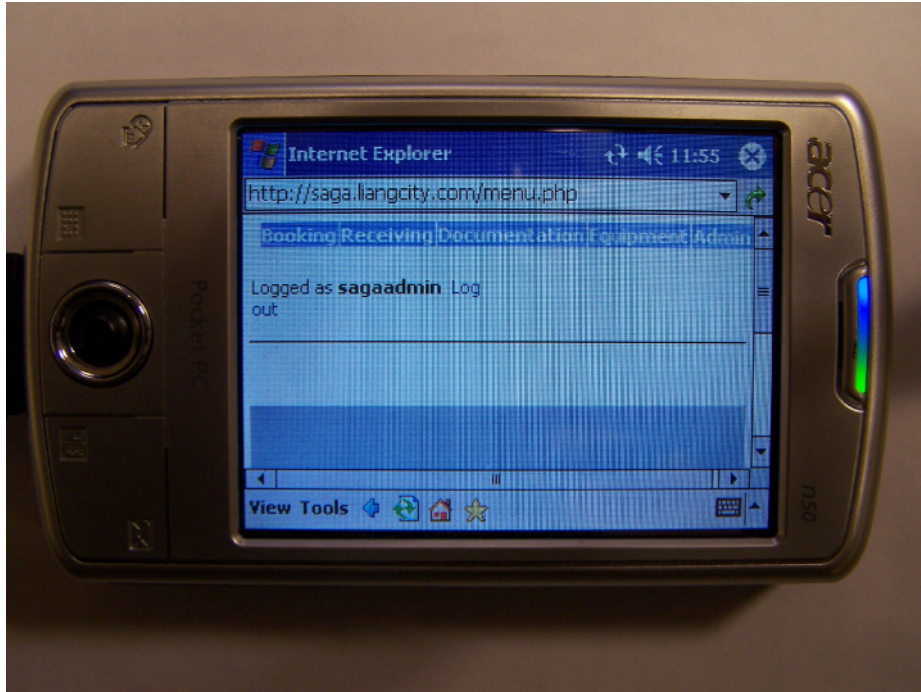
The shipping carrier or logistic company accept cargoes booking from shipper, after get the booking instruction, the booking information be inputted into the system, when shipping line received the cargo, receiving information be inputted into the system, After vessel departed, B/L and other documents are create by the system. Shipping line or logistic company can use this system for manage equipment, commodity, customer, freight code, port, shipping clause, vessel information.

The system uses for daily shipment operation and management for shipping carrier. It can use for manage vessel allocation, find cargo or container information, get updated loading information. Further more, it can also get vessel revenue information, loading list, statistic report by each vessel or each port, delivery notice of arriving cargo to consignee. It is a web application connected to Internet, so customer can track cargo or container information from Internet at any where and any time. The system is a media between carriers and shipper, customer can get on-time information, make carrier serve customer effective and efficient.

The web site also design work for portable device, such as PDA or even mobile phone with Internet connection. This is quite useful for business people with wireless Internet connection, so they can get the shipping information any time anywhere.



**Figure 5 Login the web site by using PDA**



**Figure 6 Main menu accessed by PDA**

Figure 5 is login in accessed by PDA, and Figure 6 is the man menu after login the web site.

## **2. Booking**

Booking menu use for view booking list, add booking, search booking and generate booking report.

There are three sub-level menus in Booking menu:

- Booking list
- Add booking
- Booking report

Before make a booking, the relevant information which needed for make booking must to be inputted into Equipment and Admin menu, such as, container information in Equipment, commodity, customer, freight code, port, shipping clause, vessel and schedule information in Admin.

If the relevant information not available when make a booking, administrator need to add the information to the system. IV. 5 Equipment and IV.6 Admin will

describe details information of how to add the information to Equipment and Admin menu.

## 2.1 Booking list

Use Booking -> Booking list menu can list all booking.

Figure 7 show the booking list. IV.2.3 will describe how to search and create booking list report for a particular vessel or port.

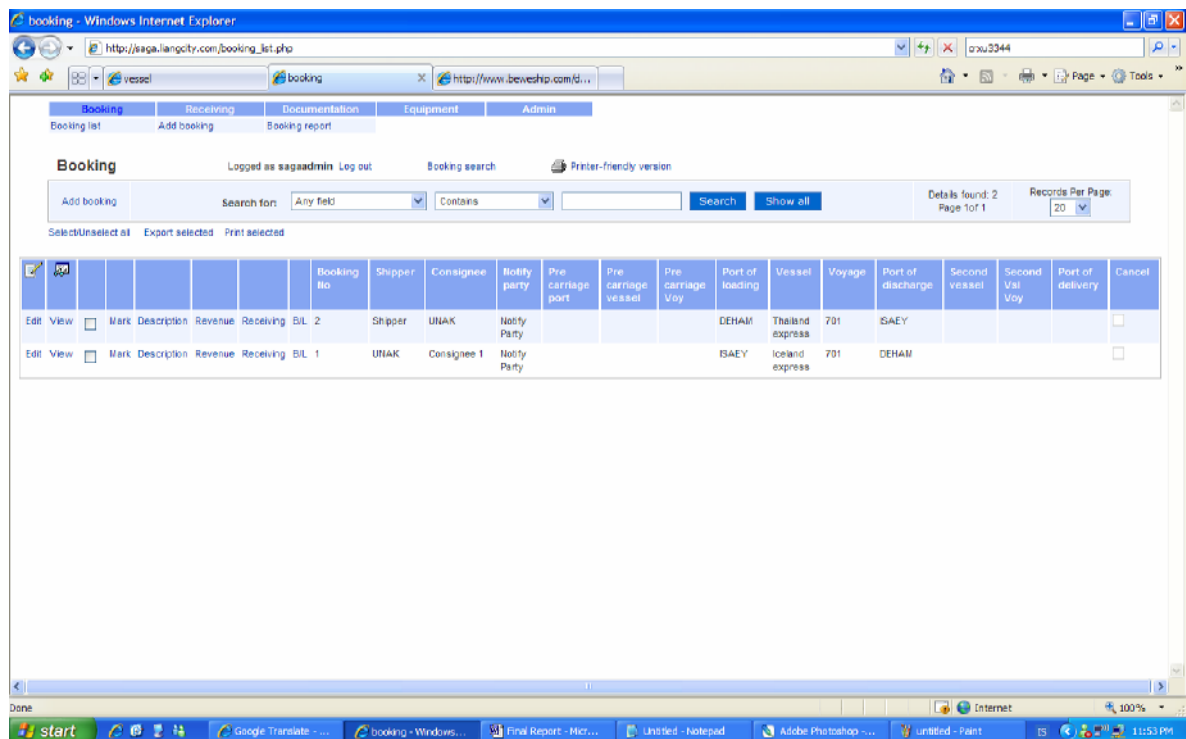


Figure 7 Booking list

## 2.2 Add booking

Use Booking -> Add booking menu can create new booking.

There are following attributes for a booking:

- Booking No
- Shipper
- Consignee
- Notify party

- Pre carriage port
- Pre carriage vessel
- Pre carriage Voy
- Port of loading
- Vessel
- Voyage
- Port of discharge
- Second vessel
- Second Vsl Voy
- Port of delivery
- Cancel ( checkbox to indicate cancelled booking)

For example, to make a booking to ship 50 sheep in a 20 inch dry container from Akureyri, Iceland to Hamburg, Germany. The gross weight is 20,000 Kgs, net weight is 15,000 Kgs, and measurement is 20 CBM. The ocean freight is EUR1,500, destination delivery charge is EUR100.

First, click Add booking menu, it will prompt new booking to ask you input booking information. Figure 8 displays create new booking.

Booking	Receiving	Documentation	Equipment	Admin
Booking list	Add booking	Booking report		

### Add booking

[Back to list](#)

Shipper	Shipper	*
Consignee	UNAK	*
Notify party	Notify Party	*
Pre carriage port	Please select	
Pre carriage vessel	Please select	
Pre carriage Voy		
Port of loading	ISAEY	
Vessel	Iceland express	*
Voyage	701	*
Port of discharge	DEHAM	*
Second vessel	Please select	
Second Vs IVoy		
Port of delivery	Please select	
Cancel	<input type="checkbox"/>	




[Save](#) [Reset](#)

\* - Required field

Figure 8 Create new booking

Shipper, consignee and notify party, port of loading, vessel, port of discharge can be select from the dropdown list if the information have already inputted in Equipment and Admin menu, after click 'Save' to create the booking, the booking will be list on 'Booking list', and it will show the booking number, for this booking, the booking number is 1, booking number can be use to retrieve the booking information in future.

Shipping mark, cargo description, freight revenue information are also needed to finish create the booking. Figure 9 show the link to input the information.

									Booking No	Shipper	
Edit	View		Mark	Description	Revenue	Receiving	B/L	1		UNAK	C

**Figure 9 Booking information**

Figure 10 show the mark menu after click 'Mark' link.

<b>Booking</b>	<b>Receiving</b>	<b>Documentation</b>	<b>Equipment</b>	<b>Admin</b>
Booking list	Add booking	Booking report		

**Mark**

Back to booking

Logged  
 as sagaadmin Log  
 out

Mark search

Add mark	Search for: <div>Any field ▼</div> <div>Contains ▼</div> <input type="text"/>
----------	---

**No records found**

**Figure 10 Mark menu**

Figure 11 show the shipping mark after click 'Add mark' in the Mark menu.



Booking	Receiving	Documentation	Equipment	Admin
Booking list	Add booking	Booking report		

## Add mark

---

[Back to list](#)

Mark

N/M

Save

Reset

---

\* - Required field

Figure 11 Add mark

Figure 12 display the shipping mark information which is under the associated booking.

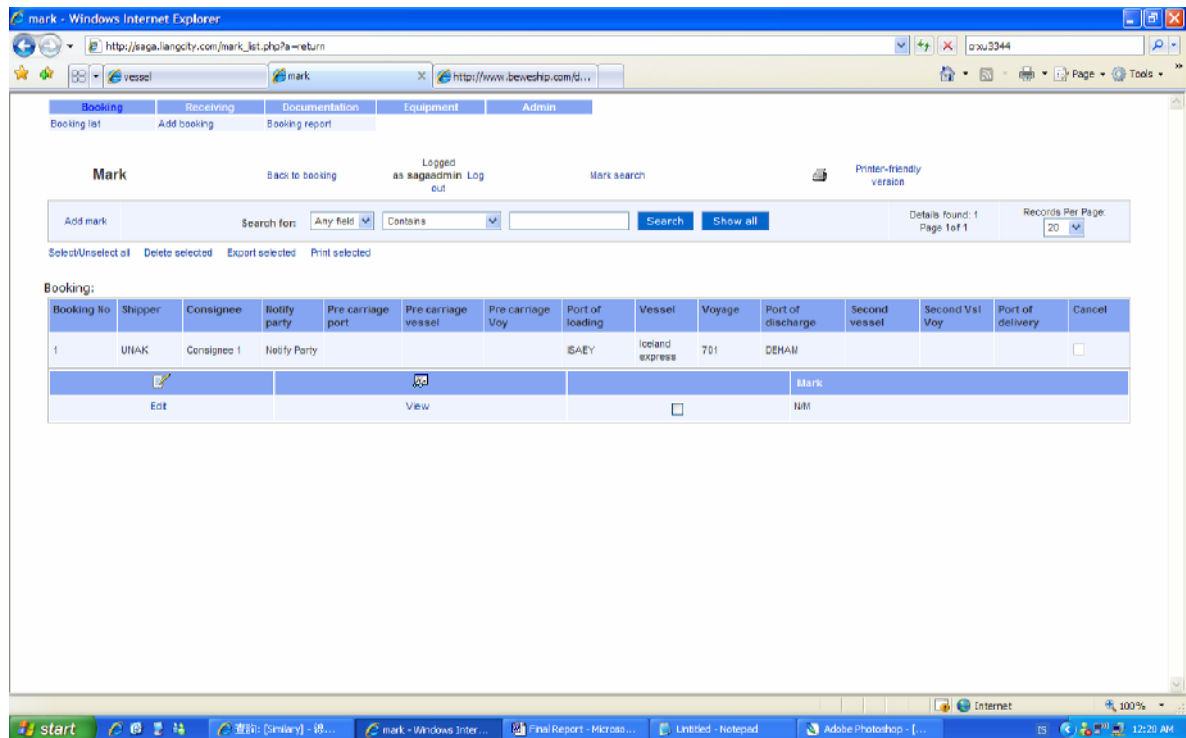


Figure 12 Shipping mark

Similarly, figure 13 shows the add description after click 'Description' to input following cargo description information:

- Description (Name of cargo)
- Package (Number of package)
- Package unit
- Gross weight
- Net weight
- Measurement

Booking	Receiving	Documentation	Equipment	Admin
Booking list	Add booking	Booking report		

### Add description

---

[Back to list](#)

Commodity	Sheep	*
Description	Icelandic Sheep	
Package	500	*
Package unit	PC	
Gross weight	20,000	*
Net weight	15,000	*
Measurement	20	*

[Save](#) [Reset](#)

---

\* - Required field

Figure 13 Add description

	DG cargo	Fumigation	

Figure 14 DG and fumigation cargo

Figure 14 show the 'DG cargo' and 'Fumigation' information associated with each description. This cargo is not dangerous cargo or fumigation cargo, so do not need to input 'DG cargo' and 'Fumigation' information. Other wise, if the cargo is dangerous cargo, must input 'DG cargo' information which includes:

- Commodity
- Proper shipping name
- IMDG code
- Class
- UN number
- EmS No
- Packing group

- Package
- Package unit
- Measurement
- Weight
- Control emergency temp
- Flash point
- Marine pollutant
- MFAG No
- Gross weight
- Net weight

For details description of the above information, please refer to International Maritime Dangerous Goods (IMDG) Code description.

Figure 15 show the add DG cargo information. Figure 16 show the add fumigation cargo information.

Booking	Receiving	Documentation	Equipment	Admin
Booking list	Add booking	Booking report		

### Add DG cargo

[Back to list](#)

Commodity Name	<input type="text" value="Please select"/>	
Proper shipping name	<input type="text"/>	
IMDG code	<input type="text"/>	
Class	<input type="text"/>	
UN number	<input type="text"/>	*
EmS No	<input type="text"/>	*
Packing group	<input type="text"/>	
Package	<input type="text"/>	*
Package unit	<input type="text"/>	
Measurement	<input type="text"/>	*
Weight	<input type="text"/>	*
control emergency temp	<input type="text"/>	*
Flash point	<input type="text"/>	
Marine pollutant	<input type="text"/>	*
MFAG No	<input type="text"/>	
Gross weight	<input type="text"/>	*
Net weight	<input type="text"/>	*

Figure 15 Add DG cargo information

If fumigation cargo, need to input following information in 'Fumigation':

- Description

---

Booking	Receiving	Documentation	Equipment	Admin
Booking list	Add booking	Booking report		

**Add fumigation cargo,**

---

[Back to list](#)

Description

---

\* - Required field

**Figure 16 Add fumigation cargo information**

Also click 'Revenue' to input following freight revenue information:


- Freight
- Revenue

Figure 17 show the add revenue information.

Booking	Receiving	Documentation	Equipment	Admin
Booking list	Add booking	Booking report		

### Add revenue

[Back to list](#)

Freight	FAK  *
Revenue	1500

\* - Required field

Figure 17 Add revenue

All attribute may have one or more than one instance, such as there are two instances for revenue attribute:

- FAK(Freight All Kinds/Ocean freight) EUR1500
- DDC(Destination Delivery Charge) EUR100

Now, the booking created successfully.

You can edit a booking by click 'Edit' (Figure 18).

								Booking No	Shipper	
Edit	View		Mark	Description	Revenue	Receiving	B/L	1	UNAK	C

Figure 18 Edit booking menu

Booking	Receiving	Documentation	Equipment	Admin
Booking list	Add booking	Booking report		

### Edit booking

[Back to list](#)

Shipper	Shipper	*
Consignee	UNAK	*
Notify party	Notify Party	*
Pre carriage port	Please select	
Pre carriage vessel	Please select	
Pre carriage Voy		
Port of Loading	DEHAM	
Vessel	Thailand express	*
Voyage	701	*
Port of discharge	ISAEY	*
Second vessel	Please select	
Second Vsl Voy		
Port of delivery	Please select	
Cancel	<input type="checkbox"/>	

[Save](#) [Reset](#)

\* - Required field

**Figure 19 Edit booking**

For management and security reason, it never allowed to delete the booking after add the booking, so there is not a button to delete a booking, alternative, a booking can be mark as inactive by click 'Cancel' when edit booking. Figure 19 show the edit booking.

Click 'View' can view existing booking information (Figure 20) and Figure 21 show the view booking.











								Booking No	Shipper	
Edit	View	<input type="checkbox"/>	Mark	Description	Revenue	Receiving	B/L	1	UNAK	C

Figure 20 View booking menu

Booking	Receiving	Documentation	Equipment	Admin
Booking list	Add booking	Booking report		

## View booking

[Back to list](#)

Booking No	1
Shipper	UNAK
Consignee	Consignee 1
Notify party	Notify Party
Pre carriage port	
Pre carriage vessel	
Pre Carriage Voy	
Port of loading	ISAEY
Vessel	Iceland express
Voyage	701
Port of discharge	DEHAM
Second Vessel	
Second Vs IVoy	
Port of delivery	
Cancel	<input type="checkbox"/>

[Back to list](#)

Figure 21 View booking

## 2.3 Booking report

Use Booking -> Booking report menu can search and create booking list report for a particular vessel or port. For example, to create a report of booking list of all booking booked on vessel Iceland express voyage 701.

First click Booking -> Booking report menu (or click 'Booking search' in the main booking list) to define the search criteria. Figure 22 show the search booking.

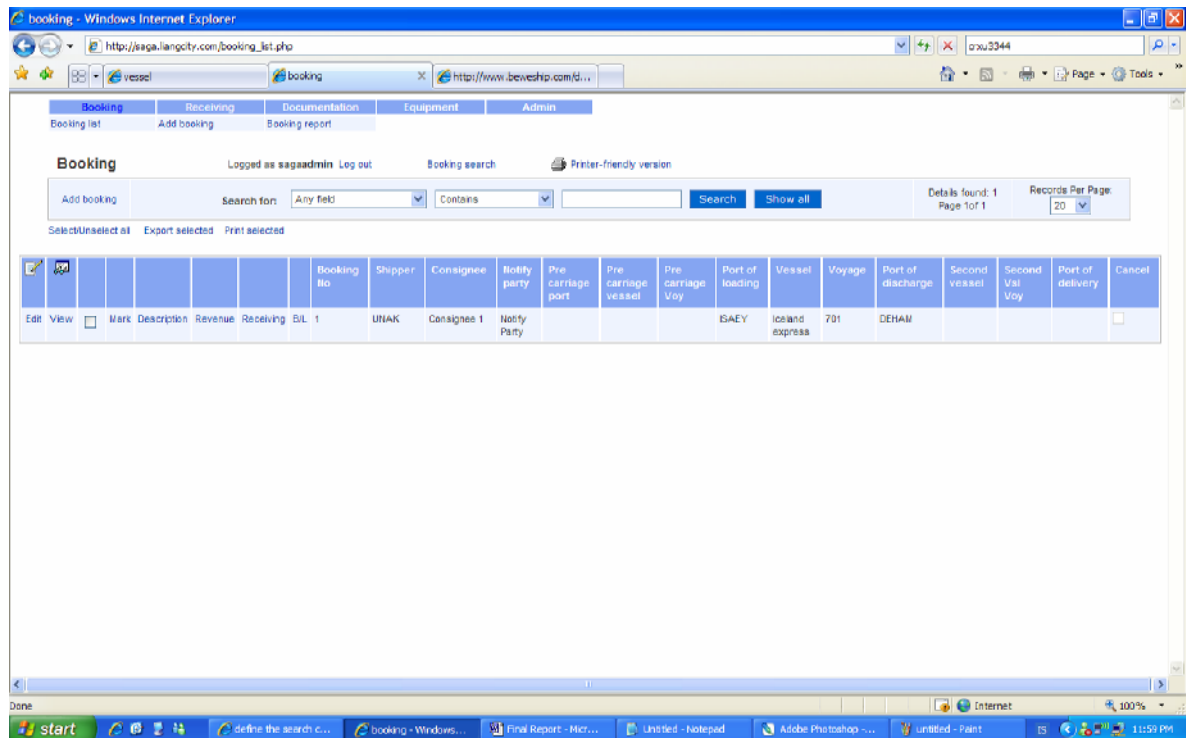
Figure 22 Booking report

Next, use the dropdown list to choose vessel name 'Iceland express' in Vessel filed and input '701' in voyage field (Figure 23).

<b>Vessel</b>	<input type="checkbox"/>	Equals ▼	Iceland express ▼
<b>Voyage</b>	<input type="checkbox"/>	Contains ▼	701

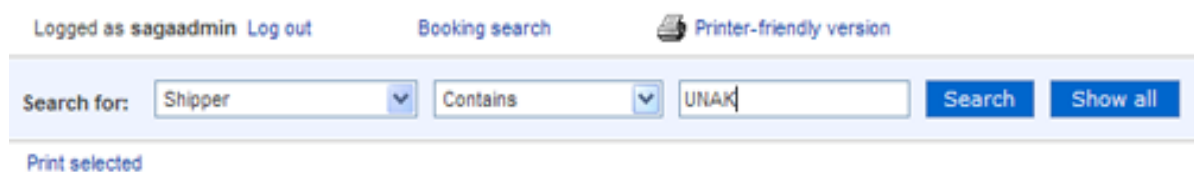
Figure 23 Define search key word

Then click the 'Search' button. Figure 24 shows the booking list of vessel Iceland express v.701.



**Figure 24 Booking list report**

There is another one-click quick search to get the booking report if only search by one key word. Input the key word in the 'Search for' menu bar (Figure 25). For example, to search all the booking list with shipper's name 'UNAK', input 'UNAK' in the blank field after 'Search for' menu then select 'Shipper' from the next dropdown list, click 'Search' button, it will list all booking with shipper name 'UNAK'.



**Figure 25 One-click quick searches**

Figure 26 show the printer-friendly version report to print out the report if click Printer-friendly version from the menu.

Cancel	Booking no	Shipper	Consignee	Notify party	Pre carriage port	Pre carriage vessel	Pre carriage Voy	Port of loading	Vessel	Voyage	Port of discharge	Second Vessel	Second Val Voy	Port of delivery
<input type="checkbox"/>	2	Shipper	UNIAK	Notify Party				DEHAM	Thailand express	701	ISAEY			
<input type="checkbox"/>	1	UNIAK	Consignee 1	Notify Party				ISAEY	Iceland express	701	DEHAM			

Figure 26 Print-friendly version report

### 3. Receiving

Receiving menu use for view receiving list, add receiving, search receiving and generate receiving report.

There are three sub level menus in Receiving menu:

- Receiving list
- Add receiving
- Receiving report

#### 3.1 Receiving list

Use Receiving -> Receiving list menu can view receiving list.

Receiving list will list all the receiving. IV.3.3 will describe how to search and create receiving report for a particular vessel or port.

Click the booking number (Figure 27) of each receiving in the list can view the booking information, it will link to 'View booking' (Figure 21) to display the

booking information. Or click the equipment number to view the equipment information.

	Booking No	Equipment No
	1	CAXU2213668

**Figure 27 Receiving list**

### **3.2 Add receiving**

After cargoes arrive container yard at port of loading, and the cargoes are ready be loaded on vessel, the receiving information need to be input into the system.

There are following attributes for a receiving:

- Booking No
- Equipment No
- Seal No

For example, the cargo of booking number: 1 arrived the container yard and ready to be loaded on vessel, then the receiving information need to be inputted into the system.

There are two ways to input receiving information. One is use Receiving -> Add receiving menu create new receiving. By this way to add the receiving, click Add receiving menu, Figure 28 shows add receiving to input receiving information.

Booking	Receiving	Documentation	Equipment	Admin
Receiving list	Add receiving	Receiving report		

### Add receiving

[Back to list](#)

Booking No	<input type="text" value="1"/>	*
Equipment No	<input type="text" value="CAXU2213668"/>	
Seal No	<input type="text" value="SN6666"/>	

\* - Required field

Figure 28 Add receiving

Another way is click the Receiving link associated with each booking in Booking list (Figure 29).

								Booking No	Shipper	
Edit	View		Mark	Description	Revenue	Receiving	B/L	1	UNAK	C

Figure 29 Add receiving from Booking

It will prompt the same web page to input the receiving information with click 'Add receiving' from Receiving menu, instead of input 'Booking No.' by manual, the 'Booking No' field is automatic inputted by this way, it only need input 'Equipment No' and 'Seal No'.

### 3.3 Receiving report

Same with Booking report, it can search and create receiving list report for a particular vessel or port. For example, to create a report of receiving list of all receiving on vessel Iceland express voyage 701.

Use Receiving -> Receiving report menu (or click 'Receiving search' in the main receiving list) can define the search criteria to create the report.

Next, use the dropdown list to choose vessel name 'Iceland express' in Vessel filed and input '701' in voyage field.

Then after click the 'Search' button, it will list all the receiving of vessel Iceland express v.701.

Still same with 'Booking report', there is another one-click quick search to get the receiving report if only search one key word.

For example, to search all the receiving list with shipper's name 'UNAK', input 'UNAK' in the blank field after 'Search for' menu then select 'Shipper' from the next dropdown list, click 'Search' button, it will list all receiving with shipper name 'UNAK'.

## **4. Documentation**

Documentation menu uses for view B/L (Bills of Lading) list, add B/L, print B/L, search B/L and generate B/L report.

There are three sub level menus in Documentation menu:

- B/L list
- Add B/L
- Print B/L
- B/L report

### **4.1 B/L list**

Use Documentation -> B/L list menu can view B/L list.

B/L list will list all the Bs/L. IV.4.4 will describe how to search and create B/L report for a particular vessel or port.

### **4.2 Add B/L**

After cargoes loaded on vessel, and vessel departed from the port of loading, the documentation information need to be input into the system.

There are following attributes for a B/L:

- Booking No

- B/L No
- B/L issue date
- Place of issue
- No of OB/L
- No of Copy B/L

For example, the vessel has departed from port of loading, and the cargo of booking number: 1 loaded on the vessel, then the documentation information need to be inputted into the system.

Same with receiving, There are two ways to input documentation information. One is use Documentation -> Add B/L menu create new B/L. By this way to add the documentation, click Add bill of loading menu, Figure 30 shows add bill of lading to input receiving information.

You may click Add B/L menu, then it will prompt new web page to ask you input B/L information.

Booking	Receiving	Documentation	Equipment	Admin
B/L list	Add B/L	B/L report		

### Add bill of loading

[Back to list](#)

Booking No	<input type="text" value="1"/>	*
B/L No	<input type="text" value="1"/>	*
B/L issue date	<input type="text" value="April"/> <input type="text" value="13"/> <input type="text" value="2007"/> <input type="text"/>	*
Place of issue	<input type="text" value="ISAEY"/>	
No of OB/L	<input type="text" value="3"/>	*
No of Copy B/L	<input type="text" value="3"/>	*




\* - Required field

Figure 30 Add bill of loading

Another way is click the B/L link associated with each booking in Booking list (Figure 31).



Another way is click the B/L link associated with each booking in Booking.

									Booking No	Shipper	
Edit	View	<input type="checkbox"/>	Mark	Description	Revenue	Receiving	B/L	1		UNAK	

**Figure 31 Add B/L from Booking**

It will prompt the same web page to input the B/L information with click 'Add B/L' from Documentation menu, instead of input 'Booking No.' by manual, the 'Booking No' field is automatic inputted by this way.

B/L clause is also needed to finish create the B/L. Figure 32 show the link to input the information.

Booking:

Booking No	Shipper	Consignee	Notify party	Pre carriage port	Pre carriage vessel	Pre carriage Voy	Port of loading
1	UNAK	Consignee 1	Notify Party				ISAIEY

					Booking No	B/LNo	B/L issue date
Edit	View	<input type="checkbox"/>	<a href="#">B/L clause</a>		1	1	4/13/2007

**Figure 32 B/L information**

Click B/L clause to select the B/L clause by the dropdown list (Figure 33).

Booking	Receiving	Documentation	Equipment	Admin
B/L list	Add B/L	B/L report		

### Add B/L clause

---

[Back to list](#)

Clause

---

\* - Required field

Figure 33 B/L clause

## 4.3 Print B/L

Shipping carrier need to issue original ocean bill of lading (OB/L) after vessel departed from the port of loading. After make the B/L, the OB/L can be printed by Documentation -> Print B/L menu.

Print B/L

Logged as bright2000 [Log out](#)

B/L search [Print B/L](#)

B/L No.:  Contains

Details found: 2  
Page 1 of 1  
Records Per Page:

B/L No.	Booking No.	Shipper	Notify party	Consignee	Pre-carriage port	Pre-carriage vessel	Pre-carriage/Voy	Port of loading	Vessel	Voyage	Port of discharge	Second vessel	Second Vsl/Voy	Port of delivery	Mark	Package	Package unit	Description	Equipment No.
1	1	UNAK	Notify Party	Consignee 1				ISAEY	Iceland express	701	DEHAM				NM	500	PC	Icelandic Sheep	CAXU2213661

Figure 34 Print B/L

Input the B/L number in the blank field (Figure 34) and click the 'Search' button, the B/L will list out, the B/L will include all information inputted in booking, receiving and documentation.

Only a complement shipment can print B/L, a complement shipment must include mark, description, revenue, receiving, B/L in Booking, and B/L clause in Documentation. If miss any of the above information, the B/L can not be printed and also will not search out in Print B/L menu.

Click the Print B/L link can print out the B/L. Click the B/L no. can view the B/L information (Figure 35), or click the booking no. can view the booking information (Figure 21).

Booking	Receiving	Documentation	Equipment	Admin
B/L list	Add B/L	Print B/L	B/L report	

## View B/L

[Back to list](#)

B/LNo	1
Booking No	1
Shipper	UNAK
Notify party	Notify Party
Consignee	Consignee 1
Pre carriage port	
Pre carriage vessel	
Pre carriage Voy	
Port of loading	ISAEY
Vessel	Iceland express
Voyage	701
Port of discharge	DEHAM
Second vessel	
Second Vsl Voy	
Port of delivery	
Mark	N/M
Package	500
Package unit	PC
Description	Icelandic Sheep
Equipment No	CAXU2213668
Seal No	SN6666
Gross weight	9.100
Net weight	15
Measurement	9.100

one

Figure 35 View B/L

#### **4.4 B/L report**

Same with Booking and Receiving report, it can search and create B/L list report for a particular vessel or port. For example, to create a report of Bs/L list of all receiving on vessel Iceland express voyage 701.

Use Documentation -> B/L report menu (or click 'B/L search' in the main documentation list) can define the search criteria to create the report.

Next, use the dropdown list to choose vessel name 'Iceland express' in Vessel filed and input '701' in voyage field.

Then after click the 'Search' button, it will list all the Bs/L of vessel Iceland express v.701.

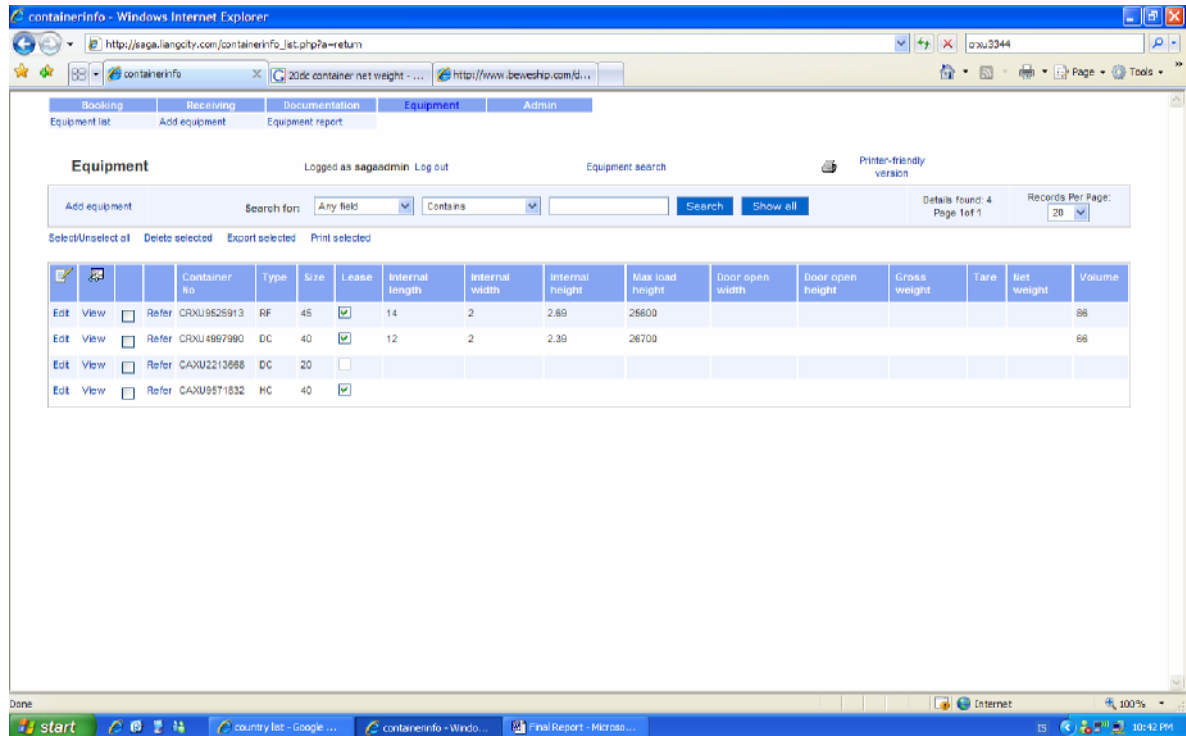
Still same with 'Booking report' and 'Receiving report', there is another one-click quick search to get the receiving report if only search one key word. For example, to search all the Bs/L list with shipper's name 'UNAK', input 'UNAK' in the blank field after 'Search for' menu then select 'Shipper' from the next dropdown list, click 'Search' button, it will list all Bs/L with shipper name 'UNAK'.

#### **5. Equipment**

Equipment menu uses for view equipment list, add equipment, search commodity and generate equipment report.

There are following attributes for equipment:

- Container No
- Type
- Size
- Lease
- Internal length
- Internal width
- Internal height
- Max load height
- Door open width
- Door open height
- Gross weight
- Tare
- Net weight
- Volume



**Figure 36 Equipment list**

Figure 36 show the equipment list. RF stand for refer container, if a container type is 'RF', it must input refer container information by click 'Refer' link associated with each container (Figure 37).

There are following attribute for a refer container:

- Temp

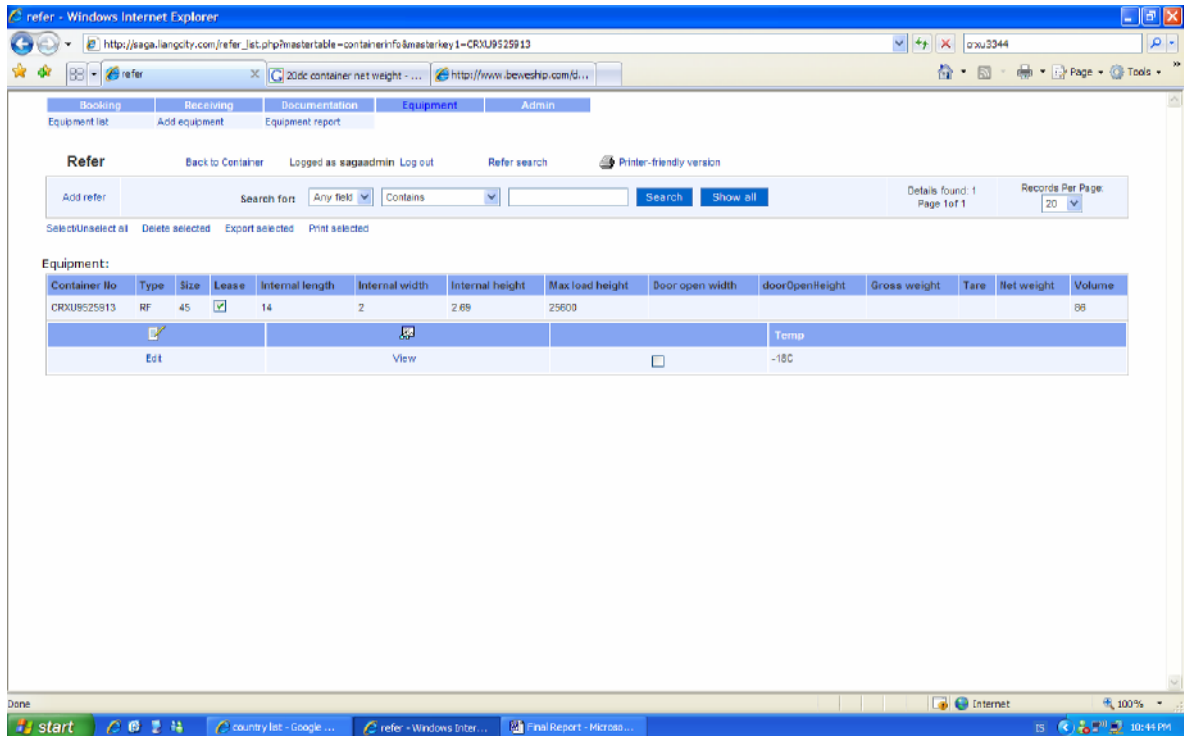


Figure 37 Refer container information

## 6. Admin

Admin menu use for manage commodity, customer, freight code, port, shipping clause, vessel, schedule and user.

There are eight sub level menus in Admin menu:

- Commodity
- Customer
- Freight code
- Port
- Shipping clause
- Vessel
- Schedule
- User

### 6.1 Commodity

Admin -> Commodity use for view commodity list, add commodity, search commodity and generate commodity report.

There are following attributes for commodity (Figure 38):

- Commodity ID
- Custom code
- Commodity

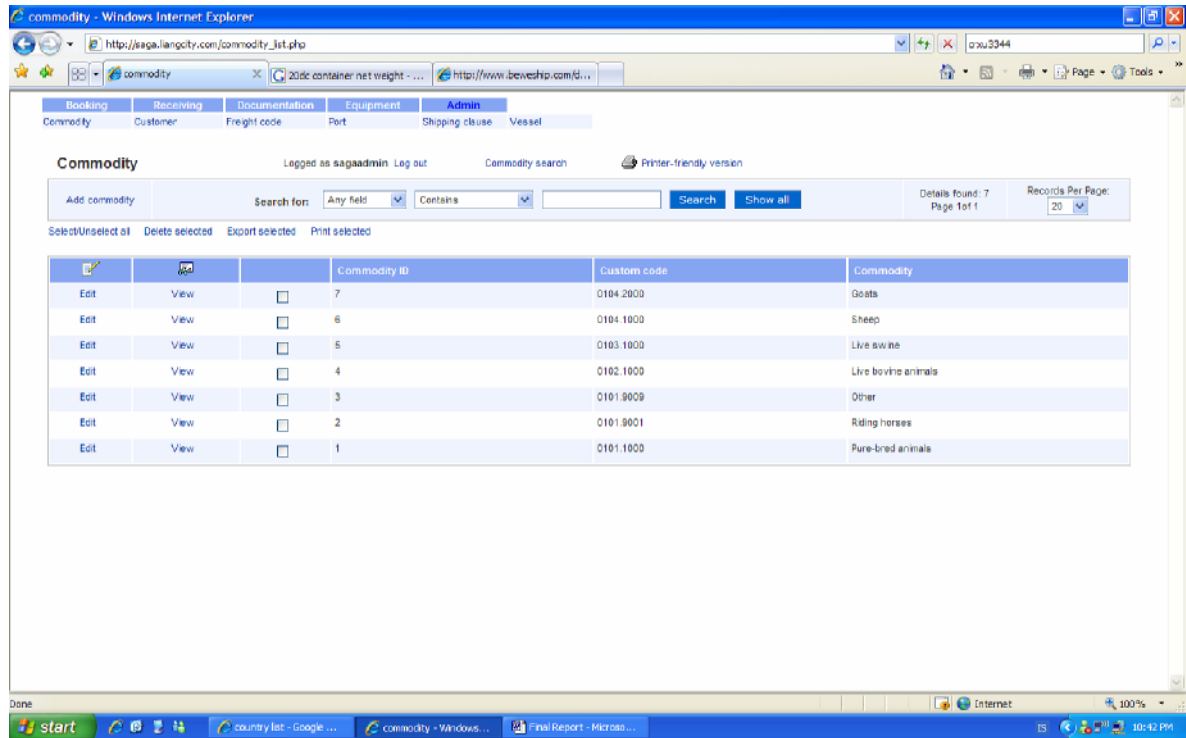


Figure 38 Commodity

## 6.2 Customer

Admin -> Customer use for view customer list, add customer, search customer and generate customer report.

There are following attributes for customer (Figure 39):

- Customer ID
- Name
- Address
- City
- Post code
- Country
- Phone
- Fax



- Email

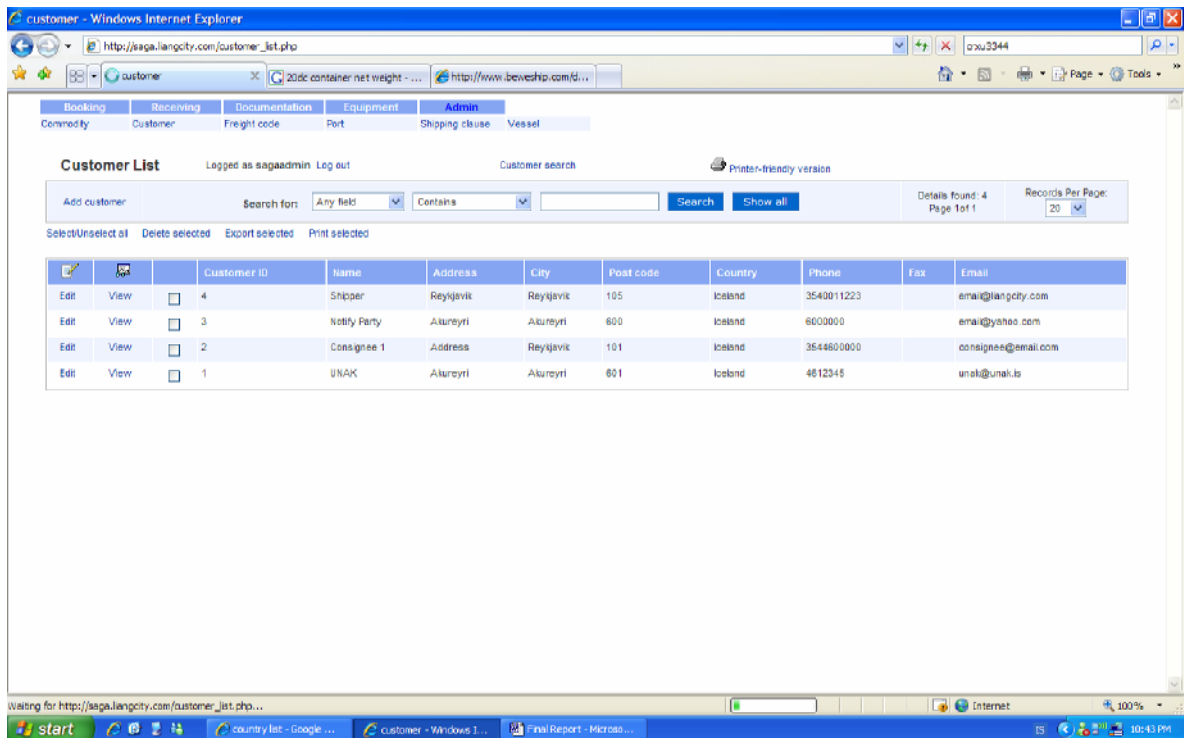


Figure 39 Customer

### 6.3 Freight code

Admin -> Freight code use for view freight code list, add freight code, search freight code and generate freight code report.

There are following attributes for freight code (Figure 40):

- Freight ID
- Freight code

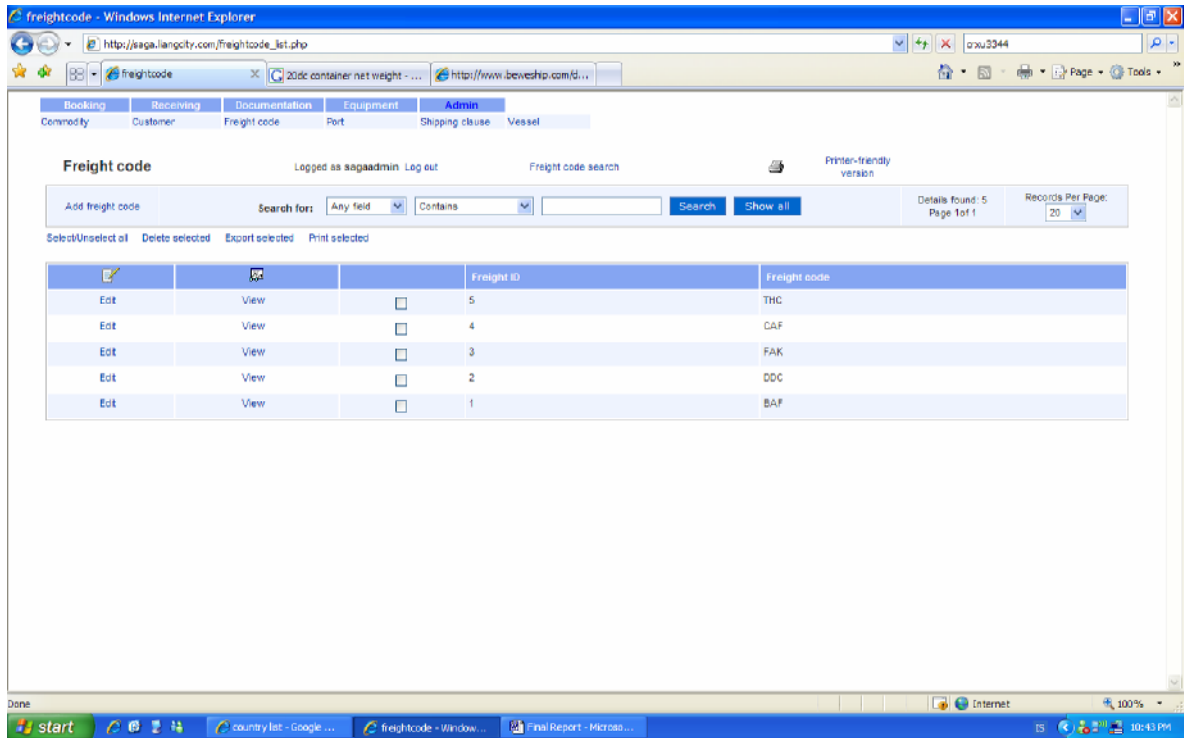


Figure 40 Freight code

## 6.4 Port

Admin -> Port use for view port list, add port, search port and generate port report.

There are following attributes for port (Figure 41):

- Port Id
- Port name
- City
- country

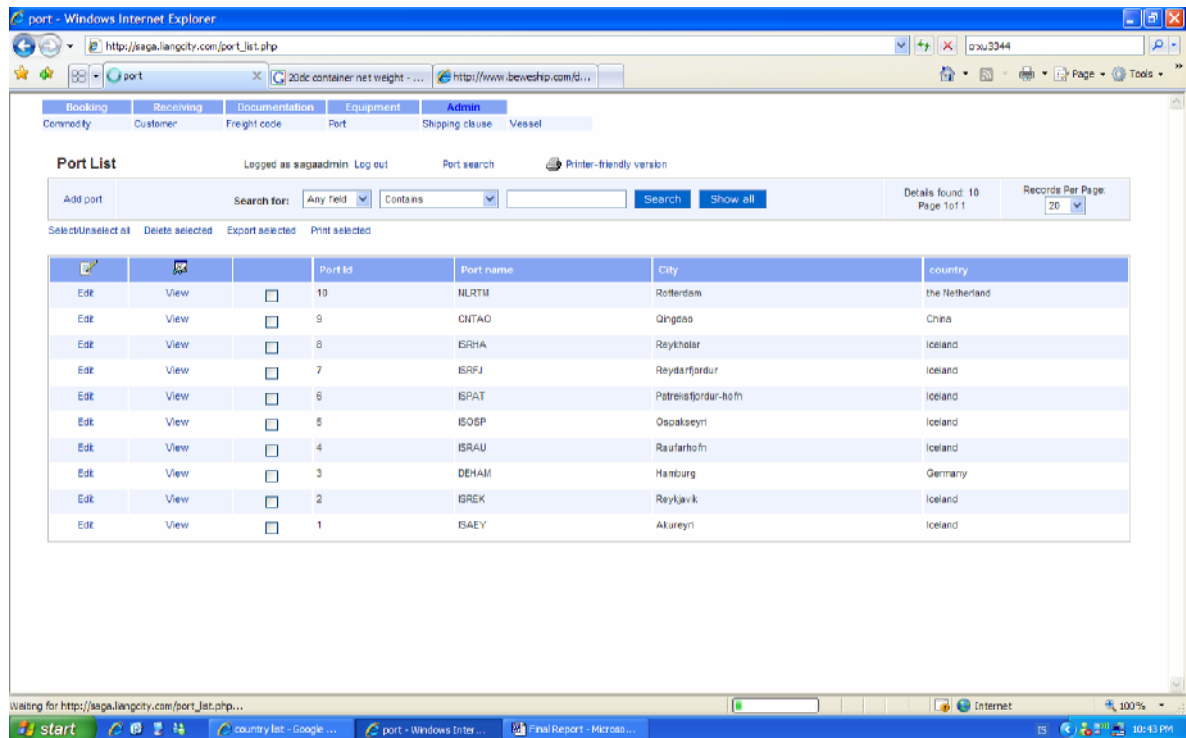


Figure 41 Port

## 6.5 Shipping clause

Admin -> Shipping clause use for view shipping clause list, add shipping clause, search shipping clause and generate shipping clause report.

There are following attributes for term (Figure 42):

- Term

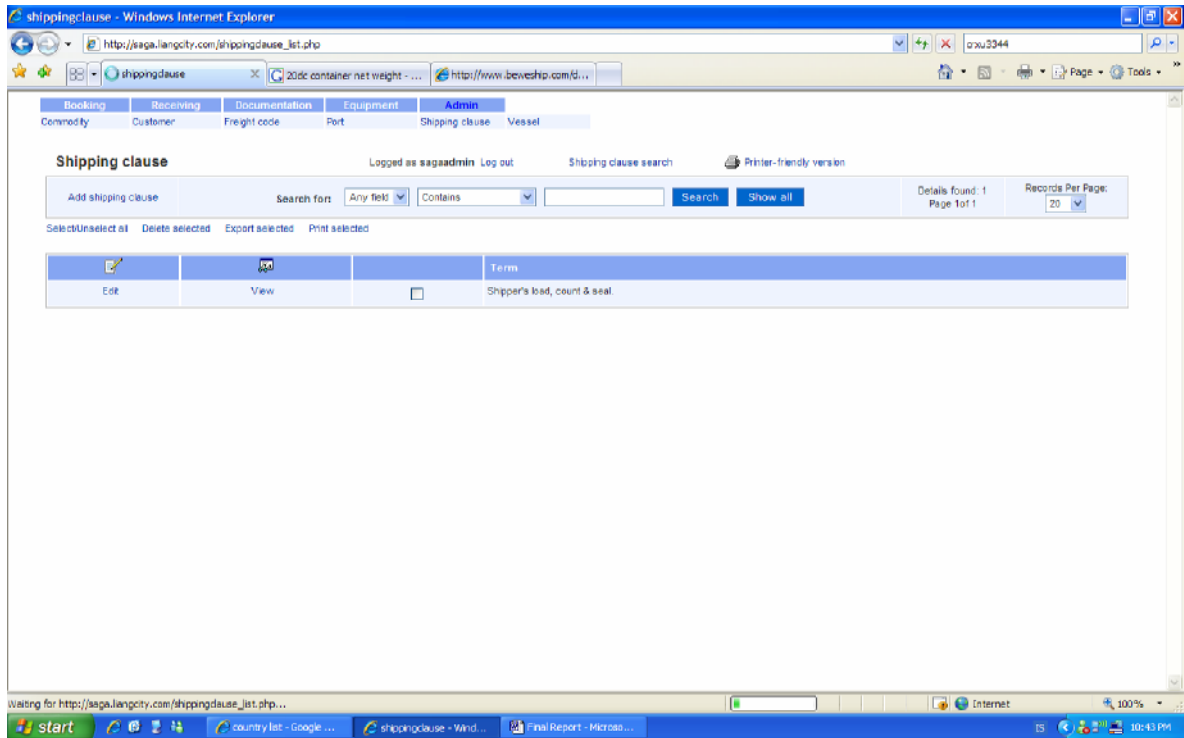


Figure 42 Shipping clause

## 6.6 Vessel

Admin -> Vessel use for view vessel list, add vessel, search vessel and generate vessel report.

There are following attributes for vessel (Figure 43):

- Vessel ID
- Vessel Name
- Flag

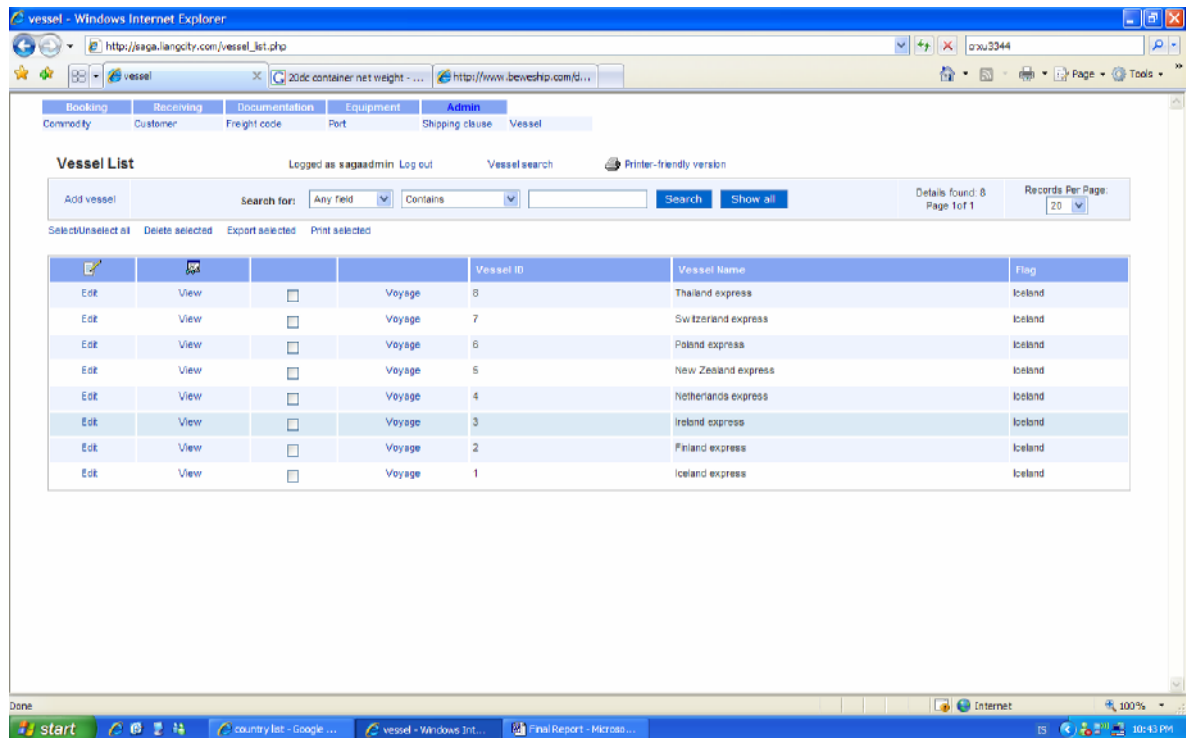


Figure 43 Vessel

## 6.7 Schedule

Admin -> Vessel use for view vessel voyage list, add vessel voyage, search vessel voyage and generate vessel voyage report.

There are following attributes for schedule (Figure 44):

- Voyage
- Port
- Arrive date
- Depart date

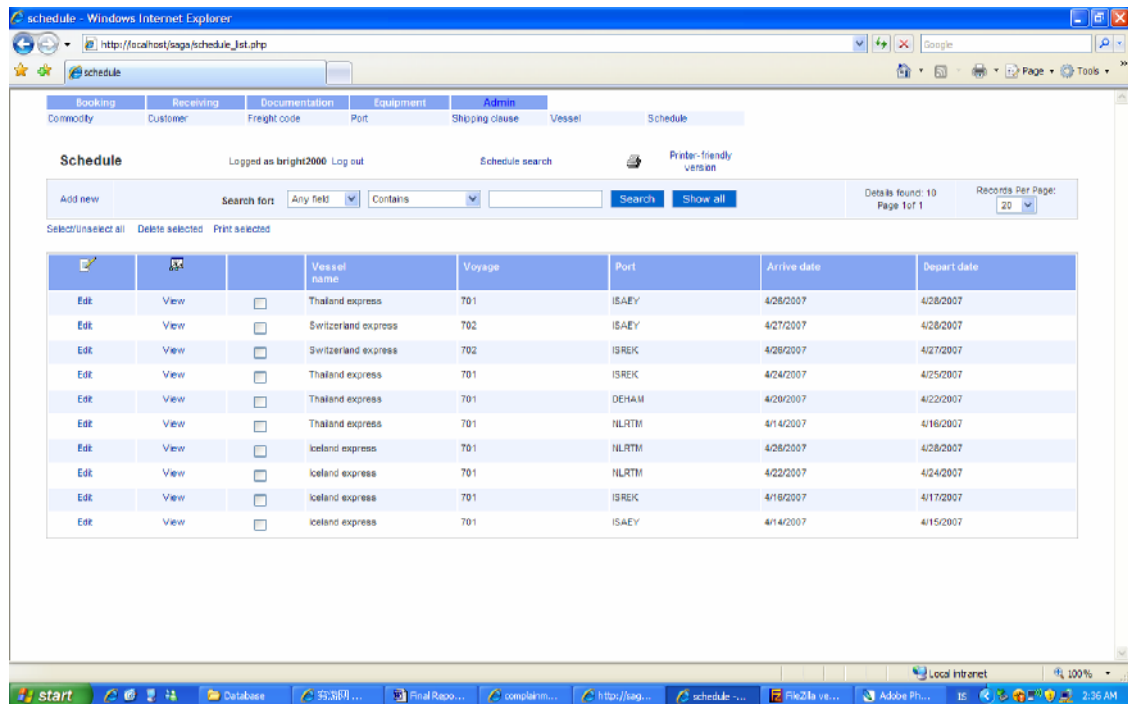


Figure 44 Schedule

## 6.8 Users

This function only for web site administrator, all other users can not use this function. This function can view user list, add user, search user, generate user report, change password or delete user. For security reason, there is not a direct link from Admin menu for this function.

There are four levers of user group:

1. Site administrator
2. Administrator
3. Super user
4. User

Site administrator has all privilege, include create user and manage user information. Administrator has privilege to access Admin menu except create user and manage user information. Super user has privilege to access Booking, Receiving, Documentation and Equipment menus, they can only view Admin menu but can not create or edit the information in Admin menus. User can access Booking, Receiving, Documentation and Equipment menus, user can only view the information, can not create, or edit information, and this is use for outside users which only need to retrieve shipping information.

For each of the user group, Table 1 is a list of user names and passwords to access the web site. For security reason, there is not site administrator user name and password listed.

User group	User name	Password	Privilege
Site administrator	-	-	All include manage users
Administrator	sagaadmin	unak2007	Access all menus
Super user	sagauser	iceland	Except Admin menu
User	user	akureyri	Only view information

**Table 1 User name and password to access the web site.**

## **V. Testing**

Before the system can be delivered, it must be thoroughly tested. System need to be tested to ensure that it satisfies the user requirements accurately and completely. Individual components are tested independently, and then are tested together as a sub-system and then the sub-systems are tested together as a whole system. Also can perform some form of acceptance testing before the system is finally accepted and complete.

### **1. Unit test**

There are five units in the system, which are booking, receiving, documentation, equipment and admin. I tested each of the unit by add equipment, commodity, customer, freight code, port, shipping clause, vessel, voyage, then make a booking, receiving, and documentation.

### **2. Sub-system test**

It need equipment, commodity, customer, freight code, port, shipping clause, vessel, voyage information when create a booking, receiving and documents, sub-system test are test if the sub-system can work together.

### **3. System test**

After sub-system test, I tested the whole system from make a booking request to make documents and relevant reports after cargo transported.

#### **4. Acceptance test**

Before release the web site, I also perform an acceptance test, to test if the system can work for really industry, I made more booking request, and created more complex report for make business plan, the system can meet the designed requirement.

#### **5. Complete system**

After performed the entire test, the system complete and will release on 14<sup>th</sup> May, 2007. The domain name is <http://saga.liangcity.com>.

### **VI. Future Development and Conclusions**

The development of the Internet increases and speeds up the demand of customers e-commerce services. This e-commerce web site can fully committed to capitalizing on the advantage of the Internet and wants to support and accompany its customers as they venture into the web. The web site more tightly integrates services into logistic processes. It make work easier for shipping line and their customers, and enabled shipping line to turn into leading providers of integrated logistics services. Customer get full range of logistics services via a single interface.

The web application use PHP, MySQL, and Apache to provide full range of logistic application.

In future, the web application can extend the online service with additional feature, such as, more kinds of search or statistic reports may created according to difference requirement, EDI function to transfer the shipment information cross platform, and more operation of equipments activity may be developed, then user can get more accuracy information when tracking the shipment.

The project conduct a detailed study of work processes of logistic system, the project use object-oriented methods to design the web site, by study business methods, gather user requirement, to perform a detailed investigation and study of a how computer science technology work for logistic business, then design and implementation of the system.

There are various reasons why e-commerce is important, customer demand a single central platform to meet the core competencies, it need decreasing the costs of operation, there are more innovations of information technology to make the application possible. [9]



The system modernise the business with new and already existing partners, to simplify internal processes by using information technologies more efficiently and decrease processing costs.

The web based application lead to lower process costs for customers. Faster service and 24X7 hours available systems provide high degree of availability.  
[10]

This open system standardising the operation processes, and improved market transparency, it connect people, technologies and work processes. It increasing the delivery of service speed, integrate supply chain and services and transparency.

This is the first time that I work individual on a specific project and I have definitely learned a lot from this project with the supervisor's advice and clarification.

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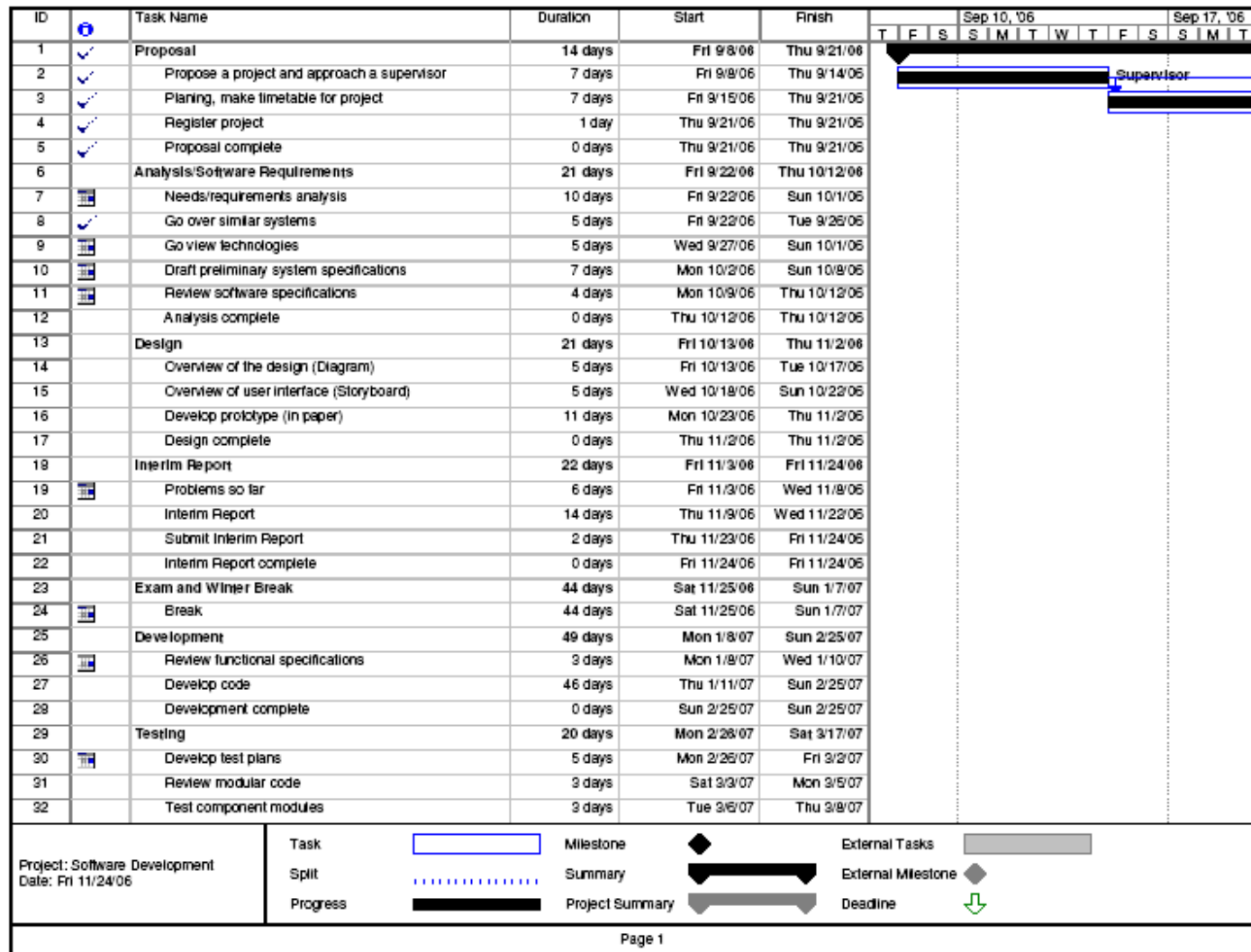
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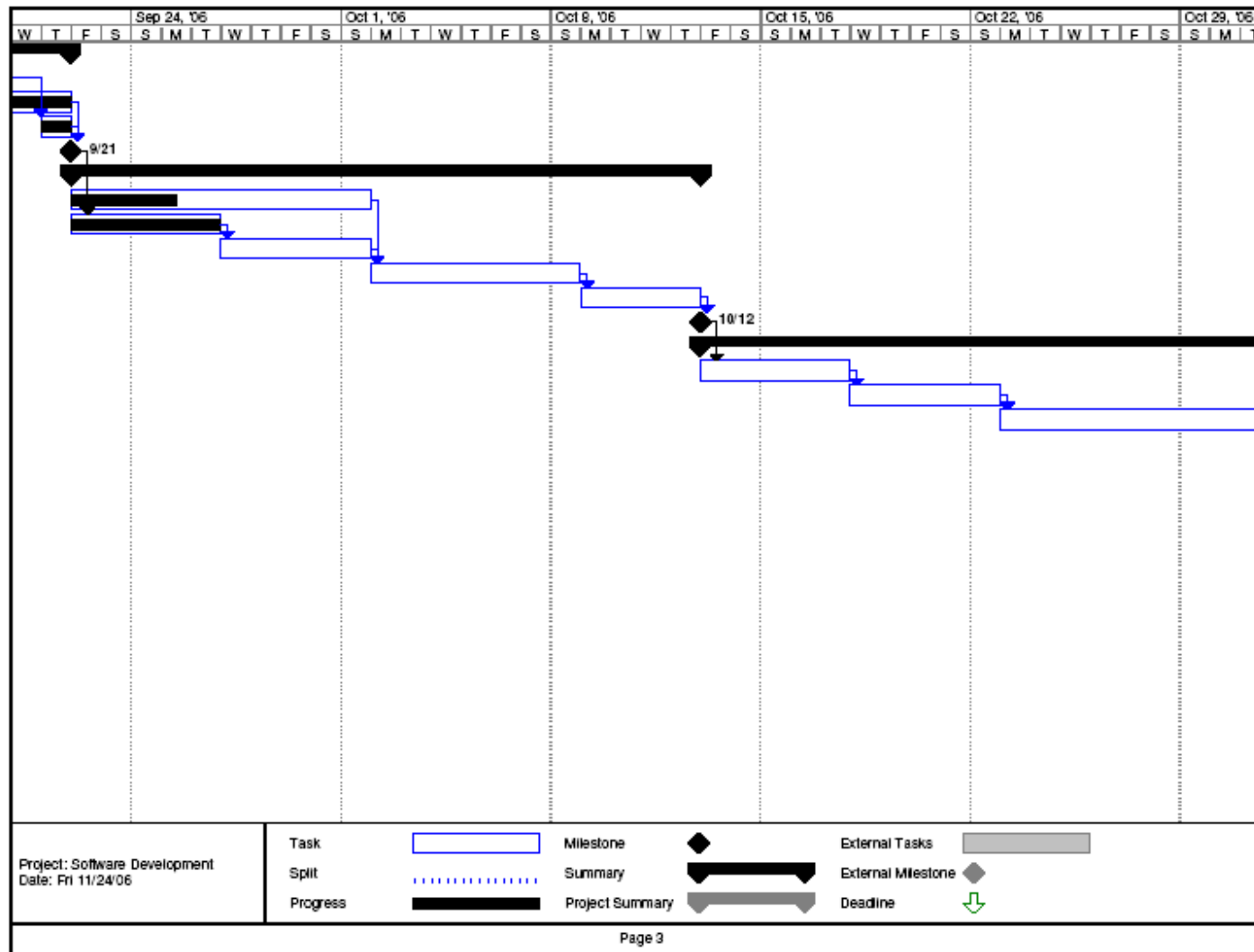
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## **Appendix A Project time plan**



ID		Task Name	Duration	Start	Finish	Sep 10, '06							Sep 17, '06			
						T	F	S	S	M	T	W	T	F	S	S
33		Modify code	4 days	Fri 3/9/07	Mon 3/12/07											
34		Re-test modified code	5 days	Tue 3/13/07	Sat 3/17/07											
35		Testing complete	0 days	Sat 3/17/07	Sat 3/17/07											
36		Presentation	7 days	Mon 3/5/07	Sun 3/11/07											
37		Presentation (date not confirm yet)	7 days	Mon 3/5/07	Sun 3/11/07											
39		Presentation complete	0 days	Sun 3/11/07	Sun 3/11/07											
39		Final System	12 days	Sun 3/18/07	Thu 3/29/07											
40		Final system	12 days	Sun 3/18/07	Thu 3/29/07											
41		Final system complete	0 days	Thu 3/29/07	Thu 3/29/07											
42		Final Report	14 days	Fri 3/30/07	Fri 4/13/07											
43		Final Report	14 days	Fri 3/30/07	Thu 4/12/07											
44		Submit final report	0 days	Fri 4/13/07	Fri 4/13/07											
45		Final report complete	0 days	Fri 4/13/07	Fri 4/13/07											
Project: Software Development Date: Fri 11/24/06		Task		Milestone		External Tasks										
		Split		Summary		External Milestone										
		Progress		Project Summary		Deadline										
Page 2																

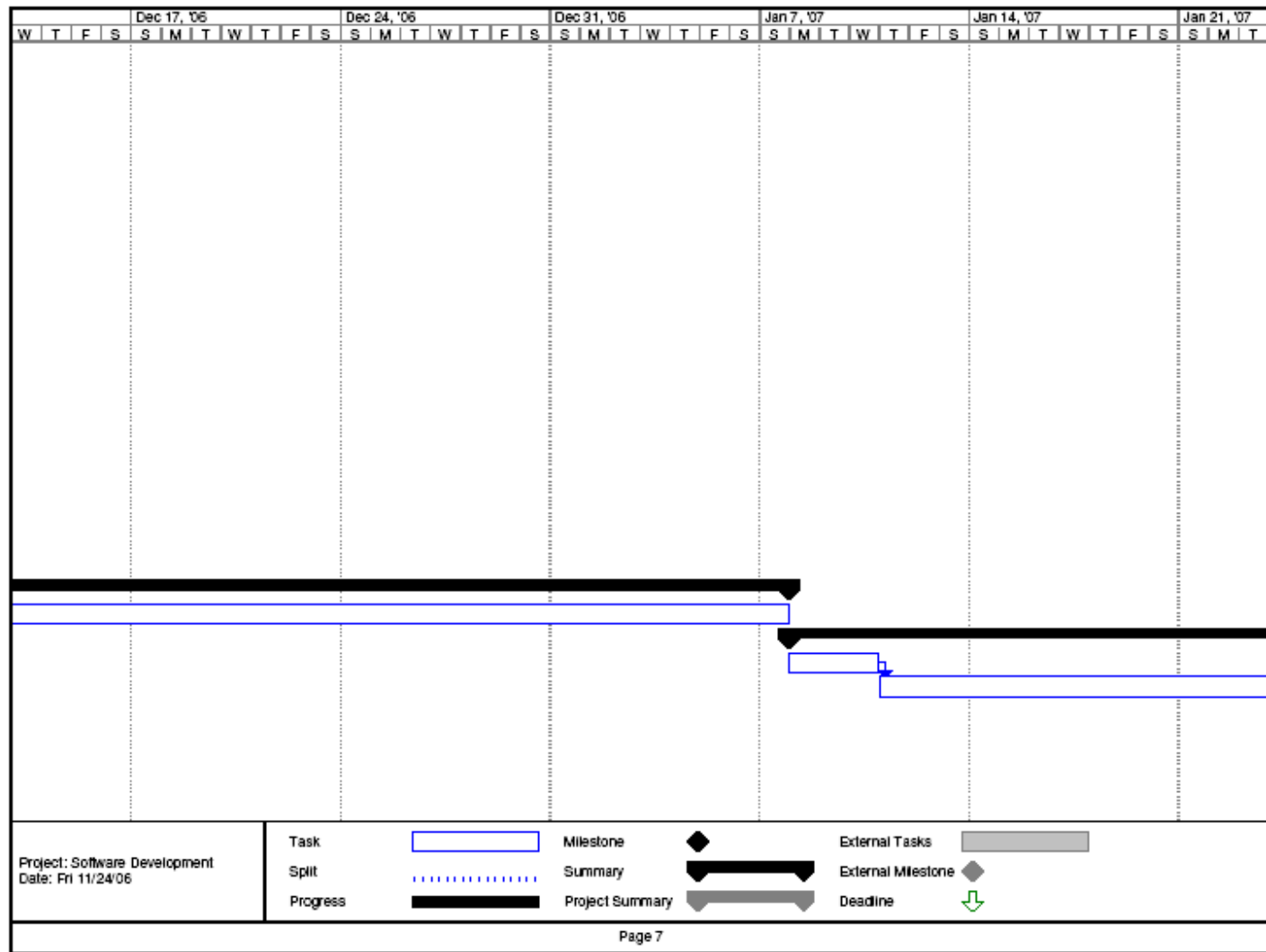


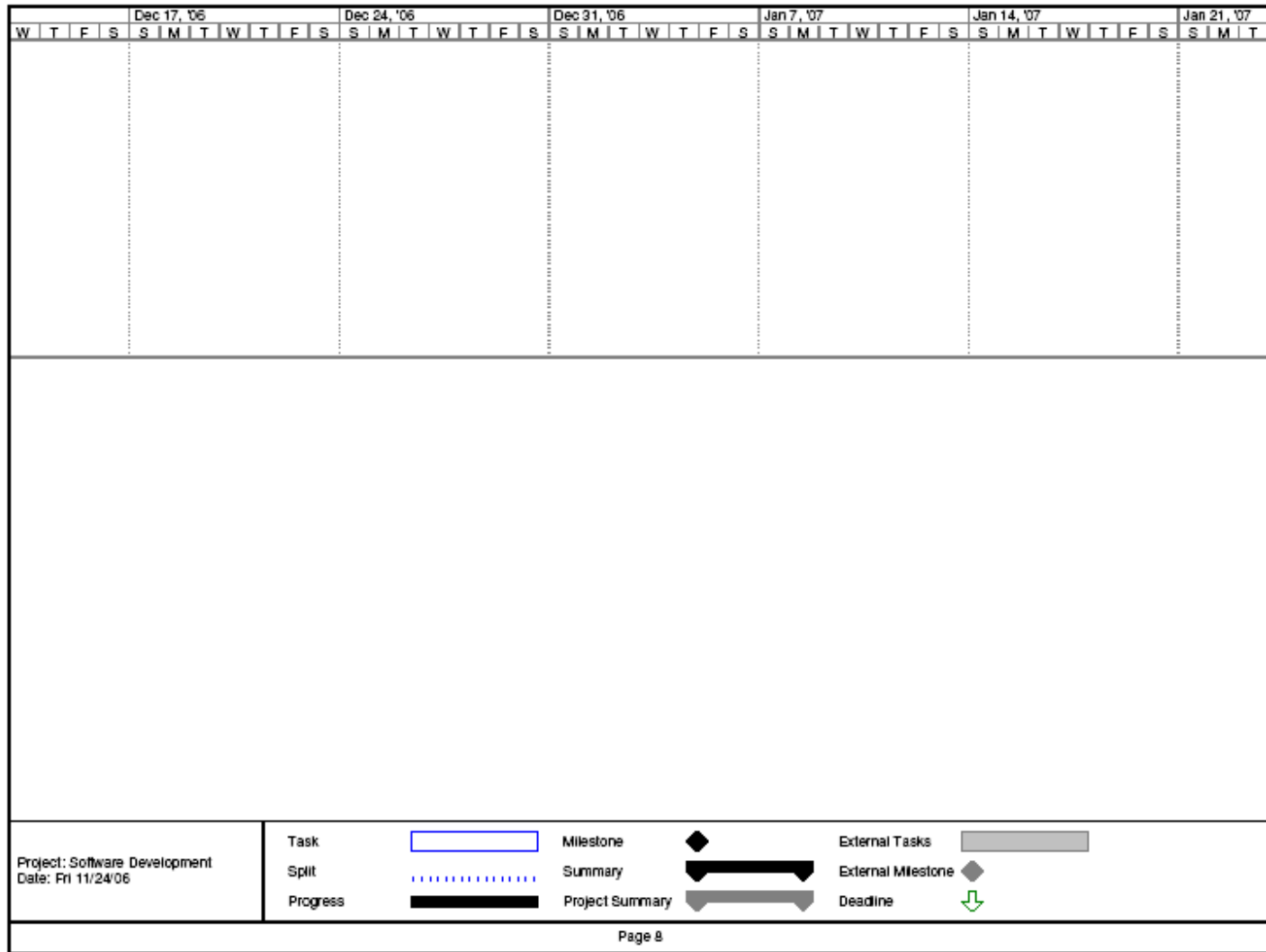


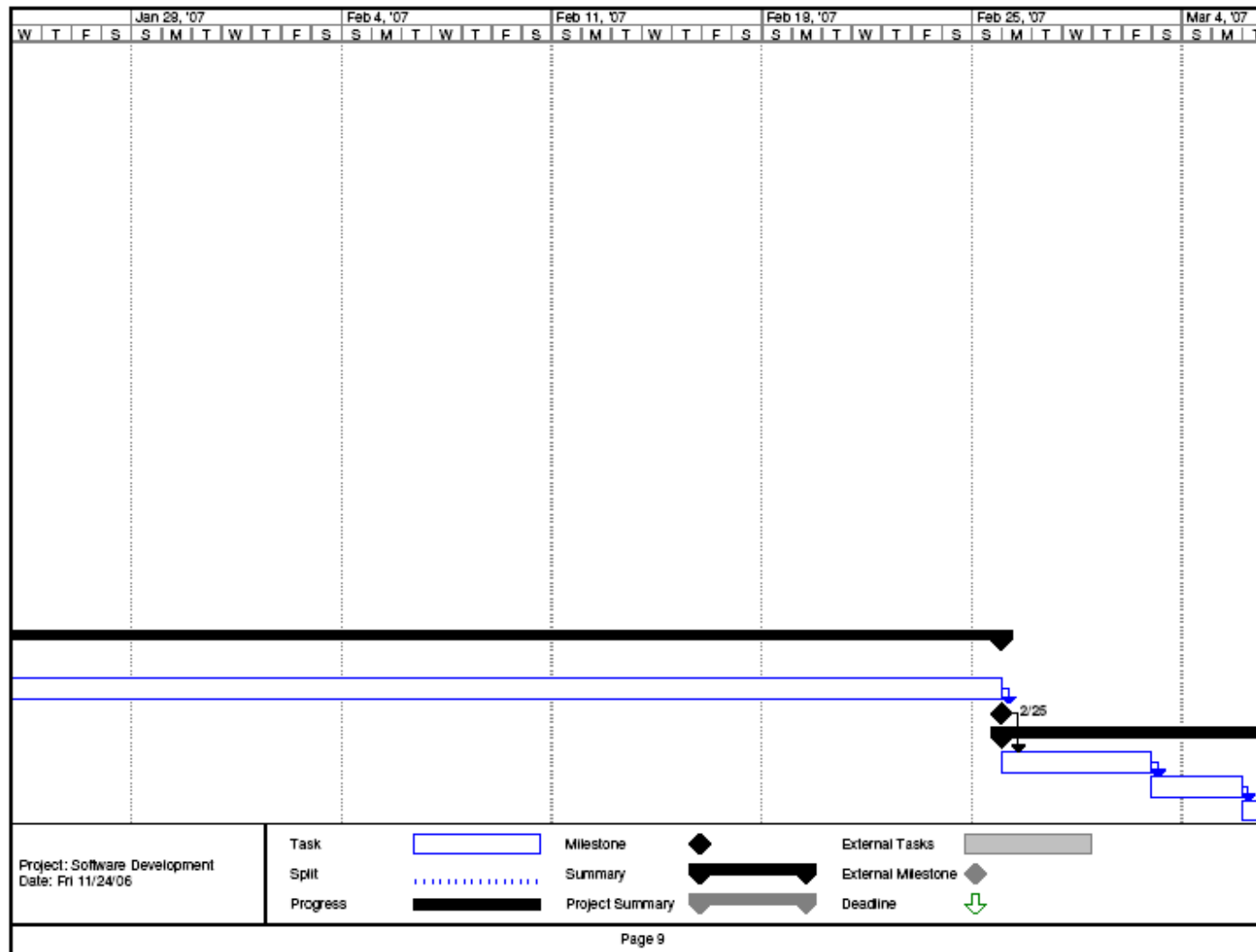


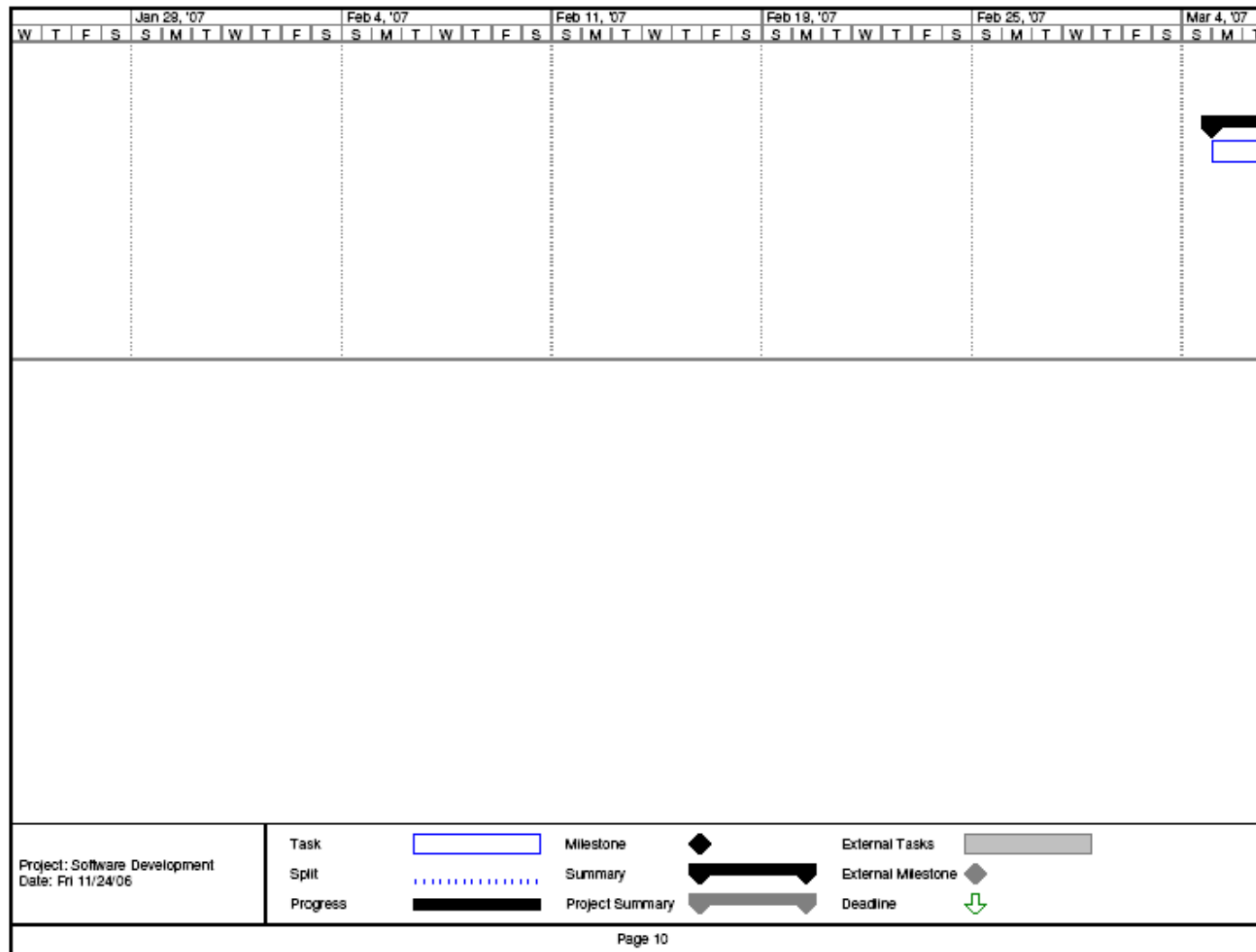


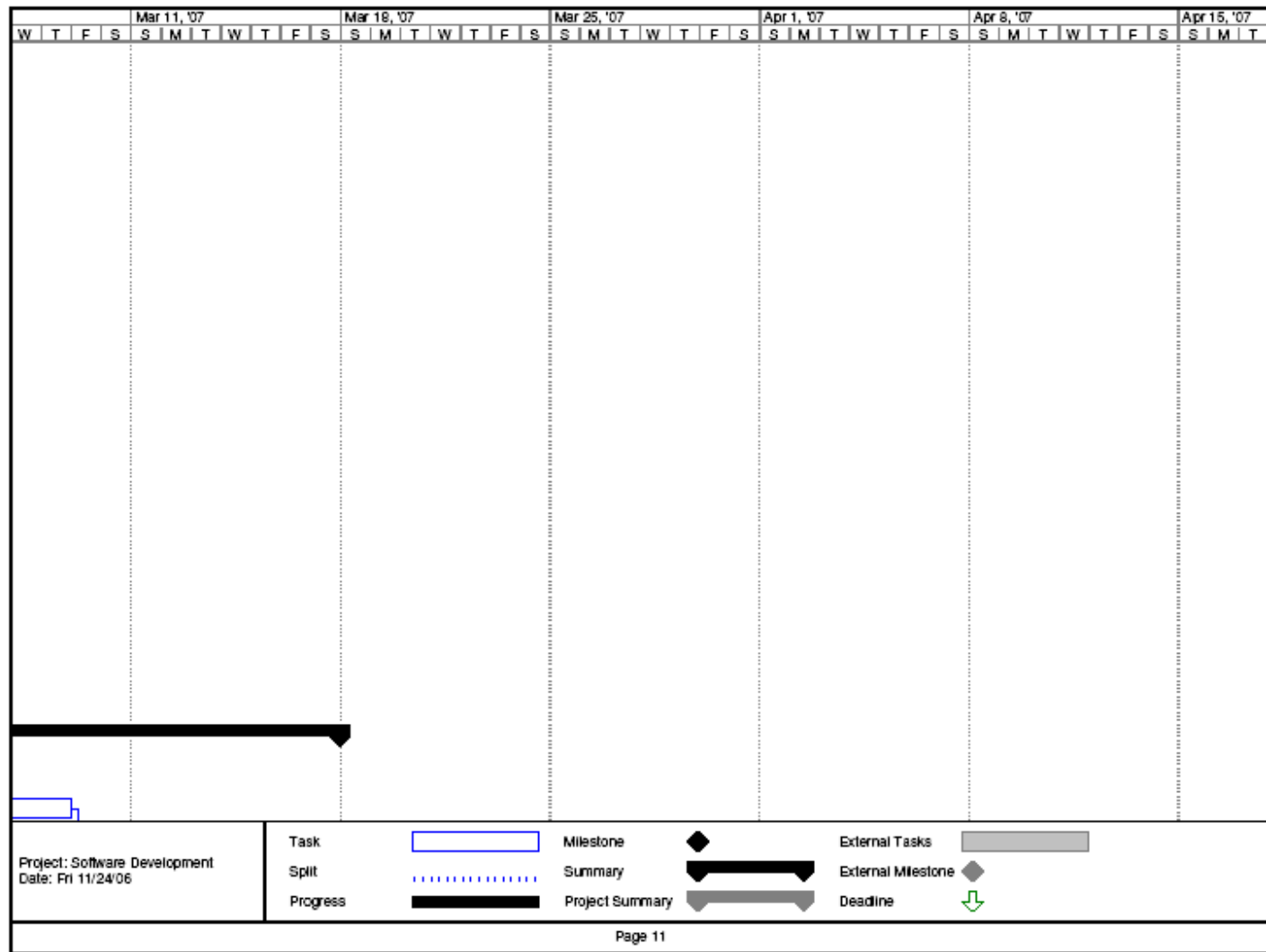


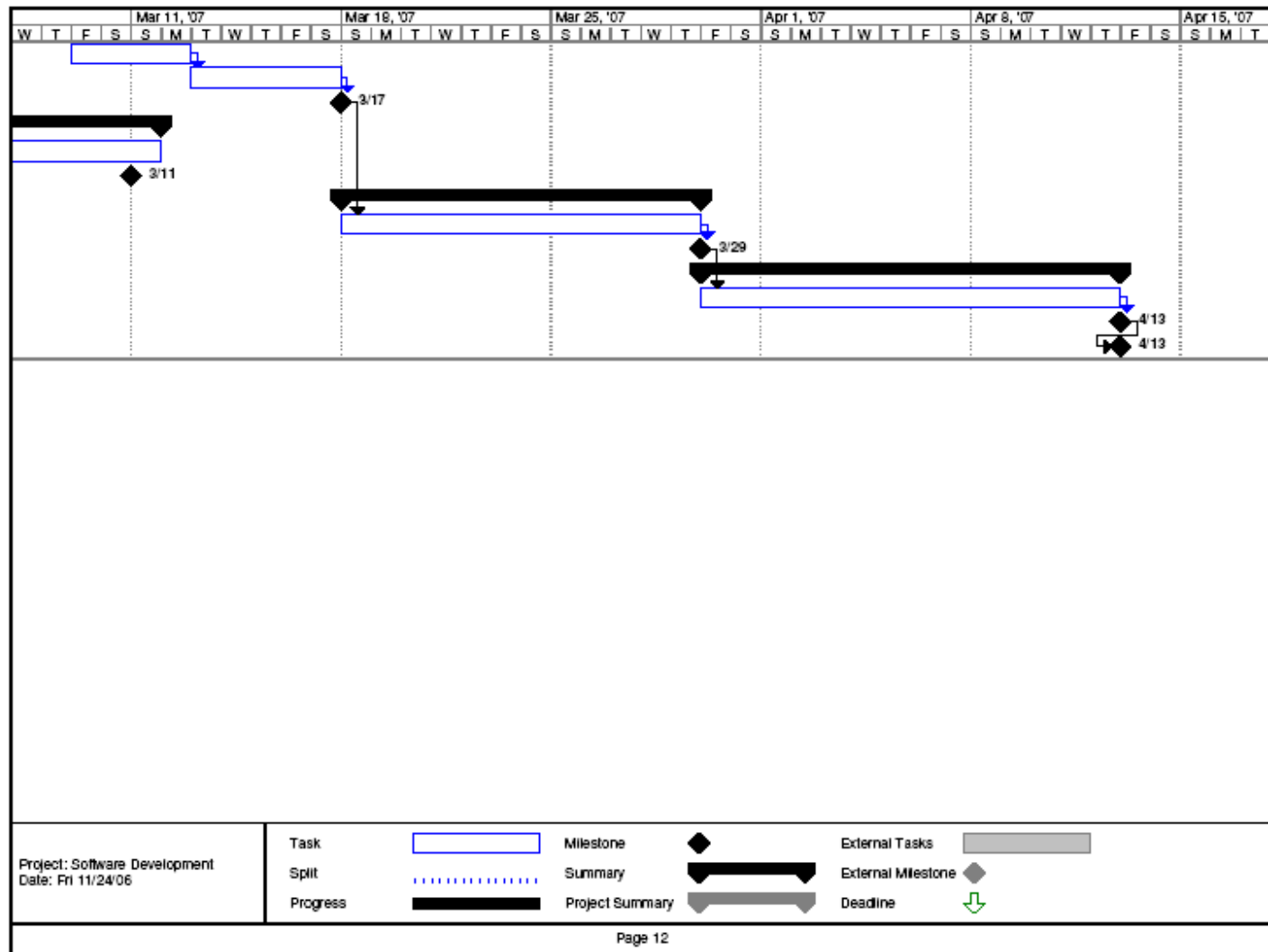






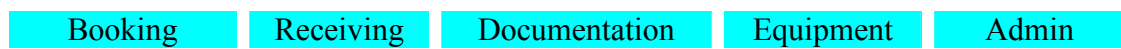






## Appendix B Storyboard

### Main Menu



Page 1 Main menu.

You may select the menu to link to different page.

Click Booking, link to page 2.

Click Receiving, link to page 9.

Click Documentation, link to page 12.

Click Equipment, link to page 17.




Click Admin, link to page 22.



## Review inquiry

[New booking](#) [Report](#)

**Search for:**

							<u>bookingNo</u>	<u>shipperID</u>	<u>ConsigneeID</u>	<u>notifyPartyId</u>	<u>preCarriagePo</u>
<a href="#">Edit</a>	<a href="#">View</a>	<input type="checkbox"/>	<a href="#">billofloading</a>	<a href="#">description</a>	<a href="#">receiving</a>	<a href="#">revenue</a>	bookingNo	shipperID	ConsigneeID	notifyPartyId	preCarriage

### Page 2 Booking - Review inquiry

Click New booking or Report to link to create new booking page, or report page.

By 'Search for' text field, user can input booking number or vessel name to search and review bookings.

User also can Edit, View, Delete the booking by the menu.

User must input description and revenue information by click Description and Revenue.

Click Bill of loading, Description, Receiving or Revenue can link to relevant pages of this booking.

Or user also can input bill of loading and receiving information by input booking number by the menu in Main menu page.

---

**Create new booking**      **(\* - Required field )**

shipperID	<div>shipperID</div> <div>*</div>
ConsigneeID	<div>ConsigneeID</div> <div>*</div>
notifyPartyId	<div>notifyPartyId</div> <div>*</div>
preCarriagePortID	<div>preCarriagePortID</div>
preCarriageVesselId	<div>preCarriageVesselId</div>
preCarriageVoyId	<div>preCarriageVoyId</div>
portofLoadingID	<div>portofLoadingID</div>
vesselId	<div>vesselId</div> <div>*</div>
voyageld	<div>voyageld</div> <div>*</div>
portofDischargeld	<div>portofDischargeld</div> <div>*</div>
secondVesselId	<div>secondVesselId</div>
secondVslVoyId	<div>secondVslVoyId</div>
portofDeliveryId	<div>portofDeliveryId</div>
Creator	<div>Creator</div>

Save





Reset

---

## Page 3 Booking – New booking

Create a new booking.

#### New description

						<u>bookingNo</u>	<u>commodityId</u>	<u>description</u>	<u>package</u>	<u>package</u>
<a href="#">Edit</a>	<a href="#">View</a>	<input type="checkbox"/>	<a href="#">dangerouscargo</a>	<a href="#">fumigationcargo</a>		bookingNo	commodityId	description	package	packa

#### Page 4 Booking – List Description

When make a new booking, user must also input the description information. By click Description in the Review inquiry in Booking.

Click New description to create a new description.

User also can Edit, View, Delete the description by the menu, each commodity need one description item, one booking may has more than one description.

User also needs input dangerous cargo information if commodity is dangerous cargo, and fumigation cargo if commodity need to be fumigate.

## New description

commodityId	commodityId	*
description	description	
package	package	*
packageUnit	packageUnit	
grossWeight	grossWeight	*
netWeight	netWeight	*
measurement	measurement	*

Save

Reset

Page 5 Booking – New description

Create a new description.

dangerouscargo

properShippingName	<input type="text" value="properShippingName"/>
IMDGCode	<input type="text" value="IMDGCode"/>
class	<input type="text" value="class"/>
UNnumber	<input type="text" value="UNnumber"/>
EmSNo	<input type="text" value="EmSNo"/>
packingGroup	<input type="text" value="packingGroup"/>
package	<input type="text" value="package"/>
packageUnit	<input type="text" value="packageUnit"/>
measurement	<input type="text" value="measurement"/>
weight	<input type="text" value="weight"/>
controlEmergencyTemp	<input type="text" value="controlEmergencyTemp"/>
flashpoint	<input type="text" value="flashpoint"/>
marinePollutant	<input type="text" value="marinePollutant"/>
MFAGNo	<input type="text" value="MFAGNo"/>
grossWeight	<input type="text" value="grossWeight"/>
netWeight	<input type="text" value="netWeight"/>

SAVE

## Page 6 Booking – Dangerous cargo

Create a new dangerous cargo.

## fumigationcargo

description	description
<div>Save</div> <div>Reset</div>	

Page 7 Booking – Fumigation cargo

Create a new fumigations cargo.

# Report




Summary booking	<ul style="list-style-type: none"><li>• All</li><li>• Container</li><li>• Non-container</li></ul>	Vessel name	Voyage	POL	POD	<u>Search</u>
Vessel revenue summary		Vessel name	Voyage	POL	POD	Search

## Page 8 Booking – Report

By input Vessel name, voyage, POL (port of loading) and/or POD (port of destination), user can get summary booking report by a dropdown list menu to choose All cargo, Container cargo or Non-container cargo.

Same for Vessel revenue summary report.

## Receiving

<a href="#">New receiving</a>	<a href="#">Report</a>	<b>Search for:</b>	<input type="text" value="Any field"/>	<input type="text" value="Contains"/>	<input type="text"/>	<input type="button" value="Search"/>
			<u>bookingNo</u>	<u>equipmentNo</u>	<u>sealNo</u>	
<a href="#">Edit</a>	<a href="#">View</a>	<input type="checkbox"/>	bookingNo	equipmentNo	sealNo	

### Page 9 – Receiving

Click New receiving or Report to link to create new receiving or report page.

By 'Search for' text field, user can input booking number or vessel name to search and review receiving.

User also can Edit, View, Delete the receiving by the menu.



## New receiving

bookingNo	bookingNo *
equipmentNo	equipmentNo
sealNo	sealNo

Save

Reset

|

---

\* - Required field

Page 10 Receiving – New receiving

Create a new receiving.

# Report


Loading list	All / Container / Non- container	Vessel name	Voyage	POL	POD	<u>Search</u>
Reefer loading list		Vessel name	Voyage	POL	POD	Search
Dangerous cargo manifest		Vessel name	Voyage	POL	POD	Search
Fumigation cargo		Vessel name	Voyage	POL	POD	Search
Vessel revenue summary		Vessel name	Voyage	POL	POD	Search
Booking not received		Vessel name	Voyage	POL	POD	Search

## Page 11 Receiving – Report

Same with booking report. By input Vessel name, voyage, POL (port of loading) and/or POD (port of destination), user can get loading list report by a dropdown list menu to choose All cargo, Container cargo or Non-container cargo.




Same for all other report.

## Bill of Loading

 Print Bill of Loading

<a href="#">New</a> bill of loading	Report	Search for:	Any field	Contains		Search
-------------------------------------	--------	-------------	-----------	----------	--	--------

					<u>BLNo</u>	<u>bookingNo</u>	<u>BLIssueDate</u>	<u>placeofIssue</u>	<u>noOBL</u>	<u>noCopyBL</u>
<a href="#">Edit</a>	<a href="#">View</a>	<input type="checkbox"/>	<a href="#">blclause</a>	<a href="#">mark</a>	BLNo	bookingNo	BLIssueDate	placeofIssue	noOBL	noCopyBL

## Page 12 Documentation

Click New bill or loading or Report to link to create new bill of loading or report page.

By 'Search for' text field, user can input booking number or vessel name to search and review bill of loading.

User also can Edit, View, Delete the bill of loading by the menu.

User can print Bill of loading by click Print Bill of Loading.

User can click Blclause and Mark to add clause and marks.

## New Bill of Loading

BLNo	<input type="text" value="BLNo"/>
	*
bookingNo	<input type="text" value="bookingNo"/>
	*
BLIssueDate	<input type="text" value="BLIssueDate"/>
	*
placeofissue	<input type="text" value="placeofissue"/>
noOBL	<input type="text" value="noOBL"/>
	*
noCopyBL	<input type="text" value="noCopyBL"/>
	*

---

\* - Required field

### Page 13 Documentation – New Bill of Loading

Create New bill or loading.

# New blclause, Add new record

|

clauseld

clauseld

Save

Reset

---

\* - Required field

Create New clause for bill or loading.

## New Mark

mark	mark
<div>Save Reset</div>	

Page 15 Documentation – New Mark

Create New mark for bill or loading.

# Report

Manifest	Cargo manifest	Vessel name	Voyage	POL	POD	<u>Search</u>
	Dangerous cargo manifest					
	Discharge list					
	Manifest corrections Manifest corrections report					
Invoice	B/L no.	Vessel name	Voyage	POL	POD	Search
Notice of arrival	B/L no.	Vessel name	Voyage	POL	POD	Search
Vessel Revenue summary		Vessel name	Voyage	POL	POD	Search
Vessel / Voyage list		Vessel name	Voyage	POL	POD	Search

## Page 16 Documentation – Report

Same with booking report. By input Vessel name, B/L number, voyage, POL (port of loading) and/or POD (port of destination), and by the dropdown menu list, user can get manifest.

Same for all other report.

## Equipment

Equipment tracking	Order service	Maintenance and repair	Report
--------------------	---------------	------------------------	--------

Page 17 Equipment

Equipment menu.



# Equipment - Equipment tracking

Equipment number:      (equipment number)      Search

Page 18 Equipment – Equipment tracking

Input the equipment number, can get the status of the equipment.

## Equipment - Order service

Import/Export	Quantity	Size	Type	Order
---------------	----------	------	------	-------

Page 19 Equipment – Equipment order

Choose to import or export equipment, input quantity, size, type to order the equipments.

## Equipment - Order service

Equipment no.	Size	Type	Details	Submit
---------------	------	------	---------	--------

Page 20 Equipment – Maintenance and repair

Input equipment number, size, type and detail reason to maintenance and repair the equipment.

# Equipment - Report

Port name                      (name of port)                      Submit

Page 21 Equipment – Report

Input port name can get a equipment list for this port.

## Admin

Party maintenance

Voyage master

Commodity

Equipment

Page 22 Admin




Admin menu.

Administrator can maintenance the date by this menu.

## customer

<a href="#">New Customer</a>	<b>Search for:</b>	Any field	Contains	<input type="text"/>	Search
------------------------------	--------------------	-----------	----------	----------------------	--------

			<u>name</u>	<u>customerAdd</u>	<u>city</u>	<u>postcode</u>	<u>country</u>	<u>phone</u>	<u>fax</u>	<u>email</u>
<a href="#">Edit</a>	<a href="#">View</a>	<input type="checkbox"/>	name	customerAdd	city	postcode	country	phone	fax	email

## Page 23 Admin – Party maintenance

List of customers.

Click New customer link to create new customer page.

By 'Search for' text field, user can input customer name to search and review customer information.

User also can Edit, View, Delete the customer by the menu.

## New customer




name	<input type="text" value="name"/>
customerAdd	<input type="text" value="customerAdd"/>
city	<input type="text" value="city"/>
postcode	<input type="text" value="postcode"/> *
country	<input type="text" value="country"/>
phone	<input type="text" value="phone"/> *
fax	<input type="text" value="fax"/>
email	<input type="text" value="email"/>

### Page 24 Admin – New customer

Add a new customer, the customer can be use for shipper or consignee or notify party.

## schedule

<a href="#">New</a> schdule	<b>Search for:</b>	Any field	Contains		Search	Show all
-----------------------------	--------------------	-----------	----------	--	--------	----------

			<u>vesselID</u>	<u>voyageID</u>	<u>portId</u>	<u>arriveDate</u>	<u>departDate</u>
<a href="#">Edit</a>	<a href="#">View</a>	<input type="checkbox"/>	vesselID	voyageID	portId	arriveDate	departDate

## Page 25 Admin – Voyage master

Manage vessel / voyage and sailing information.

Click New schedule link to create new schedule page.

By ‘Search for’ text field, user can input vessel name to search and review sailing information.

User also can Edit, View, Delete the schedule by the menu.



## New schedule|

vesselID	<input type="text" value="vesselID"/>
	*
voyageID	<input type="text" value="voyageID"/>
	*
portID	<input type="text" value="portID"/>
	*
arriveDate	<input type="text" value="arriveDate"/>
departDate	<input type="text" value="departDate"/>




Page 26 Admin – New schedule

Add a new schedule for vessel.

**commodity**

<a href="#">New commodity</a>	<b>Search for:</b>	Any field	Contains	<input type="text"/>	<input type="button" value="Search"/>	<input type="button" value="Show all"/>
-------------------------------	--------------------	-----------	----------	----------------------	---------------------------------------	---

			<u>customCode</u>	<u>commodity</u>
<a href="#">Edit</a>	<a href="#">View</a>	<input type="checkbox"/>	customCode	commodity

## Page 27 Admin – Commodity

Manage commodity information.

Click New commodity link to create new commodity page.

By ‘Search for’ text field, user can input commodity name to search and review commodity information.

User also can Edit, View, Delete the commodity by the menu.

## New commodity




customCode	<input type="text" value="customCode"/>
commodity	<input type="text" value="commodity"/>

Page 28 Admin – New commodity

Add a new commodity.

#### containerinfo

<a href="#">New container</a>	<b>Search for:</b>	Any field	Contains		Search	Show all
-------------------------------	--------------------	-----------	----------	--	--------	----------

				<u>containerNo</u>	<u>type</u>	<u>size</u>	<u>lease</u>	<u>internalLength</u>	<u>InternalWidth</u>	<u>internalHeight</u>
<a href="#">Edit</a>	<a href="#">View</a>	<input type="checkbox"/>	<a href="#">refer</a>	containerNo	type	size	lease	internalLength	InternalWidth	internalHeigh

#### Page 29 Admin – Equipment

Manage equipment information.

Click New equipment link to create equipment page.

By 'Search for' text field, user can input container number to search and review container information.

User also can Edit, View, Delete the container information by the menu.

New containerinfo

containerNo	<input type="text" value="containerNo"/>
type	<input type="text" value="type"/>
size	<input type="text" value="size"/>
lease	<input type="text" value="lease"/>
internalLength	<input type="text" value="internalLength"/>
InternalWidth	<input type="text" value="InternalWidth"/>
internalHeight	<input type="text" value="internalHeight"/>
maxLoadheight	<input type="text" value="maxLoadheight"/>
doorOpenWidth	<input type="text" value="doorOpenWidth"/>
doorOpenHeight	<input type="text" value="doorOpenHeight"/>
grossWeight	<input type="text" value="grossWeight"/>
Tare	<input type="text" value="Tare"/>
net	<input type="text" value="net"/>
volume	<input type="text" value="volume"/>

Add new equipment information.

== END ==

## Appendix C SQL script to create the database

### 1. *Sagacreatedb.sql*

```
/*
Created          13/04/2007
Project          LOK0183 Final Year Project
Author          Liang Sun
Database ver     MySQL 4
Database name    saga`
*/
```

-----

```
--
-- create database `saga`
--
```

Create database saga;

### 2. *Sagacreatetable.sql*

```
/*
Created          27/01/2007
Project          LOK0183 Final Year Project
Author          Liang Sun
Database ver     MySQL 4
Database name    saga`
*/
```

-----

```
--
-- Table structure for table `billofloading`
--
```

```
CREATE TABLE `billofloading` (
  `BLNo` int(11) NOT NULL auto_increment,
  `bookingNo` int(11) NOT NULL,
  `BLIssueDate` date NOT NULL,
  `placeofIssue` char(5) NOT NULL,
  `noOBL` int(11) NOT NULL,
  `noCopyBL` int(11) NOT NULL,
  PRIMARY KEY (`BLNo`,`bookingNo`),
  UNIQUE KEY `BLNo` (`BLNo`)
) ENGINE=MyISAM ;
```

```

-----

--
-- Table structure for table `blclause`
--

```

```

CREATE TABLE `blclause` (
  `id` int(11) NOT NULL auto_increment,
  `BLNo` int(11) NOT NULL,
  `clauseId` int(11) NOT NULL,
  PRIMARY KEY (`id`,`BLNo`,`clauseId`)
) ENGINE=MyISAM;

```

```

-----

--
-- Table structure for table `booking`
--

```

```

CREATE TABLE `booking` (
  `bookingNo` int(11) NOT NULL auto_increment,
  `shipperID` int(11) NOT NULL,
  `ConsigneeID` int(11) NOT NULL,
  `notifyPartyId` int(11) NOT NULL,
  `preCarriagePortID` int(11) default NULL,
  `preCarriageVesselId` int(11) default NULL,
  `preCarriageVoyId` char(20) default NULL,
  `portofLoadingID` char(5) NOT NULL,
  `vesselId` int(11) NOT NULL,
  `voyageId` int(11) NOT NULL,
  `portofDischargeId` int(11) NOT NULL,
  `secondVesselId` int(11) default NULL,
  `secondVslVoyId` int(11) default NULL,
  `portofDeliveryId` int(11) default NULL,
  `Cancel` tinyint(1) default NULL,
  PRIMARY KEY (`bookingNo`),
  UNIQUE KEY `bookingNo` (`bookingNo`)
) ENGINE=MyISAM;

```

```

-----

--
-- Table structure for table `commodity`
--

```

```

CREATE TABLE `commodity` (
  `commodityId` int(11) NOT NULL auto_increment,

```

```

`customCode` char(20) NOT NULL,
`commodity` char(20) NOT NULL,
PRIMARY KEY (`commodityId`),
UNIQUE KEY `commodityId` (`commodityId`),
UNIQUE KEY `customCode` (`customCode`),
UNIQUE KEY `commodity` (`commodity`)
) ENGINE=MyISAM;

```

```

-----

```

```

--
-- Table structure for table `containerinfo`
--

```

```

CREATE TABLE `containerinfo` (
  `containerNo` char(11) NOT NULL,
  `type` char(20) NOT NULL,
  `size` char(20) NOT NULL,
  `lease` tinyint(1) NOT NULL,
  `internalLength` int(11) default NULL,
  `InternalWidth` int(11) default NULL,
  `internalHeight` char(20) default NULL,
  `maxLoadheight` int(11) default NULL,
  `doorOpenWidth` int(11) default NULL,
  `doorOpenHeight` int(11) default NULL,
  `grossWeight` int(11) default NULL,
  `Tare` int(11) default NULL,
  `net` int(11) default NULL,
  `volume` int(11) default NULL,
  PRIMARY KEY (`containerNo`)
) ENGINE=MyISAM;

```

```

-----

```

```

--
-- Table structure for table `customer`
--

```

```

CREATE TABLE `customer` (
  `customerId` int(11) NOT NULL auto_increment,
  `name` char(20) NOT NULL,
  `customerAdd` char(20) NOT NULL,
  `city` char(20) NOT NULL,
  `postcode` int(11) NOT NULL,
  `country` char(20) NOT NULL,
  `phone` char(20) NOT NULL,
  `fax` int(11) default NULL,
  `email` char(20) default NULL,
  PRIMARY KEY (`customerId`),

```



```

    UNIQUE KEY `customerId` (`customerId`),
    UNIQUE KEY `name` (`name`)
) ENGINE=MyISAM ;

```

```

-----

```

```

--
-- Table structure for table `dangerouscargo`
--

```

```

CREATE TABLE `dangerouscargo` (
  `dangerouscargoId` int(11) NOT NULL auto_increment,
  `properShippingName` char(50) NOT NULL,
  `IMDGCode` char(20) NOT NULL,
  `class` char(20) NOT NULL,
  `UNnumber` int(11) NOT NULL,
  `EmSNo` int(11) NOT NULL,
  `packingGroup` char(20) NOT NULL,
  `package` int(11) NOT NULL,
  `packageUnit` char(20) NOT NULL,
  `measurement` double(5,4) NOT NULL,
  `weight` double(5,4) NOT NULL,
  `controlEmergencyTemp` double(3,3) NOT NULL,
  `flashpoint` double(3,3) default NULL,
  `marinePolutant` tinyint(1) NOT NULL,
  `MFAGNo` int(11) default NULL,
  `grossWeight` double(5,4) NOT NULL,
  `netWeight` double(5,4) NOT NULL,
  `descriptionID` int(11) NOT NULL,
  `commodityId` int(11) NOT NULL,
  `bookingNo` int(11) NOT NULL,
  PRIMARY KEY (`dangerouscargoId`,`descriptionID`,`commodityId`,`bookingNo`),
  UNIQUE KEY `dangerouscargoId` (`dangerouscargoId`)
) ENGINE=MyISAM;

```

```

--
-- Table structure for table `description`
--

```

```

CREATE TABLE `description` (
  `descriptionID` int(11) NOT NULL,
  `commodityId` int(11) NOT NULL,
  `description` char(200) NOT NULL,
  `package` int(11) NOT NULL,
  `packageUnit` char(20) NOT NULL,
  `grossWeight` double(5,4) NOT NULL,
  `netWeight` int(11) NOT NULL,
  `measurement` double(5,4) NOT NULL,

```

```

`bookingNo` int(11) NOT NULL,
PRIMARY KEY (`descriptionID`,`commodityId`,`bookingNo`)
) ENGINE=MyISAM;

```

```

-----

```

```

--
-- Table structure for table `freightcode`
--

```

```

CREATE TABLE `freightcode` (
  `FreightId` int(11) NOT NULL auto_increment,
  `freightCode` char(20) NOT NULL,
  PRIMARY KEY (`FreightId`),
  UNIQUE KEY `FreightId` (`FreightId`),
  UNIQUE KEY `freightCode` (`freightCode`)
) ENGINE=MyISAM;

```

```

-----

```

```

--
-- Table structure for table `fumigationcargo`
--

```

```

CREATE TABLE `fumigationcargo` (
  `fumigationId` int(11) NOT NULL auto_increment,
  `description` char(200) NOT NULL,
  `descriptionID` int(11) NOT NULL,
  `commodityId` int(11) NOT NULL,
  `bookingNo` int(11) NOT NULL,
  PRIMARY KEY (`fumigationId`,`descriptionID`,`commodityId`,`bookingNo`)
) ENGINE=MyISAM;

```

```

-----

```

```

--
-- Table structure for table `mark`
--

```

```

CREATE TABLE `mark` (
  `bookingNo` int(11) NOT NULL,
  `mark` char(200) NOT NULL,
  PRIMARY KEY (`bookingNo`)
) ENGINE=MyISAM;

```

```

-----

```

```
--
-- Table structure for table `port`
--

CREATE TABLE `port` (
  `portId` int(11) NOT NULL auto_increment,
  `portName` char(5) NOT NULL,
  `city` char(20) NOT NULL,
  `country` char(20) NOT NULL,
  PRIMARY KEY (`portId`),
  UNIQUE KEY `portId` (`portId`),
  UNIQUE KEY `portName` (`portName`)
) ENGINE=MyISAM;
```

-----

```
--
-- Table structure for table `receiving`
--
```

```
CREATE TABLE `receiving` (
  `id` int(11) NOT NULL auto_increment,
  `bookingNo` int(11) NOT NULL,
  `equipmentNo` char(20) default NULL,
  `sealNo` char(20) NOT NULL,
  PRIMARY KEY (`id`,`bookingNo`),
  UNIQUE KEY `sealNo` (`sealNo`)
) ENGINE=MyISAM;
```

-----

```
--
-- Table structure for table `refer`
--
```

```
CREATE TABLE `refer` (
  `containerNo` char(11) NOT NULL,
  `temp` char(20) NOT NULL,
  PRIMARY KEY (`containerNo`)
) ENGINE=MyISAM;
```

-----

```
--
-- Table structure for table `revenue`
--
```

```

CREATE TABLE `revenue` (
  `id` int(11) NOT NULL auto_increment,
  `bookingNo` int(11) NOT NULL,
  `FreightId` int(11) NOT NULL,
  `Revenue` double(6,2) default NULL,
  PRIMARY KEY (`id`,`bookingNo`,`FreightId`)
) ENGINE=MyISAM;

```

```

-----

```

```

--
-- Table structure for table `schedule`
--

```

```

CREATE TABLE `schedule` (
  `id` int(11) NOT NULL auto_increment,
  `vesselID` int(11) NOT NULL,
  `voyageID` int(11) NOT NULL,
  `portId` int(11) NOT NULL,
  `arriveDate` date default NULL,
  `departDate` date default NULL,
  PRIMARY KEY (`id`,`vesselID`,`voyageID`,`portId`)
) ENGINE=MyISAM;

```

```

-----

```

```

--
-- Table structure for table `shippingclause`
--

```

```

CREATE TABLE `shippingclause` (
  `clauseId` int(11) NOT NULL auto_increment,
  `term` char(150) NOT NULL,
  PRIMARY KEY (`clauseId`),
  UNIQUE KEY `clauseId` (`clauseId`),
  UNIQUE KEY `term` (`term`)
) ENGINE=MyISAM;

```

```

-----

```

```

--
-- Table structure for table `vessel`
--

```

```

CREATE TABLE `vessel` (
  `vesselID` int(11) NOT NULL auto_increment,
  `vesselName` char(20) NOT NULL,
  `Flag` char(20) NOT NULL,

```

```
PRIMARY KEY (`vesselID`)  
) ENGINE=MyISAM;
```

```
-----
```

```
--  
-- Table structure for table `users`  
--
```

```
CREATE TABLE `users` (  
  `userID` int(11) NOT NULL auto_increment,  
  `userName` char(20) NOT NULL,  
  `password` char(20) NOT NULL,  
  `groupID` int(11) NOT NULL,  
  PRIMARY KEY (`userID`),  
  UNIQUE KEY `userName` (`userName`)  
) ENGINE=MyISAM;
```

```
--  
-- Dumping data for table `users`  
--
```

```
INSERT INTO `users` VALUES (3, 'sagaadmin', 'unak2007', 1);  
INSERT INTO `users` VALUES (4, 'sagauser', 'iceland', 2);  
INSERT INTO `users` VALUES (5, 'user', 'akureyri', 3);
```