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ONLINE HOTEL BOOKING SYSTEM

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
in
Computer Science

by
Chun-Hsien Wang

March 2006

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Approved by:



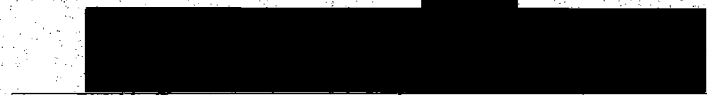
Dr. Keith Schubert, Chair, Computer Science

Date

March 9, 2006



Dr. David Turner



Dr. George M. Georgiou

ABSTRACT

The Online Hotel Booking System is a project implemented for GoodLuck Hotel, which is an imaginary hotel. It provides people all over the world with an easy and fast way to book hotel rooms online.

The interface of the Online Hotel Booking System is Web pages that can be accessed with a Web site browser. The system is implemented in PHP (Hypertext Preprocessor) and HTML (Hyper Text Markup Language). Users can perform room booking activities at GoodLuck Hotel anytime and anywhere by accessing it via Internet.

The Online Hotel Booking System is an easy-to-use application. Everyone who knows how to use a Web browser can easily carry out booking, change the booking details, cancel the booking, change the personal profile, view the booking history, or view the hotel information by following its simple and clear GUI (Graphical user interface) design.

ACKNOWLEDGMENTS

I would not have finished my graduate project successfully without the support and encouragement of my advisor, my friends, and the help from my classmates during my studying at California State University, San Bernardino (CSUSB). I am so grateful to Dr. Keith Schubert, who is so helpful a supervisor. He has not only been my advisor on my master project but has also directed me through this entire effort. He provided me with lots of valuable information that has increased my knowledge and understanding of Web application and helped me in improving the quality of my project. Without his patient instructions for problem solving and program debugging, I think I could not have even finished my master project. I am also thankful to Dr. Turner and Dr. Georgiou for their serving on my committee and providing helpful comments on my master project.

Also, I appreciate the love, encouragement, understanding and tolerance from all my family members. They have provided full financial aid that makes my dream come true and let me finish my studies at CSUSB. Without their support, I would not have had the chance to come to United States and I would not get my master degree by completing this project.

Finally, I would like to thank the faculty of Computer Science Department for giving me an opportunity to pursue my M.S. in Computer Science at California State University, San Bernardino. I also want to thank all those who have helped me during my studying at CSUSB.

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CHAPTER ONE

INTRODUCTION

1.1 Purpose of this Project

This project is a Web-based application that provides a user-friendly and simple interface to let users easily book hotel rooms and perform booking activities via Internet. The records are shared with not only Web users but also with administrators to the site.

The project uses a regular Web browser with HTML (Hyper Text Markup Language) as the basic interface language. Users can perform booking activities via the Internet browser. The administrations also can view all users' files and maintain the Web site on it. The Web pages are written in PHP (Hypertext Preprocessor) and stored in apache server. All the data is stored in a MySQL database and accessed by PHP.

The Online Hotel Booking System is a very easy-to-use Web-based application. Everyone who knows how to use a Web browser can book rooms on specific date and finish the basic payment process online. Users will receive a confirmed email included basic booking details after finishing all steps in reservation.

1.2 The Scope and Limitations of Project

The Online Hotel booking System offers the following functionality:

1. Users can register at GoodLuck Hotel and then they can view or modify the personal profile.
2. Users can book a room on any specific date.
3. Users can view all their booking history at GoodLuck Hotel.
4. Users can change the booking at any time 3 days before the arrival date.
5. Users can cancel the booking at any time 3 days before the arrival date.
6. Users can check the room availability at GoodLuck Hotel before they book a room.
7. Administrators can change the quantity and price on all four types of rooms.
8. Administrators can change any specific booking details.
9. Administrators can cancel any specific booking.
10. Administrators can modify the details of static pages including room information, about us information, contact us information, customer service Q&A details, local travel and shipping guide, and privacy policy after logon.

11. Besides the basic booking relative functions, this simulated Website contains basic room types introduction, contacting information, customer service Q&A, local travel and shipping guide, and privacy policy

The Online Hotel booking System has the following limitations:

1. The Online Hotel Booking System only offers users to book rooms within one year from current date and the interval of every booking can not be over certain number of days which the number is modified by the administrators. For example, the current default number is 7.
2. Users can book up to four rooms per purchase. If they need more than four, they need to re-book again. It has the corresponding limit for the number of occupants (adults or children), which depends on the room quantity you choose.
3. Users only can change a specific booking details or cancel specific booking whose arrival days is less than certain number of days (the number is modified by administrators) before today (system time). For example, the current default number is 3.

1.3 Significance of the Project

The Internet technology has been reached a significant achievement and we almost could get any information we need via surfing on the Web browser at anytime or anywhere where computer and Internet are available. The Online Hotel Booking System offers a simulated environment to let users perform what they could do in the real world via its simple and user-friendly interface. Online Hotel Booking System meets most functions and efficiency of a real Web-based application of the real-life case and offers the extension of future development for more completed capabilities.

1.4 Definition of Terms

This section defines terms and abbreviations used in the Hotel Booking System project document.

Apache - Apache is an open source HTTP server for UNIX, Windows NT, and other platforms.

Browser - A program which allows a person to read hypertext. The browser gives some means of viewing the contents of nodes (or "pages") and of navigating from one node to another.

ER Diagram - Diagrams that use Entity-Relationship model to design or describe database.

GUI - Graphical User Interface. A user interface based on graphics (icons and pictures and menus) instead of text. User enters data using both a mouse and keyboard.

HTML - Hyper Text Markup Language. HTML is the lingua franca for publishing hypertext on the World Wide Web. It is a non-proprietary format based upon SGML, and can be created and processed by a wide range of tools, from simple plain text editors.

HTTP - Hyper Text Transfer Protocol. The client/Server protocol that defines how messages are formatted and transmitted on the World Wide Web.

HTTPS - Hyper Text Transfer Protocol by SSL (Secure Sockets Layer). The secure version of HTTP provides authentication and encrypted communication.

Hyperlink - A link from a hypertext files to another location or file, typically activated by clicking on a highlighted word or icon at a particular location on the screen.

MySQL - Structured Query Language. MySQL is an open source relational database management system (RDBMS) that uses Structured Query Language (SQL), the most popular language for adding, accessing, and processing data in a database.

OHBS - Online Hotel Booking System.

PHP - Hypertext Preprocessor. A widely used general-purpose scripting language that is especially suited for Web development and can be embedded into HTML.

UML - Unified Modeling Language. The Unified Modeling Language (UML) is a language for specifying, constructing, visualizing, and documenting the artifacts of a software-intensive system.

1.5 Organization of the Documentation

The remaining sections of this document will be organized as follows: Chapter 2 introduces the architecture of Online Hotel Booking System. Chapter 3 is the software requirement specification (SRS). Chapter 4 illustrates the database design. Chapter 5 presents the project implementation. Chapter 6 contains conclusions and future directions.

CHAPTER TWO

ONLINE HOTEL BOOKING SYSTEM

In this chapter I will briefly introduce the architecture of my project. The Online Hotel Booking System implements a Web system that provides an environment for users to book hotel rooms online. The system is a 3-tier-distributed architecture that displays the user interface to a Web browser using PHP. The middle tier is the Apache Web server that handles requests from the client Web browser and provides access to the third tier MySQL database.

2.1 Software Interfaces

- Internet browsers.
- Operating system: Windows 98/Me/2000/XP, or Unix/Linux.
- Database: MySQL.
- Language: HTML / JavaScript / PHP.
- Web server: Apache.
- Connect Protocol: HyperText Transfer Protocol and HyperText Transfer Protocol by SSL.

The Web application executes a user command:

- User types a URL in Web browser.
- Request is transmitted to Web server via HTTP protocol.
- Web server responds to the request and executes from a PHP page and loaded by the PHP engine.
- PHP generates custom HTML documents or generates custom WML documents and sends them back to the user via the HTTP protocol.
- User's Web browser displays HTML page.

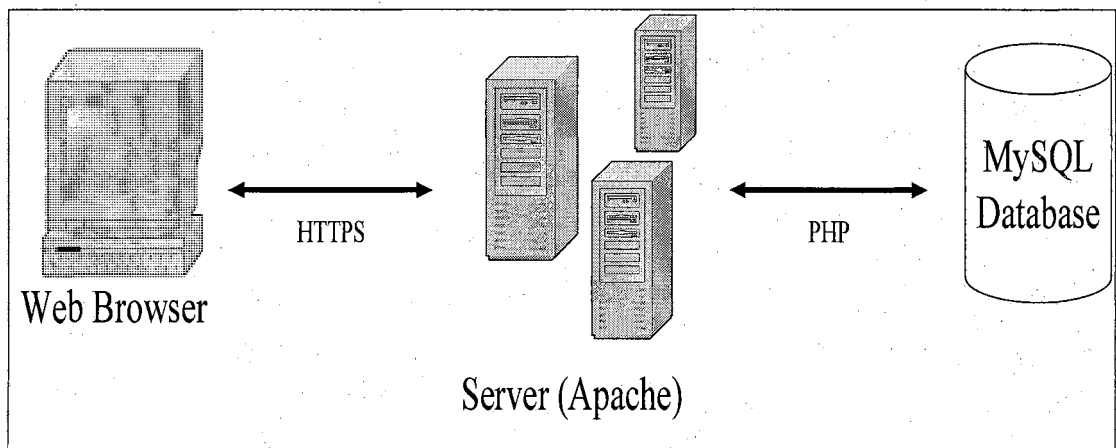


Figure 1. System Architecture

The components used to build Online Hotel Booking System (OHBS) were chosen with the following criteria:

(I) the components should be shareware, i.e., available freely for all users, (II) they do not depend on a

specific operating system and hence are easily portable across systems, (III) database server's flexibility, so that new and different versions of the server can be plugged in easily.

The user interface components are built by using HTML 6.0 forms, HTTP, frames and JavaScript. The application is implemented using Hypertext Preprocessor (PHP). PHP is mainly focused on server-side scripting, so I almost could do anything any other common gateway interface (CGI) program could do, such as collect form data, generate dynamic page content, or send and receive cookies. PHP can be used on all major operating systems and it is not limited to output HTML. One of the strongest and most significant features in PHP is its support for a wide range of databases.

The database availability to online Hotel Booking system is MySQL. MySQL is a real multi-user database and free. Also, because of its consistent fast performance, high reliability and ease of use, it has become the world's most popular open source database ranging from large corporations to specialized embedded applications on every continent in the world. It runs on more than 20 platforms including Linux, Windows, OS/X, HP-UX, AIX, Netware, giving me the kind of flexibility that puts me in

control. That is why I choose the MySQL as the application of database.

CHAPTER THREE

SOFTWARE REQUIREMENTS SPECIFICATION

3.1 Introduction

The purpose of the Online Hotel Booking System Project is to provide people with the convenience to book hotel rooms online. Users can book rooms, modify booking details and view the hotel Web site. They can do these through the user-friendly Web pages with a regular Web browser.

3.2 Overall Description

3.2.1 Product Perspective

The Online Hotel Booking System is a Web-based application. Its interfaces are implemented on regular Web browser connected via Internet.

The hardware interface requirement is that it must run on the existing Web servers. The software interface requirement is that it must support current versions of Web browsers (Internet Explorer, Netscape, Mozilla Firefox, etc.). The communications interface requires support for Hyper-Text Transfer Protocol by Secure Socket Layer (SSL). It is the well-known HTTPS.

3.2.2 Product Functions

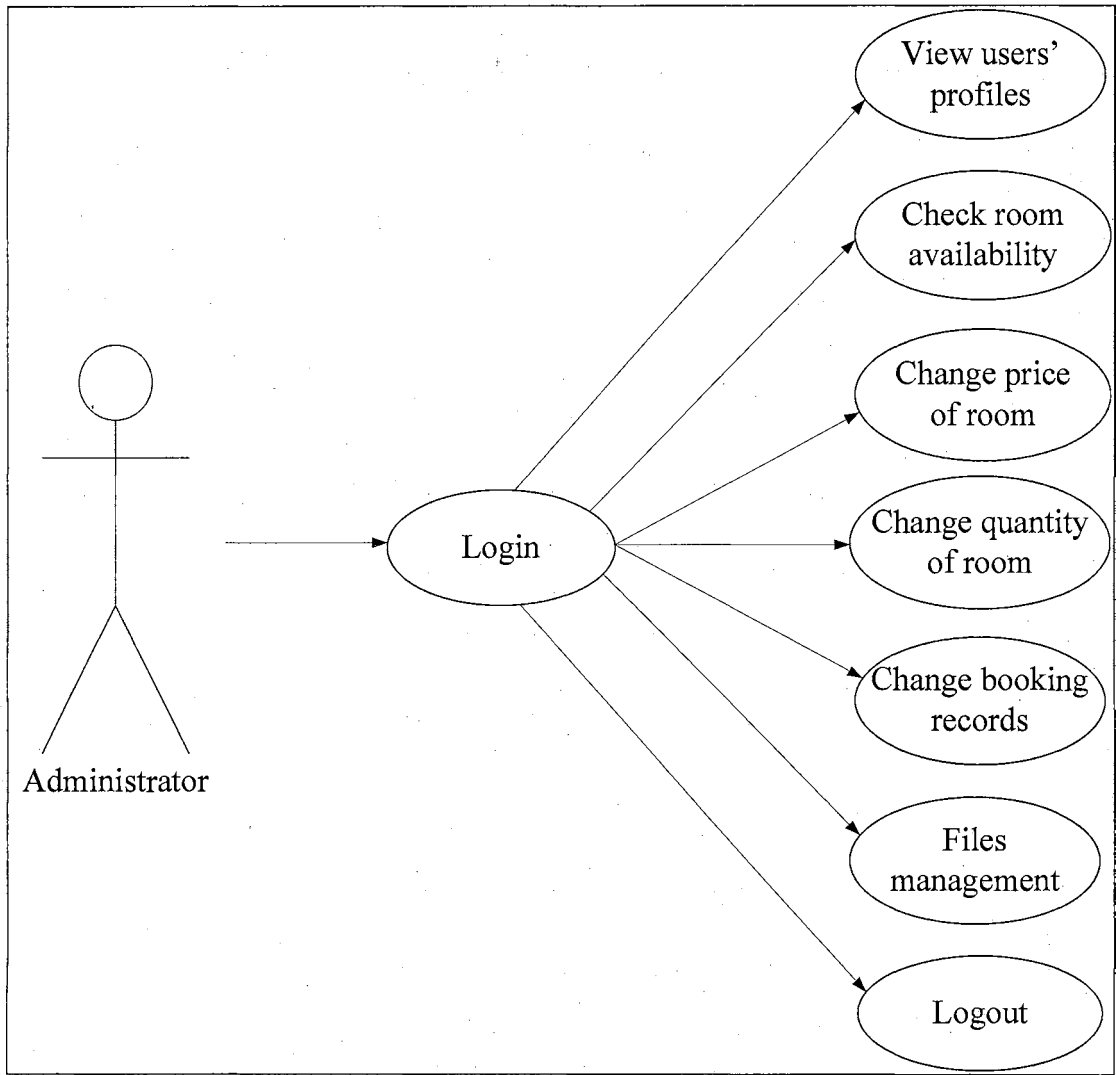


Figure 2. Online Hotel Booking System Use Case Diagram
(Admin)

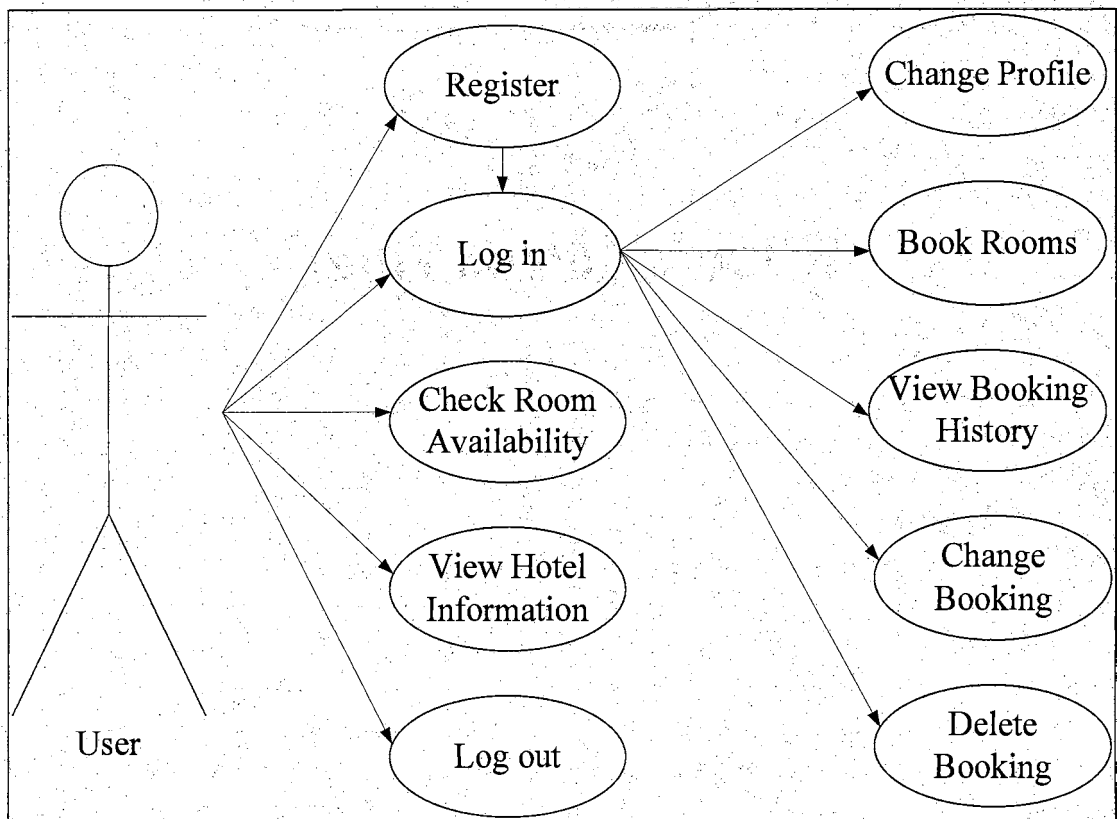


Figure 3. Online Hotel Booking System Use Case Diagram
(User)

3.2.3 Product Architecture

The system contains three main parts of architecture, client side machine, Web server, and database.

- (1) Client side machine: It requires having Internet browser and Internet connection. This machine can connect to Web server by HTTP protocol.
- (2) Web Server: This project uses Linux 9.0 as the operating system, and Apache Web server. It establishes communication between server and

client machine, and also between server and database.

- (3) Database: MySQL database is used in this project. To connect database, we use PHP to control when to access the database, and which information to access.

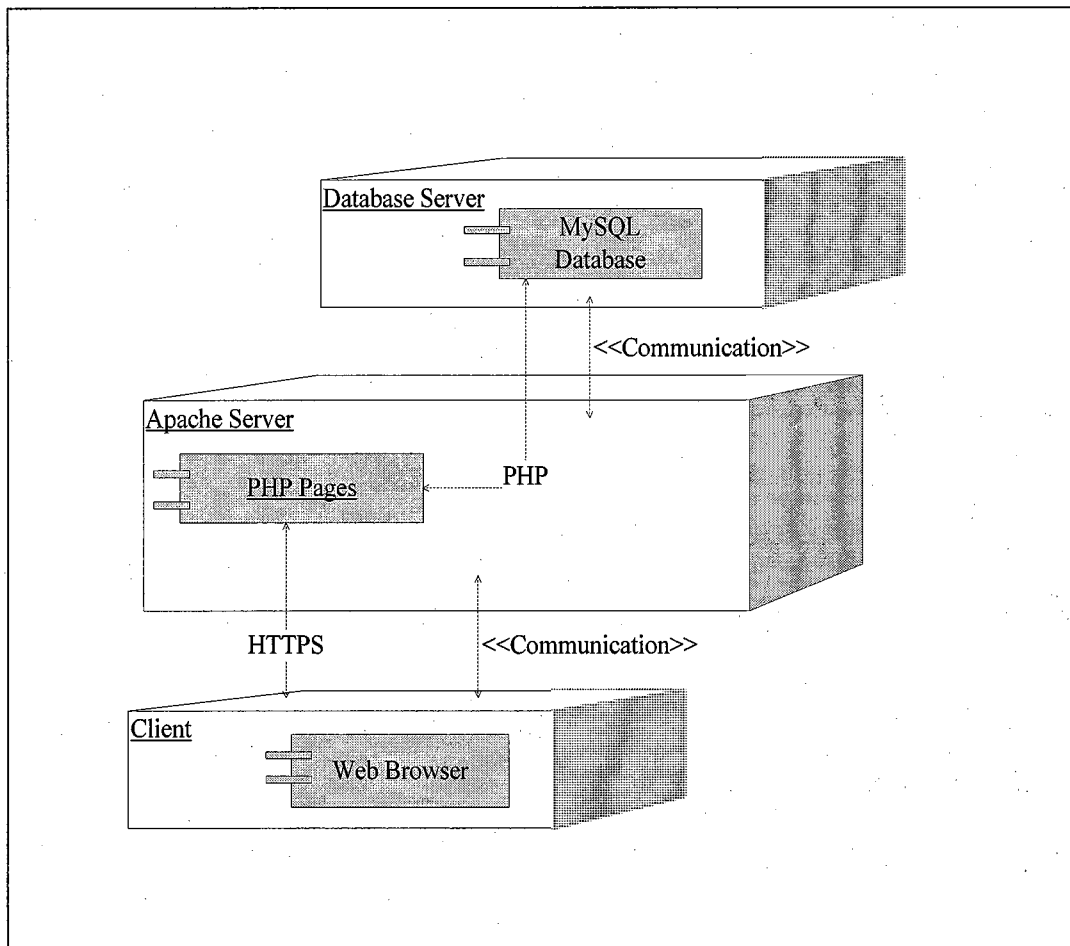


Figure 4. Deployment Diagram of Online Hotel Booking System

CHAPTER FOUR

DATABASE DESIGN

4.1 Data Analysis

The data for designing and implementing the schema of the database depends on properties of client and administrator. In designing the schema for the OHBS database, four main distinct parts have been identified and used in both user and administrator parts, and two main parts used in administrator part for modifying the hotel information pages.

For tables used in storing users' data, first one is table "clients" which includes clients ID, clients title, clients name, clients address, clients telephone, clients email, and clients password. The second one is table "bookings" which includes bookings part which including bookings ID, bookings clientID, arrival date, departure date, number of adults, number of children, room type, room options, requirements, and credit card information. The third part are tables from "2005oct" to "2006dec" include all data about room price and quantity sorted in month from October 2005 to December 2006. The last one includes states details in United States.

For tables used by administrator only, the first one is table "users" in storing data about administrators. The other ones are small tables used to store data in some information pages.

All the entities and attributes are detailed in Figure 5. In Figure 5, the "CC" is abbreviated from Credit Card.

This Entity Relationship (ER) Diagram is for both administrators and users. Some tables about administrator may not be shown in the ER Diagram, and I will explain more. The tables "aboutus", "contactus", "customercare", "hoteldetails", "privacypolicy", "properties", "roominfo", and "travelshopping" are stored data regarding some static pages about hotel information.

4.2 Database Schema Logical Model

The conceptual model ER diagram maps into the following relational table design. In the following tables, underlined fields indicate the primary key. Please refer to Figure 6 and 7.

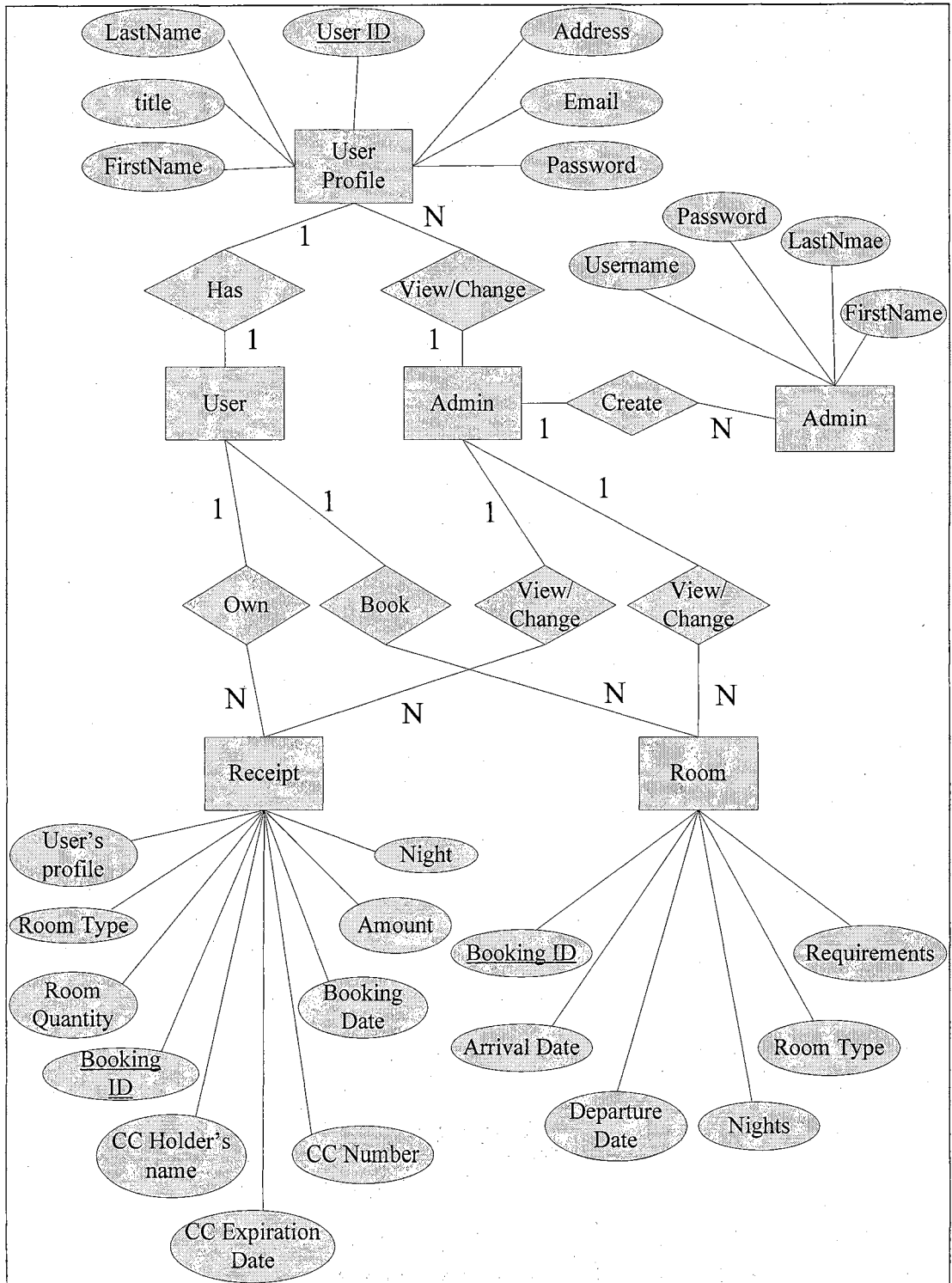


Figure 5. Entity Relationship Diagram

| Field Names of Table CLIENTS | | | |
|------------------------------|----------|-----------|----------|
| <u>ID</u> | TITLE | FIRSTNAME | LASTNAME |
| ADDRESS1 | ADDRESS2 | CITY | PROVINCE |
| COUNTRY | POSTCODE | TEL | EMAIL |
| PASSWORD | STATUS | | |

| Field Names of Table BOOKINGS | | | |
|-------------------------------|-------------|------------|--------------|
| <u>ID</u> | ROOMID | CLIENTID | BOOKING_ID |
| STARTYEAR | STARTMONTH | STARTDAY | ENDYEAR |
| ENDMONTH | ENDDAY | ADULTS | CHILDREN |
| ROOMTYPE | ROOMOPTIONS | NETWORK | REQUIREMENTS |
| CARDTYPE | CARDNO | EXPIREYEAR | EXPIREMONTH |
| ROOMQUANT | | | |

| Field Names of Table USERS | | | |
|----------------------------|----------|----------|-----------|
| <u>ID</u> | USERNAME | PASSWORD | FIRSTNAME |
| LASTNAME | STATUS | | |

| Field Names of Table STATEINUSA | |
|---------------------------------|--------------|
| <u>ID</u> | <u>STATE</u> |

Figure 6. Database Relational Schema (Part I)

| | | | |
|--|-----------|--------|-----------|
| Field Names of Table 2005OCT - 2006DEC | | | |
| <u>DAY</u> | QUANTITYA | PRICEA | QUANTITYB |
| PRICEB | QUANTITYC | PRICEC | QUANTITYD |
| PRICED | | | |

| | |
|--|------|
| Field Names of Table ABOUTUS, CONTACTUS, HOTELDETAILS, PROPERTIES | |
| <u>NUMBER</u> | DESC |

| | | |
|-------------------------------|------|------|
| Field Names of Table ROOMINFO | | |
| <u>NUMBER</u> | TYPE | DESC |

| | | | |
|--|----------|--------|---------|
| Field Names of Table CUSTOMERCARE, PRIVACYPOLICY | | | |
| <u>NUMBER</u> | QUESTION | ANSWER | ANSWER2 |

| | | | |
|-------------------------------------|-------|---------|---------|
| Field Names of Table TRAVELSHOPPING | | | |
| <u>NUMBER</u> | NAME | LINK | ADDRESS |
| CITY | STATE | ZIPCODE | PHONE |

Figure 7. Database Relational Schema (Part II)

4.3 Data Type and Details

The logical model established the following detailed design in MySQL database. The following tables describe data type, length, primary key, and null or non-null keys.

Table 1. Structure of Table CLIENTS

| Filed | Type | Null | Key | Default | Extra |
|-----------|-------------|------|-----|---------|----------------|
| ID | INT(11) | | PRI | | AUTO_INCREMENT |
| TITLE | VARCHAR(10) | | | | |
| FIRSTNAME | VARCHAR(30) | | | | |
| LASTNAME | VARCHAR(30) | | | | |
| ADDRESS1 | VARCHAR(50) | | | | |
| ADRESS2 | VARCHAR(50) | YES | | NULL | |
| CITY | VARCHAR(50) | | | | |
| PROVINCE | VARCHAR(50) | | | | |
| COUNTRY | VARCHAR(40) | | | | |
| POSTCODE | CHAR(20) | | | | |
| TEL | CHAR(20) | | | | |
| EMAIL | CHAR(50) | | | | |
| PASSWORD | VARCHAR(20) | | | | |
| STATUS | VARCHAR(5) | | | | |

Table 2. Structure of Table BOOKINGS

| Field | Type | Null | Key | Default | Extra |
|--------------|---------------|------|-----|---------|----------------|
| ID | INT (11) | | PRI | | AUTO_INCREMENT |
| ROOMID | INT (11) | YES | | | |
| CLIENTID | INT (11) | | | | |
| BOOKING_ID | INT (15) | | | | |
| STARTYEAR | VARCHAR (4) | | | | |
| STARTMONTH | VARCHAR (9) | | | | |
| STARTDAY | CHAR (2) | | | | |
| ENDYEAR | VARCHAR (4) | | | | |
| ENDMONTH | VARCHAR (9) | | | | |
| ENDDAY | CHAR (2) | | | | |
| ROOMQUANT | CHAR (2) | | | | |
| ADULT | CHAR (2) | | | 1 | |
| CHILDREN | CHAR (2) | | | | |
| ROOMTYPE | VARCHAR (30) | | | | |
| ROOMOPTIONS | INT (8) | | | | |
| NETWORK | INT (8) | | | | |
| PC | INT (8) | | | | |
| REQUIREMENTS | VARCHAR (250) | YES | | | |
| CARDTYPE | VARCHAR (15) | | | | |
| CARDNO | VARCHAR (20) | | | | |
| EXPIREYEAR | CHAR (2) | | | | |
| EXPIREMONTH | VARCHAR (4) | | | | |

Table 3. Structure of Table USER

| Field | Type | Null | Key | Default | Extra |
|-----------|-------------|------|-----|---------|----------------|
| ID | INT(8) | | PRI | | AUTO_INCREMENT |
| USERNAME | VARCHAR(15) | | | | |
| PASSWORD | VARCHAR(12) | | | | |
| FIRSTNAME | VARCHAR(30) | | | | |
| LASTNAME | VARCHAR(30) | | | | |
| STATUS | VARCHAR(10) | | | | |

Table 4. Structure of Table STATEINUSA

| Field | Type | Null | Key | Default | Extra |
|-------|---------|------|-----|---------|-------|
| ID | INT(2) | | | | |
| STATE | CHAR(2) | | PRI | | |

Table 5. Structure of Table 2005OCT - 2006DEC

| Field | Type | Null | Key | Default | Extra |
|-----------|------------|------|-----|---------|-------|
| DAY | INT(2) | | PRI | | |
| QUANTITYA | CHAR(2) | | | | |
| PRICEA | VARCHAR(5) | | | | |
| QUANTITYB | CHAR(2) | | | | |
| PRICEB | VARCHAR(5) | | | | |
| QUANTITYC | CHAR(2) | | | | |
| PRICEC | VARCHAR(5) | | | | |
| QUANTITYD | CHAR(2) | | | | |
| PRICED | VARCHAR(5) | | | | |

Table 6. Structure of Table ABOUTUS

| Field | Type | Null | Key | Default | Extra |
|--------|--------------|------|-----|---------|-------|
| NUMBER | INT(2) | | PRI | | |
| DESC | VARCHAR(255) | | | | |

Table 7. Structure of Table ROOMINFO

| Field | Type | Null | Key | Default | Extra |
|--------|-------------|------|-----|---------|-------|
| NUMBER | INT (2) | | PRI | | |
| TYPE | CHAR (2) | | | | |
| DESC | VARCHAR (5) | | | | |

Table 8. Structure of Table CUSTOMERCARE

| Field | Type | Null | Key | Default | Extra |
|----------|---------------|------|-----|---------|-------|
| NUMBER | INT (2) | | PRI | | |
| QUANTITY | VARCHAR (255) | | | | |
| ANSWER | LONGTEXT | | | | |
| ANSWER2 | LONGTEXT | | | | |

Table 9. Structure of Table TRAVELSHOPPING

| Field | Type | Null | Key | Default | Extra |
|---------|---------------|------|-----|---------|-------|
| NUMBER | INT (2) | | PRI | | |
| NAME | VARCHAR (50) | | | | |
| LINK | VARCHAR (250) | | | | |
| ADDRESS | VARCHAR (50) | | | | |
| CITY | VARCHAR (50) | | | | |
| STATE | VARCHAR (20) | | | | |
| ZIPCODE | VARCHAR (9) | | | | |
| PHONE | VARCHAR (15) | | | | |

CHAPTER FIVE

PROJECT IMPLEMENTATION

The Online Hotel Booking system is designed to perform 5 distinct logon-required functions for users. Refer to Figure 3 is the Use Case Diagram of this project.

5.1 Graphical User Interface Requirement

User interfaces for the Online Hotel Booking System are designed as HTML pages. The contents are generated dynamically by PHP in executing requests from users. OHBS GUI is an easy-to-use interface. The GUI is written using Hyper Text Markup Language (HTML) Version 6.0 forms. The OHBS GUI is executable under Internet Explorer 5.0 or greater. The following sub-section Figure 8 explains the GUI functions and details.

HTML

UserPages

aboutus.php
add_user_record.php
booking_cancelled.php
booking_completed.php
booking_dtails.php
booking_updated.php
cancel_booking.php
cancel_booking_details.php
cancel_booking_determine.php
change_booking.php
change_booking_details.php
change_user_record.php
check_abailability.php
confirm_booking.php
customercare.php
customerservice.php
footer.php
index.php
index_login.php
options.php
payment.php
price_details.php
privacypolicy.php
promotion.php
result_availability.php
roominfo.php
roominfo_popup.php
roomquant_popup.php
travelshopping.php
user_login.php
user_record_updated.php
view_booking.php
view_booking_details.php

AdminPages

2005dec.php
2005nov.php
2005oct.php
2006apr.php
2006aug.php
2006dec.php
2006feb.php
2006jan.php
2006jun.php
2006mar.php
2006may.php
2006nov.php
2006oct.php
2006sep.php
admin_login.php
admin_menu.php
cancelbooking.php
changeaboutus.php
changebooking.php
changecontactus.php
changecustomercare.php
Changedaymodify.php
changeprivacypolicy.php
changeprofile.php
changeroominfo.php
changetravelshopping.php
Create_user.php
editbookingcancelled.php
editbookingcompleted.php
editbookingupdated.php
editcancelbooking.php
editchangebooking.php
editcontactus.php
editcustomercare.php
Editdaymodify.php
editpayment.php
editprivacypolicy.php
editprofile.php
editroominfo.php
editroominfo2.php
editroominfo3.php
edittravelshopping.php

Figure 8. System Architecture Pages

5.2 Graphical User Interface Website

5.2.1 Home of ChunHsien Wang's Project

The page is the main page of my project. I offer 6 quick links in this page. There are three options on the left hand side. First one "Online Hotel Booking Hotel" is a link to my project - Online Hotel Booking System (OHBS); second one "My Documents" is a link to some documents related to my project including proposal and document in both Web page and PDF formats; third one "Source Files" is a link to view all my source files about this project. The other three are on the right hand side. First one "CSUSB Home" is a link to the home page of CSUSB Website; second one "Computer Science Department" is a link to the home page of Computer Science Department of CSUSB; third one is an email link if visitors have any comment and would like to send their suggestion to me. They can use this link. Please refer to Figure 9.

Before redirecting to the main page of OHBS, my system will require users to accept the security alert of Hyper-Text Transfer Protocol by SSL (HTTPS). If users do not accept the request, the page will not be linked to next one. They can retry and accept it, then the page will redirect to the main page of OHBS. Under the environment of HTTPS, users can enter their information more confident

such as personal profile or credit card information and all data they input in GoodLuck would get more security. Please refer to Figure 10.

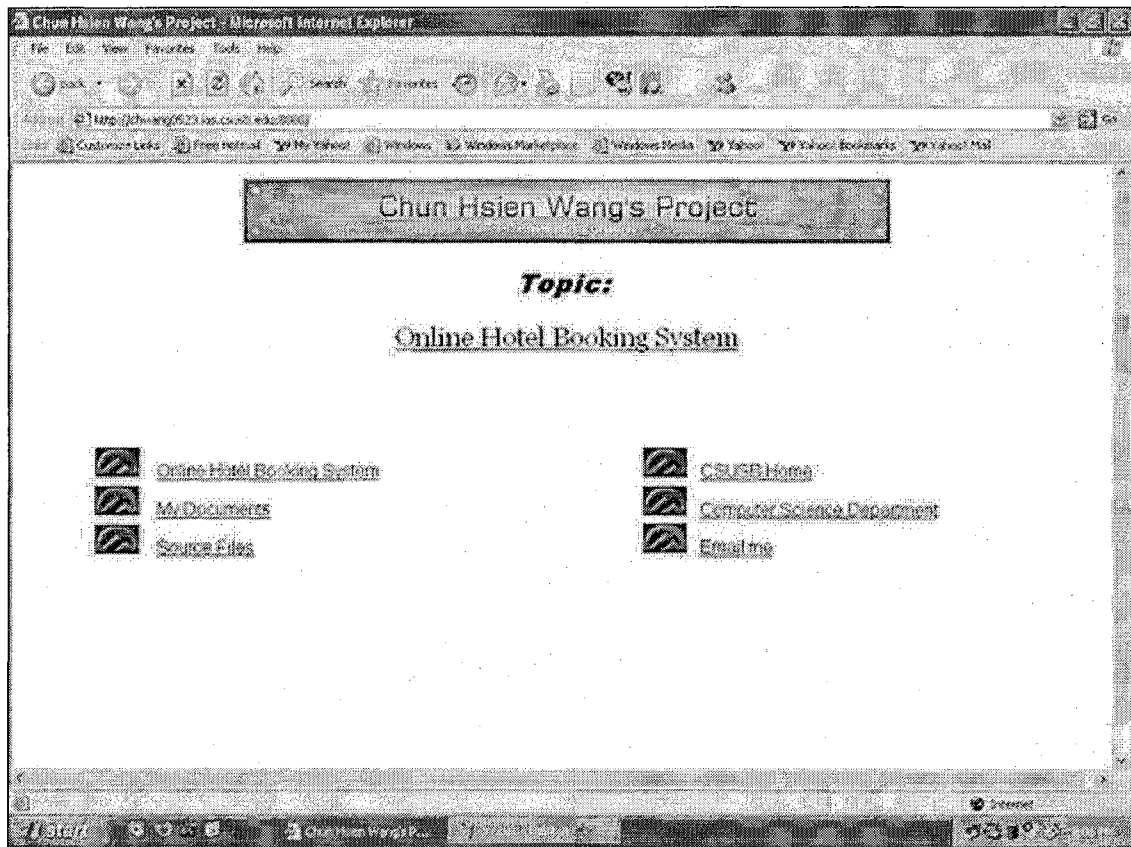


Figure 9. Main Page of Chun Hsien Wang's Project

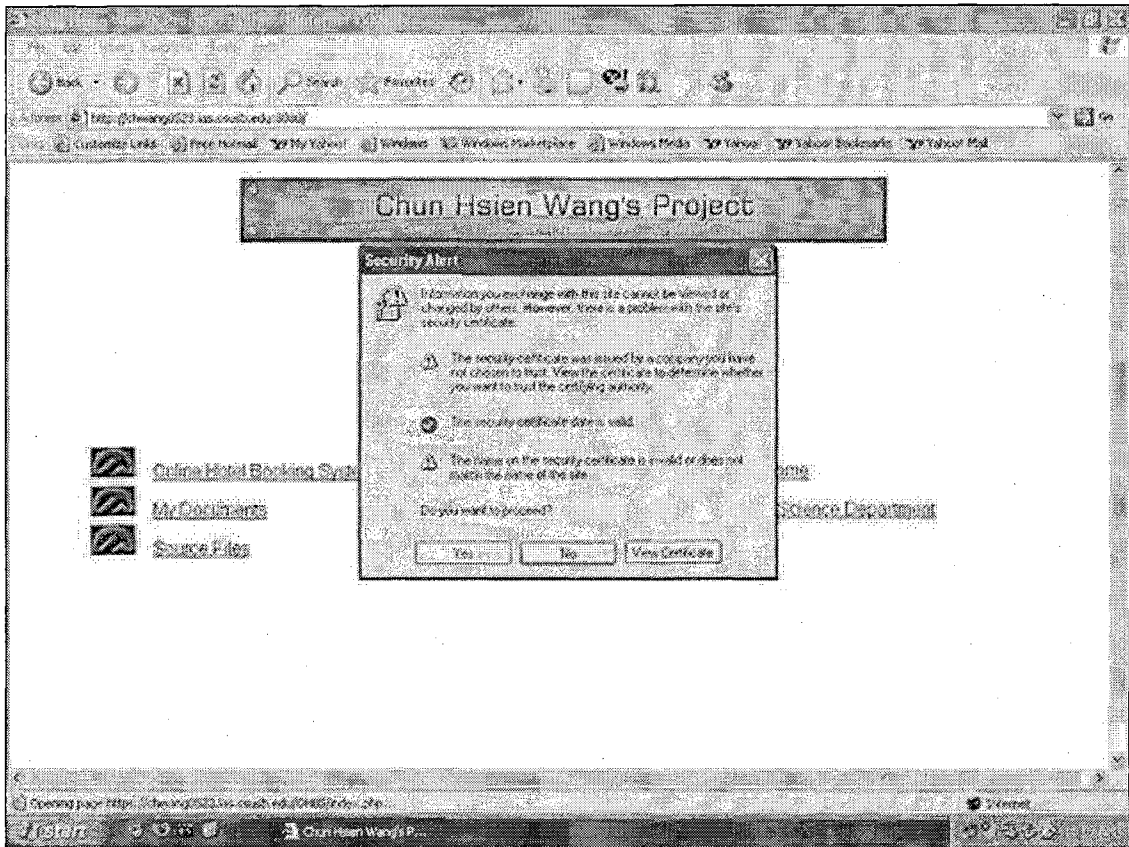


Figure 10. Hyper-Text Transfer Protocol by Secure Socket Layer

5.2.2 Home of GoodLuck Hotel

This page is the Main (Home) page of GoodLuck Hotel. Please refer to Figure 11. This page offers the following links:

- (1) Book a room: If users would like to book a room in GoodLuck, they can click this button for a start. When they click it, the page will be linked to User Login page to let users enter both email and password in order to login their

personal account. If users are first time in visit GoodLuck Hotel, they need to register themselves as a new user. After logon, users can start to book.

- (2) View Booking: After logon, users can view all their booking history in GoodLuck. From the booking history, they can change or cancel the specific booking records they have been booked before and they are not expired.
- (3) Change Booking: After logon, users can view their booking history first. This page is the same as the View Booking History page. They can choose the specific booking and start to change the specific booking details.
- (4) Cancel Booking: After logon, users can view their booking history first. They can choose the specific booking and start to cancel the specific booking details. In the next page, it will display the basic booking information again and has options "Yes" or "No" to choose. If they choose "No", it will return to previous page. They can view the booking history again. If they choose "Yes", this specific booking will be

deleted forever and the confirmed information will be shown in the next page.

- (5) Check availability: All visitors in GoodLuck can check its room availability for all information about room price and quantity for their specific arrival date and departure date. No logon required. Here users can check the room availability within one year from the current date (system time).
- (6) Room Information: All visitors in GoodLuck can check the room information. No logon required. After clicking this button, the "roominfo" page will display basic introduction for all four types of rooms in GoodLuck.
- (7) Register: If users are first time to visit GoodLuck Hotel, they can register themselves as a new user.
- (8) My Profile: Users can view their personal profile and modify it if they needs. They need to login first and then they can start to modify the profile.
- (9) Other links: In the bottom of this page, there are seven buttons for linking options. First five are "About GoodLuck", "Customer Care",

"About Us", "Travel & Shopping", and "Privacy Policy" for hotel information. The sixth is "ADMIN". It is a quick link used for administrators, not for regular users. The last one "Project" is a link to go back to the main page of my project.

If users have not logged in, when they click buttons "Book a Room", "View Booking", "Change Booking", "Cancel Booking", and "My Profile", page will be linked to user login page. They cannot view details of these pages without logon.



Figure 11. Main Page of GoodLuck Hotel

5.2.3 Register Page

If users click the button "Register" in the main page of GoodLuck, the page will be linked to Add User Record page. Please refer to Figure 12.

In this page users need to fill out all fields except field "Address2". If any field is blank, after users click "Submit" button, the page will pop up a small window showing the specific field you missed and remind you to input the data in order to finish this form.

In the field "County/State", if users choose "United States" in country, they need input the 2-letter abbreviation from US states in either uppercase or lowercase. If users do not input an abbreviation from states in US, it will show error message "Invalid state" and then users need to re-input. Please refer to Figure 13.

In the field "Telephone Number", users need to input data in all digits, no space or dash is allowed; otherwise the page will display the error message. Please refer to Figure 14.

In the field "Email", if users have been registered in GoodLuck already and database finds the record, it will display error message "Email is in use already". Users cannot finish the registration until they change another substitute email address. Please refer to Figure 15.

In the field "Password", users need to input a password whose length is between 6 and 12 characters; otherwise the page will display the error message. Please refer to Figure 16.

The registration form cannot be finished if this page has any warning message displayed. After the registration is successful, page will be linked to "User Login" page.

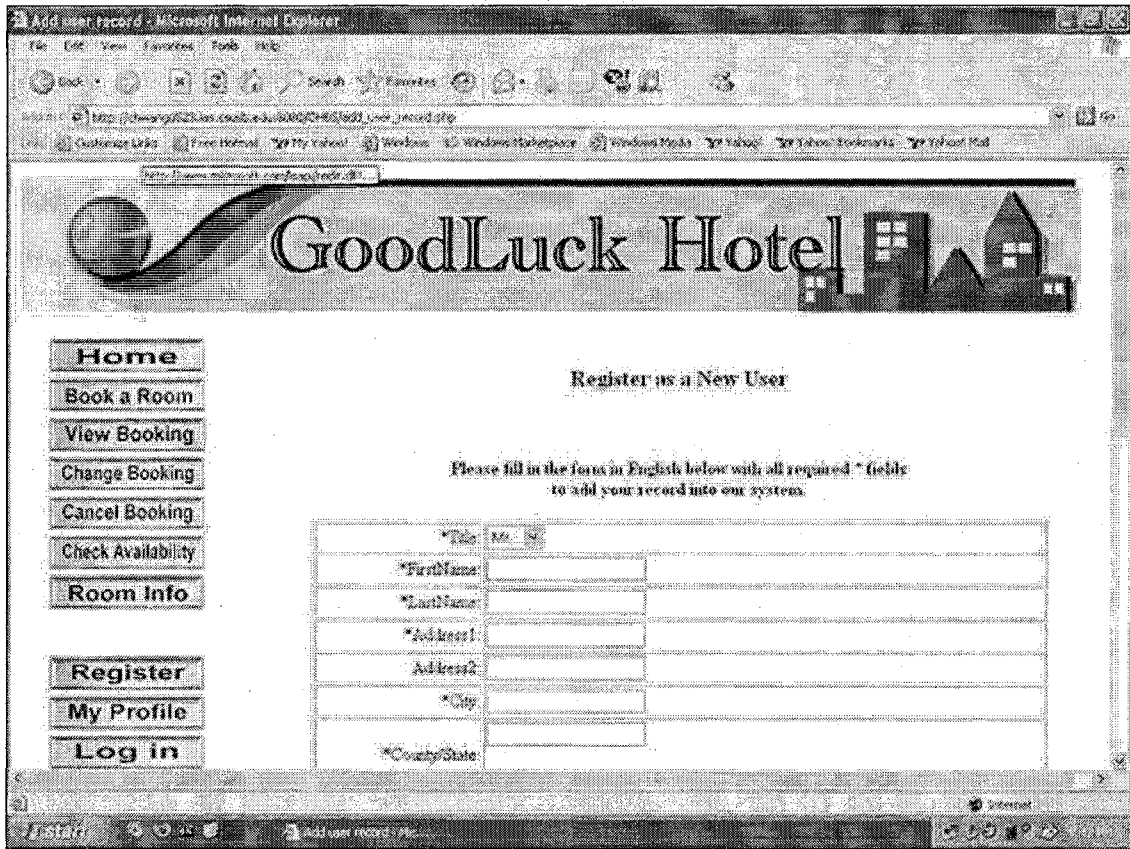


Figure 12. Register Page (Users)

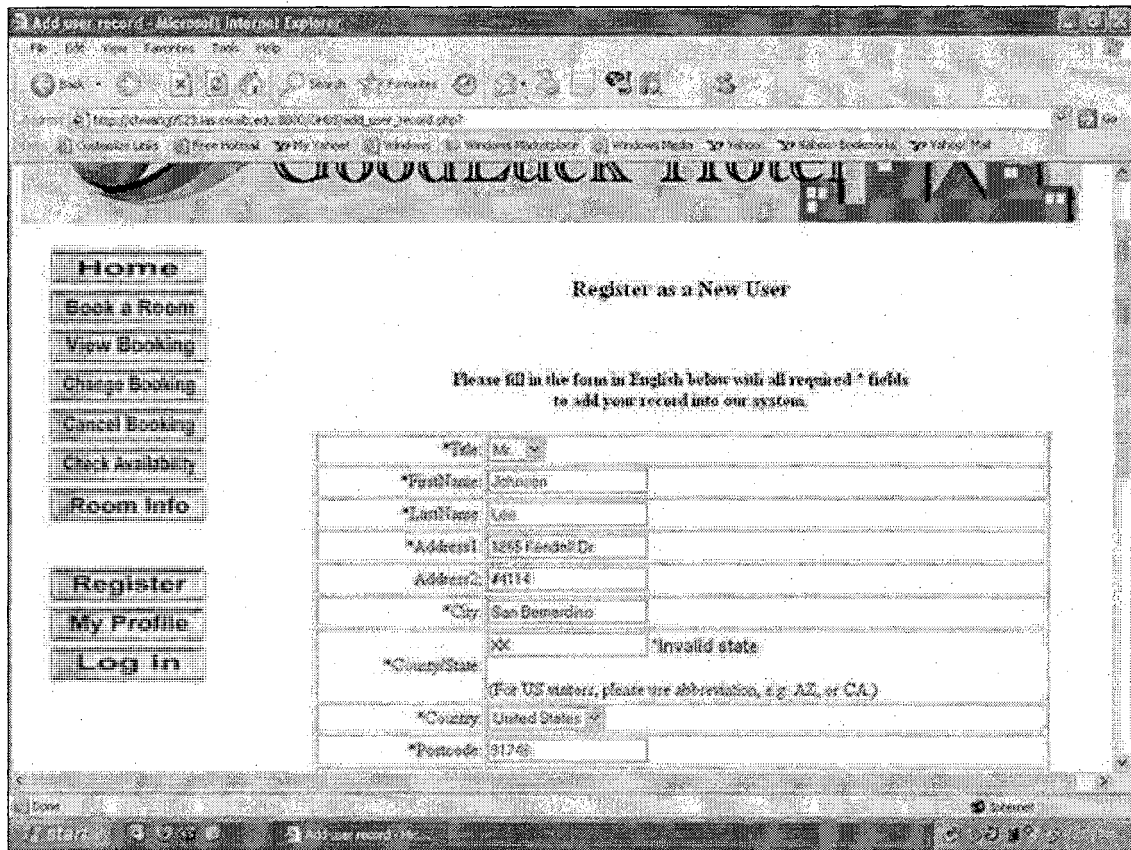


Figure 13. Error Message in State (Users)

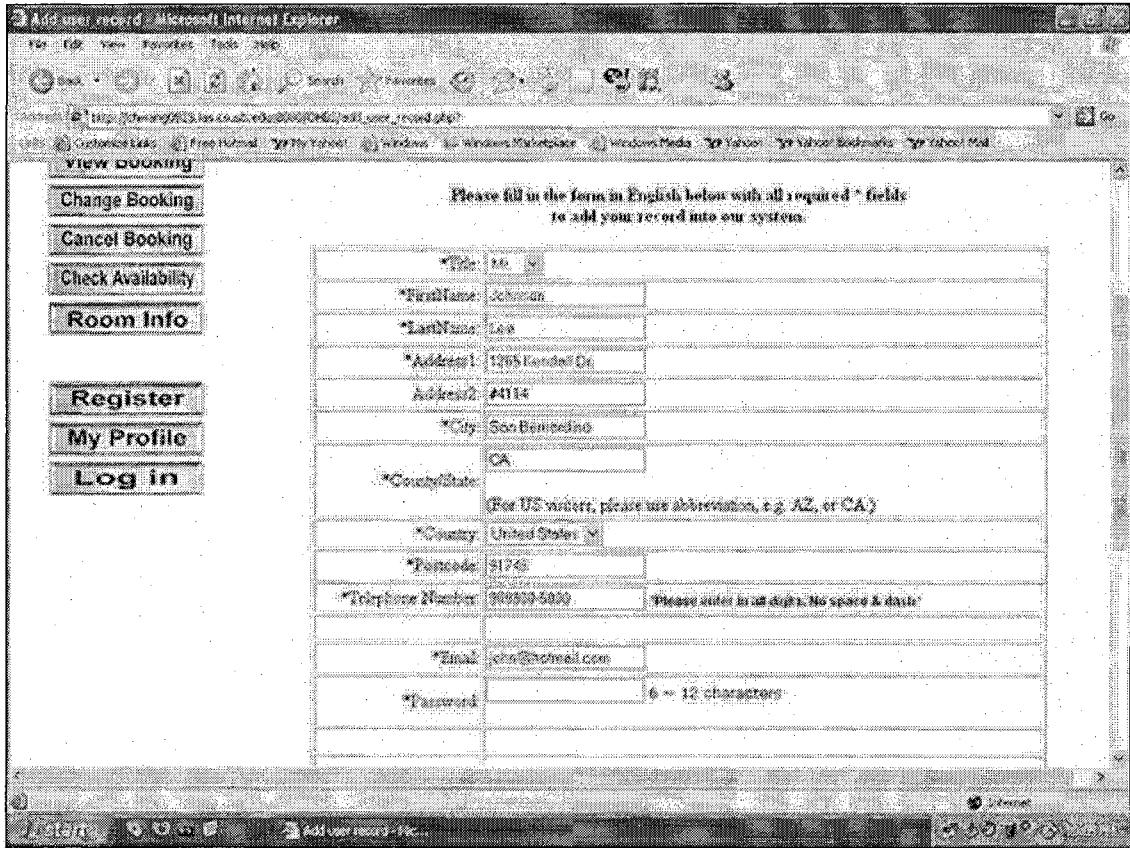


Figure 14. Error Message in Telephone (Users)

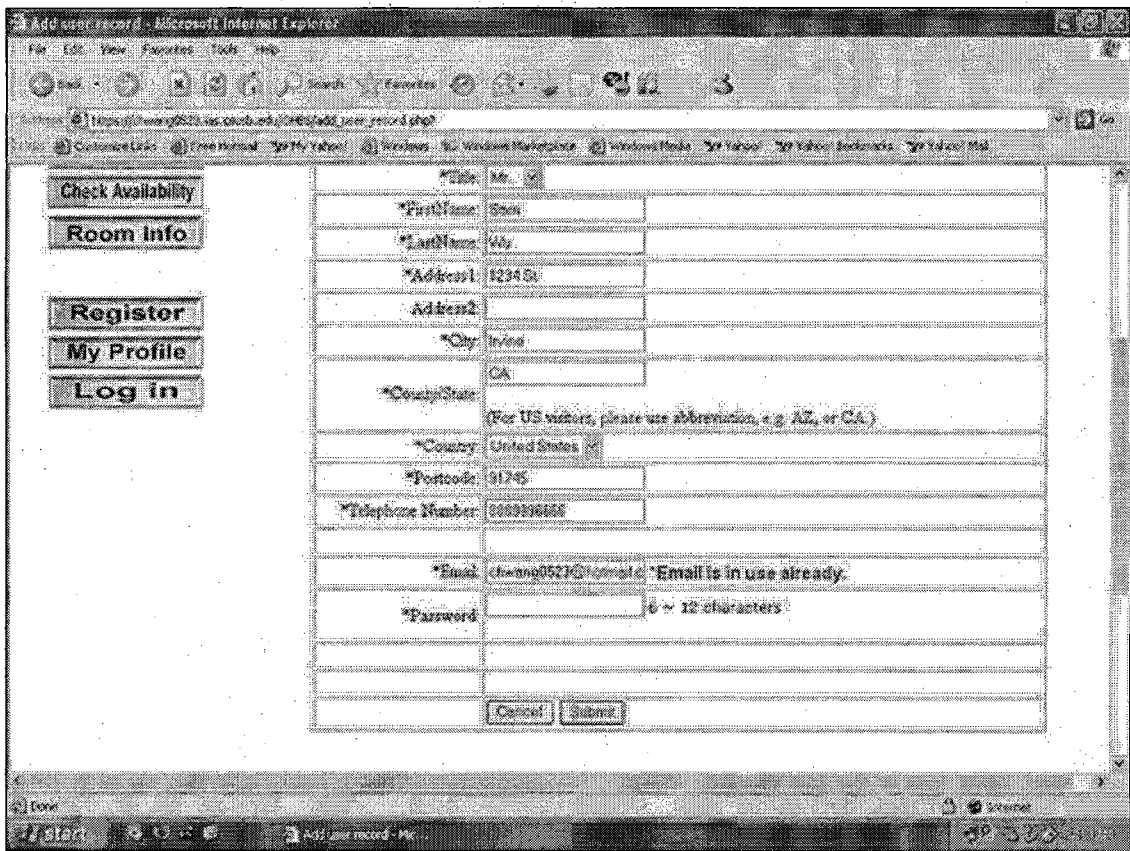


Figure 15. Error Message in Email (Users)

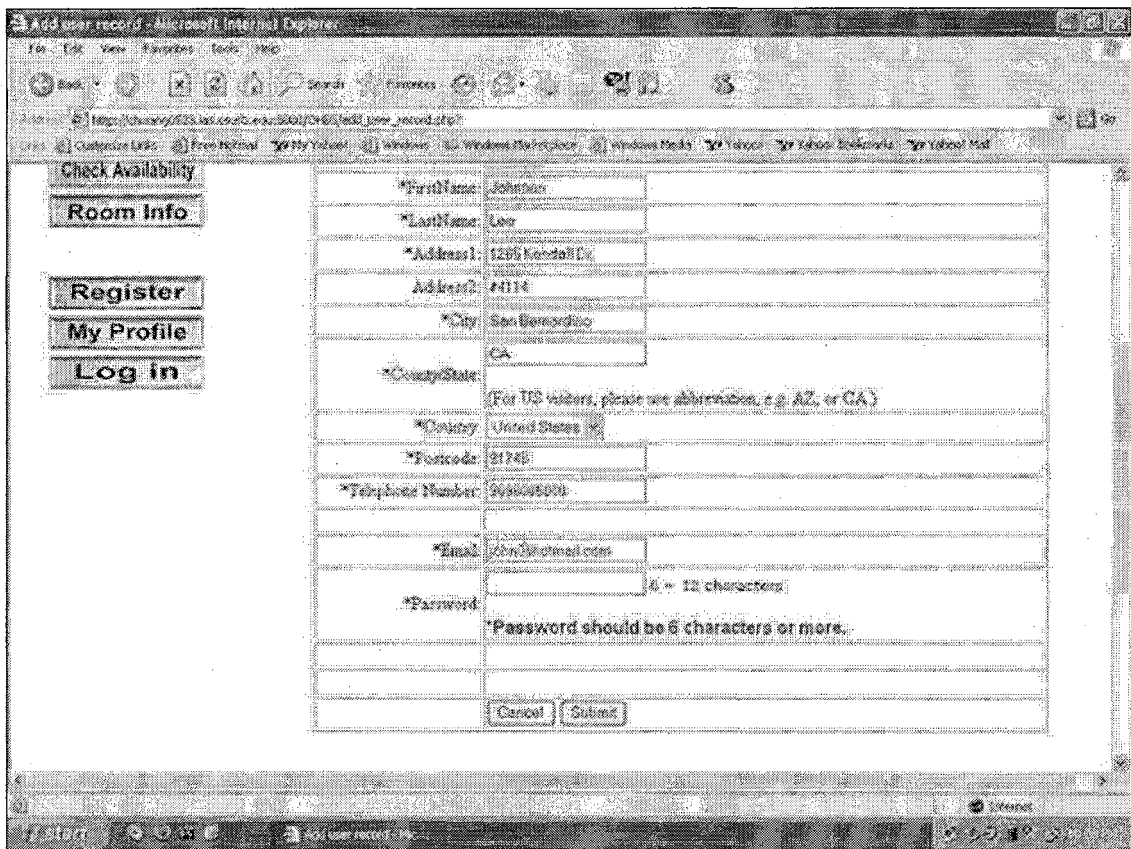


Figure 16. Error Message in Password (Users)

5.2.4 User Login Page

In the User Login page users can input their registered email and password in order to login. Please refer to Figure 17.

If the email and password cannot be matched, it will display error message and users need to re-input again until they succeed. Please refer to Figure 18.

If users have not registered in GoodLuck and go to this page, I offer a link "register" above the form to let users register themselves as a new user.

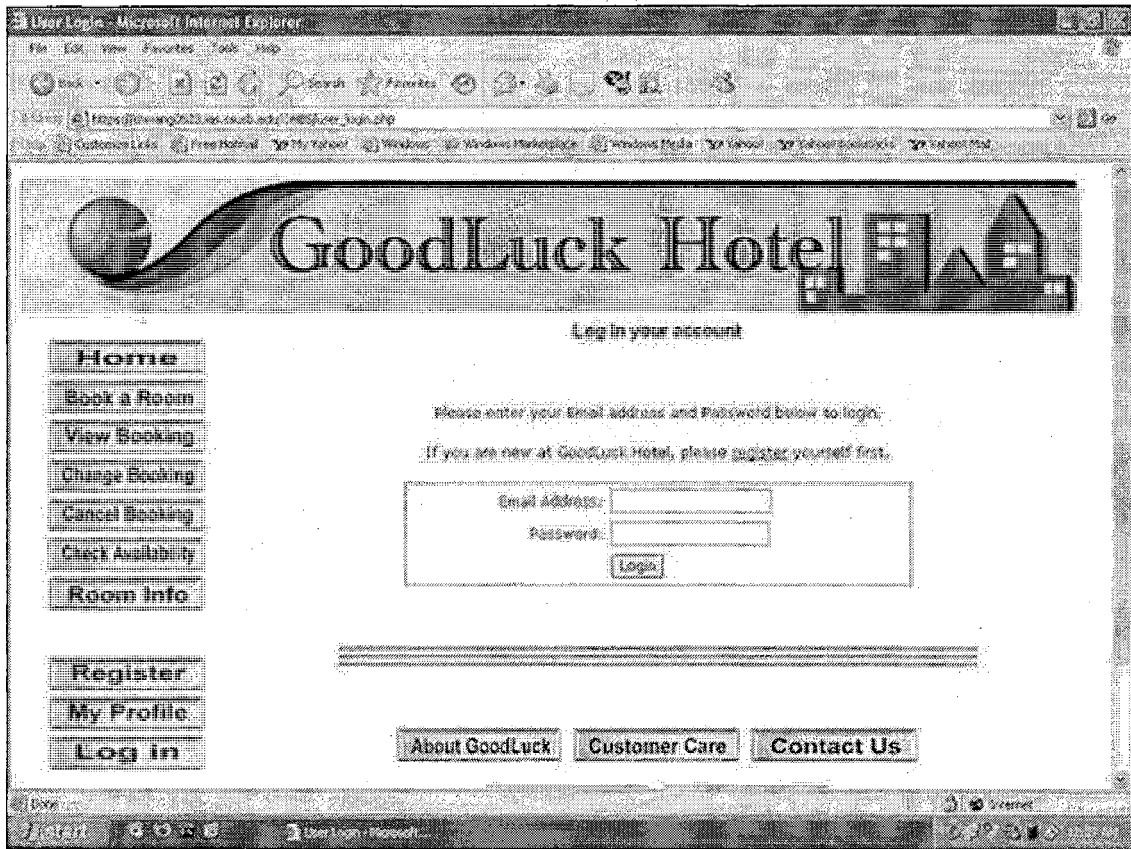


Figure 17. User Login Page (Users)



Figure 18. Error Message in Login Page (Users)

5.2.5 Main Page - Login Already

After users login successfully, they will be redirected to this page. Please refer to Figure 19.

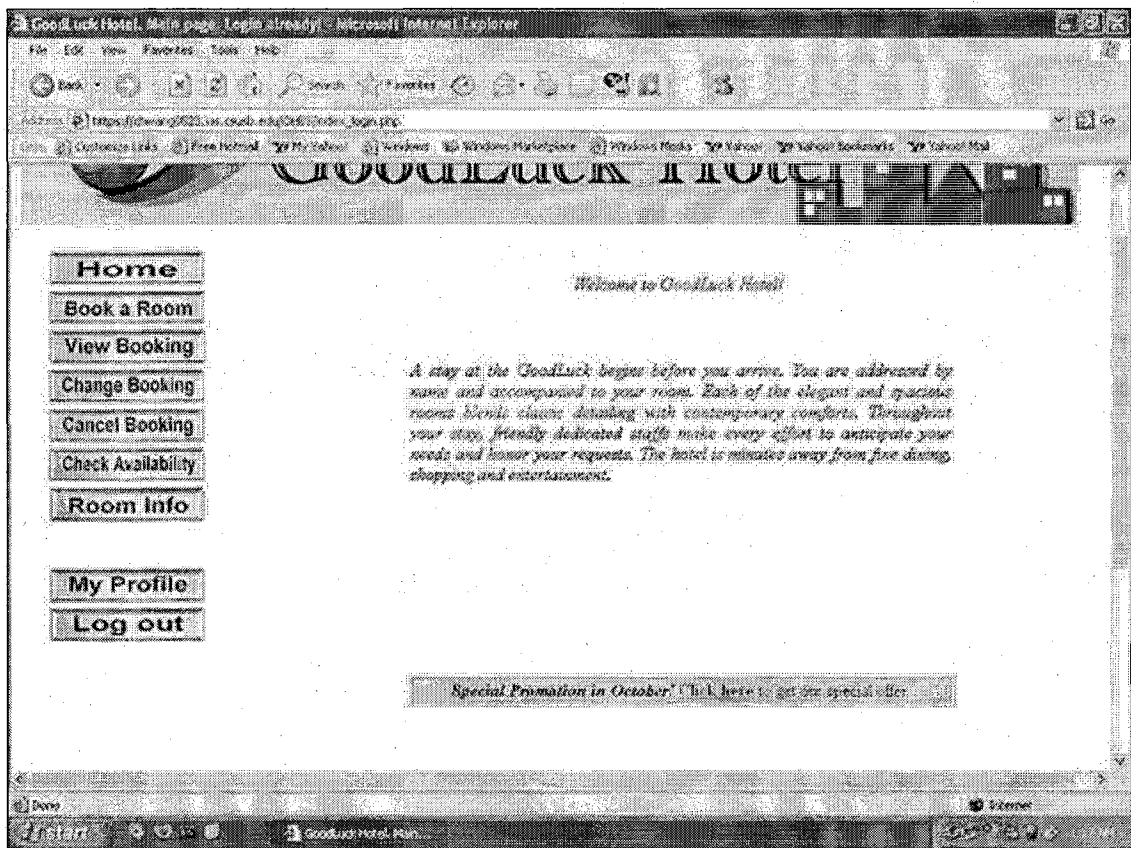


Figure 19. Main Page - Login Already (Users)

5.2.6 Booking Details Page

In this page users will start to fill out the booking information. They need to choose the arrival year, arrival month, arrival day, departure year, departure month, and departure day, room quantity, room type, extra required in Network and PC, number of adults, number of children, room options, and enter the special requirement in the required field if they need. Please refer to Figure 20.

In these fields, if users choose wrong value in either of arrival year, arrival month, arrival day,

departure year, departure month, or departure day, the page will display error message and users need to re-choose the correct value to continue the booking. The page will not skip to next one until these fields are chosen in appropriate values. Please refer to Figure 21.

If users choose a specific date which there is no quantity left in some specific room type, the page will display error message and then users need to re-choose the alternative date or change other room types until the page does not display the error message.

In the field "Room Quantity" and "Room Type", every room type requires the limited number of occupants. Corresponding to the room quantity chosen by users, it has a limited number of total occupants. The page will display error message if users cannot match its requirements. Please refer to Figure 22.

This page will not skip to next one until all fields are chosen in appropriate values. After clicking the "Booking" button and all fields are correct, the page will be linked to "Confirm Booking" page.

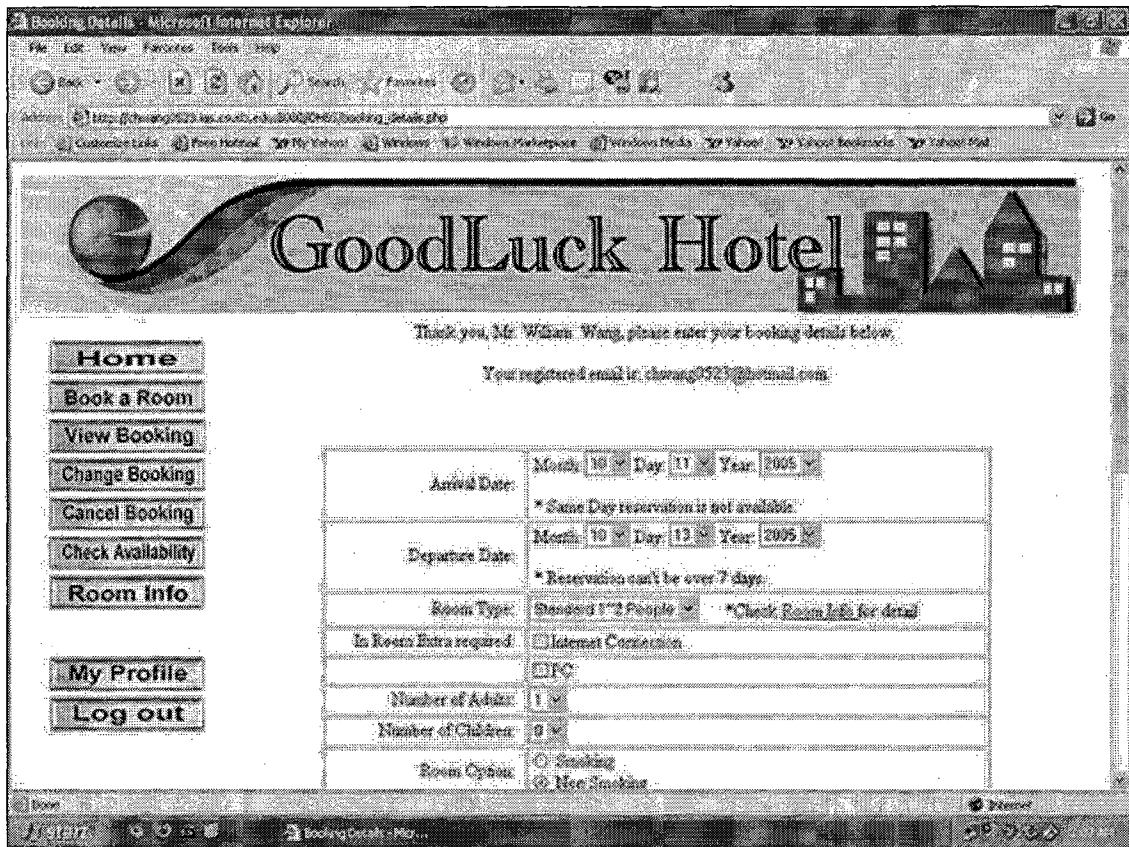


Figure 20. Booking Details Page (Users)

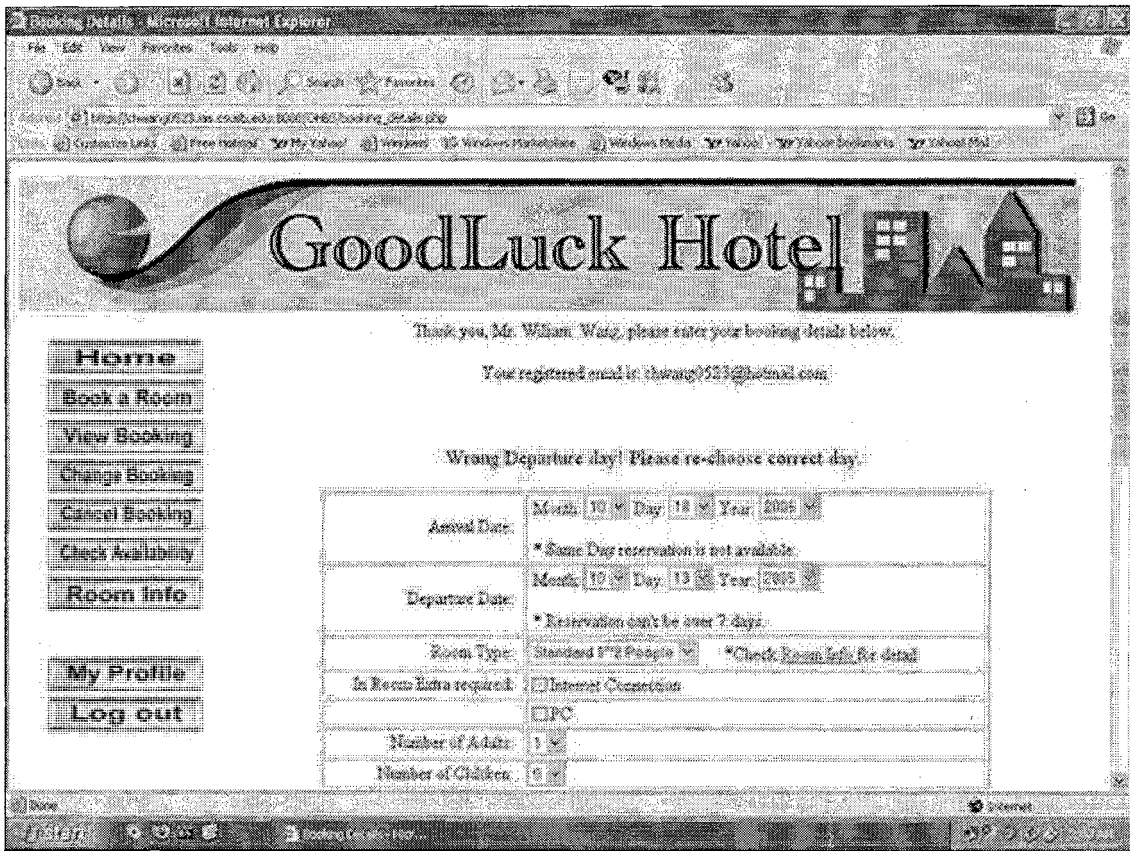


Figure 21. Error Message in Wrong Date (Users)



Figure 22. Error Message in Room Types (Users)

5.2.7 Confirm Booking Page

In this page users can see all details of their booking details including personal profile. If these booking details are correct, they can click the button "Next" to next page; otherwise they can click "Change" to change their booking information. Please refer to Figure 23.

The personal profile cannot be modified here.

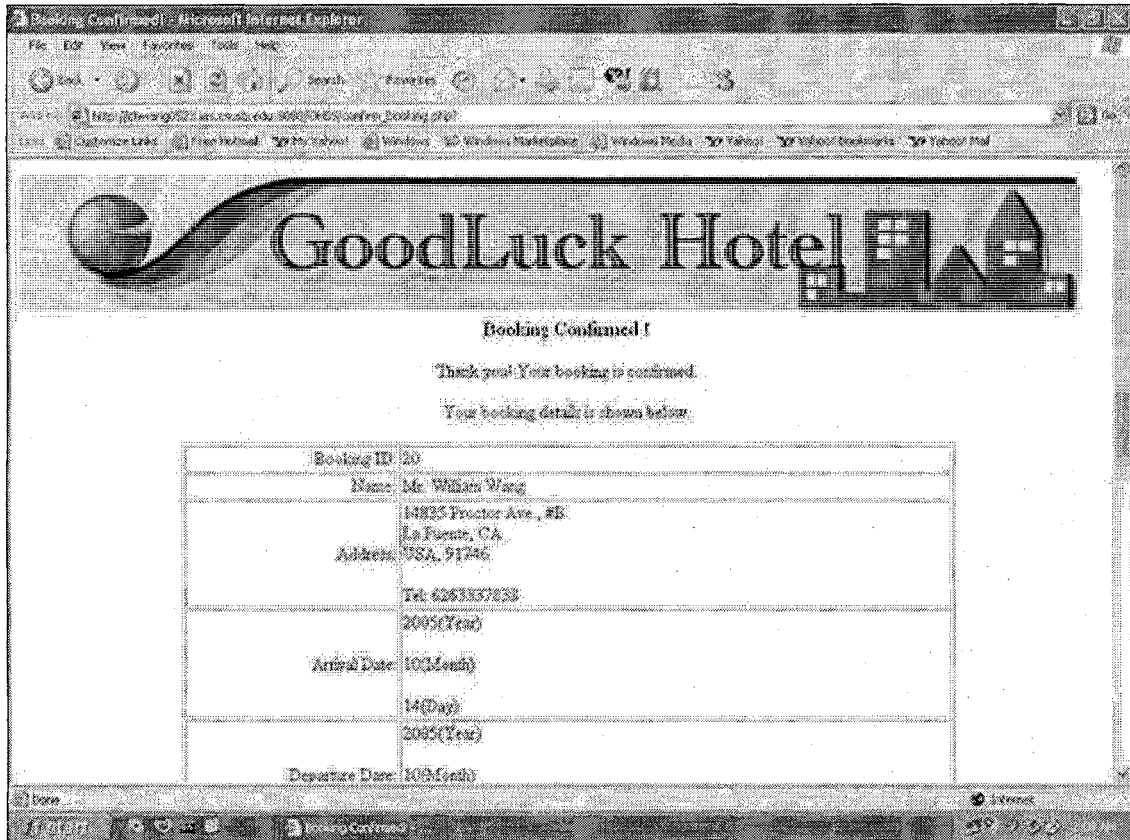


Figure 23. Confirm Booking Page (Users)

5.2.8 Change Booking Details Page

If users click "Change" in the "Confirm Booking" page, the page will be linked to this page. Please refer to Figure 24.

The same as the "Booking Details" page, if users choose wrong value in either arrival date or departure date, the page will display error message and users need to re-choose the correct value to continue the booking.

If users choose a specific date which there is no quantity left in some specific room type, the page will display error message and then users need to re-choose the alternative date or change other room types until the page doesn't display the error message.

In the field "Room Quantity" and "Room Type", every room type requires the limited number of occupants. So it also has limited number of total occupants corresponding to the required quantity of rooms. The page will display error message if users cannot match its requirements.

This page will not skip to next one until all fields are chosen in appropriate values.

After users click the "Confirm" button, the page will be linked to "Booking Updated" page.

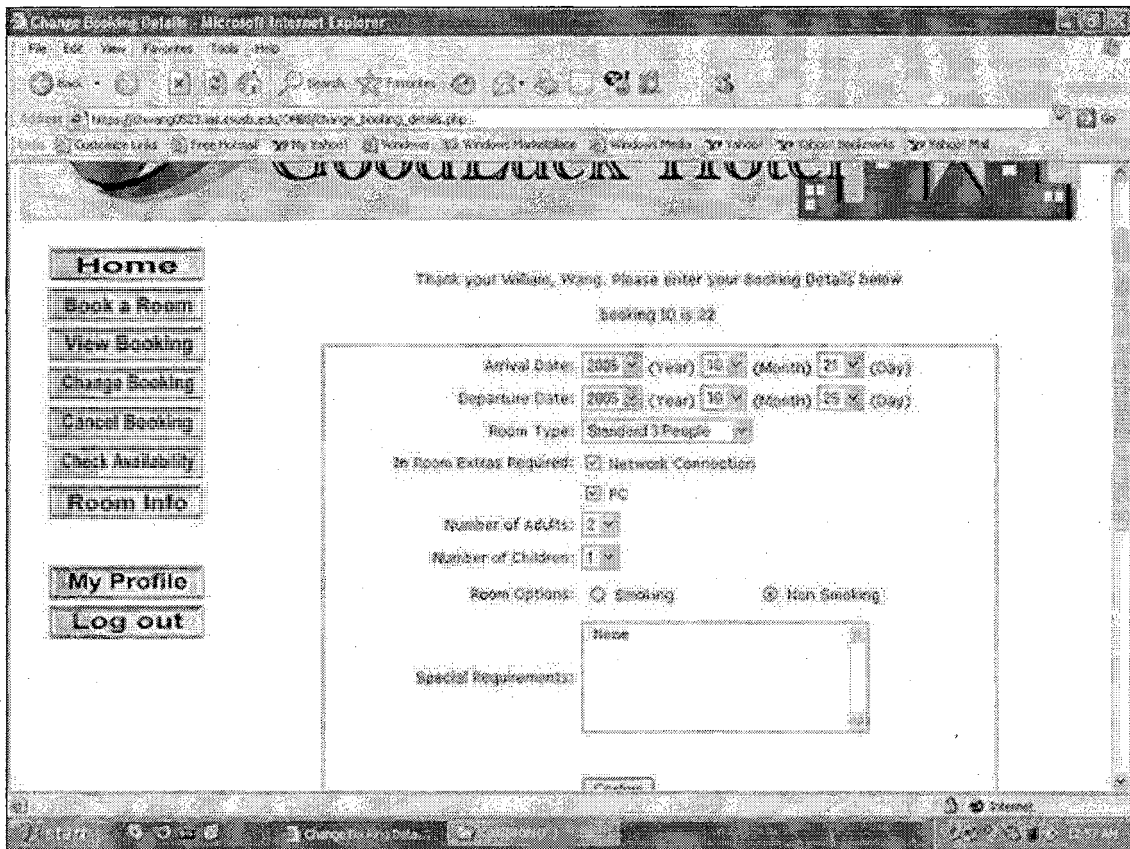


Figure 24. Change Booking Details Page (Users)

5.2.9 Booking Updated Page

In this page it will show all booking details after users had changed. This page is almost the same as the "Confirmed Booking" page. Users cannot modify any booking details again in this page. Please refer to Figure 25.

After users click the "Next" button, the page will be linked to "Price Details" page.

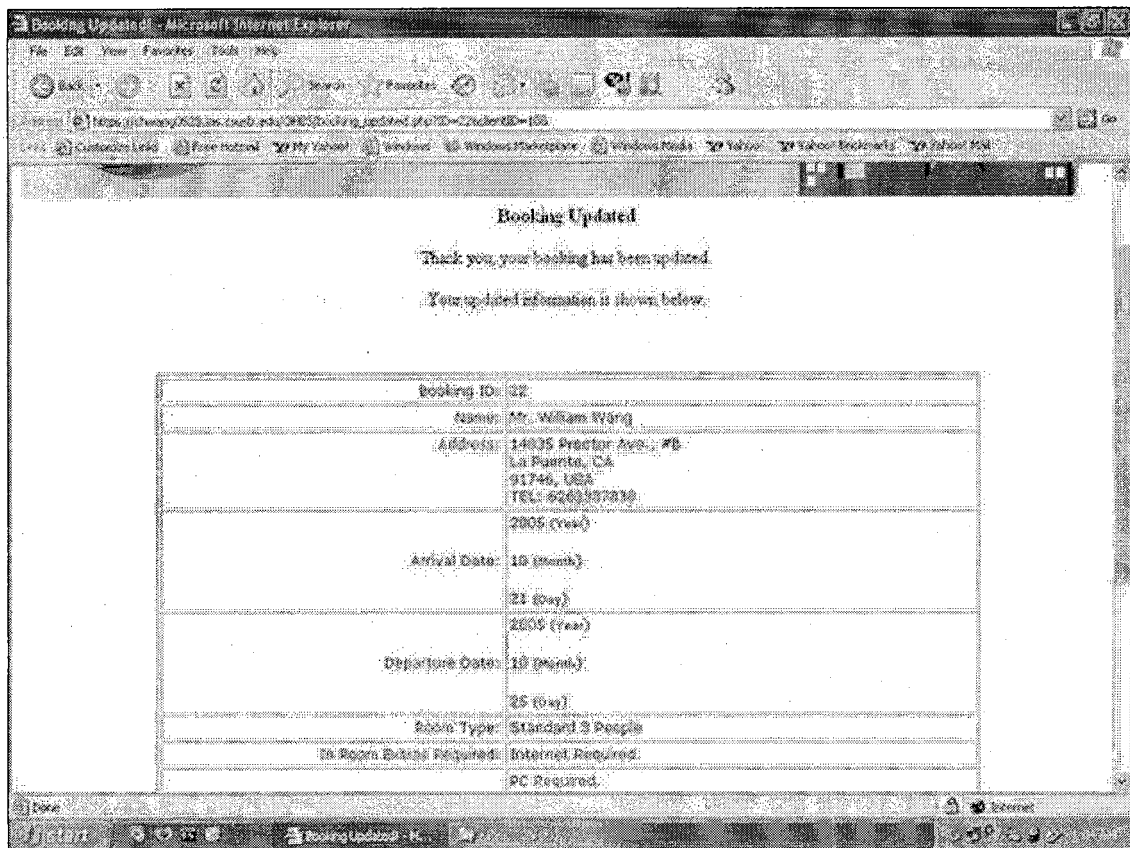


Figure 25. Booking Updated Page (Users)

5.2.10 Price Details Page

This page will show all booking details from booking ID, personal profile, arrival year, arrival month, arrival day, departure year, departure month, departure day, room quantity, room type, number of adults, number of children, a small table in the middle showing the details of user's booking dates and their corresponding prices, total nights of order, total price, if the tax is applied or not, and the final price. Users cannot change any details shown on this page. Please refer to Figure 26.

After users click the "Next" button, the page will be linked to "Payment" page.

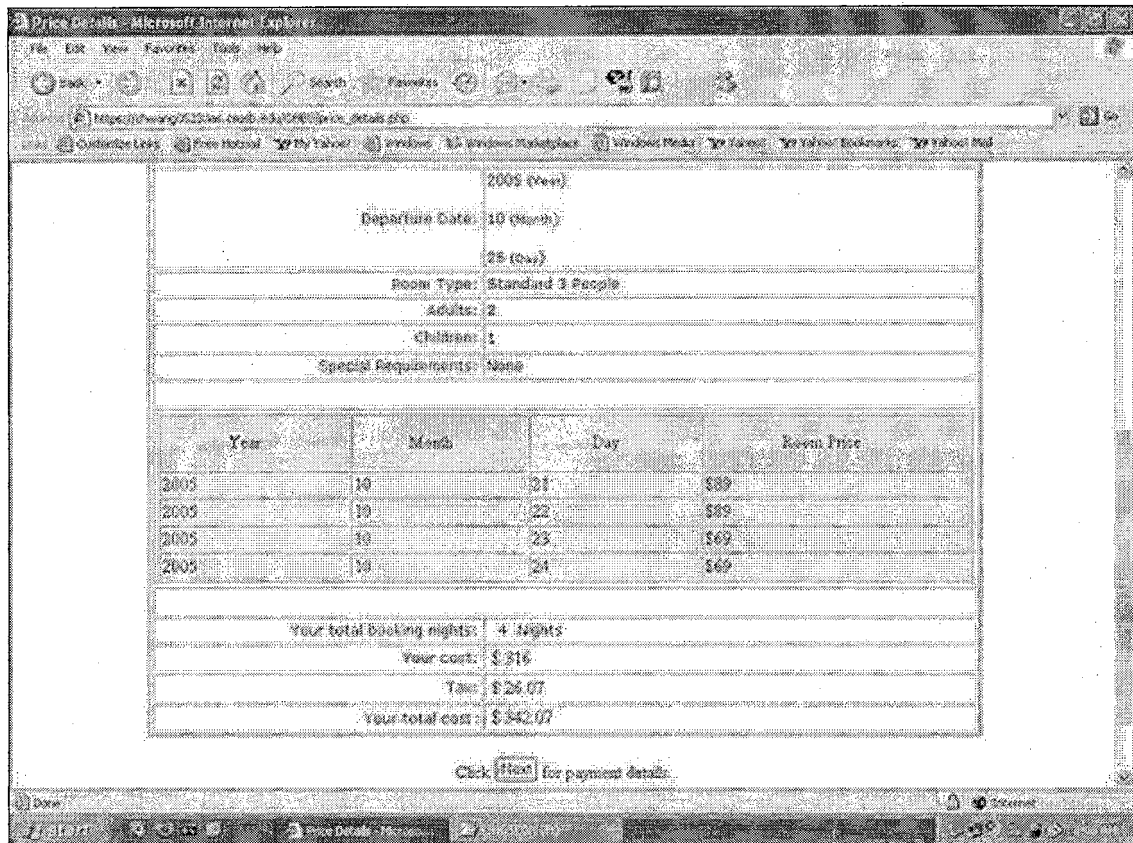


Figure 26. Price Details Page (Users)

5.2.11 Payment Page

Users need to input their credit card information at this page. At present, the GoodLuck payment system only accepts credit card types in Visa, Master card, Discover, or American Express. Sorry no other types of cards will be accepted. Please refer to Figure 27.

When users input card number, the length of card number should match between 15 and 16. The 15-digit option is for American Express card only. The rest of cards are all in 16-digit. If users do not match the requirement here, the page will display corresponding error messages. Please refer to Figure 28.

In the option "expiration date", users cannot choose date before the current month; otherwise the page will display the error message. Please refer to Figure 29.

This page will not skip to next one until all fields are chosen in appropriate values.

After users click the "Done" button, the page will be linked to "Booking Completed" page.

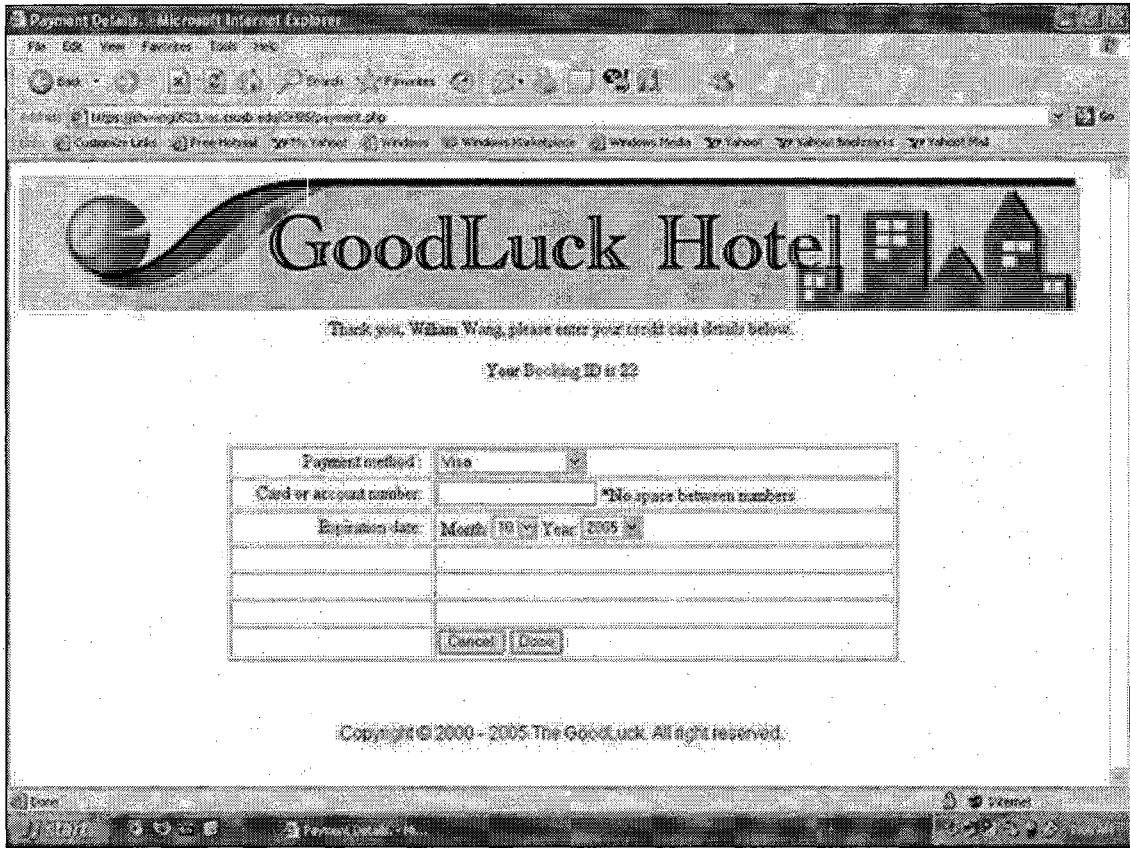


Figure 27. Payment Page

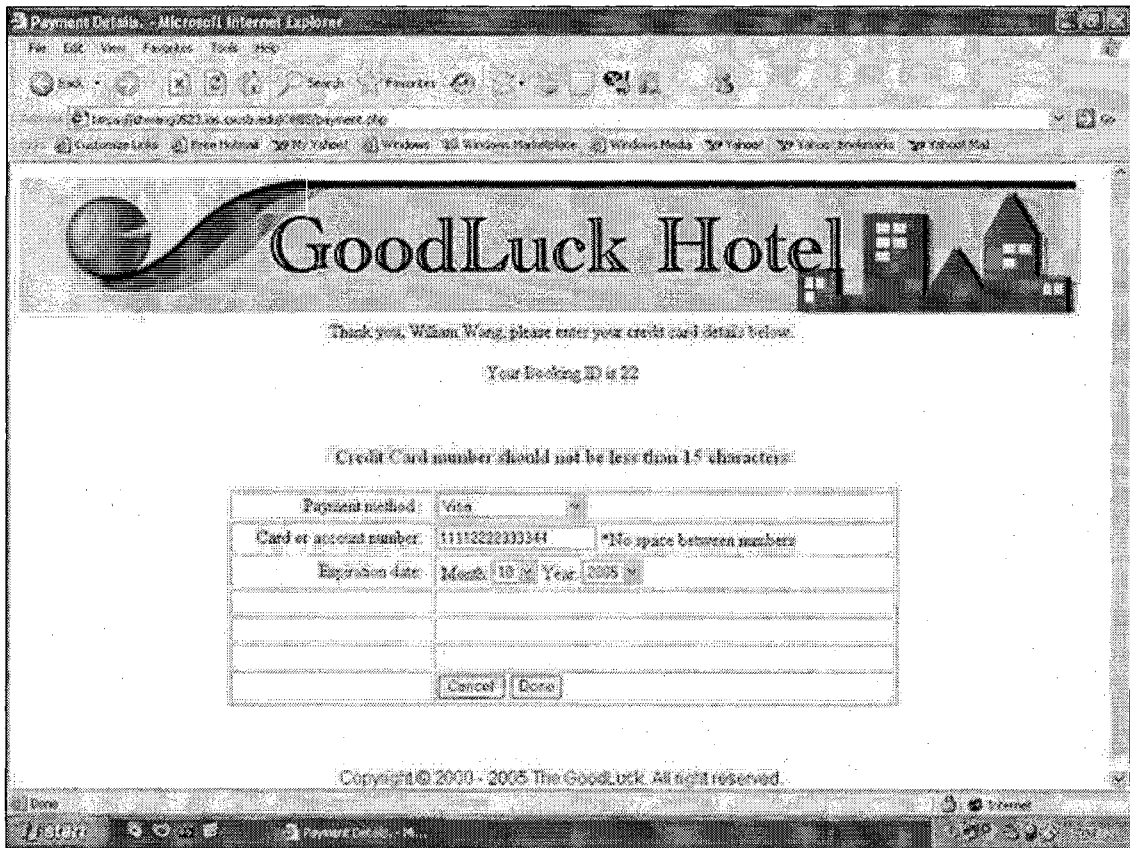


Figure 28. Error Message in Card Number (Users)

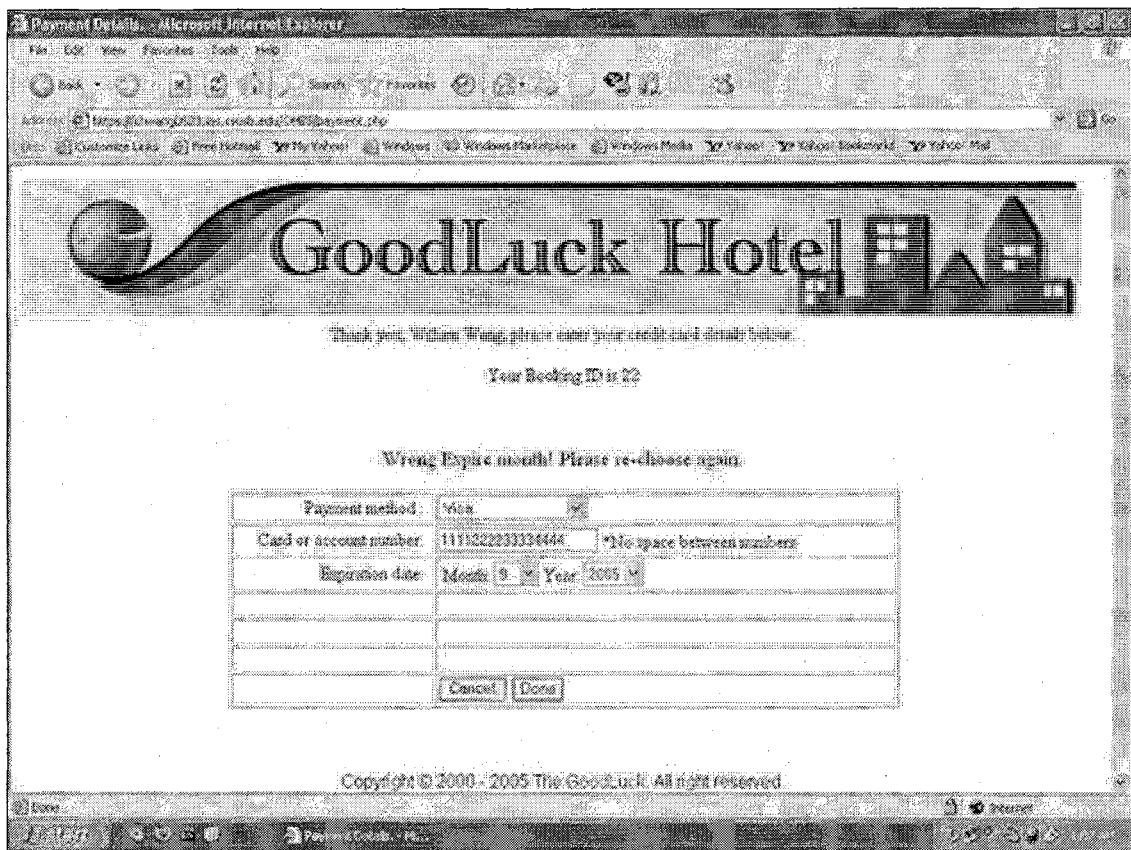


Figure 29. Error Message in Card Date (Users)

5.2.12 Booking Completed Page

After users finish the payment page, the page will be linked to this one for displaying the final confirmation details. Users can view all details for their booking. In this page they only can click "Homepage" to back to home page of GoodLuck Hotel. Please refer to Figure 30.

At the same time, system will send out a confirmed email to their registered email address. They can check all details inside the confirmed email to make sure if the booking information is correct.

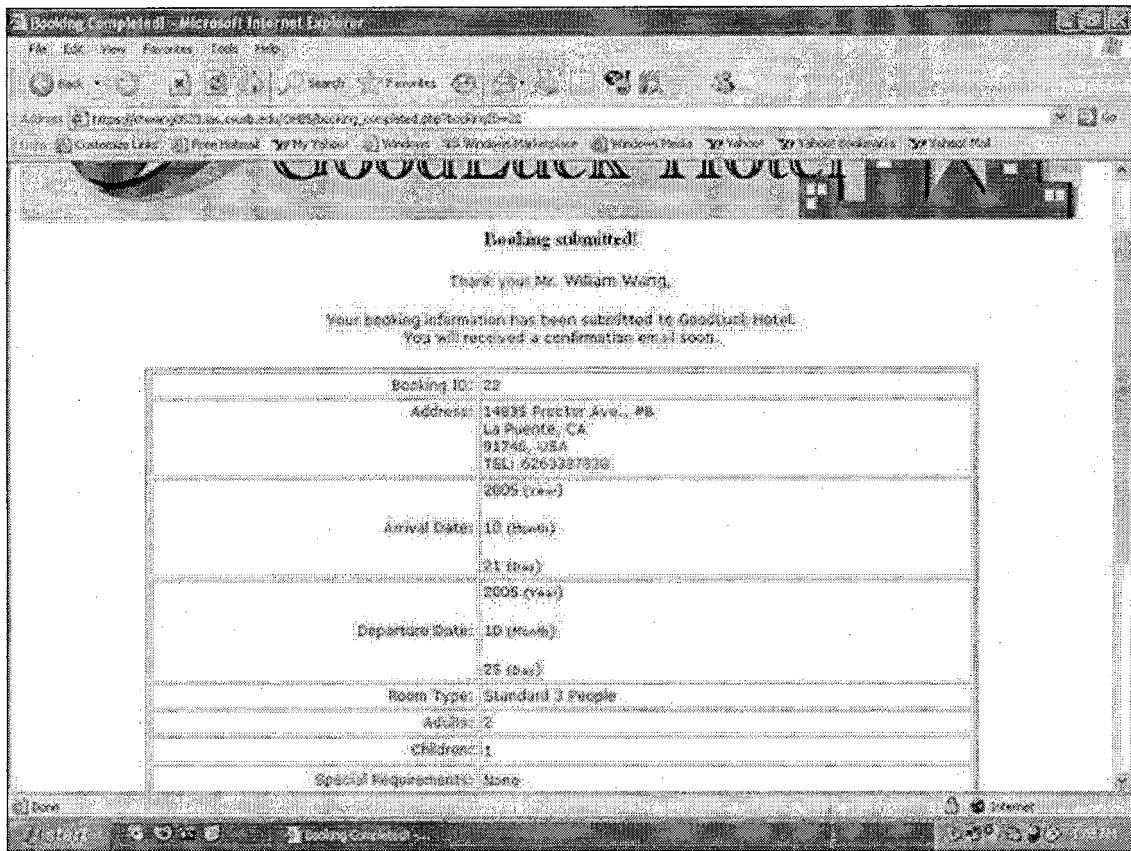


Figure 30. Booking Completed Page (Users)

5.2.13 View Booking Details Page

After logon, when users click in either of "View Booking", "change booking", or "Cancel Booking" button, they will see this page. In this page, users can view all their booking history in GoodLuck. If the Edit field displays "No", it means the specific booking has been expired or the arrival date is less than 3 days from today. They cannot change or cancel this specific booking. If it has options "Change" and "Cancel" on it, it means users

can change or cancel this specific booking. Please refer to Figure 31.

If users click the option "Change", the page will be linked to Change Booking Details page. The same page as we mentioned in Figure 24.

If users click the option "Cancel", the page will be linked to the "Cancel Booking Determined" page.

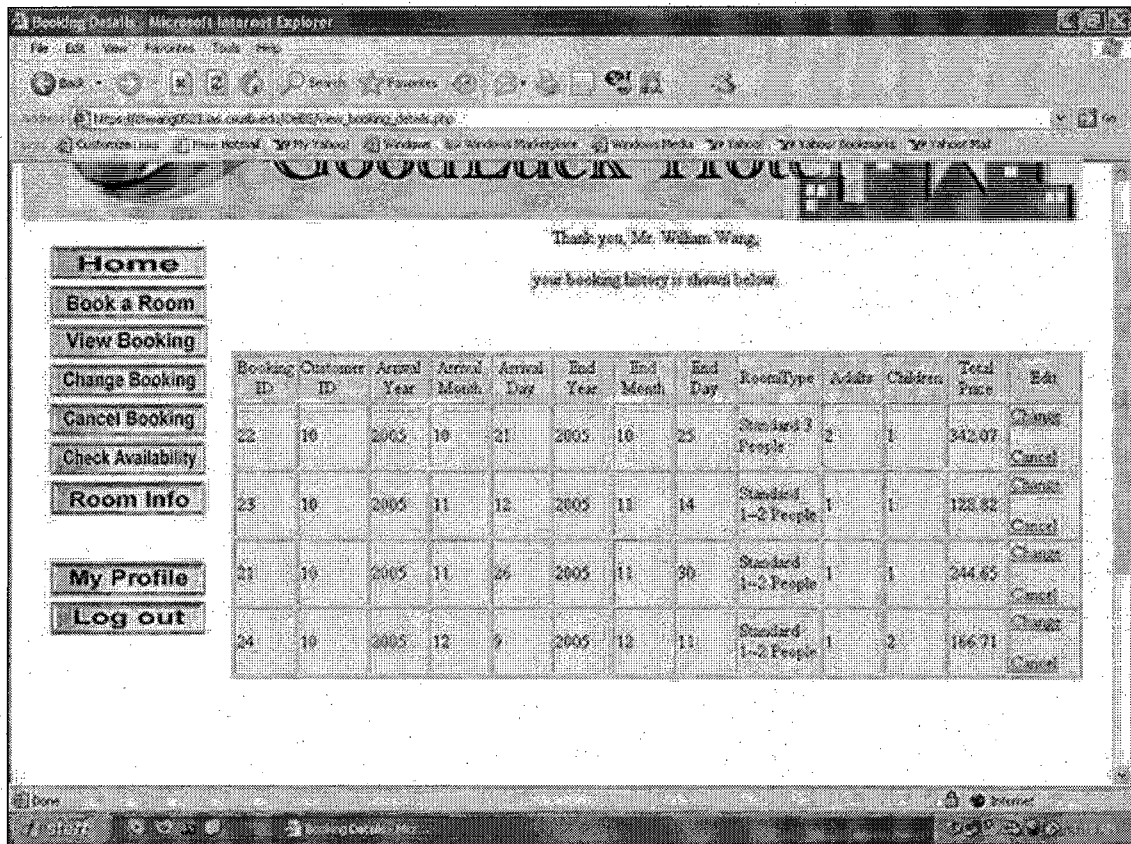


Figure 31. View Booking Details Page (Users)

5.2.14 Cancel Booking Determined

If users click option "Cancel" in the "View Booking Details" page, the page will be linked to this one. In this page user can review both arrival and departure date and the booking ID for this specific booking.

If they choose "YES" and submit, this booking will be cancelled forever and cannot be recovered.

If they choose "NO" and submit, this page will be linked back to "View Booking Details" page.

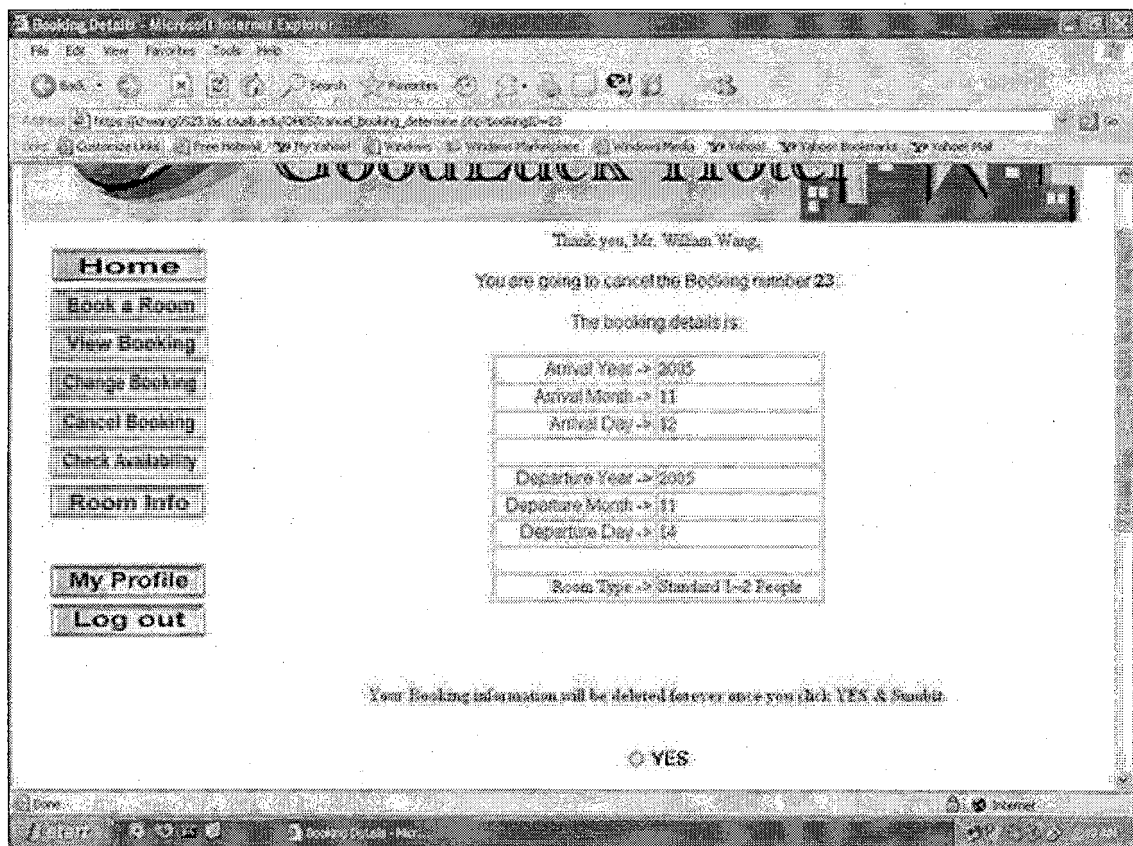


Figure 32. Cancel Booking Decided Page (Users)

5.2.15 Booking Cancelled Page

In this Page users will see the information shown the specific booking has been cancelled.



Figure 33. Booking Cancelled Page (Users)

5.2.16 Change my Profile Page

In this page users can view their registered information in GoodLuck. They can change any fields here except the email address. If users do not want to change anything, just click "Update" and the page will be linked to next one. Please refer to figure 34.

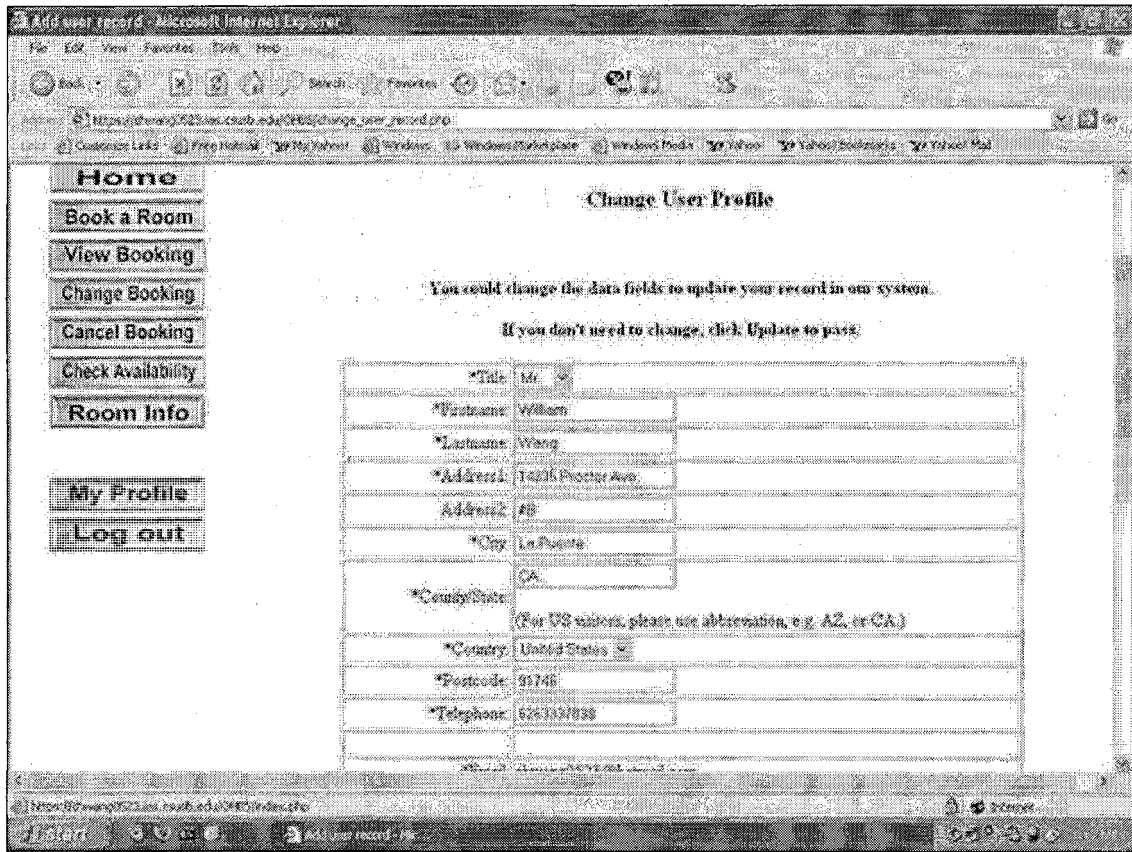


Figure 34. Change my Profile Page (Users)

5.2.17 User Profile Updated Page

After users click "update" from "Change User Record" page, the page will be linked to this one and shown all information. If users find any error in data, they can click the "My Profile" button again and re-modify until the information is correct. Please refer to Figure 35.

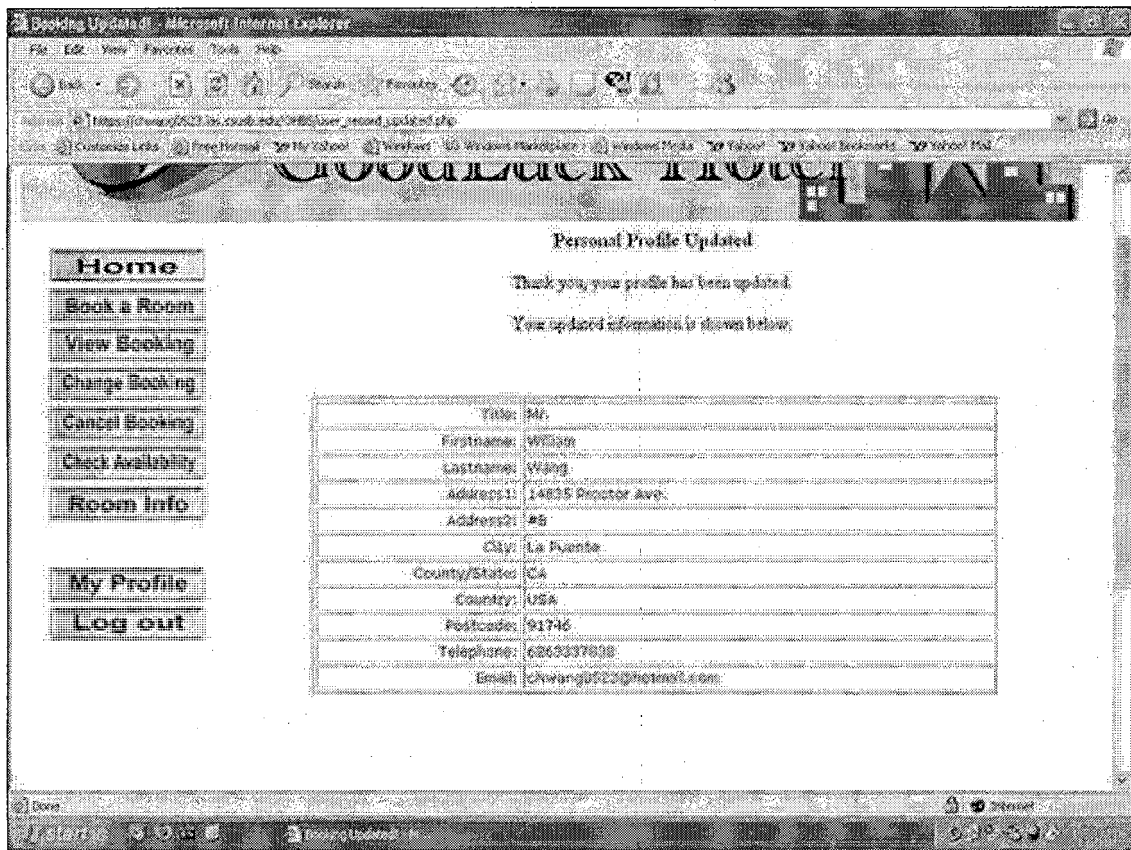


Figure 35. User Profile Updated Page (Users)

5.2.18 Check Availability Page

In this page users can check the room availability in GoodLuck. All visitors in GoodLuck can use this function. No logon required in this page. Please refer to Figure 36.

The same function as the Booking Details Page, users cannot choose the inappropriate arrival or departure date; otherwise the page will display the error message.

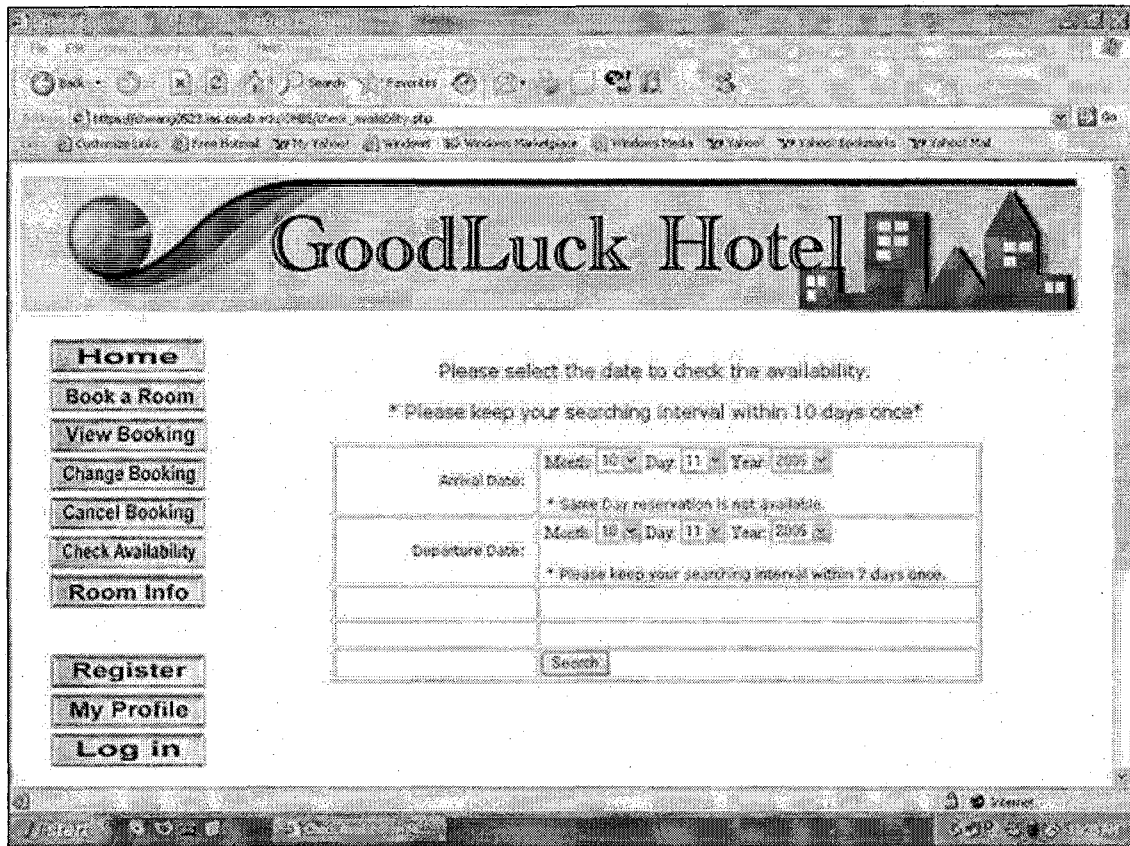


Figure 36. Check Availability Page (Users)

5.2.19 Result Availability Page

After users select the date in checking room availability, the page will be linked to this one and display the result. No logon required in this page. Please refer to Figure 37.



Figure 37. Result Availability Page (Users)

5.2.20 Room Information Page

Users can view all room types in GoodLuck and their basic introduction. No logon required in this page. Please refer to Figure 38.

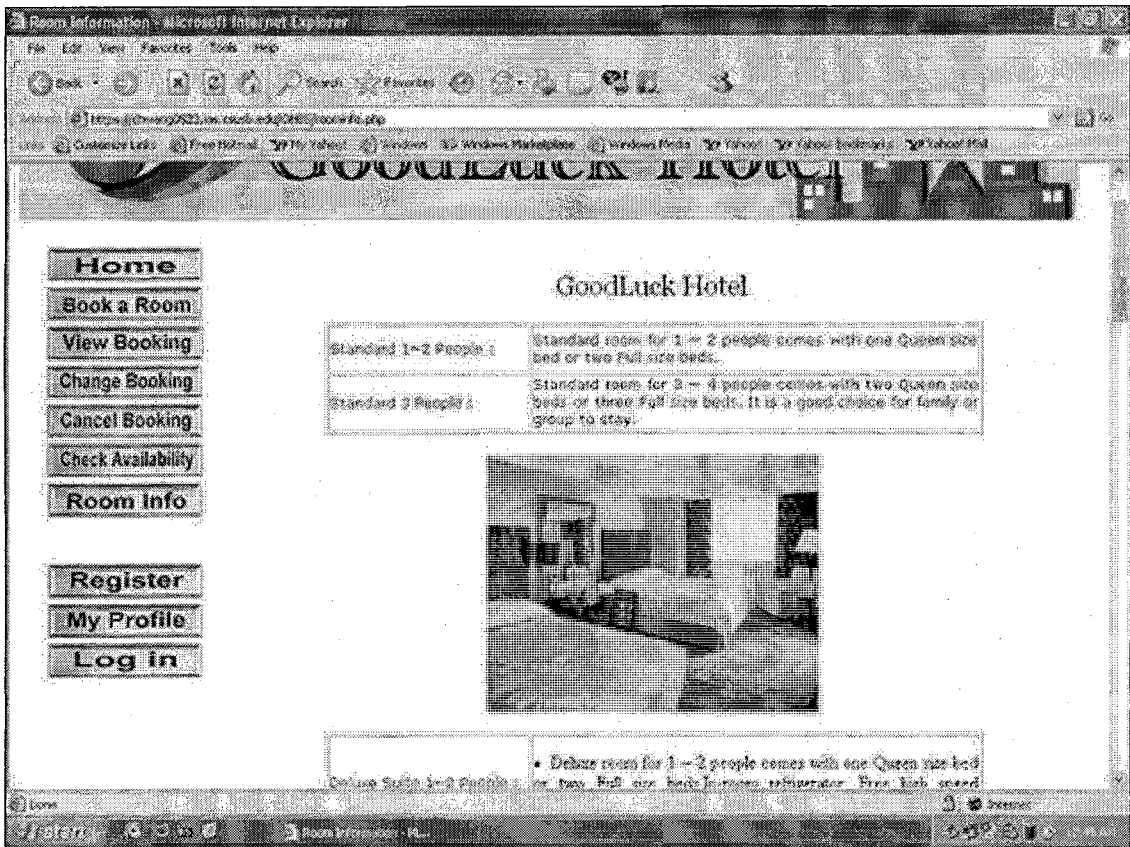


Figure 38. Room Information Page (Users)

5.2.21 Special Promotion Page

This page displays the current promotion in GoodLuck. Please refer to Figure 39.

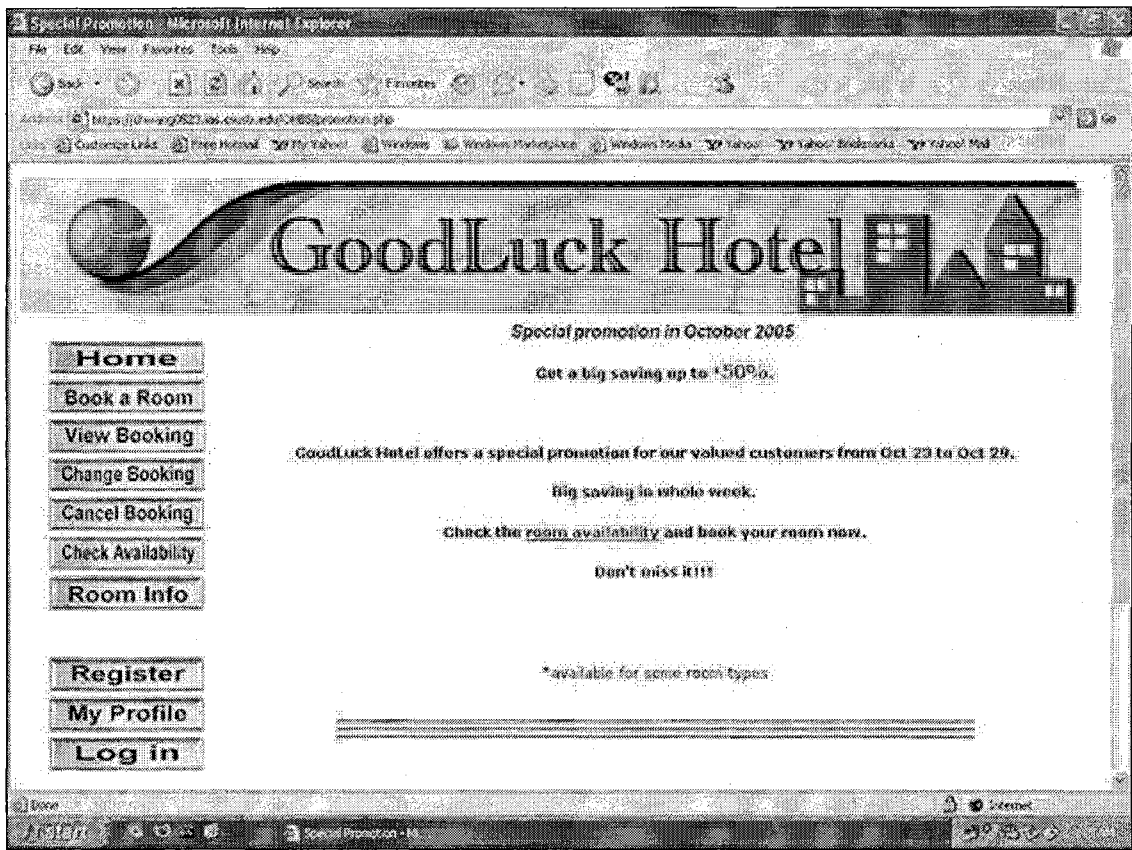


Figure 39. Special Promotion Page (Users)

5.2.22 About GoodLuck Page

This page displays basic introduction about GoodLuck Hotel. Please refer to Figure 40.

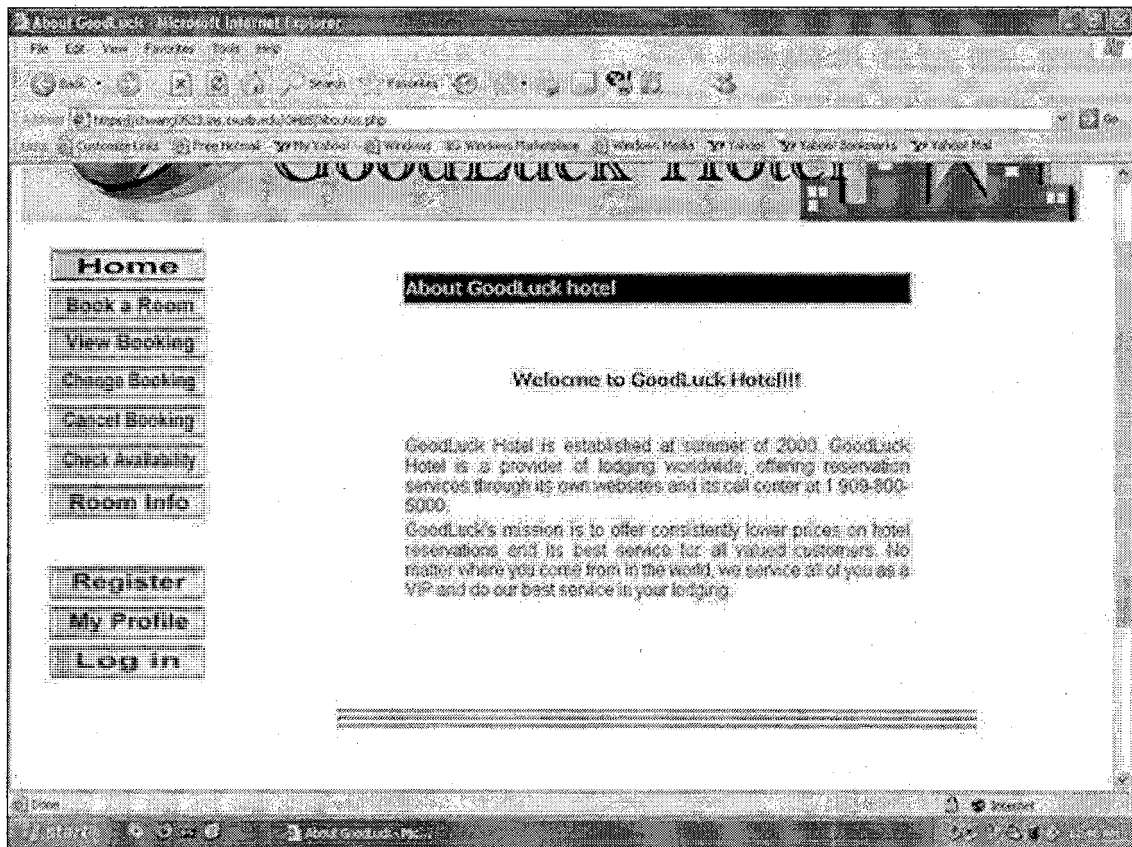


Figure 40. About GoodLuck Page (Users)

5.2.23 Customer Care Page

This page displays some frequently asked Q&A. If users still cannot get the answer on the page, they can call Customer Service Department for help. Please refer to figure 41.

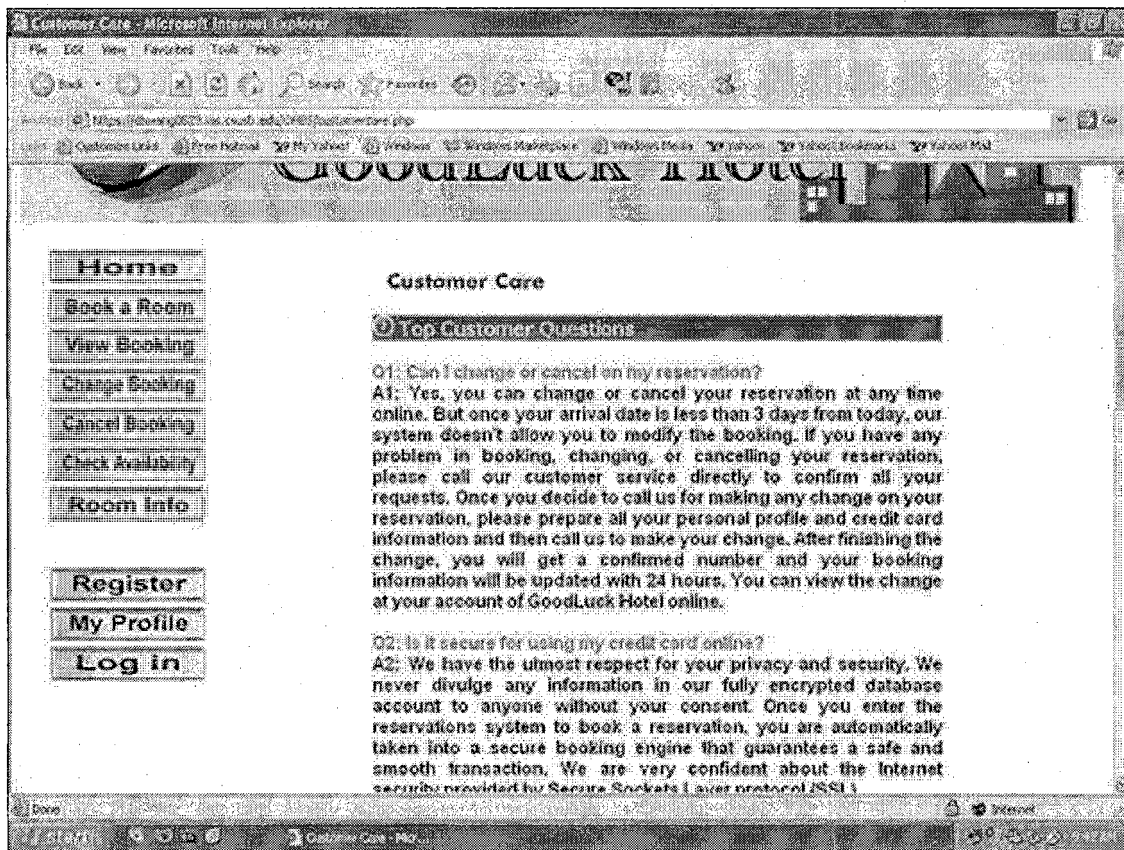


Figure 41. Customer Care Page (Users)

5.2.24 Contact us Page

This page displays basic contacting information and service options in GoodLuck. Please refer to Figure 42.

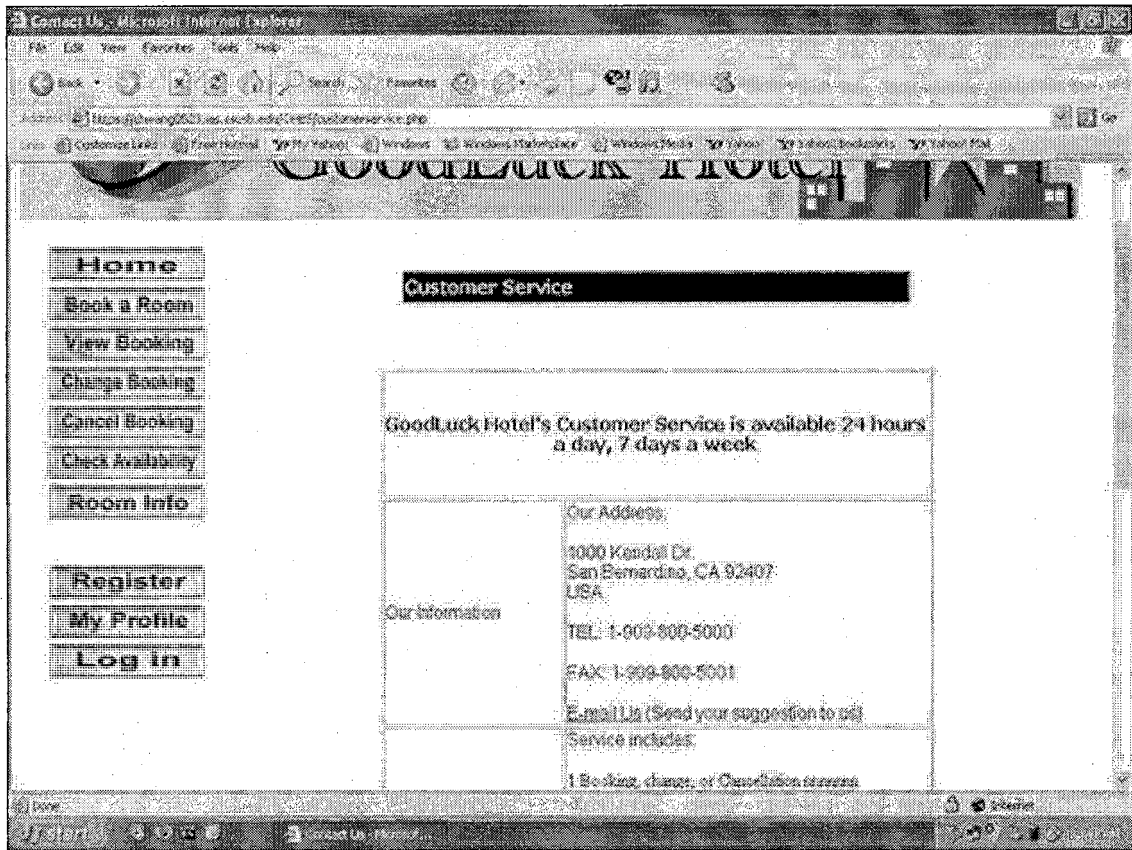


Figure 42. Contact us Page (Users)

5.2.25 Travel and Shopping Page

This page displays some basic traveling introduction and shopping information in local areas of GoodLuck Hotel. Please refer to Figure 43.

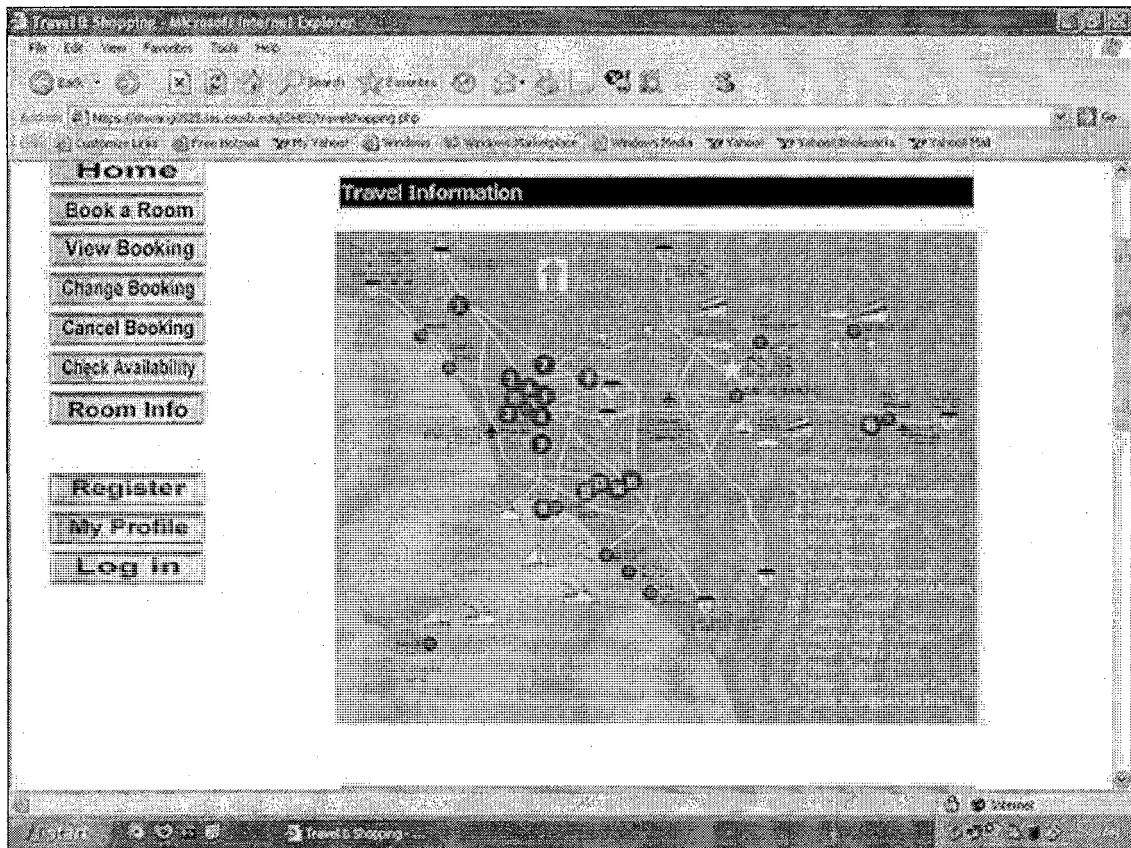


Figure 43. Travel and Shopping Page (Users)

5.2.26 Privacy Policy Page

This page displays some basic Q&A in privacy policy part. If users still cannot get the answer on the page, they can call Customer Service Department for help. Please refer to Figure 44.

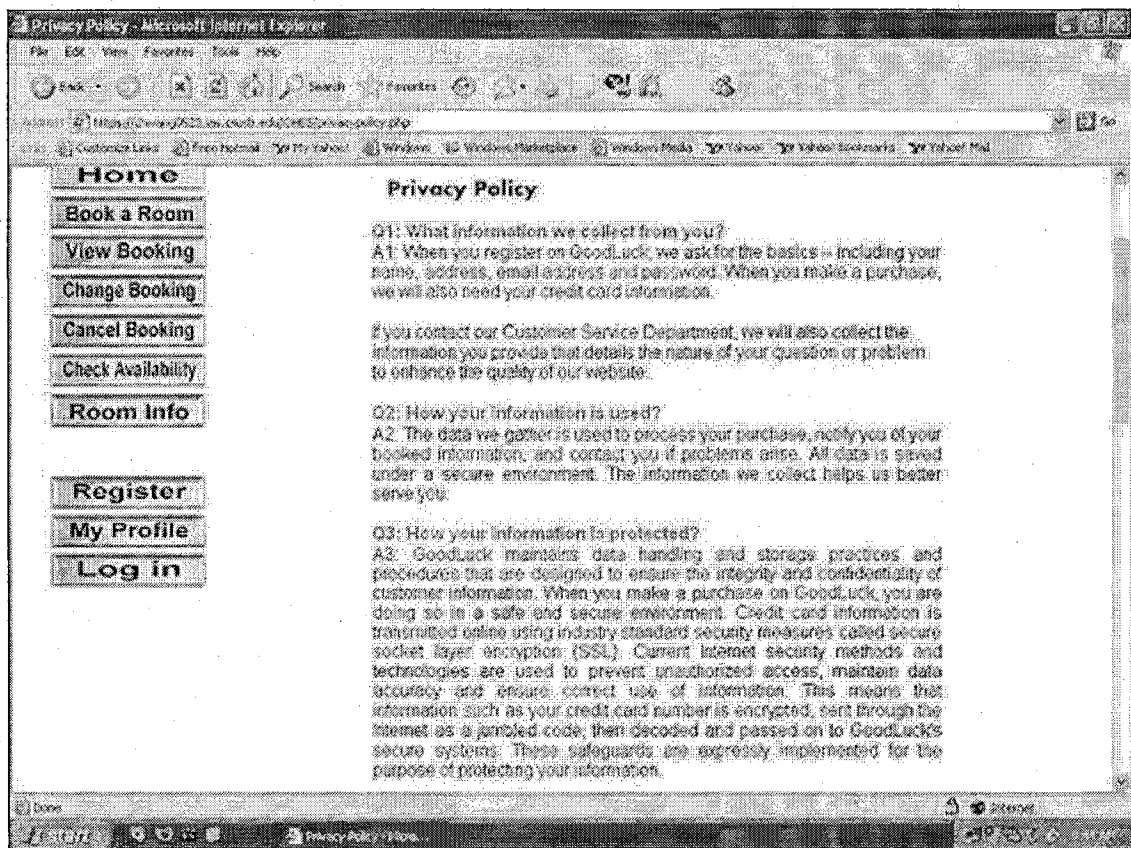


Figure 44. Privacy Policy Page (Users)

5.2.27 Admin Login Page

After clicking "Admin" button on main page, the page will be linked to Admin Login Page. The page is for administrators in GoodLuck only, not for the regular users or visitors.

The same as the User Login page, it requires administrators to enter the username and password in order to login. Please refer to Figure 45.

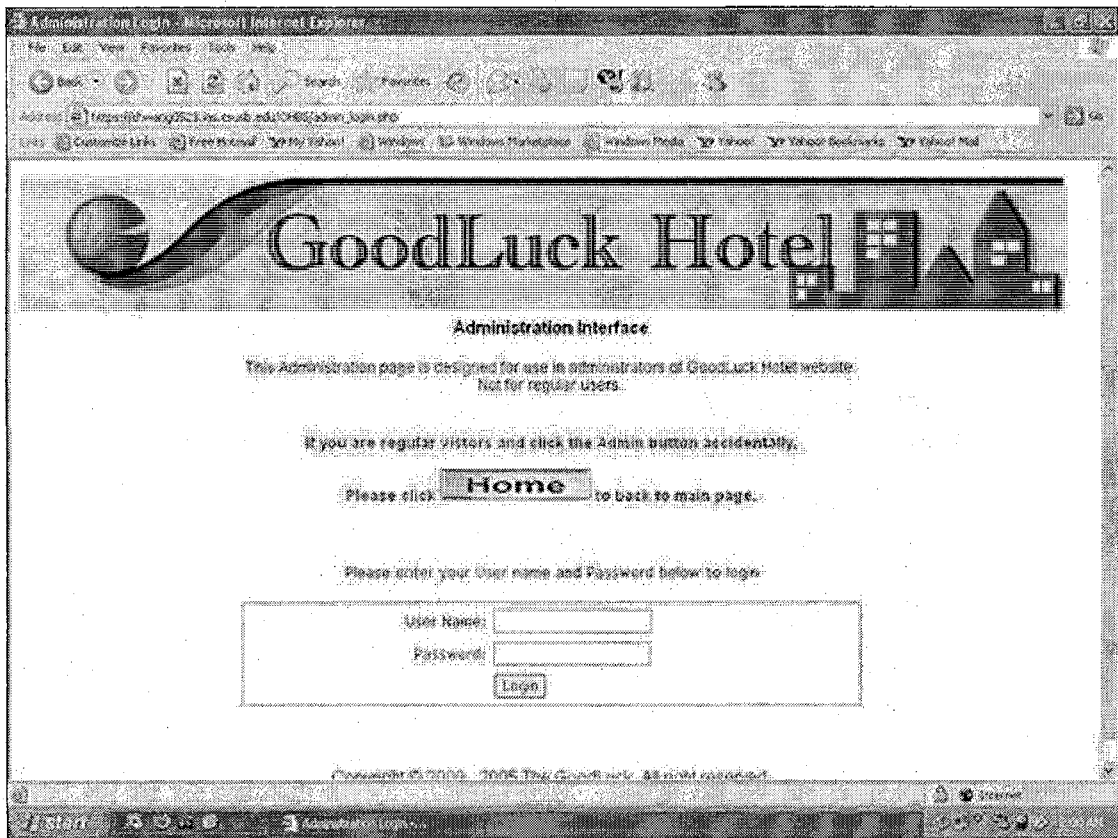


Figure 45. Admin Login Page (Admin)

5.2.28 Admin Menu Page

After administrators login, they will see this page. In this page, first part is "Modify Room Price and Quantity". They can modify data in room price or quantity sorted by month. Second part "View Users' Profiles or Create New Administrator", they can view users' profiles and change them if it needs, or create a new administrator. Third part "Booking Management", they can change or cancel users' booking record if it needs. Last one is "Files Management". Here they can modify some information pages.

It is very useful for administrators to manage the system in an efficient and fast way.

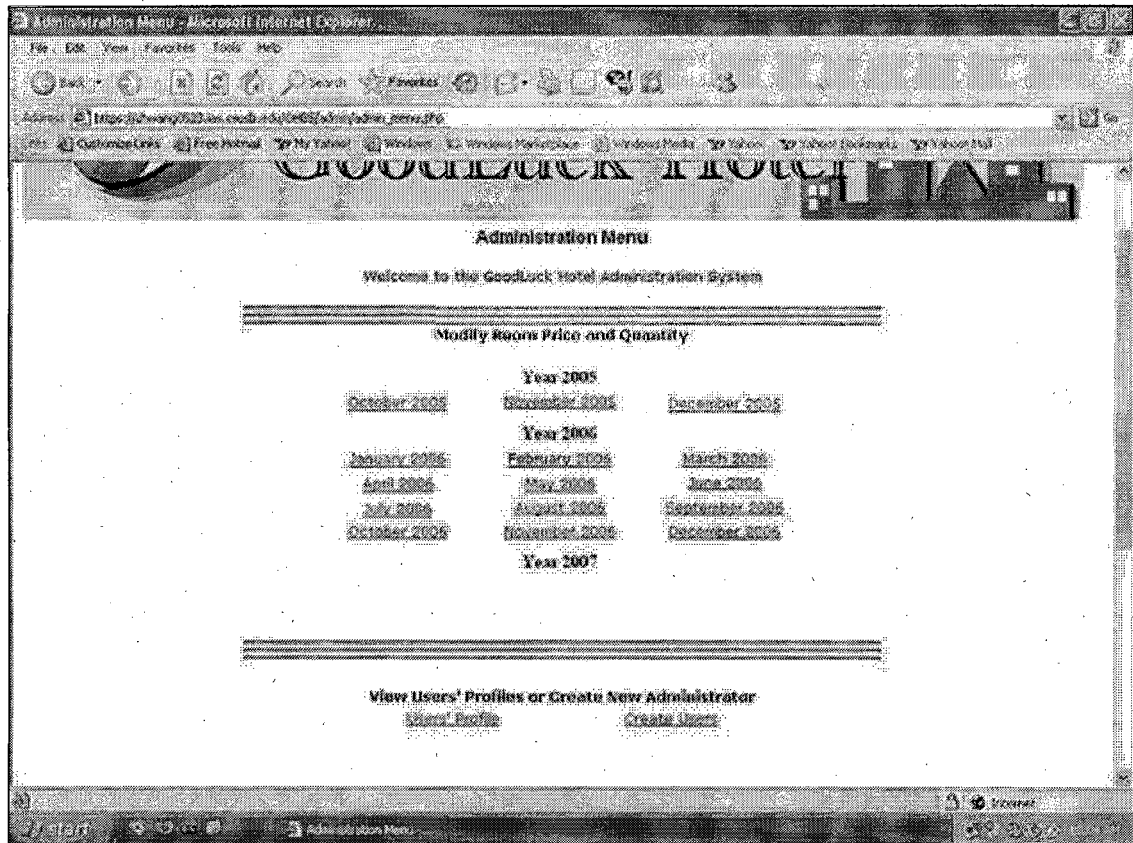


Figure 46. Admin Menu Page (Admin)

5.2.29 Change Price and Quantity Page

In the "Modify Room Price and Quantity" part, administrators can access the database to change room price or quantity sorted by month. Please refer to Figure 47.

| Day | Standard 1-2 | | Standard 3 | | Deluxe Suite | | Luxury Room | | Edit |
|-----|---------------|--------|---------------|--------|---------------|--------|---------------|--------|------|
| | Quantity Left | PriceA | Quantity Left | PriceB | Quantity Left | PriceC | Quantity Left | PriceD | |
| 1 | 99 | 80 | 50 | 119 | 35 | 169 | 15 | 220 | Edit |
| 2 | 99 | 69 | 50 | 99 | 35 | 139 | 15 | 199 | Edit |
| 3 | 99 | 49 | 50 | 69 | 35 | 99 | 15 | 149 | Edit |
| 4 | 99 | 49 | 50 | 69 | 35 | 99 | 15 | 149 | Edit |
| 5 | 99 | 49 | 50 | 69 | 35 | 99 | 15 | 149 | Edit |
| 6 | 99 | 69 | 50 | 99 | 35 | 139 | 15 | 199 | Edit |
| 7 | 99 | 69 | 50 | 99 | 35 | 139 | 15 | 199 | Edit |
| 8 | 99 | 49 | 50 | 69 | 35 | 99 | 15 | 149 | Edit |
| 9 | 99 | 49 | 50 | 69 | 35 | 99 | 15 | 149 | Edit |
| 10 | 99 | 49 | 50 | 69 | 35 | 99 | 15 | 149 | Edit |
| 11 | 99 | 49 | 50 | 69 | 35 | 99 | 15 | 149 | Edit |
| 12 | 99 | 49 | 50 | 69 | 35 | 99 | 15 | 149 | Edit |
| 13 | 99 | 69 | 50 | 99 | 35 | 139 | 15 | 199 | Edit |
| 14 | 99 | 69 | 50 | 99 | 35 | 139 | 15 | 199 | Edit |
| 15 | 99 | 69 | 50 | 99 | 35 | 139 | 15 | 199 | Edit |
| 16 | 99 | 49 | 50 | 69 | 35 | 99 | 15 | 149 | Edit |
| 17 | 99 | 49 | 50 | 69 | 35 | 99 | 15 | 149 | Edit |
| 18 | 99 | 49 | 50 | 69 | 35 | 99 | 15 | 149 | Edit |
| 19 | 99 | 49 | 50 | 69 | 35 | 99 | 15 | 149 | Edit |

Figure 47. Room Price and Quantity Page (Admin)

5.2.30 View Users' Profiles Page

In this page administrators can view all registered users in GoodLuck and make any necessary modification in all fields except field "clientID". Please refer to Figure 48.

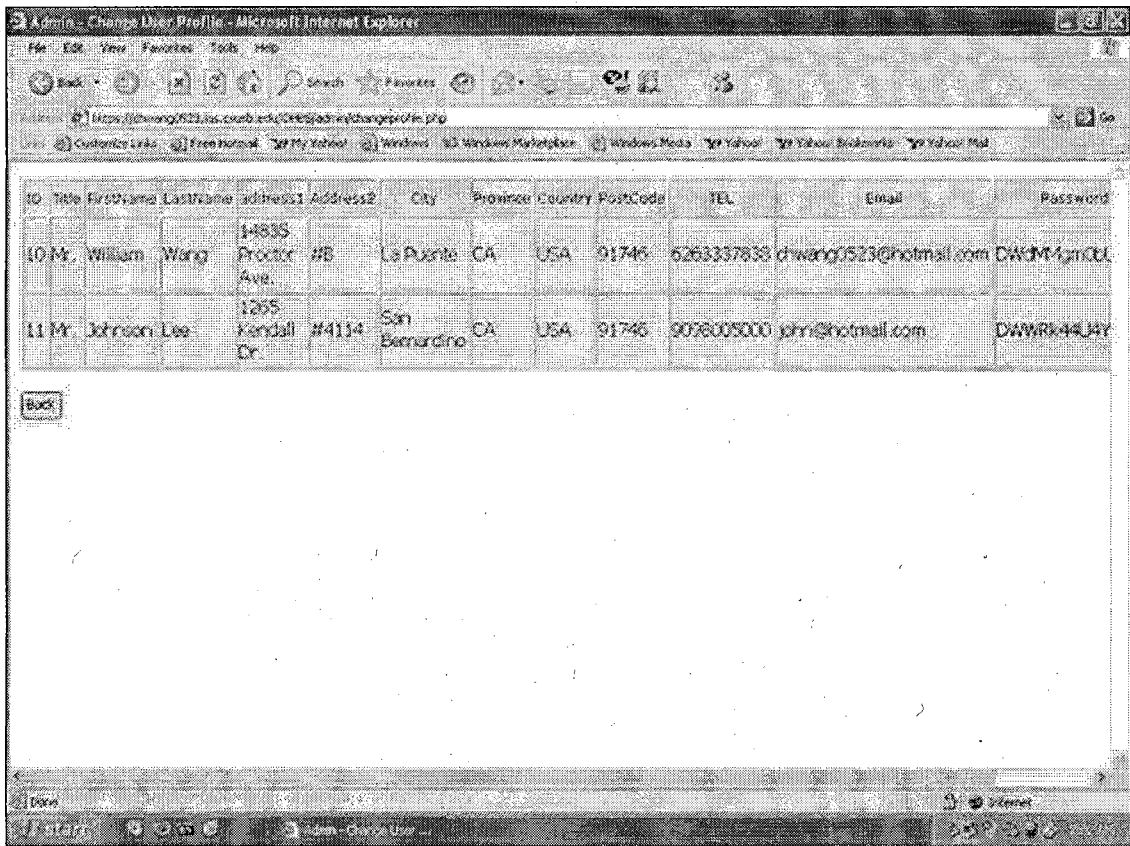


Figure 48. View Users' Profiles Page (Admin)

5.2.31 Create New Administrators Page

In this page administrators can add a new administrator after fill out required form. All fields are required in this form. Please refer to Figure 49.

The username cannot be the same with previous created one; otherwise the page will display the error message.

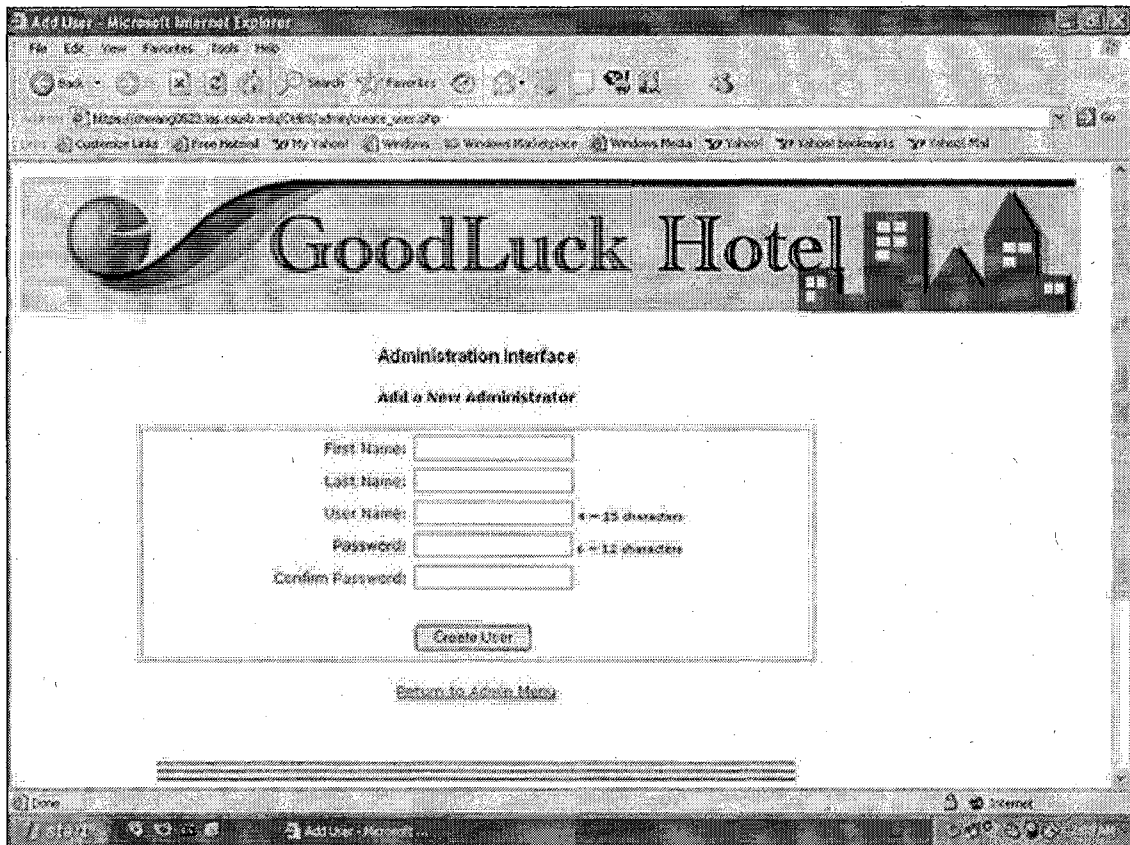


Figure 49. Create New Admin Page (Admin)

5.2.32 Change Users' Records Page

In this page administrators can view all booking history and change the specific one if it is necessary.

Please refer to Figure 50.

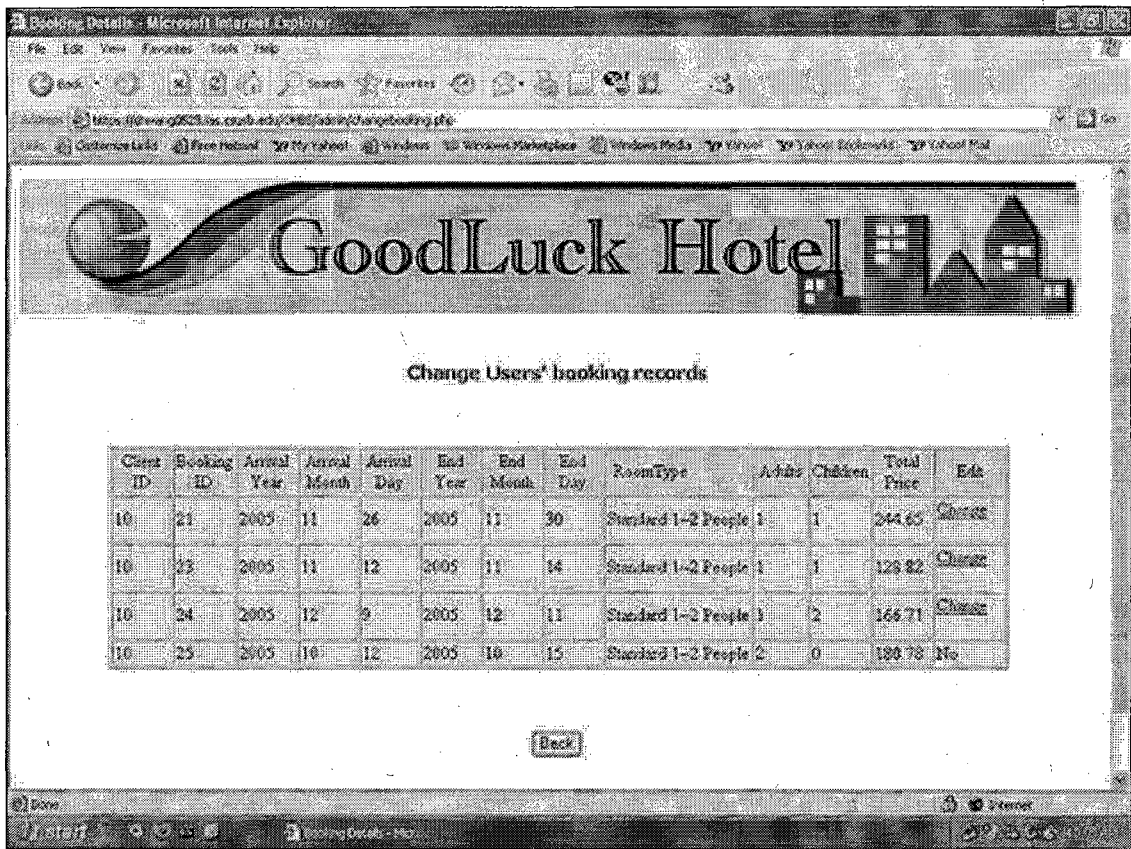


Figure 50. Change Users' Records Page (Admin)

5.2.33 Cancel Users' Records Page

In this page administrators can view all booking history in GoodLuck and cancel the specific booking.

Please refer to Figure 51.

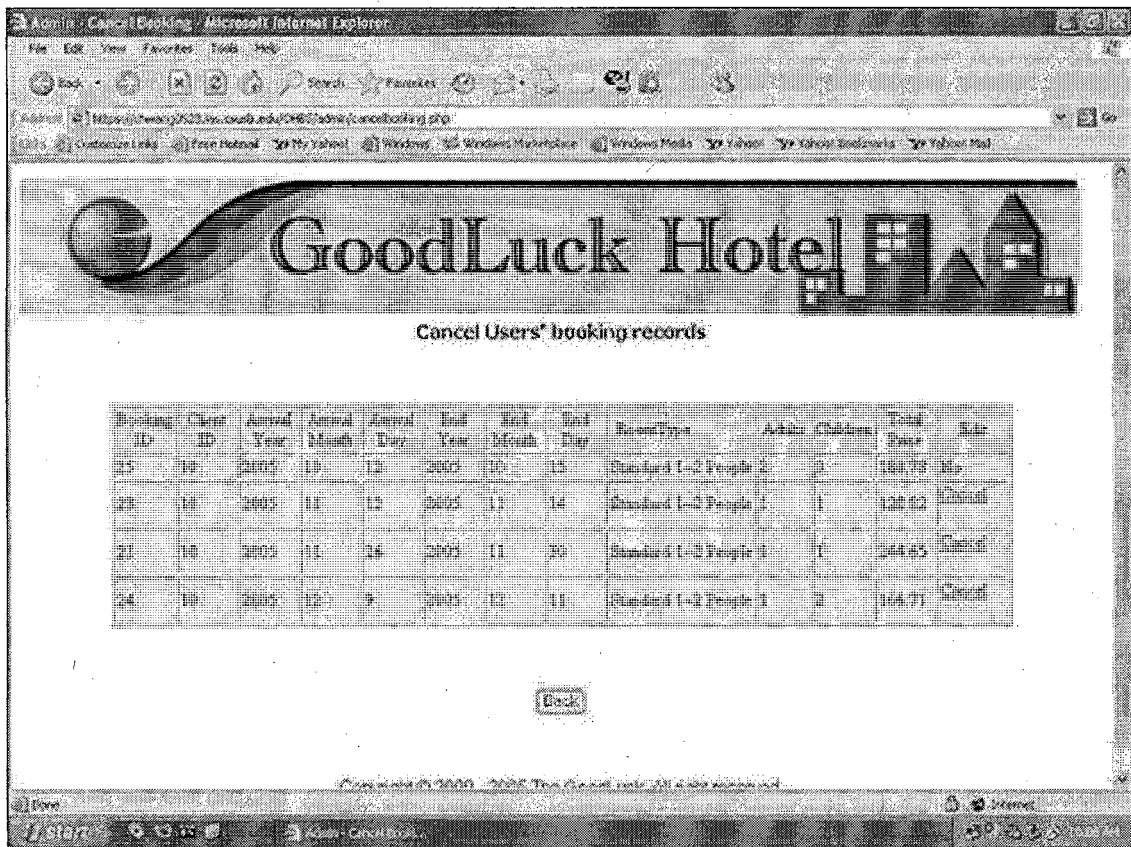


Figure 51. Cancel Users' Records Page (Admin)

5.2.34 Change About GoodLuck Page

Administrators can modify all information shown in the About GoodLuck page. After modifying, they can check and view the change immediately from the Web page. Please refer to Figure 52.

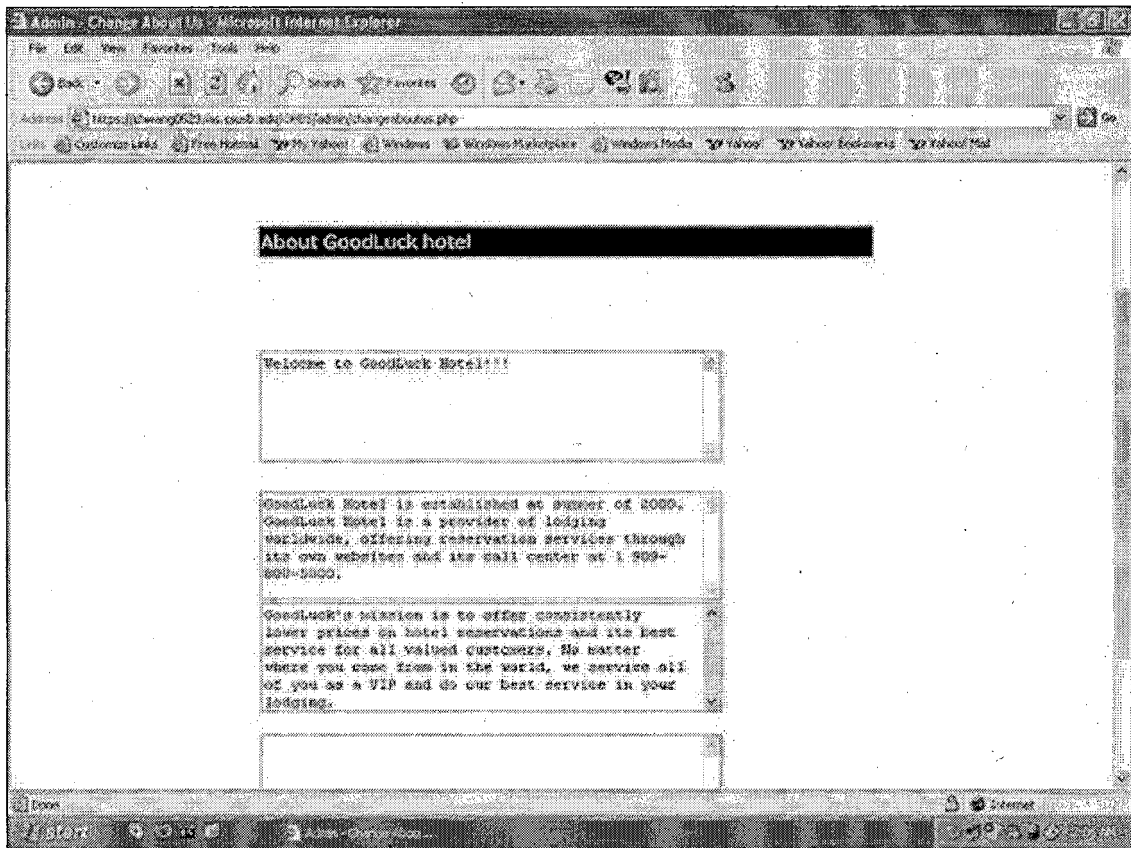


Figure 52. Change About us Page (Admin)

5.2.35 Change Customer Care Page

Administrators can modify all information shown in the Customer Care page no matter in question or answer part. After modifying, they can check and view the change immediately from the Web page. Please refer to Figure 53.

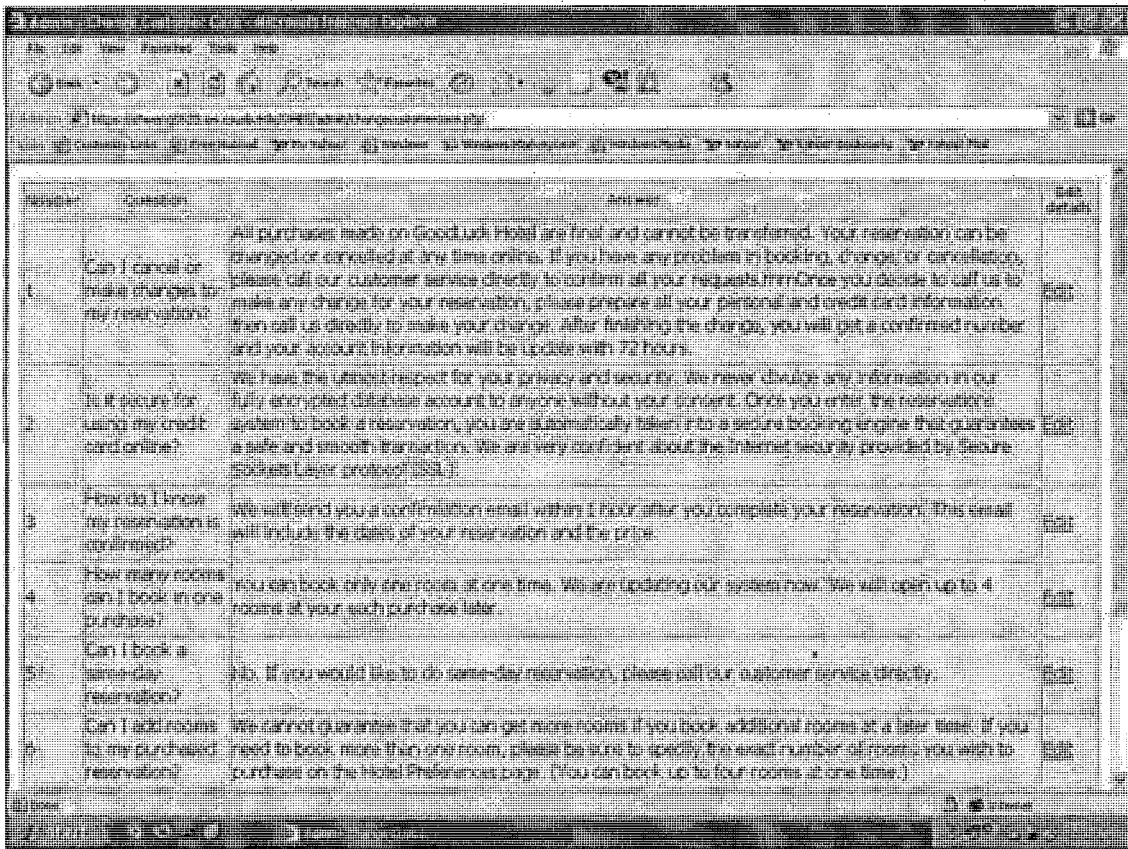


Figure 53. Change Customer Care Page (Admin)

5.2.36 Change Contact us Page

Administrators can modify description part shown in the Contact Us page. After modifying, they can check and view the change immediately from the Web page. Please refer to Figure 54.

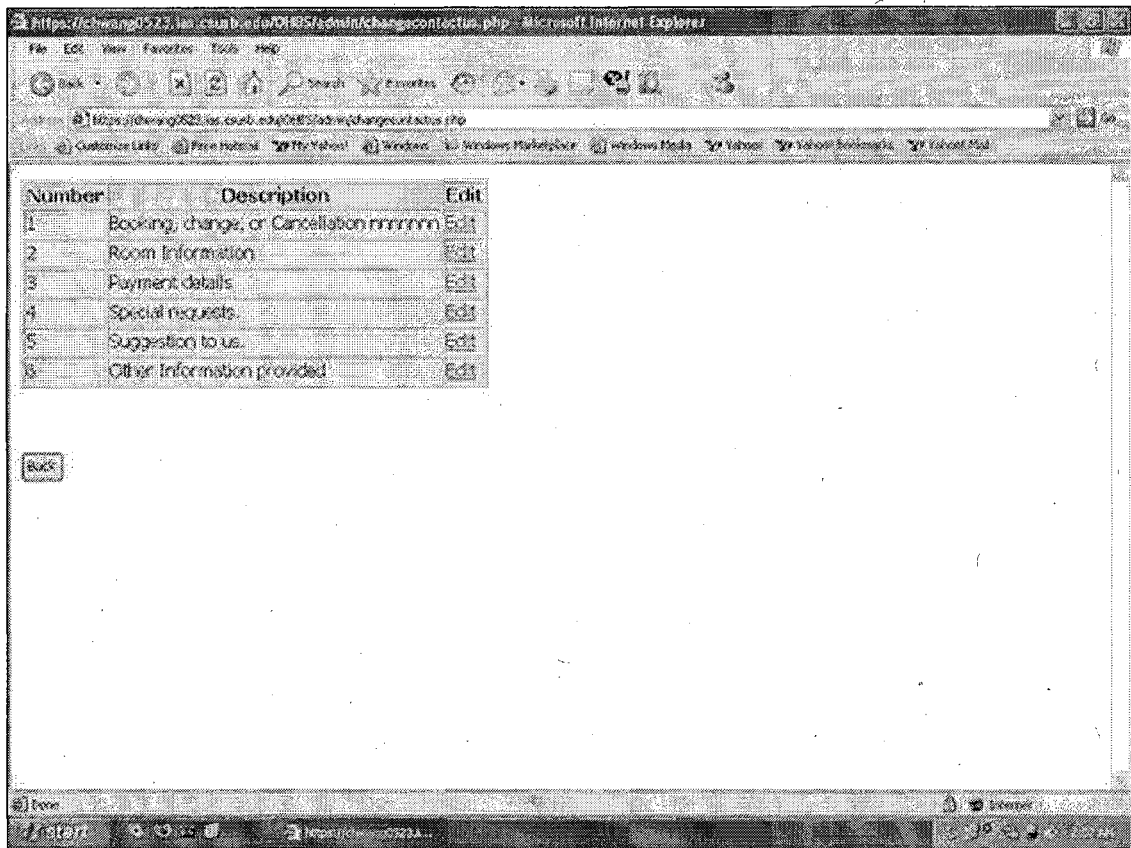


Figure 54. Change Contact us Page (Admin)

5.2.37 Change Travel and Shopping Page

Administrators can modify all fields shown in the Travel & Shopping page. After modifying, they can check and view the change immediately from the Web page. Please refer to Figure 55.

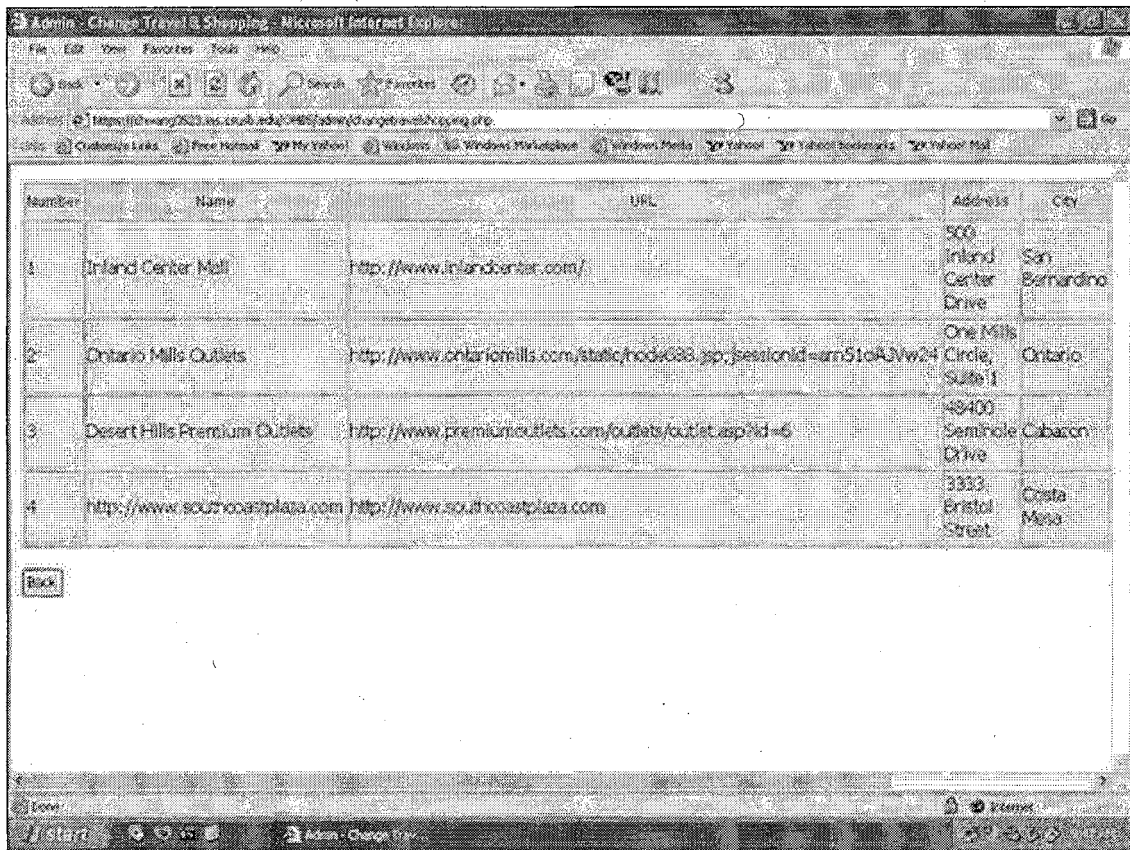


Figure 55. Change Shopping Page (Admin)

5.2.38 Change Privacy Policy Page

Administrators can modify all information shown in the Privacy Policy page no matter in question or answer part. After modifying, they can check and view the change immediately from the Web page. Please refer to Figure 56.

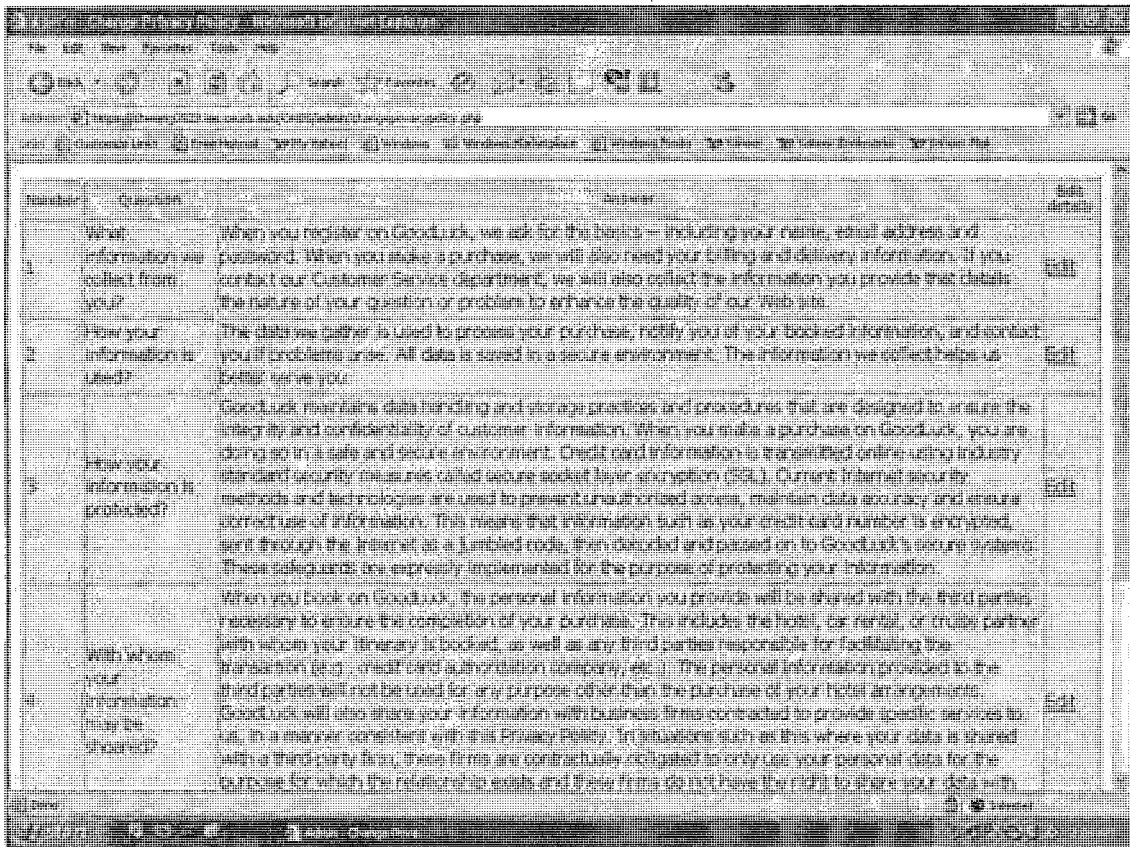


Figure 56. Change Privacy Policy Page (Admin)

5.2.39 Change Room Information Page

Administrators can modify all information shown in the Room Information page. For each room type and its corresponding description, hotel details, and properties, administrators can change all details here. After modifying, they can check and view the change immediately from the Web page. Please refer to Figure 57.

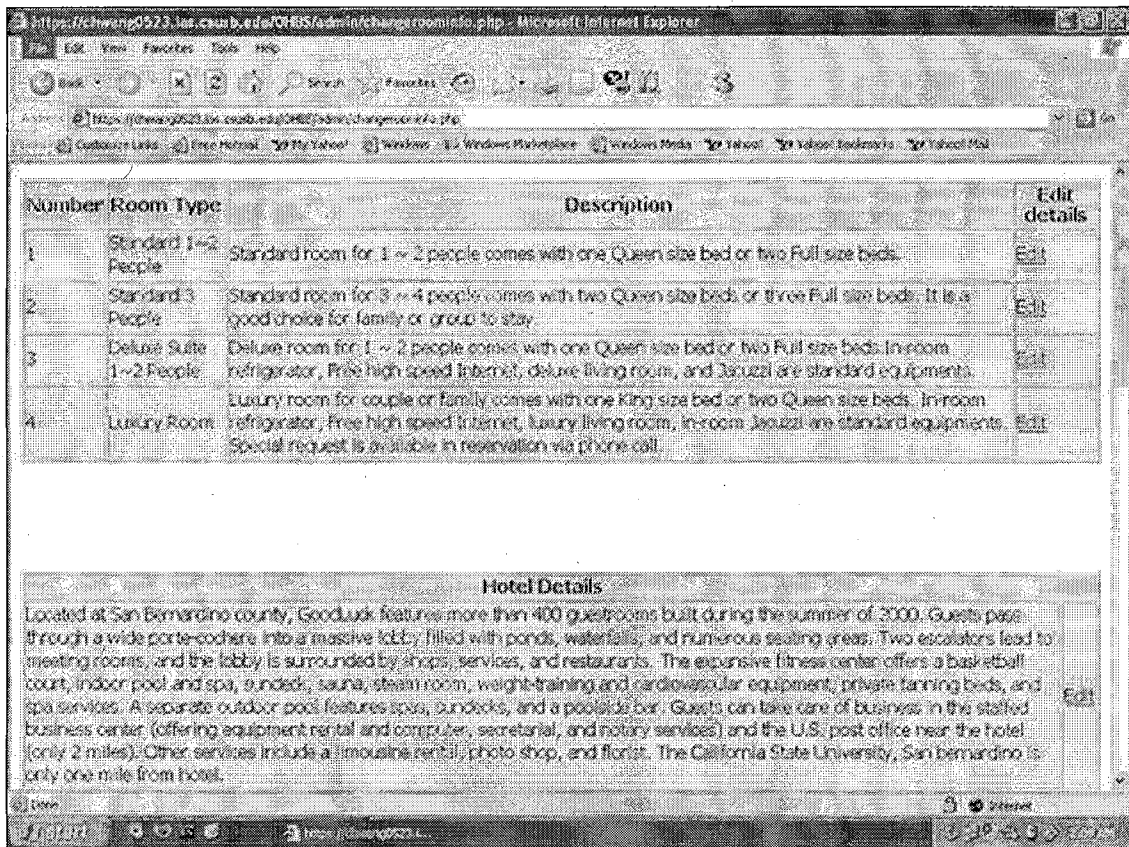


Figure 57. Change Room Information Page (Admin)

CHAPTER SIX

CONCLUSION AND FUTURE DIRECTIONS

6.1 Conclusion

The Online Hotel Booking System provides an environment for users to book hotel rooms, perform booking activities, and manage personal account at GoodLuck Hotel with a Web browser. The system uses Apache Web Server running on Linux platform. The database server is MySQL. To implement the system, the developer has used JavaScript, HTML, and PHP. All dynamic contents are handled by PHP. Persistent data are saved in the database.

Online Hotel Booking System is a user-friendly and easy-to-use system of a Web-based application. Everyone who knows how to use a Web browser can register and then login to book a room, change booking details, cancel booking, and view or modify personal profile online. It is easy and fast to make a reservation.

There can still be improvements for the Online Hotel Booking System. First, users can only make a reservation that date is within one year from today (system time). Second, if the customer arrival date is less than specific days (this number is decided by administrators) from today, they cannot change or cancel it.

6.2 Future Enhancements

The possible improvements that can be made for the Online Hotel Booking System include:

I can make the graphical user interface friendlier and more functional in the next development. The Online Hotel Booking System aims to provide a user-friendly interface and more functions for real world hotels. But there is still some room for improvements. For example, I can change the settings and functions of some options in the Web pages to make them more professional and artistic. I can also use more pop-up windows so that users can choose the value from them directly. This applies to "arrival date" and "departure date" options. In this way the users can avoid many possible mistakes caused by inappropriate input.

This online system only allows users to make a reservation that date is within one year and reserve up to four rooms per visit. These limitations can be removed in the future.

In future improvements, the Online Hotel Booking System can offer more services such as car rental, flight ticket purchase, and the vacation package advising. These services have been offered already on some real world online booking systems. More hotels will add these

services on their online systems. In this way, people can make all their requests at once no matter they are business trip arrangement, shopping, travel, or vacation.

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