

# Web Technology Report

## ➤ Abstract

The aim of this assignment is to design and implement a hotel management I system for managers and guests. The overall mission of the hotel management system is to allow guests who can sign up and can successfully login according to the correct email and password, search for vacant rooms and make reservations for specific period of time. Moreover, this hotel management can allow guests to view their reservation history. On the other hand, administrators can control room availability and prices, and they can also modify the details of guest's information through the hotel management system.

## ➤ Design

### I. The design of the hotel database

The hotel management system is widely used in the daily management between administration staff and customers in a real-life scenario. First of all, I designed a data model for a hotel system. There is some information about the rooms and facilities in Sunny Beach Hotel, the details of guest's information, the data of login permissions for administrators and the reservation data that will be stored in tables. Sunny Beach Hotel contains the following seven tables: admin, facility, guests, reservation, roomlimit, roomrcount, roomtype.

- The admin table is used to store the data of login permissions for hotel staff, including their email and password.
- The facility table is used to store the basic information of all facilities in the hotel such as swimming pool, parking and restaurant.
- The guests table is used to store the basic information of the hotel customers, including their username, password, full-name, email, phone and the date of registration.
- The reservation table is used to store the information of the guest's reservations, including the order number, the id from guests, the id of the different room types, the date of checking in and the date of making the reservation.
- The roomlimit table is used to store information about the limitation of rooms.
- The roomtype table is used to store the basic information of all the room types at sunny beach hotel, the information includes the name of rooms, and the description of different room types, the images of all room types, the different prices according to room types, and the period of the reservation.
- The roomrcount table is used to save the information of new reservation about room count.

### II. The design of the hotel interface and system

The guests and administrators are mainly users in the hotel systems. The three main features can be seen in the system that include home page features, guest features and administration features. Firstly, I created index.php in connection with home page. I used HTML to show the tagline, image of the hotel and primary contact information of the hotel in the main page. Furthermore, there are five links at the top of the hotel main page, home, room, facility, booking and member respectively.

Secondly, I created the facility.php which list all information about facilities in the hotel. The facility.php connect the database from table facility. I selected ftype, fdesc and fimage to show. Then, I created the roomtype.php which list all the room types at sunny beach hotel. The roomtype.php connect the database as well

Related to the guests features in the hotel system, firstly the login.php is used for guest login form. I created the checklogin.php to validate the email account and password of guests. As consider the scenario in the real world, we always have a web page for guest registration. I created the guestregform.php for guest sign up. In addition, I also wrote the guestreg.php in order to store the data guests registered to database. On the other hand, in relation to maintain guest's profile, I created guests.php, and it is used to maintain the main page for guest's

profile. Then I wrote the `guestorder.php` which can list the reservation from guests. Moreover, the `changeprofile.php` is used for updating the profile of guests. There are two php files for making reservations. One of them is `bookingform.php`. It can be seen the form of reservations of guests. The `booking.php` is used to save the reservation history from guests to database.

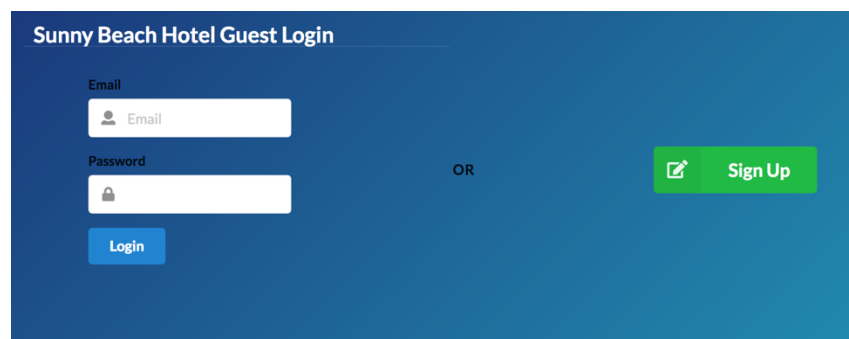
Administrators at the hotel are main users to use the system. There are some features about back-end(admin panel). Firstly, the `adminlogin.php` is used login form of for administrators. I also created the `checkadminlogin.php` to validate the email account and password of admin panel, and the `admin.php` is used for the main page of the admin panel. Besides, the `adminlogout.php` is used for administrators to logout the system after they login. I also created some php files that are used for guest management. The one of all is `guestsadmin.php` which is the main page for admin panel to show the guest management. The modify and delete are the main action for admin panel to manage the data of guests. In order to achieve the two functions, I wrote the `modifyguests.php`, it is used to modify the data of guests. Another php file `deletguests.php` is about deleting the data of guests. On the other hand, in connection with room management part, there are three php files. The `adminroomlist.php` is used to list room information and the main page about room administration. The `modifyroomprice.php` is obviously used to allow admin panel to modify the prices of rooms.

In connection with changing room availability, I created the `newroomavailable.php` which is used to create the number of new available limitation in a date, and `modifyroomavailable.php` is used to modify the number of room available limitation in date of record. Overall, the `adminguestorder.php` is used to list all of reservation from guests.

We can find that there are some similar parts between guests features and admin features. For example, both of them have `login.php` file, `checklogin.php` and `logout.php` file.

## ➤ Implementation

In terms of implementation, there are two main parts can be displayed. I can see the result of my code through the web browser. Related to guests, I used Ajax to retrieve the data from server, and it can allow the guests login web pages to be updated asynchronously by exchanging data which are guest's email and their password with a web server behind the scenes; in other words, it can be used to update parts of a web page, without reloading the whole login web page. (W3schools.com, 2018) Ajax is the most useful technology for me in this assignment. Firstly, guests can see the form of guest login when they browse the website.

The image shows a web form titled "Sunny Beach Hotel Guest Login" on a blue background. It features two input fields: "Email" with a person icon and "Password" with a lock icon. Below the password field is a blue "Login" button. To the right of the password field is the text "OR" and a green "Sign Up" button with a plus icon. The form is designed for guest authentication.

If they type the correct email and password they have registered, then they can login successfully.

The screenshot shows a web form titled "Sunny Beach Hotel Member Area". On the left, there is a sidebar with three buttons: "Guests Data", "Orders", and "Logout". The main form area contains several input fields: "Fullname" with the value "grace1", "New Password" with a placeholder "6-12 characters", "Repeat New Password" with a placeholder "6-12 characters", and "Phone" with the value "88463466". An "Update" button is located at the bottom right of the form.

If they typed the wrong password, email, or empty, the warning window will be displayed.

The screenshot shows a "Warning!" dialog box with a black border. The text inside reads: "The email or password you typed is incorrect. Please try again." At the bottom right, there is a green button labeled "OK" with a checkmark icon.

I also set the Ajax Error Handling, the error message "Can't Conntect!!" will be displayed if the error happened. Besides, guests can see the "sign up" button on the left side. The button allows guests can link to the guest registration form page through hyperlink setting(onclick="location='guestsregform.php'"), then the guest registration form will be showed.

The screenshot shows a web form titled "Sunny Beach Hotel Guest Registration Form". It contains several input fields: "Fullname" with a placeholder "Fullname", "User name" with a placeholder "User Name", "E-mail" with the value "joe@schmoe.com", "Password" with a placeholder "6-12 characters", "Password Check" with a placeholder "Please re-enter your pawword", and "Phone". A "Submit" button is located at the bottom left of the form.

I use Javascript to set a function to check the information when guests submit. If they typed empty, the warning window will be displayed. In the guestsregform.php, I also use Ajax to transport data which are full-name, username, email, password and phone.

The guests.php is used the main page for guests to maintain their profile.(type)

Sunny Beach Hotel Member Area

Guests Data

Orders

Logout

Fullname

grace1

New Password

6-12 characters

Repeat New Password

6-12 characters

Phone

88463466

Update

There are three buttons on the right side, if guests click the “Guests Data”, then their profile will be displayed. If they click button “Orders”, they can view their reservation history.

Sunny Beach Hotel Member Area

Guests Data

Orders

Logout

Order ID	Guest Email	Room Type	Reserved Period	Order Date	Day Count
201803131947397	grace@sunnybeach.com	single room	2018-03-13 - 2018-03-19	2018-03-13 19:47:39	6

If guests would like to logout, they just click the “Logout” button.

Guests need to the room types if they would like to make a reservation. The successful message will show if their reservation is successful, then when they click ok button, the page will back to the home page. On the other hand, the warning window will be displayed after guests failed their reservation.

Sunny Beach Hotel HOME

Room Type

single room

single room

double room

twin room

quad room

Booking

Besides, they also have to choose the date of check-in, the date of check-out, for this part, I took the original document from GitHub about [Semantic-UI-Calendar](#) as reference.

Sunny Beach Hotel HOME

Room Type

single room

Start Date

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In connection with admin panel, considering the back-end platform in the real-life scenario , so I decided used different address between admin panel and guests in order to segment them. We have the adminlogin.php file for administrator typed their email and password to login their account. It is similar to guest features, I also wrote a php file “checkadminlogin.php” in order to check the email and password from admin panel can be validated. There is a logout button, the adminlogout.php file is for this purpose.

We also have the admin panel main page.

If they login successfully, the page will show as below:

Guest name	Guest Email	Guest Phone	Action
grace1	grace@sunnybeach.com	884563466	<a href="#">Modify</a> <a href="#">Delete</a>

There are five buttons on the right sides of the admin main page. Guest button is used for admin panel to modify and delete the information from guests.

The Reservation is for administrators to view the information from guest’s orders. We can see the details of the reservation, including order ID, guest email, the room type they choose, the specific period of time, the order date and the total day they stay.

Order ID	Guest Email	Room Type	Reserved Period	Order Date	Day Count
201803131947397	grace@sunnybeach.com	single room	2018-03-13 - 2018-03-19	2018-03-13 19:47:39	6
201803152141497	grace@sunnybeach.com	double room	2018-03-19 - 2018-03-23	2018-03-15 21:41:49	4
201803160527037	grace@sunnybeach.com	single room	2018-03-16 - 2018-03-19	2018-03-16 05:27:03	3
201803160527557	grace@sunnybeach.com	single room	2018-03-16 - 2018-03-20	2018-03-16 05:27:55	4
201803160617117	grace@sunnybeach.com	single room	2018-03-17 - 2018-03-20	2018-03-16 06:17:11	3
201803160617307	grace@sunnybeach.com	single room	2018-03-17 - 2018-03-20	2018-03-16 06:17:30	3
201803160651117	grace@sunnybeach.com	single room	2018-03-17 - 2018-03-19	2018-03-16 06:51:11	2

If admin panel click “Room Price” button, they can modify the prices of rooms

Sunny Beach Hotel Admin Panel			
<div>Guests</div> <div>Reservation</div> <div>Room Price</div> <div>Room Available</div> <div>Logout</div>	Room Name	Room Price	Action
	single room	65	<a href="#">Change Price</a>
	double room	75	<a href="#">Change Price</a>
	twin room	86	<a href="#">Change Price</a>
	quad room	93	<a href="#">Change Price</a>

In other words, if admin panel click “Room Available” button, they can modify room availability.

Sunny Beach Hotel Admin Panel			
<div>Guests</div> <div>Reservation</div> <div>Room Price</div> <div>Room Available</div> <div>Logout</div>	<a href="#">Create New Room Limit</a>		
	Room Name	Room Limit Number	Room Limit Date
	single room	6	2018-03-20
	twin room	5	2018-03-28

On the one hand, in order to allow the system that can be adjusted to different device screen sizes, I used [semantic ui](#) which is used to web responsive framework for different screen size according to smartphone, pad, laptop and desktop. On the other hand, I used JQuery for ajax request processing and html page and data processing for semantic ui base javascript library. On the other hand, I used JQuery for ajax request processing and html page and data processing for semantic ui base javascript library. Besides

Otherwise, in order to simplify the process, I created two files that make my code more convenient. One is footer.php which can show the contact information on the bottom even if you change a page to next different page. Another file is dbconnect.php, the two files are created that have similar meaning, we do not wrote the same codes repeatedly.

## ➤ User Guide

### I. Database Setup

- login to MySQL or MairaDB Database
- Use the command below to create the hotel database, create database hotelldb default character set utf-8;
- Use the command below to import the database table schema and data to hotelldb database  
mysql -u root -p hotelldb < hotelldb.sql

### II. PHP Programs Setup

- Extract the hotelprog.zip,It will extract to a folder named "hotel"
- Change the dbconnect.php in the hotel folder to match your database environment's setting above.
- The hotel web site's url is as below,10.245.157.141 is my machine's ip address or domain name.
  - http://10.245.157.141/sunnybeachhotel/

- The guest demo account is `grace@sunnybeach.com` ,demo guest's password is `grace1`
- The Hotel backend administration url is as below,10.245.157.141 is my machine's ip address or domain name. <http://10.245.157.141/sunnybeachhotel/admin/adminlogin.php>
- The admin area demo account is `grace@sunnybeach.com` ,demo guest's password is `grace`

## ➤ Conclusion

In conclusion, the hotel management system can be separated two main parts which are guests and admin panel. In order to fulfil all of the functions of the hotel system. We need to take real objects in a real-life scenario. Manager can do modify and view the guest's information and change the room availability and room prices that depend on circumstances. There should be a complete platform for guests to book rooms and register their account. Otherwise, we also design a function for our guests can view their reservation history.

We have to consider how to design the appropriate database. We look for a data model where we can represent information about the rooms, the guests and the reservations booked at our imaginary Sunny Beach Hotel. All this information will be stored in tables. (vertabelo, 2018)

The most difficulty I met in the assignment is that design the room availability check mechanism. There are a lot of conditions that need to consider such as some conditions as below

- use roomtype table's rcount field to record the most room available numbers for every room type
- use roomlimt table to record the room available numbers for a particular date.
- use roomrcount table to record the ordered room numbers for a room type and a particular date.
- booking.php use theses three tables to check whether the room type is available in order dates

The hotel system is used to make hotel daily work more efficient. There are lots of functions and platform that need to optimize and make complex. For example, the system lack of considering front end system. We should think how to design a more efficient web site architecture for hotel daily work.

## ➤ Reference

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