COMP9321 Semester 1, 2016 Assignment 2: Hotel Booking Web Application

Aims

This project aims to give COMP9321 students hands-on experience in:

- Designing and implementing a fully-functional Web application
- Using well-known application patterns such as MVC
- Use JDBC and related technologies to maintain persistence of user data.

Background

Travel Web applications provide consumers with tools to organise their own schedules as they see fit. One of the key elements of any travel plan is the accommodation arrangement. In the context of this project, we consider the case of a hotel chain which has hotels in Sydney, Brisbane, Melbourne, Perth, Adelaide and Hobart (at least one in each state). Here, there are 2 types of users for the site: customers, and the hotel managers and owners. As groups, your project is to design a Web application that enables customers to book rooms in a hotel of their choice, and for the managers and owners to manage room availability and occupancy across all hotels in the chain.

Business Requirements

Each hotel in the chain offers the different types of rooms with the following respective off-peak rates:

- Single Room (with 1 single bed) - $80 per night
- Twin Bed (2 single beds) - $ 130 per night
- Queen (1 double bed) - $150 per night
- Executive (1 double bed, more facilities than Queen) - $200 per night
- Suite (2 double beds, most luxurious) - $320 per night

One extra bed is allowed in all rooms except for Single, at an extra charge of $35. A room can either be occupied, under maintenance or available. You can decide how many rooms of each type you can have in each hotel, but all the types should be represented.

In the hotel calendar, a year is also divided into peak and off-peak periods during which rooms' rates may vary. Peak and off-peak periods, as well as surcharges, should be managed by the Hotel Owner.

Functional Requirements

There are two types of users of the system: customers and hotel managers and owner. The following usage scenarios describe key functional requirements that must be implemented in all solutions of this project.

Public View (Home Page)

The home page contains a link for registered users to login, and a link to register as a user of the system. It also shows a list of hotel rooms listed as follows:

Featured Rooms

- One room from each main city should be displayed in the home page with the following details: preview, room type, city, and price. Rooms should be different types (randomly generated).
- Special deals: display one or more deals on certain rooms as specified by the hotel owner (see special deals scenario under hotel owner)
- Clicking on any of the featured rooms or speial deals should take the user to sign-up sign-in page.

The home page also has a search field with different options, a check-in date and a check-out date, a city, the number of rooms in the booking, and the maximum price per room per night willing to pay.

Customer (hotel customer/normal user)

A hotel customer is a public user/viewer who can interact with the Web application to make and manage their hotel booking. They have the following scenarios:

Sign-up and Sign-in

- A user goes to a registration page/link which allow them to sign-up or sign-in. Registered users should be able to sign-in using their correct username and password.
- On submitting sign-up information, the system sends an email containing a confirmation URL to the supplied email address
- The user reads the mail, goes to the confirmation URL; the system confirms the registration and takes them to the edit profile page.

Editing User Profile

- This page displays a form with the current values of: username, nickname, first name, last name, email, full address, and standard credit card details
- Every detail other than the username can be changed at any time.

Searching Hotel Rooms

- The user sign-in into their account. Unsuccessful sign-in should prompt an appropriate error message.

- Upon successful sign-in, a wlecom page displays a search field with different search options (similar to the public view home page); a check-in date and a check-out date, a city, the number of rooms in the booking, and the maximum price per room per night they are willing to pay.
- The user selects their preferred search options (all is mandetory except maximum price).
- A list of rooms and the number of these that are available for the specified options will be displayed. Brief preview details of each room will need to be displayed including peak or off-peak period (see Hotel Owner Functions)
- Search options should still be available on this page. The user may run another search.
- If there are no available rooms that meet the user's criteria, then they are presented with an appropriate message and asked to repeat their search with different values.

Booking Rooms and Checkout

- The user selects one or more of the available rooms, adds an extra bed if required and adds their booking to the Shopping Cart. The user can add multiple booking to the Cart.
- The user navigates to the Shopping Cart, and sees all the rooms with brief details, extra beds they may added, and cost details (individual and total).
- The user can remove one or more room and/or extra beds, the Shopping Cart must be updated.
- The user can access the Shopping Cart from any page once signed in.
- Upon selecting Checkout, the user will be taken to the Checkout page If the rooms are available.
- In the Checkout page, the user's payment details, name, address and email address will be auto-populated if it's already saved in their profile. If not, they are prompted to provide missing details.
- Upon selecting Confirm Checkout (no real payment processing or checking), the system generates a unique page with a system-generated URL containing the consumer's booking details and a unique PIN (Personal Identification Number), and sends it as an email to the user's email

Booking Management

- The user can visit the page until 48 hours before the start date of their booking through the unique system-generated URL, enter his PIN and check his/her booking details.
- The user can modify their booking to ADD a new room to her booking (Note: removing a room from the booking is NOT allowed).
- If the user adds a room and no such room is available, then they are alerted and given the choice to continue with the existing booking or delete the entire booking altogether.
- If the room is available, then the room is added to the booking, the price recalculated and the consumer asked to confirm if they want to

proceed with the new booking and new price.
- If the user declines, then the existing booking is maintained

Hotel Manager

When the customer shows up to check-in at the hotel, the Hotel Manager can assign the customer to the room(s) that match(es) their booking in the following manner:

1. The Hotel Manager account is already present in the system and is entered via a different URL. The account is password-protected.
2. After authentication, the manager is presented with a page that enables them to view all the rooms occupied and bookings made by customer
3. The manager can assign a room to a booking; they select a booking, view the appropriate rooms available (e.g. if a booking is for 2 twin rooms, then all the twin rooms available would show up), and assigns rooms to the booking as per the number specified. You could imagine this happens when the customer shows up to check-in at the hotel.
4. When a customer checks out, the manager returns the occupied room to the available list.

Hotel Owner

The Owner of the hotel chain is able to have a view of all the hotels that are part of the chain. The functionalities provided are as follows:

1. The owner account is already present in the system and is entered via a different URL.
2. When the owner logs in, they are able to view the occupancy of each hotel in the chain. Occupancy is number of rooms occupied and number of rooms available. This must be updated in real time.
3. The owner can make a portion of a hotel unavailable for repair or maintenance.
4. Special deals: the owner can set a discount fare for a specific class of rooms in a specific hotel for a set time period. For example, the owner can reduce the price of twin rooms in the Sydney hotel by 50 % for two weeks beginning 13th May. The owner is asked to confirm the new fare. This change must become immediately available. The new fare is available to all successive bookings. However, bookings confirmed prior to applying the discount are unchanged.
5. The owner set one or more peak period (name, start date and end date) and surcharges (e.g., 30% of normal price). Rooms rates should be reflected in peak periods.

Other Notes

All user input must be properly validated.

Submission and Demo

The completed assignment must be submitted by **week 11, by 12:00:00 noon of Monday, May 16th, 2016.** Submission is through give. Prepare a demo scenario and demo data (more details on this later). Keep your submitted code safe.

Submission Instructions for Complete Assignment

1. On one of your CSE accounts, prepare a directory structure like so:
   group<id>/
   group<id>/src/
   group<id>/war/
   Where <id> is your group-id.So,for example, for group03 you will have a directory structure:
   group03/
   group03/src/
   group03/war/
2. Put your source files in src/ and your **final .war file** in war/
3. zip -r group<id>.zip group<id>/
4. give cs9321 Assign2 group<id>.zip

Demo will be held during lab times in week 11. Groups can demonstrate their projects on CSE lab machines or their own PCs. You should use the same .war file that you submitted for your demo.

Demo Schedule

To be announced later on.

Important

Please use the message board (assignment 2 thread) for discussing any issue related to the assignment.