 JEE MINI PROJECT

**JEE**

**Mini Project**

**Hotel Bookings Management System**

**(HBMS)**

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 *JEE Mini Project*

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# INTRODUCTION

This document outlines a mini project for the JEE LOT. The project is to develop an online Hotel Bookings Management System (HBMS) for a website “CheapStays.com”. This document contains the work flow of the system and gives guidelines on how to build the functionality gradually in each of the course modules of the JEE LOT.

## SETUP CHECKLIST FOR MINI PROJECT

**Minimum System Requirements**

* Intel Pentium 90 or higher (P166 recommended)
* Microsoft Windows 95, 98, or NT 4.0, 2k, XP, Windows 7
* Memory: 32MB of RAM (64MB or more recommended)
* Internet Explorer 6.0 or higher
* Oracle 9i client and access to oracle 9i server
* JDK 8
* Eclipse Luna
* JUnit 4.0, MAVEN
* WildFly

## INSTRUCTIONS

* The code modules in the mini project should follow all the coding standards.
* Create a directory by your name in drive **<drive>**. In this directory, create a subdirectory **MiniProject**. Store your Project here.
* You can refer to your course material.
* You may also look up the help provided in the java docs and documentation provided with WildFly.
* The total time required to complete this mini project is 50 hrs.
* Since this project work will span over couple of months, you will need to take care of maintaining the code

# PROBLEM STATEMENT

## OBJECTIVE

Development of an online Hotel Bookings Management System (HBMS)

## ABSTRACT OF THE PROJECT

This project is aimed at developing an online Hotel Bookings Management System (HBMS). This is a web based application that can be accessed over the web. This system can be used to search for Hotel rooms and reserve them. This is an integrated system that contains both the user component, Hotel-Employee component and the Admin component. There are features like report generators etc in this system.

## FUNCTIONAL COMPONENTS OF THE PROJECT

Following is a list of functionalities of the system. Wherever, the description of functionality is not adequate; you can make appropriate assumptions and proceed.

There are three categories of people who would access the system viz. customer, hotelemployee & Admin. Each one of them would have some exclusive privileges (for e.g. customer and hotel-employee can just search for hotel rooms and reserve them, but only the admin has the right to add new and modify hotels.)

1. Customer and Hotel-Employee should be able to

* + Register into the system.
  + Login to the system using his/her credentials.
  + Search for hotel rooms.
  + Book hotel rooms.
  + View Booking Status

1. The Admin should be able to

* + Login to the system using his/her credentials
  + Perform Hotel Management (add/delete/modify Hotel info like description, any special offers etc)
  + Perform Room Management (add/delete/modify Room info like revised tariff)
  + Generate various reports like:
    - View List of Hotels
    - View Bookings of specific hotel
    - View guest list of specific hotel
    - View bookings for specified date

## TECHNOLOGY USED:

* *Front End & Web Components:–* 1. HTML/JavaScript
  1. Servlets
  2. JSP

* *Business Logic Components and Services :-* 1. Java Beans

* *Application Servers :-* 1. WildFly

* *Databases:-*

1. Oracle 9i

# IMPLEMENTATION IN JEE LOT

## SUMMARY OF THE FUNCTIONALITY TO BE BUILT:

The participants need to develop the Online **HBMS** by building the functionality incrementally in each of the course modules of JEE LOT.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No** | **Course** | **Duration (in PDs)** | **No. of Saturdays** | **Functionality to be built** |
| 1 | Programming Foundation with Pseudo code | 3 | 1 | Analyze the given case study |
| 2 | Web Basics (HTML 5,CSS 3, JavaScript, XML) | 4.5 | 1 | Developing prototype i.e. developing screens/web pages in HTML and client side validation in JavaScript. |
| 3 | Oracle Basics | 4 | 1 | Creating relevant database tables |
| 4 | OOP & UML | 1.5 | 1 | Creating relevant Use case and class diagrams |
| 5 | Programming Foundation with Pseudo code + Web Basics +Oracle Basics Test | 1 |
| 6 | Core Java 8 & Development Tools  (Junit, Log4j) | 10 | 2 | Developing Business components (java classes). Coding for test classes & testing the functionality using JUnit |
| 7 | Core Java with JAXB + Dev Tools + OOP/UML Test | 1 |
| 8 | Servlets | 3.5 | 2 | Developing the web application using the prototypes. Converting the HTML web pages to jsp pages and java classes (business components) to java beans. Integrating jsp web pages with business components to complete the entire functionality. Building the web applications component using  MAVEN build script. |
| 9 | JSP | 2 |
| 10 | Developer Workbench (PMD, MAVEN) | 1 |
| 11 | Servlets + JSP + Dev Workbench Test | 1 |
| 12 | Basic Spring 4.0 | 5 | 1 | Prepare document for presentation. |
| 13 | Basic Spring Test | 1 |
| 14 | Mini Project presentation | 1 |  |  |

## GUIDELINES ON THE FUNCTIONALITY TO BE BUILT:

The functionality and components to be built in each of the course modules of JEE LOT is as follows:

1. **Course: HTML, JavaScript (Duration: 10 hours)**

* 1. Develop the following screens:
     + 1. Home page screen: Home page for the online HBMS which provides a link for the login page.
       2. Login Screen: Allows the valid user or amount to logon to the system and display the Main option screen.
       3. View Hotel screen: For all the users, this screen shows a list of hotels and rooms.
       4. Book Rooms: For the customers and the hotel-employees, this screen will allow booking of available hotel rooms.
       5. Add Hotels: This screen allows the admin to add new hotels or rooms.
       6. Update Hotels: This screen allows the admin to update existing hotels or rooms. vii. Delete Hotels: This screen allows the admin to delete existing hotels or rooms.

viii. View Reports: This screen offers administrator to view various reports by clicking on an appropriate link.

* 1. In this course you need to develop the user interface using HTML and document the flow of your application including the images of html page in a word document. The screens/web pages should include the fields as per the functionality mentioned above. Also, include client-side validations using JavaScript in each of these screens

1. **Course: Oracle (Duration: 5 hours)**

* 1. Create the following database tables:

i. Users: This contains the list of valid users with details ii. Hotel: This will contain the list of hotels.

iii. RoomDetails: This will contain the details of all the rooms available in all the hotels. iv. BookingDetails: This will contain the list of booked rooms and their details.

* 1. The structure of the above listed tables is as follows:
     + 1. Users: user\_id(varchar(4)), password (varchar(7)), role(varchar(10), user\_name(varchar (20)), mobile\_no(varchar(10)), phone(varchar(10)), address (varchar(25)), email (varchar(15))
       2. Hotel: hotel\_id(varchar(4)), city (varchar(10)), hotel\_name(varchar (20)), address(varchar(25)), description varchar(50)), avg\_rate\_pernight (number(m,n)), phone\_no1(varchar(10)), phone\_no2(varchar(10)), rating(varchar(4)), email (varchar(15)), fax (varchar(15))

* + - 1. Note : Description here could be a brief teaser about the hotel like –

“Centrally located in the main city centre at Shivajinagar Railway Station, this budget accommodation is designed with spacious rooms…”. It could also give some special offers etc.

* + - 1. RoomDetails: hotel\_id(varchar(4)), room\_id (varchar(4)), room\_no(varchar(3)), room\_type(varchar(20)), per\_night\_rate

(number(6,2)), availability (Boolean), photo (blob))

* + - 1. Note : Room\_type could be Standard non A/C room, Standard A/C room, Executive A/C room, Deluxe A/C room etc.

* + - 1. BookingDetails: booking\_id(varchar(4)), room\_id(varchar(4)), user\_id(varchar(4)), booked\_from (date), booked\_to(date), no\_of\_adults, no\_of\_children, amount(number(6,2))

Note: You may add/normalize/denormalize the tables if your application so demands it.

1. **Course: OOP & UML** **(Duration: 5 hours)**
   1. Develop relevant Use case and Class diagrams for the **HBMS** application.

1. **Course: Core Java with JAXB + Developer Tools (Duration: 14 hours)**

* 1. Develop business components (java classes) for the following functionality:
     + 1. User verification (on Login): This component will verify if the user who is trying to access the system is a valid user. This verification is as against the valid users listed in the users table.
       2. Add/Delete/Modify: This component will allow the admin to add new hotels, update and delete existing hotels.
       3. Book Rooms: this component will allow the customers to book rooms.
  2. Develop test classes for testing the following functionality
     + 1. Login
       2. Booking Rooms
       3. Modify hotel details
  3. Test the application using JUnit.
  4. Configure Logger to log the status of an application

1. **Course: Servlets + JSP + Developer Workbench (Duration: 14 hours)**

* 1. Convert all the screens developed in HTML to JSP.
  2. Convert all the java classes (business components) created in Java module to

Java beans

* 1. Integrate all screens (JSP pages) with business components (java beans) to complete the entire functionality
  2. Configure the DataSource and modify the data access classes to use DataSource object configured.
  3. Use https for security throughout the pages so that the valid users can only access the **ARS.**
  4. Develop Logger ServletFilter to log status of an application
  5. Build the web component using MAVEN

1. **Documentation (Duration: 2 hours)**

* + 1. Project Documentation: Document your project details (Duration: 1 hour 30 mins).
    2. Project submission: Submit your project with all the artifacts including the test cases & documentation (Duration: 30 mins).

## EVALUATION AND ASSESSMENT PARAMETERS:

This miniproject will be done in groups of five. Each group will identify a Team Lead who will decide which team member will code for which functionality. This project shall be evaluated at the end of spring module.

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**Evaluation Criteria (out of 100):**

|  |  |
| --- | --- |
| Look and Feel of Web pages | **05** |
| Client-side and server-side validation | **10** |
| Code Documentation and using coding standards | **10** |
| Overall Business logic. This also includes:  • Usage of Logging API (log4j) | **25** |

|  |  |
| --- | --- |
| Usage of Maven to build project | **5** |
| Good amount of appropriate dataset to showcase project completely | **5** |
| Appropriate test cases using JUnit 4.0 | **5** |
| Using MVC architecture and clean encapsulation of business logic in appropriate components. Judicious use of java beans, cleaner looks to JSP | **35** |

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