

**Project Name:Online Hostel Booking System** 

Batch:PG-DAC AUG-2018

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3.3.4.

## INTRODUCTION

This document communicates the business requirements and scope for developing Hostel booking website. The scope of this document is to define the functional and non functional requirements, business rules and other constraints requirements.

It is very common to see students moving to another city for higher education. While student tend to happily move to the new place, the main problem they face is to find a proper Hostel. It's very tedious and time consuming job to visit every hostel and then compare it with any other hostel. There are many websites which provides hostel booking ,but there are some drawbacks like students are not able to compare these hostels with another hostel based on some specific criteria.

This website provide platform for those users who want to book online hostel. This website also provides facility for Hostel-owners to publish their hostels on online platform which is not available on the most of the websites. So, Hostel-owners will not need to entertain every student. Students can directly search about the hostels on this website. Our websites provide reviews and rating facility which is very useful for students to decide which hostel is providing better service. So, with the help of this website students can search hostels as per specific criteria.

# Architecture Design:

Following diagram shows the details of online Hostel booking system architecture.

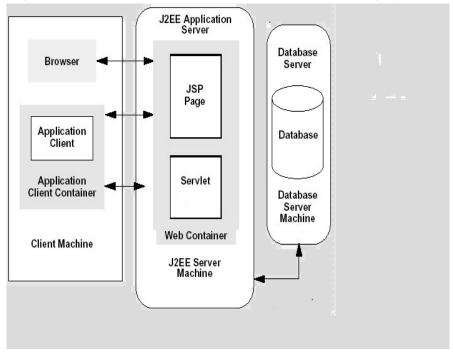


Fig. Architecture Diagram

This System consist of three tiers as listed below,

- First tier
- Second tier
- Third tier

## **First Tier:**

This tier is used for user interface and it is called as client tier. In this tier we are using AJAX because of it provides better interactivity, easier navigation, compact. The use of java script facilities us for the client side validation. That's why in first tier we are using the java script. We are using HTML for the presentation purpose.

## **Second Tier:**

Second Tier is comprises of two parts listed below,

#### Server UI

In this part of second tier we are using JSP, because it provides better UI to system, as well as it provides the dynamically designing of pages.

#### Server Process

Servlet API is standard and freely available on the internet (like JSPs) servlets have the advantages like ease of development & platform independence (like Java) they can access all the J2SE and J2EE APIs can take the full advantage & capabilities of the Java programming language.

## **Third Tier:**

Third tier consist of a Data Access Object (DAO) and the back end i.e. the database of Hostel Booking system.

## **Data Access Object (DAO):**

Data access object layer has proven good in separate business logic layer and persistent layer. The DAO design pattern completely hides the data access implementation from its clients.

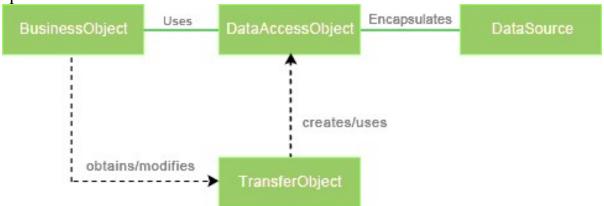


Fig Data Access Object (DAO) Mechanism

## **Java Database Connectivity (JDBC):**

JDBC is used to provide database connectivity from java to database. Using Java database connectivity we can update/retrieve data to/from database with java programs. The main advantage of using JDBC is we can execute database queries by the program so that we can utilize the functionality provided by the database (with the queries). More over we can use triggers too. JDBC provides much other functionality (like the functions provided by Callable Statement class) to manage the data. Additionally, loading the driver will be different to different databases.

Online Hostel management system consist of Three modules described as below:

- 1.User module.
- 2. Admin module.
- 3. Hostel-owner module.

#### 1. User Module

- user can register and create his own account.
- user can change password.
- website allows user to search hostel according to specific criteria.
- registered user is able to book hostel .
- · user can cancel the booking.
- user is able to view other users review.
- user is able to give reviews.
- user is able to give ratings

#### 2. Admin Module

- Admin has an authority to verify the information posted by every Hostelowner.
- Approving request for Hostel-owners registration.
- Generating report for all bookings that has been done, number of users registered and number of Hostel-owners registered.
- Admin have all authorities like block particular user.

#### 3. Hostel-Owner Module

- Hostel-owner can resister.
- Hostel-owner can update hostel details.
- Hostel-owner can see all requests for hostel.
- Hostel-owner will provide confirmation about whether the booking is successful or not.

## • Functional Requirements

The Hostel Booking System has three main modules which are divided into 20 processes described as below.

| No        | BRS       | Description              |
|-----------|-----------|--------------------------|
|           | requirem  |                          |
|           | ent ID    |                          |
| 2.1       | User Modu | ıle                      |
| 2.1.1     | F1        | Account Creation Process |
| 2.1.2     | F2        | Login Process            |
| 2.1.3     | F3        | Forgot Password Process  |
| 2.1.4     | F4        | Change Password Process  |
| 2.1.5     | F5        | Update Account Process   |
| 2.1.6     | F6        | Search Hostel            |
| 2.1.7     | F7        | Book Hostel              |
| 2.1.8     | F8        | Cancel Booking           |
| 2.1.9     | F9        | Give reviews             |
| 2.1.10    | F10       | Give ratings             |
| 2.2       | Hostel-ow | ner Module               |
| 2.2.1     | F11       | Account Creation Process |
| 2.2.2     | F12       | Login Process            |
| 2.2.3     | F13       | Forgot Password Process  |
| 2.2.4     | F14       | Change Password Process  |
| 2.2.5     | F15       | Update Account Process   |
| 2.2.6     | F16       | Confirm booking          |
| 2.3 Admir | Module    |                          |
| 2.3.1     | F17       | Login Process            |
| 2.3.2     | F18       | Verification             |
| 2.3.3     | F19       | Account Management       |
| 2.3.4     | F20       | Report generation        |

# > User Module

- User is the candidate who is looking for the Hostel.
- User is able to search the Hostel according to the specific criteria.

#### **Account Creation Process**

- Registration is mandatory to book a hostel.So, Hostel Booking System provides the functionality to create new account.
- To create a new account, user needs to enter information like **First name,Last** name,Date of birth,Gender,Email ID,Contact Number,Password, Password recovery questions etc.

### **Login Process**

- Using specific ID and Password user can access the application.
- The user authentication demands UserID and Password.

#### Forgot Password Process

 When system user forgets their password, the recovery method has been provided by Hostel booking system.

The recovery method is described as below.

- First, System user enters their UserID for Hostel booking System.
- ➤ Next, Hostel booking System demands the Answer which has been registered since when the Account was created.
- Only when the Answer is correct, user will be able to create new password.

### **Change Password Process**

- When user wants to change the Password, Therefore, Hostel Booking System has provided the function which is available after getting the user authentication.
- The function demands the current password and the new password.

#### **Update Account Process**

- Hostel-Booking System provides the function which allows user to update the account.
- The information user can update is described as below.
  - 1. Login information
  - 2. User information
  - 3. Security Question Information

#### Search Hostel

- Searching criteria's are mentioned below.
  - 1. Type of Hostel(Girls/Boys)
  - 2. City
  - 3. Area
  - 4. Price

#### **Book Hostel**

- User can request to book the hostel if seats are available.
- As the user requests to book the seat the Hostel-owner will have authority whether to confirm the booking or not.

### **Cancel Booking**

- If user wants to cancel the booking for that we have provided functionality which will show the information about previous transaction.
- With the help of this functionality user can cancel booking.

#### View and Give Reviews

 User can view reviews which are given by other users as well as user can give the reviews to hostel.

### View and Give Ratings

• User can view rating which is given by other users as well as user can give the rating to hostel.

### > Hostel-Owner Module

Hostel-owner is the candidate who is publishing the hostel information.

#### **Account Creation Process**

- Registration is mandatory to book a hostel. So, Hostel Booking System provides the functionality to create new account.
- To create a new account, user needs to enter information like Hostel name, Type of Hostel, Number of beds available, Address, Hostel owner name, Email ID, Contact Number, Password, Password recovery questions etc.

### Login Process

- Using specific ID and Password Hostel-owner can access the application.
- The Hostel-owner authentication demands Hostel-ownerID and Password.

#### Forgot Password Process

 When Hostel-owner forgets their password, the recovery method has been provided by Hostel booking system.

The recovery method is described as below.

- First, System user enters their User ID for Hostel booking System.
- Next, Hostel booking System demands the Answer which has been registered since when the Account was created.
- Only when the Answer is correct, user will be able to create new password.

## **Change Password Process**

- When Hostel-owner wants to change the Password, Therefore, Hostel Booking System has provided the function which is available after getting the Hostelowner authentication.
- The function demands the current password and the new password.

### **Update Account Process**

- Hostel-Booking System provides the function which allows Hostel-owner to update the account.
- The information Hostel-owner can update is described as below.
  - 1. Hostel information
  - 2. Hostel-owner information
  - 3. Security question information

### Confirm booking

- Hostel-Booking System provides the function which allows Hostel-owner to confirm the booking.
- If booking is successful then it will send feedback to particular user that booking is successful.

## > Admin Module

#### **Login Process**

- Using specific ID and Password Admin can access the application.
- The Admin authentication demands ID and Password.

#### Verification

Admin will verify all the information published by the Hostel-owner.

• If the information is correct Admin will approve the request of Hostel-owner to publish their hostel.

## **Account Management**

- Admin should able to manage all the accounts with following activities
- 1. Enable accounts
- 2. Disable accounts

## **Report Generation**

- Admin is able to generate reports based on number of Hostel-owners registered, number of users registered in the system.
- Admin can also generate report based on number of successful bookings and cancelled bookings.

# • <u>Database Design:</u>

## 1] Booking Details

| Field          | Type        | Null | Key     | Default | Description              |
|----------------|-------------|------|---------|---------|--------------------------|
| Booking_id     | Integer(10) | No   | Primary |         | ID for Booking           |
|                |             |      | key     |         |                          |
| Hostel_id      | Integer(10) | No   | Primary |         | ID for Hostel            |
|                |             |      | key     |         |                          |
| User_id        | Integer(10) | No   | Primary |         | ID for User              |
|                |             |      | key     |         |                          |
| From_date      | Varchar(45) | No   |         |         | Hostel allocation date   |
| To_date        | Varchar(45) | No   |         |         | Tentative relieving date |
| Booking_status | Varchar(45) | No   |         |         | Current Status of        |
|                |             |      |         |         | booking                  |
| Relieving_date | Varchar(45) | No   |         |         | Actual leaving date      |

# 2] Hostel Details

| Field     | Type        | Null | Key         | Default | Description             |
|-----------|-------------|------|-------------|---------|-------------------------|
| Hostel_id | Integer(10) | No   | Primary key |         | ID for Hostel           |
| Owner-id  | Integer(10) | No   | Primary key |         | IDofOwner               |
| Hostel-   | Varchar(45) | No   |             |         | Name Of Hostel          |
| name      |             |      |             |         |                         |
| Type_of   | Integer(10) | No   | Foreign key |         | Hostel is available for |
| _hostel   |             |      |             |         | Boys/Girls/Both         |
| City      | Integer(10) | No   | Foreign key |         | City id                 |
| Address   | Varchar(45) | No   |             |         | Address of the hostel   |
| Pin code  | Integer(10) | No   |             |         | Code of area            |
| Status    | Varchar(45) | No   |             |         | Confirm/Pending/Cancel  |
| Price     | Integet(10) | No   |             |         | Price                   |

# 3] Hostel Facility

| Field     | Type        | Null | Key         | Default | Description   |
|-----------|-------------|------|-------------|---------|---------------|
| Hostel id | Integer(10) | No   | Primary key |         | Id for hostel |

| Total seats | Integer(10) | No | Capacity of hostel         |
|-------------|-------------|----|----------------------------|
| Mess        | Integer(1)  | No | Mess availability          |
| Study       | Integer(1)  | No | Study room availability    |
| room        |             |    |                            |
| Gym         | Integer(1)  | No | Gym availability           |
| Swimming    | Integer(1)  | No | Swimming pool availability |
| pool        |             |    |                            |
| Wi-Fi       | Integer(1)  | No | Wi-Fi availability         |
| ATM         | Integer(1)  | No | ATM availability           |

## 4] Hostel Owner

|            | T           |      |         |         | 1                   |
|------------|-------------|------|---------|---------|---------------------|
| Field      | Type        | Null | Key     | Default | Description         |
| Owner id   | Integer(10) | No   | Primary |         | Id of hostel owner  |
| _          |             |      | key     |         |                     |
| First name | Varchar(45) | No   |         |         | First name of owner |
| Last name  | Varchar(45) | No   |         |         | Last name of owner  |
| Aadhar no  | Varchar(45) | No   |         |         | Aadhar no of owner  |
| Email_id   | Varchar(45) | No   |         |         | Email id of owner   |
| Contact    | Varchar(45) | No   |         |         | Contact no of owner |

# 5] City

| Field     | Type        | Null | Key            | Default | Description      |
|-----------|-------------|------|----------------|---------|------------------|
| City_id   | Integer(10) | No   | Primary<br>key |         | Id of city       |
| City_name | Varchar(45) | No   |                |         | Name of the city |

# 6] Hostel Type

| Field          | Type        | Null | Key     | Default | Description             |
|----------------|-------------|------|---------|---------|-------------------------|
| Hostel_type_id | Integer(10) | No   | Primary |         | Id of hostel_type       |
|                |             |      | key     |         |                         |
| Hostel_type    | Varchar(45) | No   |         |         | Which type of hostel it |
|                |             |      |         |         | is.                     |

# 7] Ratings

| Field     | Type        | Null | Key     | Default | Description  |
|-----------|-------------|------|---------|---------|--------------|
| Hostel_id | Integer(10) | No   | Primary |         | Id of hostel |
|           |             |      | key     |         |              |

| User_id | Integer(10) | No | Primary | Id of user               |
|---------|-------------|----|---------|--------------------------|
|         |             |    | key     |                          |
| Rating  | Integer(5)  | No |         | Rating given by user and |
|         |             |    |         | user                     |
|         |             |    |         | Can the rating           |

# 8] Reviews

| Field       | Type        | Null | Key     | Default | Description              |
|-------------|-------------|------|---------|---------|--------------------------|
| Hostel_id   | Integer(10) | No   | Primary |         | Id of hostel             |
|             |             |      | key     |         |                          |
| User_id     | Integer(10) | No   | Primary |         | Id of user               |
| _           |             |      | key     |         |                          |
| Review text | Varchar(45) | No   |         |         | Comments given by user   |
|             |             |      |         |         | and user can view others |
|             |             |      |         |         | comments                 |

# 9] User Details

| Field      | Type        | Null | Key        | Default | Description        |
|------------|-------------|------|------------|---------|--------------------|
| User_id    | Integer(10) | No   | Primarykey |         | Id of user         |
| First name | Varchar(45) | No   |            |         | First name of user |
| Last name  | Varchar(45) | No   |            |         | Last name of user  |
| Aadhar no  | Integer(10) | No   |            |         | Aadhar no of user  |
| Email_id   | Varchar(45) | No   |            |         | Email id of user   |
| Contact    | Integer(10) | No   |            |         | Contact no of user |

## 10] Login Details

| Field    | Type        | Null | Key         | Default | Description             |
|----------|-------------|------|-------------|---------|-------------------------|
| Role_id  | Varchar(45) | No   |             |         | Role name               |
| Login_id | Varchar(45) | No   | Primary key |         | Login id for particular |
|          |             |      |             |         | role                    |
| Password | Varchar(45) | No   |             |         | Password of users       |

### **Stored Procedures:**

Following Stored Procedures are used:

1. add hostel

This procedure is used for adding the hostel.

2. add hostel facilities

This procedure is used for adding the hostel\_facilities.

3. add booking

This procedure is used for adding the booking details.

4. get booking details

This procedure is used for getting the Booking Details.

5. get booking report

This procedure is used for generating the booking Report...

6. get hostel report

This procedure is used for generating the Report of the Hostel Information.

7. get pending hostel

This procedure is used for getting the Hostels who's status is pending.

8. get previous transaction

This procedure is used for getting the information of Previous Transactions.

9. get user ajax

This procedure is used for checking whether the User is already existing.

10. get user report

This procedure is used for generating the report for the users of the system.

11. register owner

This procedure is used for registering the owner.

12. register user

This procedure is used for registering the user.

13. save login details

This procedure is used for saving the login Details of the users of the system.

14. update seats

This procedure is used for updating the available seats after some booking is done.

15. get login details

This procedure is used for getting the login details.

## **SDLC MODELS**

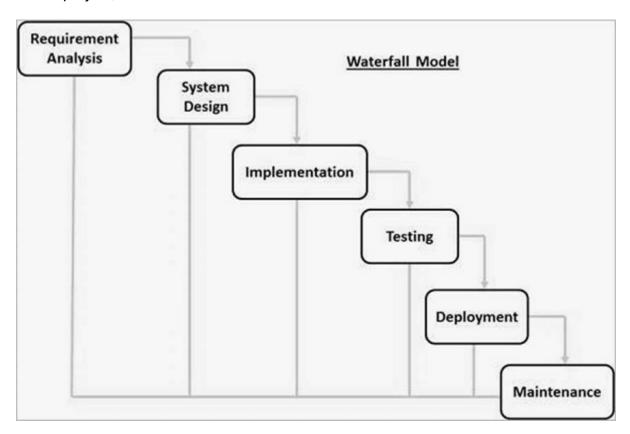
## **Life Cycle Models**

There are Various software development life cycle models defined and designed which are followed during software software development process. These models are also referred as "software Development Process Models". Each process model follows a series of steps unique to its type, in order to ensure success in process of software development.

Following are the most important and popular SDLC models followed in the Industry:

- Waterfall Model
- Iterative Model
- Spiral Model
- Prototype Model
- Evolutionary Model

In this project, Waterfall Model is Followed.



## Waterfall Model Design:

Waterfall approach was first SDLC Model to be used widely in Software Engineering to ensure success of the project. In "The Waterfall" approach, the whole process of software development is divided into separate phases. In this Waterfall model, typically, the outcome of one phase acts as the input for the next phase sequentially. The following illustration is a representation of the different phases of the Waterfall Model.

The sequential phases in Waterfall model are -

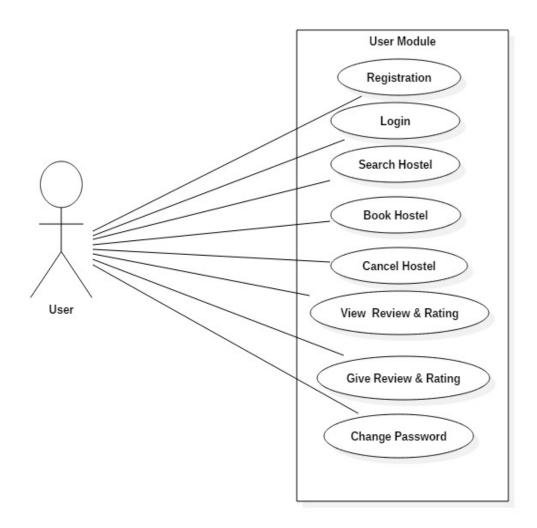
- Requirement Gathering and analysis All possible requirements of the system to be developed are captured in this phase and documented in a requirement specification document.
- System Design The requirement specifications from first phase are studied in this phase and the system design is prepared. This system design helps in specifying hardware and system requirements and helps in defining the overall system architecture.
- Implementation With inputs from the system design, the system is first developed in small programs called units, which are integrated in the next phase. Each unit is developed and tested for its functionality, which is referred to as Unit Testing.
- Integration and Testing All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures.
- Deployment of system Once the functional and non-functional testing is done; the product is deployed in the customer environment or released into the market.
- Maintenance There are some issues which come up in the client environment. To fix those issues, patches are released. Also to enhance the product some better versions are released. Maintenance is done to deliver these changes in the customer environment.

All these phases are cascaded to each other in which progress is seen as flowing steadily downwards (like a waterfall) through the phases. The next phase is started only after the defined set of goals are achieved for previous phase and it is signed off, so the name "Waterfall Model". In this model, phases do not overlap.

# **System Design**

# Use Case Diagrams

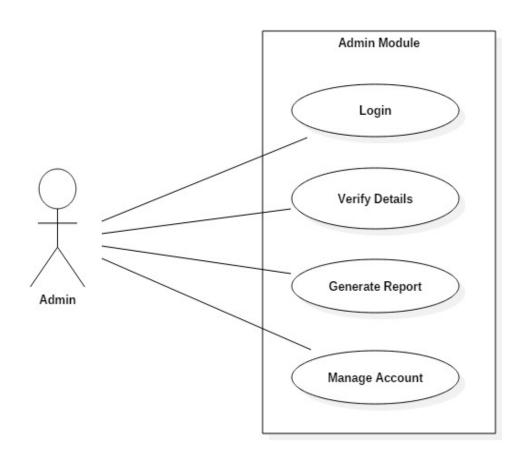
## User:



- 1. In User case diagram User is actor.
- 2. User can handle following use cases
  - a. Registration
  - b. Login
  - c. Search Hostel
  - d. Book Hostel

- e. Cancel Booking
- f. View Review & Rating
- g. Give Review & Rating
- h. Change Password

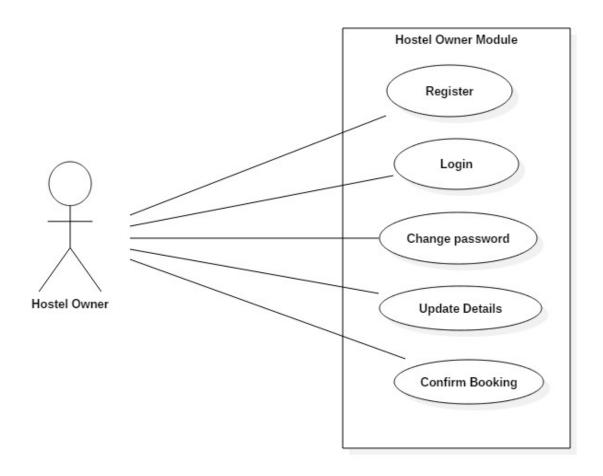
## Admin:



- 1. In Admin case diagram Admin is actor.
- 2. Admin can handle following use cases
  - a. Login
  - b. Verify Details
  - c. Generate Report

## d. Manage Account

# **Hostel-Owner:**



- 1. In Hostel-owner case diagram Hostel-owner is actor.
- 2. Hostel-owner can handle following use cases
  - a. Register
  - b. Login
  - c. Change Password
  - d. Update Details
  - e. Confirm Booking

# ER Diagram:

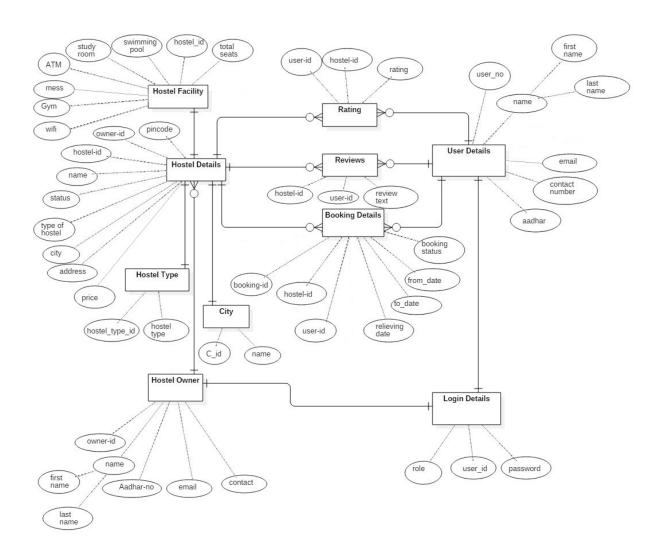


Figure: ER-Diagram

Above E-R Diagram shows that database of Online Hostel Boking system consist of following entities:

## Login Details

User ,Hostel\_Owner and the admin will log in to the Application using username and password.

#### • User

Account Creation process needs following information:

First\_name,Last\_name,email,contact\_no,aadhar\_no .All these registration details are stored in database after the successful registration.

## Hostel owner

Account Creation process needs following information:

First name, Last name, email, contact, aadhar no

All these registration details are stored in database after the successful registration.

## Hostel Details

To Add the Hostel the hostel owner need to provide following type of information: Hostel name, type\_of\_hostel,city,address,pincode,price

## Hostel\_type

This entity contains the hostel\_type\_id,Hostel\_type attributes.

## Hostel\_facility

This entity contains hostel\_id, total\_seats, mess, study\_room, gym, swimming pool, wifi, atm attributes.

## • city

This entity contains city\_id and city\_name attributes.

## ratings

This entity contains hostel\_id,user\_id, ratings attributes.

#### reviews

This entity contains hostel\_id,user\_id, reviews attributes.

# Booking\_id

This entity contains booking\_id,hostel\_id,user\_id,from\_date,to\_date, Booking\_status,relieving\_date attributes.

# • Data Flow Diagram:

## • 0-Level DFD:

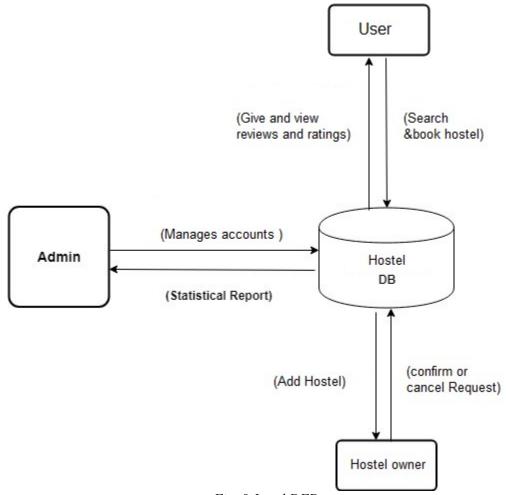
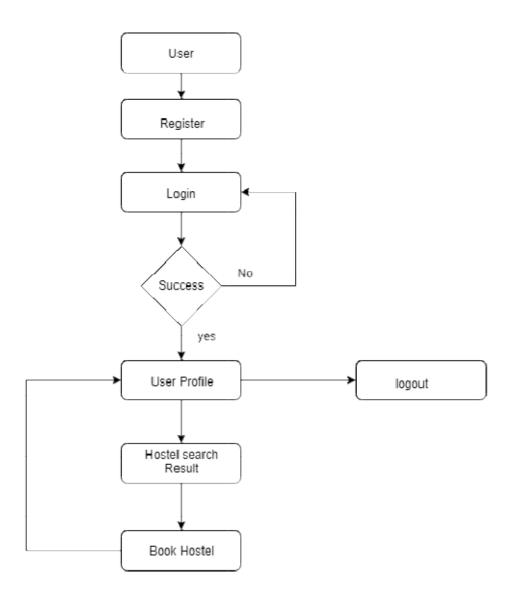


Fig. 0-Level DFD

- In 0-Level DFD, there are three Entities:
- User
- Admin
- Hostel\_Owner

# **Page Navigation:**



**Figure: USER Page Navigation** 

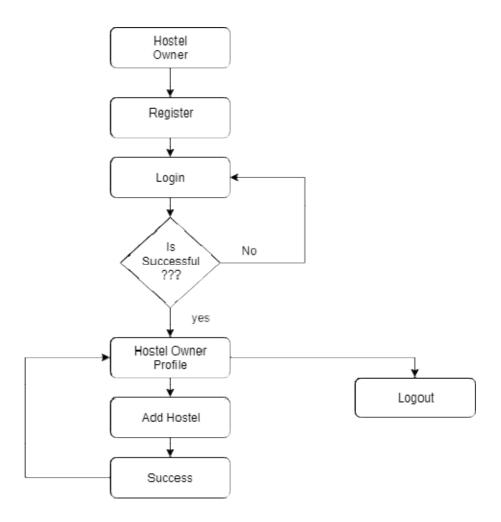


Figure: HOSTEL\_OWNER Page Navigation

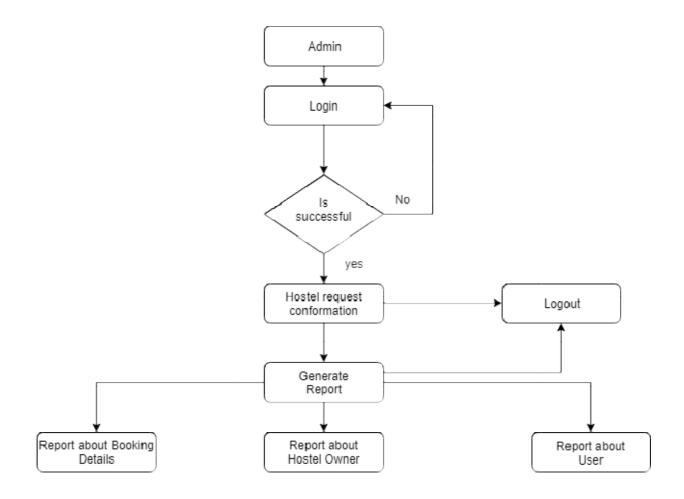


Figure: ADMIN Page Navigation

## **ScreenShot:**

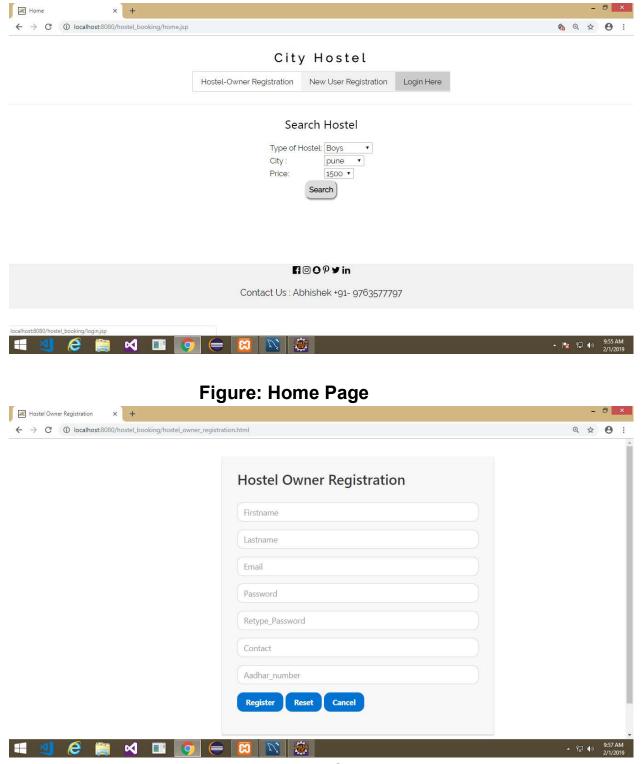
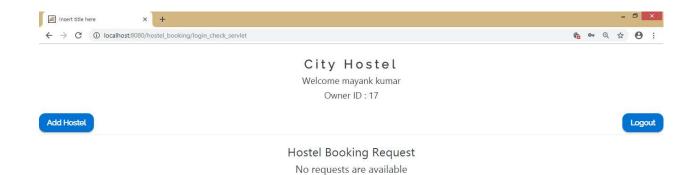


Figure :Hostel-Owner Registration



**Figure : Hostel-owner Profile** Hostel Registration ← → C ① localhost:8080/hostel\_booking/add\_hostel.html Hostel Registration Form Type Of Hostel: ® Boys ♥ Girls ♥ For Both Name Of Hostel: Address: Select City: Pune Pin Code: ■Gym ■Mess ■Study Room ■WiFi ■ATM ■Swimming Pool Add Hostel Reset Cancel 

Figure : Add-Hostel Page

## **ADMIN:**

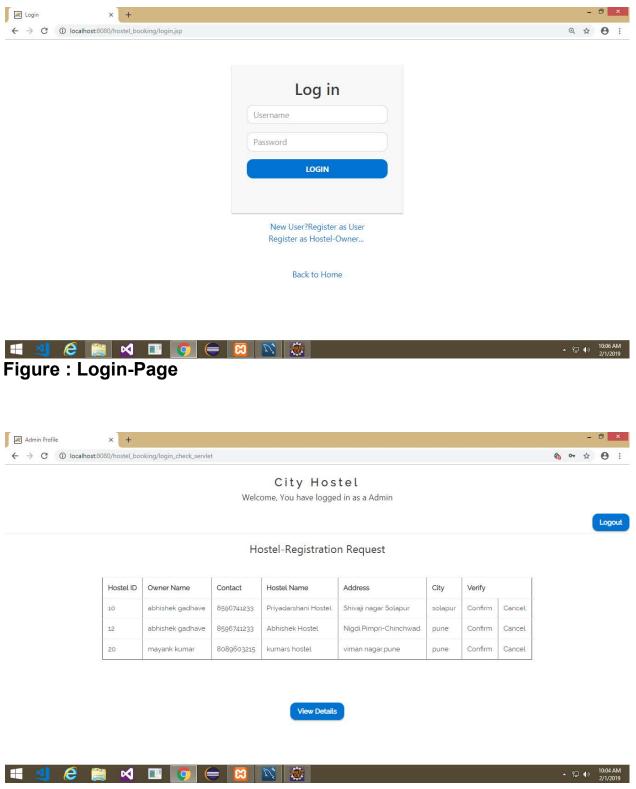


Figure : Admin\_profile page

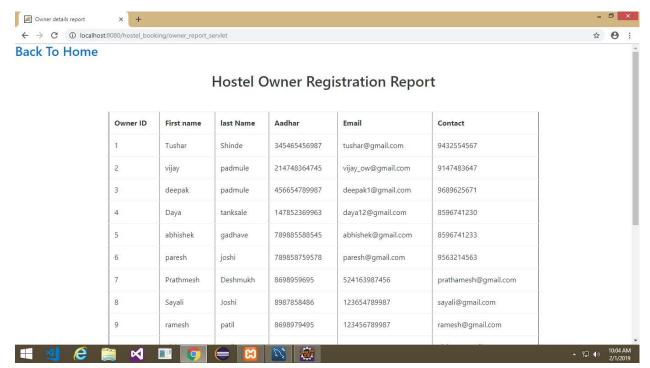


Figure: Hostel Registration Report

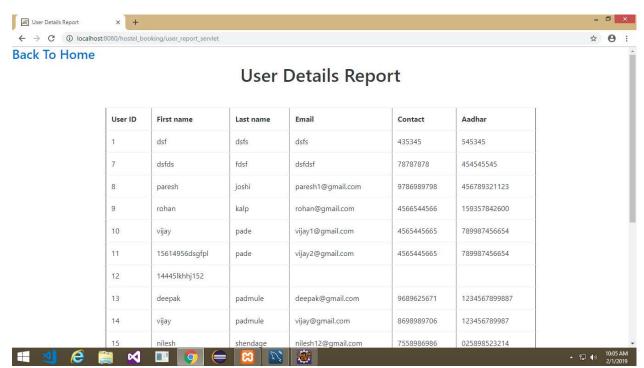


Figure: User Details Report

### User::

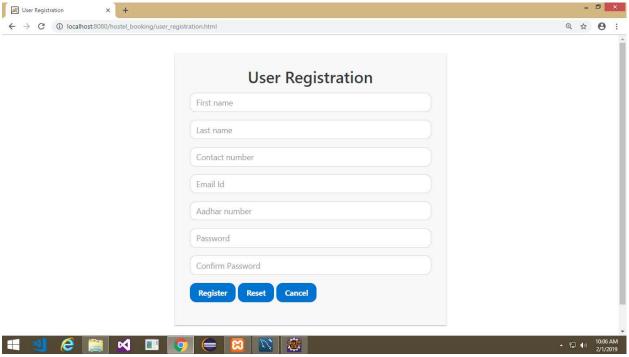


Figure: User Registration



No Previous Transactions

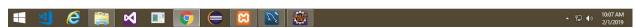


Figure: User Profile Page

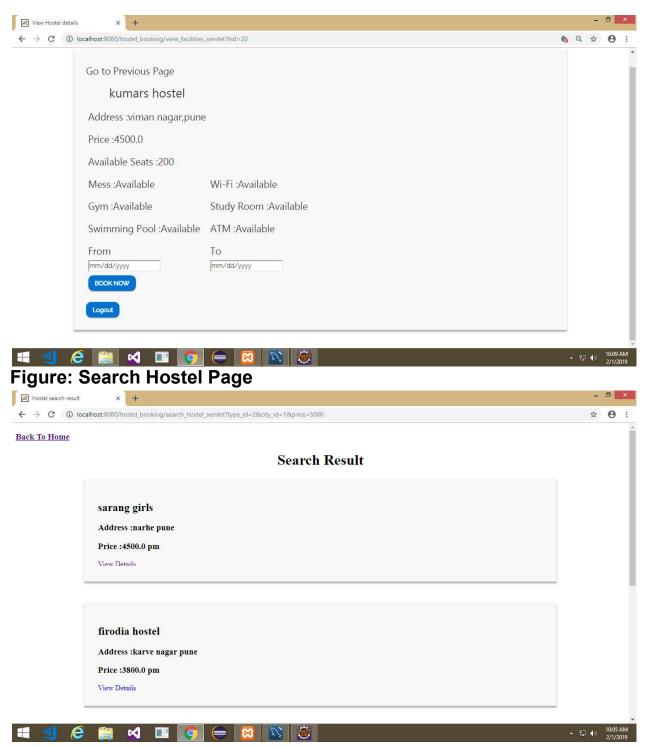
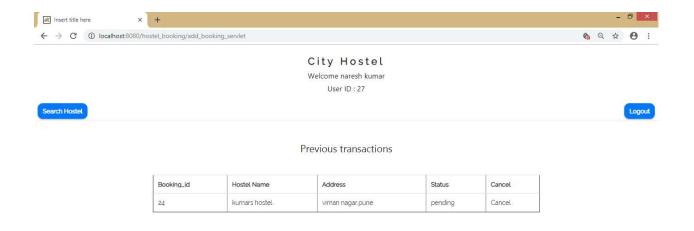


Figure:Search Result Page





## **Conclusion And Future Scope**

- According to existing system there is no online payment option available..By making the payment online, more convenience can be added to the system.
- Online Ratings and reviews:

There will be the provision for the users to give the ratings to the Hostels on the scale of Five .The users can also share their experience & feedbacks for the Hostel they visited, which will be helpful for the new users when they are using this system for booking the hostels.

• In the future scope, this system will be available in local languages and also available in the form of mobile app so it will be more beneficial for the users.