



Software Requirements Specification

ONLINE SEAT BOOKING SYSTEM

V1.1



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1. Introduction

This document explains in detail about a project to test various programming skills of an individual. This will also enable us to access level of understanding an individual has about Web application technologies. It also provides detailed instructions that should be followed while executing this assignment.

2. Scope

2.1 Problem Statement

Every organization provides a space (seat) for the users to use. To reserve a seat (cubicle), the user will need to record their booking in a log book. This logistic requires a lot of manual work to maintain the records, which tends to be an error prone approach. Hence, some automated approach is preferred, and the organization would like to have a seat booking system to improve the situation.

Using the seat booking system, user can first check the availability of their preferred seat, and make the corresponding bookings online. The admin can check the booking status of the seat and have appropriate arrangements for the bookings. In addition, users can also view their booking histories via the interface. With this seat booking system user can instantly schedule desks, manage bookings and locate neighbourhoods and colleagues.

Limitations with the current system:

1. Not convenient to register a booking because the validation checking cannot scan all the invalid inputs at once.
2. No calendar can be viewed in the system.
3. No timeline to show booking schedule.
4. No recurring booking can be performed.
5. No statistical report of the seats usage.

Benefits of seat booking system:

1. Create a dynamic workforce
2. Maximise desk usage
3. Reduce costs
4. Understand your space
5. Locate / search desks easily

2.2 Key Features

1. Application should allow the administrator to add, modify location, offices, floors and seats and able to remove offices, floor and seats, if needed.
2. Admin should be able to view number of available seats and booked seats.
3. Administrator should be able to deny any request.
4. Administrator can change seat to any person according to the situation/needs.
5. Application should display all seats. Available seats should be shown in Green and booked seats should be disabled for user and shown in grey in colour.



6. User should be able to see remaining seat and be able to select available seat and book.
7. User should be able to update his/her personal information.
8. User should be able to view previous and future booking within particular time.
9. User should be able to send the swap request for exchanging the seat.
10. User should be able to send seat cancellation request to admin.

3. Acronyms & Abbreviations

SRS – Software Requirements Specification

GUI – Graphical User Interface

4. Functional Requirements

Below mentioned basic requirements to be implemented as part of SEAT Booking System:

1. User friendly web based GUI which is accessible over internet.
2. User registration screen where new users can register themselves and book Seats.
3. Login screen that allows registered users to login to their account and see seats available and allow them to book available seat. Once user has a booked seat, no one else should be able to book it; it should be disabled.
4. User should be able to swap seats with each other , In short, Manage My Account (MMA) functionality.
5. Admin should be able to Disallow request or change seat allocation anytime
6. User should not be able to release seat automatically without Admin
7. Search screen to search available seats at different floor at different office at different location.. Display search results.

4.1 Persona's / Actors

Types of users

Persona/Actors	Description
User	Registered User who can login and make seat/cubicle booking
Administrator	Admin User who can manage the administration module to be able to add office location, floor plans, layouts, seating capacity and approve /reject seat bookings

4.2 Epics

Epics of IFL System

Epic Id	Epic
EP-1	User Management Module



EP-2	Administration Module
EP-3	Flight Ticket booking

4.3 User Story

<To be provided to the students>

User Story ID: EP1-OSB1

User Story Title: User Registration

As a User, I can register at the Online Seat Booking system, so that I am able login into Online Seat Booking system

Business Rules

- User should be able to register themselves with a valid email id and password
- Validate empty fields and validation patterns like email id etc.,

User Story ID: EP1-OSB2

User Story Title: User Login

As a User, I can Login to Online Seat Booking system, so that I am able login and search for vacant seats to be booked

Business Rules

- Registered users should be able to login to the Online Seat Booking system
- Forgot password option to allow users to reset their password with appropriate validation check via email or security question
- Validation for empty fields and wrong credentials

User Story ID: EP1-OSB3

User Story Title: User Profile management

As a User, I can Login to Online Seat Booking system, so that I am able manage my profile and bookings

Business Rules

- Registered users should be able to update the profile details
- Valid users should be able to reset their password
- Registered users should be able to view their dashboard of bookings and access to options like Request for Swap / approve a Swap request

User Story ID: EP2-OSB1

User Story Title: Admin Login

As an Admin, I can Login to Online Seat Booking system, so that I am able manage the Online Seat Booking system

Business Rules

- Admin should have access to the administration section of Online seat booking system to update location / manage bookings etc.,



User Story ID: EP2-OSB2

User Story Title: Office details Administration

As an Admin, I can Login to Online Seat Booking system, so that I am able Update Office details

Business Rules

- Admin should be able to
 - Create / update office locations
 - Floor details and layouts
 - Seating capacity
 - Manage available spaces

User Story ID: EP2-OSB3

User Story Title: Bookings Dashboard

As an Admin, I can Login to Online Seat Booking system, so that I am able Manage Bookings

Business Rules

- Admin should be able to
 - View all bookings
 - View open capacity location wise, office wise and floor wise

User Story ID: EP2-OSB4

User Story Title: Bookings Approval

As an Admin, I can Login to Online Seat Booking system, so that I am able approve seat booking requests

Business Rules

- Admin should be able to approve / reject seat booking request
- Every approval / rejection should notify the user who has booked
- Admin should be able to disallow booking / change seat allocation anytime and notify the respective user
- Admin should be able to approve Cancellation of booking requests

User Story ID: EP3-OSB1

User Story Title: Seat Search

As a User, I can Login to Online Seat Booking system, so that I am able search for open seats

Business Rules

- Logged in user should be able to search for open vacant seats for a given Location, Office and floor, all open seats should be shown in green

User Story ID: EP3-OSB2

User Story Title: Seat Booking

As a User, I can Login to Online Seat Booking system, so that I am able search for open seats to book

Business Rules

- All open vacation seats should be shown in green



- User should be able to book a seat for a particular duration
- Once booked, that seat should be shown in grey and disabled
- Once booked, user cannot release the seat, rather should raise a cancellation request for Admin to approve

User Story ID: EP3-OSB3

User Story Title: Seat Swap request

As a User, I can Login to Online Seat Booking system, so that I am able request for swapping of seats with another user

Business Rules

- Users should be able to send request for Swap of seats with the other user who has booked
- User should be able to approve Swap requests without Admin's involvement

5. System Details

5.1 Use Case Diagram

<To be filled by the students>

5.2 Class diagram

<to be filled by the students(optional)>

5.3 Sequence Diagram

<To be filled by the students>

5.4 E-R Diagram

<To be filled by the students>



6. Technical Details

6.1 Technology Details

- Build Tool: Apache Maven latest version
- JDK: 1.8 any latest update available
- Spring Framework – Spring Microservices, Spring Boot
- Logging: Slf4j with Log4j
- DB: Oracle / MySQL / MongoDB
- IDE: STS or Eclipse
- Data Layer: JPA, Spring Transaction Management with Hibernate JPA Implementation.
- UI Layer: React, Bootstrap
- Devops Tools : Git, Docker, Jenkins, Kafka

6.2 UI Screens

<To be filled by the students>