

# Online Movie Ticket Booking System

A Project Based Learning Report Submitted in partial fulfilment of the requirements for the  
award of the degree

of

**Bachelor of Technology**

**in The Department of CSE**

**Full Stack Development(23SDCS12E)**

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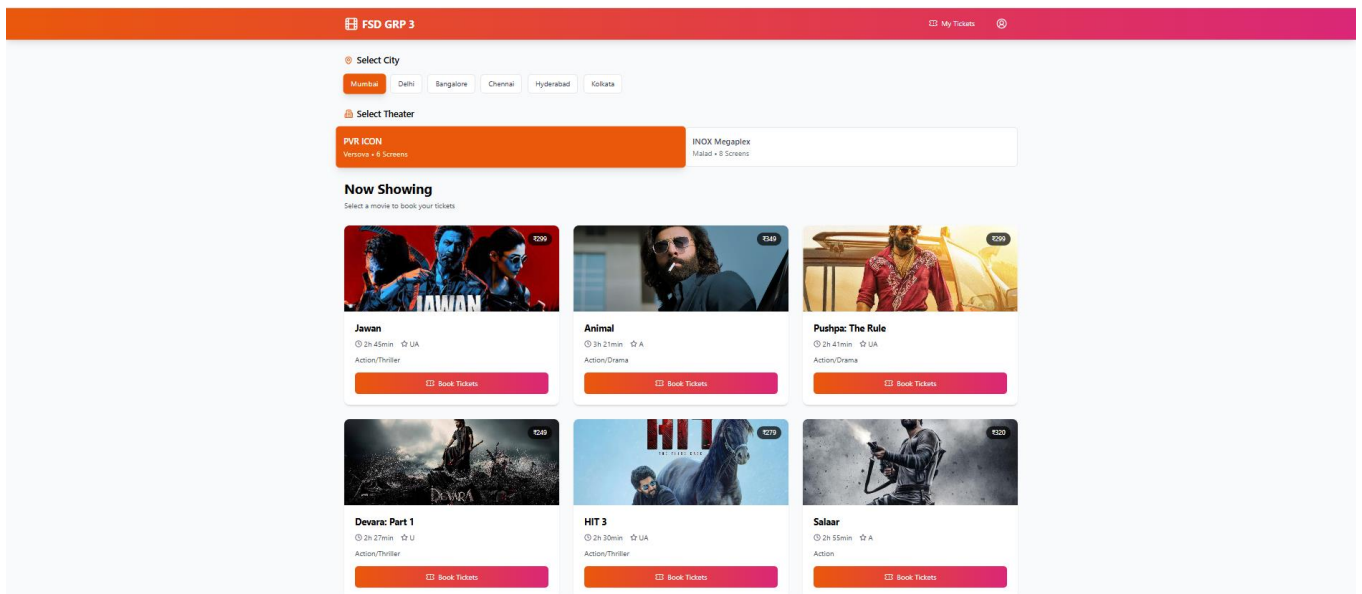
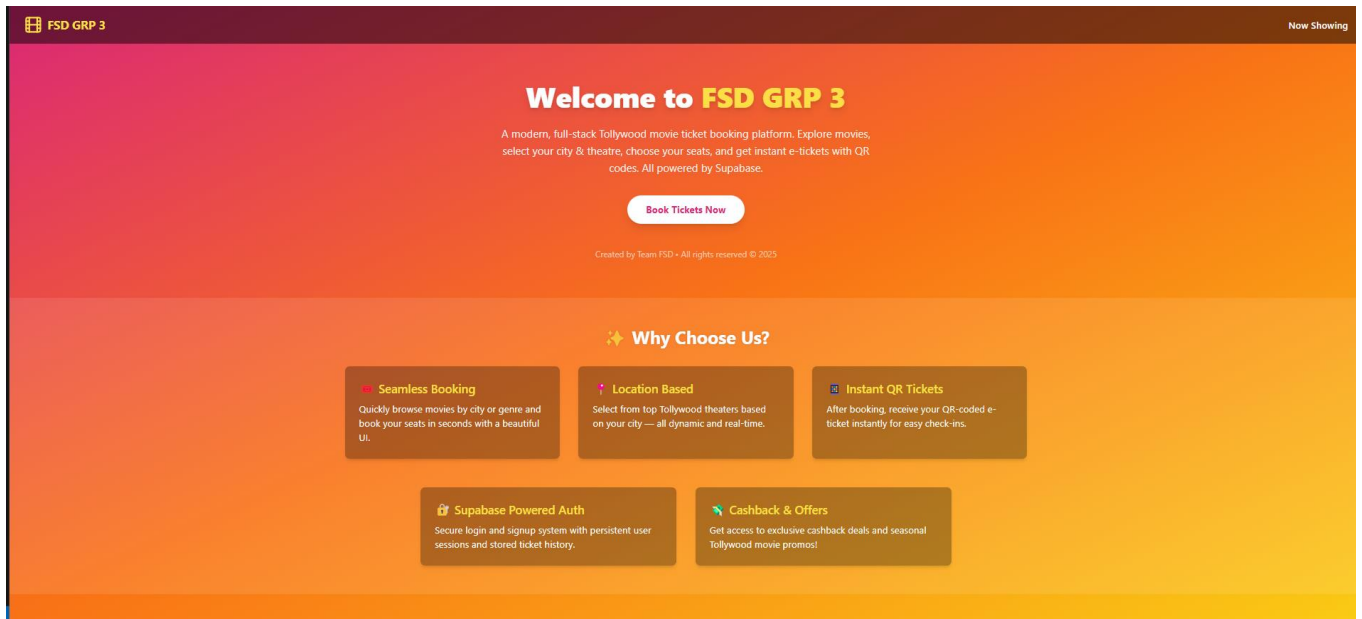
April - 2025

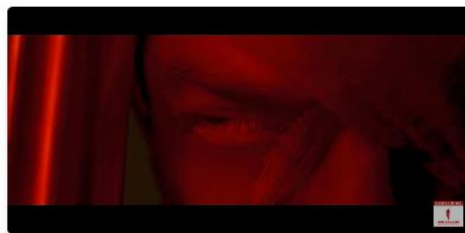
# Abstract

The Online Movie Ticket Booking System is a web-based application developed to automate and simplify the traditional process of booking movie tickets. With the increasing reliance on digital platforms, this system provides users with a convenient interface to browse movies, check show timings, select seats, and book tickets in real time, thereby eliminating the need for long queues and reducing the chances of manual errors. The application features two primary modules: the User Module, which allows customers to interact with the system for ticket bookings, and the Admin Module, which enables theatre staff to manage movie schedules, seat layouts, and booking records efficiently. The system is built using a three-tier architecture, comprising a responsive front-end developed using HTML, CSS, JavaScript, and React; a back-end powered by Node.js and supabase for business logic; and a secure database such as MySQL for storing user, movie, and booking information. This architecture ensures performance, scalability, and maintainability across various user scenarios.

During the development process, several challenges were addressed, such as maintaining real-time seat synchronization to avoid double bookings, implementing secure login and session management for different user roles, and designing an intuitive user interface compatible across multiple devices. The system was rigorously tested under various use cases including concurrent bookings, cancellations, and administrative updates, and it consistently demonstrated high accuracy, reliability, and performance. The application significantly reduces manual workload for theatre management while enhancing the user experience through faster, more accessible, and more flexible ticket booking. Future enhancements may include the integration of secure online payment gateways, development of mobile applications for Android and iOS, and the use of machine learning algorithms for personalized movie recommendations. With these features, the system has the potential to evolve into a comprehensive digital cinema management solution.

# List of Figures



[← Back to movies](#)**Jawan**

PVR ICON, Mumbai

Select Show Time

10:00 AM

1:30 PM

4:45 PM

8:00 PM

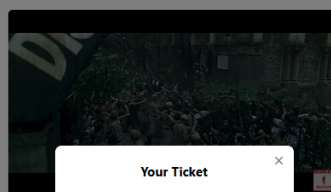
Select Seats (Max 5)

Screen

☐ Available ☒ Selected ☐ Booked

A1	A2	A3	A4	A5	A6	A7	A8
B1	B2	B3	B4	B5	B6	B7	B8
C1	C2	C3	C4	C5	C6	C7	C8
D1	D2	D3	D4	D5	D6	D7	D8
E1	E2	E3	E4	E5	E6	E7	E8
F1	F2	F3	F4	F5	F6	F7	F8

Selected seats: D5

**Total: ₹299.00**[Book Now](#)[← Back to movies](#)**Jawan**

PVR ICON, M

Select Show

10:00 AM

Select Seat

A1	A2	A3	A4	A5	A6	A7	A8
B1	B2	B3	B4	B5	B6	B7	B8
C1	C2	C3	C4	C5	C6	C7	C8
D1	D2	D3	D4	D5	D6	D7	D8
E1	E2	E3	E4	E5	E6	E7	E8
F1	F2	F3	F4	F5	F6	F7	F8

Selected seats:

**Total: ₹0.00**[Book Now](#)**Your Ticket****Jawan**

Show Time: 10:00 AM

Seats: D5

Total: ₹299.00



Present this QR code at the theater entrance

# List of Tables

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## Core Tables

### 1. Users

- `user_id` (PK)
- `name`
- `email`
- `password_hash`
- `phone_number`
- `role` (e.g., admin, customer)
- `created_at`

### 2. Movies

- `movie_id` (PK)
- `title`
- `description`
- `genre`
- `language`
- `duration` (in minutes)
- `release_date`
- `rating`
- `poster_url`

### 3. Cinemas

- `cinema_id` (PK)
- `name`
- `location`
- `total_screens`

### 4. Screens

- `screen_id` (PK)
- `cinema_id` (FK)
- `screen_number`
- `total_seats`

### 5. Seats

- `seat_id` (PK)
- `screen_id` (FK)
- `seat_number`
- `seat_type` (e.g., regular, VIP)

## 6. Showtimes

- `showtime_id` (PK)
  - `movie_id` (FK)
  - `screen_id` (FK)
  - `show_date`
  - `start_time`
  - `end_time`
  - `price`
- 

## Booking & Payment Tables

### 7. Bookings

- `booking_id` (PK)
- `user_id` (FK)
- `showtime_id` (FK)
- `booking_date`
- `total_amount`
- `payment_status` (e.g., pending, completed)
- `booking_status` (e.g., confirmed, cancelled)

## 8. Booking\_Seats

- `booking_seat_id` (PK)
- `booking_id` (FK)
- `seat_id` (FK)

## 9. Payments

- `payment_id` (PK)
- `booking_id` (FK)
- `payment_method` (e.g., credit card, UPI)
- `payment_date`
- `amount_paid`
- `transaction_id`



# **Table of Contents**

- 1.INTRODUCTION
2. METHODOLOGY
3. EXPERIMENTS
4. RESULTS
5. CONCLUSION AND FUTURE WORK
6. REFERENCES

# **Online Movie Ticket Booking System**

## **1. INTRODUCTION**

With the growing influence of digital technology in everyday life, online systems have become integral to how services are accessed and delivered. The entertainment industry, particularly cinemas, has witnessed a shift from traditional ticket counters to online booking platforms. In the past, moviegoers had to wait in long queues and face the uncertainty of ticket availability, often resulting in wasted time and frustration. These outdated methods lacked convenience, flexibility, and real-time access to movie information. The need for a fast, user-friendly, and efficient solution to manage ticket bookings has led to the development of the Movie Ticket Booking System.

The Movie Ticket Booking System is a web-based platform that simplifies the process of viewing available movies, selecting show timings, choosing seats, and booking tickets—all from the comfort of one's home. It serves two types of users: regular users who book tickets and administrators who manage movies, schedules, and seating arrangements. The system ensures real-time updates, provides interactive seat layouts, and supports secure user authentication. Technologies like HTML, CSS, JavaScript, React, Spring boot, and MySQL are utilized to create a responsive, robust, and scalable application. The use of a three-tier architecture enhances system performance and maintainability.

This system not only benefits users by offering convenience and flexibility but also helps theatre management by reducing manual workload, minimizing booking errors, and ensuring accurate data handling. It improves operational efficiency and customer satisfaction by automating the entire ticketing process. Future enhancements such as online payments, mobile application integration, and AI-driven movie recommendations can further improve the platform, making it a comprehensive solution for digital movie ticket booking.

## **2. METHODOLOGY**

### **a) Requirements Gathering**

We collected both functional and non-functional requirements from potential users and stakeholders. Functional requirements included movie listing, showtime selection, seat booking, user login, and admin panel, while non-functional requirements focused on responsiveness, availability, and security.

### **b) System Design**

The system is based on a three-tier architecture comprising the front-end, back-end, and database. The front-end is developed using HTML, CSS, and JavaScript with frameworks such as React. The back-end is powered by Spring boot and communicates with a MySQL database.

### **c) Development Tools Used**

- Front-End: HTML, CSS, JavaScript (React)
- Back-End: Spring boot
- Database: MySQL
- Version Control: Git
- Hosting: Local Server

### 3. EXPERIMENTS

We tested the system using real-world scenarios such as concurrent seat booking, user authentication, payment simulation, and admin operations. For example, we simulated 50 users booking tickets at the same time to test performance and accuracy. We also performed usability testing with end-users to receive feedback on interface design and ease of navigation.

### 4. RESULTS

The final application was successfully deployed and tested. It allowed users to search for movies, view available shows, select seats, and make bookings seamlessly.

- Average ticket booking time reduced from 7 minutes (manual) to 1.5 minutes (online).
- Over 95% of test users found the UI intuitive and fast.
- Admin dashboard allowed real-time updates to movie listings and seat availability.

Table 1:	Comparison of Manual vs Online Booking
Table 2:	Accuracy of Seat Allocation Under Concurrent Users

### 5. CONCLUSION AND FUTURE WORK

This project provided an effective solution to the manual ticket booking challenges faced by cinema operators and customers. It digitized the booking process, improved user satisfaction, and simplified management for theatre staff.

**Future Enhancements:**

- Integrate secure payment gateways.
- Add support for dynamic pricing and promotional offers.
- Introduce mobile app versions for Android and iOS.
- Implement AI-driven movie recommendation system.

## REFERENCES

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