Online Movie Ticket Booking: An Android-Based Application for Smart Cinema Management

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Article Info	*Abstract:*
Article History: *Published:11 Feb 2026* *Publication Issue:* *Volume 3, Issue 2* *February-2026* *Page Number:* *188-191* *Corresponding Author:* *Shravani Sunil Jagtap*	In the modern digital era, traditional movie ticket booking systems are inefficient and time-consuming due to long queues and limited access to real-time information. To overcome these issues, an Android-based Online Movie Ticket Booking application is proposed. The system allows users to view available movies, check show timings, select seats, and book tickets using mobile devices. The application reduces manual effort, improves user convenience, and enhances the overall movie-going experience through a user-friendly interface and digital booking mechanism. *Keywords:* Online Movie Ticket Booking, Android Application, Seat Selection, Digital Payments, Smart Cinema

1. INTRODUCTION

With the rapid growth of smartphone usage, mobile applications have become an essential part of daily life. The entertainment industry, especially movie theatres, has adopted digital solutions to improve customer service. Traditional ticket booking methods involve physical presence, long waiting times, and lack of seat availability information.

The Online Movie Ticket Booking application is designed to provide a smart and efficient solution for cinema ticket reservations. Users can browse movies, select theatres, choose show timings, and book tickets instantly. The system minimizes human effort, reduces errors, and supports

Digital transactions. This Android-based application aims to modernize the ticket booking process and enhance customer satisfaction.

2. LITERATURE SURVEY

Several studies indicate that online booking systems significantly improve service efficiency and user experience. Patel et al. reported that mobile ticket booking platforms reduce waiting time and increase customer satisfaction. Existing platforms such as BookMyShow provide advanced features but may be complex for first-time users.

Research emphasizes the need for lightweight, user-friendly mobile applications with real-time seat availability and instant confirmation. These findings motivate the development of a simple Android-based movie ticket booking system suitable for a wide range of users.

3. METHODOLOGY/FEATURES IMPLEMENTATION

The Online Movie Ticket Booking application is developed using Android Studio, with Firebase Real-time Database for data storage. The system is divided into multiple functional modules to ensure smooth operation.

1. User Registration and Login
Users can register using basic details and log in securely. Firebase Authentication manages user credentials.

2. Movie and Theatre Information
The application displays a list of currently available movies along with:

Movie name

- Description
- Show timings
- Theatre details

3. Seat Selection
Users can view real-time seat availability and select preferred seats. Booked seats are marked unavailable to avoid duplication.

 4. Ticket Booking and Payment
After seat selection, users confirm booking. A simulated or integrated digital payment option completes the transaction.

5. Booking Confirmation and Notification
Once booking is successful, the app sends a confirmation message and stores booking details in the database.

Technical Tools Used:

- Android Studio
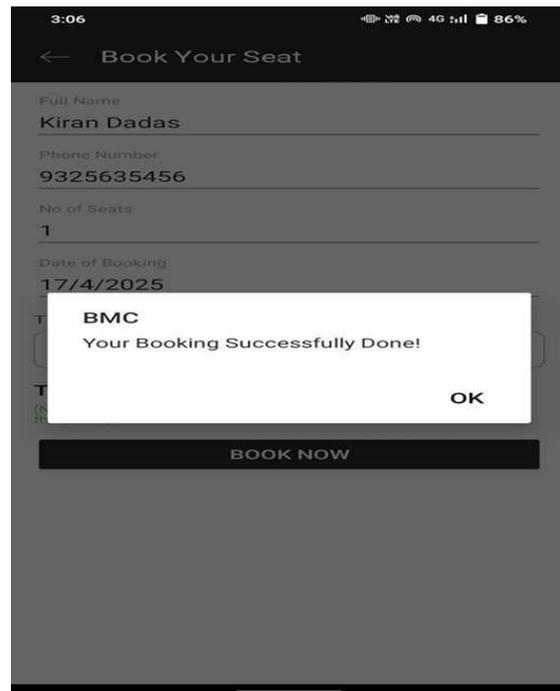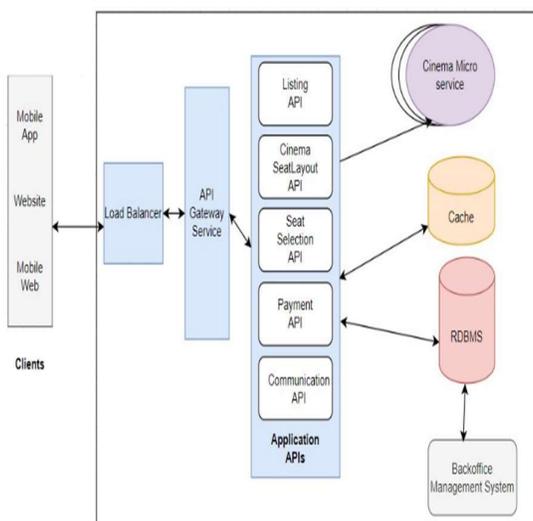- Firebase Real-time Database
- Firebase Authentication

Fig .Architecture Diagram

4. RESULTS AND DISCUSSION

The developed application successfully provides a smooth and reliable ticket booking experience. Users can book tickets anytime without visiting the theatre. Real-time seat selection prevents double booking, and notifications ensure booking confirmation.

The system reduces crowding at ticket counters and improves operational efficiency. Testing results show stable performance on standard Android devices.

5. CONCLUSION AND FUTURE WORK:

The Online Movie Ticket Booking application provides an efficient and user-friendly solution for digital cinema ticket booking. It successfully replaces traditional manual booking methods with a smart Android-based system. The application improves customer experience, reduces crowding, and supports digital transactions.

Future Enhancements:

- Integration of live payment gateways
- QR-code based ticket scanning
- Multiple language support
- Admin panel for theatre management
- Online food and snack ordering

In conclusion, this project proves that mobile applications can significantly improve service efficiency in the entertainment sector and offers scope for further expansion.

References

1. *Database System Concepts* – Silberschatz, Korth & Sudarshan

2. *Pro MERN Stack* – Vasan Subramanian

3. **Object-Oriented Analysis and Design** – *Grady Booch*

4. **Mobile Application Development –** *Raj Kamal*

5. A Craftsman's Guide to Software Structure and Design - Robert C. Martin ("Uncle Bob")

6. Designing Data-Intensive Applications - Martin Kleppmann

7. System Design Interview – An Insider's Guide" by Alex Xu

8. https://www.slideshare.net/slideshow/a-case-study-on-online-ticket- booking-system-project-pdf/269326444
9. https://graffersid.com/case-studies/movie-booking-application/