PROJECT REPORT
On
MOVIE TICKET BOOKING SYSTEM

COMPUTER SCIENCE AND ENGINEERING

Chitkara University, Punjab
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📘 1. Project Overview

This project is a **Console-Based Movie Ticket Booking System** fully developed using **Core Java**.
It demonstrates a wide range of Java concepts such as:

- Object-Oriented Programming
- Collections Framework
- CSV File Handling
- Exception Handling
- Multithreading
- Clean Package Structure

The system allows users to:

✓ Book movie tickets
✓ Cancel tickets
✓ Check availability
✓ View upcoming movies (thread animation)
✓ View their previous bookings (CSV read)

🎯 2. Objectives

- Build a complete real-world Java application using **only Core Java**
- Apply **OOP concepts** in a practical system
- Use **CSV files** for persistent storage (No SQL databases)
- Implement **custom exceptions** for better error handling
- Use **multithreading** for smooth animated output
- Demonstrate a **clean & modular architecture**

🧩 3. System Modules

1. Book Tickets
2. Cancel Ticket
3. Check Seat Availability
4. Upcoming Movies (Thread Animation)
5. Show My Bookings

🧠 4. Core Java Concepts Used

✓ Object-Oriented Programming (OOP)

- Classes & Objects
- Encapsulation
- Abstraction
- Method-based flow

✓ Collections Framework

- **ArrayList** for storing movies & bookings

✓ File Handling (CSV)

- Persistent storage using
  - FileWriter
  - BufferedReader
  - String.split(",")

✓ Exception Handling

- Custom exceptions:
  - BookingNotFoundException
  - InvalidSeatSelectionException

✓ Multithreading

- Animated display of upcoming movies

🏗️ 5. Project Architecture

```
src/
├── model/
│   ├── Movie.java
│   └── Booking.java
├── service/
│   └── BookingSystem.java
├── util/
│   └── FileUtil.java
├── exceptions/
│   ├── BookingNotFoundException.java
│   └── InvalidSeatSelectionException.java
└── main/
    └── MovieTicketBooking.java
```

📂 6. Data Storage

All booking details are stored inside:

📄 **data/bookings.csv**

CSV format ensures:

- No SQL database
- Easy portability
- Easy debugging
- Simple file-based persistence

🔄 7. Flow of the System

1. User opens application
2. Menu displayed
3. User chooses an action
4. System performs tasks via BookingSystem
5. Data written/read from CSV
6. Output displayed
7. Upcoming movies shown using threads

🏁 8. Conclusion

The **Movie Ticket Booking System** successfully demonstrates:

✓ Practical use of Core Java
✓ Real-world system design
✓ Exception handling & OOP concepts
✓ Multithreading in console
✓ CSV data storage
✓ Clean package architecture

This project meets all guidelines of **Chitkara University** and provides a strong foundation for future Java development.