NORTH SOUTH UNIVERSITY

Project Report

Project Title: Movie Ticket Booking System.
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Faculty: MAQM

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Table of contents

1. Introduction:

We present the Movie Ticket Booking System, a comprehensive solution designed to enhance the movie-going experience for customers and streamline theater operations for managers. Our system aims to revolutionize the traditional ticket booking process, providing a user-friendly platform for efficient movie management.

2. Project Overview:

In this project, we have developed a Movie Ticket Booking System featuring user registration, movie listings, ticket booking, and theater management functionalities. The system caters to both customers seeking a convenient way to book tickets and managers looking to efficiently manage movie listings and seating arrangements.

3. Features:

This is a comprehensive list of all the features and components in the provided code for the Movie Ticket Booking System:

User Registration: Customers and Managers can create accounts with unique IDs and login credentials.

User Login: Registered users can log in using their IDs and passwords.

Movie Listing: Customers can view available movies, including details like title, duration, and genre.

Ticket Booking: Customers can book movie tickets by selecting seats for a specific movie.

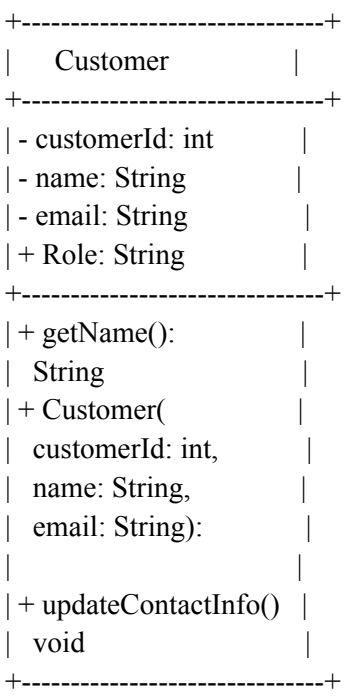
Ticket Cancellation: Customers can cancel their booked tickets.

Manager-specific Features: Managers can add new movies to the system and define seat layouts for theaters.

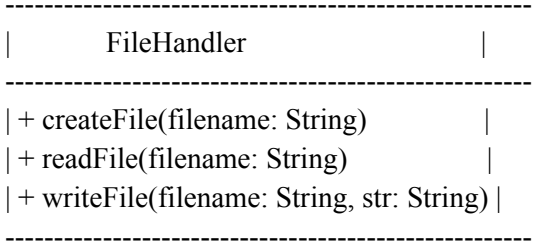
File Handling: The system uses file handling to store user and movie data securely.

4. UML Diagram

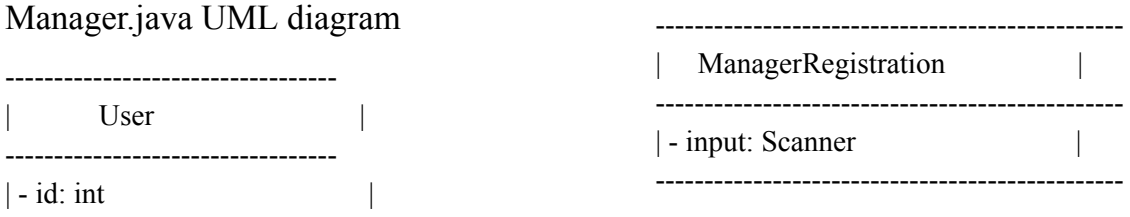
Customer.java UML diagram:



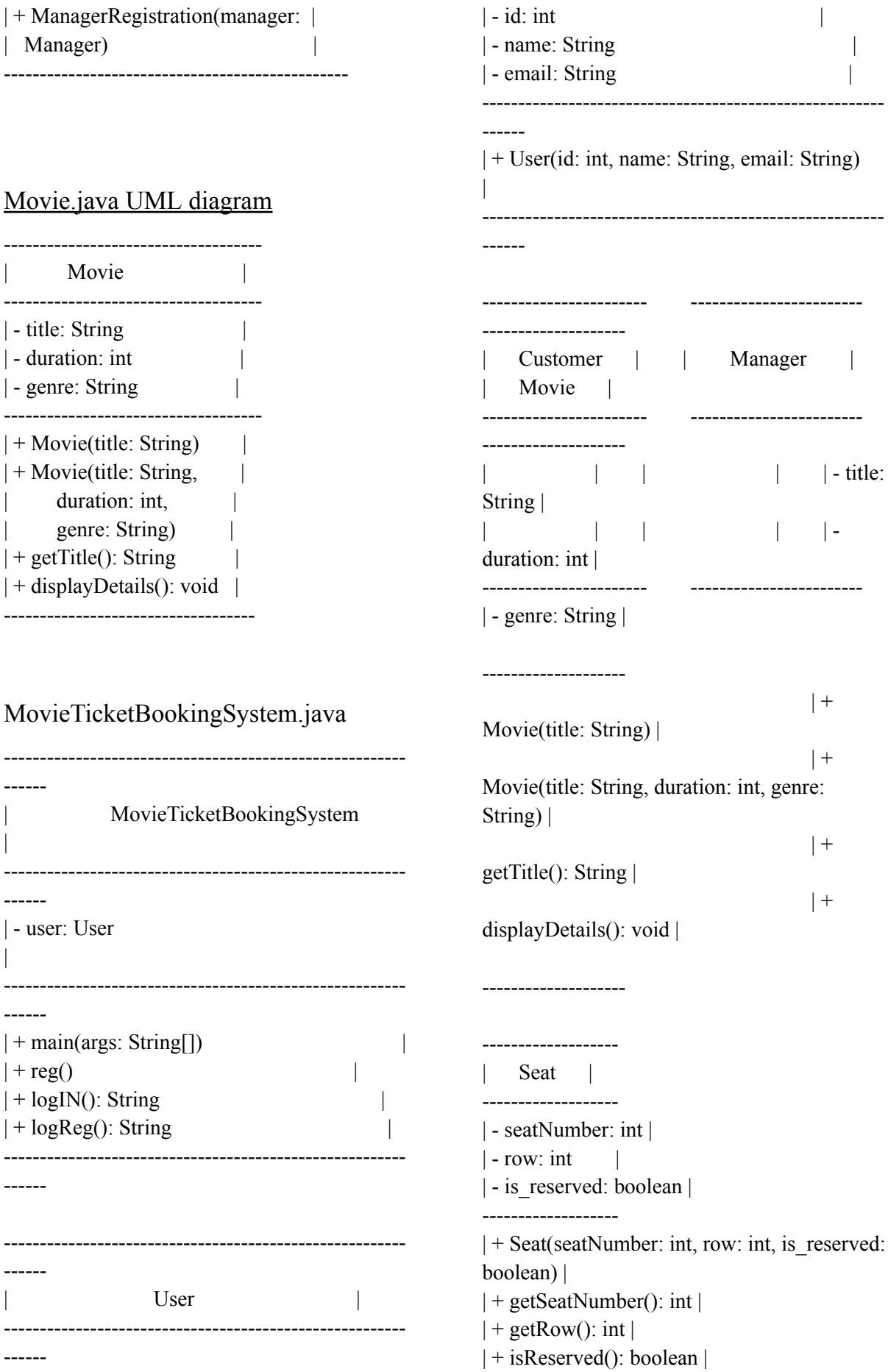
FileHandler.java UML diagram



Manager.java UML diagram



ManagerRegistration.java UML diagram


| + ManagerRegistration(manager: |
| Manager) |
Movie.java UML diagram
| Movie |
| - title: String |
| - duration: int |
| - genre: String |
| + Movie(title: String) |
| + Movie(title: String, |
| duration: int, |
| genre: String) |
| + getTitle(): String |
| + displayDetails(): void |
MovieTicketBookingSystem.java
MovieTicketBookingSystem
| - user: User |
| + main(args: String[]) |
| + reg() |
| + logIN(): String |
| + logReg(): String |
User
| - id: int |
| - name: String |
| - email: String |
| + User(id: int, name: String, email: String) |
Customer
Manager
Movie
| - title: String |
| - duration: int |
| - genre: String |
| + Movie(title: String) |
| + Movie(title: String, duration: int, genre: String) |
| + getTitle(): String |
| + displayDetails(): void |
Seat
| - seatNumber: int |
| - row: int |
| - is_reserved: boolean |
| + Seat(seatNumber: int, row: int, is_reserved: boolean) |
| + getSeatNumber(): int |
| + getRow(): int |
| + isReserved(): boolean |

| + reserve(): void |

| Ticket |

| - movieTitle: String |
| - passengerName: String |

| + Ticket(movieTitle: String, passengerName: String) |
| + getMovieTitle(): String |
| + getPassengerName(): String |

Seat.java

| Seat |

| - seatNumber: int |
| - row: int |
| - is_reserved: boolean |

| + Seat(seatNumber: int, row: int, is_reserved: boolean) |
| + getSeatNumber(): int |
| + setSeatNumber(seatNumber: int): void |
| + getRow(): int |
| + setRow(row: int): void |
| + isIs_reserved(): boolean |
| + setIs_reserved(is_reserved: boolean): void |
| + reserveSeat(): void |

Ticket.java

| Ticket |

| - ticketNumber: int |
| - passengerName: String |
| - TicketTitle: String |

| + Ticket(ticketTitle: String, |
| passengerName: String) |
| + Ticket(title: String, |
| duration: int, genre: String,|
| ticketNumber: int, |
| passengerName: String) |
| + toString(): String |

TicketBooking.java

| TicketBooking |

| - tickets: List<Ticket> |

| + TicketBooking() |
| + getTickets(): List<Ticket>|
| + bookTicket(ticket: Ticket): void |
| + cancelTicket(ticket: Ticket): void |

User.java

| User |

| + Role: String |

UserRegistration.java

| UserRegistration |
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5. Description of each class including each methods:

- **Customer Class:**
  - Attributes:
    - customerId: Unique customer identifier.
    - name: Customer's name.
    - email: Customer's email address.
    - Role: Role of the user (set as "Customer").
  - Methods:
    - getName(): Returns the customer's name.
    - updateContactInfo(): Allows the customer to update their contact information.
- **FileHandler Class:**
  - Methods:
    - createFile(filename): Creates a new text file.
    - readFile(filename): Reads the content from a text file.
    - writeFile(filename, str): Writes data to a text file.
- **Manager Class:**
  - Attributes:
    - managerId: Unique manager identifier.
    - name: Manager's name.
    - email: Manager's email address.
    - Role: Role of the user (set as "Manager").
  - Methods:
    - updateContactInfo(managerId, successLevel, name, email): Updates manager contact information.
    - getName(): Returns the manager's name.
- **ManagerRegistration Class:**
  - Allows managers to register by providing manager-specific details.
- **Movie Class:**
  - Attributes:
    - title: Movie title.
    - duration: Movie duration in minutes.
    - genre: Movie genre.
  - Methods:
    - displayDetails(): Displays movie details.
- **MovieTicketBookingSystem Class:**
  - The main class responsible for managing movie listings, ticket booking, and user interaction.
  - Provides user registration, login, and booking functionalities.
  - Manages movies, seats, and booked tickets.
- **Seat Class:**
  - Attributes:

        - seatNumber: Seat number.
        - row: Row number.
        - is_reserved: Indicates whether the seat is reserved.
    - Methods:
        - reserveSeat(): Checks and reserves a seat if available.
- **Ticket Class:**
    - Represents a booked ticket.
    - Inherits from the Movie class and includes ticket-specific details.

6. Application/ Use of the Project:

The Movie Ticket Booking System has broad applications in real-world scenarios, providing a comprehensive solution for both customers and theater managers. The system is designed to revolutionize the movie-going experience, offering convenience, efficiency, and enhanced management capabilities.

Customer Interaction: Streamlined Booking Process: Customers can effortlessly browse through a variety of movies, view detailed information such as titles, genres, and durations, and seamlessly book tickets for their preferred shows.
Personalized Experience: Through user registration, customers can create personalized accounts, enabling them to track their booking history, receive recommendations based on their preferences, and enjoy a tailored movie-going experience.

Viewing Movie Listings: Informed Decision-Making: The system provides customers with a comprehensive list of available movies, ensuring they have access to essential details for informed decision-making, such as showtimes, genres, and critical reviews.
Ticket Booking:

Efficient Seat Selection: Customers can visualize and select their preferred seats through an intuitive interface, optimizing the seat selection process and ensuring a smooth and efficient booking experience.

Instant Confirmation: Upon successful booking, customers receive immediate confirmations with all pertinent details, eliminating the need for physical tickets and enhancing the overall convenience of the process.
Ticket Cancellation:

Flexibility for Customers: The system allows customers to cancel booked tickets, offering flexibility in case plans change. Clear information about cancellation policies provides transparency and ensures a positive customer experience.
Manager Interaction:

Efficient Movie Management: Theater managers can efficiently add new movies to the system, update showtimes, and manage seating layouts. This feature ensures that the movie listings are always current and reflective of the theater's offerings.
Dynamic Seating Configuration: Managers have the flexibility to dynamically configure seating layouts based on specific movie showings or events, optimizing the use of theater space and accommodating various audience sizes.
Administrative Functions:

Secure User Management: The system includes robust user management functionalities, ensuring the security and privacy of customer and manager accounts.
Structured Data Handling: Utilizing file handling, the system organizes and stores user data securely, streamlining administrative tasks and enhancing the overall efficiency of theater operations.
Future Integration:

Online Payment Options: As part of future enhancements, the system could seamlessly integrate secure online payment options, allowing customers to complete transactions without leaving the platform.
User Reviews and Ratings: The inclusion of a user review and rating system would enrich the movie selection process, providing valuable feedback to both customers and theater managers.
User Experience:

Intuitive Interface Design: The Movie Ticket Booking System is designed with a user-friendly interface, ensuring that customers can navigate the platform effortlessly, leading to a positive and enjoyable user experience.
Accessibility through Mobile App: A potential mobile application could extend the accessibility of the system, enabling users to book tickets, manage accounts, and stay updated on movie listings while on the go.
Scalability:

Adaptability to Theater Setups: The system's adaptability makes it suitable for theaters of various sizes and configurations, ensuring that it can cater to the diverse needs of different cinema environments.

Potential for Expansion: The modular design of the system allows for potential future expansion with additional features and improvements, ensuring its relevance and effectiveness in a continually evolving industry.
Overall, the Movie Ticket Booking System aspires to be a transformative force in the entertainment industry, simplifying the movie ticket booking process for customers and empowering managers with efficient tools to enhance theater operations.

7. Limitations:

The Movie Ticket Booking System, while offering valuable features, has certain limitations that should be acknowledged:

Security Concerns: The current system may lack robust security measures, potentially exposing user data to security threats. Implementing advanced authentication and encryption methods is crucial for ensuring user privacy.

Limited Genre Classification: The genre classification system for movies is basic. Future improvements could include a more sophisticated genre categorization to better assist customers in finding movies based on their preferences.

Payment Integration: The system does not currently support online payment options. To enhance user convenience, integrating secure online payment methods could be a valuable addition, allowing customers to complete transactions seamlessly.

User Reviews and Ratings: The absence of a user review and rating system limits the platform's ability to provide valuable feedback to both customers and managers. Implementing a feature for users to leave reviews and ratings can enhance the overall movie selection process.

Scalability Challenges: The system's adaptability to different theater setups is essential, but it may face scalability challenges with a growing number of users and theaters. Evaluating and optimizing the system's scalability should be considered for future development.

8. Future work:

To address the limitations and improve the Movie Ticket Booking System, the following future work is suggested:

Enhanced Security Measures: Implement advanced security protocols, including secure authentication methods, encryption of sensitive data, and regular security audits to protect user information and prevent unauthorized access.
Advanced Genre Classification:

Expand the genre classification system to include sub-genres, allowing for more precise categorization of movies. This can enhance the recommendation engine and improve the user experience.

Online Payment Integration: Integrate secure online payment gateways to enable customers to purchase tickets online. This feature would streamline the booking process and offer a more comprehensive and convenient user experience.

User Reviews and Ratings:

Implement a user review and rating system for movies. This can provide valuable feedback for both customers and managers, aiding in movie selection and enhancing the overall quality of the movie-watching experience.

Scalability Optimization:

Evaluate and optimize the system's scalability to accommodate a growing user base and expanding theater networks. This may involve performance testing, database optimization, and infrastructure upgrades.

Mobile Application Development:

Consider developing a mobile application to extend the system's accessibility, allowing users to book tickets and manage their accounts on-the-go. A mobile app can enhance the overall user experience and increase the system's reach.

Advanced Analytics:

Implement analytics tools to gather and analyze user behavior, booking patterns, and movie preferences. This data can be utilized to improve the recommendation system and tailor the movie listings to user preferences.

Dynamic Seat Configuration:

Explore the possibility of dynamic seat configuration, allowing managers to adapt seating layouts based on specific movie showings or events. This feature can enhance flexibility and optimize theater space utilization.

By addressing these future work items, the Movie Ticket Booking System can evolve into a more secure, user-friendly, and feature-rich platform, meeting the needs of both customers and theater managers.

9. Conclusion:

The Movie Ticket Booking System, developed with a focus on user experience and efficient theater management, aims to redefine the movie-going process. We anticipate continuous improvement and expansion, ensuring that our system remains at the forefront of innovation in the entertainment industry.