Theater management system

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INTRODUCTION

This project aims to develop a Theater Management System using the C programming language. The system will provide a console-based interface for managing theater operations, including ticket booking, seat management, movie scheduling, and customer management.

The project will focus on creating a robust and efficient system using C, leveraging its low-level capabilities for performance and reliability.

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Objectives

- Automate ticket booking and seat allocation
- Provide an intuitive interface for users and administrators
- Improve customer experience through digital solution

Scope and Limitation

Scope

- Enable customers to book ticket online with real-time seat availability option.

- Allow admins to manage movie listing, show timings efficiently.

- Provide role based access for customer and admin.

Limitations

- It does not allow users to perform digital payments.

- It does not allow user to select movie time

Development Methodology

Waterfall Model

Since the project requirements are well-defined, stable and not expected to undergo significant changes. The Waterfall Model was selected for its ability to provide a controlled and predictable development process, catering to the specific characteristics and requirements of our project.

- The **requirement analysis** phase helped in defining core functionalities like movie management, seat booking, and authentication.

- The **system design** ensured modularity, making the system easier to understand and extend.

- The **implementation** phase successfully utilized C programming with file handling and data structures for efficient functionality.

- **Testing** verified the reliability of the system, handling errors and ensuring smooth operation.

- The **deployment** phase demonstrated that the system can run in a terminal-based environment with persistent data storage.

- Future **maintenance and enhancements** can include GUI implementation, better security, and additional features like user accounts and cancellation options.

Requirement analysis

- Fundamental requirement
  o User can select movie and seat.
  o Admin can monitor users, manage movie data and access system logs.
- Non fundamental requirements
 o System must be fast, scalable, secure, and user friendly.

Feasibility Study

Technical Feasibility – Evaluates whether the required technology, software, and infrastructure are available for system implementation.

Operational Feasibility – Assesses how well the system meets theater management needs, improves efficiency, and enhances user experience.
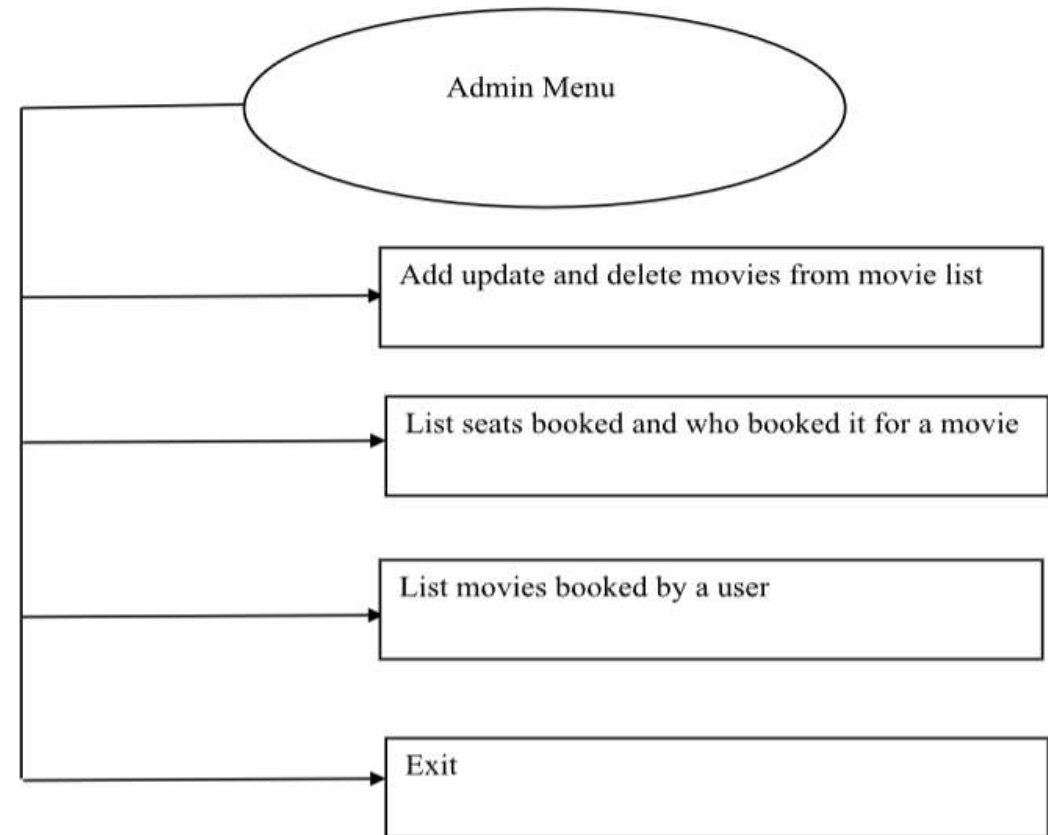
Economic Feasibility – Determines the cost-effectiveness of the project, including development, maintenance, and return on investment.

Scheduling Feasibility – Examines whether the project can be completed within the given time frame and resource availability.
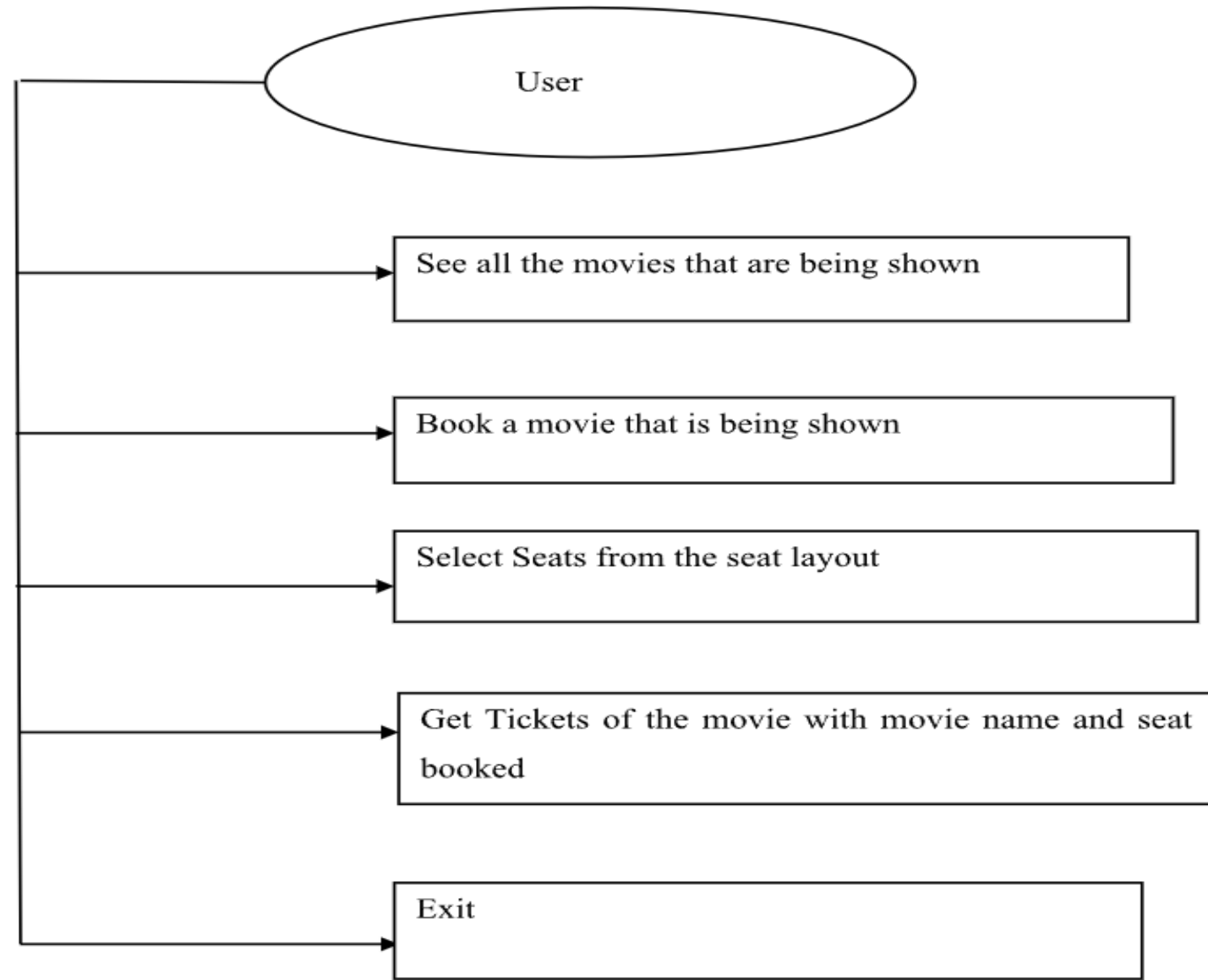
System
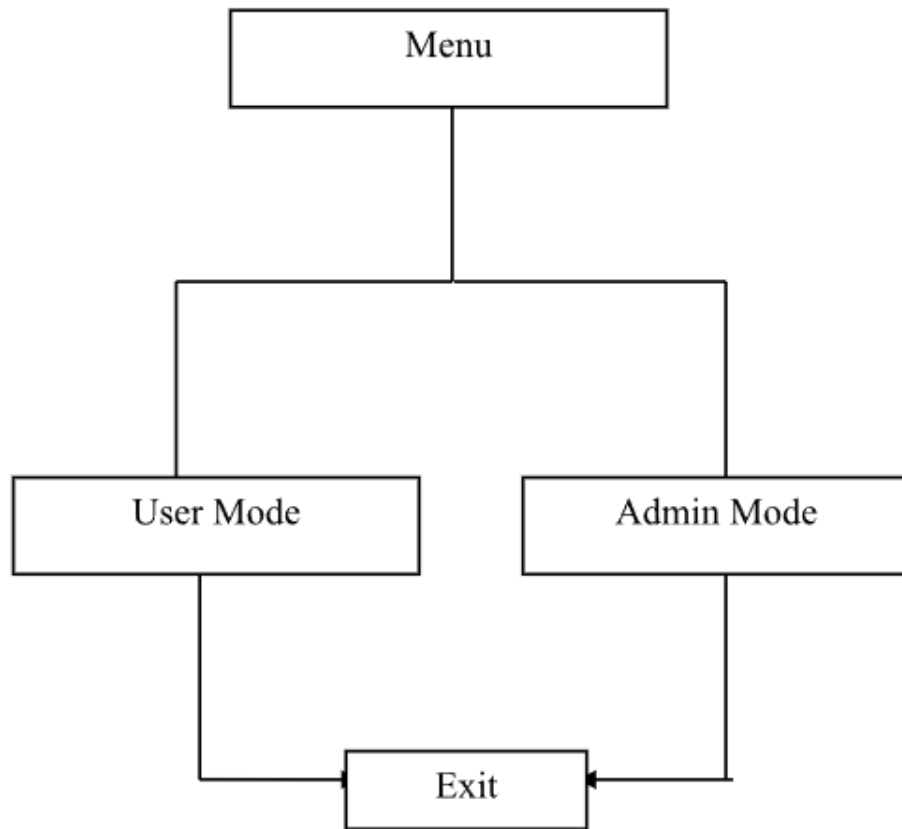
Block Diagram of entry point

Block Diagram of admin menu

Block Diagram of user menu

Future recommendation

- **AI-Powered Personalization** – Implement AI-driven recommendations based on user preferences, viewing history, and real-time trends.

- **Smart Ticketing & Contactless Entry** – Integrate QR code-based or facial recognition ticketing for a seamless and secure entry experience.

- **Digital payment –** Integrate online payment method using Esewa, Khalti and Bank transfer.

Conclusion

- It simplifies the management of theater using c programming language
- The system effectively enhances user engagement by providing accurate, fast booking facility

Output


```
Enter password: admin
Admin login successful! Welcome, admin.

========== ADMIN MENU ==========
1. Add Movie
2. Remove Movie
3. Show Bookings
4. Show Users
5. Show User Bookings
6. Exit Admin Menu
Enter your choice: █
```



```
=====================================
            MOVIE TICKET
-------------------------------------
Movie: The Shawshank Redemption
Seat: Row 4, Column 6
Enjoy your movie!
=====================================

========== MOVIE BOOKING SYSTEM ==========
1. Book a Seat
```



```
3. Interstellar
Enter the movie number you want to book a seat for: 1

============== Seat Layout for The Shawshank Redemption ==============
        1   2   3   4   5   6   7   8   9   10
--------------------------------------------------------------------
Row  1 |[X] [O] [O] [O] [O] [O] [O] [O] [O] [O]  |
Row  2 |[O] [O] [O] [O] [O] [O] [O] [O] [O] [O]  |
Row  3 |[O] [O] [O] [O] [O] [O] [O] [O] [O] [O]  |
Row  4 |[O] [O] [O] [O] [O] [O] [O] [O] [O] [O]  |
Row  5 |[O] [O] [O] [O] [O] [O] [O] [O] [O] [O]  |
Row  6 |[O] [O] [O] [O] [O] [O] [O] [O] [O] [O]  |
Row  7 |[O] [O] [O] [O] [O] [O] [O] [O] [O] [O]  |
Row  8 |[O] [O] [O] [O] [O] [O] [O] [O] [O] [O]  |
Row  9 |[O] [O] [O] [O] [O] [O] [O] [O] [O] [O]  |
Row 10 |[O] [O] [O] [O] [O] [O] [O] [O] [O] [O]  |
--------------------------------------------------------------------
Enter row and column number to book a seat (1-10): 4
6
```



```
v) main

========== MOVIE BOOKING SYSTEM ==========
1. Book a Seat
2. Register
3. Login
4. Logout
5. Exit
Enter your choice: █
```

Any Questions ?