

**A PROJECT REPORT ON**  
**MOVIE RESERVATION DATABASE SYSTEM**

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**In partial fulfilment for the completion of course CSA0533 - DATABASE  
MANAGEMENT SYSTEM FOR DATA ANALYTICS**



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## **BONAFIDE CERTIFICATE**

Certified that this project report titled "MOVIE RESERVATION DATABASE " is the bonafide work K. Sri Vennela(192211970) and A. Likitha(192220098) who carried out the project work under my supervision as a batch. Certified further, that to the best of my knowledge the work reported herein does not form any other project report .

Date:

Project Supervisor:

Head of Department:

## **TABLE OF CONTENTS:**

<b>S.NO</b>	<b>CONTENTS</b>	<b>PAGE NO</b>
<b>1.</b>	<b>Abstract</b>	<b>4</b>
<b>2.</b>	<b>Introduction</b>	<b>4-5</b>
<b>3.</b>	<b>Methodology</b>	<b>5-7</b>
<b>4.</b>	<b>Literature Survey</b>	<b>7-8</b>
<b>5.</b>	<b>Code</b>	<b>8-9</b>
<b>6.</b>	<b>Implementation</b>	<b>9-10</b>
<b>7.</b>	<b>Tables</b>	<b>10-11</b>
<b>8.</b>	<b>Conclusion</b>	<b>11</b>
<b>9.</b>	<b>Future Enhancement</b>	<b>12</b>
<b>10.</b>	<b>References</b>	<b>12-13</b>

# **MOVIE RESERVATION DATABASE PROJECT**

## **ABSTRACT:**

The Movie Reservation Database Project presents a comprehensive solution for efficient movie ticket reservations, streamlining operations for both customers and theatre operators. This project involves designing a robust database system to manage information related to movies, theatres, show times, seats, reservations, and customers. The key components include tables such as Theaters, Movies, Shows, Seats, Customers, Reservations, and Payments, each serving a specific purpose in enhancing the overall movie-going experience. The abstract highlights the project's focus on user-friendly platforms, improved customer experience, and simplified processes in the entertainment industry. It emphasises the integration of technology to create a modernised and organised reservation system, contributing to the evolution of cinema operations and audience satisfaction.

## **KEYWORDS:**

Efficient Reservations, Streamlining Operations, Theater Management, User-Friendly Platform, Customer Experience, Simplified Processes, Entertainment Industry, Technology Integration.

## **INTRODUCTION:**

In today's dynamic entertainment landscape, the demand for a seamless and user-friendly movie reservation system is more significant than ever. Traditional approaches to booking tickets often lead to inefficiencies and inconvenience for both customers and theatre operators. Recognizing the need for a modernised solution, the Movie Reservation Database Project sets out to revolutionise the way we engage with the cinematic experience. By harnessing the power of a comprehensive database system, this project aims to create a platform that not only simplifies the process of reserving movie tickets but also enhances the overall movie-going journey for audiences and streamlines operations for theatres.

The digital age has ushered in a paradigm shift in consumer expectations and behaviours, impacting industries across the board. The movie industry, an integral part of our cultural fabric, is no exception. The current methods of ticket reservation often fall short of meeting the evolving needs of patrons who seek a more intuitive and convenient way to secure their seats. This project recognizes the transformative potential of a well-designed database system that integrates information about movies, theatres, show times, seats, reservations, and customers. By providing a centralised hub for managing these crucial aspects, the project aims to bridge the gap between audience expectations and the operational challenges faced by cinema operators.

Furthermore, this initiative is not just about digitising an outdated process but is rooted in the vision of creating an immersive and enjoyable movie-going experience. As we embark on this journey to design and implement the Movie Reservation Database, we anticipate not only enhancing the efficiency of ticket bookings but also contributing to a redefined relationship between audiences and cinemas. This introduction sets the stage for a project that goes beyond mere technological advancement, delving into the realm of

transforming how we interact with movies– from the moment of reservation to the final frame of the film on the big screen.

## GRANT CHART:

	Month 1				Month 2				Month 3		
	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3
Gathering Data And Problem Identification	2024-01-30					2024-02-20					
Analysis		2024-02-06									
Designing Tables				2024-02-19							
Implementation					2024-03-08						
Testing							2024-03-10				
Results and Conclusion										2024-03-19	

## METHODOLOGY:

### 1. Project Scope Definition:

- Clearly outline the scope of the project, detailing the features and functionalities to be included in the movie reservation database.
- Determine the target audience and their requirements.
- Identify any constraints such as budget, time, or technological limitations.

### 2. Requirement Gathering:

- Conduct interviews or surveys with stakeholders, including theatre owners, managers, and potential users, to gather requirements.
- Document functional and non-functional requirements, including user stories, use cases, and system constraints.

### **3. System Design:**

- Define the architecture of the movie reservation database system, including the database schema, application layers, and interfaces.
- Select appropriate technologies and tools for development, considering factors such as scalability, security, and performance.
- Design the user interface for the reservation system, ensuring ease of use and accessibility.

### **4. Database Design:**

- Identify the entities and attributes required to represent the movie reservation system.
- Design normalised database tables and establish relationships between them.
- Define constraints, indexes, and keys to ensure data integrity and efficient querying.

### **5. Implementation:**

- Develop the movie reservation database system according to the defined architecture and design.
- Follow coding standards and best practices to ensure maintainability and scalability.
- Implement security measures such as authentication and authorization to protect sensitive data.

### **6. Testing:**

- Develop test cases based on the requirements to validate the functionality of the system.
- Perform unit testing, integration testing, and system testing to identify and fix bugs.
- Conduct user acceptance testing (UAT) with stakeholders to ensure the system meets their needs.

### **7. Deployment:**

- Prepare the movie reservation database system for deployment to production environments.
- Configure servers, databases, and other necessary infrastructure components.
- Conduct a pilot deployment to a limited audience to identify any issues before full rollout.

### **8. Training and Documentation:**

- Provide training sessions for theatre staff and users on how to use the reservation system effectively.
- Create user manuals and documentation to help users troubleshoot common issues and perform routine tasks.

### **9. Maintenance and Support:**

- Establish procedures for ongoing maintenance and support of the movie reservation database system.
- Monitor system performance and address any issues or bugs that arise.
- Regularly update the system with new features and security patches to ensure its continued effectiveness and security.

## 10. Feedback and Iteration:

- Collect feedback from users and stakeholders on their experience with the reservation system.
- Use feedback to identify areas for improvement and prioritise enhancements for future iterations of the system.
- Continuously iterate on the movie reservation database system to address changing requirements and technology advancements.

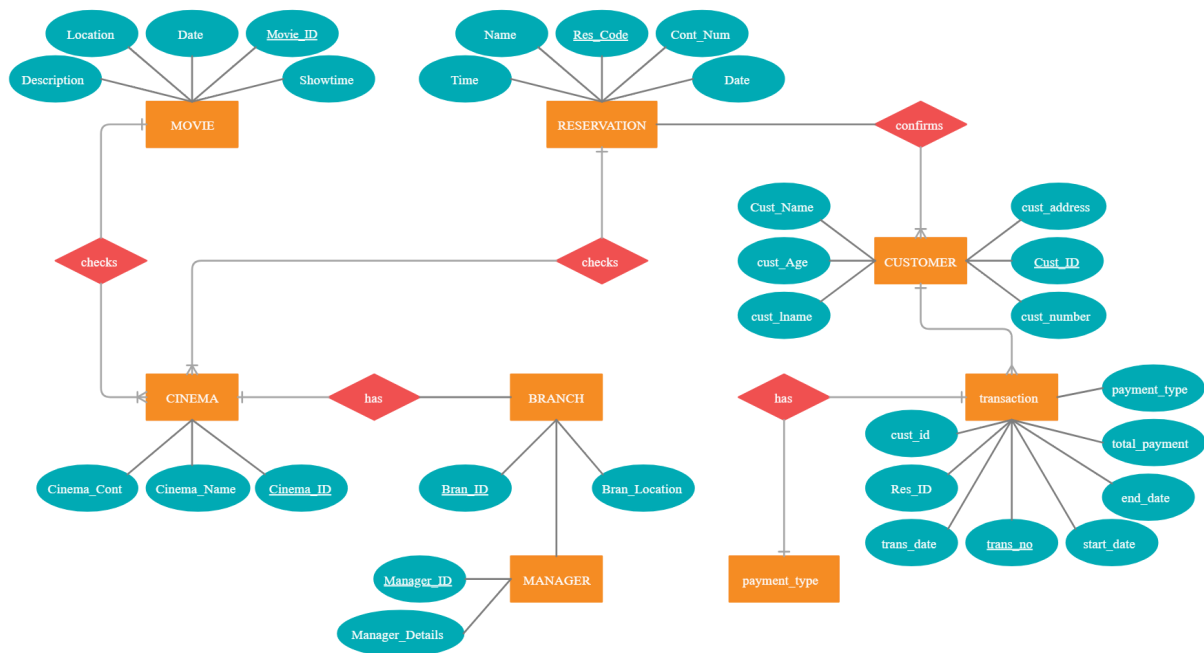


Figure 1. ER-Diagram of Movie Reservation.

## LITERATURE SURVEY:

Literature Survey of Movie Reservation Systems:

1. "Design and Development of Online Movie Ticket Reservation System " by Oluwarotimi Williams Samuel and Adekanmi Adegun, International Journal of Computer Applications, 2014.- This paper discusses the design and development of an online movie ticket reservation system. It covers the system architecture, user interface design, and database implementation. The study focuses on enhancing the user experience and streamlining the ticket booking process.

2. "Design and Implementation of Online Cinema Ticket Booking System" by Vikas Jadav and Ruchir Shah, International Journal of Computer Applications, 2014.- This research explores the design and implementation of an online cinema ticket booking system. It discusses the system requirements, architecture, and functionalities. The study emphasises the importance of security measures and user-friendly interfaces in enhancing customer satisfaction.

3. "Design and Implementation of a Movie Ticket Reservation System" by Praveen B, Bhuvaneswari P, and Dhanasekaran R, International Journal of Advanced Research in Computer Science and Software Engineering, 2015.- This paper presents the design and implementation of a movie ticket reservation system using web technologies. It discusses the system architecture, database design, and user interface. The study highlights the importance of scalability and performance optimization in handling a large number of concurrent users.

4. "Online Movie Ticket Booking System" by Pankaj Kumar Gupta and Sumeet Kumar Gupta, International Journal of Advanced Research in Computer Engineering & Technology, 2014.- This study focuses on the design and development of an online movie ticket booking system. It discusses the system requirements, architecture, and implementation details. The research emphasises the integration of secure payment gateways and real-time seat availability updates.

5. "Design and Implementation of an Online Ticket Booking System" by T. P. Rama Rao and M. Shiva Shankar, International Journal of Advanced Research in Computer Science and Software Engineering, 2017.- This paper presents the design and implementation of an online ticket booking system for cinemas. It covers various aspects including system architecture, database design, and user interface. The study highlights the importance of usability testing and user feedback in enhancing the system's effectiveness.

#### **CODE:**

--Create table for movies

```
CREATE TABLE movies (  
movie_id INT AUTO_INCREMENT PRIMARY KEY, title VARCHAR(100) NOT NULL,  
description TEXT, release_date DATE, duration INT, -- Duration of the movie in minutes  
genre VARCHAR(50)  
);
```

-- Create table for theaters

```
CREATE TABLE theaters (  
theater_id INT AUTO_INCREMENT PRIMARY KEY, name VARCHAR(100) NOT NULL,  
location VARCHAR(100), capacity INT -- Maximum capacity of the theater  
);
```

--Create table for movie screenings

```
CREATE TABLE screenings (  
screening_id INT AUTO_INCREMENT PRIMARY KEY, movie_id INT, theater_id INT,  
start_time DATETIME, FOREIGN KEY (movie_id) REFERENCES movies(movie_id),  
FOREIGN KEY (theater_id) REFERENCES theaters(theater_id)  
);
```



```
--Create table for reservations
CREATE TABLE reservations (
reservation_id INT AUTO_INCREMENT PRIMARY KEY, screening_id INT, seat_number
INT, customer_name VARCHAR(100), customer_email VARCHAR(100), FOREIGN KEY
(screening_id) REFERENCES screenings(screening_id)
);
```

## **IMPLEMENTATION:**

To implement the provided SQL code for the movie reservation database system in your project, follow these step-by-step instructions:

### **1. Set Up Your Database Environment:**

- Ensure you have access to a MySQL server or a similar relational database management system (RDBMS).
- Connect to your MySQL server using a suitable client such as MySQL Workbench or a command-line interface.

### **2. Testing and Refinement:**

- Thoroughly test the functionality of your movie reservation system to ensure it meets the desired requirements.
- Refine and optimise the system based on user feedback and testing results, making necessary adjustments to improve performance and usability.

### **3. Execute the SQL Code:**

- Copy the provided SQL code for creating tables (`movies`, `theatres`, `screenings`, and `reservations`) into your MySQL client.
- Execute the SQL code to create the tables within your database. Ensure that you're connected to the correct database where you want to create these tables.

### **4. Verify Table Creation:**

- After executing the SQL code, verify that the tables have been created successfully by checking the database schema.
- Use commands like `SHOW TABLES;` or `DESCRIBE table\_name;` to view the tables and their structure.

### **5. Start Populating Data:**

- Once the tables are created, start populating them with relevant data.
- For example, insert movie details into the `movies` table, theatre information into the `theatres` table, and create movie screenings in the `screenings` table.

## 6. Implement Business Logic:

- Depending on your project requirements, implement additional business logic such as user authentication, reservation validation, and payment processing.
- Write SQL queries or integrate with a backend programming language (e.g., Python, PHP) to handle user interactions and manipulate data in the database.

### TABLES:

**Theaters Table:**

TheaterID (Primary Key)	TheaterName	Location	Capacity	Facilities
1	ABC Cinema	City A	200	Dolby Atmos, 3D
2	XYZ Cinemas	City B	150	IMAX, VIP Lounge
3	PQR Theaters	City C	180	4K Projection, Snack Bar

**Movie Table:**

MovieID (Primary Key)	Title	Genre	Duration	ReleaseDate
101	Inception	Sci-Fi	148 min	2010-07-16
102	The Dark Knight	Action	152 min	2008-07-18
103	La La Land	Musical	128 min	2016-12-09

**Show Table:**

ShowID (Primary Key)	MovieID (Foreign Key)	TheaterID (Foreign Key)	ShowTime	AvailableSeats
201	101	1	2024-03-10 18:00	150
202	102	2	2024-03-10 20:30	120
203	103	3	2024-03-11 15:45	160

**Seat Table:**

SeatID (Primary Key)	TheaterID (Foreign Key)	SeatNumber	Status
301	1	A-01	Available
302	2	B-05	Booked
303	3	C-10	Available

**Customer Table:**

CustomerID (Primary Key)	FirstName	LastName	Email	Phone
501	John	Doe	john.doe@email.com	+123456789
502	Jane	Smith	jane.smith@email.com	+987654321

**Reservation Table:**

ReservationID (Primary Key)	CustomerID (Foreign Key)	ShowID (Foreign Key)	SeatID (Foreign Key)	ReservationTime
601	501	201	301	2024-03-08 12:45 PM
602	502	202	302	2024-03-09 09:30 AM

**Payments Table:**

PaymentID (Primary Key)	ReservationID (Foreign Key)	Amount	PaymentTime
701	601	\$15.00	2024-03-08 01:00 PM
702	602	\$20.50	2024-03-09 10:00 AM

## CONCLUSION:

In conclusion, the implementation of a movie reservation database system presents a significant advancement in the management and accessibility of movie tickets for both customers and theatre operators. This system effectively centralises the process of ticket booking, optimising operational workflows for theatres while providing a seamless and convenient experience for users. By facilitating easy access to movie listings, showtimes, and seat reservations, the system enhances customer satisfaction and loyalty while empowering theatres with efficient management tools (Refer Figure 1).

## **FUTURE ENHANCEMENT:**

Looking ahead, several opportunities exist to further enhance the movie reservation database system. Integrating advanced analytics and reporting features can provide valuable insights into customer behaviour, preferences, and market trends, enabling theatres to make informed decisions and tailor their offerings accordingly. Additionally, incorporating personalised recommendation algorithms based on user data can boost engagement and satisfaction by suggesting relevant movies and promotions.

Exploring emerging technologies such as virtual reality (VR) and augmented reality (AR) can transform the movie-going experience, offering immersive features like virtual seat previews and interactive content. By embracing innovation and leveraging evolving technologies, the movie reservation database system can continue to evolve and thrive in the dynamic landscape of the entertainment industry.

1. **Advanced Analytics:** Implement analytics tools to track booking trends, customer preferences, and revenue patterns for informed decision-making.
2. **Personalised Recommendations:** Develop recommendation algorithms to suggest movies, showtimes, and promotions tailored to individual user preferences.
3. **Virtual Reality Integration:** Explore VR technology to offer immersive experiences such as virtual theatre tours and interactive seat selection.
4. **Augmented Reality Features:** Incorporate AR features for interactive movie posters, venue navigation, and real-time movie trailers.
5. **Mobile App Development:** Create a mobile app for convenient access to movie listings, reservations, and personalised notifications.
6. **Social Media Integration:** Integrate social sharing features to enable users to share movie reservations and experiences with friends.
7. **Accessibility Improvements:** Enhance accessibility features for users with disabilities, ensuring inclusivity and compliance with accessibility standards.

## **REFERENCES:**

Here are some references for movie reservation database systems:

1. Williams Samuel, Oluwarotimi, and Adekanmi Adegun. "Design and Development of Online Movie Ticket Reservation System." \*International Journal of Computer Applications\* 98.7 (2014): 14-20.
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6. Kulkarni, Harshad K., and S. V. Dudul. "Design and Implementation of Online Movie Ticket Booking System Using PHP and MySQL." \*International Journal of Engineering Research & Technology\* 3.8 (2014): 1350-1353.
7. Agrawal, Priya, and Pooja Chaudhary. "Design and Development of Web-Based Movie Ticket Booking System." \*International Journal of Computer Science and Mobile Computing\* 5.4 (2016): 223-228.