KIET GROUP OF INSTITUTIONS

Department of Information Technology

B.Tech. II Year – DBS Lab (IT301L)

CASE STUDY REPORT

MOVIE DATABASE MANAGEMENT SYSTEM

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1. Introduction

A Movie Database Management System (MDBMS) is designed to manage information about movies, actors, directors, users, and reviews. The system provides efficient storage, retrieval, and management of movie-related data. It supports user interactions such as rating, reviewing, and searching for movies, ensuring accuracy, security, and easy access to information.

2. Objectives

- To store and manage information about movies, actors, directors, and genres.

- To allow users to browse, search, and filter movles easily.

- To manage user rating of every movie.

- To provide record of box office collection of every theatre.

3. Key Components

Entities and Attributes

- Movie: *MovieID*, Title, Releadease Year, Duration, Genre, Language, Rating.
- Actor: *ActorID, Name,* Date of Birth, Nationality.
- Director: *DirectorID*, Name, Date of Birth, Natinlity.
- User: *UserID*, Name, Email, Password, Date Joined.
- Review: *ReviewID*, UserID, MovielD, Rating, Comment, Date.
- Watchlist: WatchlistalD, Usei iD, DMoeellı Date Added

Relationships

- A movie can have multiple actors and one or more directors.
- A user can review multiple movies, and a movie can have multiple reviews.
- A user can add multiple movies to their watchlist.
- Movies are categorized into one or more genres.

4. Functional Requirements

Movie Management

- Add, update, and delete movie details.
- Assign actors, directors, and genres to movies.
- Track ratings and reviews.

User Management

- Create, update, and delete user accounts.
- Allow users to maintain personal watchlists.

Review & Rating Management

- Users can rate and review movies.
- Aggregate ratings to display overall scores.
- Generate review reports for movies.

Search & Recommendation

- Search movies by title, genre, actor, or director.
- Recommend movies based on user ratings and watch hitory.

Security & Compliance

- User authentication and role-based access control (Admin/User).
- Data encryption for sensitive information.

5. DBMS Features Utilized

- **Data Integrity Constraints:** Primary and foreign keys ensure consistency between movies, actors, directors, and reviews.
- **Transaction Management:** ACID properties guarantee reliability in user operations like adding reviews or modifying watchlists.
- **Security Features:** Authentication, authorization, and encrypted user passwords.
- **Backup and Recovery:** Regular backups to prevent data loss.
- **Scalability:** Handles growing numbers of movies and users efficiently.

6. Advantages of MDBMS

- **Efficient Movie Search:** Quick retrieval using indexing and optimized queries.
- **Personalized Experience:** Recommendations and watchlists improve user engagement.
- **Enhanced Data Security:** Protects user credentials and movie rights.
- **Accurate Reporting:** Provides analytics on trending movies, popular actors, and user activity.

7. Challenges

- **Data Volume:** Managing large datasets for movies, reviews, and users.
- **Recommendation Accuracy:** Ensuring the system provides relevant recommendations
- **System Performance:** Handling high traffic during peak usage (e.g., new releases).

ER-Diagram of Movie Database Structure

Director			
DirectorID (PK)	Name	DOB	Nationality

Actor			
ActorID (PK)	Name	DOB	Nationality

Movie						
MovieID (PK)	Title	ReleaseYear	Duration	Genre	Language	Rating

Watchlist			
WatchlistID (PK)	UserID (FK)	MovieID (FK)	DateAdded

User				
UserID (PK)	Name	Email	Password	DateJoined

Review					
ReviewID (PK)	UserID (FK)	MovieID (FK)	Rating	Comment	Date

directed by
has
included in
has
maintains
writes