CSE302: Database Systems (Section No. 02) [Fall 2024]

Project Report

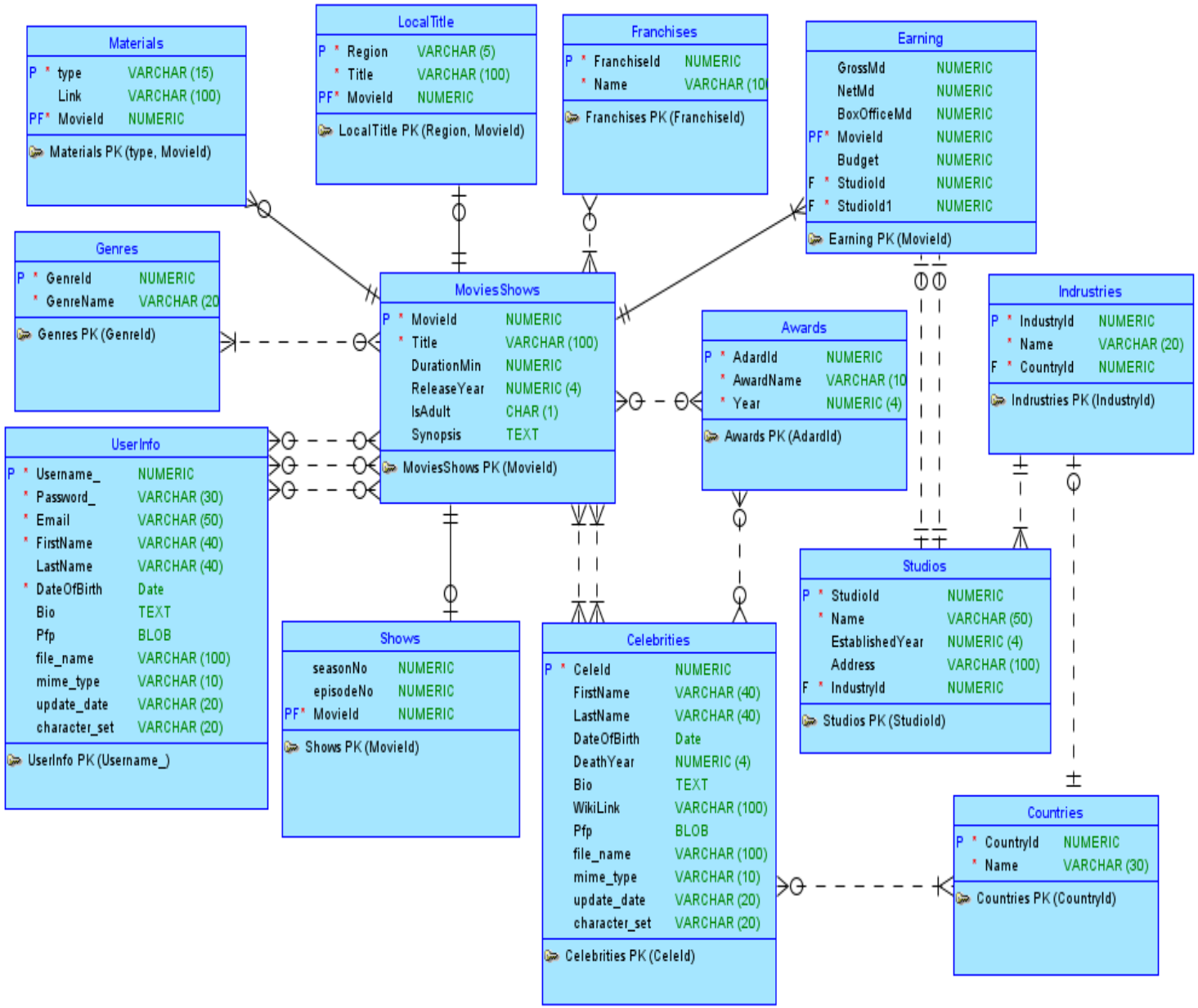
Movie Database Application

https://apex.oracle.com/pls/apex/r/fesa_cse302/movie-database-application

Submitted by

Student ID	Student Name	Contribution Percentage
2022-3-60-022	Md. Shakhiul Abrar	28.5%
2022-3-60-020	Fahim Shahriar	28.5%
2022-3-60-021	Sarfaraz Ahamed Shovon	20%
2022-3-60-090	Rukaiya Binta Hossain	23%

1. E-R Model of the Project

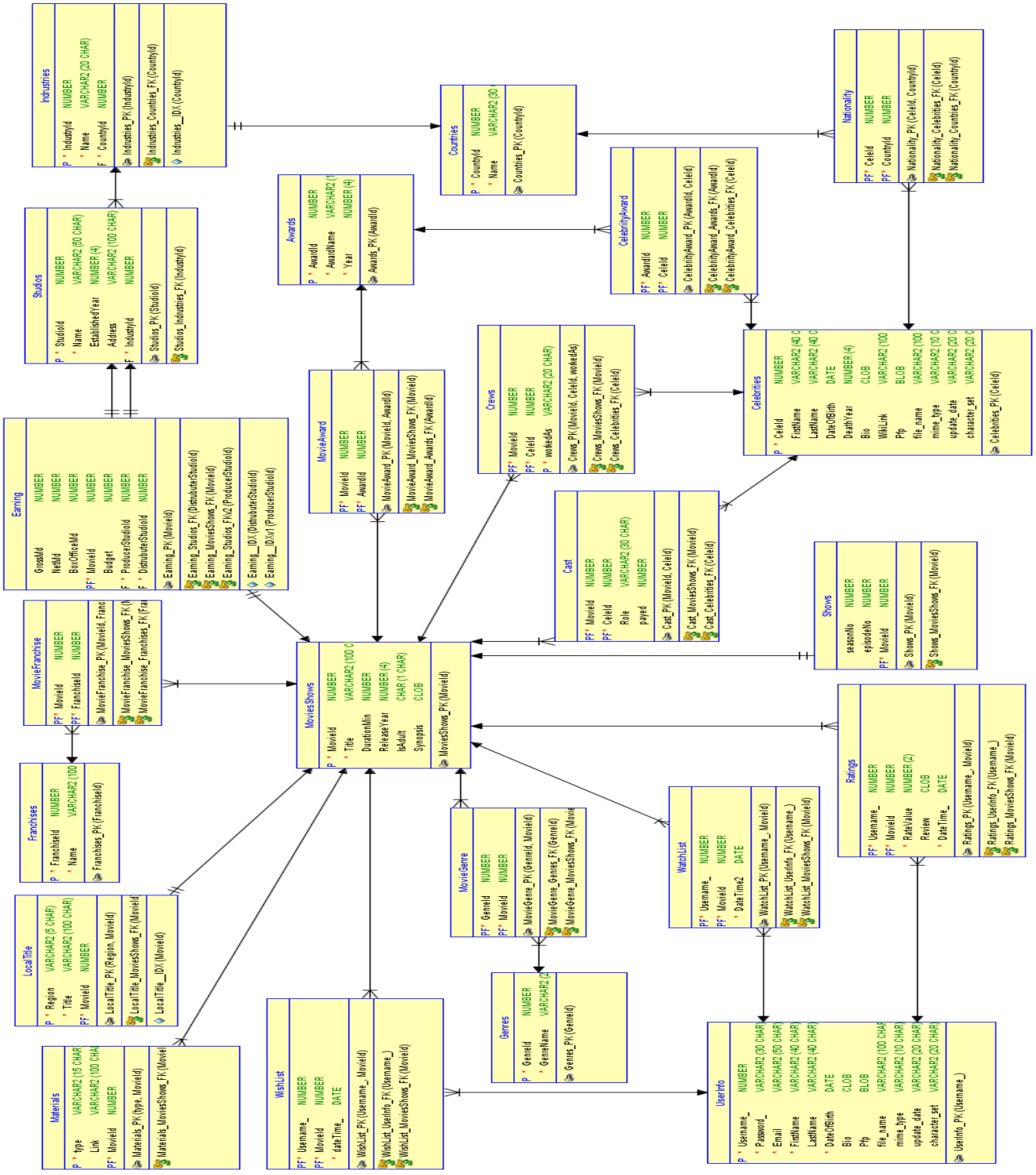

Materials
P * type VARCHAR (15)
Link VARCHAR (100)
PF* MovieId NUMERIC
Materials PK (type, MovieId)
LocalTitle
P * Region VARCHAR (5)
* Title VARCHAR (100)
PF* MovieId NUMERIC
LocalTitle PK (Region, MovieId)
Franchises
P * FranchiseId NUMERIC
* Name VARCHAR (10
Franchises PK (FranchiseId)
Earning
GrossMd NUMERIC
NetMd NUMERIC
BoxOfficeMd NUMERIC
PF* MovieId NUMERIC
Budget NUMERIC
F * StudioId NUMERIC
F * StudioId1 NUMERIC
Earning PK (MovieId)
Genres
P * GenreId NUMERIC
* GenreName VARCHAR (20
Genres PK (GenreId)
MoviesShows
P * MovieId NUMERIC
* Title VARCHAR (100)
DurationMin NUMERIC
ReleaseYear NUMERIC (4)
IsAdult CHAR (1)
Synopsis TEXT
MoviesShows PK (MovieId)
Awards
P * AdardId NUMERIC
* AwardName VARCHAR (10
* Year NUMERIC (4)
Awards PK (AdardId)
Indrustries
P * IndustryId NUMERIC
* Name VARCHAR (20)
F * CountryId NUMERIC
Indrustries PK (IndustryId)
UserInfo
P * Username_ NUMERIC
* Password_ VARCHAR (30)
* Email VARCHAR (50)
* FirstName VARCHAR (40)
LastName VARCHAR (40)
* DateOfBirth Date
Bio TEXT
Pfp BLOB
file_name VARCHAR (100)
mime_type VARCHAR (10)
update_date VARCHAR (20)
character_set VARCHAR (20)
UserInfo PK (Username_)
Shows
seasonNo NUMERIC
episodeNo NUMERIC
PF* MovieId NUMERIC
Shows PK (MovieId)
Celebrities
P * CeleId NUMERIC
FirstName VARCHAR (40)
LastName VARCHAR (40)
DateOfBirth Date
DeathYear NUMERIC (4)
Bio TEXT
WikiLink VARCHAR (100)
Pfp BLOB
file_name VARCHAR (100)
mime_type VARCHAR (10)
update_date VARCHAR (20)
character_set VARCHAR (20)
Celebrities PK (CeleId)
Studios
P * StudioId NUMERIC
* Name VARCHAR (50)
EstablishedYear NUMERIC (4)
Address VARCHAR (100)
F * IndustryId NUMERIC
Studios PK (StudioId)
Countries
P * CountryId NUMERIC
* Name VARCHAR (30)
Countries PK (CountryId)

The relationships in the E-R model, organized into a tabular form:

Entities	Relationship Type	Description
MoviesShows ↔ Materials	One-to-Many	A movie or show can have multiple associated materials (e.g., trailers, articles).
MoviesShows ↔ LocalTitle	One-to-Many	A movie or show can have multiple localized titles for different regions or languages.
MoviesShows ↔ Earning	One-to-Many	A movie or show has one set of financial details (e.g., gross, net, budget).
MoviesShows ↔ Shows	One-to-Many	A movie or show can have multiple seasons or episodes.
MoviesShows ↔ Genres	Many-to-Many	A movie or show can belong to multiple genres, and each genre can include multiple movies/shows.
MoviesShows ↔ Franchises	Many-to-One	A movie or show belongs to one franchise, but a franchise can include multiple movies/shows.
MoviesShows ↔ Celebrities	Many-to-Many	Movies or shows involve multiple celebrities, and each celebrity can work on multiple projects.
MoviesShows ↔ Awards	Many-to-Many	A movie or show can win multiple awards, and each

		award can apply to multiple movies/shows.
Studios ↔ Earning	No Direct Relationship	Earnings are tied to individual movies/shows, not studios.
Studios ↔ Industries	Many-to-One	Studios belong to one industry, but an industry can include multiple studios.
Industries ↔ Countries	One-to-One	Each industry operates in a specific country.
Countries ↔ Celebrities	Relationship Not Explicit	No direct relationship is shown in the diagram.
Celebrities ↔ Awards	Many-to-Many	Celebrities can win multiple awards, and awards can be given to multiple celebrities

2. Relational Data Model of the Project



The functional dependencies (FDs) from the given ERD:

Determinant	Determined	Explanation
Materials	MoviesShows	Each material belongs to a movie.
LocalTitle	MoviesShows	Each localized title is linked to a specific movie.
WishList	MoviesShows, UserInfo	A user's wishlist entry uniquely identifies both a movie and the user.
MovieFranchise	Franchises, MoviesShows	A movie belongs to a franchise.
Earning	MoviesShows, Studios	Earnings are associated with movies and studios (producers/distributors).
Studios	Industries	A studio belongs to a specific industry.
Industries	Countries	An industry is based in a specific country.
Nationality	Countries, Celebrities	A celebrity belongs to a country.
CelebrityAward	Celebrities, Awards	A celebrity receives a specific award.
MovieAward	Awards, MoviesShows	A movie wins a specific award.
Crews	MoviesShows, Celebrities	A crew member is linked to a movie.
Cast	MoviesShows, Celebrities	An actor plays a role in a movie.
Shows	MoviesShows	A show belongs to a movie.
Ratings	MoviesShows, UserInfo	A rating is associated with a movie and a user.
WatchList	MoviesShows, UserInfo	A user's watchlist entry links a movie to the user.
MovieGenre	MoviesShows, Genres	A movie belongs to a genre.

3. Database Normalization

Table Name	Primary Key (Candidate Key(s))	Assumed Normal Form	Comments
awards	awardid	BCNF	All non-key attributes (awardname, year) depend solely on awardid.
celebrities	celeid	BCNF	All attributes (firstname, lastname, etc.) depend on celeid.
countries	Countryid	BCNF	(Note: In practice, country name might be unique too, but countryid is the PK.)
franchises	Franchiseid	BCNF	
genres	Genreid	BCNF	
Studios	studioid	BCNF	
Indrustries	industryid; also, countryid is unique (thus a candidate key via a unique index)	BCNF	Both industryid and countryid serve as candidate keys.
Userinfo	username_	BCNF	
Moviesshows	movieid	BCNF	All non-key attributes (title, durationmin, releaseyear, etc.) depend on movieid.
earning	movieid; also unique on producerstudioid and distrubuterstudioid	BCNF	Three candidate keys exist. (Business rules enforcing uniqueness of studios across movies should be reviewed.)
localtitle	Declared as (region, movieid) but a unique index on movieid exists	BCNF	*Issue:* If a movie may have multiple local titles (per region), the unique index on movieid is in error. If one local title per movie is intended, the key should be movieid alone.
materials	(type, movieid)	BCNF	

Shows	Declared as movieid	BCNF *(as declared)*	Potential Issue: For episodic content, a composite key (e.g., movieid, seasonno, episodeno) may be more appropriate if multiple episodes per movie are expected.
Cast	(movieid, celeid)	BCNF	Non-key attributes (role, payed) depend on the composite key.
Celebriityaward	(awardid, celeid)	BCNF	
Crews	(movieid, celeid, workedas)	BCNF	
Movieaward	(movieid, awardid)	BCNF	
Moviefranchise	(movieid, franchiseid)	BCNF	
Moviegenre	(genreid, movieid)	BCNF	
Nationality	(celeid, countryid)	BCNF	
Ratings	(username_, movieid)	BCNF	All non-key attributes (ratevalue, review, datetime_) depend on the composite key.
watchlist	(username_, movieid)	BCNF	
wishlist	(username_, movieid)	BCNF	

4. Implementation Checklist

Description	**Remarks**
Project ID	162662
Workspace Name	fesa_cse302
Workspace Email	msascendary@gmail.com
Workspace Password	FESA_cse302
Authentication Type	Custom
Username and Password to Login	admin

write username like admin	*admin123*
if you have multiple users, write all username and password correctly	
Uploaded and Displayed Images in Reports	Yes
Implemented Page-wise Authorization	Yes
Number of Reports with Forms	9
Number of Master-detail Forms	3
Number of Reports based on Queries, Aggregate Queries	2
Number of Graphs/Charts	1
Included any trigger/other feature which is not taught in class. If yes, please explain briefly.	
Write the most unique feature/functionality in your application or the page of your application that you are proud of. Explain briefly.	If user don't have any account, they can create a account from log in page.

5. Reports with Forms

Report Page Number and Name	Form Page Number and Name	Table
2, movies and shows	3, movies and shows edit	MOVIESSHOWS
4, celebrities	5, celebrities edit	CELEBRITIES
7, earnings	8, earnings edit	EARNING
9, movie material	10, movie material edit	MATERIAL
23, Industries	24, Industries edit	INDUSTRIES
25, Studios	26, Studios	STUDIOS
31, User information	N/A	USERINFO
54, cast	55, Cast edit	CAST

56, Crews	57, Crews edit	CREWS

Screenshots:

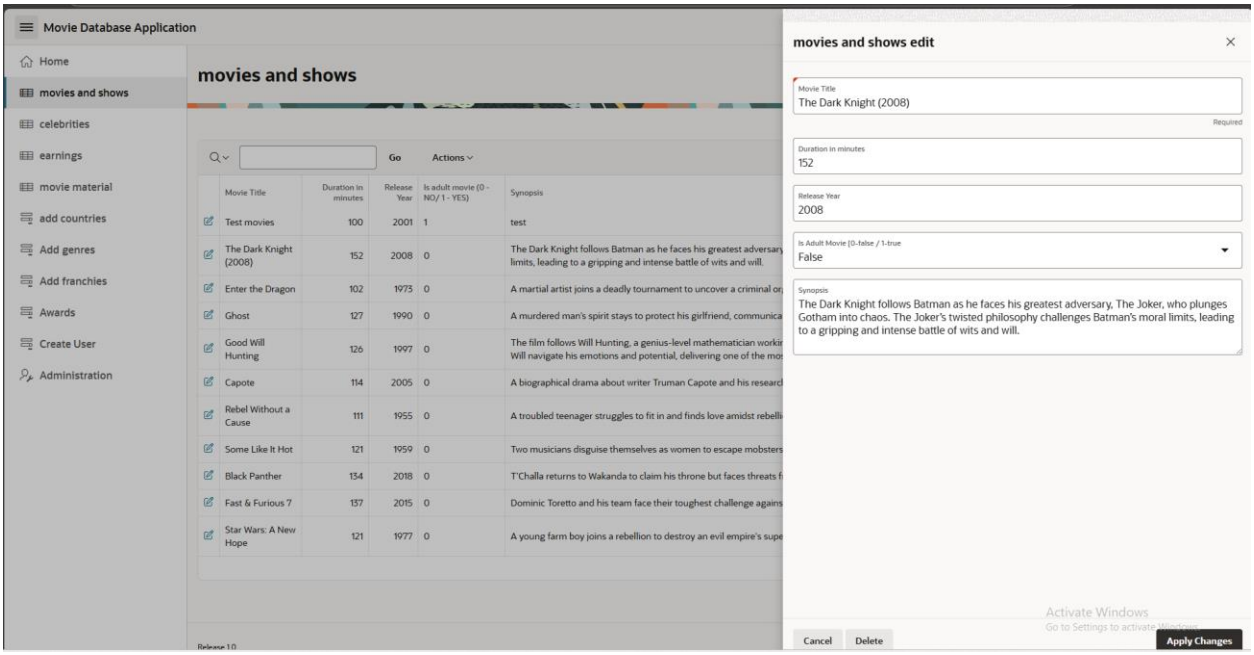


Figure 5.1: Movies and Shows

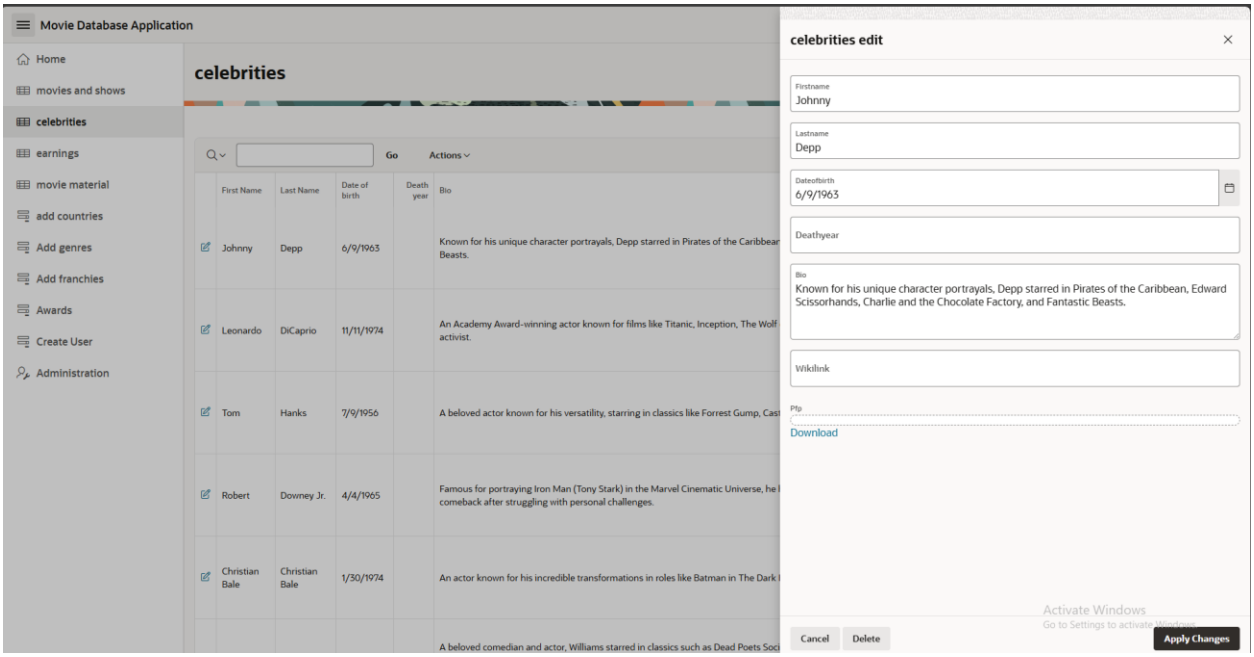


Figure 5.2: Celebrities

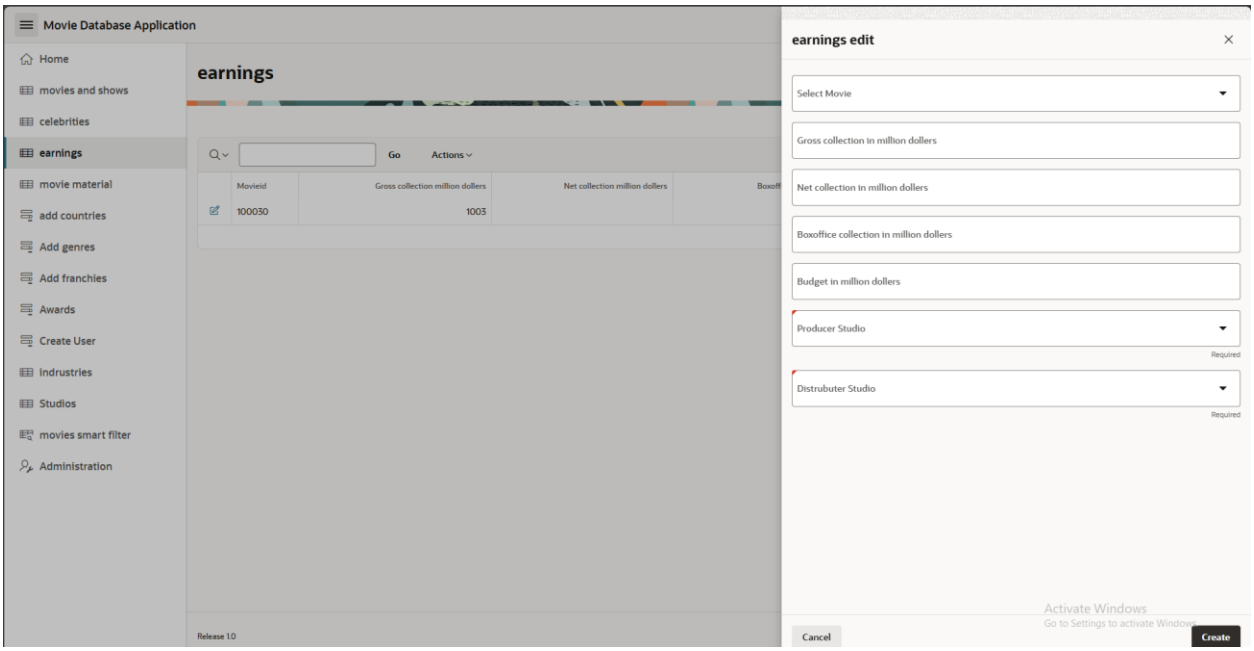


Figure 5.3: Earnings

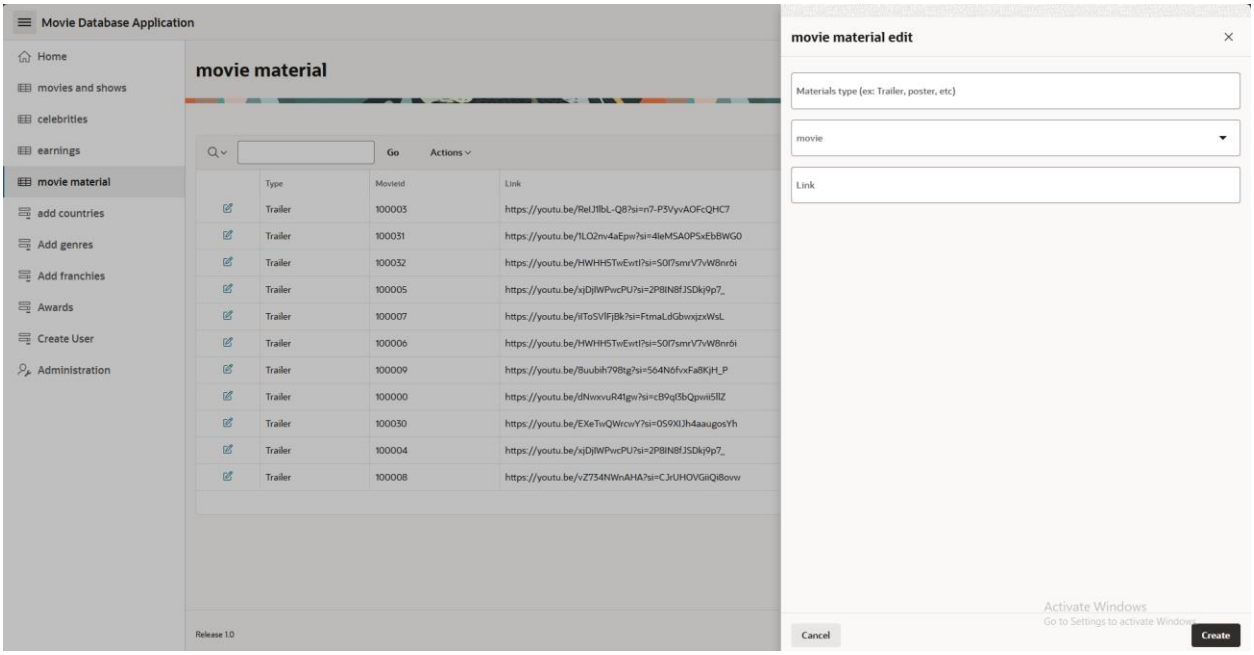


Figure 5.4: Movie Material

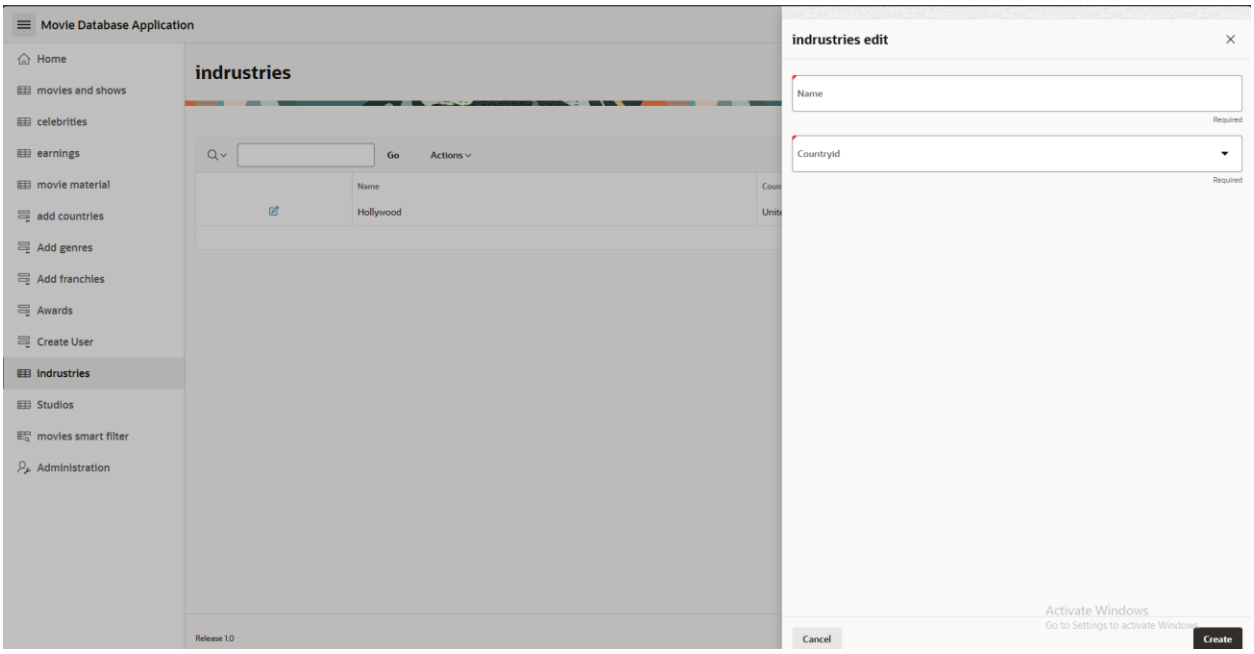


Figure 5.5: Industries

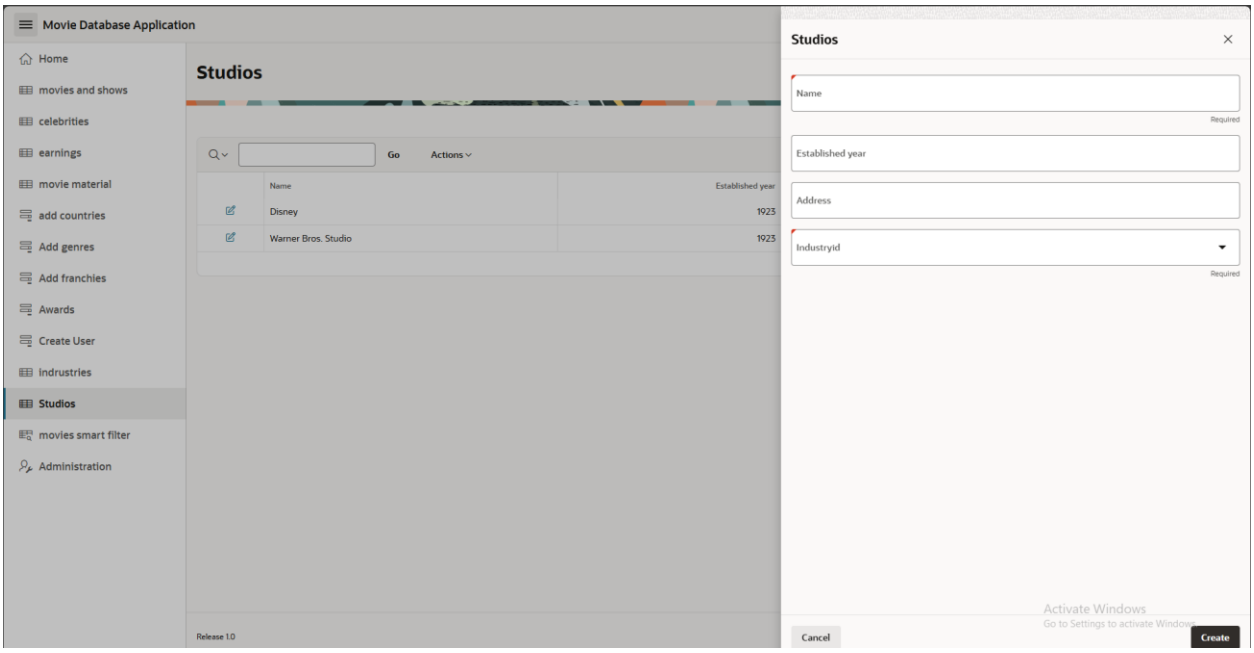


Figure 5.6: Studios

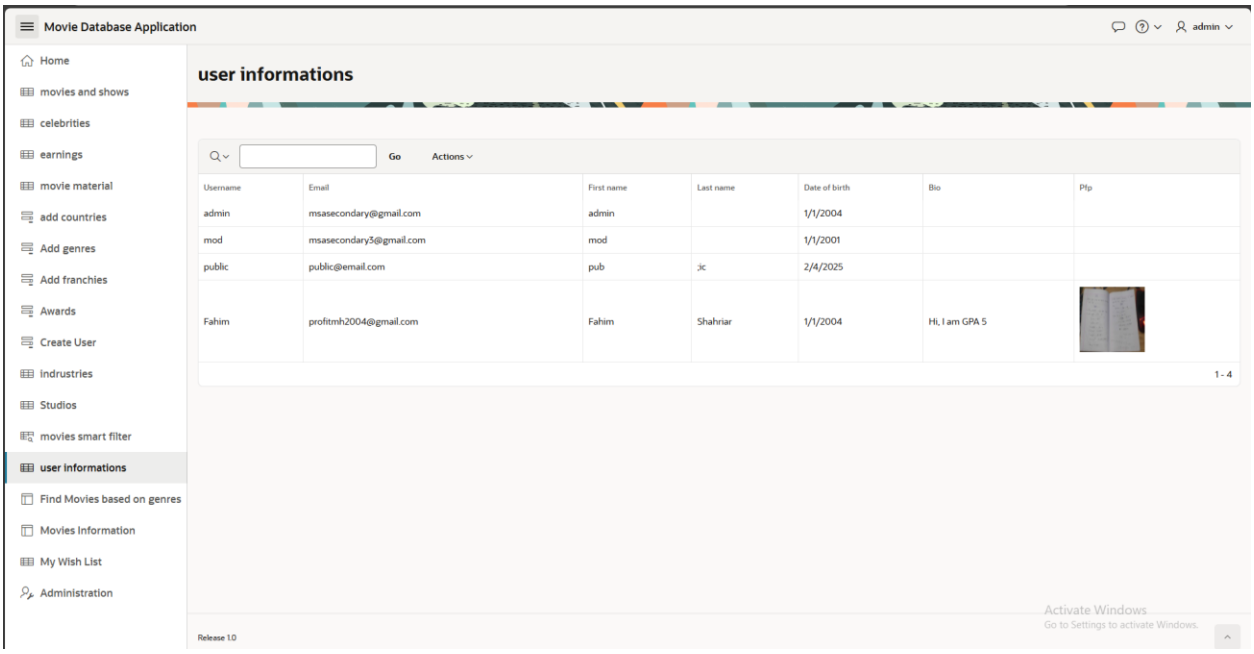


Figure 5.7: User information

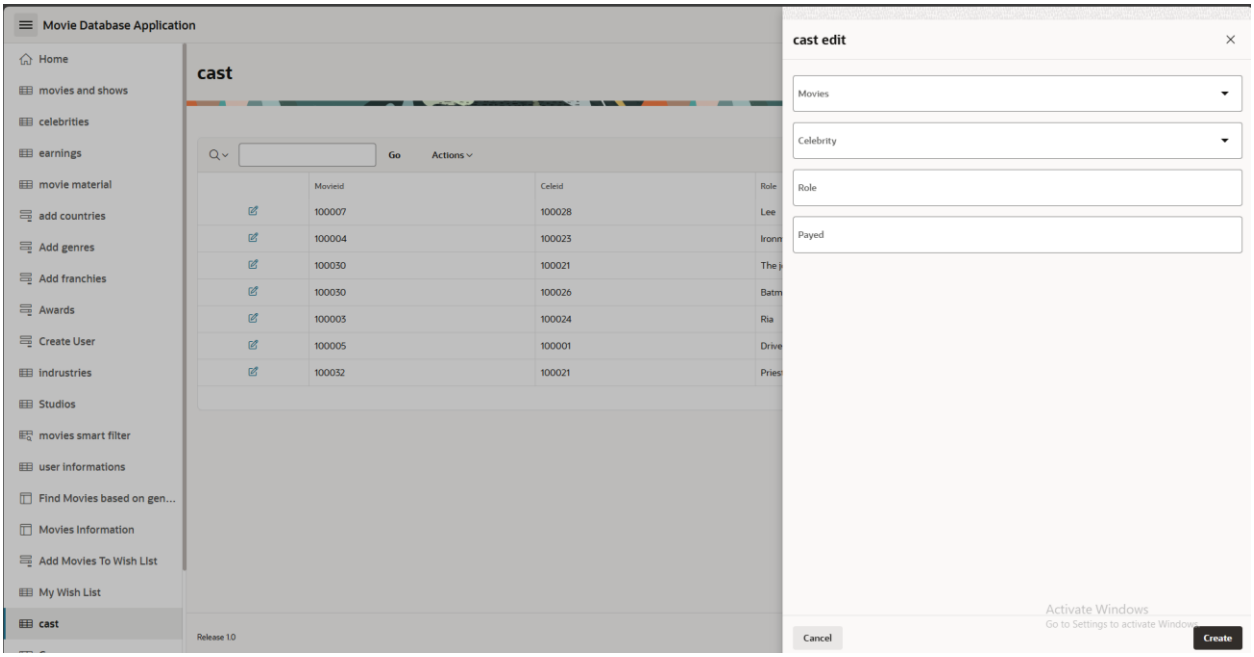


Figure 5.8: Cast

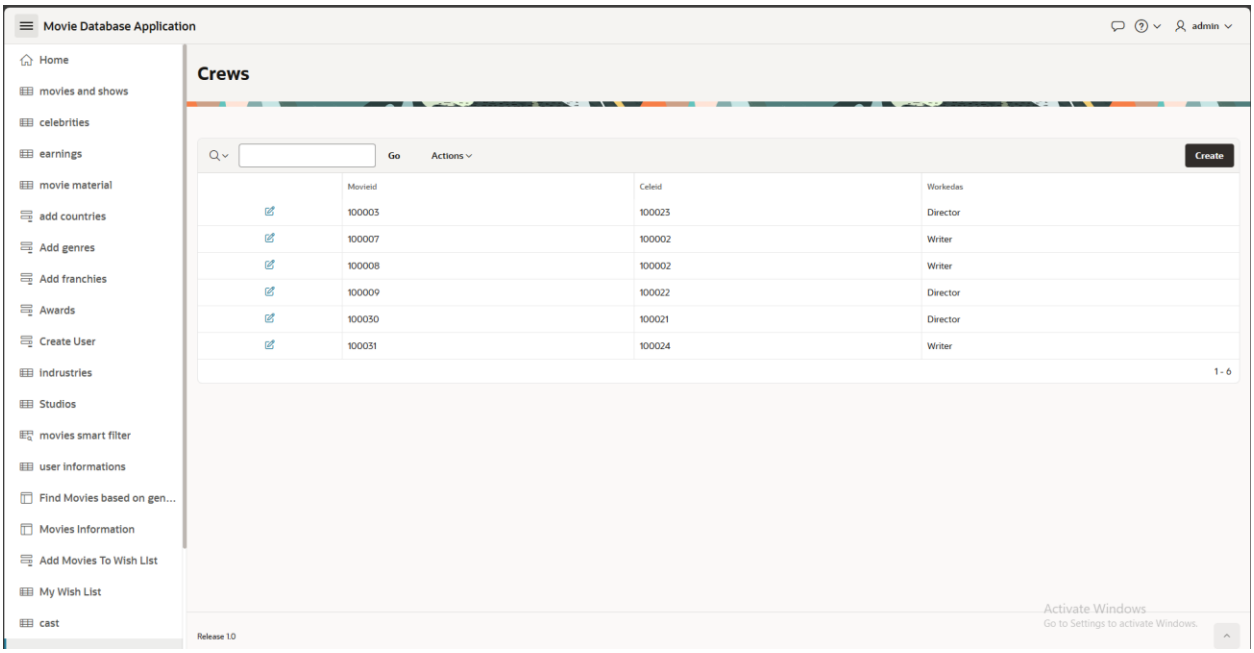


Figure 5.9: Crews

6. Master-Detail Form

Page Number and Name	Master Table (Parent)	Detail Table (Child)
36, Find Movies based On Genres	GENRE	MOVIESSHOWS
39, Movies Information	MOVIESSHOWS	CAST,CREW,EARNING, LOCALTITLE
58, Actors	MOVIESSHOWS	CAST, CREW

Screenshots:

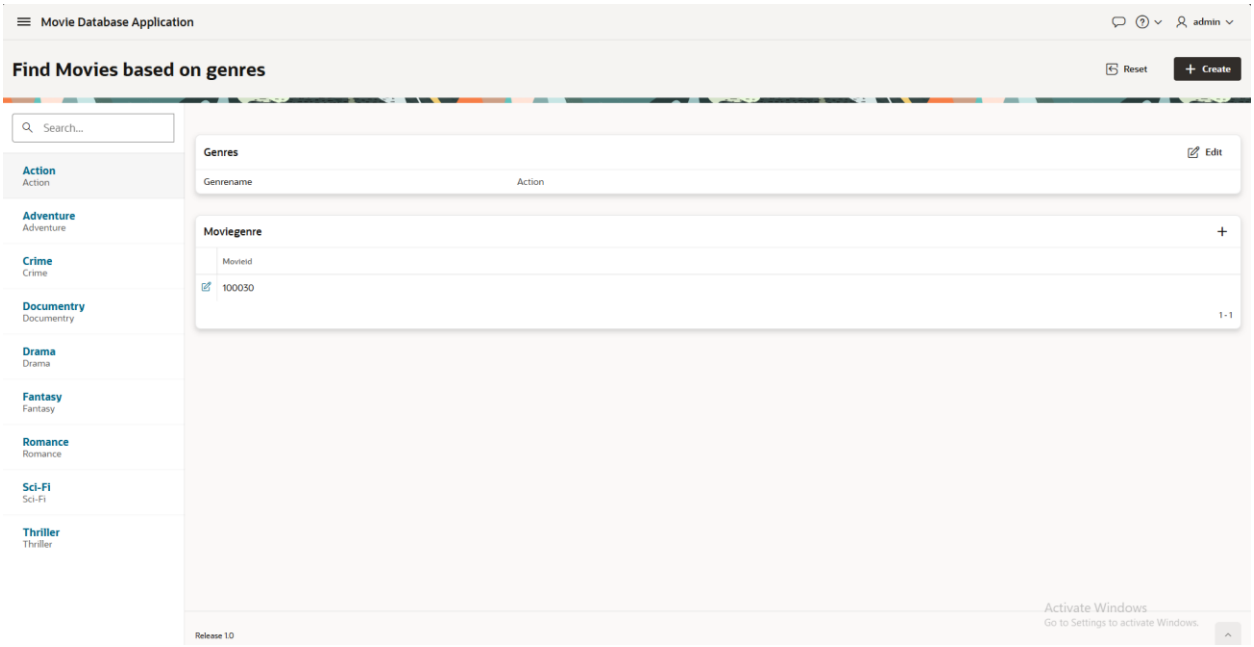


Figure 6.1: Find Movies based On Genres

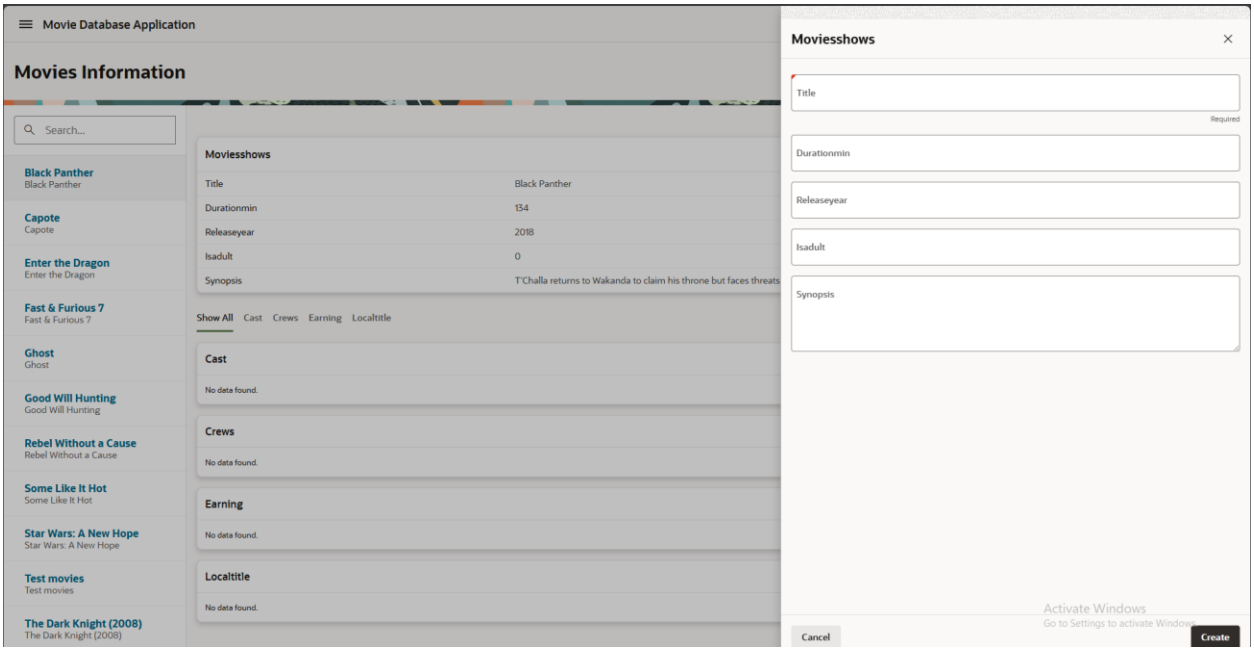


Figure 6.2: Movies Information

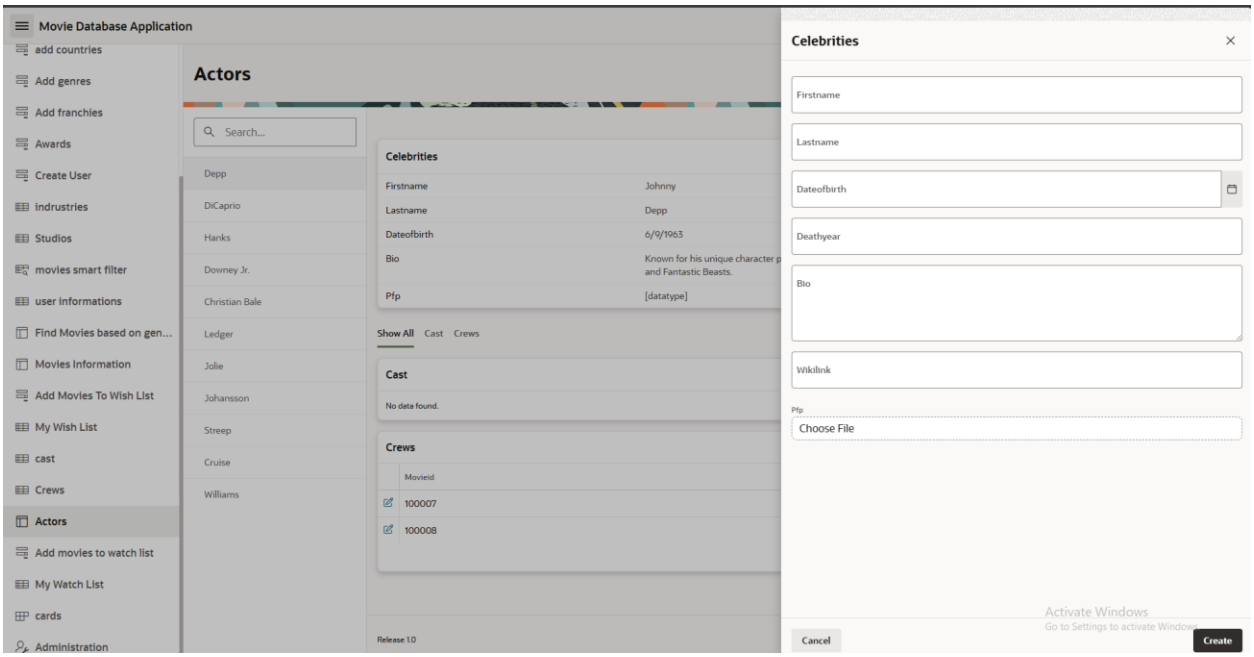


Figure 6.3: Actors

7. Reports based on Multi-Table and Aggregate Queries

Page Number and Name	Query Type	Report description
71. Top 10 paied actor	Two table natural join	Shows top 10 paied actor
70. earned movies based of genres	Left join genres, moviegeneres, movie, movie earnings	Shows a bar chart number of earning movie per genre

Screenshots:

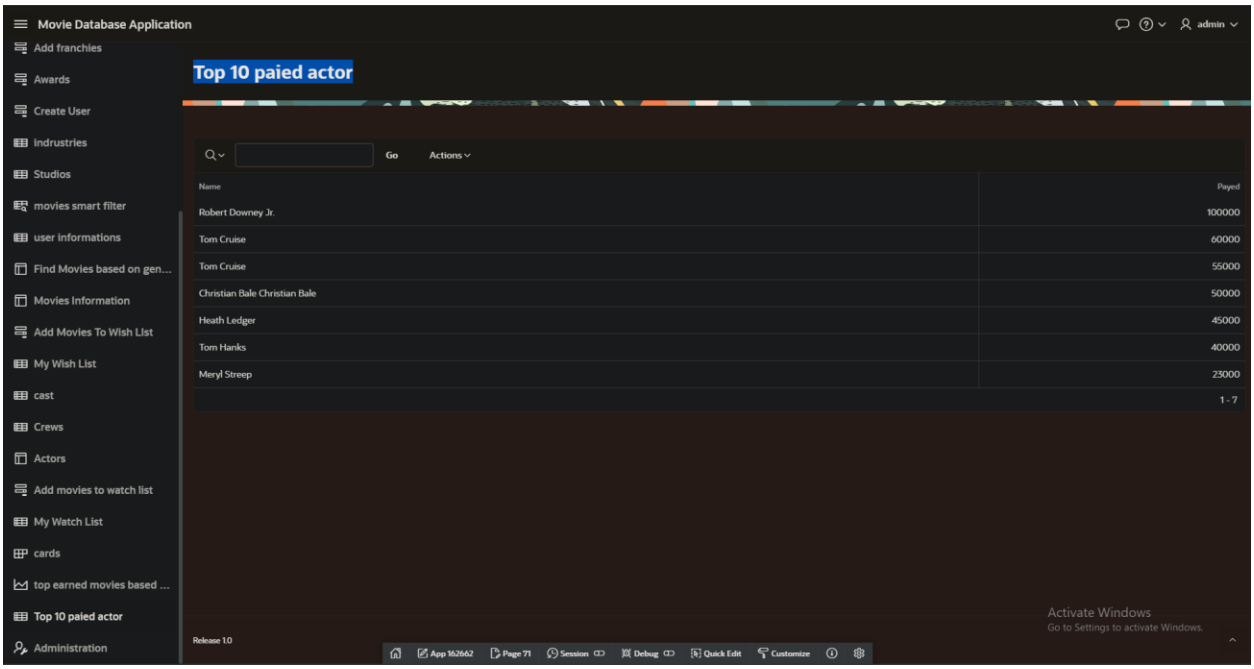


Figure 7.1: Top 10 paied actor

8. Charts and Other Pages

Page Number and Name	Chart description
70. earned movies based of genres	Shows a bar chart number of earning movie per genre

Screenshots:

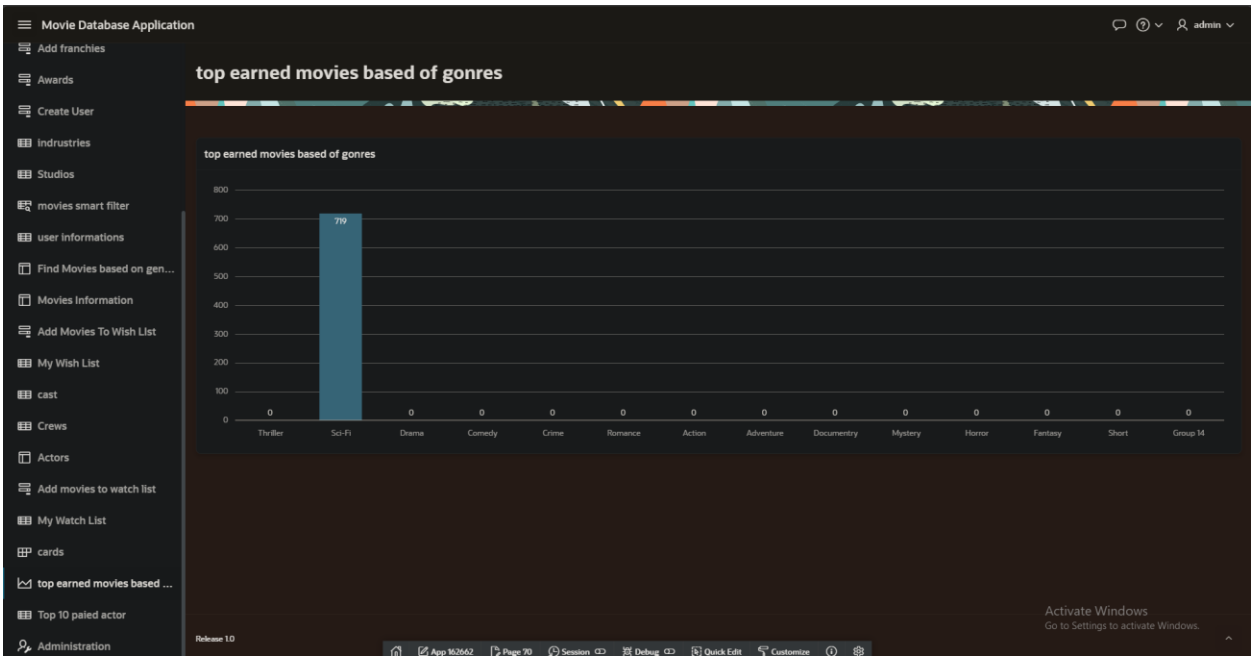


Figure 8.1: earned movies based of genres

9.Authorization and User Role Assignment

User Role Assignment

User name	Password	Role
admin	admin123	Administrator
fahim	fahim	Reader
mod	mod	Contributor
nobody	N/A	Reader

Page-wise Authorization Information

Page number and name	Authorization Level
P1. Home	Reader
P10000: Administration	Administrator
P2: movies and shows	Contributor
P4: celebrities	Contributor
P27: movies smart filter	Reader

10. Others Pages

Page Number and Name	Chart description
27, movies smart filter	The movies can be searched by using specific range of Duration and Release year.
10060, About Page	This page contains a summary of our project and the names of the contributors.
10000, Administration	This page is for Administrator to administrate the application and control the application access.
Cards	Shows movies Synopsis

Screenshots:

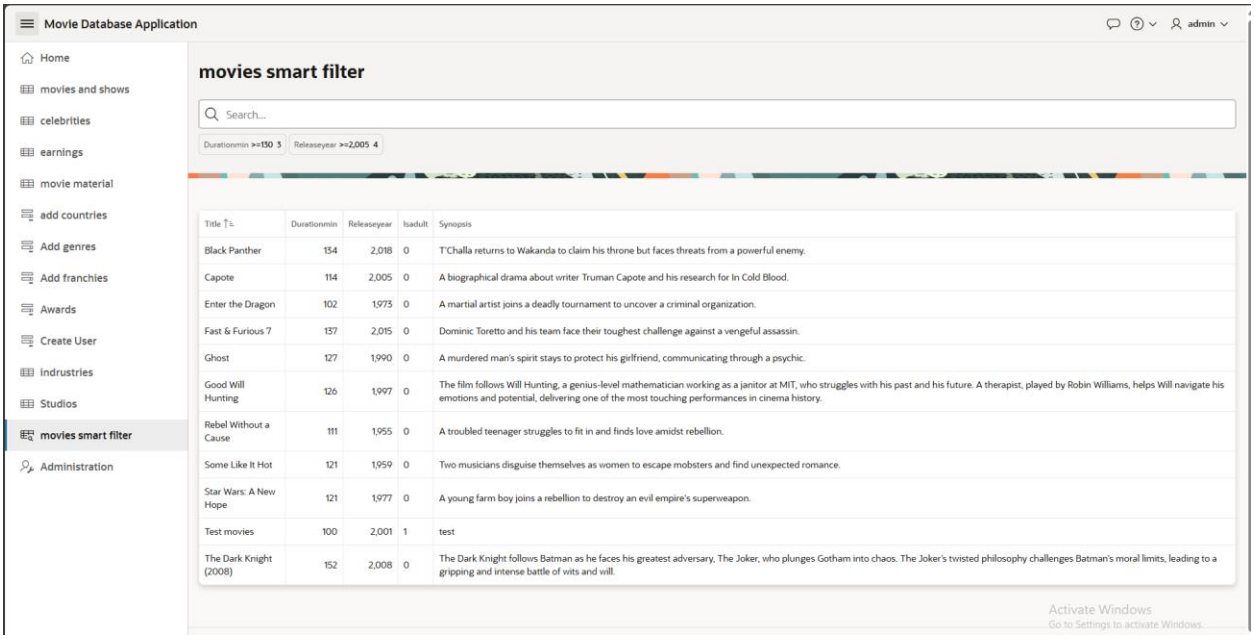


Figure 10.1: movies smart filter

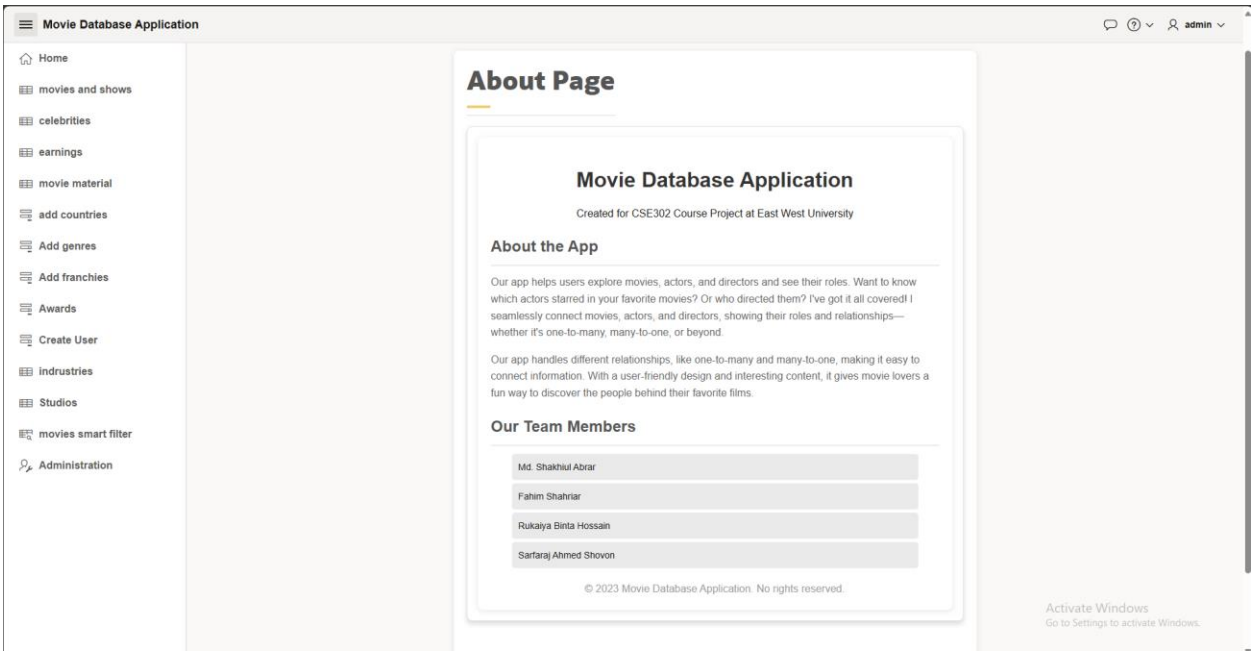


Figure 10.2: About page

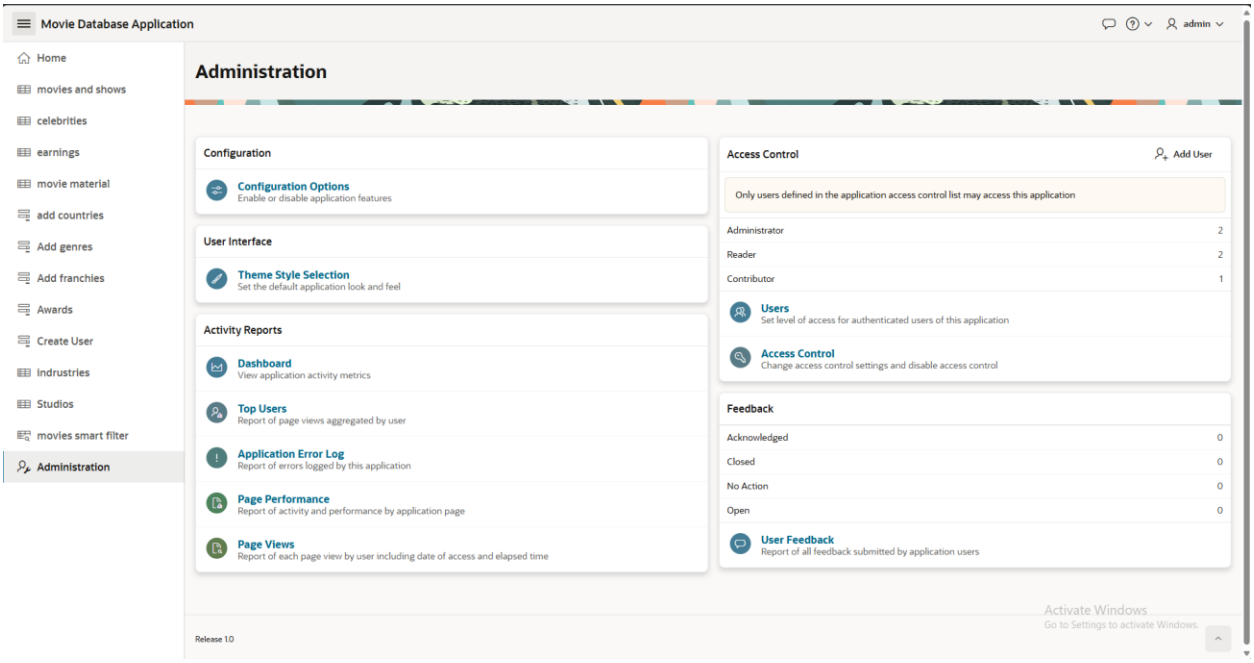


Figure 10.3: Administration

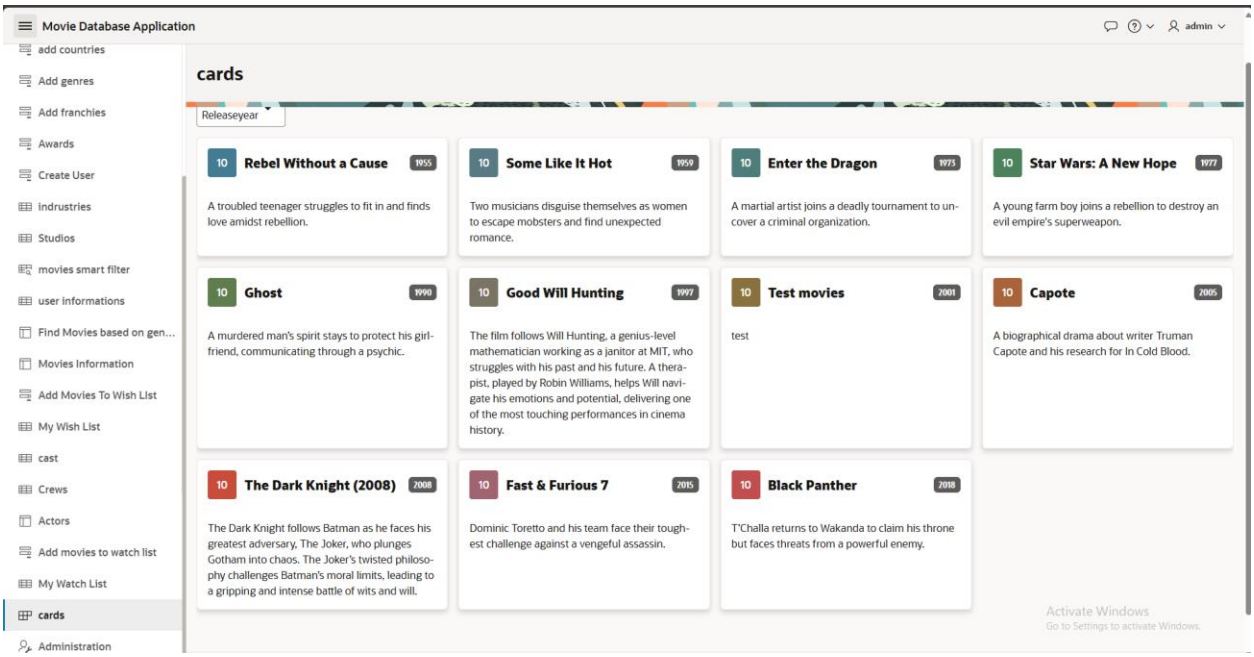


Figure 10.4: Cards

11. Concluding Remarks

Developing the Movie Database System was both challenging and rewarding for us. We faced obstacles with database design, SQL queries, and triggers, but each issue improved our problem-solving skills. Debugging was frustrating at times, but seeing everything come together was satisfying. Overall, this project strengthened our understanding of databases, and we're excited to apply these skills in the future. Thank you, and best of luck!