



# CSE302: Database Systems (Section No. 02)

## [Fall 2024]

### Project Report

Movie Database Application

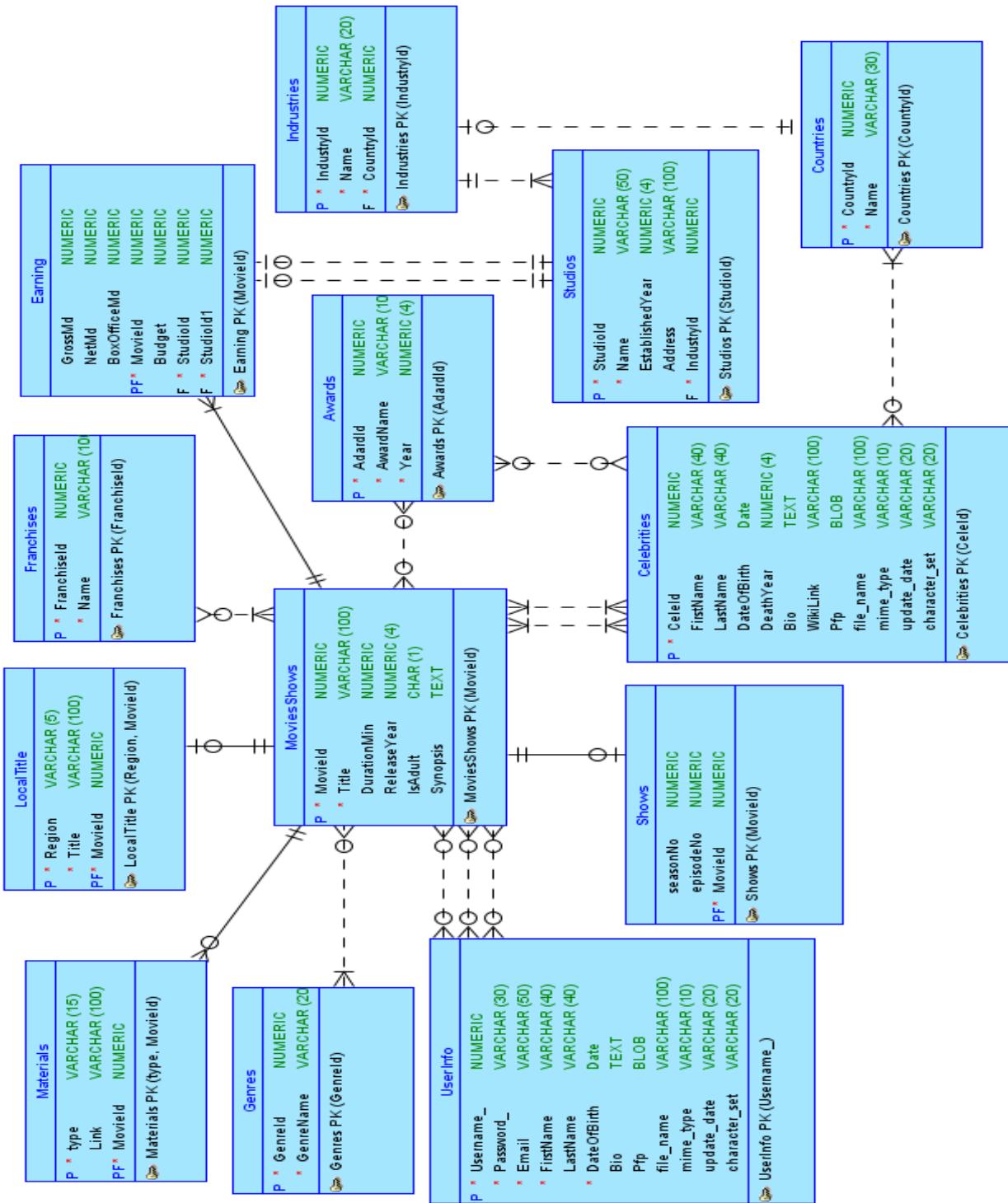
[https://apex.oracle.com/pls/apex/r/fesa\\_cse302/movie-database-application](https://apex.oracle.com/pls/apex/r/fesa_cse302/movie-database-application)

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## 1. E-R Model of the Project

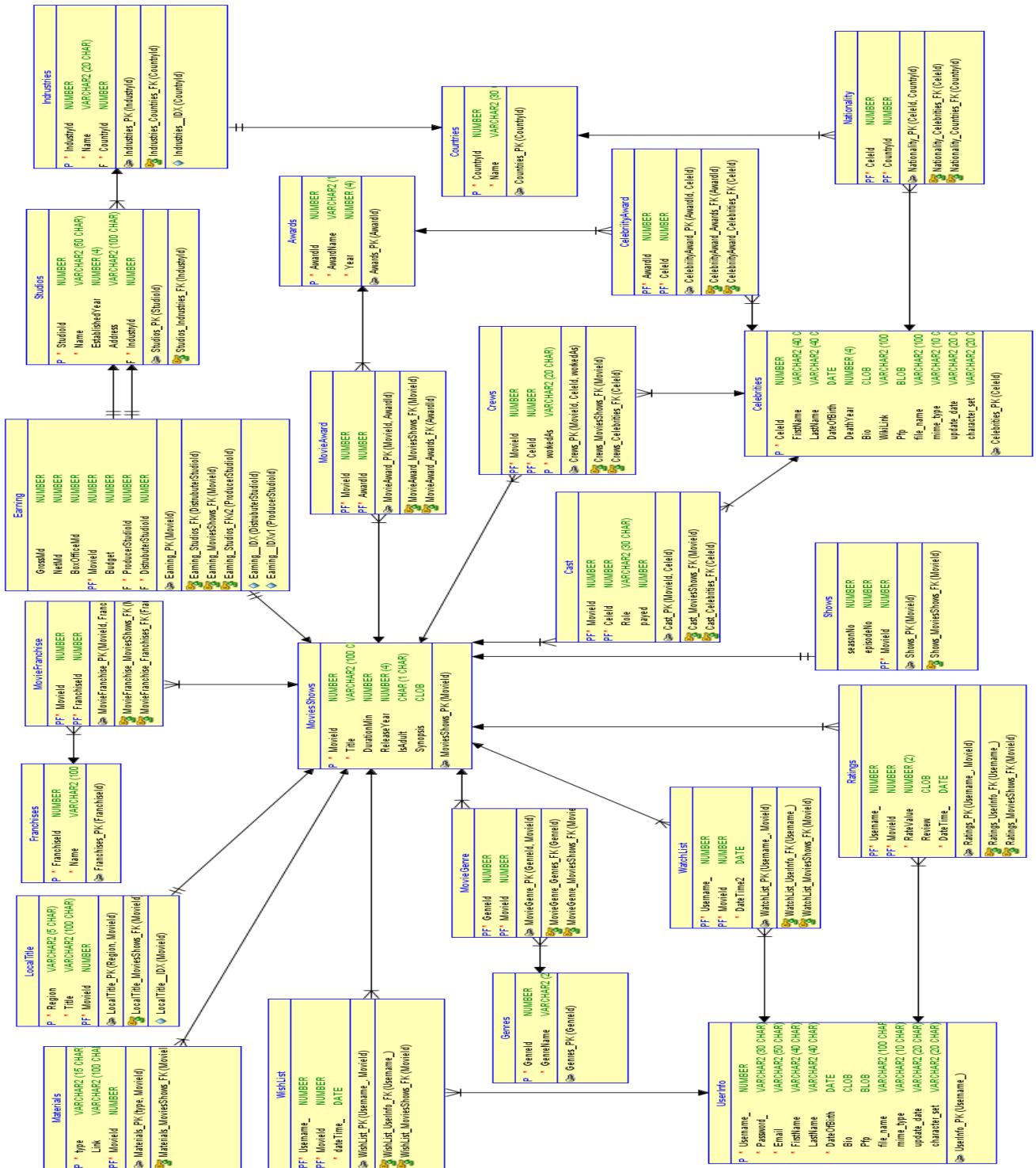


The relationships in the E-R model, organized into a tabular form:

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 ↔ Earnings	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	studiooid	BCNF	
Indrusters	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 producerstudiooid and distributerstudiooid	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	<i>Issue:</i> 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 ( <i>as declared</i> )	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.
Celebrityaward	(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 if you have multiple users, write all username and password correctly	<i>admin123</i>
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:

The screenshot shows the 'Movie Database Application' interface. On the left is a sidebar with navigation links: Home, movies and shows, celebrities, earnings, movie material, add countries, Add genres, Add franchises, Awards, Create User, and Administration. The main area displays a table titled 'movies and shows' with columns: Movie Title, Duration in minutes, Release Year, Is adult movie (0 - NO/ 1 - YES), and Synopsis. The table lists several movies like 'Test movies', 'The Dark Knight (2008)', 'Enter the Dragon', 'Ghost', etc. To the right of the table is an 'edit' dialog for 'The Dark Knight (2008)'. The dialog fields include: Movie Title (The Dark Knight (2008)), Duration in minutes (152), Release Year (2008), Is Adult Movie (0-false / 1-true) (False), and Synopsis (The Dark Knight follows Batman as he faces his greatest adversary, The Joker, who plunges Gotham into chaos. The Joker's twisted philosophy challenges Batman's moral limits, leading to a gripping and intense battle of wits and will.). At the bottom right of the dialog are buttons for 'Activate Windows', 'Go to Settings to activate', 'Cancel', 'Delete', and a bolded 'Apply Changes'.

Figure 5.1: Movies and Shows

The screenshot shows the 'Movie Database Application' interface. The sidebar includes: Home, movies and shows, celebrities, earnings, movie material, add countries, Add genres, Add franchises, Awards, Create User, and Administration. The main area shows a table titled 'celebrities' with columns: First Name, Last Name, Date of birth, Death year, and Bio. The table lists celebrities like Johnny Depp, Leonardo DiCaprio, Tom Hanks, Robert Downey Jr., and Christian Bale. To the right is an 'edit' dialog for 'Johnny Depp'. The dialog fields are: Firstname (Johnny), Lastname (Depp), Dateofbirth (6/9/1963), Deathyear (empty), Bio (Known for his unique character portrayals, Depp starred in Pirates of the Caribbean, Edward Scissorhands, Charlie and the Chocolate Factory, and Fantastic Beasts.), and Wikilink (empty). At the bottom right of the dialog are buttons for 'Activate Windows', 'Go to Settings to activate', 'Cancel', 'Delete', and a bolded 'Apply Changes'.

Figure 5.2: Celebrities

Figure 5.3: Earnings

Figure 5.4: Movie Material

**Movie Database Application**

**industries**

Q Go Actions

Name	Count	Unit
Hollywood		

Release 1.0

**industries edit**

Name: Hollywood

Countryid:

Cancel Create

Figure 5.5: Industries

**Movie Database Application**

**Studios**

Q Go Actions

Name	Established year
Disney	1923
Warner Bros. Studio	1923

Release 1.0

**Studios**

Name: Disney

Established year: 1923

Address:

Industryid:

Activate Windows  
Go to Settings to activate Windows

Cancel Create

Figure 5.6: Studios

**user informations**

Username	Email	First name	Last name	Date of birth	Bio	Photo
admin	msasecondary@gmail.com	admin		1/1/2004		
mod	msasecondary5@gmail.com	mod		1/1/2001		
public	public@email.com	pub	jc	2/4/2025		
Fahim	profitmh2004@gmail.com	Fahim	Shahriar	1/1/2004	Hi, I am GPA 5	

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Release 1.0

Activate Windows  
Go to Settings to activate Windows.

Figure 5.7: User information

**cast**

	Movieid	Celebid	Role	Payed
	100007	100028	Lee	
	100004	100023	Ironn	
	100030	100021	The j	
	100030	100026	Batm	
	100003	100024	Ria	
	100005	100001	Drive	
	100032	100021	Pries	

Release 1.0

cast edit

Movies

Celebrity

Role

Payed

Cancel Create

Activate Windows  
Go to Settings to activate Windows.

Figure 5.8: Cast

Movie Database Application			
<span>Home</span> <span>movies and shows</span> <span>celebrities</span> <span>earnings</span> <span>movie material</span> <span>add countries</span> <span>Add genres</span> <span>Add franchises</span> <span>Awards</span> <span>Create User</span> <span>Industries</span> <span>Studios</span> <span>movies smart filter</span> <span>user informations</span> <span>Find Movies based on gen...</span> <span>Movies Information</span> <span>Add Movies To Wish List</span> <span>My Wish List</span> <span>cast</span>			
<span>Crews</span>			
<input type="text"/> Q	<input type="button"/> Go	<input type="button"/> Actions	<input type="button"/> Create
	Movied	Celeid	Workedas
<input checked="" type="checkbox"/>	100003	100023	Director
<input checked="" type="checkbox"/>	100007	100002	Writer
<input checked="" type="checkbox"/>	100008	100002	Writer
<input checked="" type="checkbox"/>	100009	100022	Director
<input checked="" type="checkbox"/>	100030	100021	Director
<input checked="" type="checkbox"/>	100031	100024	Writer
1 - 6			
<small>Release 1.0</small> <span>Activate Windows</span> <span>Go to Settings to activate Windows.</span>			

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	MOVIESHOWS
39, Movies Information	MOVIESHOWS	CAST,CREW,EARNING, LOCALTITLE
58, Actors	MOVIESHOWS	CAST, CREW

Screenshots:

The screenshot shows a web-based movie database application. At the top, there's a header with a search bar, user authentication (admin), and a 'Create' button. Below the header, the main title is 'Find Movies based on genres'. On the left, a sidebar lists various movie genres: Action, Adventure, Crime, Documentry, Drama, Fantasy, Romance, Sci-Fi, and Thriller. The 'Action' genre is selected. The main content area shows a table for 'Genres' with columns 'GenreName' and 'Action'. A modal window titled 'MovieGenre' is open, showing a table with a single row for 'MovieId' (100050). The bottom right corner of the main content area has a watermark: 'Activate Windows Go to Settings to activate Windows.'

Figure 6.1: Find Movies based On Genres

This screenshot shows the 'Movies Information' page. The sidebar on the left lists movies: Black Panther, Capote, Enter the Dragon, Fast & Furious 7, Ghost, Good Will Hunting, Rebel Without a Cause, Some Like It Hot, Star Wars: A New Hope, Test movies, and The Dark Knight (2008). The 'Black Panther' movie is selected. The main content area displays detailed information for 'Black Panther' under 'Movielshows', including Title (Black Panther), Durationmin (134), Releaseyear (2018), Isadult (0), and Synopsis (T'Challa returns to Wakanda to claim his throne but faces threats). Below this, sections for Cast, Crews, Earning, and Localtitle show 'No data found.' A modal window titled 'Movielshows' is open on the right, containing fields for Title (Required), Durationmin, Releaseyear, Isadult, and Synopsis. The bottom right corner has a watermark: 'Activate Windows Go to Settings to activate Windows.'

Figure 6.2: Movies Information

The screenshot shows the Movie Database Application interface. On the left, a sidebar lists various database management options like 'Add countries', 'Add genres', etc. The main area is titled 'Actors' and displays a list of actors (Depp, DiCaprio, Hanks, Downey Jr., Christian Bale, Ledger, Jolie, Johansson, Streep, Cruise, Williams) with a search bar at the top. A modal window titled 'Celebrities' is open, prompting for 'Firstname' (Johnny), 'Lastname' (Depp), 'Dateofbirth' (6/9/1963), and 'Bio' (Known for his unique character p... and Fantastic Beasts.). It also includes fields for 'Deathyear', 'Bio', 'Wikilink', and a file upload section for 'Pfp'. Buttons for 'Cancel' and 'Create' are at the bottom right of the modal.

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:

Movie Database Application	
<a href="#">Add franchises</a>	
<a href="#">Awards</a>	
<a href="#">Create User</a>	
<a href="#">Industries</a>	
<a href="#">Studios</a>	
<a href="#">movies smart filter</a>	
<a href="#">user informations</a>	
<a href="#">Find Movies based on genres</a>	
<a href="#">Movies Information</a>	
<a href="#">Add Movies To Wish List</a>	
<a href="#">My Wish List</a>	
<a href="#">cast</a>	
<a href="#">Crews</a>	
<a href="#">Actors</a>	
<a href="#">Add movies to watch list</a>	
<a href="#">My Watch List</a>	
<a href="#">cards</a>	
<a href="#">top earned movies based ...</a>	
<a href="#">Top 10 paied actor</a>	
<a href="#">Administration</a>	

Top 10 paied actor

Search: Go Actions

Name	Payed
Robert Downey Jr.	100000
Tom Cruise	60000
Tom Cruise	55000
Christian Bale Christian Bale	50000
Heath Ledger	45000
Tom Hanks	40000
Meryl Streep	23000

1 - 7

Release 1.0

Activate Windows  
Go to Settings to activate Windows.

App 162662 Page 71 Session 00 Debug 00 Quick Edit Customize

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:

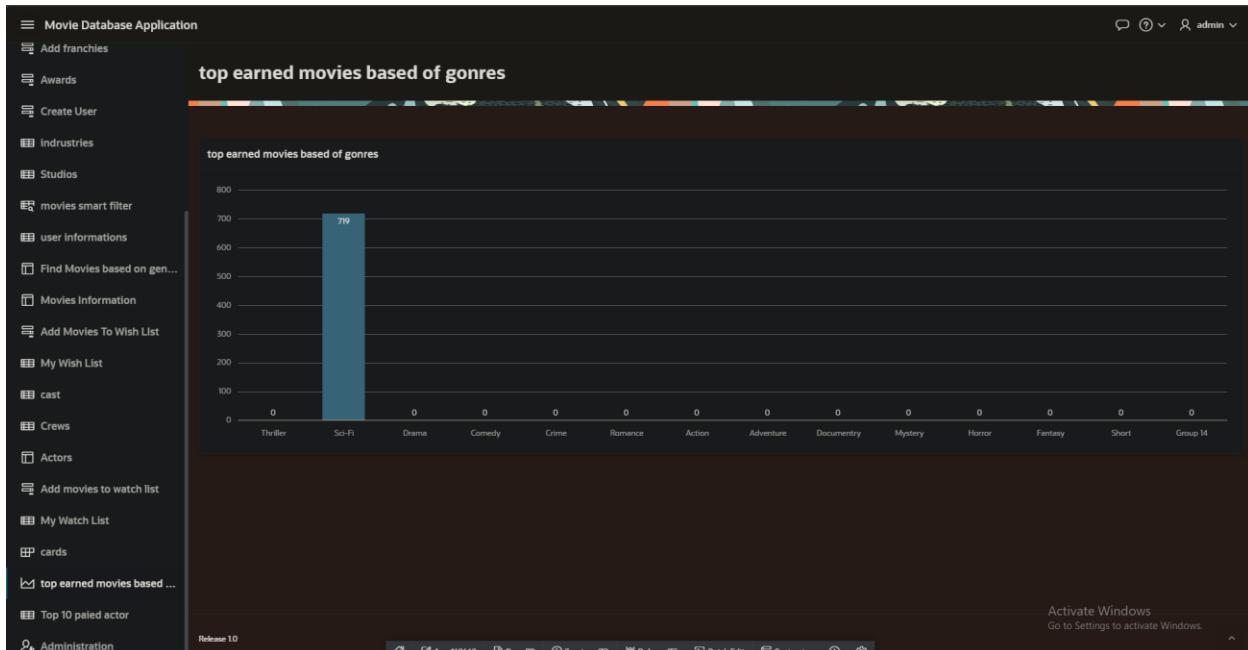


Figure 8.1: earned movies based of genres

## 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:

Title	Duration(min)	Releaseyear	Isadult	Synopsis
Black Panther	154	2,018	0	T'Challa returns to Wakanda to claim his throne but faces threats from a powerful enemy.
Capote	114	2,005	0	A biographical drama about writer Truman Capote and his research for In Cold Blood.
Enter the Dragon	102	1973	0	A martial artist joins a deadly tournament to uncover a criminal organization.
Fast & Furious 7	137	2,015	0	Dominic Toretto and his team face their toughest challenge against a vengeful assassin.
Ghost	127	1990	0	A murdered man's spirit stays to protect his girlfriend, communicating through a psychic.
Good Will Hunting	126	1997	0	The film follows Will Hunting, a genius-level mathematician working as a janitor at MIT, who struggles with his past and his future. A therapist, played by Robin Williams, helps Will navigate his emotions and potential, delivering one of the most touching performances in cinema history.
Rebel Without a Cause	111	1955	0	A troubled teenager struggles to fit in and finds love amidst rebellion.
Some Like It Hot	121	1959	0	Two musicians disguise themselves as women to escape mobsters and find unexpected romance.
Star Wars: A New Hope	121	1977	0	A young farm boy joins a rebellion to destroy an evil empire's superweapon.
Test movies	100	2,001	1	test
The Dark Knight (2008)	152	2,008	0	The Dark Knight follows Batman as he faces his greatest adversary, The Joker, who plunges Gotham into chaos. The Joker's twisted philosophy challenges Batman's moral limits, leading to a gripping and intense battle of wits and will.

Figure 10.1: movies smart filter

Figure 10.2: About page

Figure 10.3: Administration

The screenshot shows a web-based movie database application. On the left, there is a sidebar with a list of navigation items:

- add countries
- Add genres
- Add franchises
- Awards
- Create User
- Industries
- Studios
- movies smart filter
- user informations
- Find Movies based on gen...
- Movies Information
- Add Movies To Wish List
- My Wish List
- cast
- Crews
- Actors
- Add movies to watch list
- My Watch List
- cards**
- Administration

The main area is titled "cards" and has a dropdown menu set to "Releaseyear". It displays a grid of movie cards:

Rank	Title	Year	Description
10	Rebel Without a Cause	1955	A troubled teenager struggles to fit in and finds love amidst rebellion.
10	Some Like It Hot	1959	Two musicians disguise themselves as women to escape mobsters and find unexpected romance.
10	Enter the Dragon	1973	A martial artist joins a deadly tournament to uncover a criminal organization.
10	Star Wars: A New Hope	1977	A young farm boy joins a rebellion to destroy an evil empire's superweapon.
10	Ghost	1990	A murdered man's spirit stays to protect his girlfriend, communicating through a psychic.
10	Good Will Hunting	1997	The film follows Will Hunting, a genius-level mathematician working as a janitor at MIT, who struggles with his past and his future. A therapist, played by Robin Williams, helps Will navigate his emotions and potential, delivering one of the most touching performances in cinema history.
10	Test movies	2001	test
10	Capote	2005	A biographical drama about writer Truman Capote and his research for In Cold Blood.
10	The Dark Knight (2008)	2008	The Dark Knight follows Batman as he faces his greatest adversary, The Joker, who plunges Gotham into chaos. The Joker's twisted philosophy challenges Batman's moral limits, leading to a gripping and intense battle of wits and will.
10	Fast & Furious 7	2015	Dominic Toretto and his team face their toughest challenge against a vengeful assassin.
10	Black Panther	2018	T'Challa returns to Wakanda to claim his throne but faces threats from a powerful enemy.

At the bottom right, there is a message: "Activate Windows Go to Settings to activate Windows."

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!