

Project Step 6: Portfolio Assignment

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URL: <http://flip2.engr.oregonstate.edu:31500/>

Executive Summary

The initial design of our movie database was intended to cater to streaming movie websites, with a primary focus on organizing essential movie data. Key entities included movies, directors, actors, and movie genres. As the project progressed, we shifted our focus towards websites offering detailed movie information, like IMDB.com, leading to the introduction of a "synopsis" entity and refining the properties of existing entities.

Throughout the development process, feedback played a crucial role in identifying flaws in our entity relationships. This led to a better understanding of the movie entity's central role and its many-to-many (M:N) relationships with other entities, except for the synopsis entity. Consequently, we created intersection tables and updated our DDL.sql to reflect these changes.

In implementing the movie database application, we utilized Node.js, Handlebars, and AJAX. Timely feedback from TAs and peers helped us uncover and rectify overlooked errors, enabling the successful execution of Create, Read, Update, and Delete (CRUD) operations for a more reliable and efficient system. One notable challenge was the inability to add data to the 'Cast' table, which we later discovered was due to 'Cast' being a reserved SQL keyword. We resolved this by renaming the table to 'Movie_Cast' and updating the related DDL.sql, DML.sql, schema, database outline, and backend code files.

In summary, our movie database project underwent significant changes from its initial conception, driven by invaluable feedback and realizations along the way. The result is a robust and efficient movie database system tailored to detailed movie information websites.

Project Outline

CinemaNow is a new online database that hosts information related to films, streaming content, and television shows, including details on directors, actors, and genres. Initially conceived as a pet project during the 2020 COVID-19 pandemic, CinemaNow focused on independent and foreign films. However, over the past few years, the platform's growing popularity and significant web traffic have generated substantial revenue, prompting its owners to consider expansion.

Given the competition from platforms like IMDb, the CinemaNow team recognized the need to enhance their service. While they initially relied on Excel to store their data, they have come to appreciate the advantages of using MySQL as a database management system. As a result, they are eager to upgrade their infrastructure to accommodate their expanding scope.

CinemaNow's goal is to hold information on at least 700,000 feature films and 300,000 television shows, capitalizing on the benefits offered by a robust database management system like MySQL. Upgrading to MySQL will enable them to efficiently manage their growing data and maintain a competitive edge in the market.

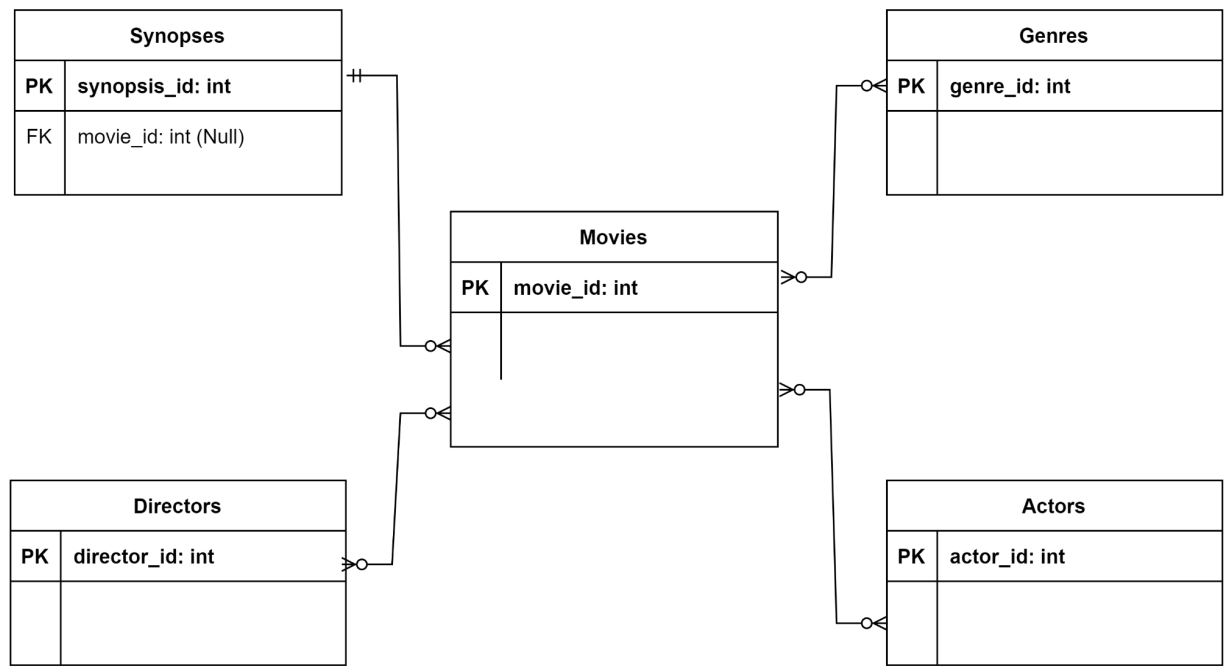
Database Outline

- **Movies** (object) - Information entailing basic film information
 - movie_id: int, auto_increment, unique, not NULL, PK
 - title: varchar(145), not NULL
 - released_year: year, not NULL
 - language: varchar(145), not NULL
 - duration: varchar(145), not NULL
 - rating: decimal(3,1), NULL
 - revenue: bigint NULL
 - Relationship:
 - M:M relationship between Movies and Actors implemented with the use of the Movie_Cast intersection table with movie_id and actor_id used as FK inside it.
 - M:M relationship between Movies and Genres implemented with the use of Movie_genre intersection table with movie_id and genre_id used as FK inside it.
 - M:M relationship between Movies and Directors implemented with the use of Movie_directors intersection table with movie_id and director_id used as FK inside it.
 - 1:M relationship between Movies and Synopses implemented with the use of movie_id as FK inside Synopsis entity.
- **Actors** (object) - Details information about an actor currently in database
 - actor_id: int, auto_increment, unique, not NULL, PK
 - first_name: varchar(145), not NULL
 - last_name: varchar(145), not NULL
 - gender: varchar(145), not NULL
 - birthdate: varchar(10), NULL
 - nationality: varchar(145) NULL
 - biography: text, NULL
 - Relationship:
 - M:M relationship between Movies and Actors implemented with the use of the Movie_Cast intersection table with movie_id and actor_id used as FK inside it.
- **Directors** (object) - Information on a director in our system
 - director_id: int, auto_increment, unique, not NULL, PK
 - first_name: varchar(145), not NULL
 - last_name: varchar(145), not NULL

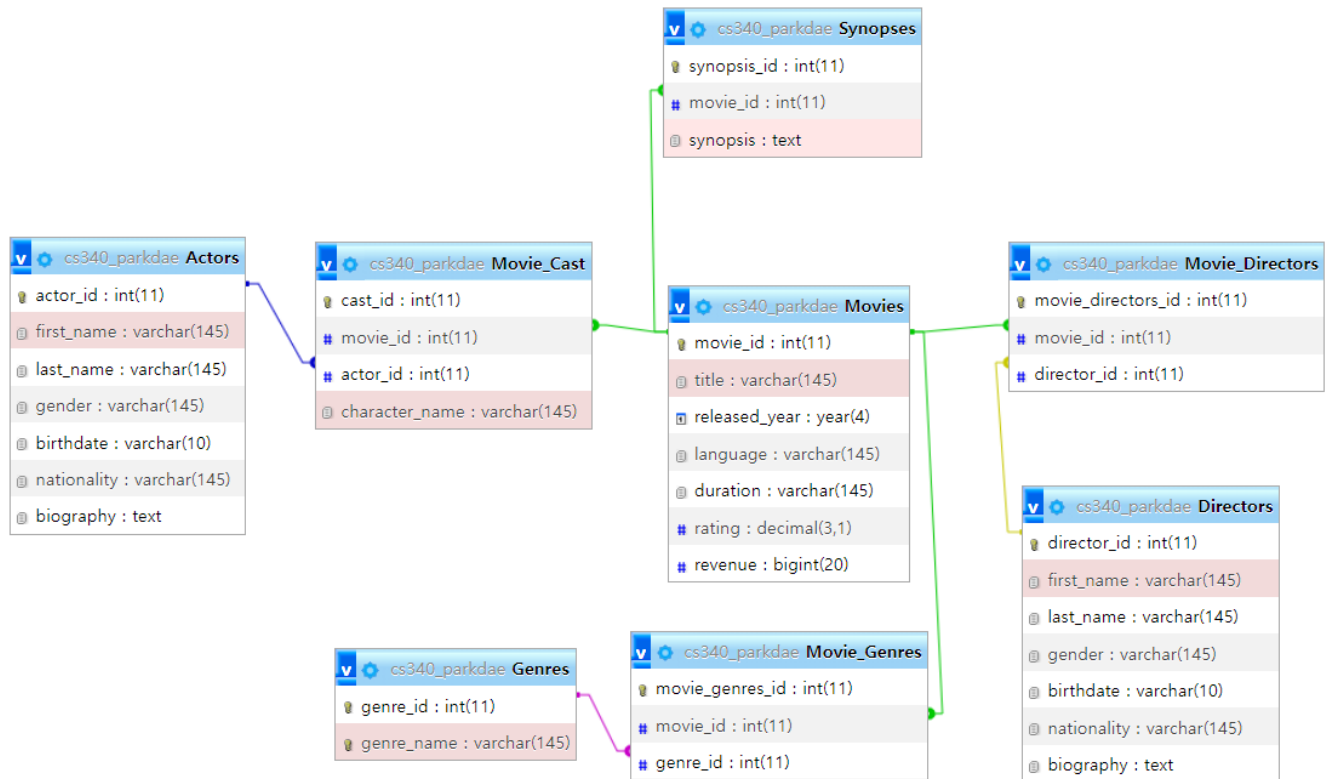
- gender: varchar(145), not NULL
 - birthdate: varchar(10), NULL
 - nationality: varchar(145) NULL
 - biography: text, NULL
 - Relationship:
 - M:M relationship between Movies and Directors implemented with the use of Movie_directors intersection table with movie_id and director_id used as FK inside it.
- **Genres** (category) - A type possible for a movie
 - genre_id: int, auto_increment, unique, not NULL, PK
 - genre_name: varchar(145), not NULL, unique
 - Relationship:
 - M:M relationship between Movies and Genres implemented with the use of Movie_genre intersection table with movie_id and genre_id used as FK inside it.
- **Synopses** - A plot of a movie (Multiple synopses are written before a movie is produced)
 - synopsis_id: int, auto_increment, unique, not NULL, PK
 - synopsis: TEXT, NOT NULL
 - movie_id: Int, NULL, FK from movies
 - Relationship:
 - M:1 relationship between Movies and Synopses implemented with the use of movie_id as FK inside Synopses entity.
- **Movie_Genres** (intersection table) - link movies and genres
 - movie_genres_id: int, auto_increment, unique, not NULL, PK
 - movie_id: int, NOT NULL, FK from movies
 - genre_id: int, NOT NULL, FK from genres
 - Relationship:
 - M:1 relationship between Movie_Genres and Movies implemented with the use of movie_id as FK inside Movie_Genres table.
 - M:1 relationship between Movie_Genres and Genres implemented with the use of genre_id as FK inside Movie_Genres table.
- **Movie_Directors** (intersection table) - link movies and directors
 - movie_directors_id: int, auto_increment, unique, NOT NULL, PK
 - movie_id: int, NOT NULL, FK from movies
 - director_id: int, NOT NULL, FK from directors

- Relationship:
 - M:1 relationship between Movie_Directors and Movies implemented with the use of movie_id as FK inside Movie_Directors table.
 - M:1 relationship between Movie_Directors and Directors implemented with the use of director_id as FK inside Movie_Directors table.
- **Movie_Cast** (intersection table) - link movies and actors
 - cast_id: int, auto_increment, unique, not NULL, PK
 - movie_id: int, NOT NULL, FK from movies
 - actor_id: int, NOT NULL, FK from directors
 - character_name: varchar(145)
 - Relationship:
 - M:1 relationship between Movie_Cast and Movies implemented with the use of movie_id as FK inside Movie_Cast table.
 - M:1 relationship between Movie_Cast and Actors. Implemented with the use of actor_id as FK inside the Movie_Cast table.

Entity-Relationship Diagram



Schema



Sample Data

All tables:

Tables_in_cs340_parkdae
Actors
Directors
Genres
Movie_Cast
Movie_Directors
Movie_Genres
Movies
Synopses

Movies table:

movie_id	title	released_year	language	duration	rating	revenue
1	No Country for Old Men	2007	English, Spanish	02:02:00	8.2	NULL
2	Parasite	2019	Korean	02:12:00	8.5	NULL
3	The Shawshank Redemption	1994	English	02:22:00	9.3	7300000
4	Harry Potter and the Sorcerer's Stone	2001	English	02:32:00	7.6	NULL
5	The Dark Knight	2008	English	02:32:00	9.0	533000000

Synopses table:

synopsis_id	movie_id	synopsis
1	1	Violence and mayhem ensue after a hunter stumbles upon a drug deal gone wrong and more than two million dollars in cash near the Rio Grande
2	2	Greed and class discrimination threaten the newly formed symbiotic relationship between the wealthy Park family and the destitute Kim clan.
3	3	Over the course of several years, two convicts form a friendship, seeking consolation and, eventually, redemption through basic compassion.
4	NULL	No movie yet. asdfasdf asdf asdf asdf asdf asdf
5	5	When the menace known as the Joker wreaks havoc and chaos on the people of Gotham,.....

Actors table:

actor_id	first_name	last_name	gender	birthdate	nationality	biography
1	Javier	Bardem	Male	1969-3-1	Spanin	NULL
2	Kang-ho	Song	Male	1967-1-17	Korea	NULL
3	Tim	Robbins	Male	1958-10-16	United States	NULL
4	Daniel	Radcliffe	Male	1989-7-23	UK	NULL
5	Christian	Bale	Male	1974-1-30	UK	NULL
6	Heath	Ledger	Male	1979-4-4	Australia	NULL

Movie_Cast table:

cast_id	movie_id	actor_id	character_name
1	1	1	Anton Chigurh
2	2	2	Ki-Taek Kim
3	3	3	Andy Dufresne
4	4	4	Harry Potter
5	5	5	Bruce Wayne
6	5	6	Joker

Directors table:

director_id	first_name	last_name	gender	birthdate	nationality	biography
1	Ethan	Coen	Male	1957-09-21	United States	NULL
2	Joel	Coen	Male	1954-11-29	United States	NULL
3	Joon-Ho	Bong	Male	1969-09-14	Korea	NULL
4	Frank	Darabont	Male	1959-01-29	France	NULL
5	Chris	Columbus	Male	1958-9-10	United States	NULL
6	Christopher	Nolan	Male	1970-7-30	England	NULL

Movie_Directors table:

movie_directors_id	movie_id	director_id
1	1	1
2	1	2
3	2	3
4	3	4
5	5	6

Genres table:

genre_id	genre_name
1	Action
2	Adventure
3	Comedy
4	Crime
5	Drama
6	Horror
7	Mystery
8	Romance
9	Sci-Fi
10	Thriller

Movie_Genres table:

movie_genres_id	movie_id	genre_id
1	1	1
2	1	4
3	1	10
4	2	5
5	2	10
6	3	4
7	3	5
8	4	2
9	5	4

UI Screen Shots

Display Home Page:

HomeMoviesDirectorsActorsGenresSynopses

Welcome to my Movie Database

Check out our collection of movies!

title	released_year	genres	director_name	actors	rating	language
Harry Potter and the Sorcerer's Stone	2001	Adventure		Daniel Radcliffe	7.6	English
No Country for Old Men	2007	Action, Crime, Thriller	Ethan Coen, Joel Coen	Javier Bardem	8.2	English, Spanish
Parasite	2019	Drama, Thriller	Joon-Ho Bong	Kang-ho Song	8.5	Korean
The Dark Knight	2008	Crime	Christopher Nolan	Christian Bale, Heath Ledger	9	English
The Shawshank Redemption	1994	Crime, Drama	Frank Darabont	Tim Robbins	9.3	English

Read/Create/Update/Delete Movies Page(1):

HomeMoviesDirectorsActorsGenresSynopses

Movies

List of Movies

movie_id	title	released_year	language	duration	rating	revenue	
1	No Country	2007	English, Spanish	02:02:00	5	0	Delete
2	Parasite	2019	Korean	02:12:00	8.5		Delete
3	The Shawshank Redemption	1994	English	02:22:00	9.3	7300000	Delete
4	Harry Potter and the Sorcerer's Stone	2001	English	02:32:00	7.6		Delete
5	The Dark Knight	2008	English	02:32:00	9	533000000	Delete

Add Movie

Please enter the information below and click submit!

Title:

Released Year (1901 to 2155):

Language:

Duration(hh:mm:ss):

Rating: (0 to 10.0)

Revenue:

Submit

Update Movie

Choose the movie you want to edit by its title,
fill out the information and click submit

Select Movie Title (movie_id):
No Country (1) ▼
Title:
No Country
Released Year (1901 to 2155):
2007
Language:
English, Spanish
Duration(hh:mm:ss):
02:02:00
Rating: (0 to 10.0)
5
Revenue:
0
Submit

Read/Create Directors Page:

[Home](#) [Movies](#) [Directors](#) [Actors](#) [Genres](#) [Synopsis](#)

Directors

Movie Directors

director_id	first_name	last_name	gender	birthdate	nationality	biography
1	Ethan	Coen	Male	09/20/1957	United States	
2	Joel	Coen	Male	11/28/1954	United States	
3	Joon-Ho	Bong	Male	09/13/1969	Korea	
4	Frank	Darabont	Male	01/28/1959	France	
5	Chris	Columbus	Male	09/10/1958	United States	
6	Christopher	Nolan	Male	07/30/1970	England	

Add a Director

Please enter the information and click submit

First Name:

Last Name:

Gender:

Birthdate (YYYY-MM-DD):

Nationality:

Biography

Submit

Read/Create Movie_Directors (in the same page as Directors):

Movie_Directors

List of movies and directors

movie_directors_id	Title	Director
1	No Country	Ethan Coen
2	No Country	Joel Coen
3	Parasite	Joon-Ho Bong
4	The Shawshank Redemption	Frank Darabont
5	The Dark Knight	Christopher Nolan

Add Movie Director

To add a new director with film, please enter their information below and click 'Submit'!

Movie Title
No Country (1) ▼
Director Full Name (director_id)
Ethan Coen (1) ▼
Submit

Read/Create Actors Page:

[Home](#) [Movies](#) [Directors](#) [Actors](#) [Genres](#) [Synopses](#)

Actors

Movie Actors

actor_id	first_name	last_name	gender	birthdate	nationality	biography
1	Javier	Bardem	Male	03/01/1969	Spanin	
2	Kang-ho	Song	Male	01/17/1967	Korea	
3	Tim	Robbins	Male	10/15/1958	United States	
4	Daniel	Radcliffe	Male	07/23/1989	UK	
5	Christian	Bale	Male	01/30/1974	UK	
6	Heath	Ledger	Male	04/04/1979	Australia	

Add Actor

To add a new actor, please enter their information below and click 'Submit'!

First Name:

Last Name:

Gender:

Birthdate (YYYY-MM-DD):

Nationality:

Biography

Submit

Read/Create Movie_Cast (in the same page as Actors):

Movie_Cast

Actors in the movies

cast_id	Movie Title	Actor Full Name	Character Name
1	No Country	Javier Bardem	Anton Chigurh
2	Parasite	Kang-ho Song	Ki-Taek Kim
3	The Shawshank Redemption	Tim Robbins	Andy Dufresne
4	Harry Potter and the Sorcerer's Stone	Daniel Radcliffe	Harry Potter
5	The Dark Knight	Christian Bale	Bruce Wayne
6	The Dark Knight	Heath Ledger	Joker

Add Cast

Choose Movie Title & Actor Name and enter character Name

Movie Title

No Country (1) ▼

Actor Name

Javier Bardem (1) ▼

character name:

Submit

Read/Create Genres Page:

[Home](#) [Movies](#) [Directors](#) [Actors](#) [Genres](#) [Synopses](#)

Genres

genre_id	genre_name
1	Action
2	Adventure
3	Comedy
4	Crime
5	Drama
6	Horror
7	Mystery
8	Romance
9	Sci-Fi
10	Thriller

Add Genre

To add a new genre, please enter the genre name and submit

Genre Name:

Read/Create Movie_Genres (in the same page as Genres)

Movie_Genres

Movie Genres ID	Movie Title	Genre Name
1	No Country	Action
2	No Country	Crime
3	No Country	Thriller
4	Parasite	Drama
5	Parasite	Thriller
6	The Shawshank Redemption	Crime
7	The Shawshank Redemption	Drama
8	Harry Potter and the Sorcerer's Stone	Adventure
9	The Dark Knight	Crime

Add Movie Genre

Choose Movie title and its Genre

Movie Title
No Country ▼
Genre Name
Action ▼
Submit

READ/CREATE/UPDATE Synopses Page(1):

Home Movies Directors Actors Genres Synopses		
Synopses		
synopsis_id	movie_title	synopsis
1	No Country	Violence and mayhem ensue after a hunter stumbles upon a drug deal gone wrong and more than two million dollars in cash near the Rio Grande
2	Parasite	Greed and class discrimination threaten the newly formed symbiotic relationship between the wealthy Park family and the destitute Kim clan.
3	The Shawshank Redemption	Over the course of several years, two convicts form a friendship, seeking consolation and, eventually, redemption through basic compassion.
5	The Dark Knight	When the menace known as the Joker wreaks havoc and chaos on the people of Gotham,.....
4		No movie yet. asdfasdf asdf asdf asdf asdf asdf

READ/CREATE/UPDATE Synopses Page(2):

Add Synopsis

To add a new synopsis, choose the movie title or New, enter the description below and submit.
A movie can have multiple synopses or none.

Select a movie to enter its synopsis:

New Synopsis

Synopsis:

Submit

Update Synopsis

Choose synopsis, choose the movie title, enter the description below and submit

Select a synopsis_id:

No Country (1)

Update the Synopsis:

Choose the movie for this synopsis:

None

Submit