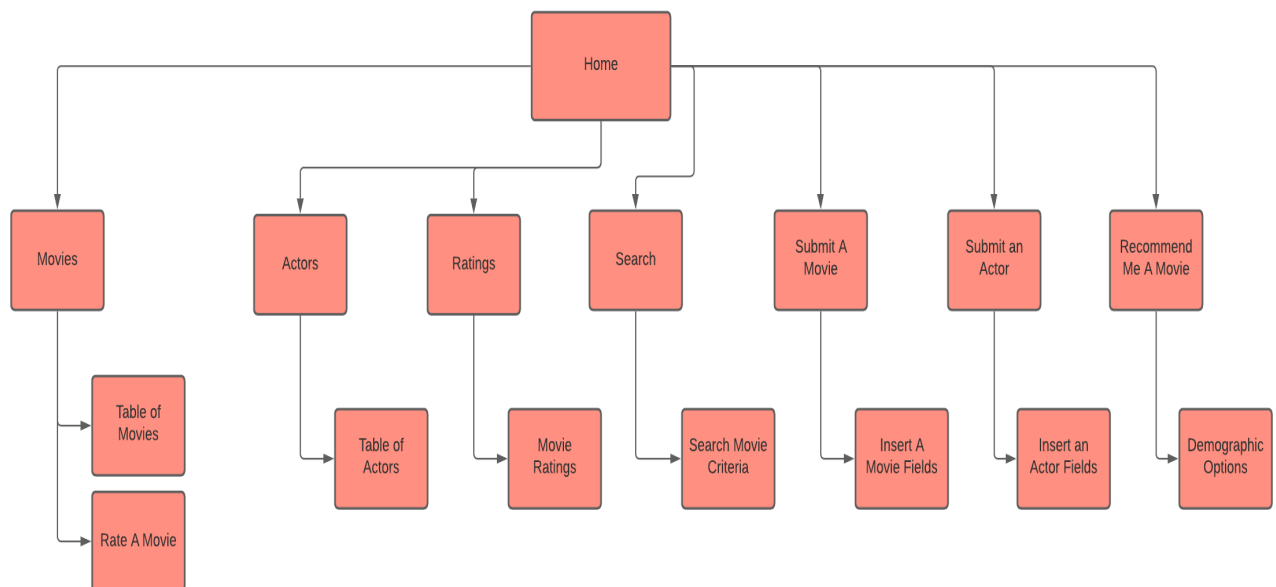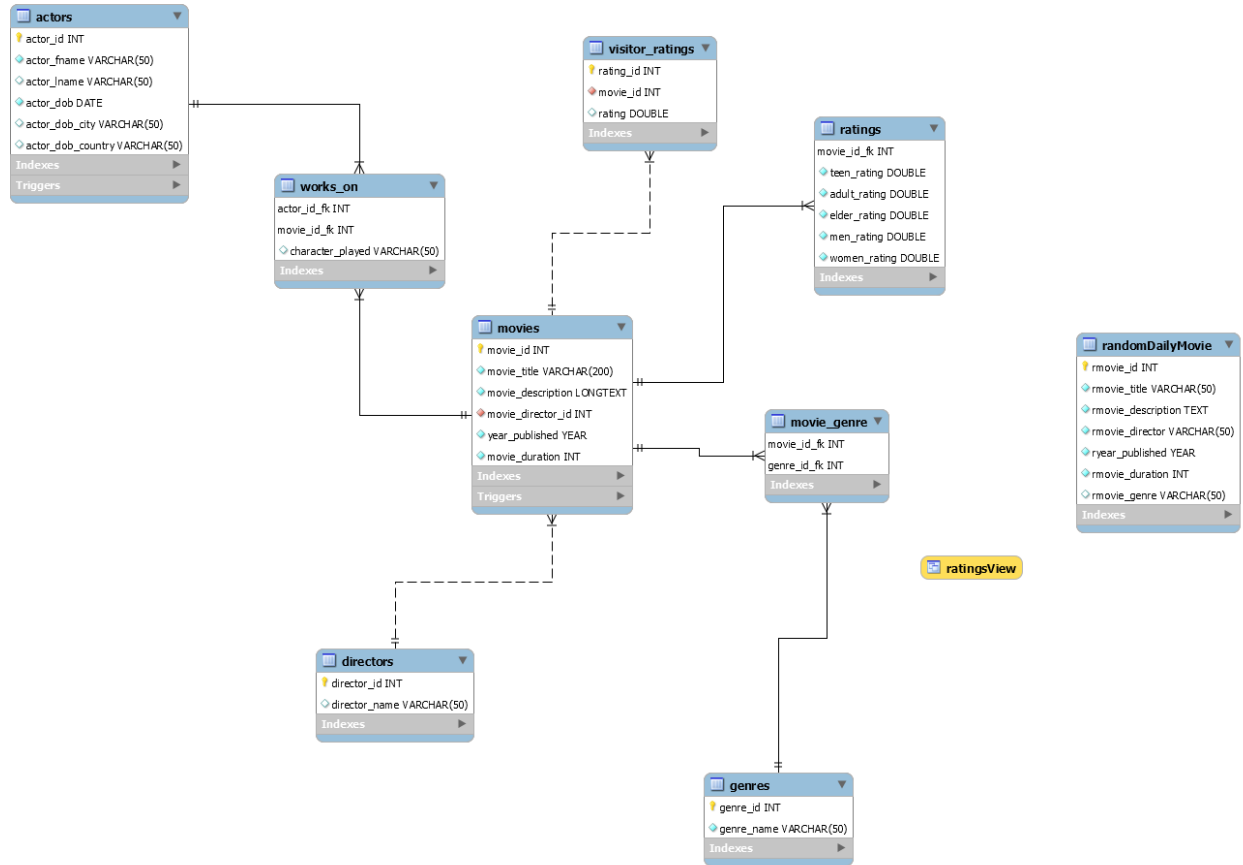## Elevator Pitch:

All Your Databases Are Belong To Us Movie Database, provides you with information about movies. You can insert movies, insert actors, and with our feature to recommend movies based on the ratings, your demographics, and the genre you wish to be recommended. All of this is powered through the community that helps us grow!
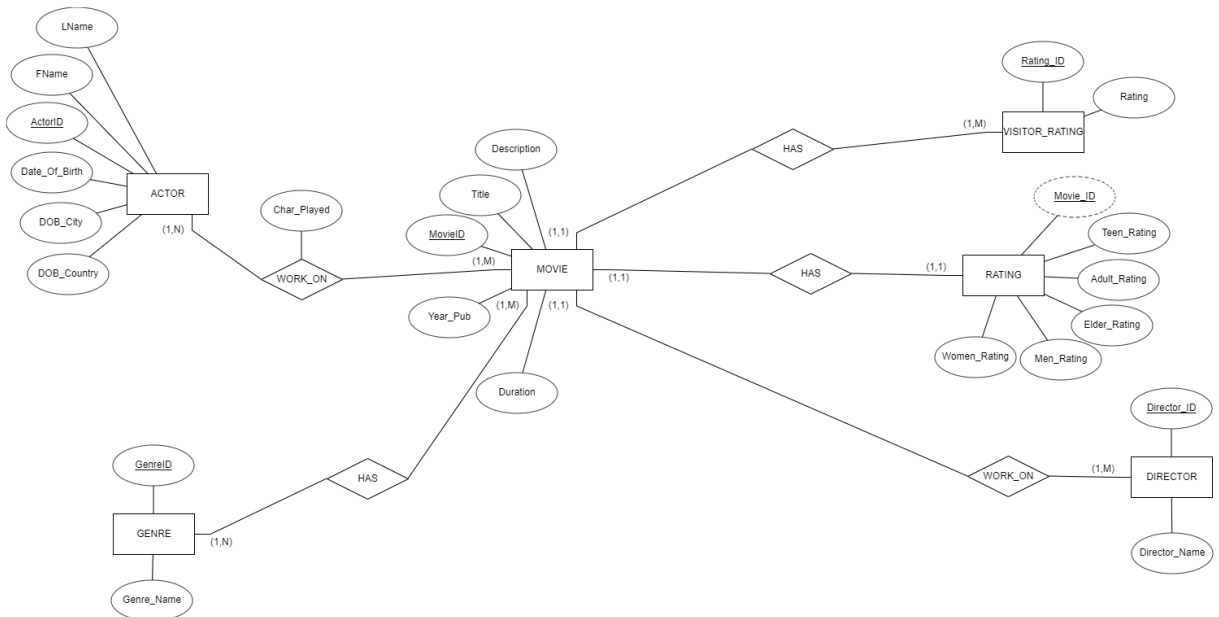
Site Map:

Schema:

actors
- actor_id INT
- actor_fname VARCHAR(50)
- actor_lname VARCHAR(50)
- actor_dob DATE
- actor_dob_city VARCHAR(50)
- actor_dob_country VARCHAR(50)
- Indexes
- Triggers

works_on
- actor_id_fk INT
- movie_id_fk INT
- character_played VARCHAR(50)
- Indexes

visitor_ratings
- rating_id INT
- movie_id INT
- rating DOUBLE
- Indexes

ratings
- movie_id_fk INT
- teen_rating DOUBLE
- adult_rating DOUBLE
- elder_rating DOUBLE
- men_rating DOUBLE
- women_rating DOUBLE
- Indexes

movies
- movie_id INT
- movie_title VARCHAR(200)
- movie_description LONGTEXT
- movie_director_id INT
- year_published YEAR
- movie_duration INT
- Indexes
- Triggers

movie_genre
- movie_id_fk INT
- genre_id_fk INT
- Indexes

randomDailyMovie
- rmovie_id INT
- rmovie_title VARCHAR(50)
- rmovie_description TEXT
- rmovie_director VARCHAR(50)
- ryear_published YEAR
- rmovie_duration INT
- rmovie_genre VARCHAR(50)
- Indexes

directors
- director_id INT
- director_name VARCHAR(50)
- Indexes

genres
- genre_id INT
- genre_name VARCHAR(50)
- Indexes

ratingsView

ER Diagram:

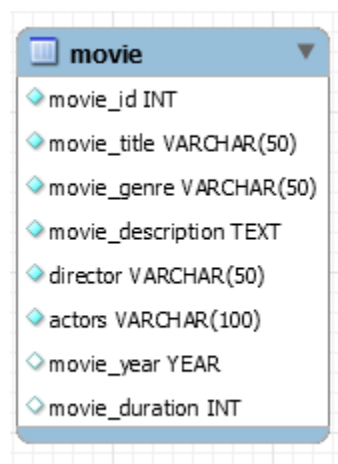## Core Queries:

The Core Queries can be found on:

https://github.com/SamGonChec/470_All_Your_Database_are_belong_to_us/tree/master/470Project/Files/Schema

Normalization:

There were multiple relationships in our database that needed to be normalized. First of all: Actors and Movies, this was a many to many that needed to be normalized. Therefore we developed a junction table that allowed for 1-to-many relationship.

movie_id	movie_title	movie_genre	movie_description	director	actors	movie_year	movie_duration
1	Guardians of the Galaxy	Action,Adventure,Sci-Fi	A group of intergalactic criminals are forced to ...	James Gunn	Chris Pratt, Vin Diesel, Bradley Cooper, Zoe Sal...	2014	121
2	Prometheus	Adventure,Mystery,Sci-Fi	Following clues to the origin of mankind, a team ...	Ridley Scott	Noomi Rapace, Logan Marshall-Green, Michael F...	2012	124
3	Split	Horror,Thriller	Three girls are kidnapped by a man with a diagn...	M. Night Shyamalan	James McAvoy, Anya Taylor-Joy, Haley Lu Rich...	2016	117
4	Sing	Animation,Comedy,Family	In a city of humanoid animals, a hustling theate...	Christophe Lourdelet	Matthew McConaughey,Reese Witherspoon, Se...	2016	108
5	Suicide Squad	Action,Adventure,Fantasy	A secret government agency recruits some of t...	David Ayer	Will Smith, Jared Leto, Margot Robbie, Viola Davis	2016	123
6	The Great Wall	Action,Adventure,Fantasy	European mercenaries searching for black powd...	Yimou Zhang	Matt Damon, Tian Jing, Willem Dafoe, Andy Lau	2016	103
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7	La La Land	Comedy,Drama,Music	A jazz pianist falls for an aspiring actress in Los ...	Damien Chazelle	Ryan Gosling, Emma Stone, Rosemarie DeWitt, ...	2016	128
8	Mindhorn	Comedy	A has-been actor best known for playing the titl...	whom he believes t...	Sean Foley	0	2016
9	The Lost City of Z	Action,Adventure,Biography	A true-life drama, centering on British explorer ...	James Gray	Charlie Hunnam, Robert Pattinson, Sienna Miller...	2016	141
10	Passengers	Adventure,Drama,Romance	A spacecraft traveling to a distant colony plane...	Morten Tyldum	Jennifer Lawrence, Chris Pratt, Michael Sheen,L...	2016	116
11	Fantastic Beasts and W...	Adventure,Family,Fantasy	The adventures of writer Newt Scamander in N...	David Yates	Eddie Redmayne, Katherine Waterston, Alison ...	2016	133
12	Hidden Figures	Biography,Drama,History	The story of a team of female African-American...	Theodore Melfi	Taraji P. Henson, Octavia Spencer, Janelle Mon...	2016	127
13	Rogue One	Action,Adventure,Sci-Fi	The Rebel Alliance makes a risky move to steal t...	Gareth Edwards	Felicity Jones, Diego Luna, Alan Tudyk, Donnie ...	2016	133

movie
- ◆ movie_id INT
- ◆ movie_title VARCHAR(50)
- ◆ movie_genre VARCHAR(50)
- ◆ movie_description TEXT
- ◆ director VARCHAR(50)
- ◆ actors VARCHAR(100)
- ◆ movie_year YEAR
- ◆ movie_duration INT

This was our initial data and it was disorganized. How hard would it be to organize something or get information when the genres are all clumped up together in one, so we decided to fix the other many-to-many relationship between movies and genres by adding a junction table.

Another instance of normalization was the separation of directors from the movie table. This one was not needing a junction table as it was just a one-to-many relationship.

Deficiencies:

There are a couple of deficiencies in our project as we did not have time to address some of them.

First would have to be the enforcing of the information that is being inserted into the database. For example, right now we only recommend that the user inserts YYYY-MM-DD, but there is no way to enforce that using PHP. The information is still inserted even if its wrong, but that means that the birth date would be 0000-00-00 since it was done wrong.

Another deficiency would be the need to improve our security against SQL Injection. Not that our project is vulnerable or anything, but it would be nice to improve the security and make it more flexible to future implementation by adding prepared statements and that would make it secure.

Testing Log:

Expectation	Input	Result
Movie Ratings should only accept doubles, no strings and no commands	'Select * From movies'	Input needs to be a number
Inserting a new movie should not allow for the duplication of a movie	Guardians of The Galaxy	Error, duplicate movie
Inserting an Actor with the same	Chris Pratt, 1979-06-21	Error, duplicate actor

combination of name, last name, and date of birth should be considered a duplicate entry and return error		
Inserting a movie with a director should assign the correct id value of that director as a foreign key	Fantastic Mr. Fox, (Director Wes Anderson)	Inserted movie with the director id as 193 (Wes Anderson)
Inserting information that is not searchable on the search page returns empty	1234	No such result matching
Inserting SQL commands into search box returns error and no matching result	;DROP TABLE visitor_ratings	No such result and table is intact
Inserting SQL commands into actor text box returns error and no matching result	;DROP TABLE visitor_ratings	The database is not affected
Inserting SQL commands into movies text box returns error and no matching result	;DROP TABLE visitor_ratings	The database is not affected

Future Scope: Our project could improve in many ways, that's why not only fixing our deficiencies is part of our future scope but more like:

Implementing a user account where they get to insert demographic information rather than having an open free for all mechanism like we currently have:

Select Your Gender

    Male

Select Your Age Range

    0-25

Select The Genre You Wished Recommended

    Action

Insert

Having an account would make the recommendation only reliant on the genre that the user would like to be recommended.

Second idea for a future scope would be to begin implementing a dynamic page system through javascript. That is, allow for the rows where the movies are listed to expand and show further information about the movie and list the actors for example.

Another would be to store images and attach them to the movie and actors, have pictures of their profiles for an idea on how they look.

This was in our mind all along, the fact that we have two tables for ratings one for user input and the other with ratings based on demographics. We initially made this decision to be able to show both features, since the recommendation feature required a large sample of ratings. That means that in the future we would merge these tables together since with more usage and samples we have more data to recommend our movies.

Lastly, another idea and this was a harder one to implement was to keep storage of movies watched, this would require the expansion of the database by adding another table for watched movies for each user, then adjust the movies recommended to remove movies already watched, that way users always have more movies to watch.