



PART 1: Conceptual Database Design

Doğa Devrim Çelik 2019203000

My reasoning with this ER Diagram:

- Firstly, since every user is either an audience or a director I decided to use the ISA hierarchy to tackle this constraint.
- Since the nationality constraint cannot be shown directly in an attribute in the ER diagram I showed it as a separate entity with a participation constraint.
- I also showed the participation constraint of directors in the rating platform as shown.
- Since every movie is directed by exactly one director but a director can direct many movies I have shown the constraint in the relationship between Movie and Director.
- I have also separated the movie sessions entity given in the assignment to different ones to make relations more easier.
- Since we cant have lists as entities, both predecessors and the genre lists have become separate entities from movie entity.
- Because of the same reason, audience tickets and subscribed platforms are also shown as relations rather than entities.
- Since database managers are said to be independent I have shown them on the corner without any relations.

There are a few constraints I couldn't tackle in this diagram:

- All predecessor movies have to be watched in order to watch a movie.
- A user can rate a movie if they are subscribed to the platform of the movie and if they have bought a ticket to the movie.

Also there are some constraints that are not visible from this diagram which I tackled in the second part:

- Each movie's platform is the same as its directors.
- No two movie sessions can overlap.

PART 2: Logical Database Design

User(username: string, _password: string, _name: string, surname: string)

| username | _password | _name | surname |
|-----------------|------------------|--------------|----------------|
| steven.jobs | apple123 | Steven | Jobs |
| minion.lover | bello387 | Felonius | Gru |
| steve.wozniak | pass4321 | Ryan | Andrews |
| he.gongmin | passwordpass | He | Gongmin |
| carm.galian | madrid9897 | Carmelita | Galiano |
| kron.helene | helenepass | Helene | Kron |
| arzucan.ozgur | deneme123 | Arzucan | Ozgur |
| egemen.isguder | deneme124 | Egemen | Isguder |
| busra.oguzoglu | deneme125 | Busra | Oguzoglu |
| peter.weir | peter weir879 | Peter | Weir |
| kyle.balda | mynameiskyle9 | Kyle | Balda |

Audience(username: string)

| username |
|-----------------|
| steven.jobs |
| minion.lover |
| steve.wozniak |
| arzucan.ozgur |
| egemen.isguder |
| busra.oguzoglu |

Bought_tickets(username: string, session_id: integer)

| username | session_id |
|-----------------|-------------------|
| steven.jobs | 50001 |
| steve.wozniak | 50004 |
| steve.wozniak | 50005 |
| arzucan.ozgur | 50006 |
| egemen.isguder | 50008 |
| egemen.isguder | 50007 |
| egemen.isguder | 50001 |
| egemen.isguder | 50004 |
| busra.oguzoglu | 50009 |

Ratings(*username*:string, *movie_id*: integer, *rating*: float)

| username | movie id | rating |
|----------------|----------|--------|
| egemen.isguder | 20001 | 5 |
| egemen.isguder | 20005 | 5 |
| egemen.isguder | 20006 | 5 |
| arzucan.ozgur | 20004 | 5 |
| busra.oguzoglu | 20007 | 5 |

Subscribed_platforms(*username*: string, *platform_id*: integer)

| username | Platform_id |
|----------------|-------------|
| steven.jobs | 10130 |
| steven.jobs | 10131 |
| steve.wozniak | 10131 |
| arzucan.ozgur | 10130 |
| egemen.isguder | 10132 |
| busra.oguzoglu | 10131 |

Director(*username*: string, *nationality*: string,*platform_id*: integer)

| username | nationality | platform id |
|-------------|-------------|-------------|
| he.gongmin | Turkish | 10130 |
| carm.galian | Turkish | 10131 |
| kron.helene | French | 10130 |
| peter.weir | Spanish | 10131 |
| kyle.balda | German | 10132 |

Rating Platform(*platform_id*: integer, *platform_name*: string)

| platform_id | platform_name |
|--------------------|----------------------|
| 10130 | IMDB |
| 10131 | Letterboxd |
| 10132 | FilmIzle |
| 10133 | Filmora |
| 10134 | BollywoodMDB |

Database Managers(*username*: string, *password*: string)

| username | password |
|-----------------|-----------------|
| manager1 | managerpass1 |
| manager2 | managerpass2 |
| manager35 | managerpass35 |

Movie(*movie_id*: integer, *movie_name*: string, *duration*: integer, *average_rating*: float, *username*: string, *platform_id*: integer)

| movie_id | movie_name | duration | average_rating | username | platform_id |
|-----------------|--------------------------|-----------------|-----------------------|-----------------|--------------------|
| 20001 | Despicable Me | 2 | 5 | kyle.balda | 10132 |
| 20001 | Despicable Me | 2 | 5 | kyle.balda | 10132 |
| 20001 | Despicable Me | 2 | 5 | kyle.balda | 10132 |
| 20002 | Catch Me If You Can | 2 | | he.gongmin | 10130 |
| 20003 | The Bone Collector | 2 | | carm.galian | 10131 |
| 20004 | Eagle Eye | 2 | 5 | kron.helene | 10130 |
| 20005 | Minions: The Rise Of Gru | 1 | 5 | kyle.balda | 10132 |
| 20006 | The Minions | 1 | 5 | kyle.balda | 10132 |
| 20007 | The Truman Show | 3 | 5 | peter.weir | 10131 |

Predecessors(*movie_id*: integer, *predecessor_id*: integer)

| movie_id | predecessor_id |
|-----------------|-----------------------|
| 20005 | 20001 |
| 20005 | 20006 |
| 20006 | 20001 |

Genre_list(*genre_id*: integer, *genre_name*: string)

| genre_id | genre_name |
|-----------------|-------------------|
| 80001 | Animation |
| 80002 | Comedy |
| 80003 | Adventure |
| 80004 | Real Story |
| 80005 | Thriller |
| 80006 | Drama |

Has_Genre(*movie_id*: integer, *genre_id*: integer)

| movie_id | genre_id |
|-----------------|-----------------|
| 20001 | 80001 |
| 20001 | 80002 |
| 20002 | 80003 |
| 20002 | 80004 |
| 20003 | 80005 |
| 20004 | 80003 |
| 20005 | 80001 |
| 20005 | 80002 |
| 20006 | 80001 |
| 20006 | 80002 |
| 20007 | 80002 |
| 20007 | 80006 |

Movie_Sessions(session_id: integer, _date: date, theatre_id: integer, time_slot: integer)

| session_id | theatre_id | time_slot | _date |
|------------|------------|-----------|---------|
| 50001 | 40001 | 1 | 3.15.23 |
| 50002 | 40001 | 3 | 3.15.23 |
| 50003 | 40002 | 1 | 3.15.23 |
| 50004 | 40002 | 3 | 3.15.23 |
| 50005 | 40003 | 1 | 3.16.23 |
| 50006 | 40003 | 3 | 3.16.23 |
| 50007 | 40004 | 1 | 3.16.23 |
| 50008 | 40004 | 3 | 3.16.23 |
| 50009 | 40005 | 1 | 3.16.23 |

Screens_as(movie_id: integer, session_id: integer)

| movie_id | session_id |
|----------|------------|
| 20001 | 50001 |
| 20001 | 50002 |
| 20001 | 50003 |
| 20002 | 50004 |
| 20003 | 50005 |
| 20004 | 50006 |
| 20005 | 50007 |
| 20006 | 50008 |
| 20007 | 50009 |

Theatre(*theatre_id*: integer, *theatre_name*: string, *theatre_capacity*: integer, *theatre_district*: string)

| theatre_id | theatre_name | theatre_capacity | theatre_district |
|-------------------|---------------------|-------------------------|-------------------------|
| 40001 | Sisli 1 | 300 | Sisli |
| 40001 | Sisli 1 | 300 | Sisli |
| 40002 | Sisli 2 | 200 | Sisli |
| 40002 | Sisli 2 | 200 | Sisli |
| 40003 | Besiktas1 | 100 | Besiktas |
| 40003 | Besiktas1 | 100 | Besiktas |
| 40004 | Besiktas2 | 100 | Besiktas |
| 40004 | Besiktas2 | 100 | Besiktas |
| 40005 | Besiktas3 | 500 | Besiktas |