

**At least 6 features' description, their corresponding query template, sampled queries, and expected output:**

1. Searching for movies based on movie attributes

- Query through **TITLE** templates:

```
SELECT * FROM media WHERE originalTitle LIKE
"%GIVEN_TITLE%"
```

- Sample queries:

```
SELECT * FROM media WHERE originalTitle LIKE "%Titanic%"
LIMIT 10
```

- Expected output for production data:

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	tt10703902	Metatitanic	Romance	2018	6.8	17
	tt13328824	The Blind Man Who Did Not Want to ...	Comedy	2021	7.5	1325
	tt15325396	Ship of Dreams: Titanic Movie Diaries	Documentary	2023	<small>HULL</small>	<small>HULL</small>
	tt15437998	Titanic Ocean	Sci-Fi	2021	<small>HULL</small>	<small>HULL</small>
	tt16245004	How The Titanic Became My Lifeboat	Documentary	2021	<small>HULL</small>	<small>HULL</small>
	tt18394428	Titanic 666	Horror	2022	3.3	2332
	tt2006889	The Titanic Disaster	Documentary	2011	7.3	7
	tt21274562	Titanic XXX parody	Comedy	2022	6.8	6
	tt2169432	Titanic: 100 Years On	Documentary	2012	7.1	41
	tt2190221	Cinematic Titanic: War of the Insects	Comedy	2011	7.5	258

- Query through **GENRE** templates:

```
SELECT * FROM media WHERE genre = GIVEN_GENRE
```

- Sample queries:

```
SELECT * FROM media WHERE genre = "Drama" LIMIT 10
```

- Expected output for production:

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	tt0043139	Life of a Beijing Policeman	Drama	2013	7.2	190
	tt0062336	The Tango of the Widower and Its Di...	Drama	2020	6.4	175
	tt0069049	The Other Side of the Wind	Drama	2018	6.7	7731
	tt0146592	Pál Adrienn	Drama	2010	6.7	528
	tt0154039	So Much for Justice!	Drama	2010	4.5	83
	tt0162942	Children of the Green Dragon	Drama	2010	6.9	142
	tt0173042	Premaloka	Drama	2021	7.9	527
	tt0192528	Heaven & Hell	Drama	2018	4.4	131
	tt0194357	Sever, yug, vostok, zapad	Drama	2010	8.8	26
	tt0228802	Mugen ryūkyū tsuru Henrî	Drama	2021	<small>HULL</small>	<small>HULL</small>

- Query through **RATING** templates:

```
SELECT * FROM media WHERE rating >= GIVEN_RATING
```

- Sample queries:

```
SELECT * FROM media WHERE rating >= 8.0 LIMIT 10
```

- Expected output for production data:

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	tt0111596	Vazir	Action	2015	8.1	64
	tt0137204	Joe Finds Grace	Adventure	2017	8.6	290
	tt0144449	Nema aviona za Zagreb	Biography	2012	8.2	8
	tt0164115	Nine Ball	NULL	2023	9.4	13
	tt0176694	The Tragedy of Man	Animation	2011	8.0	1027
	tt0194357	Sever, yug, vostok, zapad	Drama	2010	8.8	26
	tt0211266	Black Star: Autobiography of a Close ...	Documentary	2022	8.4	14
	tt0230212	The Final Journey	Drama	2010	8.9	11
	tt0252316	Chhatrapati Shivaji	Drama	2017	9.0	68
	tt0304681	The Secret Safari	Documentary	2013	8.3	11

- Query through **STARTYEAR** templates:

```
SELECT * FROM media WHERE startYear >= GIVEN_YEAR
ORDER BY startYear DESC
```

- Sample queries:

```
SELECT * FROM media WHERE startYear >= 1997
ORDER BY startYear DESC LIMIT 10
```

- Expected output for production:

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	tt5637536	Avatar 5	Action	2031	NULL	NULL
	tt12827070	Hell's Posse	Western	2030	NULL	NULL
	tt3095356	Avatar 4	Action	2029	NULL	NULL
	tt10275406	The Vampire Bites the Stake	Fantasy	2029	NULL	NULL
	tt26217472	Rajju	Adventure	2029	NULL	NULL
	tt26217400	Aevum	Adventure	2029	NULL	NULL
	tt26421115	Forest Witch	Horror	2028	NULL	NULL
	tt27696374	Agent Owen	Action	2028	NULL	NULL
	tt11448132	Project Valentina	Animation	2027	NULL	NULL
	tt1204976	Monopoly	Adventure	2027	NULL	NULL

## 2. Modify the list of movies

- **ADD** new movies template:

```
INSERT INTO Media Values(givenID, givenTitle,
givenGenre, givenStartYear, givenRating,
givenNumVotes)
```

### Sample query

```
INSERT INTO Media Values("tt00000000", "sample media" ,
"sample genre", 2023, 0.0, 0)
```

### Expected Output for Production

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	tt0000000	sample media	sample genre	2023	0.0	0
	tt0011801	Tötet nicht mehr	Action	2019	NULL	NULL
	tt0013274	Istoriya grazhdanskoy voyny	Documentary	2021	6.8	56
	tt0043139	Life of a Beijing Policeman	Drama	2013	7.2	190
	tt0062336	The Tango of the Widower and ...	Drama	2020	6.4	175
	tt0069049	The Other Side of the Wind	Drama	2018	6.7	7731
	tt0077684	Histórias de Combóios em Portugal	Documentary	2022	NULL	NULL
	tt0097767	Loading Ludwig	NULL	2022	7.0	6
	tt0100275	The Wandering Soap Opera	Comedy	2017	6.5	347
	tt0103788	Bell of Purity Temple	NULL	2023	7.4	56
	tt0104988	Neues in Wittstock	Documentary	2021	7.8	9
	tt0109128	Washed Ashore	Documentary	2023	7.2	29

- **Update StartYear template**

```
UPDATE Media SET startYear = GivenYear WHERE titleID=
GIVEN_ID
```

**Sample query**

```
UPDATE Media SET startYear = 2000 WHERE titleID=
"tt0000000"
```

**Expected Output for Production**

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	tt0000000	sample media	sample genre	2000	0.0	0
	tt0011801	Tötet nicht mehr	Action	2023	NULL	NULL
	tt0013274	Istoriya grazhdanskoy voyny	Documentary	2021	6.8	56
	tt0043139	Life of a Beijing Policeman	Drama	2013	7.2	190
	tt0062336	The Tango of the Widower and ...	Drama	2020	6.4	175
	tt0069049	The Other Side of the Wind	Drama	2018	6.7	7731
	tt0077684	Histórias de Combóios em Portugal	Documentary	2022	NULL	NULL

- **Update originalTitle template**

```
UPDATE Media SET originalTitle = GivenTitle WHERE
titleID = GIVEN_ID
```

**Sample query:**

```
UPDATE Media SET originalTitle = "updated name for
sample media" WHERE titleID = "tt0000000"
```

**Expected Output for Production**

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	tt0000000	updated name for sample media	sample genre	2000	0.0	0
	tt0011801	Tötet nicht mehr	Action	2023	NULL	NULL
	tt0013274	Istoriya grazhdanskoy voyny	Documentary	2021	6.8	56
	tt0043139	Life of a Beijing Policeman	Drama	2013	7.2	190
	tt0062336	The Tango of the Widower and ...	Drama	2020	6.4	175
	tt0069049	The Other Side of the Wind	Drama	2018	6.7	7731
	tt0077684	Histórias de Combóios em Portugal	Documentary	2022	NULL	NULL

- **Update genre template**

```
UPDATE Media SET genre = GivenGenre WHERE titleID =
GIVEN_ID
```

Sample query:

```
UPDATE Media SET genre = "new sample genre" WHERE
titleID = "tt0000000"
```

Expected Output for Production

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	tt0000000	updated name for sample media	new sample genre	2000	0.0	0
	tt0011801	Tötet nicht mehr	Action	2023	NULL	NULL
	tt0013274	Istoriya grazhdanskoy voyny	Documentary	2021	6.8	56
	tt0043139	Life of a Beijing Policeman	Drama	2013	7.2	190
	tt0062336	The Tango of the Widower and ...	Drama	2020	6.4	175
	tt0069049	The Other Side of the Wind	Drama	2018	6.7	7731
	tt0077684	Histórias de Combóios em Portugal	Documentary	2022	NULL	NULL

- **Update rating template**

```
UPDATE Media SET rating = GivenRating WHERE titleID =
GIVEN_ID
```

Sample query:

```
UPDATE Media SET rating = 9.0 WHERE titleID =
"tt0000000"
```

Expected Output for Production

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	tt0000000	updated name for sample media	new sample genre	2000	9.0	0
	tt0011801	Tötet nicht mehr	Action	2023	NULL	NULL
	tt0013274	Istoriya grazhdanskoy voyny	Documentary	2021	6.8	56
	tt0043139	Life of a Beijing Policeman	Drama	2013	7.2	190
	tt0062336	The Tango of the Widower and ...	Drama	2020	6.4	175
	tt0069049	The Other Side of the Wind	Drama	2018	6.7	7731
	tt0077684	Histórias de Combóios em Portugal	Documentary	2022	NULL	NULL

- **Update numVotes template:**

```
UPDATE Media SET numVotes = GivenVote WHERE titleID =
GIVEN_ID
```

**Sample query**

```
UPDATE Media SET numVotes= 1 WHERE titleID =
"tt0000000"
```

**Expected Output for Production**

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	tt0000000	updated name for sample media	new sample genre	2000	9.0	1
	tt0011801	Tötet nicht mehr	Action	2023	NULL	NULL
	tt0013274	Istoriya grazhdanskoy voyny	Documentary	2021	6.8	56
	tt0043139	Life of a Beijing Policeman	Drama	2013	7.2	190
	tt0062336	The Tango of the Widower and ...	Drama	2020	6.4	175
	tt0069049	The Other Side of the Wind	Drama	2018	6.7	7731
	tt0077684	Histórias de Combóios em Portugal	Documentary	2022	NULL	NULL

- **Delete movie template**

```
DELETE FROM Media WHERE titleID = GIVEN_ID
```

**Sample query:**

```
DELETE FROM Media WHERE titleID = "tt0000000"
```

**Expected Output for Production**

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	tt0011801	Tötet nicht mehr	Action	2019	NULL	NULL
	tt0013274	Istoriya grazhdanskoy voyny	Documentary	2021	6.8	56
	tt0043139	Life of a Beijing Policeman	Drama	2013	7.2	190
	tt0062336	The Tango of the Widower and ...	Drama	2020	6.4	175
	tt0069049	The Other Side of the Wind	Drama	2018	6.7	7731
	tt0077684	Histórias de Combóios em Portugal	Documentary	2022	NULL	NULL
	tt0097767	Loading Ludwig	NULL	2022	7.0	6
	tt0100275	The Wandering Soap Opera	Comedy	2017	6.5	347
	tt0103788	Bell of Purity Temple	NULL	2023	7.4	56
	tt0104988	Neues in Wittstock	Documentary	2021	7.8	9
	tt0109128	Washed Ashore	Documentary	2023	7.2	29

### 3. Movie recommendations based on currently viewed movie

- **Query templates:**

```
SELECT * FROM media WHERE genre = GIVEN_VIEWED_GENRE AND
rating >= 8.5 AND titleID <> GIVEN_VIEWED_ID
```

- **Sample queries:**

```
SELECT * FROM media WHERE genre = "Action" AND rating >=
8.5 AND titleID <> "tt0848228" LIMIT 10
```

- Expected output for production:

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	tt10008304	In Our Blood - El Comienzo de Todo, ...	Action	2019	9.0	5
	tt10008602	In Our Blood - Sin Límite, Marc Márquez	Action	2019	9.2	8
	tt10022870	SIUAT Sumanth 3	Action	2016	8.5	14
	tt10041958	In Our Blood - El Legado, Jorge Lore...	Action	2019	9.4	5
	tt10078886	Washington's Armor	Action	2022	9.2	6
	tt10189514	Soorai Pottu	Action	2020	8.7	119829
	tt10314366	Fighting Olympus	Action	2023	8.6	14
	tt10346834	16 Bits	Action	2023	8.6	6
	tt10378660	The Dark Knight: The Ballad of the N ...	Action	2018	9.1	142
	tt10450770	Clinging with Hate	Action	2018	8.8	21

#### 4. View who worked on a movie and their other films

- Query templates:

```
SELECT * FROM Crew
    NATURAL JOIN Produced
    NATURAL JOIN Media
    WHERE RIGHT(CrewID, 9) IN
        (SELECT RIGHT(crewID, 9) FROM Produced
            WHERE titleID = GIVEN_TITLE_ID) AND titleID <>
        GIVEN_TITLE_ID
```

```
SELECT * FROM Role
    NATURAL JOIN PlaysIn
    NATURAL JOIN Media
    WHERE RIGHT(roleID, 9) IN
        (SELECT RIGHT(roleID, 9) FROM PlaysIn
            WHERE titleID = GIVEN_TITLE_ID) AND titleID <>
        GIVEN_TITLE_ID
```

- Sample queries:

```
SELECT * FROM Crew
    NATURAL JOIN Produced
    NATURAL JOIN Media
    WHERE RIGHT(CrewID, 9) IN
        (SELECT RIGHT(crewID, 9) FROM Produced
            WHERE titleID = "tt1399103")
    AND titleID <> "tt1399103" LIMIT 10
```

```
SELECT * FROM Role
    NATURAL JOIN PlaysIn
    NATURAL JOIN Media
    WHERE RIGHT(roleID, 9) IN
        (SELECT RIGHT(roleID, 9) FROM PlaysIn
```

```
WHERE titleID = "tt1399103")
AND titleID <> "tt1399103" LIMIT 10
```

- Expected output for production:

	titleID	crewID	name	role	originalTitle	genre	startYear	rating	numVotes
▶	tt1980209	tt1980209nm0000881	Michael Bay	director	Pain & Gain	Action	2013	6.4	223256
	tt2109248	tt2109248nm0000881	Michael Bay	director	Transformers: Age of Extinction	Action	2014	5.6	323015
	tt3371366	tt3371366nm0000881	Michael Bay	director	Transformers: The Last Knight	Action	2017	5.2	160366
	tt4172430	tt4172430nm0000881	Michael Bay	director	13 Hours	Action	2016	7.3	151301
	tt4998632	tt4998632nm0000881	Michael Bay	director	Ambulance	Action	2022	6.1	84054
	tt8106534	tt8106534nm0000881	Michael Bay	director	6 Underground	Action	2019	6.1	186785

	titleID	roleID	name	characterName	originalTitle	genre	startYear	rating	numVotes
▶	tt1027718	tt1027718nm0479471	Shia LaBeouf	Jake Moore	Wall Street: Money Never Sleeps	Drama	2010	6.2	104785
	tt1055292	tt1055292nm0241049	Josh Duhamel	Eric Messer	Life as We Know It	Comedy	2010	6.5	135730
	tt10788058	tt10788058nm0879085	Tyrese Gibson	Sergeant Warran Crecy	Come Out Fighting	Action	2022	4.7	1316
	tt11161474	tt11161474nm0479471	Shia LaBeouf	Sean	Pieces of a Woman	Drama	2020	7.0	53019
	tt1185416	tt1185416nm0241049	Josh Duhamel	Nick	When in Rome	Comedy	2010	5.5	63562
	tt1196948	tt1196948nm0479471	Shia LaBeouf	Charlie Countryman	Charlie Countryman	Action	2013	6.3	29191
	tt1198156	tt1198156nm0241049	Josh Duhamel	Evan	You're Not You	Drama	2014	7.3	26264
	tt1212450	tt1212450nm0479471	Shia LaBeouf	Jack Bondurant	Lawless	Biography	2012	7.2	247615
	tt13067292	tt13067292nm0879085	Tyrese Gibson	Kyle Snowden	Rogue Hostage	Action	2021	3.4	2575
	tt14037272	tt14037272nm0879085	Tyrese Gibson	Terry Savage	The System	Action	2022	4.1	1002

## 5. Add/remove movie to a personal watchlist

- Query templates:

**Adding a movie to personal watchlist**

```
INSERT INTO Collection(collectionID) VALUES(NULL)
```

```
INSERT INTO HasNotes VALUES(GIVEN_TITLE_ID,
GIVEN_COLLECTION_ID)
```

**Removing a movie from personal watchlist**

```
DELETE FROM Collection WHERE collectionID =
GIVEN_COLLECTION_ID
```

```
DELETE FROM HasNotes WHERE collectionID =
GIVEN_COLLECTION_ID AND titleID = GIVEN_TITLE_ID
```

- Sample queries:

**Add a new movie to watchlist and remove a movie in the watchlist**

```
INSERT INTO Collection(collectionID) VALUES(NULL);
INSERT INTO HasNotes VALUES("tt0011801", 6);
```

```
DELETE FROM Collection WHERE collectionID = 1;
DELETE FROM HasNotes WHERE collectionID = 1 AND titleID =
"tt2582802";
```

- Expected output for production data:

*Before*

Collection relation

	collectionID	notes	isWatched	rating
▶	1	Lorem ipsum dolor sit amet, consecte...	1	7.8
	2	Proin lectus felis, tincidunt vitae lacus ...	1	9.6
	3	Nulla viverra vitae leo vitae hendrerit. ...	0	NULL
	4	Praesent mattis nisl vel enim malesua...	1	4.5
	5	Praesent viverra vitae nibh at varius. ...	0	NULL

HasNotes relation

	titleID	collectionID
▶	tt0780504	5
	tt0816692	3
	tt2582802	1
	tt6751668	2
	tt7784604	4

*After*

Collection relation

	collectionID	notes	isWatched	rating
▶	2	Proin lectus felis, tincidunt vitae lacus ...	1	9.6
	3	Nulla viverra vitae leo vitae hendrerit. ...	0	NULL
	4	Praesent mattis nisl vel enim malesua...	1	4.5
	5	Praesent viverra vitae nibh at varius. ...	0	NULL
	6	NULL	NULL	NULL

HasNotes relation

	titleID	collectionID
▶	tt0011801	6
	tt0780504	5
	tt0816692	3
	tt6751668	2
	tt7784604	4

- Update rating, notes, and mark as watched for a movie in personal watchlist

- Query templates:

View movies in watchlist

```
SELECT * FROM Collection
      NATURAL JOIN HasNotes h
```



```
JOIN Media m ON h.titleID = m.titleID
```

#### Update the rating

```
UPDATE Collection SET rating = GIVEN_RATING WHERE  
collectionID = GIVEN_ID;
```

#### Update the notes

```
UPDATE Collection SET notes = GIVEN_NOTES WHERE  
collectionID = GIVEN_ID;
```

#### Update whether the movie has been watched

```
UPDATE Collection SET isWatched = GIVEN_IS_WATCHED WHERE  
collectionID = GIVEN_ID;
```

#### ○ Sample queries:

##### View movies in watchlist

```
SELECT * FROM Collection  
        NATURAL JOIN HasNotes h  
        JOIN Media m ON h.titleID = m.titleID
```

#### Update the rating

```
UPDATE Collection SET rating = 9.8 WHERE collectionID = 1;
```

#### Update the notes

```
UPDATE Collection SET notes = "Great movie!" WHERE  
collectionID = 2;
```

#### Update whether the movie has been watched

```
UPDATE Collection SET isWatched = true WHERE collectionID  
= 3;
```

#### ○ Expected output for production data:

##### Viewing movies in watchlist

	collectionID	notes	isWatched	rating	titleID	titleID	originalTitle	genre	startYear	rating	numVotes
►	5	Praesent viverra vitae nibh at varius. ...	0	NULL	tt0780504	tt0780504	Drive	Action	2011	7.8	667876
	3	Nulla viverra vitae leo vitae hendrerit. ...	0	NULL	tt0816692	tt0816692	Interstellar	Adventure	2014	8.7	1926303
	1	Lorem ipsum dolor sit amet, consecte...	1	7.8	tt2582802	tt2582802	Whiplash	Drama	2014	8.5	911167
	2	Proin lectus felis, tincidunt vitae lacus ...	1	9.6	tt6751668	tt6751668	Parasite	Drama	2019	8.5	862500
	4	Praesent mattis nisl vel enim malesua...	1	4.5	tt7784604	tt7784604	Hereditary	Drama	2018	7.3	344727

#### *Before updates*

	collectionID	notes	isWatched	rating
▶	1	Lorem ipsum dolor sit amet, consecte...	1	7.8
	2	Proin lectus felis, tincidunt vitae lacus ...	1	9.6
	3	Nulla viverra vitae leo vitae hendrerit. ...	0	NULL
	4	Praesent mattis nisl vel enim malesua...	1	4.5
	5	Praesent viverra vitae nibh at varius. ...	0	NULL

*After updates*

	collectionID	notes	isWatched	rating
▶	1	Lorem ipsum dolor sit amet, consecte...	1	9.8
	2	Great movie!	1	9.6
	3	Nulla viverra vitae leo vitae hendrerit. ...	1	NULL
	4	Praesent mattis nisl vel enim malesua...	1	4.5
	5	Praesent viverra vitae nibh at varius. ...	0	NULL