

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%"
```

- Expected Output for sample data:

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	ttc	Titanic	Romance	1997	9.3	14384

- Query through **GENRE** templates:

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

- Sample queries:

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

- Expected Output for sample:

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	tqf	The Godfather	Drama	1972	9.5	11998
	tsr	The Shawshank Redemption	Drama	1994	9.8	17789

- Query through **RATING** templates:

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

- Sample queries:

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

- Expected Output for sample data:

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	qww	Gone With the Wind	Romance	1939	9.8	10923
	tdk	The Dark Knight	Action	2008	8.7	20912
	tqf	The Godfather	Drama	1972	9.5	11998
	tsr	The Shawshank Redemption	Drama	1994	9.8	17789
	ttc	Titanic	Romance	1997	9.3	14384

- 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
```

- Expected Output for sample:

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	tdk	The Dark Knight	Action	2008	8.7	20912
	ttc	Titanic	Romance	1997	9.3	14384

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("tt0000000", "sample media" ,
"sample genre", 2023, 0.0, 0)
```

Expected Output for Sample

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	aaa	sample media	sample genre	2023	0.0	0
	gww	Gone With the Wind	Romance	1939	9.8	10923
	tdk	The Dark Knight	Action	2008	8.7	20912
	tgf	The Godfather	Drama	1972	9.5	11998
	tsr	The Shawshank Redemption	Drama	1994	9.8	17789
	ttc	Titanic	Romance	1997	9.3	14384

- Update StartYear** template:

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

Sample query:

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

Expected Output for Sample

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	aaa	sample media	sample genre	2000	0.0	0
	gww	Gone With the Wind	Romance	1939	9.8	10923
	tdk	The Dark Knight	Action	2008	8.7	20912
	tgf	The Godfather	Drama	1972	9.5	11998
	tsr	The Shawshank Redemption	Drama	1994	9.8	17789
	ttc	Titanic	Romance	1997	9.3	14384

- 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 = "aaa"
```

Expected Output for Sample

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	aaa	updated name for sample media	sample genre	2000	0.0	0
	gww	Gone With the Wind	Romance	1939	9.8	10923
	tdk	The Dark Knight	Action	2008	8.7	20912
	tgf	The Godfather	Drama	1972	9.5	11998
	tsr	The Shawshank Redemption	Drama	1994	9.8	17789
	ttc	Titanic	Romance	1997	9.3	14384

- **Update genre template:**

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

Sample query:

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

Expected Output for Sample

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	aaa	updated name for sample media	new sample genre	2000	0.0	0
	gww	Gone With the Wind	Romance	1939	9.8	10923
	tdk	The Dark Knight	Action	2008	8.7	20912
	tgf	The Godfather	Drama	1972	9.5	11998
	tsr	The Shawshank Redemption	Drama	1994	9.8	17789
	ttc	Titanic	Romance	1997	9.3	14384

- **Update rating template:**

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

Sample query

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

Expected Output for Sample

	titleID	originalTitle	genre	startYear	rating	numVotes
►	aaa	updated name for sample media	new sample genre	2000	9.0	0
	gww	Gone With the Wind	Romance	1939	9.8	10923
	tdk	The Dark Knight	Action	2008	8.7	20912
	tgf	The Godfather	Drama	1972	9.5	11998
	tsr	The Shawshank Redemption	Drama	1994	9.8	17789
	ttc	Titanic	Romance	1997	9.3	14384

- **Update numVotes template:**

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

Sample query

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

Expected Output for Sample

	titleID	originalTitle	genre	startYear	rating	numVotes
►	aaa	updated name for sample media	new sample genre	2000	9.0	1
	gww	Gone With the Wind	Romance	1939	9.8	10923
	tdk	The Dark Knight	Action	2008	8.7	20912
	tgf	The Godfather	Drama	1972	9.5	11998
	tsr	The Shawshank Redemption	Drama	1994	9.8	17789
	ttc	Titanic	Romance	1997	9.3	14384

- **Delete movie template:**

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

Sample query

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

Expected Output for Sample

	titleID	originalTitle	genre	startYear	rating	numVotes
►	gww	Gone With the Wind	Romance	1939	9.8	10923
	tdk	The Dark Knight	Action	2008	8.7	20912
	tgf	The Godfather	Drama	1972	9.5	11998
	tsr	The Shawshank Redemption	Drama	1994	9.8	17789
	ttc	Titanic	Romance	1997	9.3	14384

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 = "Romance" AND rating >=
8.5 AND titleID <> "ttc"
```

- Expected Output for sample:

	titleID	originalTitle	genre	startYear	rating	numVotes
▶	qww	Gone With the Wind	Romance	1939	9.8	10923

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

- Query templates:

```
SELECT * FROM Crew
    NATURAL JOIN Produced
    NATURAL JOIN Media WHERE crewID IN
    (SELECT crewID FROM Produced WHERE titleID =
    GIVEN_TITLE_ID)
```

```
SELECT * FROM Role
    NATURAL JOIN PlaysIn
    NATURAL JOIN Media WHERE roleID IN
    (SELECT roleID FROM PlaysIn WHERE titleID =
    GIVEN_TITLE_ID)
```

- Sample queries:

```
SELECT * FROM Crew
    NATURAL JOIN Produced
    NATURAL JOIN Media WHERE crewID IN
    (SELECT crewID FROM Produced WHERE titleID = "tgf")
```

```
SELECT * FROM Role
    NATURAL JOIN PlaysIn
    NATURAL JOIN Media WHERE roleID IN
    (SELECT roleID FROM PlaysIn WHERE titleID = "tgf")
```

- Expected Output for sample:

	titleID	crewID	name	role	originalTitle	genre	startYear	rating	numVotes
▶	tgf	ffc	Francis Ford Coppola	Director	The Godfather	Drama	1972	9.5	11998
	titleID	roleID	name	characterName	originalTitle	genre	startYear	rating	numVotes
▶	tgf	2	Al Pacino	Michael Corleone	The Godfather	Drama	1972	9.5	11998
	taf	3	Marlon Brando	Vito Corleone	The Godfather	Drama	1972	9.5	11998

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("gww", 4);
```

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

- Expected output for sample data:

Before

Collection relation

	collectionID	notes	isWatched	rating
▶	1	Pretty good	1	8.9
	2	Good	1	7.6
	3	Boring	0	6.5

HasNotes relation

	titleID	collectionID
▶	tdk	1
	tqf	3
	ttc	2

After

Collection relation

	collectionID	notes	isWatched	rating
▶	2	Good	1	7.6
	3	Boring	0	6.5
	4	NULL	NULL	NULL

Note that notes, isWatched, and rating are NULL until the user modifies them in the watchlist.

HasNotes relation

	titleID	collectionID
▶	gww	4
	tqf	3
	ttc	2

6. 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 sample data:
Viewing movies in watchlist:

	collectionID	notes	isWatched	rating	titleID	titleID	originalTitle	genre	startYear	rating	numVotes
▶	1	Pretty good	1	8.9	tdk	tdk	The Dark Knight	Action	2008	8.7	20912
	3	Boring	0	6.5	tqf	tqf	The Godfather	Drama	1972	9.5	11998
	2	Good	1	7.6	ttc	ttc	Titanic	Romance	1997	9.3	14384

Before updates

Collection relation

	collectionID	notes	isWatched	rating
▶	1	Pretty good	1	8.9
	2	Good	1	7.6
	3	Boring	0	6.5

After updates

Collection relation

	collectionID	notes	isWatched	rating
▶	1	Pretty good	1	9.8
	2	Great movie!	1	7.6
	3	Boring	1	6.5