C. Consider the schema for Movie Database:

        ACTOR (*Act_id, Act_Name, Act_Gender*)
        DIRECTOR (*Dir_id, Dir_Name, Dir_Phone*)
        MOVIES (*Mov_id, Mov_Title, Mov_Year, Mov_Lang, Dir_id*)
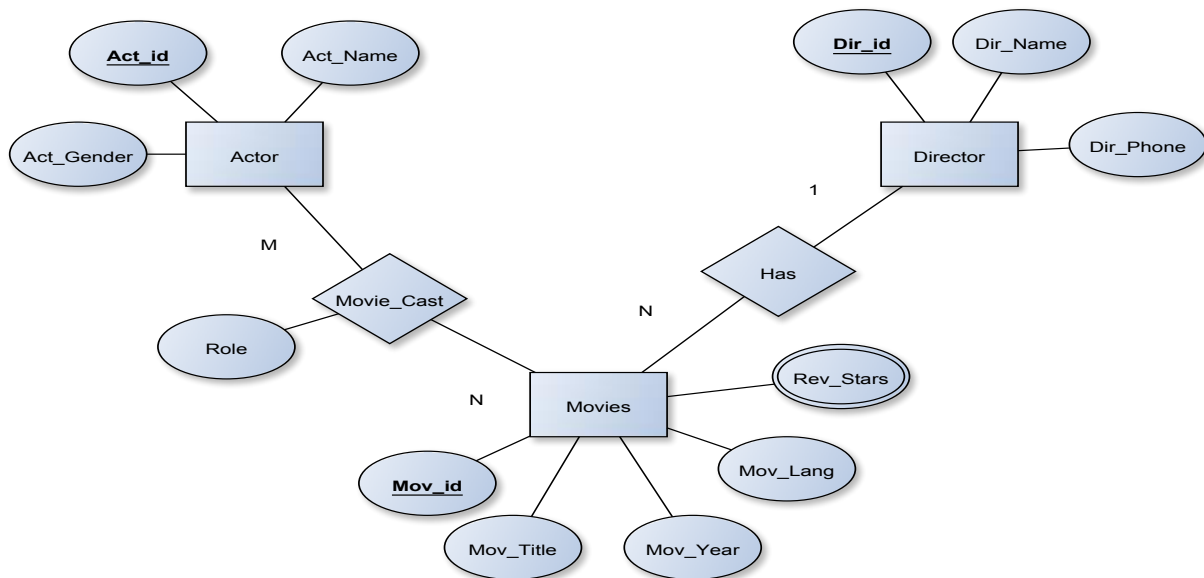   **MOVIE_CAST (*Act_id, Mov_id, Role*)**
        RATING (*Mov_id, Rev_Stars*)

Write SQL queries to
1. **List the titles of all movies directed by 'Hitchcock'.**
2. **Find the movie names where one or more actors acted in two or more movies.**
3. **List all actors who acted in a movie before 2000 and also in a movie after 2015 (use JOIN operation).**
4. **Find the title of movies and number of stars for each movie that has at least one rating and find the highest number of stars that movie received. Sort the result by movie title.**
5. **Update rating of all movies directed by 'Steven Spielberg' to 5.**

Solution:

Entity-Relationship Diagram

Schema Diagram

Actor

Act_id	*Act_Name*	*Act_Gender*

Director

Dir_id	*Dir_Name*	*Dir_Phone*

Movies

Mov_id	*Mov_Title*	*Mov_Year*	*Mov_Lang*	*Dir_id*

Movie_Cast

Act_id	***Mov_id***	*Role*

Rating

Mov_id	*Rev_Stars*

Table Creation

CREATE TABLE ACTOR (
ACT_ID NUMBER (3),
ACT_NAME VARCHAR (20),
ACT_GENDER CHAR (1),
PRIMARY KEY (ACT_ID));

CREATE TABLE DIRECTOR (
DIR_ID NUMBER (3),
DIR_NAME VARCHAR (20),
DIR_PHONE NUMBER (10),
PRIMARY KEY (DIR_ID));

CREATE TABLE MOVIES (
MOV_ID NUMBER (4),
MOV_TITLE VARCHAR (25),
MOV_YEAR NUMBER (4),
MOV_LANG VARCHAR (12),
DIR_ID NUMBER (3),
PRIMARY KEY (MOV_ID),
FOREIGN KEY (DIR_ID) REFERENCES DIRECTOR (DIR_ID));

CREATE TABLE MOVIE_CAST (
ACT_ID NUMBER (3),
MOV_ID NUMBER (4),
ROLE VARCHAR (10),
PRIMARY KEY (ACT_ID, MOV_ID),
FOREIGN KEY (ACT_ID) REFERENCES ACTOR (ACT_ID),
FOREIGN KEY (MOV_ID) REFERENCES MOVIES (MOV_ID));

CREATE TABLE RATING (
MOV_ID NUMBER (4),
REV_STARS VARCHAR (25),
PRIMARY KEY (MOV_ID),
FOREIGN KEY (MOV_ID) REFERENCES MOVIES (MOV_ID));

Table Descriptions

DESC ACTOR;

```
SQL> DESC ACTOR;
 Name                                      Null?    Type
 ----------------------------------------- -------- ---------------------------
 ACT_ID                                    NOT NULL NUMBER(3)
 ACT_NAME                                           VARCHAR2(20)
 ACT_GENDER                                         CHAR(1)
```

DESC DIRECTOR;

```
SQL> DESC DIRECTOR;
 Name                                      Null?    Type
 ----------------------------------------- -------- ---------------------------
 DIR_ID                                    NOT NULL NUMBER(3)
 DIR_NAME                                           VARCHAR2(20)
 DIR_PHONE                                          NUMBER(10)
```

DESC MOVIES;

```
SQL> DESC MOVIES;
 Name                                      Null?    Type
 ----------------------------------------- -------- ---------------------------
 MOV_ID                                    NOT NULL NUMBER(4)
 MOV_TITLE                                          VARCHAR2(25)
 MOV_YEAR                                           NUMBER(4)
 MOV_LANG                                           VARCHAR2(12)
 DIR_ID                                             NUMBER(3)
```

DESC MOVIE_CAST;

```
SQL> DESC MOVIE_CAST;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ACT_ID                                    NOT NULL NUMBER(3)
 MOV_ID                                    NOT NULL NUMBER(4)
 ROLE                                               VARCHAR2(10)
```

DESC RATING;

```
SQL> DESC RATING;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 MOV_ID                                    NOT NULL NUMBER(4)
 REV_STARS                                          VARCHAR2(25)
```

Insertion of Values to Tables

INSERT INTO ACTOR VALUES (301,'ANUSHKA','F');
INSERT INTO ACTOR VALUES (302,'PRABHAS','M');
INSERT INTO ACTOR VALUES (303,'PUNITH','M');
INSERT INTO ACTOR VALUES (304,'JERMY','M');

INSERT INTO DIRECTOR VALUES (60,'RAJAMOULI', 8751611001);
INSERT INTO DIRECTOR VALUES (61,'HITCHCOCK', 7766138911);
INSERT INTO DIRECTOR VALUES (62,'FARAN', 9986776531);
INSERT INTO DIRECTOR VALUES (63,'STEVEN SPIELBERG', 8989776530);

INSERT INTO MOVIES VALUES (1001,'BAHUBALI-2', 2017, 'TELAGU', 60);
INSERT INTO MOVIES VALUES (1002,'BAHUBALI-1', 2015, 'TELAGU', 60);
INSERT INTO MOVIES VALUES (1003,'AKASH', 2008, 'KANNADA', 61);
INSERT INTO MOVIES VALUES (1004,'WAR HORSE', 2011, 'ENGLISH', 63);

INSERT INTO MOVIE_CAST VALUES (301, 1002, 'HEROINE');
INSERT INTO MOVIE_CAST VALUES (301, 1001, 'HEROINE');
INSERT INTO MOVIE_CAST VALUES (303, 1003, 'HERO');
INSERT INTO MOVIE_CAST VALUES (303, 1002, 'GUEST');
INSERT INTO MOVIE_CAST VALUES (304, 1004, 'HERO');

INSERT INTO RATING VALUES (1001, 4);
INSERT INTO RATING VALUES (1002, 2);

INSERT INTO RATING VALUES (1003, 5);
INSERT INTO RATING VALUES (1004, 4);

SELECT * FROM ACTOR;

```
SQL> SELECT * FROM ACTOR;

    ACT_ID ACT_NAME           A
---------- ------------------ -
       301 ANUSHKA            F
       302 PRABHAS            M
       303 PUNITH             M
       304 JERMY              M
```

SELECT * FROM DIRECTOR;

```
SQL> SELECT * FROM DIRECTOR;

    DIR_ID DIR_NAME            DIR_PHONE
---------- ------------------ ----------
        60 RAJAMOULI          8751611001
        61 HITCHCOCK          7766138911
        62 FARAN              9986776531
        63 STEVEN SPIELBERG   8989776530
```


SELECT * FROM MOVIES;

```
SQL> SELECT * FROM MOVIES;

    MOV_ID MOV_TITLE                  MOV_YEAR MOV_LANG        DIR_ID
---------- -------------------------- -------- ----------- ----------
      1001 BAHUBALI-2                     2017 TELAGU          60
      1002 BAHUBALI-1                     2015 TELAGU          60
      1003 AKASH                          2008 KANNADA         61
      1004 WAR HORSE                      2011 ENGLISH         63
```


SELECT * FROM MOVIE_CAST;

```
SQL> SELECT * FROM MOVIE_CAST;

    ACT_ID     MOV_ID ROLE
---------- ---------- ----------
       301       1002 HEROINE
       301       1001 HEROINE
       303       1003 HERO
       303       1002 GUEST
       304       1004 HERO
```

SELECT * FROM RATING;

```
SQL> SELECT * FROM RATING;

    MOV_ID REV_STARS
---------- ------------------------
      1001 4
      1002 2
      1003 5
      1004 4
```

Queries:

1. **List the titles of all movies directed by 'Hitchcock'.**

>   SELECT MOV_TITLE
>   FROM MOVIES
>   WHERE DIR_ID IN (SELECT DIR_ID
>   FROM DIRECTOR
>   WHERE DIR_NAME = 'HITCHCOCK');

```
    MOV_TITLE
    ------------------------
    AKASH
```

2. **Find the movie names where one or more actors acted in two or more movies.**

>   SELECT MOV_TITLE
>   FROM MOVIES M, MOVIE_CAST MV
>   WHERE M.MOV_ID=MV.MOV_ID AND ACT_ID IN (SELECT ACT_ID
>   FROM MOVIE_CAST GROUP BY ACT_ID
>   HAVING COUNT (ACT_ID)>1)
>   GROUP BY MOV_TITLE
>   HAVING COUNT (*)>1;

```
    MOV_TITLE
    ------------------------
    BAHUBALI-1
```

3. **List all actors who acted in a movie before 2000 and also in a movie after 2015 (use JOIN operation).**

>   SELECT ACT_NAME, MOV_TITLE, MOV_YEAR

FROM ACTOR A
JOIN MOVIE_CAST C
        ON A.ACT_ID=C.ACT_ID
JOIN MOVIES   M
        ON C.MOV_ID=M.MOV_ID
WHERE M.MOV_YEAR NOT BETWEEN 2000 AND 2015;

OR

SELECT A.ACT_NAME, A.ACT_NAME, C.MOV_TITLE, C.MOV_YEAR
FROM ACTOR A, MOVIE_CAST B, MOVIES C
WHERE A.ACT_ID=B.ACT_ID
AND B.MOV_ID=C.MOV_ID
AND C.MOV_YEAR NOT BETWEEN 2000 AND 2015;

```
ACT_NAME               MOV_TITLE                    MOV_YEAR
--------------------   ------------------------     ----------
ANUSHKA                BAHUBALI-2                         2017
```

4. **Find the title of movies and number of stars for each movie that has at least one rating and find the highest number of stars that movie received. Sort the result by movie title.**

SELECT MOV_TITLE, MAX (REV_STARS)
FROM MOVIES
INNER JOIN RATING USING (MOV_ID)
GROUP BY MOV_TITLE
HAVING MAX (REV_STARS)>0
ORDER BY MOV_TITLE;

```
MOV_TITLE                 MAX(REV_STARS)
----------------------    ------------------------
AKASH                     5
BAHUBALI-1                2
BAHUBALI-2                4
WAR HORSE                 4
```

5. Update rating of all movies directed by 'Steven Spielberg' to 5

KL

        UPDATE RATING

        SET REV_STARS=5

        WHERE MOV_ID IN (SELECT MOV_ID FROM MOVIES

                    WHERE DIR_ID IN (SELECT DIR_ID

                          FROM DIRECTOR

                          WHERE DIR_NAME = 'STEVEN

                SPIELBERG'));

```
SQL> SELECT * FROM RATING;

    MOV_ID REV_STARS
---------- ------------------------
      1001 4
      1002 2
      1003 5
      1004 5
```