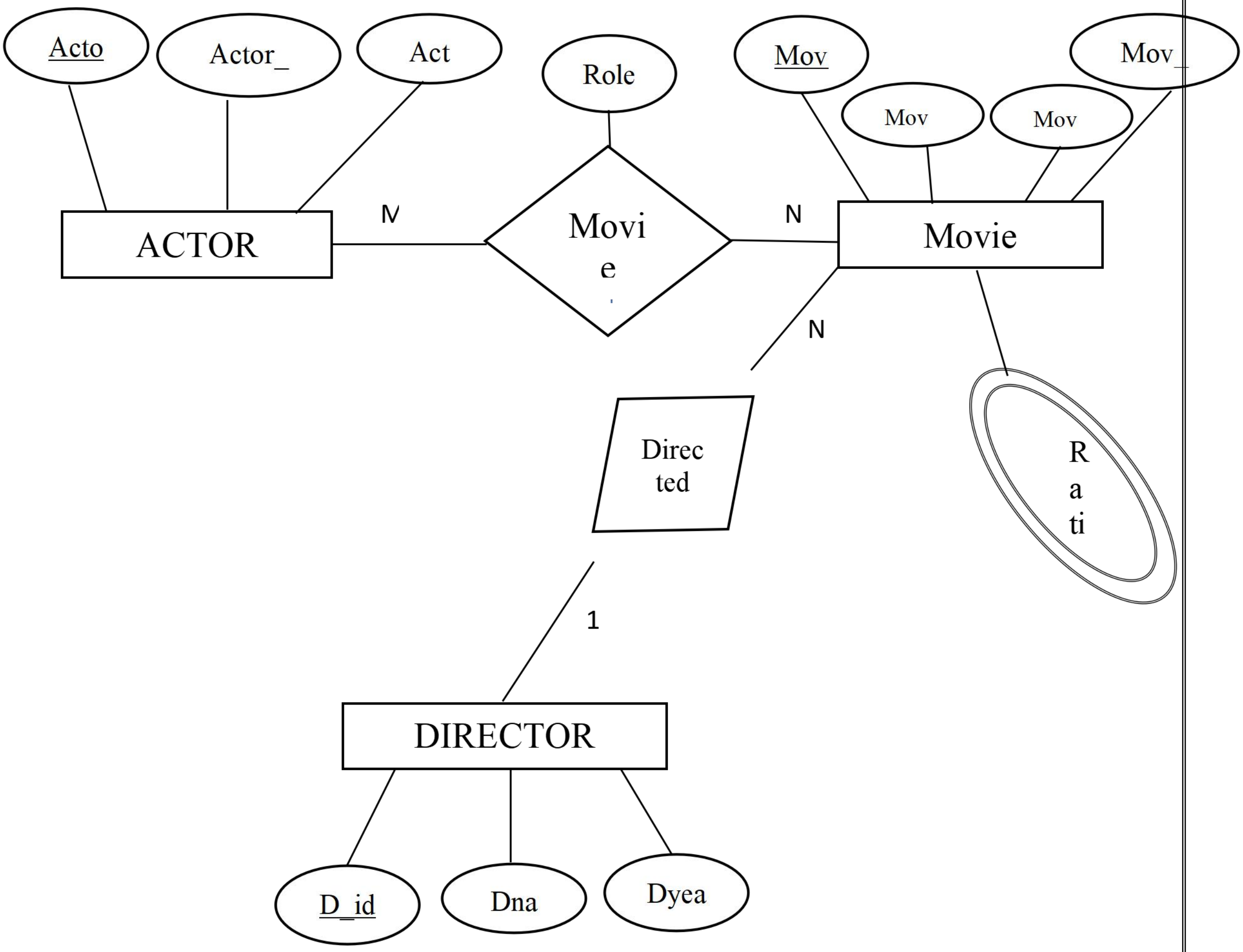
3. Consider the schema for Movie Database:

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)



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

CREATE TABLE DIRECTOR(
DIR_ID NUMBER (3),
DIR_NAME VARCHAR (20),
DIR_PHONE NUMBER (10),
CONSTRAINT PKDI 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),
CONSTRAINT PKMV PRIMARY KEY(MOV_ID),
CONSTRAINT FKMV FOREIGN KEY(DIR_ID) REFERENCES DIRECTOR(DIR_ID));

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

CREATE TABLE RATING (
MOV_ID NUMBER (4),
REV_STARS INTEGER,
CONSTRAINT FKRA FOREIGN KEY(MOV_ID) REFERENCES MOVIES(MOV_ID));

INSERT INTO ACTOR VALUES (301,'ANUSHKA','F');
INSERT INTO ACTOR VALUES (302,'PRABHAS','M');
INSERT INTO ACTOR VALUES (303,'ARAVIND','M');
INSERT INTO ACTOR VALUES (304,'JERMY','M');
INSERT INTO ACTOR VALUES (305,'KIM NEWMEN','M');

SQL> SELECT * FROM ACTOR;

    ACT_ID      ACT_NAME              ACT_G
----------      --------------------  --------
     301        ANUSHKA                   F
     302        PRABHAS                   M
     303        ARAVIND                   M
     304        JERMY                     M
     305        KIM NEWMEN                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 DIRECTOR VALUES (64,'MAHESH', 8989776539);


SQL> SELECT * FROM DIRECTOR;

    DIR_ID      DIR_NAME              DIR_PHONE
----------      --------------------  ----------
        60      RAJAMOULI             8751611001
        61      HITCHCOCK             7766138911
        62      FARAN                 9986776531
        63      STEVEN SPIELBERG      8989776530
        64      MAHESH                8989776539

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,'PSYCHO', 2008, 'ENGLISH', 61);
INSERT INTO MOVIES VALUES (1004,'WAR HORSE', 2011, 'ENGLISH', 63);
INSERT INTO MOVIES VALUES (1005,'LAST BUS', 2016, 'KANNADA', 64);
INSERT INTO MOVIES VALUES (1006,'THE BIRDS', 2011, 'ENGLISH', 61);
INSERT INTO MOVIES VALUES (1007,'TITANIC', 2012, 'ENGLISH', 63);

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      PSYCHO                       2008          ENGLISH          61
     1004      WAR HORSE                    2011          ENGLISH          63
     1005      LAST BUS                     2016          KANNADA          64
     1006      THE BIRDS                    2011          ENGLISH          61
     1007      TITANIC                      2012          ENGLISH          63

INSERT INTO MOVIE_CAST VALUES (301, 1002, 'HEROINE');
INSERT INTO MOVIE_CAST VALUES (301, 1001, 'HEROINE');
INSERT INTO MOVIE_CAST VALUES (303, 1005, 'HERO');
INSERT INTO MOVIE_CAST VALUES (302, 1002, 'HERO');
INSERT INTO MOVIE_CAST VALUES (302, 1001, 'HERO');
INSERT INTO MOVIE_CAST VALUES (304, 1004, 'HERO');
INSERT INTO MOVIE_CAST VALUES (305, 1005, 'HERO');
INSERT INTO MOVIE_CAST VALUES (305, 1007, 'HERO');

SQL> SELECT * FROM MOVIE_CAST;

   ACT_ID    MOV_ID ROLE
----------        -------------------
      301         1002     HEROINE
      301         1001    HEROINE
      303         1005     HERO
      302         1002    HERO
      302         1001     HERO
      304         1004    HERO
      305         1005    HERO
      305         1007    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);
INSERT INTO RATING VALUES (1005, 3);
INSERT INTO RATING VALUES (1006, 8);
INSERT INTO RATING VALUES (1007, 0);
INSERT INTO RATING VALUES (1001, 2);
INSERT INTO RATING VALUES (1002, 5);

SQL> SELECT * FROM RATING;

   MOV_ID REV_STARS
---------- ----------
     1001          4
     1001          2
     1002          2
     1002          5
     1003          5
     1004          4
     1005          3
     1006          8
     1007          0
```

Queries:

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

```
        SELECT M.MOV_TITLE
        FROM MOVIES M,DIRECTOR D
        WHERE M.DIR_ID=D.DIR_ID AND  D.DIR_NAME = 'HITCHCOCK';
```

OUTPUT:

```
MOV_TITLE
------------------------
PSYCHO
THE BIRDS
```

1. **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;
```

OUTPUT:

```
MOV_TITLE
------------------------
BAHUBALI-1
BAHUBALI-2
LAST BUS
```

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

```
SELECT A.ACT_NAME
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;
```

OUTPUT:

```
ACT_NAME
--------------------
ANUSHKA
PRABHAS
ARAVIND
KIM NEWMEN
```

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;
```

OUTPUT:

```
MOV_TITLE                    MAX(REV_STARS)
------------------------          --------------
BAHUBALI-1                          5
BAHUBALI-2                          4
LAST BUS                            3
PSYCHO                              5
THE BIRDS                           8
WAR HORSE                           4
```

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

```
UPDATE RATING
SET REV_STARS=5
WHERE MOV_ID IN (SELECT M.MOV_ID FROM MOVIES M,DIRECTOR D
                 WHERE M.DIR_ID=D.DIR_ID AND
                    D.DIR_NAME = 'STEVEN SPIELBERG');
```

```
BEFORE UPDATING
-------------
 SQL> SELECT * FROM RATING;

   MOV_ID       REV_STARS
----------      ----------
     1001          4
     1002          2
     1003          5
     1004          4 <-------
     1005          3
     1006          8
     1007          0 <-------
     1001          2
     1002          5
```

```
AFTER UPDATING
--------------
SQL> SELECT * FROM RATING;
```

```
    MOV_ID        REV_STARS
----------        ----------
      1001           4
      1002           2
      1003           5
      1004           5 <-------
      1005           3
      1006           8
      1007           5 <-------
      1001           2
      1002           5
```