1. **Create Database project_movie_data and deploy table data according to ER diagram.**

```
create database project_movie_data;

use project_movie_data;
```

2. **Create 9 tables which are presented in ER model and load the data with their foreign key and primary key values.**

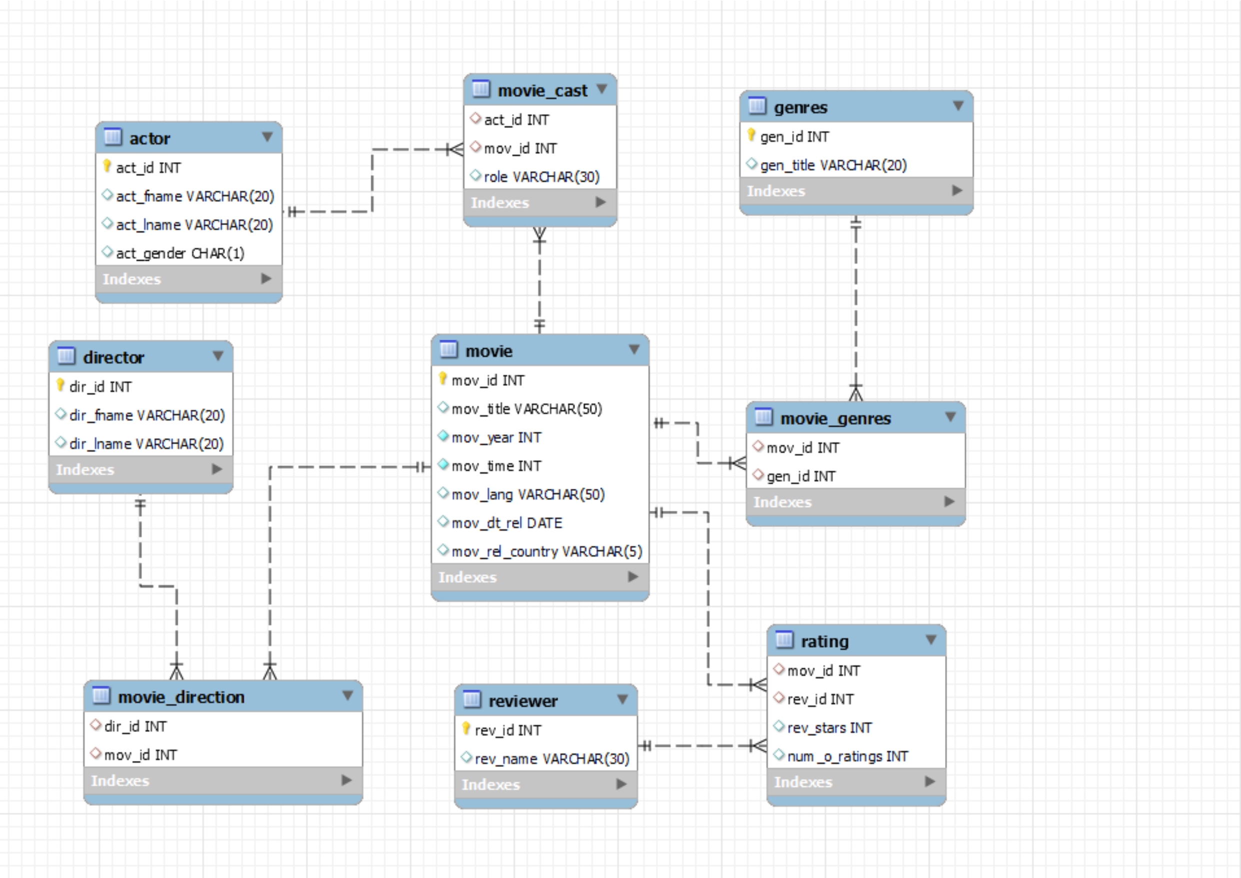
```
create table actor(
act_id int primary key,
act_fname varchar(20),
act_lname varchar(20),
act_gender char(1)
);

INSERT INTO actor (act_id, act_fname, act_lname, act_gender) VALUES
(101, 'James', 'Stewart', 'M'),
(102, 'Deborah', 'Kerr', 'F'),
(103, 'Peter', 'OToole', 'M'),
(104, 'Robert', 'De Niro', 'M'),
(105, 'F. Murray', 'Abraham', 'M'),
(106, 'Harrison', 'Ford', 'M'),
(107, 'Nicole', 'Kidman', 'F'),
(108, 'Stephen', 'Baldwin', 'M'),
(109, 'Jack', 'Nicholson', 'M'),
(110, 'Mark', 'Wahlberg', 'M'),
(111, 'Woody', 'Allen', 'M'),
(112, 'Claire', 'Danes', 'F'),
(113, 'Tim', 'Robbins', 'M'),
(114, 'Kevin', 'Spacey', 'M'),
(115, 'Kate', 'Winslet', 'F'),
(116, 'Robin', 'Williams', 'M'),
(117, 'Jon', 'Voight', 'M'),
(118, 'Ewan', 'McGregor', 'M'),
(119, 'Christian', 'Bale', 'M'),
(120, 'Maggie', 'Gyllenhaal', 'F'),
(121, 'Dev', 'Patel', 'M'),
(122, 'Sigourney', 'Weaver', 'F'),
(123, 'David', 'Aston', 'M'),
(124, 'Ali', 'Astin', 'F');
```

```
-- ---------------------------------------------------------------------------------------------------------------
create table movie(
mov_id int primary key,
mov_title varchar(50),
mov_year int not null,
mov_time int not null,
mov_lang varchar(50),
mov_dt_rel date,
mov_rel_country varchar(5)
);


INSERT INTO movie (mov_id, mov_title, mov_year, mov_time, mov_lang, mov_dt_rel,
mov_rel_country) VALUES
(901, 'Vertigo', 1958, 128, 'English', '1958-08-24', 'UK'),
(902, 'The Innocents', 1961, 100, 'English', '1962-02-19', 'SW'),
(903, 'Lawrence of Arabia', 1962, 216, 'English', '1962-12-11', 'UK'),
(904, 'The Deer Hunter', 1978, 183, 'English', '1979-03-08', 'UK'),
(905, 'Amadeus', 1984, 160, 'English', '1985-01-07', 'UK'),
(906, 'Blade Runner', 1982, 117, 'English', '1982-09-09', 'UK'),
(907, 'Eyes Wide Shut', 1999, 159, 'English', '0000-00-00', 'UK'),
(908, 'The Usual Suspects', 1995, 106, 'English', '1995-08-25', 'UK'),
(909, 'Chinatown', 1974, 130, 'English', '1974-08-09', 'UK'),
(910, 'Boogie Nights', 1997, 155, 'English', '1998-02-16', 'UK'),
(911, 'Annie Hall', 1977, 93, 'English', '1977-04-20', 'USA'),
(912, 'Princess Mononoke', 1997, 134, 'Japanese', '2001-10-19', 'UK'),
(913, 'The Shawshank Redemption', 1994, 142, 'English', '1995-02-17', 'UK'),
(914, 'American Beauty', 1999, 122, 'English', '0000-00-00', 'UK'),
(915, 'Titanic', 1997, 194, 'English', '1998-01-23', 'UK'),
(916, 'Good Will Hunting', 1997, 126, 'English', '1998-06-03', 'UK'),
(917, 'Deliverance', 1972, 109, 'English', '1982-10-05', 'UK'),
(918, 'Trainspotting', 1996, 94, 'English', '1996-02-23', 'UK'),
(919, 'The Prestige', 2006, 130, 'English', '2006-11-10', 'UK'),
(920, 'Donnie Darko', 2001, 113, 'English', '0000-00-00', 'UK'),
(921, 'Slumdog Millionaire', 2008, 120, 'English', '2009-01-09', 'UK'),
(922, 'Aliens', 1986, 137, 'English', '1986-08-29', 'UK'),
(923, 'Beyond the Sea', 2004, 118, 'English', '2004-11-26', 'UK'),
(924, 'Avatar', 2009, 162, 'English', '2009-12-17', 'UK'),
(925, 'Braveheart', 1995, 178, 'English', '1995-09-08', 'UK'),
(926, 'Seven Samurai', 1954, 207, 'Japanese', '1954-04-26', 'JP'),
(927, 'Spirited Away', 2001, 125, 'Japanese', '2003-09-12', 'UK'),
(928, 'Back to the Future', 1985, 116, 'English', '1985-12-04', 'UK');




-- ---------------------------------------------------------------------------------------------------------------
```

```
create table movie_cast(
act_id int,
mov_id int,
role varchar(30),
foreign key(act_id) references actor(act_id),
foreign key(mov_id) references movie(mov_id)
);

INSERT INTO movie_cast (act_id, mov_id, role) VALUES
(101, 901, 'John Scottie Ferguson'),
(102, 902, 'Miss Giddens'),
(103, 903, 'T.E. Lawrence'),
(104, 904, 'Michael'),
(105, 905, 'Antonio Salieri'),
(106, 906, 'Rick Deckard'),
(107, 907, 'Alice Harford'),
(108, 908, 'McManus'),
(110, 910, 'Eddie Adams'),
(111, 911, 'Alvy Singer'),
(112, 912, 'San'),
(113, 913, 'Andy Dufresne'),
(114, 914, 'Lester Burnham'),
(115, 915, 'Rose DeWitt Bukater'),
(116, 916, 'Sean Maguire'),
(117, 917, 'Ed'),
(118, 918, 'Renton'),
(120, 920, 'Elizabeth Darko'),
(121, 921, 'Older Jamal'),
(122, 922, 'Ripley'),
(114, 923, 'Bobby Darin'),
(109, 909, 'J.J. Gittes'),
(119, 919, 'Alfred Borden');


-- -------------------------------------------------------------------------------------------------------------------
create table director(
dir_id int primary key,
dir_fname varchar(20),
dir_lname varchar(20)
);

INSERT INTO director (dir_id, dir_fname, dir_lname) VALUES
(201, 'Alfred', 'Hitchcock'),
(202, 'Jack', 'Clayton'),
(203, 'David', 'Lean'),
(204, 'Michael', 'Cimino'),
(205, 'Milos', 'Forman'),
(206, 'Ridley', 'Scott'),
(207, 'Stanley', 'Kubrick'),
(208, 'Bryan', 'Singer'),
(209, 'Roman', 'Polanski'),
(210, 'Paul', 'Thomas Anderson'),
(211, 'Woody', 'Allen'),
(212, 'Hayao', 'Miyazaki'),
(213, 'Frank', 'Darabont'),
(214, 'Sam', 'Mendes'),
(215, 'James', 'Cameron'),
(216, 'Gus', 'Van Sant'),
(217, 'John', 'Boorman'),
(218, 'Danny', 'Boyle'),
(219, 'Christoph', 'Nolan'),
(220, 'Richard', 'Kelly'),
(221, 'Kevin', 'Spacey'),
(222, 'Andrei', 'Tarkovsky'),
(223, 'Peter', 'Jackson');


-- ------------------------------------------------------------------------------------------------------------------
create table movie_direction(
dir_id int,
mov_id int,
foreign key(dir_id) references director(dir_id),
foreign key(mov_id) references movie(mov_id)
);

INSERT INTO movie_direction (dir_id, mov_id) VALUES
(201, 901),
(202, 902),
(203, 903),
(204, 904),
(205, 905),
(206, 906),
(207, 907),
(208, 908),
(209, 909),
(210, 910),
(211, 911),
(212, 912),
(213, 913),
(214, 914),
(215, 915),
(216, 916),
(217, 917),
(218, 918),
(219, 919),
(220, 920),
(218, 921),
(215, 922),
(221, 923);
```

```
-- -------------------------------------------------------------------------------------------------------------
create table reviewer(
rev_id int primary key,
rev_name varchar(30)
);

INSERT INTO reviewer(rev_id,rev_name) values
('9001','Righty Sock'),
('9002','Jack Malvern'),
('9003','Flagrant Baronessa'),
('9004','Alec Shaw'),
('9005',''),
('9006','Victor Woeltjen'),
('9007','Simon Wright'),
('9008','Neal Wruck'),
('9009','Paul Monks'),
('9010','Mike Salvati'),
('9011',''),
('9012','Wesley S.Walker'),
('9013','Sasha Goldshtein'),
('9014','Josh Cates'),
('9015','Krug Stillo'),
('9016','Scott LeBrun'),
('9017','Hannah Steele'),
('9018','Vincent Cadena'),
('9019','Brandt Sponseller'),
('9020','Richard Adams');

-- -------------------------------------------------------------------------------------------------------------
create table genres(
gen_id int primary key,
gen_title varchar(20)
);

INSERT INTO genres (gen_id, gen_title) VALUES
(1001, 'Action'),
(1002, 'Adventure'),
(1003, 'Animation'),
(1004, 'Biography'),
(1005, 'Comedy'),
(1006, 'Crime'),
(1007, 'Drama'),
(1008, 'Horror'),
(1009, 'Music'),
(1010, 'Mystery'),
(1011, 'Romance'),
(1012, 'Thriller'),
(1013, 'War');

-- -------------------------------------------------------------------------------------------------------------
```

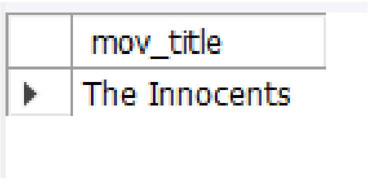
```
create table movie_genres(
mov_id int,
gen_id int,
foreign key(gen_id) references genres(gen_id),
foreign key(mov_id) references movie(mov_id)
);

INSERT INTO movie_genres (mov_id, gen_id) VALUES
(922, 1001),
(917, 1002),
(903, 1002),
(912, 1003),
(911, 1005),
(908, 1006),
(913, 1006),
(926, 1007),
(928, 1007),
(918, 1007),
(921, 1007),
(902, 1008),
(923, 1009),
(907, 1010),
(927, 1010),
(901, 1010),
(914, 1010),
(906, 1012),
(904, 1013);

-- -----------------------------------------------------------------------------------------------------------------
create table rating(
mov_id int,
rev_id int,
rev_stars int,
num_o_ratings int,
foreign key(rev_id) references reviewer(rev_id),
foreign key(mov_id) references movie(mov_id)
);

INSERT INTO rating (mov_id, rev_id, rev_stars, num_o_ratings) VALUES
(901, 9001, '8.4', 263575),
(902, 9002, '7.9', 20207),
(903, 9003, '8.3', 202778),
(906, 9005, '8.2', 484746),
(924, 9006, '7.3', 0),
(908, 9007, '8.6', 779489),
(909, 9008, '0', 227235),
(910, 9009, '3', 195961),
(911, 9010, '8.1', 203875),
(912, 9011, '8.4', 0),
(915, 9001, '7.7', 830095),
(914, 9013, '7', 862618),
(916, 9014, '4', 642132),
(925, 9015, '7.7', 81328),
(918, 9016, '0', 580301),
(920, 9017, '8.1', 609451),
(921, 9018, '8', 667758),
(922, 9019, '8.4', 511613),
(923, 9020, '6.7', 13091);
```



3. Write a query in SQL to list the Horror movies?

```
select mov_title from movie m
inner join movie_genres mg on m.mov_id = mg.mov_id
inner join genres g on g.gen_id = mg.gen_id
where gen_title = 'Horror';
```

Result:

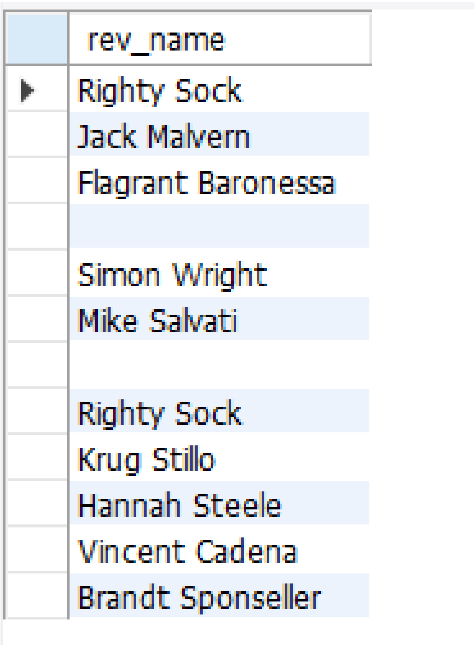


mov_title
The Innocents

4. Write a query in SQL to find the name of all reviewers who have rated 8 or more stars?

```
select re.rev_name from reviewer re
inner join rating ra on re.rev_id = ra.rev_id
where ra.rev_stars >= 8;
```

Result:

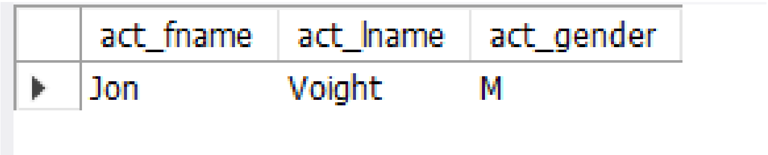


rev_name
Righty Sock
Jack Malvern
Flagrant Baronessa
Simon Wright
Mike Salvati
Righty Sock
Krug Stillo
Hannah Steele
Vincent Cadena
Brandt Sponseller

5. **Write a query in SQL to list all the information of the actors who played a role in the movie 'Deliverance'**

```
select act_fname,act_lname,act_gender from movie m
inner join movie_cast mc on m.mov_id = mc.mov_id
inner join actor a on mc.act_id = a.act_id
where mov_title = 'Deliverance';
```

Result:

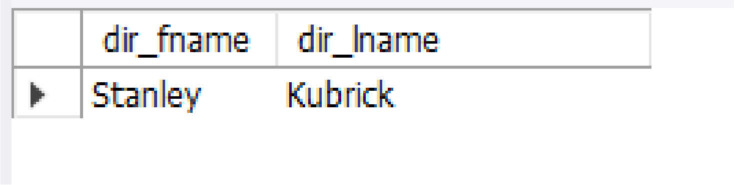


	act_fname	act_lname	act_gender
▶	Jon	Voight	M

6. **Write a query in SQL to find the name of the director (first and last names) who directed a movie that casted a role for 'Eyes Wide Shut'. (using subquery)**

```
SELECT dir_fname, dir_lname FROM  director d
natural join  movie_direction md
natural join movie_cast mc
where act_id in
(select act_id from movie m
natural join movie_cast mc
natural join actor a
WHERE role IS  NOT NULL
and mov_title='Eyes Wide Shut');
```

Result:

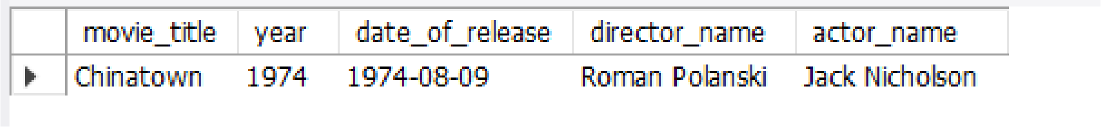


	dir_fname	dir_lname
▶	Stanley	Kubrick

7. **Write a query in SQL to find the movie title, year, date of release, director and actor for those movies which reviewer is 'Neal Wruck'**

```
select m.mov_title as movie_title, m.mov_year as year, m.mov_dt_rel as date_of_release,
concat(d.dir_fname,' ',d.dir_lname) as director_name , concat(a.act_fname,' ',a.act_lname) as
actor_name from movie m
inner join movie_cast mc on m.mov_id = mc.mov_id
inner join actor a on mc.act_id = a.act_id
inner join movie_direction md on m.mov_id = md.mov_id
inner join director d on md.dir_id = d.dir_id
where m.mov_id in
(select mov_id from reviewer re
inner join rating ra on re.rev_id = ra.rev_id
where rev_name = 'Neal Wruck');
```

Result:

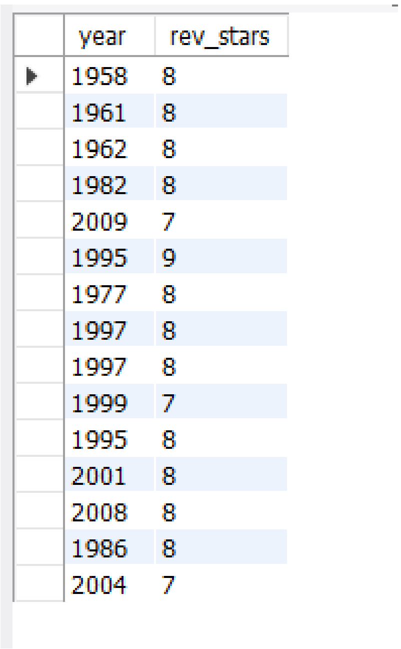


	movie_title	year	date_of_release	director_name	actor_name
▶	Chinatown	1974	1974-08-09	Roman Polanski	Jack Nicholson

8. **Write a query in SQL to find all the years which produced at least one movie and that received a rating of more than 4 stars.**

```
select m.mov_year as year,r.rev_stars from movie m
inner join rating r on m.mov_id = r.mov_id
and r.rev_stars > 4;
```

Result:

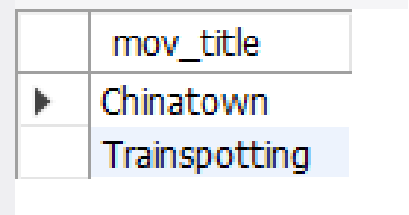


year	rev_stars
1958	8
1961	8
1962	8
1982	8
2009	7
1995	9
1977	8
1997	8
1997	8
1999	7
1995	8
2001	8
2008	8
1986	8
2004	7

9. **Write a query in SQL to find the name of all movies who have rated their ratings with a NULL value**

```
select mov_title from movie m
inner join rating r on m.mov_id = r.mov_id
where r.rev_stars = 0;
```

Result:

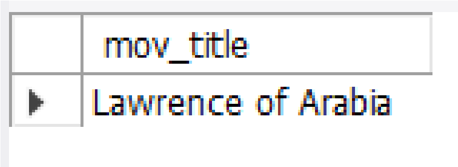


mov_title
Chinatown
Trainspotting

10. Write a query in SQL to find the name of movies who were directed by 'David'

```
select mov_title from movie m
inner join movie_direction md on m.mov_id = md.mov_id
inner join director d on md.dir_id = d.dir_id
where dir_fname = 'David';
```

Result:

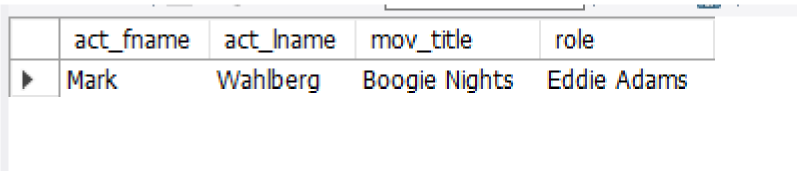


	mov_title
▶	Lawrence of Arabia

11. Write a query in SQL to list the first and last names of all the actors who were cast in the movie 'Boogie Nights', and the roles they played in that production.

```
select a.act_fname, a.act_lname, m.mov_title, mc.role from actor a
inner join movie_cast mc on a.act_id = mc.act_id
inner join movie m on mc.mov_id = m.mov_id
where mov_title = 'Boogie Nights';
```

Result:

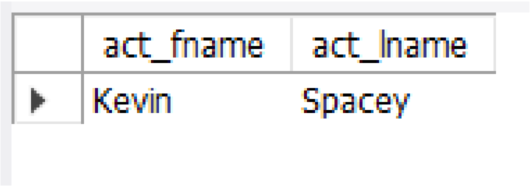


	act_fname	act_lname	mov_title	role
▶	Mark	Wahlberg	Boogie Nights	Eddie Adams

12. Find the name of the actor who have worked in more than one movie.

```
select act_fname,act_lname from actor
where act_id in (SELECT act_id
FROM movie_cast GROUP BY act_id
HAVING COUNT(act_id) > 1 );
```

Result:



	act_fname	act_lname
▶	Kevin	Spacey