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)

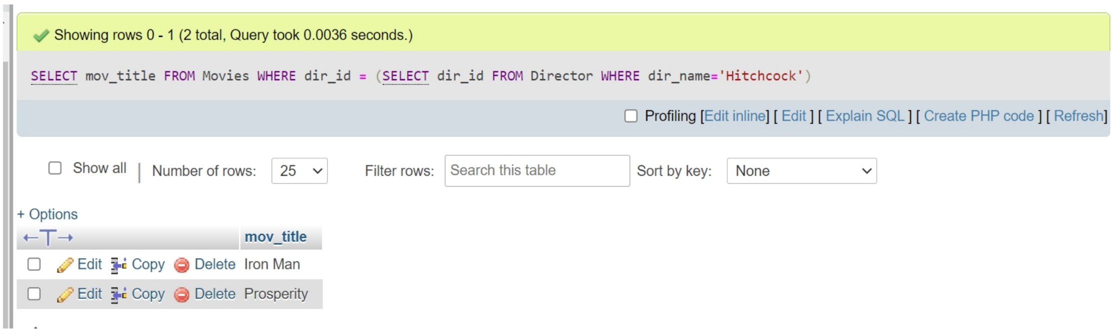
```
CREATE DATABASE movie;
CREATE TABLE ACTOR (
ACT_ID INTEGER PRIMARY KEY,
ACT_NAME VARCHAR(20),
ACT_GENDER CHAR(1));

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

CREATE TABLE MOVIES(
MOV_ID INTEGER PRIMARY KEY,
MOV_TITLE VARCHAR(25),
MOV_YEAR INTEGER,
MOV_LANG VARCHAR(15),
DIR_ID INTEGER,
FOREIGN KEY (DIR_ID) REFERENCES DIRECTOR(DIR_ID));

CREATE TABLE MOVIE_CAST(
ACT_ID INTEGER,
MOV_ID INTEGER,
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 INTEGER PRIMARY KEY,
REV_STARS VARCHAR(25),
FOREIGN KEY (MOV_ID) REFERENCES MOVIES(MOV_ID));

INSERT INTO Actor values
(1001, 'Tom Crusie','M'),
(1002, 'Chris Hemsworth','M'),
(1003, 'Angelina Jolie','F'),
(1004, 'Margot Robbie','F'),
(1005, 'Kate Winslet','F'),
(1006, 'Robert Downey','M');

INSERT INTO Director values
(9001, 'Hitchcock',9874562154),
(9002, 'Steven Spielberg',9874560054),
(9003, 'Joseph Levitan',9874562178),
(9004, 'Christopher Loyd',9874564454),
(9005, 'Yash Chopra',9874562994),
(9006, 'Tom Jones',9874503154);

INSERT INTO Movies values
(101,'Iron Man',2014,'English',9001),
(102,'Prosperity',2001,'Spanish',9001),
(103,'Spiderman',1998,'English',9002),
(104,'Star Wars',1999,'English',9003),
(105,'Thor',2017,'English',9002),
(106,'Captain America',1994,'English',9004);

INSERT INTO Movie_cast values
(1001,101,'Joey'),
(1001,102,'Conor'),
(1002,102,'Tim'),
(1003,103,'Kate'),(1004,104,'Claire'),
(1006,105,'Sally'),
(1005,106,'Jo'),
(1002,106,'Craft'),
(1002,104,'Josh'),
(1005,105,'Roy');

INSERT INTO Rating values
(101,4),
(102,3),
(103,5),
(104,2),
(105,4),
(106,3);
```

Write SQL queries to:

i. List the titles of all movies directed by ‘Hitchcock’.

ii.

```
SELECT mov_title FROM Movies
WHERE dir_id = (SELECT dir_id FROM Director WHERE dir_name='Hitchcock');
```



✓ Showing rows 0 - 1 (2 total, Query took 0.0036 seconds.)

```
SELECT mov_title FROM Movies WHERE dir_id = (SELECT dir_id FROM Director WHERE dir_name='Hitchcock')
```

□ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

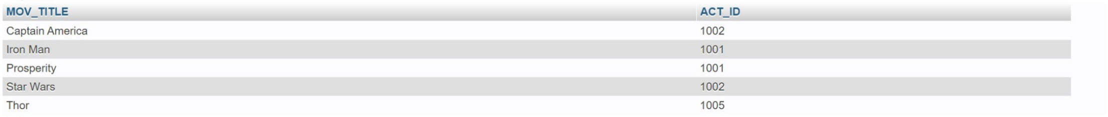
□ Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

	mov_title
□ Edit Copy Delete	Iron Man
□ Edit Copy Delete	Prosperity

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

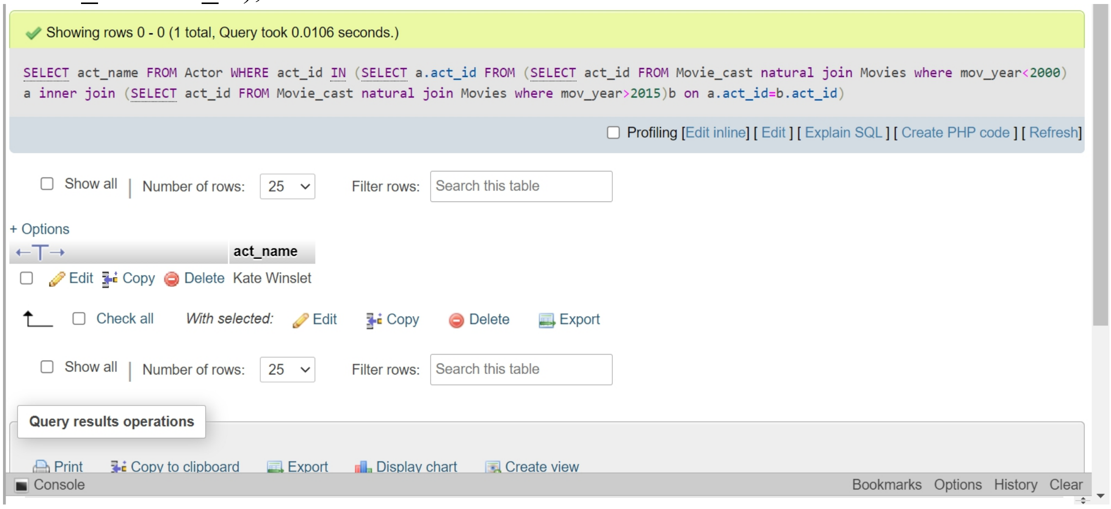
```
SELECT DISTINCT M.MOV_TITLE,MC.ACT_ID FROM MOVIES
M,MOVIE_CAST MC
WHERE M.MOV_ID=MC.MOV_ID AND MC.ACT_ID IN (SELECT ACT_ID
FROM MOVIE_CAST GROUP BY ACT_ID
HAVING COUNT(ACT_ID)>1)
GROUP BY M.MOV_TITLE HAVING COUNT(*)>= 1;
```



MOV_TITLE	ACT_ID
Captain America	1002
Iron Man	1001
Prosperity	1001
Star Wars	1002
Thor	1005

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

```
SELECT act_name FROM Actor
WHERE act_id IN (SELECT a.act_id FROM (SELECT act_id FROM Movie_cast
natural join Movies where
mov_year<2000)
a inner join (SELECT act_id FROM Movie_cast natural join Movies where
mov_year>2015)b on
a.  act_id=b.act_id);
```



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```
SELECT act_name FROM Actor WHERE act_id IN (SELECT a.act_id FROM (SELECT act_id FROM Movie_cast natural join Movies where mov_year<2000)
a inner join (SELECT act_id FROM Movie_cast natural join Movies where mov_year>2015)b on a.act_id=b.act_id)
```

□ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
□ Show all | Number of rows: 25 Filter rows: Search this table
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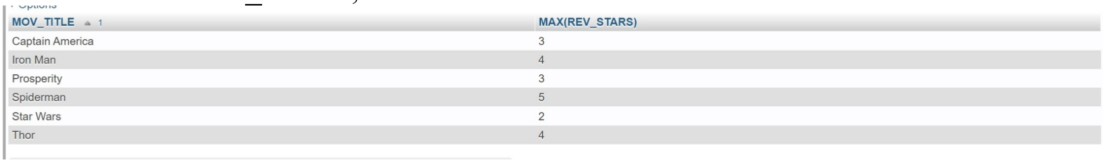
	act_name
□ Edit Copy Delete	Kate Winslet

□ Check all With selected: Edit Copy Delete Export
□ Show all | Number of rows: 25 Filter rows: Search this table
Query results operations
Print Copy to clipboard Export Display chart Create view
Console
Bookmarks Options History Clear

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

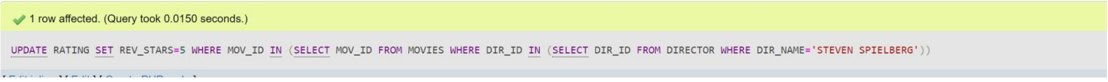
```
SELECT MOV_TITLE,MAX(REV_STARS) FROM MOVIES
INNER JOIN RATING USING (MOV_ID)
GROUP BY MOV_TITLE HAVING MAX(REV_STARS)>0
ORDER BY MOV_TITLE;
```



MOV_TITLE ▲ 1	MAX(REV_STARS)
Captain America	3
Iron Man	4
Prosperity	3
Spiderman	5
Star Wars	2
Thor	4

v. Update rating of all movies directed by ‘Steven Spielberg’ to 5.

```
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'));
```



```
✓ 1 row affected. (Query took 0.0150 seconds.)

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'))
```