In [1]:
```
import numpy as np
import pandas as pd
import sqlite3
```

In [3]:
```
#https://www.w3schools.com/sql/default.asp
#https://www.w3resource.com/sql-exercises/movie-database-exercise/joins-exercises
con = sqlite3.connect('Db-IMDB.db')
```

Assignment

1.List all the directors who directed a 'Comedy' movie in a leap year. (You need to check that the genre is 'Comedy' and year is a leap year) Your query should return director name, the movie name, and the year.

In [22]:
```
qn1 = pd.read_sql_query('''select Name,title,year from Person p join M_Director r
                           (select MID from Movie where (year%4=0 and year%100!=
                           (select MID from M_Genre where GID in(select GID fro
print(qn1.head(10))
```

	Name	title	year
0	Milap Zaveri	Mastizaade	2016
1	Milap Zaveri	Mastizaade	2016
2	Danny Leiner	Harold & Kumar Go to White Castle	2004
3	Danny Leiner	Harold & Kumar Go to White Castle	2004
4	Anurag Kashyap	Gangs of Wasseypur	2012
5	Anurag Kashyap	Gangs of Wasseypur	2012
6	Frank Coraci	Around the World in 80 Days	2004
7	Frank Coraci	Around the World in 80 Days	2004
8	Griffin Dunne	The Accidental Husband	2008
9	Griffin Dunne	The Accidental Husband	2008

2. List the names of all the actors who played in the movie 'Anand' (1971)

In [23]:
```
qn2 = pd.read_sql_query("""WITH MOVIE_ANAND AS
                          (SELECT M.title Movie, MC.PID
                          FROM MOVIE M
                          JOIN M_CAST MC ON M.MID = MC.MID
                          WHERE M.title = 'Anand')

                          SELECT DISTINCT TRIM(P.NAME) Actors
                          FROM MOVIE_ANAND MA
                          JOIN PERSON P ON TRIM(P.PID) = TRIM(MA.PID)""", con)
```

In [24]:
```
qn2
```

Out[24]:

	Actors
0	Amitabh Bachchan
1	Rajesh Khanna
2	Sumita Sanyal
3	Ramesh Deo
4	Seema Deo
5	Asit Kumar Sen
6	Dev Kishan
7	Atam Prakash
8	Lalita Kumari
9	Savita
10	Brahm Bhardwaj
11	Gurnam Singh
12	Lalita Pawar
13	Durga Khote
14	Dara Singh
15	Johnny Walker
16	Moolchand

3) List all the actors who acted in a film before 1970 and in a film after 1990. (That is: < 1970 and > 1990.)

In [25]:
```
qn3=pd.read_sql_query("""WITH Actors_Before_1970 AS
                         (SELECT DISTINCT TRIM(MC.PID) PID
                         FROM MOVIE M
                         JOIN M_CAST MC ON M.MID = MC.MID
                         WHERE CAST(SUBSTR(M.year,-4) AS UNASSIGNED) < 1970),

                         Actors_After_1990 AS
                         (SELECT DISTINCT TRIM(MC.PID) PID
                         FROM MOVIE M
                         JOIN M_CAST MC ON M.MID = MC.MID
                         WHERE CAST(SUBSTR(M.year,-4) AS UNASSIGNED) > 1990),

                         ACTORS AS
                         (SELECT A_1970.PID PID
                         FROM Actors_Before_1970 A_1970
                         JOIN Actors_After_1990 A_1990 ON A_1970.PID = A_1990.PID

                         SELECT DISTINCT TRIM(P.NAME) Actors_Before_1970_After_19
                         FROM PERSON P
                         JOIN ACTORS A ON A.PID = TRIM(P.PID)""", con)
```

In [26]:
```
qn3
```

Out[26]:

	Actors_Before_1970_After_1990
0	Rishi Kapoor
1	Amitabh Bachchan
2	Asrani
3	Zohra Sehgal
4	Parikshat Sahni
5	Rakesh Sharma
6	Sanjay Dutt
7	Ric Young
8	Yusuf
9	Suhasini Mulay
10	A.K. Hangal
11	Jeremy Child
12	Farida Jalal
13	Waheeda Rehman
14	Rajesh Khanna
15	Ramesh Deo
16	Seema Deo
17	Asit Kumar Sen
18	Brahm Bhardwaj
19	Lalita Pawar
20	Dara Singh
21	Johnny Walker
22	Moolchand
23	Saira Banu
24	Prem Chopra
25	Dina Pathak
26	Achala Sachdev
27	Shashikala
28	Mohandas K. Gandhi
29	Jawaharlal Nehru
...	...
270	Gemini Ganesan
271	Aziz
272	Mohamad Ali

	Actors_Before_1970_After_1990
273	Master Amar
274	Gopal
275	Manish
276	Surendra
277	Raj Joshi
278	Nikita
279	Jaswant
280	Merlyn
281	Vikram Makandar
282	Lata Mangeshkar
283	Munni
284	Gummadi
285	Allu Ramalingaiah
286	Kaveri
287	Bharati Devi
288	Kumar
289	Uma
290	Ismail
291	Miss Firoza
292	Dube
293	Dolly
294	Shekhar
295	Poonam
296	Jamila Massey
297	K.R. Vijaya
298	Sethi
299	Suryakantham

300 rows × 1 columns

4. List all directors who directed 10 movies or more, in descending order of the number of movies they directed. Return the directors' names and the number of movies each of them directed.

In [27]:
```
qn4=pd.read_sql_query("""SELECT DISTINCT TRIM(P.Name) Directors, COUNT(DISTINCT M
                         FROM PERSON P
                         JOIN M_DIRECTOR MD ON TRIM(P.PID) = TRIM(MD.PID)
                         GROUP BY Directors
                         HAVING Movie_Count >= 10
                         ORDER BY Movie_Count DESC""", con)
```

In [28]:
```
qn4
```

Out[28]:

	Directors	Movie_Count
0	David Dhawan	39
1	Mahesh Bhatt	36
2	Priyadarshan	30
3	Ram Gopal Varma	30
4	Vikram Bhatt	29
5	Hrishikesh Mukherjee	27
6	Yash Chopra	21
7	Basu Chatterjee	19
8	Shakti Samanta	19
9	Subhash Ghai	18
10	Abbas Alibhai Burmawalla	17
11	Rama Rao Tatineni	17
12	Shyam Benegal	17
13	Gulzar	16
14	Manmohan Desai	16
15	Raj N. Sippy	16
16	Mahesh Manjrekar	15
17	Raj Kanwar	15
18	Indra Kumar	14
19	Rahul Rawail	14
20	Raj Khosla	14
21	Rajkumar Santoshi	14
22	Ananth Narayan Mahadevan	13
23	Anurag Kashyap	13
24	Dev Anand	13
25	Harry Baweja	13
26	K. Raghavendra Rao	13
27	Rakesh Roshan	13
28	Vijay Anand	13
29	Anees Bazmee	12
30	Anil Sharma	12
31	Guddu Dhanoa	12
32	Madhur Bhandarkar	12
33	Nagesh Kukunoor	12

	Directors	Movie_Count
34	Prakash Jha	12
35	Prakash Mehra	12
36	Rohit Shetty	12
37	Satish Kaushik	12
38	Umesh Mehra	12
39	Govind Nihalani	11
40	Ketan Mehta	11
41	Mohit Suri	11
42	Nasir Hussain	11
43	Pramod Chakravorty	11
44	Sanjay Gupta	11
45	Bimal Roy	10
46	Hansal Mehta	10
47	J. Om Prakash	10
48	J.P. Dutta	10
49	K. Bapaiah	10
50	K. Muralimohana Rao	10
51	Mehul Kumar	10
52	N. Chandra	10
53	Pankaj Parashar	10
54	Raj Kapoor	10
55	Sudhir Mishra	10
56	Tigmanshu Dhulia	10
57	Vishal Bhardwaj	10

5.a) For each year, count the number of movies in that year that had only female actors.

In [29]:
```
qn5a = pd.read_sql_query("""WITH MOVIE_MALE_NONE AS
                            (SELECT MC.MID MID_F
                            FROM M_CAST MC
                            JOIN PERSON P ON TRIM(P.PID) = TRIM(MC.PID)
                            WHERE TRIM(P.GENDER) IN ('Male', 'None'))

                            SELECT CAST(SUBSTR(M.year,-4) AS UNASSIGNED) Year, CO
                            FROM MOVIE M
                            WHERE TRIM(MID) NOT IN (SELECT MID_F FROM MOVIE_MALE_
                            GROUP BY CAST(SUBSTR(M.year,-4) AS UNASSIGNED)
                            ORDER BY Year""", con)
```

In [30]:
```
qn5a
```

Out[30]:

	Year	Female_Movie_Count
0	1939	1
1	1999	1
2	2000	1
3	2009	1
4	2012	1
5	2018	2

5. b) Now include a small change: report for each year the percentage of movies in that year with only female actors, and the total number of movies made that year. For example, one answer will be: 1990 31.81 13522 meaning that in 1990 there were 13,522 movies, and 31.81% had only female actors. You do not need to round your answer.

In [31]:
```
qn5b = pd.read_sql_query("""WITH Movie_Non_Females AS
                            (SELECT DISTINCT TRIM(MC.MID) MID
                            FROM M_CAST MC
                            JOIN PERSON P ON TRIM(MC.PID) = TRIM(P.PID)
                            WHERE TRIM(P.GENDER) IN ('Male','None')),

                            MOVIE_FEMALE_Year AS
                            (SELECT CAST(SUBSTR(M.YEAR,-4) AS UNASSIGNED) YEAR,
                            COUNT(DISTINCT TRIM(MID)) Female_Movie_Only
                            FROM Movie M
                            WHERE TRIM(MID) NOT IN (SELECT MID FROM Movie_Non_Fe
                            GROUP BY CAST(SUBSTR(M.year,-4) AS UNASSIGNED)),

                            MOVIES_YEAR AS
                            (SELECT CAST(SUBSTR(M.YEAR,-4) AS UNASSIGNED) Year,
                            COUNT(DISTINCT TRIM(MID)) Total_Movies
                            FROM MOVIE M
                            GROUP BY CAST(SUBSTR(M.YEAR,-4) AS UNASSIGNED))

                            SELECT MY.YEAR, MY.Total_Movies,
                            ROUND((IFNULL(MF.Female_Movie_Only, 0) * 100)/MY.Tota
                            FROM MOVIES_YEAR MY
                            LEFT OUTER JOIN MOVIE_FEMALE_Year MF ON
                            TRIM(MY.YEAR) = TRIM(MF.YEAR)
                            ORDER BY Female_Movie_Percentage DESC""", con)
```

In [32]:
```
qn5b
```

Out[32]:

	Year	Total_Movies	Female_Movie_Percentage
0	1939	2	50.0
1	1999	66	1.0
2	2000	64	1.0
3	2018	104	1.0
4	1931	1	0.0
5	1936	3	0.0
6	1941	1	0.0
7	1943	1	0.0
8	1946	2	0.0
9	1947	2	0.0
10	1948	3	0.0
11	1949	3	0.0
12	1950	2	0.0
13	1951	6	0.0
14	1952	6	0.0
15	1953	8	0.0
16	1954	6	0.0
17	1955	9	0.0
18	1956	6	0.0
19	1957	13	0.0
20	1958	9	0.0
21	1959	6	0.0
22	1960	14	0.0
23	1961	7	0.0
24	1962	12	0.0
25	1963	10	0.0
26	1964	15	0.0
27	1965	14	0.0
28	1966	18	0.0
29	1967	19	0.0
...	...	...	...
48	1986	33	0.0
49	1987	32	0.0
50	1988	37	0.0

	Year	Total_Movies	Female_Movie_Percentage
51	1989	47	0.0
52	1990	42	0.0
53	1991	41	0.0
54	1992	58	0.0
55	1993	63	0.0
56	1994	60	0.0
57	1995	56	0.0
58	1996	60	0.0
59	1997	55	0.0
60	1998	55	0.0
61	2001	73	0.0
62	2002	87	0.0
63	2003	103	0.0
64	2004	103	0.0
65	2005	129	0.0
66	2006	101	0.0
67	2007	109	0.0
68	2008	107	0.0
69	2009	110	0.0
70	2010	125	0.0
71	2011	116	0.0
72	2012	111	0.0
73	2013	136	0.0
74	2014	126	0.0
75	2015	119	0.0
76	2016	129	0.0
77	2017	126	0.0

78 rows × 3 columns

6) Find the film(s) with the largest cast. Return the movie title and the size of the cast. By "cast size" we mean the number of distinct actors that played in that movie: if an actor played multiple roles, or if it simply occurs multiple times in casts, we still count her/him only once.

In [38]:
```
qn6 = pd.read_sql_query("""WITH CAST AS
                                (SELECT COUNT(DISTINCT TRIM(MC.PID)) Cast_Count, MC.M
                                FROM M_CAST MC
                                GROUP BY MC.MID)

                                SELECT M.title Movie, C.Cast_Count
                                FROM MOVIE M
                                JOIN CAST C ON C.MID = M.MID
                                ORDER BY Cast_Count DESC
                                LIMIT 1""", con)
```

In [34]:
```
qn6
```

Out[34]:

	Movie	Cast_Count
0	Ocean's Eight	238

7) A decade is a sequence of 10 consecutive years. For example, say in your database you have movie information starting from 1965. Then the first decade is 1965, 1966, ..., 1974; the second one is 1967, 1968, ..., 1976 and so on. Find the decade D with the largest number of films and the total number of films in D.

In [35]:
```
qn7=pd.read_sql_query("""WITH  YEARS_UNIQUE AS
                        (SELECT DISTINCT
                         CAST(SUBSTR(year,-4) AS UNSIGNED) YEAR,
                         CAST(SUBSTR(year,-4) AS UNSIGNED) DECADE_START,
                         CAST(SUBSTR(year,-4) AS UNSIGNED) + 9 DECADE_END,
                         'Decade of : ' || SUBSTR(year,-4) DECADE
                         FROM MOVIE),

                         MOVIE_COUNT_YEARS AS
                        (SELECT COUNT(DISTINCT MID) Movie_Count, CAST(SUBSTR(year,
                         FROM MOVIE
                         GROUP BY CAST(SUBSTR(year,-4) AS UNSIGNED)),

                         MOVIE_COUNT_DECADE AS
                        (SELECT SUM(Movie_Count) Total_Movies, YU.DECADE
                         FROM MOVIE_COUNT_YEARS MCY, YEARS_UNIQUE YU
                         WHERE MCY.YEAR BETWEEN YU.DECADE_START AND YU.DECADE_END
                         GROUP BY YU.DECADE)

                         SELECT Decade, Total_Movies
                         FROM MOVIE_COUNT_DECADE
                         WHERE Total_Movies = (SELECT MAX(Total_Movies)
                         FROM MOVIE_COUNT_DECADE)""", con)
```

In [36]:
```
qn7
```

Out[36]:

	DECADE	Total_Movies
0	Decade of : 2008	1205

8) Find the actors that were never unemployed for more than 3 years at a stretch. (Assume that the actors remain unemployed between two consecutive movies).

In [39]:
```
qn8= pd.read_sql_query("""WITH ACTORS_MOVIE_YEAR AS
                          (SELECT TRIM(MC.PID) PID, CAST(SUBSTR(year,-4) AS UNASSI(
                          COUNT(DISTINCT TRIM(M.MID)) Number_of_Mov
                          FROM M_CAST MC, MOVIE M
                          WHERE TRIM(MC.MID) = TRIM(M.MID)
                          GROUP BY TRIM(MC.PID), CAST(SUBSTR(year,-4) AS UNASSIGNEI
                          ORDER BY NUMBER_OF_MOV DESC),

                          ACTORS_MORE_THAN_YEAR AS
                          (SELECT AMY.PID, COUNT(AMY.YEAR) AS Number_of_Years, MIN
                          MAX(AMY.YEAR) AS Max_Year
                          FROM ACTORS_MOVIE_YEAR AMY
                          GROUP BY AMY.PID
                          HAVING COUNT(AMY.YEAR) > 1),

                          ACTORS_NUMBER_MORE_THAN_YEAR AS
                          (SELECT AMY.PID, AMY.YEAR, AMY.YEAR+4 AS Year_4, AMY.NUME
                          ATY.MIN_YEAR, ATY.MAX_YEAR
                          FROM ACTORS_MOVIE_YEAR AMY, ACTORS_MORE_THAN_YEAR ATY
                          WHERE AMY.PID = ATY.PID),

                          NUMBER_MOVIE_PRESENT AS
                          (SELECT AM.PID, NY.YEAR, SUM(AM.NUMBER_OF_MOV) AS NUMBER_
                          FROM ACTORS_NUMBER_MORE_THAN_YEAR AM, ACTORS_NUMBER_MORE_
                          WHERE AM.PID = NY.PID AND
                          AM.YEAR BETWEEN NY.MIN_YEAR AND NY.YEAR
                          GROUP BY AM.PID, NY.YEAR),

                          ACTOR_MOVIE_4_YEAR AS
                          (SELECT AM.PID, NY.YEAR, SUM(AM.NUMBER_OF_MOV) AS ACTOR_N
                          FROM ACTORS_NUMBER_MORE_THAN_YEAR AM, ACTORS_NUMBER_MORE_
                          WHERE AM.PID = NY.PID AND
                          AM.YEAR BETWEEN NY.MIN_YEAR AND NY.YEAR_4 AND
                          NY.YEAR_4 <= NY.MAX_YEAR
                          GROUP BY AM.PID, NY.YEAR)

                          SELECT DISTINCT TRIM(P.NAME) AS ACTORS_NEVER_UNEMPLOYED_M
                          FROM PERSON P
                          WHERE TRIM(P.PID) NOT IN (SELECT DISTINCT NMP.PID
                          FROM NUMBER_MOVIE_PRESENT NMP, ACTOR_MOVIE_4_YEAR AM_4
                          WHERE NMP.PID = AM_4.PID AND
                          NMP.YEAR = AM_4.YEAR AND
                          NMP.NUMBER_OF_MOVIE_PRESENT = AM_4.ACTOR_MOVIE_4_YEARS_PR
```

In [40]:
```
qn8
```

Out[40]:

	ACTORS_NEVER_UNEMPLOYED_MORE_THAN_3_YEARS
0	Christian Bale
1	Cate Blanchett
2	Benedict Cumberbatch
3	Naomie Harris
4	Andy Serkis
5	Peter Mullan
6	Jack Reynor
7	Eddie Marsan
8	Tom Hollander
9	Matthew Rhys
10	Rohan Chand
11	Keveshan Pillay
12	Louis Ashbourne Serkis
13	Moonsamy Narasigadu
14	Soobrie Govender
15	Gopal Singh
16	Kista Munsami
17	Mahomed Araf Cassim
18	Riaz Mansoor
19	Roshan Jayesh Patel
20	T'khai Phillips
21	Sachin Soni
22	Hridhay Somera
23	Ethaniel Jaden Moonsamy
24	Gareth Ryan Benjamin
25	Nirvayesh Chakravorty Thanendra
26	Adiyan Ahmed Choudhury
27	Amara Motala
28	Diyara Prakash
29	Diyajal Prakash
...	...
32555	Rakesh Chaturvedi
32556	Swapna Joshi
32557	Shukla Barnali Ray

	ACTORS_NEVER_UNEMPLOYED_MORE_THAN_3_YEARS
32558	Pavithran
32559	Vara Mullapoodi
32560	D. Sumana Kittur
32561	Abhishek Chhadha
32562	Arup Dutta
32563	Illangkannan
32564	Visakh G S
32565	Sandip Ray
32566	S.V. Krishna Reddy
32567	R.K. Selvamani
32568	Amma Rajasekhar
32569	Sanjay Talreja
32570	Rajatesh Nayyar
32571	Murali Nair
32572	Pryas Gupta
32573	Shivamani
32574	Oliver Paulus
32575	Vishal Inamdar
32576	Kumar Shahani
32577	Avtandil Varsimashvili
32578	G. Ram Prasad
32579	Raja Chanda
32580	Deepak Ramteke
32581	Kamika Verma
32582	Dhorairaj Bhagavan
32583	Nasir Shaikh
32584	Adrian Fulle

32585 rows × 1 columns

9) Find all the actors that made more movies with Yash Chopra than any other director.

In [6]:
```
qn9= pd.read_sql_query("""select Director, Actor, Count(*) as Movies_with_YashCho
from(select p1.Name as Director, m1.title as Movie from Person p1 Inner Join M_Di
md on TRIM(md.PID)=p1.PID Inner Join Movie m1 on TRIM(md.MID)=m1.MID and
p1.Name LIKE 'Yash%' Group By p1.Name, m1.title) t1 Inner Join
(select p2.Name as Actor,m2.title as Movie from Person p2 Inner Join
M_Cast mc on TRIM(mc.PID)=p2.PID Inner Join Movie m2 on TRIM(mc.MID)=m2.MID
Group By p2.Name, m2.title) t2 on t1.Movie=t2.Movie Group By t1.Director, t2.Acto
Order By Movies_with_YashChopra DESC""", con)
```

In [7]:
```
qn9
```

Out[7]:

	Director	Actor	Movies_with_YashChopra
0	Yash Chopra	Jagdish Raj	11
1	Yash Chopra	Manmohan Krishna	10
2	Yash Chopra	Manmohan Krishna	10
3	Yash Chopra	Iftekhar	9
4	Yash Chopra	Madan Puri	8
5	Yash Chopra	Vikas Anand	8
6	Yash Chopra	Anupam Kher	7
7	Yash Chopra	Shashi Kapoor	7
8	Yash Chopra	Anupam Kher	7
9	Yash Chopra	Shashi Kapoor	7
10	Yash Chopra	Amitabh Bachchan	6
11	Yash Chopra	Rakhee Gulzar	5
12	Yash Chopra	Waheeda Rehman	5
13	Yash Chopra	Achala Sachdev	4
14	Yash Chopra	Deven Verma	4
15	Yash Chopra	Hema Malini	4
16	Yash Chopra	Neetu Singh	4
17	Yash Chopra	Ravikant	4
18	Yash Chopra	Rishi Kapoor	4
19	Yash Chopra	Shah Rukh Khan	4
20	Yash Chopra	Deven Verma	4
21	Yash Chopra	Hema Malini	4
22	Yash Chopra	Rishi Kapoor	4
23	Yash Chopra	A.K. Hangal	3
24	Yash Chopra	Anil Kapoor	3
25	Yash Chopra	Annu Kapoor	3
26	Yash Chopra	Leela Chitnis	3
27	Yash Chopra	Mohan Sherry	3
28	Yash Chopra	Parikshat Sahni	3
29	Yash Chopra	Prem Chopra	3
...	...	...	...
59	Yash Chopra	Nazir	2
60	Yash Chopra	Nirupa Roy	2
61	Yash Chopra	Nissar	2

	Director	Actor	Movies_with_YashChopra
62	Yash Chopra	Padma Khanna	2
63	Yash Chopra	Parveen Babi	2
64	Yash Chopra	Poonam Dhillon	2
65	Yash Chopra	R.P. Kapoor	2
66	Yash Chopra	Raj Hans	2
67	Yash Chopra	Rajan Verma	2
68	Yash Chopra	Rajendra Kumar	2
69	Yash Chopra	Rehman	2
70	Yash Chopra	Roopesh Kumar	2
71	Yash Chopra	S.N. Banerjee	2
72	Yash Chopra	Saeed Jaffrey	2
73	Yash Chopra	Satyendra Kapoor	2
74	Yash Chopra	Shakti Kapoor	2
75	Yash Chopra	Sharmila Tagore	2
76	Yash Chopra	Shyam Arora	2
77	Yash Chopra	Sridevi	2
78	Yash Chopra	Sudhir	2
79	Yash Chopra	Sunil Dutt	2
80	Yash Chopra	Surendra Nath	2
81	Yash Chopra	Sushma Seth	2
82	Yash Chopra	Uma Dutt	2
83	Yash Chopra	Vinod Khanna	2
84	Yash Chopra	Yash Chopra	2
85	Yash Chopra	Ananth Narayan Mahadevan	2
86	Yash Chopra	Rajendra Kumar	2
87	Yash Chopra	Sunil Dutt	2
88	Yash Chopra	Yash Chopra	2

89 rows × 3 columns

10) The Shahrukh number of an actor is the length of the shortest path between the actor and Shahrukh Khan in the "co-acting" graph. That is, Shahrukh Khan has Shahrukh number 0; all actors who acted in the same film as Shahrukh have Shahrukh number 1; all actors who acted in the same film as some actor with Shahrukh number 1 have Shahrukh number 2, etc. Return all actors whose Shahrukh number is 2.

In [43]:
```
qn10 = pd.read_sql_query("""WITH SHAHRUK_0 AS
                         (SELECT TRIM(P.PID) PID
                         FROM PERSON P
                         WHERE TRIM(P.NAME) like '%Shahrukh%'),

                         SHAHRUK_1_MOV AS
                         (SELECT DISTINCT TRIM(MC.MID) MID, S_0.PID
                         FROM SHAHRUK_0 S_0, M_CAST MC
                         WHERE TRIM(MC.PID) = S_0.PID),

                         SHAHRUK_1_ACTS AS
                         (SELECT DISTINCT TRIM(MC.PID) PID
                         FROM M_CAST MC, SHAHRUK_1_MOV SM_1
                         WHERE TRIM(MC.MID) = SM_1.MID AND
                         TRIM(MC.PID) <> SM_1.PID),

                         SHAHRUK_2_MOV AS
                         (SELECT DISTINCT TRIM(MC.MID) MID, SA_1.PID
                         FROM SHAHRUK_1_ACTS SA_1, M_CAST MC
                         WHERE TRIM(MC.PID) = SA_1.PID)

                         SELECT DISTINCT TRIM(P.NAME) Shahruk_2_Actors
                         FROM PERSON P, M_CAST MC, SHAHRUK_2_MOV SM_2
                         WHERE TRIM(MC.PID) = TRIM(P.PID) AND
                         MC.MID = SM_2.MID AND
                         MC.PID <> SM_2.PID""", con)
```

In [44]:
```
qn10
```

Out[44]:

	Shahruk_2_Actors
0	Freida Pinto
1	Caroline Christl Long
2	Rajeev Pahuja
3	Michelle Santiago
4	Jandre le Roux
5	Raj Awasti
6	Michael Chapman
7	James Heron
8	Alex Jaep
9	Marian Lorencik
10	Celina Nessa
11	James Pimenta
12	M'laah Kaur Singh
13	Maximiliano Hernández
14	Sohum Shah
15	Deepak Damle
16	Piyush Kaushik
17	Harish Khanna
18	Sushant Singh Rajput
19	Nitish Bharadwaj
20	Lalu Makhija
21	Mir Sarwar
22	Ayushmann Khurrana
23	Tabu
24	Radhika Apte
25	Anil Dhawan
26	Manav Vij
27	Ashwini Kalsekar
28	Chhaya Kadam
29	Zakir Hussain
...	...
15258	Pradhan Manjari
15259	Poonam Jha
15260	Sunila Karambelkar

	Shahruk_2_Actors
15261	Arup Ganguli
15262	Laxmi Patel
15263	Meena Pankaj
15264	Pratap
15265	Vidya Shenoy
15266	Jeetendra Khanna
15267	K.L. Sethi
15268	Malaika Shinoy
15269	Poonam Bajwa
15270	Kishin Punjabi
15271	Surjeet Redi
15272	Premji
15273	Kamu
15274	Monal
15275	Ushma Rathod
15276	Shilpi
15277	Zubeda Khan
15278	N. Sagar
15279	Habib Tanvar
15280	Mohd. Zahiruddin
15281	Muktha George
15282	Anjuman
15283	Dhruv Shetty
15284	Hayley Cleghorn
15285	Nirvasha Jithoo
15286	Kamal Maharshi
15287	Mohini Manik

15288 rows × 1 columns