```
import sqlite3
import pandas as pd
conn = sqlite3.connect("Db-IMDB.db")

In [2]:

cursor = conn.cursor()
cursor.execute('UPDATE Movie SET year = trim(substr(year,instr(year," ")));')
conn.commit()
```

In [3]:

```
cursor.execute('delete from MOVIE where MID in(select MID from MOVIE group by MID having count(*)
>1);')
conn.commit()
cursor.execute('delete from PERSON where PID in(select PID from PERSON group by PID having count(*)
) >1);')
conn.commit()
cursor.execute('delete from GENRE where GID in(select GID from GENRE group by GID having count(*)
>1);')
conn.commit()
```

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 [31]:

```
query1 = pd.read_sql_query('''SELECT m.year,m.title,p.Name FROM movie m JOIN M_Director md
ON md.mid = m.mid JOIN Person p ON p.pid = md.pid where (m.year % 4 = 0) AND ((m.year % 100 != 0)
OR
(m.year % 400 = 0)) and m.title IN(SELECT m.title FROM GENRE g JOIN M_Genre mg ON mg.gid = g.gid J
OIN
Movie m on m.mid=mg.mid where g.name LIKE '%Comedy%');''', conn)
query1
```

Out[31]:

	year	title	Name
0	2016	Dishoom	Rohit Dhawan
_			Tronic Enamen
1	2016	Sanam Teri Kasam	Radhika Rao
2	2000	Hera Pheri	Priyadarshan
3	2016	Hotel Salvation	Shubhashish Bhutiani
4	2008	The Other End of the Line	James Dodson
5	1996	Tere Mere Sapne	Joy Augustine
6	2016	Tu Hai Mera Sunday	Milind Dhaimade
7	2012	Luv Shuv Tey Chicken Khurana	Sameer Sharma
8	2004	Meri Biwi Ka Jawab Nahin	Pankaj Parashar
9	1996	Kadhal Desam	Kathir
10	1996	Raja Hindustani	Dharmesh Darshan
11	2012	Filmistaan	Nitin Kakkar
12	2008	Mere Baap Pehle Aap	Priyadarshan
13	2012	Son of Sardaar	Ashwani Dhir
14	2004	Hulchul	Priyadarshan
15	1964	Rajkumar	K. Shankar
16	2008	Bhoothnath	Vivek Sharma

17	year 2 012	Aiyyaa title	Sachin Kundalkar Name
18	2000	Hadh Kar Di Aapne	Manoj Agrawal
19	1956	Jagte Raho	Amit Mitra
20	2000	Mela	Dharmesh Darshan
21	2004	Tauba Tauba	T.L.V. Prasad
22	2016	Days of Tafree	Krishnadev Yagnik
23	2000	Raju Chacha	Anil Devgan
24	1956	Chori Chori	Anant Thakur
25	2016	Fuddu	Sunil Subramani
26	2012	Kyaa Super Kool Hain Hum	Sachin Yardi
27	2016	Thikka	Sunil K. Reddy
28	2012	Kamaal Dhamaal Malamaal	Priyadarshan
29	1980	Swayamvar	P. Sambasiva Rao
50	2012	Tere Naal Love Ho Gaya	Mandeep Kumar
51	2012	Will You Marry Me	Aditya Datt
52	2012	Chaalis Chauraasi	Hriday Shetty
53	2000	Hum To Mohabbat Karega	Kundan Shah
54	2016	Direct Ishq	Rajiv S. Ruia
55	2004	Ek Se Badhkar Ek	Kundan Shah
56	2008	Oh, My God!!	Sourabh Shrivastava
57	1972	Raaste Kaa Patthar	Mukul Dutt
58	2008	Hari Puttar: A Comedy of Terrors	Rajesh Bajaj
59	2016	Motu Patlu: King of Kings	Suhas Kadav
60	2008	Hulla	Jaideep Varma
61	1956	Jagriti	Satyen Bose
62	2000	Beti No. 1	Rama Rao Tatineni
63	1972	Garam Masala	Aspi Irani
64	2016	Hello Mumbai: Salaam Mumbai	Ghorban Mohammadpour
65	2008	Hastey Hastey Follow Your Heart	Ramanjit Juneja
66	1984	Ab Ayega Mazaa	Pankaj Parashar
67	1980	Dadar Kirti	Tarun Majumdar
68	2008	Bach ke Zara	Salim Raza
69	2008	Ugly Aur Pagli	Sachin Kamlakar Khot
70	1988	Ghar Ghar Ki Kahani	Kalpataru
71	2004	Paisa Vasool	Srinivas Bhashyam
72	1968	Do Dooni Char	Debu Sen
73	2000	Azaad	Tirupati Swamy
74	2012	Khokababu	Shankaraiya
75	2008	Meerabai Not Out	Chandrakant Kulkarni
76	2008	Sathyam	Amma Rajasekhar
77	2008	Tandoori Love	Oliver Paulus
78	2012	Le Halua Le	Raja Chanda
79	1996	Raja Aur Rangeeli	K.S. Prakash Rao

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

In [34]:

```
query2 = pd.read_sql_query('''SELECT p.Name from Person p WHERE p.PID IN
(SELECT LTRIM(mc.PID) from M_Cast mc JOIN Movie m on mc.MID=m.MID WHERE m.title ='Anand')''', conn
)
query2
```

Out[34]:

	Name
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

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

In [59]:

```
query3 = pd.read_sql_query('''SELECT p.Name from Person p WHERE p.PID IN
(SELECT LTRIM(mc.PID) from M_Cast mc JOIN Movie m on mc.MID=m.MID WHERE (m.year < 1970))
INTERSECT SELECT p.Name from Person p WHERE p.PID IN (SELECT LTRIM(mc.PID)
from M_Cast mc JOIN Movie m on mc.MID=m.MID WHERE (m.year > 1990))''', conn)
query3
```

Out[59]:

	Name
0	A.K. Hangal
1	Aachi Manorama
2	Abbas
3	Abdul
4	Abhi Bhattacharya
5	Achala Sachdev
6	Adil
7	Ajay

8	Ajit Name
9	Akashdeep
10	Akbar Bakshi
11	Alka
12	Allu Ramalingaiah
13	Altaf
14	Amar
15	Amarnath
16	Ameer
17	Amitabh Bachchan
18	Amjad Khan
19	Amol Sen
20	Amrit
21	Anand
22	Anand Kumar
23	Anand Tiwari
24	Anil
25	Anil Kumar
26	Anil Nagrath
27	Anjali Kadam
28	Anju Mahendru
29	Anoop Kumar
372	Tanuja
373	Tej Sapru
374	Thapa
375	Tulsi
376	Uma
377	Umesh Sharma
378	Unni Mary
379	Urmila Bhatt
379	Urmila Bhatt
379 380	Urmila Bhatt Usha Kiran
379 380 381	Urmila Bhatt Usha Kiran Utpal Dutt
379 380 381 382	Urmila Bhatt Usha Kiran Utpal Dutt Veena
379 380 381 382 383	Urmila Bhatt Usha Kiran Utpal Dutt Veena Veera
379 380 381 382 383 384	Urmila Bhatt Usha Kiran Utpal Dutt Veena Veera Vijay
379 380 381 382 383 384 385	Urmila Bhatt Usha Kiran Utpal Dutt Veena Veera Vijay Vijayalalitha
379 380 381 382 383 384 385 386	Urmila Bhatt Usha Kiran Utpal Dutt Veena Veera Vijay Vijayalalitha Vijayalaxmi
379 380 381 382 383 384 385 386	Urmila Bhatt Usha Kiran Utpal Dutt Veena Veera Vijay Vijayalalitha Vijayalaxmi Viju Khote
379 380 381 382 383 384 385 386 387	Urmila Bhatt Usha Kiran Utpal Dutt Veena Veera Vijay Vijayalalitha Vijayalaxmi Viju Khote Vikram Makandar
379 380 381 382 383 384 385 386 387 388	Urmila Bhatt Usha Kiran Utpal Dutt Veena Veera Vijay Vijayalalitha Vijayalaxmi Viju Khote Vikram Makandar Vineet Kumar
379 380 381 382 383 384 385 386 387 388 389	Urmila Bhatt Usha Kiran Utpal Dutt Veena Veera Vijay Vijayalalitha Vijayalaxmi Viju Khote Vikram Makandar Vineet Kumar Vinod Sharma

394	Wasi Khan Name	
395	Yash Kumar	
396	Yasmin	
397	Yunus Parvez	
398	Yusuf	
399	Zia	
400	Zohra Sehgal	
401	Zul Vellani	

402 rows × 1 columns

1. 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 [31]:

```
query4 = pd.read_sql_query('''SELECT count(title),p.Name FROM Person p, movie m, M_Director md
where md.mid = m.mid and p.pid = md.pid group by TRIM(p.name) having
count(m.title) >= 10 order by count(m.title) desc;''', conn)
query4
```

Out[31]:

	count(title)	Name
0	78	David Dhawan
1	72	Mahesh Bhatt
2	60	Ram Gopal Varma
3	58	Vikram Bhatt
4	54	Hrishikesh Mukherjee
5	42	Yash Chopra
6	38	Basu Chatterjee
7	38	Shakti Samanta
8	36	Subhash Ghai
9	34	Abbas Alibhai Burmawalla
10	34	Shyam Benegal
11	32	Gulzar
12	32	Manmohan Desai
13	32	Raj N. Sippy
14	30	Mahesh Manjrekar
15	30	Priyadarshan
16	30	Raj Kanwar
17	28	Indra Kumar
18	28	Rahul Rawail
19	28	Raj Khosla
20	28	Rajkumar Santoshi
21	26	Ananth Narayan Mahadevan
22	26	Anurag Kashyap
23	26	Dev Anand
24	26	Harry Baweja
25	26	K. Radhavendra Rao

26	count(title)	Name Rakesh Roshan
27	26	Vijay Anand
28	24	Anees Bazmee
29	24	Anil Sharma
126	10	Krishna D.K.
127	10	Kunal Kohli
128	10	Lekh Tandon
129	10	Mohan Babu
130	10	Mohan Segal
131	10	Neeraj Pandey
132	10	Nishikant Kamat
133	10	Pankaj Parashar
134	10	Pooja Bhatt
135	10	Pradeep Sarkar
136	10	Prawaal Raman
137	10	R. Balki
138	10	Rajat Kapoor
139	10	Rajkumar Hirani
140	10	Rakesh Kumar
141	10	Rakeysh Omprakash Mehra
142	10	Ramanand Sagar
143	10	Remo D'Souza
144	10	S.S. Rajamouli
145	10	Saeed Akhtar Mirza
146	10	Sajid Khan
147	10	Sanjay Gadhvi
148	10	Shankar Mukherjee
149	10	Shashilal K. Nair
150	10	Shoojit Sircar
151	10	Siddharth Anand
152	10	Subhash Kapoor
153	10	Subodh Mukherji
154	10	Sujoy Ghosh
155	10	Zoya Akhtar

156 rows × 2 columns

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

In [8]:

```
#https://stackoverflow.com/questions/17975229/using-sql-count-in-a-case-statement
query5a = pd.read_sql_query('''Select m.year as 'Year',count(title) as 'Movie Count' from Movie m
where m.title not in (SELECT m.title from Person p,M_Cast mc where p.pid=LTRIM(mc.pid) and
LTRIM(mc.MID)=m.MID and p.gender != 'Female') group by m.year;''', conn)
query5a
```

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

5b. 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 [24]:

```
#https://stackoverflow.com/questions/8257106/divide-the-value-of-a-column-by-another-column
query5b = pd.read_sql_query('''select Year2,k.MovieCount*100.0/l.MovieCount as
Percent,k.MovieCount,l.MovieCount from (Select m.year as Year1, count(title) as 'MovieCount' from
Movie m where m.title not in (SELECT m.title from Person p,M_Cast mc where p.pid=LTRIM(mc.pid) and
LTRIM(mc.MID)=m.MID and p.gender != 'Female') group by Year1) k,
(Select m.year as Year2, count(title) as 'MovieCount' from Movie m group by Year2) l
where Year1=Year2 order by Year2;''', conn)
query5b
```

Out[24]:

Ī		Year2	Percent	MovieCount	MovieCount
Ī	0	1939	50.000000	1	2
Ī	1	1999	1.515152	1	66
Ī	2	2000	1.562500	1	64
Ī	3	2009	0.909091	1	110
Ī	4	2012	0.900901	1	111
	5	2018	1.923077	2	104

1. 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 [12]:

```
query6 = pd.read_sql_query('''SELECT m.title as 'Movie Name',count(DISTINCT p.name) as 'Size of
cast'
FROM Movie m JOIN M_Cast mc ON LTRIM(mc.mid) = m.mid JOIN Person p ON p.pid = LTRIM(mc.pid)
group by m.title order by count(DISTINCT p.name) desc;''', conn)
query6
```

Out[12]:

	Movie Name	Size of cast
0	Ocean's Eight	237
1	Apaharan	232
2	Gold	213
3	My Name Is Khan	210
4	Captain America: Civil War	191
5	Geostorm	170
e	Strikor	16/

7	2012 Movie Name	Size of cast
8	Pixels	143
9	The Avengers	138
10	Yamla Pagla Deewana 2	137
11	Daddy	129
12	Housefull 3	129
13	Fan	127
14	Bajrangi Bhaijaan	124
15	Split Wide Open	124
16	Train Station	122
17	Million Dollar Arm	117
18	Octopussy	116
19	Dhoom:3	114
20	Miss Lovely	113
21	Mubarakan	108
22	Love Aaj Kal	107
23	Jab Tak Hai Jaan	106
24	The Day the Earth Stood Still	105
25	Judwaa 2	103
26	Midnight's Children	103
27	Oye Lucky! Lucky Oye!	103
28	Phantom	101
29	Hey Ram	100
3309	Uski Roti	4
3310	Cheluvi	3
3311	Chhota Bheem and the Throne of Bali	3
3312	Gauru: Journey of Courage	3
3313	Genesis	3
2244		
3314	Goopi Gawaiya Bagha Bajaiya	3
3314		3
3315		
3315 3316	Jogi the King	3
3315 3316 3317	Jogi the King Kaun?	3
3315 3316 3317 3318	Jogi the King Kaun? Kya Dilli Kya Lahore	3 3 3
3315 3316 3317 3318 3319	Jogi the King Kaun? Kya Dilli Kya Lahore Main Hoon Khiladiyon Ka Khiladi	3 3 3 3
3315 3316 3317 3318 3319 3320	Jogi the King Kaun? Kya Dilli Kya Lahore Main Hoon Khiladiyon Ka Khiladi Man on Mission Taqatwar	3 3 3 3 3
3315 3316 3317 3318 3319 3320	Jogi the King Kaun? Kya Dilli Kya Lahore Main Hoon Khiladiyon Ka Khiladi Man on Mission Taqatwar Military Officer Partha	3 3 3 3 3 3
3315 3316 3317 3318 3319 3320 3321 3322	Jogi the King Kaun? Kya Dilli Kya Lahore Main Hoon Khiladiyon Ka Khiladi Man on Mission Taqatwar Military Officer Partha	3 3 3 3 3 3 3
3315 3316 3317 3318 3319 3320 3321 3322 3323	Jogi the King Kaun? Kya Dilli Kya Lahore Main Hoon Khiladiyon Ka Khiladi Man on Mission Taqatwar Military Officer Partha Sins Chaar Sahibzaade	3 3 3 3 3 3 3 3
3315 3316 3317 3318 3319 3320 3321 3322 3323 3324	Jogi the King Kaun? Kya Dilli Kya Lahore Main Hoon Khiladiyon Ka Khiladi Man on Mission Taqatwar Military Officer Partha Sins Chaar Sahibzaade Dilwale:The Brave Heart	3 3 3 3 3 3 3 3 2 2
3315 3316 3317 3318 3319 3320 3321 3322 3323 3324 3325	Jogi the King Kaun? Kya Dilli Kya Lahore Main Hoon Khiladiyon Ka Khiladi Man on Mission Taqatwar Military Officer Partha Sins Chaar Sahibzaade Dilwale:The Brave Heart Leera the Soulmate	3 3 3 3 3 3 3 2 2 2
3315 3316 3317 3318 3319 3320 3321 3322 3323 3324 3325 3326	Jogi the King Kaun? Kya Dilli Kya Lahore Main Hoon Khiladiyon Ka Khiladi Man on Mission Taqatwar Military Officer Partha Sins Chaar Sahibzaade Dilwale:The Brave Heart Leera the Soulmate Mahakali Ka Insaaf	3 3 3 3 3 3 3 2 2 2 2
3315 3316 3317 3318 3319 3320 3321 3322 3323 3324 3325 3326 3327	Jogi the King Kaun? Kya Dilli Kya Lahore Main Hoon Khiladiyon Ka Khiladi Man on Mission Taqatwar Military Officer Partha Sins Chaar Sahibzaade Dilwale:The Brave Heart Leera the Soulmate	3 3 3 3 3 3 3 2 2 2

3330	Pihu Movie Name	Size of cast
3331	Rui Ka Bojh	2
3332	Uyirile Kalanthathu	2
3333	Yaadein	2
3334	Chaar Sahibzaade 2: Rise of Banda Singh Bahadur	1
3335	Man On Mission Jaanbaaz	1
3336	Raja Aur Rangeeli	1
3337	Return of Hanuman	1
3338	Vaibhav Sethia: Don't	1

3339 rows × 2 columns

1. 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 [58]:

```
query7 = pd.read_sql_query('''SELECT count(title) as 'No of Movies',cast(MIN(year) as varchar) ||
'-' ||
cast(MIN(year)+10 as varchar) as 'Decade'
FROM MOVIE group by substr(year,0,4);''', conn)
query7
```

Out[58]:

	No of Movies	Decade
0	6	1931-1941
1	12	1941-1951
2	71	1950-1960
3	148	1960-1970
4	254	1970-1980
5	350	1980-1990
6	556	1990-2000
7	986	2000-2010
8	1092	2010-2020

1. 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 [35]:

```
query8 = pd.read_sql_query('''Select FirstName from (SELECT p.pid as Actor_ID ,m.year as Year,
p.name as FirstName FROM
movie m

JOIN M_cast mc ON LTRIM(mc.mid) = m.mid
JOIN Person p ON p.pid = LTRIM(mc.pid)
order by p.name,m.year asc) t1

JOIN

(SELECT p.pid as Actor_ID, m.year as Year, p.name as SecondName FROM
movie m

JOIN M_cast mc ON LTRIM(mc.mid) = m.mid
JOIN Person p ON p.pid = LTRIM(mc.pid)
order by p.name,m.year asc) t2 on t1.Actor_ID=t2.Actor_ID
where t2.Year-t1.Year < 3 and t1.FirstName=t2.SecondName group by FirstName;''', conn)
query8</pre>
```

Out[35]:

	FirstName
0	'Ganja' Karuppu
1	'Lee' George Quinones
2	'Musafir' Radio Performing
3	'Nandha' Saravanan
4	'Om' Rakesh Chaturvedi
5	'Snub' Pollard
6	A'Ali de Sousa
7	A. Abdul Hameed
8	A. Darpan
9	A. Deiva Sundari
10	A. Gabibi
11	A. Kapoor
12	A. Khan
13	A. Kukereja
14	A. Lakshmi
15	A. Narsimha
16	A. Prabhakar
17	A. Ravi Verma
18	A. Shalomayev
19	A. Sharma
20	A. Vithya
21	A.A. Deepak
22	A.A. Khan
23	A.A. Premawathie
24	A.C. Murali
25	A.C. Sarkar
26	A.D. Singh
27	A.G. Poddar
28	A.H. Shore
29	A.J. Rosen
30043	Zoya Shah
30044	Zoë Bright
30045	Zoë Castle
30046	Zsolt Nagy
30047	Zsolt Viczei
30048	Zubaida
30049	Zubair Khan
30050	Zubeda
30051	Zubeda Khan
30052	Zubeen Garg
30053	Zubeida

30054	Zuber k Khan FirstName	
30055	Zuberi	
30056	Zubin Jauhari	
30057	Zubin Vicky Driver	
30058	Zufin	
30059	Zuha Sharma	
30060	Zul Vellani	
30061 Zul Vilani		
30062 Zuleikha Robinson		
30063	Zulfi Sayed	
30064	Zulfikar Ali	
30065	Zulica Fito Cia	
30066	Zulkhumor Muminova	
30067	Zurab Kapianidze	
30068	Zuri Echea	
30069	Zuzanna Zajac	
30070	Àaron Brewster	
30071	Éric Berger	
30072	Ócsai Krisztián	

30073 rows × 1 columns

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

In [3]:

```
query9 = """
        WITH
   YASH_CHOPRAS_PID AS
       SELECT
         TRIM(P.PID) AS PID
       FROM
          Person P
       WHERE
           Trim(P.Name) = 'Yash Chopra'
   NUM_OF_MOV_BY_ACTOR_DIRECTOR AS
       SELECT
           TRIM(MC.PID) ACTOR PID,
           TRIM(MD.PID) DIRECTOR PID,
           COUNT(DISTINCT TRIM(MD.MID)) AS NUM_OF_MOV
       FROM
           M_Cast MC,
           M Director MD
       WHERE
           TRIM(MC.MID) = TRIM(MD.MID)
       GROUP BY
           ACTOR_PID,
           DIRECTOR_PID
   NUM_OF_MOVIES_BY_YC AS
       SELECT
           NM.ACTOR_PID,
           NM.DIRECTOR PID,
           NM.NUM_OF_MOV NUM_OF_MOV_BY_YC
           NUM OF MOV BY ACTOR DIRECTOR NM,
           YASH_CHOPRAS_PID_YCP
```

```
WHERE
           NM.DIRECTOR PID = YCP.PID
   MAX_MOV_BY_OTHER_DIRECTORS AS
       SELECT
           ACTOR PID,
           MAX (NUM OF MOV) MAX NUM OF MOV
           NUM OF MOV BY ACTOR DIRECTOR NM,
            YASH CHOPRAS PID YCP
           NM.DIRECTOR PID <> YCP.PID
        GROUP BY
           ACTOR PID
    ACTORS MOV COMPARISION AS
    SELECT
       NMY.ACTOR PID,
       CASE WHEN NMY.NUM_OF_MOV_BY_YC > IFNULL(NMO.MAX NUM OF MOV,0) THEN 'Y' ELSE 'N' END
MORE MOV BY YC
    FROM
       NUM OF MOVIES BY YC NMY
        LEFT OUTER JOIN
       MAX_MOV_BY_OTHER_DIRECTORS NMO
       NMY.ACTOR PID = NMO.ACTOR PID
    SELECT
       DISTINCT
        TRIM(P.Name) ACTOR NAME
        Person P
    WHERE
       TRIM(P.PID) IN (
            SELECT
                DISTINCT
               ACTOR PID
            FROM
               ACTORS MOV COMPARISION
            WHERE
               MORE MOV BY YC = 'Y'
        )
result = pd.read sql query(query9,conn)
print(result)
                ACTOR NAME
```

```
0
           Waheeda Rehman
            Achala Sachdev
1
              Yash Chopra
               Vinod Negi
3
4 Chandni Jas Keerat
5
            Shivaya Singh
6
          Huzefa Gadiwala
7
             Manish Arora
8
             Pankaj Raina
              Neetu Singh
10
            Julia St John
11
            Susan Fordham
12
                Steve Box
13
           Jasmine Jardot
14
             Abbie Murphy
15
            Julie Vollono
16
             Varun Thakur
17
           Katy Kartwheel
18
              Lucy Phelps
19 Matthew David McCarthy
20
           Benjayx Murphy
21
          Melissa Hollett
22
     Nick Thomas-Webster
23
              Anick Wiget
24
               Jay Conroy
25
             Gary Wronecki
                 Sean Moon
```

```
27
       Rudy Valentino Grant
           Richard Herdman
28
       James Michael Rankin
29
         Chandu Allahabadi
7.5
76
               Shyam Arora
77
              Leela Chitnis
                Ravi Dubey
78
79
                Ashok Verma
80
               Pratima Puri
81
            Ramola Bachchan
82
               Sumati Gupte
             Akhtar-Ul-Iman
83
84
                Pran Mehra
85
                    Nissar
             Master Rizwan
86
87
                    Naseem
88
                    Parijat
89
                     Nazir
90
                  Ram Maini
                   Om Sahni
91
92
                     Bhola
93
                   Ramanand
94
                     Gopal
95
                     Kishan
96
                      Nasir
97
               Ashok Chadda
98
                    Rajesh
99
               Master Kelly
100
                Yasin Khan
101
            Sandow S. Sethi
102
                      Naval
103
                  Prem Sood
104
            Ramlal Shyamlal
[105 rows x 1 columns]
```

1. 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 [136]:

```
query10 = pd.read_sql_query('''WITH
   SHAHRUKH_0 AS
        SELECT
           TRIM(P.PID) PID
        FROM
           Person P
           Trim(P.Name) like '%Shahrukh%'
    SHAHRUKH 1 MOVIES AS
        SELECT
           DISTINCT
            TRIM(MC.MID) MID,
           S0.PID
           M Cast MC,
            SHAHRUKH 0 S0
           TRIM(MC.PID) = S0.PID
    SHAHRUKH 1 ACTORS AS
    (
        SELECT
           DISTINCT
           TRIM(MC.PID) PID
           M_Cast MC,
            SHAHRUKH 1 MOVIES S1M
```

```
MITEUE
           TRIM(MC.MID) = S1M.MID AND
          TRIM(MC.PID) <> S1M.PID
   SHAHRUKH_2_MOVIES AS
       SELECT
         DISTINCT
          TRIM(MC.MID) MID,
          S1A.PID
          M Cast MC,
          SHAHRUKH_1_ACTORS S1A
          TRIM(MC.PID) = S1A.PID
   SELECT
       DISTINCT
       TRIM(MC.PID) PID,
      TRIM(P.Name) ACTOR_NAME
       Person P,
       M_Cast MC,
SHAHRUKH_2_MOVIES S2M
   WHERE
           TRIM(MC.PID) = TRIM(P.PID) AND
           TRIM(MC.MID) = S2M.MID AND
           TRIM(MC.PID) <> S2M.PID;''', conn)
query10
```

Out[136]:

	PID	ACTOR NAME
0	nm2951768	Freida Pinto
1	nm6467532	Caroline Christl Long
2	nm6071249	Rajeev Pahuja
3	nm3491108	Michelle Santiago
4	nm7509518	Jandre le Roux
5	nm5951787	Raj Awasti
6	nm5525290	Michael Chapman
7	nm8232648	James Heron
8	nm7247557	Alex Jaep
9	nm6631007	Marian Lorencik
10	nm7255636	Celina Nessa
11	nm5721141	James Pimenta
12	nm4964257	M'laah Kaur Singh
13	nm0380073	Maximiliano Hernández
14	nm3630374	Sohum Shah
15	nm3708961	Deepak Damle
16	nm8334880	Piyush Kaushik
17	nm1390115	Harish Khanna
18	nm3818286	Sushant Singh Rajput
19	nm0080232	Nitish Bharadwaj
20	nm8644385	Lalu Makhija
21	nm6661769	Mir Sarwar
22	nm4731677	Ayushmann Khurrana
23	nm0007102	Tabu
24	nm2331000	Radhika Apte

25	nm0223 521	Anil Dhactor_NAME
26	nm2435847	Manav Vij
27	nm1817397	Ashwini Kalsekar
28	nm3777127	Chhaya Kadam
29	nm1664541	Zakir Hussain
15614	nm2019990	Pradhan Manjari
15615	nm2021136	Poonam Jha
15616	nm1459053	Sunila Karambelkar
15617	nm1763457	Arup Ganguli
15618	nm1760405	Laxmi Patel
15619	nm1760399	Meena Pankaj
15620	nm1686154	Pratap
15621	nm2184586	Vidya Shenoy
15622	nm2182462	Jeetendra Khanna
15623	nm2177257	K.L. Sethi
15624	nm2084775	Malaika Shinoy
15625	nm2465676	Poonam Bajwa
15626	nm1688585	Kishin Punjabi
15627	nm1082198	Surjeet Redi
15628	nm0695939	Premji
15629	nm1693988	Kamu
15630	nm5578623	Monal
15631	nm1524755	Ushma Rathod
15632	nm1567918	Shilpi
15633	nm1946131	Zubeda Khan
15634	nm2519512	N. Sagar
15635	nm4042918	Habib Tanvar
15636	nm1881395	Mohd. Zahiruddin
15637	nm2522571	Muktha George
15638	nm0030135	Anjuman
15639	nm3099317	Dhruv Shetty
15640	nm2371614	Hayley Cleghorn
15641	nm2675737	Nirvasha Jithoo
15642	nm2370589	Kamal Maharshi
15643	nm1866356	Mohini Manik

15644 rows × 2 columns