Experiment No. 6

Q. Write relational algebra queries for a given set of relations.

Consider the MOVIE DATABASE

Movies

title	director	myear	rating
Fargo	Coen	1996	8.2
Raising Arizona	Coen	1987	7.6
Spiderman	Raimi	2002	7.4
Wonder Boys	Hanson	2000	7.6

Actors

actor	ayear
Cage	1964
Hanks	1956
Maguire	1975
McDormand	1957

Acts

actor	title
Cage	Raising Arizona
Maguire	Spiderman
Maguire	Wonder Boys
McDormand	Fargo
McDormand	Raising Arizona
McDormand	Wonder Boys

Directors

director	dyear
Coen	1954
Hanson	1945
Raimi	1959

Write following relational algebra queries for a given set of relations.

1. Find movies made after 1997
2. Find movies made by Hanson after 1997
3. Find all movies and their ratings
4. Find all actors and directors
5. Find Coen's movies with McDormand

1. Find movies made after 1997

σmyear>1997**(Movies)**

Movies

title	director	myear	rating
Fargo	Coen	1996	8.2
Raising Arizona	Coen	1987	7.6
Spiderman	Raimi	2002	7.4
Wonder Boys	Hanson	2000	7.6

$$\sigma_{myear>1997}(\text{Movies})$$

title	director	myear	rating
Spiderman	Raimi	2002	7.4
Wonder Boys	Hanson	2000	7.6

2. Find movies made by Hanson after 1997
σmyear>1997 ∧ director='Hanson_**(Movies)**

Movies

title	director	myear	rating
Fargo	Coen	1996	8.2
Raising Arizona	Coen	1987	7.6
Spiderman	Raimi	2002	7.4
Wonder Boys	Hanson	2000	7.6

$$\sigma_{myear>1997 \ \wedge \ director='Hanson'}(\text{Movies})$$

title	director	myear	rating
Wonder Boys	Hanson	2000	7.6

3. Find all movies and their ratings
πtitle, rating**(Movies)**

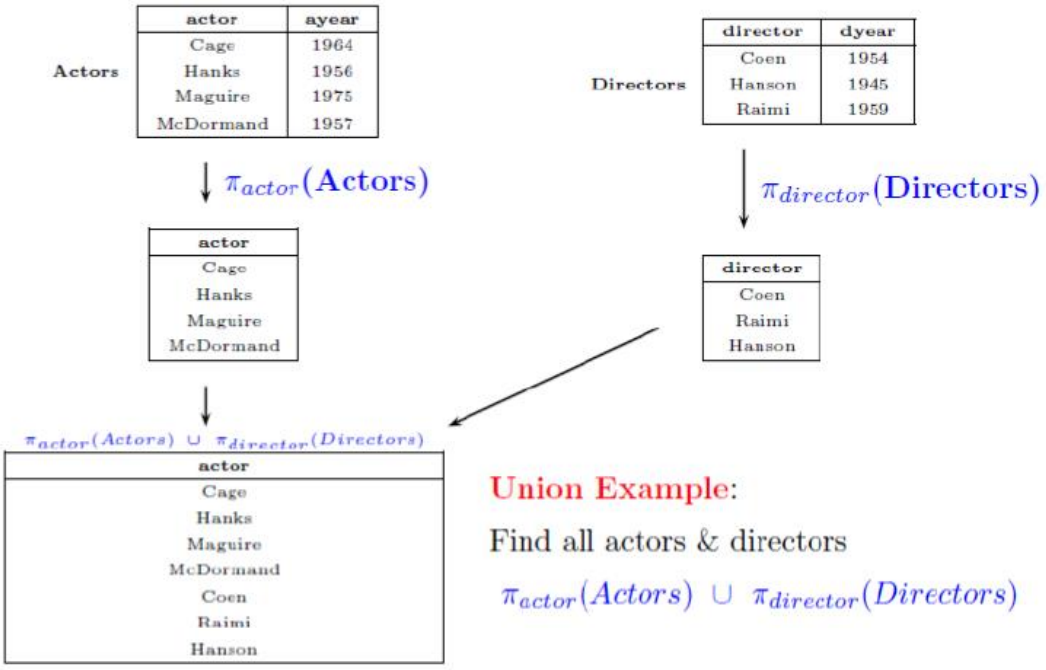
Movies

title	director	myear	rating
Fargo	Coen	1996	8.2
Raising Arizona	Coen	1987	7.6
Spiderman	Raimi	2002	7.4
Wonder Boys	Hanson	2000	7.6

$$\pi_{title, \ rating}(\text{Movies})$$

title	rating
Fargo	8.2
Raising Arizona	7.6
Spiderman	7.4
Wonder Boys	7.6

4. Find all actors and directors
πactor(Actors) ∪ πdirector(Directors)



5. Find Coen's movies with McDormand
e1 = πtitle(σactor='McDormand_ (Acts))
e2 = πtitle(σdirector='Coen_ (Movies))
result = e1 ∩ e2