Movies schema

Schema

Movies(<u>mID</u>, title, director, year, length)
Artists(<u>aID</u>, aName, nationality)
Roles(<u>mID, aID, character</u>)

Roles[mID] $\subseteq$ Movies[mID]
Roles[aID] $\subseteq$ Artists[aID]

Example database

Movies

mID	title	director	year	length
1	Shining	Kubrick	1980	146
2	Player	Altman	1992	146
3	Chinatown	Polanski	1974	131
4	Repulsion	Polanski	1965	143
5	Star Wars IV	Lucas	1977	126
6	American Graffiti	Lucas	1973	110
7	Full Metal Jacket	Kubrick	1987	156

Artists

aID	aName	nat
1	Nicholson	American
2	Ford	American
3	Stone	British
4	Fisher	American

Roles

mID	**aID**	**character**
1	1	Jack Torrance
3	1	Jake ‘J.J.’ Gittes
1	3	Delbert Grady
5	2	Han Solo
6	2	Bob Falfa
5	4	Princess Leia Organa

Student Name: Student CDF ID:

CSC343 Week 2 Class Exercises - Relational Algebra (RA)

1. Write a relational algebra query to find all British actors.

2. How about all movies from the 1970s (between 1970 and 1979)?

3. Write an RA expression to find the names of all directors of movies from the 1970s.

4. Find all movie names which are longer than 120 minutes.

5. How many tuples are in Artists X Roles?

6. How many tuples are in Artists $\bowtie$ Roles?

7. How many tuples are in the following result set:
   $\Pi_{aName}\sigma_{director=\text{“}Kubrick\text{”}}(Artists \bowtie Roles \bowtie Movies)$

8. Use Theta join to find artists who have also directed movies. Display artist name followed by movie title: