Lecture 2 - Relational Algebra - Query Examples

1 The schema

Consider the schema below, consisting of three relations. The key attributes are underlined.

- Movies(<u>mID</u>, title, director, year, length).

That is, the ID, the title, the director of a movie, the year when it was released and its length.

- Artists(<u>aID</u>, aName, nat).

That is, the ID and the name of an artist and his/hers nationality.

- Roles(mID, aID, character).

That is, the ID of a movie in which an artist (aID) played a character.

The following inclusion dependency hold:

- $\operatorname{Roles}[mID] \subseteq \operatorname{Movies}[mID]$
- $\text{Roles}[aID] \subseteq \text{Artists}[aID]$

Consider an instance of these three relations:

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

Movies:

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

	mID	aID	character
Roles:	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

2 Query Examples

1. Find directors who made movies before 1966.

2. Find directors who made no movie before 1966.

3. Find directors who made at least 2 movies.

4. Find the longest movie.

5. Find directors who never made a movie.