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**Lab 02 - Relational Algebra**

**(Selection, Projection, Join)**

Consider the following relations:

**MOVIES** (id:int, title:varchar(35), year:int, director:int) Id is the key

**ACTORS** (id:int, name:varchar(20), lastname:varchar(30)) Id is the key.

**CASTINGS** (movieid:int, actorid:int) (movieid and actorid) is the key

**DIRECTORS**(id:int, name:varchar(20), lastname:varchar(30)) id is the key

1. What is the result of the following queries?

Select the tuples from relation DIRECTORS that has id 100

* 1. **Πtitle, year(**)

Select column title and year from selection movie where director 100

* 1. **Πtitle, year,name,lastname(**

Display title, year, name, lastname for all movies

1. Using the same schema as above, write each of the following queries as a relational algebra expression:
2. List all actors.

**Πid, name, lastname** (Actors)

1. List the name and the year of all movies.

**Πname, year** (Movie)

1. Find all movies produced in 2010.
2. List all actors in the Avatar movie.

**Πactors.id, actors.name, actors.lastname (**

1. Find the movie title, year, and the director name for movies produced in 2019.

**Πmovies.title, movies.year, directors.name**

1. Find movie title and the movie director’s name and last name for all movies that the actor with ID = 200 plays a character in them.

**Πmovies.title, directors.name, directors.lastname**

1. Find all actors played in movies produced after 2010 and before 2018.

**Πactors.id, actors.name, actors.lastname (**