Relations

A relation on N sets is a subset of the Cartesian product of the N sets.

A **relation** between two sets is a collection of ordered pairs containing one object from each set. If the object is from the first set and the object is from the second set, then the objects are said to be related if the ordered pair is in the **relation**. A function is a type of **relation**.

\*Problem #1

Movies(title, year, length, genre, studioName, producerId)

Write a relational algebra expression to answer the following question:

1. What are the titles and years of all moveis?

Pi(title,year)(Movies) -- projection

1. What are the titles and years of movies made by Fox that are at least 100 minutes long?
2. Pi (title,year)<Select(length>=100 and studioName == ‘Fox’) [Movies] >

OR

1. Pi(title,year)(Select(length>100)(Movies) AND Select(studioName==’Fox’)(Movies))

* MovieStar(name,address, gender, birthdate)
* Movies(title, year, length, genre, studioName, producerId)
* StarsIn(movieTitle,movieYear, starName)

Q: What were the titles and years of all movies longer than 120 minutes that starred women born on ’02-14-1977’?

\*\* Pi(title,year) (Select(length>120)(Movies) AND Select(birthdate == ’02-14-1977’)(MovieStar) AND Select(gender == ‘female’)(MovieStar)) – (x)

\*\*Pi (title, year) [Select(length>120)(Movies) natural\_join or theta join StarsIn(title == movieTitle, And year= movieyear) & (Select(ms) AND Select(birthdate = ’02-14-1997’ (Movie Star)))

& = natural join(star Name = name)