COSC265 Lab 2 - Solutions

1. Find all types of movies in the database.
   select distinct type from movie;
   π_{Type}(MOVIE)
   19 distinct types selected.
2. Find all the information about the star whose number is 4.
   *select * from star where snumber = 4;*
   $\sigma_{Number=4}$ (STAR)

   Scarlett Johansson
3. Find the name, year and city of birth of the star whose number is 50.
   select fname, lname, born, city
   from star
   where snumber=50;
   $\pi_{FName,LName,Born,City}$ ($\sigma_{Number=50}$ (STAR))
   Henry Fonda
4. List the names of all stars born in or after 1950.
   select fname, lname
   from star
   where born >= 1950;
   $\pi_{FName,LName}$ ($\sigma_{Born>=1950}$ (STAR))
   26 stars selected.
5. List the numbers and titles of all movies made between 1965 and 1975.
   select mnumber, title
   from movie
   where year between 1965 and 1975;
   $\pi_{Number,Title}$ ($\sigma_{Year>=1965\ AND\ Year<=1975}$ (MOVIE))
   37 movies selected.
6. List the numbers and titles of all movies whose type is fantasy or romance.
   select mnumber,title
   from movie
   where type = 'fantasy' or type='romance';
   $\pi_{Number,Title}$ ($\sigma_{Type='fantasy'\ OR\ Type='romance'}$ (MOVIE))
   3 movies selected.
7. Find the name, year and city of birth for every star born in 1920s who is still living.
   select fname, lname, born, city
   from star
   where born between 1920 and 1929 and died is null;
   $\pi_{Fname,Lname,Born,City}$ ($\sigma_{Born>=1920\ AND\ Born\ <=1929\ AND\ Died=NULL}$ (STAR))
   3 stars selected.
8. Produce a list of numbers of all stars that acted in movies number 85 to 91.
   select distinct star
   from stars
   where movie between 85 and 91;
   π_{Star} ($\sigma_{Movie>=85\ AND\ Movie<=91}$ (STARS))

10 stars selected.

9. For all directors who are deceased, list their names and how long they lived.
   select fname, lname, died-born
   from director
   where died is not null;
   $\pi_{\text{Fname, Lname, died-born}}$ ($\sigma_{\text{Died}\neq\text{Null}}$ (DIRECTOR))
   27 directors selected.

10. Find the total number of awards won by comedies.
    select sum(aawon)
    from movie
    where type='comedy';

    $\mathcal{F}_{\text{SUM AAWON}}$ ($\sigma_{\text{Type='comedy'}}$ (MOVIE))

    8 awards won

11. List the titles of all movies and the names of their directors.
    select title, fname, lname
    from movie, director
    where director=dnumber;

    $\pi_{\text{Title,FName,LName}}$ (MOVIE $\bowtie_{\text{Director=Director.Number}}$ DIRECTOR)
    153 movies selected.

12. Find the name of the star who played Vronsky in the movie entitled 'Anna Karenina'.
    select fname, lname
    from star, stars, movie
    where title='Anna Karenina' and role='Vronsky' and movie=mnumber and snumber=star;

    $\pi_{\text{FName,LName}}$ ((($\sigma_{\text{Title='Anna Karenina'}}$ (MOVIE)) $\bowtie_{\text{Movie=Movie.Number}}$ ($\sigma_{\text{Role='Vronsky'}}$ (STARS))

    $\bowtie_{\text{Star.Number=Star}}$ STAR)

    Vassily Lanovoi

The queries for the REGISTRATION database

1. Find the different types of vehicle in the database.
   select distinct type from vehicle;
   π_{Type}(VEHICLE)
2. Get plate numbers, makes and models of all cars imported from Japan.
   select vehicle.plates, make, model
   from registration, vehicle
   where registration.plates = vehicle.plates and country='Japan';
   $\pi_{\text{Plates,Make,Model}}$ (($\sigma_{\text{Country='Japan'}}$ (REGISTRATION)) * VEHICLE)
   3 cars selected.
3. Produce a list of all vehicles, showing only the plate numbers and the year of manufacture. Order the tuples by the year.
   select plates, year
   from vehicle

order by year;
$\pi_{Plates,Year}$(VEHICLE)
10 vehicles selected, ordered by year (in SQL)

4. List the names of all owners. Sort the output by last name descending and by first name ascending.
   select fname, lname
   from owner
   order by lname desc, fname;
   $\pi_{Lname,Fname}$(OWNER)
   14 owners selected, ordered by lname desc (in SQL)
5. For each car, show the plates number and the name of the current owner.
   select plates, fname, lname
   from owner join owns on ownerid=dr_lic
   where datesold is null;

   $\pi_{Plates,Fname,Lname}$ ($\sigma_{Datesold=NULL}$ (OWNS $\bowtie_{Ownerid=Dr\_lic}$ OWNER))
   10 vehicles selected