Homework 6 (Due at 11:59pm on 2015/2/27)

Instruction

This is a written homework. Given the following mediated schema for movies and a set of sources, you need to answer the questions below.

Mediated schema:
Assume that the values for all the attributes in the schema are strings or numbers (not object ids, or other special identifiers).

- Movie (title, director, date, genre), note that "director" denotes the director name (with similar values to those of "director" in the Director table); "date" is the release date of the movie. Genre refers to "Drama", "Sci-Fi", "Horror" and so on. Assume a movie can only have one genre.
- Director (director, nationality, birth_date, death_date), assume "nationality" contains the name of the country of citizenship, e.g., "America", "India", etc.
- Poster (title, URL), "URL" is the URL pointing to the image of the movie poster.

Sources

- S1 (title, genre), which is a table of movies released before 2000 directed by Americans.
- S2 (title, date), which is a table of movies released after 2001 and directed by David Fincher who is an American.
- S3 (title, director), which is a table of Sci-Fi movies and their directors.
- S4 (title, URL), which is a table of movies with poster image URLs online.

Please turn in a report on Blackboard with your answers to the following questions in **PDF** format, which should be named as **hw6_[firstname]_[lastname].PDF**

Questions (100 points)

1. Write Local-As-View (LAV) rules that describe each source. (30 points)

2. Given the query that searches for all the Drama movies by American directors released before 2000 that have poster URLs online. The returned results should be the titles of the movies and poster URLs. Write the query using the mediated schema and reformulate the query in LAV using the Bucket algorithm. Show the derivations for each step. (30 points)

3. For the same query as in question 2 give the inverse rules program that answers the query (20 points), and simplify the program (20 points)