CSE 412/598
Fall 2013
WinRDBI ASSIGNMENT #2
Tuple Relational Calculus

This is the second of three assignments that will allow you to execute query languages of the relational model. This assignment focuses specifically on queries in TRC.

Using the Music Rental Agency Enterprise, you are to:

1. Load the music2.rdb file in WinRDBI. This data file is located in the Homework 2 Assignment folder on myASU. *The test data has been modified. You **must** use the updated version of the rdb file for this assignment.*
2. Develop TRC solutions for the five queries specified in this assignment. You may breakdown TRC queries into subqueries, if needed. However, your relational calculus solution must NOT be a translation of a relational algebra solution. Comment the queries and use descriptive table and attribute names. You are **strongly** encouraged to look at the example queries provided at http://winrdbi.asu.edu/samples.html **before** attempting the queries on this assignment.

On the due date, you will turn in the following:

1. A hard copy of both of your query files (.trc). Make sure that the listing includes your name, the last 5 digits of your Affiliate ID, and class (CSE 412 or CSE 598) as a comment line in your .trc file. ***When possible, print your solutions using a portrait orientation. WinRDBI uses the print capabilities of Java and there appears to be an issue with a landscape orientation that loses lines across page breaks with certain printers.***

2. A printout of result data for each query taken from WinRDBI for TRC. Do not include all intermediate tables – only include the last table that answers each query.

3. An electronic copy of your query files ***must*** be turned in through the Assignment facility in the folder for the assignment on myASU. To avoid name clashes on files, name your .trc files as fname_lname.trc.

To submit your file via myASU on the web, follow the directions given below:

- *Log into the course site on myASU. **Make sure you log in as yourself.***
- *Click on Submit Assignment under the folder for the homework assignment.*
- *Follow the directions to submit your homework.*
- You can only submit your assignment once.

Points will be deducted from your grade for failing to follow the above directions.
Late Assignments Will Not Be Accepted!

Solutions will be published in the WinRDBI Assignment Folder on the due date.

REMINDER: THIS IS AN INDIVIDUAL ASSIGNMENT!
See Homework 1 for details on

QUALITY-BASED ASSESSMENT and TEST DATA DISCLAIMER

Music Rental Agency Relational Database Schema

client(clientID, firstName, lastName, phone, address)

cd(cdCode, cdTitle, numberSold, year, groupCode)

availableCopy(cdCode, seqNum)

rentedBy(cdCode, seqNum, clientID, fromDate, endDate, pricePerDay)

song(songCode, songTitle)

musicalGroup(groupCode, groupName)

artist(artistID, firstName, lastName, yearBorn)

topCDs(cdCode, year, rating)

composedOf (cdCode, songCode, trackNumber)

topSongs(songCode, year, rating)

member(groupCode, artistID, fromDate, toDate)

writtenBy(songCode, artistID)

Queries

The output schema for the query is given in parentheses following the query specification.

1. List the song along with its cdTitle and trackNumber for top 10 songs written by artists born after 1970 (artist.yearBorn > 1970).
   (songCode, songTitle, cdCode, cdTitle, trackNumber)
2. Find the oldest artist, who is currently in a group. A group member is current if the member.toDate attribute is 0.
   (groupCode, groupName, artistID, lastName, yearBorn)
3. Find the list of musical groups such that every client in Detroit rented at least one of their CD's. (The same division query as appeared in HW1).
   (groupCode, groupName)
4. List the names of rental clients who have never rented a CD rated as number one.
   (clientID, firstName, lastName)
5. Which musical groups currently consist of only one artist?
   (groupCode, groupName, artistID, lastName)