

Deductive Databases & Knowledge Based Systems

Sheet 7

(until 19.05.2008)

Exercise 1

Provided is following *Datalog^{neg}* program:

$q(1,2).$
 $q(2,3).$
 $s(1,3).$
 $r(X,Y) : \neg s(X,Y).$
 $p(X,Y) : \neg q(X,Y), \neg r(X,Y).$
 $p(X,Y) : \neg q(X,Y), \neg s(X,Y).$
 $p(X,Y) : \neg Y = W, p(X,Y), p(W,Z).$

1. Transform the program to relational algebra by providing $eval(p)$ and $eval(r)$
2. Compute the fixpoint relations by using your results from 1.

Exercise 2

Connect to our DB2 server using following login data:

Server = is60.idb.cs.tu-bs.de

User = kbsdd DB = misc Password = XlkigngX Schema = kbsdd

jdbcString = jdbc:db2://is60.idb.cs.tu-bs.de:50000/misc

You may refer to

http://www.ifis.cs.tu-bs.de/sites/default/lecturesMats/ws0809_sqlp/SQL03.pdf for a brief tutorial to connect to the DB2 server (of course, ignore any exercises in that document, and also replace the database properties accordingly). On the server, you will find some tables.

Please write some common table expressions for answering following queries (you may mail the query and results to lofi@ifis.cs.tu-bs.de instead of using paper):

1. How can we travel from Berlin to Stuttgart cheaper than 400 Euro?
2. Because you are insanely superstitious, you refuse to use flight LHI13. Can you still travel from Berlin to Stuttgart cheaper than 400 Euros?
3. How much is the cheapest flight from Munich via Stuttgart to Hamburg?
4. What is the cheapest route such that you use exactly 4 airports?