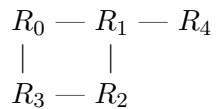**Query Optimization**

6. Exercise

Due 01.12.2014, 9 AM

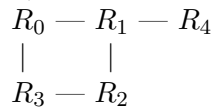submit via email (`Andrey.Gubichev@in.tum.de`)

Exercise 1

Given the following query graph, enumerate all connected subgraph-complement-pairs as produced by DPccp (not just connected subgraphs!):

$$R_0 — R_1 — R_4$$
$$|\qquad|$$
$$R_3 — R_2$$

Exercise 2

Given the following query graph, perform two simplification steps, and show the resulting query graph after each step. Assume $|R_0| = 10$, $|R_1| = 20$, $|R_2| = 50$, $|R_3| = 500$, $|R_4| = 5000$, $f_{01} = 0.1$, $f_{12} = 0.1$, $f_{23} = 0.01$, $f_{30} = 0.2$, $f_{14} = 0.05$

$$R_0 — R_1 — R_4$$
$$|\qquad|$$
$$R_3 — R_2$$

Exercise 3

Given the following join tree, give the reordering restrictions for the individual joins and show the resulting query graph for DPhyp (attention: right outer join!):