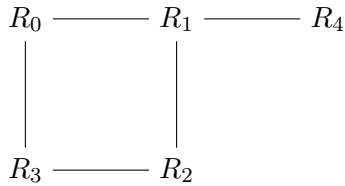# Query Optimization

6. Exercise

Due December 4, 2017, 9 AM

submit via email (radke@in.tum.de)

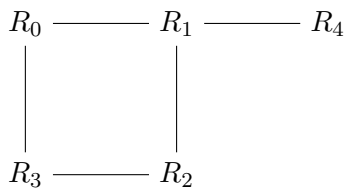## Exercise 1

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

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

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!):

$\bowtie_{A.x=B.y}$

A $\bowtie_{B.x=C.y}$

B $\bowtie_{C.x=E.y}$

$\bowtie_{C.y=D.x}$ $\bowtie_{E.x=F.y}$

C D E F