Exercise 4

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1 EXERCISE 1

1.1 GOO

Consider the cardinalities of relations R_1 to R_4 and the query graph as given in figures 1.1 and 1.2:

Relations	
Relation	Cardinality
R_1	4
R_2	4
R_3	1.000
R_4	1.000

Figure 1.1: Example relations

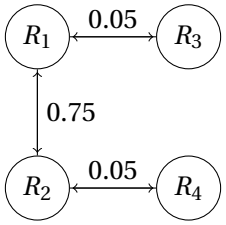

Figure 1.2: Query graph with cardinalities

Figure 1.3 shows the resulting join tree of the GOO algorithm. Labels beside the edges depict the cardinality. The values in brackets depict C_{out}.

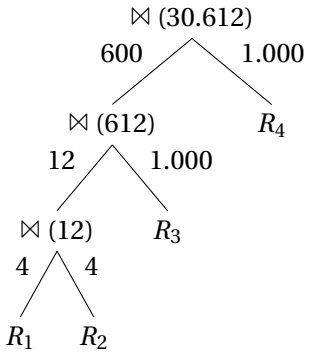

Figure 1.3: GOO join tree

The optimal join tree shown in figure 1.4, however, has lower cost. As one can see, the cost in the GOO generated join tree are 30.612, whereas the optimal join tree's cost are 30.400.

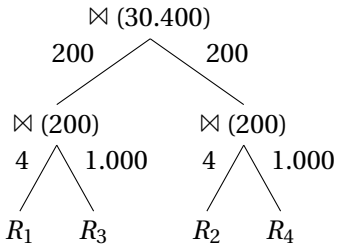

Figure 1.4: Optimal join tree

1.2 IKKBZ

2 Exercise 2

Compiling of our even-tinierDB is done via *make all* command. Changes to the originally provided Makefile include