1 Join Ordering and Cardinality Estimation

1.1 Exercise

Consider the relations $r_1(A, B, C), r_2(C, D, E)$, and $r_3(E, F)$, with primary keys A, C, and E, respectively.

Assume that r_1 has 1000 tuples, r_2 has 1500 tuples, and r_3 has 750 tuples.

Estimate the size of $r_1 \bowtie r_2 \bowtie r_3$ with a proper join ordering.

1.2 Exercise

Consider the relations $r_1(A, B, C), r_2(C, D, E)$, and $r_3(E, F)$, with primary keys A, C, and E, respectively.

Assume that r_1 has 1000 tuples, r_2 has 1500 tuples, and r_3 has 750 tuples.

Assume that there are no primary keys, except the entire schema. Assume

- $|\mathit{Values}(C, r_1)| = 900$,
- $|\mathit{Values}(C, r_2)| = 1100$,
- $|\mathit{Values}(E, r_2)| = 50$, and
- $|\mathit{Values}(E, r_3)| = 100$.

Estimate the size of $r_1 \bowtie r_2 \bowtie r_3$ and give an efficient strategy for computing the join.