数据库原理CH16作业

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16.5

Consider the relations r1(A, B, C), r2(C, D, E), and r3(E, F), with primary keys A, C, and E, respectively. Assume that r1 has 1000 tuples, r2 has 1500 tuples, and r3 has 750 tuples. Estimate the size of r1 ⋈ r2 ⋈ r3, and give an efficient strategy for computing the join.

Answer:

因为C是r2的主码，所以应该先将r1和r2连接形成r12，

因为E是r3的主码，所以将r12与r3连接，

最后的顺序应该为$(r1 \bowtie r2) \bowtie r3$。

16.8

16.8 Consider the query:

```
select *
from r, s
where upper(r.A) = upper(s.A);
```

where "upper" is a function that returns its input argument with all lowercase letters replaced by the corresponding uppercase letters.

a. Find out what plan is generated for this query on the database system you use.

b. Some database systems would use a (block) nested-loop join for this query, which can be very inefficient. Briefly explain how hash-join or merge-join can be used for this query.

Answer:

a.

经过上网搜索，MYSQL 5.5版本以前都使用的是**Nested-Loop Join。**

5.5版本以后，MYSQL使用**Block Nested-Loop Join。**

b.

先执行 upper(r.A) 和 upper(s.A)，再执行 hash-join 或者 merge-join。