Query Optimization

Due 2007-11-13

Consider the following SQL queries. For each of them, perform the canonical translation, logical optimization and (plausible) physical optimization. Give a short justification for the physical optimization.

1. (3)
   
   ```sql
   select s.name, l.name
   from students s, lectures l, attends s
   where s.id=a.sid and a.lid=l.id and l.year=2007
   ```

2. (3)
   
   ```sql
   select distinct s.name
   from students s, lectures l, attends s, professors p
   where s.id=a.id and a.lid=l.id and l.pid=p.id and l.name="Sokrates"
   ```

3. (4)
   
   ```sql
   select distinct p.name, avg(e.grade)
   from lectures l, professors p, exams e
   where l.pid=p.id and e.lid=l.id and l.year=2007
   group by p.id, p.name
   ```