CS33503数据库系统实验

实验检查记录

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| 实验结果的正确性(60%) |  | 表达能力(10%) |  |
| 实验过程的规范性(10%) |  | 实验报告(20%) |  |
| 加分(5%) |  | 总成绩(100%) |  |

实验报告

一、实验目的

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| 1.掌握PostgreSQL的使用方法；  2.利用SQL创建、修改、查询和控制关系数据库。 |

二、实验环境

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| PostgreSQL 13.4 on x86\\_64-apple-darwin20.4.0, compiled by Apple clang version 12.0.5 (clang-1205.0.22.9), 64-bit |

三、实验过程

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| 3.1 练习使用psql命令  我在连接数据库Product后，试图创建另一个数据库College。似乎没什么优雅的方法，需要\q退出psql，然后重新连接到某个用户之后再create database。  3.2 验证第3章例子  验证发现，除了嵌套查询的例子中用了不存在的属性Cname，似乎没什么问题  3.3 习题11  (a)  select distinct maker from Product where type='laptop' except select distinct maker from Product where type='pc';  (b)  select distinct maker from Product where maker not in (select maker from Product where type='pc') and maker in (select maker from Product where type='laptop');  (c)  select distinct maker from Product as A where type='laptop' and not exists (select \* from Product as B where B.maker = A.maker and B.type='pc');  (d)  select P1.model from Printer as P1 join Printer as P2 on (P1.price < P2.price) where P2.model=3002;  (e)  select model from Printer as P1 where P1.price < (select price from Printer as P2 where P2.model=3002);  (f)  select model from Printer as P1 where exists (select price from Printer as P2 where P2.model=3002 and P2.price>P1.price);  (g)  select PC1.model from PC as PC1 left outer join PC as PC2 on (PC1.speed < PC2.speed) where PC2.model is null;  (h)  select model from PC where speed in (select max(speed) from PC);  (i)  select model from PC where speed = (select max(speed) from PC);  (j)  select model from PC where speed >= (select max(speed) from PC);  (k)  select model from PC as PC1 where not exists (select \* from PC as PC2 where PC2.speed > PC1.speed);  (l)  select distinct A.maker from ((Product join PC using(model)) as A join (Product join PC using(model)) as B on A.speed != B.speed and A.maker = B.maker) join (Product join PC using(model)) as C on A.speed != C.speed and B.speed != C.speed and A.maker = C.maker;  (m)  select maker from Product join PC using(model) group by maker having count(distinct speed)>=3 ;  (n)  select maker from (select maker, count(distinct speed) as cnt from Product join PC using(model) group by maker) as A where A.cnt >=3;  (o)  update PC set price = price\*0.90 where model = any (select model from Product where maker = 'A');  (p)  update PC set price = price\*0.90 where model in (select model from Product where maker = 'A');  (q)  update PC set price = price\*0.90 where exists(select \* from Product where maker = 'A' and model = PC.model); |

四、实验结论

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| PostgreSQL真好，mySQL不支持集合相减操作，不如PostgreSQL舒服。 |