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Subject-DBMS

PROGRAM 3: SUPPLIER DATABASE

Consider the following schema:

SUPPLIERS(sid: integer, sname: string, address: string)

PARTS(pid: integer, pname: string, color: string)

CATALOG(sid: integer, pid: integer, cost: real)

The Catalog relation lists the prices charged for parts by Suppliers.

Write the following queries in SQL:

Find the pnames of parts for which there is some supplier.

Find the snames of suppliers who supply every part.

Find the snames of suppliers who supply every red part.

Find the pnames of parts supplied by Acme Widget Suppliers and by no one else.

Find the sids of suppliers who charge more for some part than the average cost of that part (averaged over all the suppliers who supply that part).

For each part, find the sname of the supplier who charges the most for that part.

|  |
| --- |
| create database supplier; |
|  | use supplier; |
|  | create table suppliers( |
|  | sid int primary key, |
|  | sname varchar(30), |
|  | address varchar(30) |
|  | ); |
|  | create table parts( |
|  | pid int primary key, |
|  | pname varchar(30), |
|  | color varchar(30) |
|  | ); |
|  | create table catalog ( |
|  | sid int , |
|  | pid int , |
|  | cost real, |
|  | constraint c\_sid foreign key(sid) references suppliers(sid) , |
|  | constraint c\_pid foreign key(pid) references parts(pid) |
|  | ); |
|  | insert into suppliers values(1,'Acme Widget','kolkata') ; |
|  | insert into suppliers values(2,'Tata','bengaluru') ; |
|  | insert into suppliers values(3,'Reebok','delhi') ; |
|  | insert into suppliers values(4,'Nike','delhi') ; |
|  | insert into suppliers values(5,'Reliance','delhi') ; |
|  |  |
|  |  |
|  | insert into parts values(1,'paint','red') ; |
|  | insert into parts values(2,'steel','black') ; |
|  | insert into parts values(3,'spray','red') ; |
|  | insert into parts values(4,'sheet','green'); |
|  | insert into parts values(5,'tiles','blue'); |
|  | delete from parts where pid=5; |
|  |  |
|  | insert into catalog values(1,1,100); |
|  | insert into catalog values(1,2,200); |
|  | insert into catalog values(1,3,200); |
|  | insert into catalog values(1,4,100); |
|  | insert into catalog values(2,1,300); |
|  | insert into catalog values(2,2,100); |
|  | insert into catalog values(3,2,90); |
|  | insert into catalog values(3,3,110); |
|  | insert into catalog values(3,4,110); |
|  | insert into catalog values(4,1,100); |
|  | insert into catalog values(4,3,120); |
|  | insert into catalog values(4,4,130); |
|  |  |
|  | select \* from catalog; |
|  | select \* from parts; |
|  |  |
|  | -- i. Find the pnames of parts for which there is some supplier. |
|  | insert into parts values(5,'tiles','blue'); |
|  | select p.pname from parts p where p.pid in (select pid from catalog c group by c.pid having count(c.sid)>0); |
|  | insert into catalog values(1,5,140); |
|  | select p.pname from parts p where p.pid in (select pid from catalog c group by c.pid having count(c.sid)>0); |
|  | delete from catalog where pid=5; |
|  | delete from parts where pid=5; |
|  |  |
|  | -- ii. Find the snames of suppliers who supply every part. |
|  | select s.sname from suppliers s where s.sid in (select c.sid from catalog c group by c.sid having count(distinct (c.pid))=(select count(p.pid) from parts p)); |
|  |  |
|  | -- iii. Find the snames of suppliers who supply every red part. |
|  | select s.sname from suppliers s where s.sid in (select ca.sid from catalog ca,parts p where ca.pid=p.pid and p.color='red' group by ca.sid having count(ca.pid)=(select count(\*) from parts p where p.color='red')); |
|  |  |
|  | -- iv. Find the pnames of parts supplied by Acme Widget Suppliers and by no one else. |
|  | select ca.pid from catalog ca where ca.sid=(select s.sid from suppliers s where s.sname ='Acme Widget') having (select count(c.pid) from catalog c where c.pid=ca.pid)=1; |
|  |  |
|  | -- v. Find the sids of suppliers who charge more for some part than the average cost of that part (averaged over |
|  | -- all the suppliers who supply that part). |
|  | select distinct c.sid,c.pid from catalog c where c.cost > (select avg(ca.cost) from catalog ca where ca.pid=c.pid); |
|  |  |
|  | -- vi. For each part, find the sname of the supplier who charges the most for that part. |
|  | select s.sname from suppliers s where s.sid in (select c.sid from catalog c where c.cost=(select max(cost) from catalog ca where ca.pid=c.pid)); |
|  |  |
|  | -- vii. select supplier who sell only red parts |
|  | select s.sname from suppliers s where s.sid in(select c.sid from catalog c where c.sid not in (select distinct(ca.sid) from catalog ca,parts p where ca.pid=p.pid and p.color!='red')); |
|  | insert into catalog values(5,1,140); |
|  | select s.sname from suppliers s where s.sid in(select c.sid from catalog c where c.sid not in (select distinct(ca.sid) from catalog ca,parts p where ca.pid=p.pid and p.color!='red')); |
|  | delete from catalog where sid=5; |

Output

