Consider the following schema:

Suppliers (sid, sname, address)
Parts (pid, pname, color)
Catalog (sid, pid, cost)

The key fields are underlined, and the domain of each field is listed after the field name. Therefore, sid is the key for Suppliers, pid is the key for Parts, and sid and pid together form the key for Catalog. The Catalog relation lists the prices charged for parts by Suppliers. Write the following queries in SQL:

1. Find the names of suppliers who supply some red part.

SELECT S.sname

FROM Suppliers S, Parts P, Catalog C. (S,P,C -> range variables)

WHERE C.sid = S.sid AND C.pid=P.pid AND P.color=’red’

1. Find the sids of suppliers who supply some red or green part

SELECT C.sid

FROM Parts P, Catalog C

WHERE C.pid=P.pid AND (P.color=’red’ OR ‘P.color=’green’)

1. 4 Find the sids of suppliers who supply some red part and some green part.

SELECT C.sid

FROM Parts P, Catalog C

WHERE C.pid=P.pid AND (P.color=’red’ AND ‘P.color=’green’)

To παραπάνω ερώτημα είναι λάθος γιατί δεν μπορώ να έχω αληθές αποτέλεσμα σε ένα AND όταν τα ορίσματά του είναι πάνω στο ίδιο γνώρισμα/attribute. Αποτέλεσμα θα βγει αλλά θα είναι πάντα κενό.

Το σωστό δίνεται παρακάτω:

Sid1: {g,p,r,w}

Sid2: {p,r,w}

Sid3: {r,g,b,y}

(SELECT C.sid

 FROM Parts P, Catalog C

 WHERE P.color=’red’ AND P.pid = C.pid)

INTERSECT

(SELECT C.sid

 FROM Parts P, Catalog C

 WHERE P.color=’green’ AND P.pid = C.pid)

INTERSECT = τομή, UNION = ένωση, EXCEPT = διαφορά

UNION COMPATIBILITY =

1. Ίδιο αριθμό γνωρισμάτων
2. Γνωρίσματα ίδιου τύπου
3. ΠΡΟΣΟΧΗ: ΔΕΝ ΜΑΣ ΕΝΔΙΑΦΕΡΕΙ ΤΟ ΟΝΟΜΑ ΤΩΝ ΓΝΩΡΙΣΜΑΤΩΝ. ΑΥΤΟ ΕΙΝΑΙ ΣΤΟ ΧΕΡΟ ΤΟΥ ΠΡΟΓΡΑΜΜΑΤΙΣΤΗ.

SELECT C.sid

FROM Parts P, Catalog C

WHERE P.color = ‘red’ AND P.pid=C.pid

AND EXISTS ( SELECT \*

 FROM Parts P2, Catalog C2

 WHERE P2.color=’green’ AND P2.pid = C2.pid AND C2.sid=C.sid )

EXISTS επιστρέφει TRUE όταν το ερώτημα που έπεται επιστρέφει τουλάχιστον μια εγγραφή

ΝΟΤ EXISTS επιστρέφει ΤRUE όταν το ερώτημα που έπεται δεν επιστρέφει εγγραφές

|  |  |  |
| --- | --- | --- |
| sid | pid | Color |
| 1 | A | Red |
| 2 | A | Red |
| 1 | B | Green |
| 1 | C | Black |

1. Find pairs of sids such that the supplier with the first sid charges more for some part than the supplier with the second sid.

SELECT C1.sid, C2.sid

FROM Catalog C1, Catalog C2 (<- Cartesian product)

WHERE C1.cost > C2.cost AND C1.sid <> C2.sid AND C1.pid = C2.pid

Σε ένα ερώτημα το 1ο βήμα (εσωτερικά) είναι το FROM, το 2ο είναι το WHERE και το τελευταίο θα είναι το SELECT

Catalog:

|  |  |  |
| --- | --- | --- |
| sid | pid | cost |
| 1 | a | 10 |
| 2 | b | 7 |
| 3 | a | 8 |

Cartesian product

SELECT \*

FROM Catalog C1, Catalog C2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| C1.sid | C1.pid | C1.cost | C2.sid | C2.pid | C2.cost |
| 1 | a | 10 | 1 | a | 10 |
| 1 | a | 10 | 2 | b | 7 |
| 1 | a | 10 | 3 | a | 8 |
| 2 | b | 7 | 1 | a | 10 |
| 2 | b | 7 | 2 | b | 7 |
| 2 | b | 7 | 3 | a | 8 |
| 3 | a | 8 | 1 | a | 10 |
| 3 | a | 8 | 2 | b | 7 |
| 3 | a | 8 | 3 | a | 8 |