1. Show the result of a project operation that lists the PNAME, COLOR, and CITY attributes of all parts

(P table).

===================

PNAME COLOR CITY

===================

Nut Red London

Bolt Green Paris

Screw Blue Oslo

Screw Red London

Cam Blue Paris

Cog Red London

====================

2. Show the result of a restrict operation that lists parts (P table) whose color is Green or Red.

=============================

PNO PNAME COLOR WEIGHT CITY

=============================

P1 Nut Red 12 London

P2 Bolt Green 17 Paris

P4 Screw Red 14 London

P6 Cog Red 19 London

=============================

3. Show the result of a project operation that lists the PNAME, COLOR, and CITY attributes of parts (P

table) whose color is Green or Red.

===================

PNAME COLOR CITY

===================

Nut Red London

Bolt Green Paris

Screw Red London

Cog Red London

====================

4. Show the result of a natural join that combines the suppliers (S table) and parts (P table).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| SNO | SNAME | STATUS | CITY | PNO | PNAME | COLOR | WEIGHT |
| s1 | Smith | 20 | London | P1 | Nut | Red | 12 |
| s4 | Clark | 20 | London | P1 | Nut | Red | 12 |
| s2 | Jones | 10 | Paris | P2 | Bolt | Green | 17 |
| s3 | Blake | 30 | Paris | P2 | Bolt | Green | 17 |
| s1 | Smith | 20 | London | P4 | Screw | Red | 14 |
| s4 | Clark | 20 | London | P4 | Screw | Red | 14 |
| s2 | Jones | 10 | Paris | P5 | Cam | Blue | 12 |
| s3 | Blake | 30 | Paris | P5 | Cam | Blue | 12 |
| s1 | Smith | 20 | London | P6 | Cog | Red | 19 |
| s4 | Clark | 20 | London | P6 | Cog | Red | 19 |

5. Show the result of a one-sided outer join between the S (supplier) and P (part) tables using the common CITY column. Preserve the rows of the S table in the result.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SNO | SNAME | STATUS | S.CITY | P.CITY | PNO | PNAME | COLOR | WEIGHT |
| s1 | Smith | 20 | London | London | P1 | Nut | Red | 12 |
| s4 | Clark | 20 | London | London | P1 | Nut | Red | 12 |
| s2 | Jones | 10 | Paris | Paris | P2 | Bolt | Green | 17 |
| s3 | Blake | 30 | Paris | Paris | P2 | Bolt | Green | 17 |
| s1 | Smith | 20 | London | London | P4 | Screw | Red | 14 |
| s4 | Clark | 20 | London | London | P4 | Screw | Red | 14 |
| s2 | Jones | 10 | Paris | Paris | P5 | Cam | Blue | 12 |
| s3 | Blake | 30 | Paris | Paris | P5 | Cam | Blue | 12 |
| s1 | Smith | 20 | London | London | P6 | Cog | Red | 19 |
| s4 | Clark | 20 | London | London | P6 | Cog | Red | 19 |
| s5 | Adams | 30 | Athens |  |  |  |  |  |

6. Show the result of a one-sided outer join between the S (supplier) and P (part) tables using the

common CITY column. Preserve the rows of the P table in the result.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SNO | SNAME | STATUS | S.CITY | P.CITY | PNO | PNAME | COLOR | WEIGHT |
| s1 | Smith | 20 | London | London | P1 | Nut | Red | 12 |
| s4 | Clark | 20 | London | London | P1 | Nut | Red | 12 |
| s2 | Jones | 10 | Paris | Paris | P2 | Bolt | Green | 17 |
| s3 | Blake | 30 | Paris | Paris | P2 | Bolt | Green | 17 |
| s1 | Smith | 20 | London | London | P4 | Screw | Red | 14 |
| s4 | Clark | 20 | London | London | P4 | Screw | Red | 14 |
| s2 | Jones | 10 | Paris | Paris | P5 | Cam | Blue | 12 |
| s3 | Blake | 30 | Paris | Paris | P5 | Cam | Blue | 12 |
| s1 | Smith | 20 | London | London | P6 | Cog | Red | 19 |
| s4 | Clark | 20 | London | London | P6 | Cog | Red | 19 |
|  |  |  |  | Oslo | P3 | Screw | Blue | 17 |

7. Show the result of the full outer join between the S (supplier) and P (part) tables using the common

CITY column.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SNO | SNAME | STATUS | S.CITY | P.CITY | PNO | PNAME | COLOR | WEIGHT |
| s1 | Smith | 20 | London | London | P1 | Nut | Red | 12 |
| s4 | Clark | 20 | London | London | P1 | Nut | Red | 12 |
| s2 | Jones | 10 | Paris | Paris | P2 | Bolt | Green | 17 |
| s3 | Blake | 30 | Paris | Paris | P2 | Bolt | Green | 17 |
| s1 | Smith | 20 | London | London | P4 | Screw | Red | 14 |
| s4 | Clark | 20 | London | London | P4 | Screw | Red | 14 |
| s2 | Jones | 10 | Paris | Paris | P5 | Cam | Blue | 12 |
| s3 | Blake | 30 | Paris | Paris | P5 | Cam | Blue | 12 |
| s1 | Smith | 20 | London | London | P6 | Cog | Red | 19 |
| s4 | Clark | 20 | London | London | P6 | Cog | Red | 19 |
| s5 | Adams | 30 | Athens |  |  |  |  |  |
|  |  |  |  | Oslo | P3 | Screw | Blue | 17 |

8. Show SNO, SNAME, and CITY of supplier(s) (S table) who did not supply ‘P1’.

|  |  |  |
| --- | --- | --- |
| SNO | SNAME | CITY |
| S2 | Jones | Paris |
| S3 | Blake | Paris |
| S4 | Clark | London |

9. Show the result of a summarize operation on the SPJ table. The grouping columns is PNO and the

aggregate calculation are the sum of QTY values.

|  |  |
| --- | --- |
| PNO | SUM(QTY) |
| P1 | 1000 |
| P2 | 300 |
| P3 | 3500 |
| P4 | 1300 |
| P5 | 1100 |
| P6 | 1300 |

10. Show SNO, SNAME, and CITY of supplier(s) (S table) who supplied to all parts in the P table. That is,

show the result of the divide operation in which SPJ table (with SNO and PNO columns) is divided

by P table (with PNO column). (See textbook §3.4.7 for divide operator.)

|  |  |  |
| --- | --- | --- |
| SNO | SNAME | CITY |
| s5 | Adams | Athens |