Homework Assignment Submitted Successfully.

Submission number: 34519
Submission certificate: JA729558
Submission time: 2023-05-01 09:26:45 PST (GMT - 8:00)

Number of questions: 6
Positive points per question: 1.0
Negative points per question: 0.0

1. The table

Scores(Team, Day, Opponent, Runs)

Gives the scores in the Japanese Baseball League for two consecutive days. The data in this table is as follows:

Team	Day	Opponent	Runs
Dragons	Sunday	Swallows	4
Tigers	Sunday	Bay Stars	9
Carp	Sunday	Giants	2
Swallows	Sunday	Dragons	7
Bay Stars	Sunday	Tigers	2
Giants	Sunday	Carp	4
Dragons	Monday	Carp	6
Tigers	Monday	Bay Stars	5
Carp	Monday	Dragons	3
Swallows	Monday	Giants	0
Bay Stars	Monday	Tigers	7
Giants	Monday	Swallows	5

Dtermine the result of the query

```
SELECT Team, Day
FROM Scores S1
WHERE NOT EXISTS
    (SELECT * FROM Scores S2
     WHERE S1.Runs = S2.Runs AND
         (S1.Team <> S2.Team OR S1.Day <> S2.Day)
    )
```

Then, identify, in the list below, one of the rows of the result. one of these queries.

Hint: When trying to understand what a query does, it is often easiest to work "inside-out." That is, first understand the subquery. Notice that the subquery in this problem has an "input," S1.Day, that is determined outside the subquery, and depends on which row of scores the alias variable S1 refers to.

a)

Carp	Sunday

b)

Dragons	Sunday

c)

Dragons	Monday

d)

Tigers	Monday

Answer submitted: **c)**

2. The table

Scores(Team, Day, Opponent, Runs)

Contains the following 12 rows:

Team	Day	Opponent	Runs
Dragons	Sunday	Swallows	4
Tigers	Sunday	Bay Stars	9
Carp	Sunday	NULL	NULL
Swallows	Sunday	Dragons	7
Bay Stars	Sunday	Tigers	2
Giants	Sunday	NULL	NULL
Dragons	Monday	Carp	NULL
Tigers	Monday	NULL	NULL
Carp	Monday	Dragons	NULL
Swallows	Monday	Giants	0
Bay Stars	Monday	NULL	NULL
Giants	Monday	Swallows	5

What is the result of the following query?

```
SELECT S1.Team, S2.Team
FROM Scores S1, Scores S2
WHERE S1.Opponent = S2.Opponent
    AND S1.Team <> S2.Team
```

Identify in the list below a tuple of the result.

a)

Giants	Bay Stars

b)

Giants	Dragons

c)

Bay Stars	Carp

d)

Giants	Giants

Answer submitted: **b)**

3. Suppose relations R(A,B) and S(B,C,D) are as follows:

R =

A	B
1	2
3	4
5	6

S =

B	C	D
4	5	1
6	7	2
8	9	3

Compute the full outer join on B, the left outer join on B, and the right outer join on B. In each case, R is the left operand and S is the right operand. Then, answer the following questions for each of the three results:

1. How many rows are there in the result?
2. How many NULL's appear in the result.

Finally, find the correct statement in the list below.

a) The left outer join has 1 NULL.

b) The full outer join has 6 tuples.

c) The full outer join has 4 rows.

d) The right outer join has 3 NULL's.

Answer submitted: **c)**

4. Here are three relations, R(A,B), S(C,D), and T(E,F). Their current values are:

R

A	B
0	1
1	0
1	1

S

C	D
0	1
1	0
1	1

T

E	F
0	1
1	0
1	1

Compute the result of the query:

```
SELECT A, F, SUM(C), SUM(D)
FROM R, S, T
WHERE B = C AND D = E
GROUP BY A, F
HAVING COUNT(*) > 1
```

Identify, in the list below, the row that appears in the result.

a) (1,1,1,1)

b) (0,1,2,2)

c) (0,1,2,1)

d) (1,0,2,1)

Answer submitted: **b)**

5. Suppose relation R(A,B,C) has the tuples:

A	B	C
1	2	3
4	2	3

4	5	6
2	5	3
1	2	6

Compute the projection $\pi_{C,B}(R)$, and identify one of its tuples from the list below.

a) (4,2)
b) (6,5)
c) (1,2,6)
d) (4,2,3)

Answer submitted: **b)**

6. Compute the union of the relation R(A,B,C):

A	B	C
1	2	3
4	2	3
4	5	6
2	5	3
1	2	6

and relation S(A,B,C):

A	B	C
2	5	3
2	5	4
4	5	6
1	2	3

Which of the following tuples DOES NOT appear in R [union] S?

a) (1,2,6)
b) (4,5,3)
c) (1,2,3)
d) (2,5,3)

Answer submitted: **b)**