FALL 2024

Introduction to Database & Data Modeling PE07

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Assignment Box **PE07**

upload it as a Word Document and/or PDF Document – I prefer PDF's.

Use the following relations to answer the questions 1 through 4. For each question, show the operations used. WRITE the required MySql AND the results. DIFFERENCE IS NOT MySQL key word.

STUDENT

| StudentID | Name | Major |
|-----------|-------|-------|
| 123 | Bill | ΙΤ |
| 234 | Sue | CS |
| 345 | Tom | SE |
| 456 | Ann | BUS |
| 567 | Linda | ΙΤ |
| 678 | Tom | ΙΤ |
| 789 | Sue | LA |

ITSTUDENT

| StudentID | Name | Major |
|-----------|-------|-------|
| 123 | Bill | IT |
| 567 | Linda | IT |
| 678 | Tom | IT |
| 890 | Jon | IT |
| 901 | Lynn | IT |

1. What is the result of the union of STUDENT and ITSTUDENT?

Relational Operation Here

STUDENT union ITSTUDENT MySQL Here

SELECT * FROM student UNION SELECT * FROM itstudent;

Results of Operation Here

| StudentID | Name | Major |
|-----------|-------|-------|
| 123 | Bill | IT |
| 234 | Sue | CS |
| 345 | Tom | SE |
| 456 | Ann | BUS |
| 567 | Linda | IT |
| 678 | Tom | IT |
| 789 | Sue | LA |
| 890 | Jon | IT |
| 901 | Lynn | IT |
| | | |
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| | | |

2. What is the result of the intersection of STUDENT and ITSTUDENT?

Relational Operation Here

| STUDENT \(\cappa\) ITSTUDENT | |
|----------------------------------|--|
| MySQL Here | |

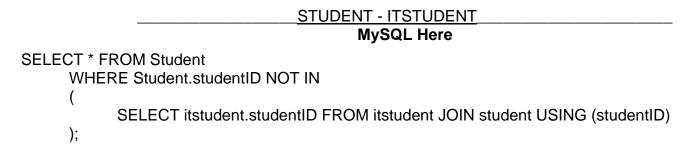
SELECT * FROM student INTERSECT SELECT * FROM itstudent;

Results of Operation Here

| StudentID | Name | Major |
|-----------|-------|-------|
| 123 | Bill | IT |
| 567 | Linda | IT |
| 678 | Tom | IT |
| | | |
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3. What is the result of the difference of STUDENT and ITSTUDENT?

Relational Operation Here



Results of Operation Here

| StudentID | Name | Major |
|-----------|------|-------|
| 234 | Sue | CS |
| 345 | Tom | SE |
| 456 | Ann | BUS |
| 789 | Sue | LA |
| | | |

4. What is the result of the difference of ITSTUDENT and STUDENT

Relational Operation Here

| ITSTUDENT - STUDENT | |
|--|--|
| MySQL Here | |
| SELECT * FROM itstudent | |
| WHERE itstudent.studentID NOT IN | |
| (SELECT student.studentID FROM student JOIN itstudent USING (studentID) | |
|): | |

Results of Operation Here

| StudentID | Name | Major |
|-----------|------|-------|
| 890 | Jon | IT |
| 901 | Lynn | IT |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Consider these two tables below when answering question #5.

Left table is relation dept and it can be found in script jimsNEW.sql

Right table is relation emp and it can also be found in script jimsNEW.sql

| SELECT * FROM dept | SELECT * FROM emp | | | |
|--------------------------|--------------------------------|----------|--|--|
| ++ departNO name | empNO name | departNO | | |
| ++ | 1 Bruce Halfpence | 1 | | |
| 1 Sys Admin | 2 Keith Beer | 2 | | |
| 2 Programming | 3 Kevin Whittling | 2 | | |
| 3 Finance | 4 Ed Holdup | 3 | | |
| 4 Management | 5 Larry Molehill | 1 | | |
| 1: | 6 Bruce Halfpence | 1 | | |
| 5 Planning | 7 Jim Habermas | 11 | | |
| f rows in set (0.00 sec) | ++ 7 rows in set (0.00 sec) | + | | |

See question #5 on NEXT page.

5. Using MySQL <u>only</u> create a FULL OUTER JOIN of dept AND emp

MySQL Here (some starter code was provided to you below)

SELECT DISTINCT dept.departNO AS "Dept #", dept.name AS "Department_Name", emp.name
AS "Employee_Name"

FROM dept LEFT JOIN emp USING (departNO)

UNION

SELECT DISTINCT dept.departNO AS "Dept #", dept.name AS "Department_Name",
emp.name AS "Employee_Name"

FROM dept RIGHT JOIN emp USING (departNO);

What does your version of a FULL OUTER JOIN between emp and dept produce?

| Dept # | Department_Name | Employee_Name |
|--------|-----------------|-----------------|
| 1 | Sys Admin | Bruce Halfpence |
| 1 | Sys Admin | Larry Molehill |
| 2 | Programming | Keith Beer |
| 2 | Programming | Kevin Whittling |
| 3 | Finance | Ed Holdup |
| 4 | Management | NULL |

| 5 | Planning | NULL |
|------|----------|--------------|
| NULL | NULL | Jim Habermas |
| | | |
| | | |