RIT | Golisano College of Computing and Information Sciences
School of Information

Introduction to Database & Data Modeling

PE07 FALL 2024

Due Date (See **MyCourses ASSIGMENTS**) Assignment Box **PE07**

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Recommend that you download this Word Document and type your Answers. You can 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	IT
234	Sue	CS
345	Tom	SE
456	Ann	BUS
567	Linda	IT
678	Tom	IT
789	Sue	LA

ITSTUDENT

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

PE#07

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

Relational Operation Here

STUDENT ∪ ITSTUDENT

MySQL Here

SELECT StudentID, Name, Major FROM Student

UNION

SELECT StudentID, Name, Major

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

Note: Not all rows may be used.

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

Relational Operation Here

STUDENT ∩ ITSTUDENT

MySQL Here

```
SELECT STUDENT.StudentID, STUDENT.Name, STUDENT.Major FROM Student
INNER JOIN
ITSTUDENT ON STUDENT.StudentID = ITSTUDENT.StudentID;
```

Results of Operation Here

StudentID	Name	Major
123	Bill	IT
567	Linda	IT
678	Tom	IT

Note: Not all rows may be used.

3. What is the result of the difference of STUDENT and ITSTUDENT?

Relational Operation Here

STUDENT - ITSTUDENT

MySQL Here

```
SELECT * FROM STUDENT
  WHERE NOT EXISTS
  (
    SELECT * FROM ITSTUDENT WHERE student.studentID = itstudent.studentID
  );
```

Results of Operation Here

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

Note: Not all rows may be used.

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

Relational Operation Here

ITSTUDENT - STUDENT

MySQL Here

```
SELECT * FROM ITSTUDENT
  WHERE NOT EXISTS
  (
    SELECT * FROM STUDENT WHERE itstudent.studentID = student.studentID
  );
```

Results of Operation Here

StudentID	Name	Major
890	Jon	IT
901	Lynn	IT

Note: Not all rows may be used.

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
--------------

+----------+-------------+
| departNO | name        |
+----------+-------------+
|        1 | Sys Admin   |
|        2 | Programming |
|        3 | Finance     |
|        4 | Management  |
|        5 | Planning    |
+----------+-------------+
5 rows in set (0.00 sec)
```

```
--------------
SELECT * FROM emp
--------------

+-------+-----------------+----------+
| empNO | name            | departNO |
+-------+-----------------+----------+
|     1 | Bruce Halfpence |        1 |
|     2 | Keith Beer      |        2 |
|     3 | Kevin Whittling |        2 |
|     4 | Ed Holdup       |        3 |
|     5 | Larry Molehill  |        1 |
|     6 | Bruce Halfpence |        1 |
|     7 | Jim Habermas    |       11 |
+-------+-----------------+----------+
7 rows in set (0.00 sec)
```

See question #5 on NEXT page.

5. Using MySQL **only** create a FULL OUTER JOIN of dept AND emp

PE#07

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" . . . . .
```

```
SELECT DISTINCT
   dept.departNO AS "Dept #",
   dept.name AS "Department_Name",
   emp.name AS "Employee_Name"
FROM
   dept
LEFT JOIN
   emp ON dept.departNO = emp.departNO

UNION

SELECT DISTINCT
   dept.departNO AS "Dept #",
   dept.name AS "Department_Name",
   emp.name AS "Employee_Name"
FROM
   dept
RIGHT JOIN
   emp ON dept.departNO = emp.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