Module 8: Join and Set Operations

Join:

→ □ Join combines columns from

□ Join condition names a column in each of the two tables involved in the join and indicates how the columns should be compared.

CROSS Join:

□ It will return a table which consists of records which combines each row from first table with each row of the second table hence giving all combinations.

□ It returns the Cartesian product of rows from the tables in join.

□ Cross Join using Comma Operator:

- □ **SELECT select_list**
- □ **FROM table_1, table_2;**

□ Cross Join using JOIN Keyword:

- □ **SELECT select_list**
- □ **table_1 CROSS JOIN table_2;**

Inner Join:

→ □ For an inner join only those rows that

□ Join condition names a column in each of the two tables involved in the join and indicates how the columns should be compared.

□ Join condition uses relational operators and for compound conditions we can use AND or OR operator.

□ If the comparing condition is = then It is also called EQUI JOIN because the result is based on matched data as per equality condition.

□ The syntax for inner join is:

- □ **SELECT column_list**
- □ **FROM table_1**
- □ **[INNER] JOIN table_2**
- □ **ON join_condition_1 …**

Self Join:

□ Joining a table to itself is called self-join.

□ We use self join when we want to combine rows from other rows in the same table.

□ To perform self join operation we must use table alias to help MySQL distinguish left table from right table of the same table in a single query.

Outer Join:

→ ❑ Outer join retrieves all rows that satisfy the join condition, plus

❑ LEFT outer join will retrieve unmatched rows from left/first table.

❑ LEFT Outer Join returns all rows from the table on left even if no matching rows have been found in the table on the right.(NULL is returned for no matches)

❑ RIGHT outer join will retrieve unmatched rows from second/right table.

❑ RIGHT Outer Join returns all rows from the table on right even if no matching rows have been found in the table on the left.(NULL is returned for no matches).

❑ The syntax for outer join is:

  ❑ **SELECT select_list**
  ❑ **FROM table_1**
  ❑ **{LEFT|RIGHT} [OUTER] JOIN table_2**
  ❑ **ON join_condition_1 …**

Natural Join:

❑ MySQL Natural Join is structured in a way that, columns with same name of associate tables will appear only once.

❑ Natural Join Guideline:

  ❑ The associated tables have one or more pairs of identically named columns.
  ❑ The columns must be the same data type.

❑ The syntax for natural join is:

  ❑ **SELECT select_list**
  ❑ **FROM table_1**
  ❑ **NATURAL JOIN table_2**
  ❑ **[NATURAL JOIN table_3]**

Set Operations:

❑ Set Operations allow the results of multiple queries to be combined into single set.

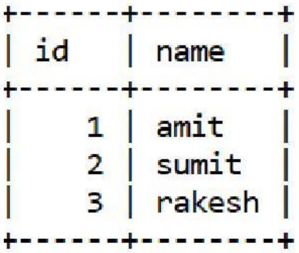
❑ Set Operations include:

  ❑ UNION
  ❑ UNION ALL
  ❑ INTERSECT
  ❑ MINUS

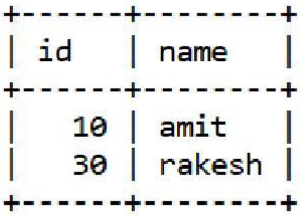
❑ Each result set must return the same number of columns and the corresponding columns in each result set must have compatible data types.

MCQs - Join

Consider two tables:



```
+------+--------+
| id   | name   |
+------+--------+
|    1 | amit   |
|    2 | sumit  |
|    3 | rakesh |
+------+--------+
```



```
+------+--------+
| id   | name   |
+------+--------+
|   10 | amit   |
|   30 | rakesh |
+------+--------+
```

Q1) What is the result of the following query?

select id, id from t1, t2;

Options:

A. (1, 10) , (1, 30), (2, 10), (2,30), (3, 10) and (3, 30).

B. (10, 1), (30, 1), (10, 2), (30, 2), (10, 3) and (30, 3).

C. output order cannot be determined

D. error

Solution:

Q2) What is the result of the following query?

select t1.id, t2.name from t1 inner join t2 on t1.name = t2.name;

Options:

A. (10, 'amit') (30, 'rakesh')

B. (2, 'amit') (3, 'rakesh')

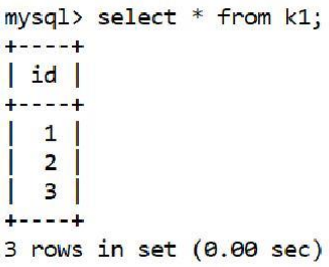
C. (1, 'amit') (3, 'rakesh')

D. (3, 'amit') (1, 'rakesh')

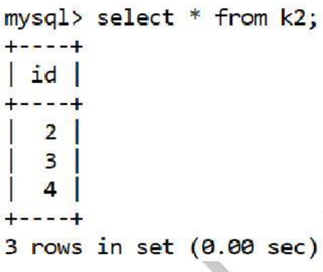
Solution:

MCQs - Set

Consider two tables:



```
mysql> select * from k1;
+----+
| id |
+----+
|  1 |
|  2 |
|  3 |
+----+
3 rows in set (0.00 sec)
```



```
mysql> select * from k2;
+----+
| id |
+----+
|  2 |
|  3 |
|  4 |
+----+
3 rows in set (0.00 sec)
```

Q3) What is the result of the following?

select * from k1 union select * from k2;

Options:

A. (2) B. (1, 2, 3, 4)

C. (1, 2, 3) D. (1, 2, 3, 2, 3, 4)

Solution:

Q4) **What is the result of the following:**

select * from k1 union all select * from k2;

Options:

A. (1, 2, 2, 3, 3, 4) B. (1, 2, 3, 4)

C. (2) D. (1, 2, 3, 2, 3, 4)

Solution:

Q5) **What is the result of the following:**

select * from k1 intersect select * from k2;

Options:

A. (2, 3) B. (1)

C. error D. (3, 2)

Solution:

Q6) **What is the result of the following:**

select * from k2 inner join k1 using(id);

Options:

A. (2, 3) B. (1)

C. error D. (3, 2)

Solution: