Government College of Engineering, Jalgaon **(An Autonomous Institute of Government of Maharashtra)**		
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Class : T. Y. B.Tech Computer	**Academic Year :** 2023-24	**Subject :** CO307U
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Date of Performance :	**Date of Completion :**	

Practical no. 5

Aim : Design queries to demonstrate different types of joins.

Requirements:

1. Computer System with Open Source Operating System.
2. Mysql

Theory:

SQL Join statement is used to combine data or rows from two or more tables based on a common field between them. Different types of Joins are as follows:

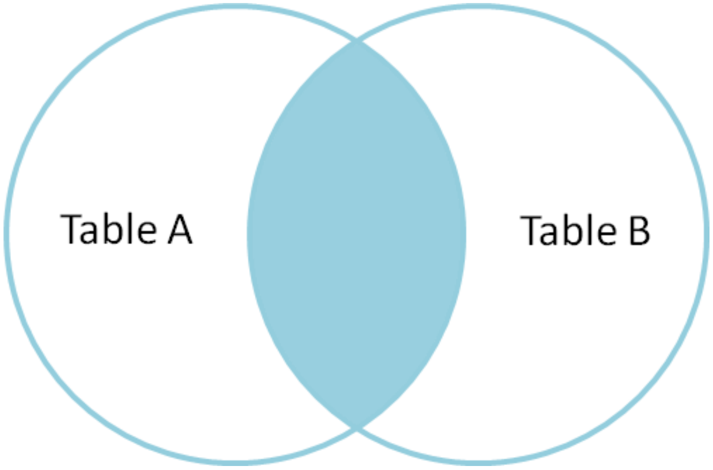
- INNER JOIN
- LEFT JOIN
- RIGHT JOIN
- FULL JOIN
- NATURAL JOIN

1. INNER JOIN

The INNER JOIN keyword selects all rows from both the tables as long as the condition is satisfied. This keyword will create the result-set by combining all rows from both the tables where the condition satisfies i.e value of the common field will be the same.

Syntax:

SELECT *table1.column1,table1.column2,table2.column1,....*
FROM table1
INNER JOIN table2
ON table1.matching_column = table2.matching_column;
table1: First table.
table2: Second table
matching_column: Column common to both the tables.



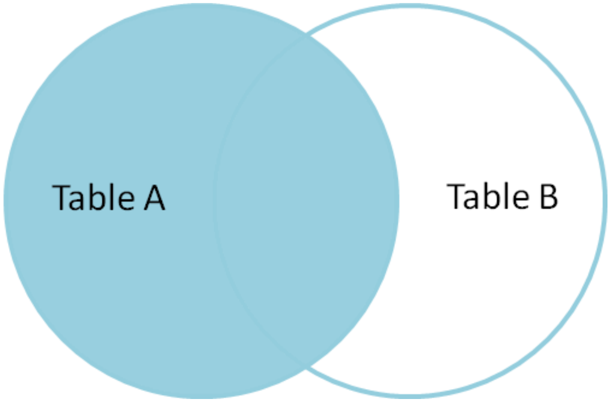
2. **LEFT JOIN**

This join returns all the rows of the table on the left side of the join and matches rows for the table on the right side of the join. For the rows for which there is no matching row on the right side, the result-set will contain *null*. LEFT JOIN is also known as LEFT OUTER JOIN.

Syntax:

```
SELECT table1.column1,table1.column2,table2.column1,....
FROM table1
LEFT JOIN table2
ON table1.matching_column = table2.matching_column;
```

table1: First table.
table2: Second table
matching_column: Column common to both the tables.



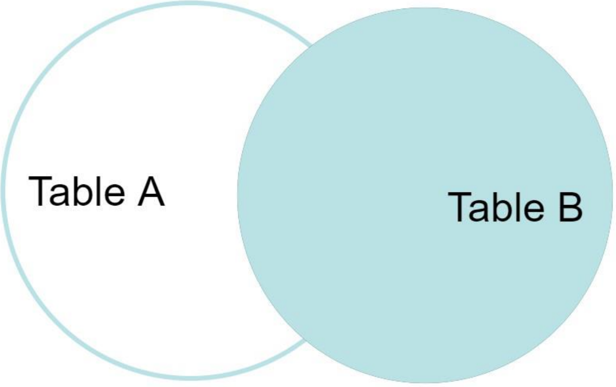
3. **RIGHT JOIN**

RIGHT JOIN is similar to LEFT JOIN. This join returns all the rows of the table on the right side of the join and matching rows for the table on the left side of the join. For the rows for which there is no matching row on the left side, the result-set will contain *null*. RIGHT JOIN is also known as RIGHT OUTER JOIN**.**

Syntax:

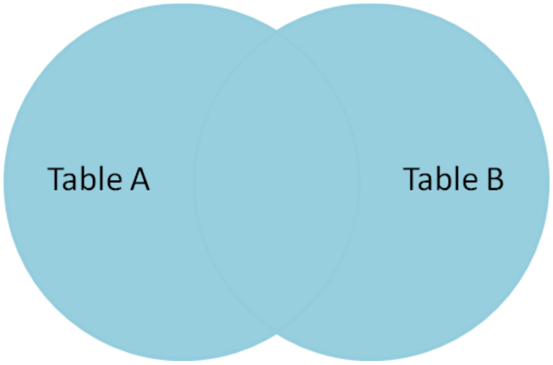
SELECT *table1.column1,table1.column2,table2.column1,....*
FROM table1
RIGHT JOIN table2
ON table1.matching_column = table2.matching_column;

table1: First table.
table2: Second table
matching_column: Column common to both the tables.



4. **FULL JOIN**

FULL JOIN creates the result-set by combining results of both LEFT JOIN and RIGHT JOIN. The result-set will contain all the rows from both tables. For the rows for which there is no matching, the result-set will contain *NULL* values.



Syntax:

```
SELECT table1.column1,table1.column2,table2.column1,....
FROM table1
FULL JOIN table2
ON table1.matching_column = table2.matching_column;
```

table1: First table.
table2: Second table
matching_column: Column common to both the tables.

Conclusion:

Design queries to demonstrate different types of joins.

Questions:

1) What is the purpose of an INNER JOIN in MySQL?

An **INNER JOIN** in MySQL is used to combine rows from two or more tables based on a related column between them. It retrieves only the rows where there is a match in the specified columns in both tables.

2) How can you perform a LEFT JOIN in MySQL, and what does it return?

LEFT JOIN in MySQL returns all rows from the left table (the first table mentioned) and the matched rows from the right table (the second table mentioned). If there is no match in the right table, NULL values are returned for columns from the right table.

```
SELECT column1, column2, ...
FROM table1
LEFT JOIN table2 ON table1.common_column = table2.common_column;
```

3) Explain the purpose of a RIGHT JOIN in MySQL.

RIGHT JOIN in MySQL returns all rows from the right table and the matched rows from the left table. If there is no match in the left table, NULL values are returned for columns from the left table.

```
SELECT column1, column2, ...
FROM table1
RIGHT JOIN table2 ON table1.common_column = table2.common_column;
```

4) How do you combine the results of two tables and include all rows, even if they don't have matches in the other table in MySQL?

MySQL doesn't have a direct **FULL OUTER JOIN**. However, you can simulate it using a combination of **LEFT JOIN**, **RIGHT JOIN**, and **UNION**. For example:

```
SELECT column1, column2, ...
FROM table1
LEFT JOIN table2 ON table1.common_column = table2.common_column

UNION

SELECT column1, column2, ...
FROM table1
RIGHT JOIN table2 ON table1.common_column = table2.common_column
WHERE table1.common_column IS NULL;
```

5)How do you retrieve rows from one table that have no corresponding matches in another table in MySQL?

You can use a **LEFT JOIN** and check for **NULL** values in columns from the right table or use the **NOT EXISTS** clause. For example:

```
-- Using LEFT JOIN and IS NULL
SELECT table1.*
FROM table1
LEFT JOIN table2 ON table1.common_column = table2.common_column
WHERE table2.common_column IS NULL;

-- Using NOT EXISTS
SELECT column1, column2, ...
FROM table1
WHERE NOT EXISTS (SELECT 1 FROM table2 WHERE table1.common_column =
table2.common_column);
```

Course Teacher

Mr. Vinit Kakde