

Part - 7

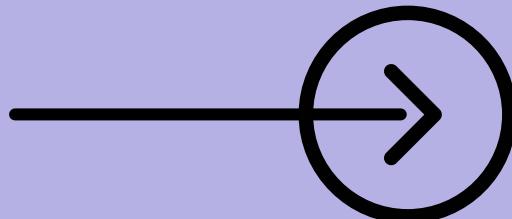
# Data Retrieval

## Interview

## Questions and Answers...!

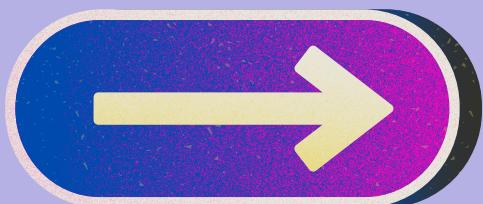


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**Find the total number of records  
in output when you join two  
tables,**

**assuming that there are  
duplicate key values.**



## **Answer:**

- To determine the total number of records in the output when joining two tables with duplicate key values,  
it is essential to understand the type of join being used and how it handles duplicates.

**In next slide there is a quick overview of different types of joins and how they handle duplicate key values:**



**Are you excited to see the types of joins ?**

## Types of Joins:



- **INNER JOIN**
- **LEFT JOIN (or LEFT OUTER JOIN)**
- **RIGHT JOIN (or RIGHT OUTER JOIN)**
- **FULL JOIN (or FULL OUTER JOIN)**
- **CROSS JOIN**



Let's understand with Practical examples ?

# Example:

→ Consider two tables, **TableA** and **TableB**

**TableA:**

ID	Name
1	Alice
2	Bob
2	Carol
3	Dave

**Table B:**

ID	Product
2	Leptop
2	Tablet
3	Phone
4	Monitor



Can you give an example of **Inner Join**?

# Inner Join:

## → Query:

```
SELECT * FROM TableA a  
INNER JOIN TableB b  
ON a.ID = b.ID;
```

## → Result:

ID	Name	Product
2	Bob	Laptop
2	Bob	Tablet
2	Carol	Laptop
2	Carol	Tablet
3	Dave	Phone

## → Explanation:

- The ID '2' appears twice in both TableA and TableB, resulting in 4 combinations (2 from TableA × 2 from TableB).
- The ID '3' appears once in both tables, resulting in 1 combination.

**Total records: 4 (for ID '2') + 1 (for ID '3') = 5 records**

# LEFT JOIN Example:

## → Query:

```
SELECT * FROM TableA a  
LEFT JOIN TableB b  
ON a.ID = b.ID;
```

## → Result:

ID	Name	Product
1	Alice	NULL
2	Bob	Laptop
2	Bob	Tablet
2	Carol	Laptop
2	Carol	Tablet
3	Dave	Phone

## → Explanation:

- The ID '1' appears in TableA but not in TableB, so it results in a row with NULL in the Product column.
- IDs '2' and '3' result in the same combinations as in the INNER JOIN example.

**Total records: 1 (for ID '1') + 4 (for ID '2') + 1 (for ID '3')  
= 6 records.**

# RIGHTJOIN Example:

## → Query:

```
SELECT * FROM TableA a  
RIGHT JOIN TableB b  
ON a.ID = b.ID;
```

## → Result:

ID	Name	Product
2	Bob	Laptop
2	Bob	Tablet
2	Carol	Laptop
2	Carol	Tablet
3	Dave	Phone
4	NULL	Monitor

## → Explanation:

- The ID '4' appears in TableB but not in TableA, so it results in a row with NULL in the Name column.
- IDs '2' and '3' result in the same combinations as in the INNER JOIN example.

**Total records: 4 (for ID '2') + 1 (for ID '3') + 1 (for ID '4')  
= 6 records.**

# FULL JOIN Example:

## → Query:

```
SELECT * FROM TableA a  
FULL JOIN TableB b  
ON a.ID = b.ID;
```

## → Result:

ID	Name	Product
1	Alice	NULL
2	Bob	Laptop
2	Bob	Tablet
2	Carol	Laptop
2	Carpl	Tablet
3	Dabe	Phone
4	NULL	Monitor

## → Explanation:

- Includes all records from both tables.
- NULLs for non-matching rows in each table.

**Total records: 1 (for ID '1') + 4 (for ID '2') + 1 (for ID '3') + 1 (for ID '4') = 7 records.**

# CROSS JOIN Example:

→ **Query:**

```
SELECT * FROM TableA a  
CROSS JOIN TableB b
```

→ **Result:**

ID	Name	ID	Product
1	Alice	2	Laptop
1	Alice	2	Tablet
1	Alice	3	Phone
1	Alice	4	Monitor
2	Bob	2	Laptop
2	Bob	2	Tablet
2	Bob	3	Phone
2	Bob	4	Monitor
2	Carol	2	Laptop
2	Carol	2	Tablet

# CROSS JOIN Example:

2	Carol	3	Phone
2	Carol	4	Monitor
3	Dave	2	Laptop
3	Dave	2	Tablet
3	Dave	3	Phone
3	Dave	4	Monitor

## → Explanation:

- Each row of TableA is combined with each row of TableB.

Total records: 4 rows in TableA × 4 rows in TableB = 16 records.

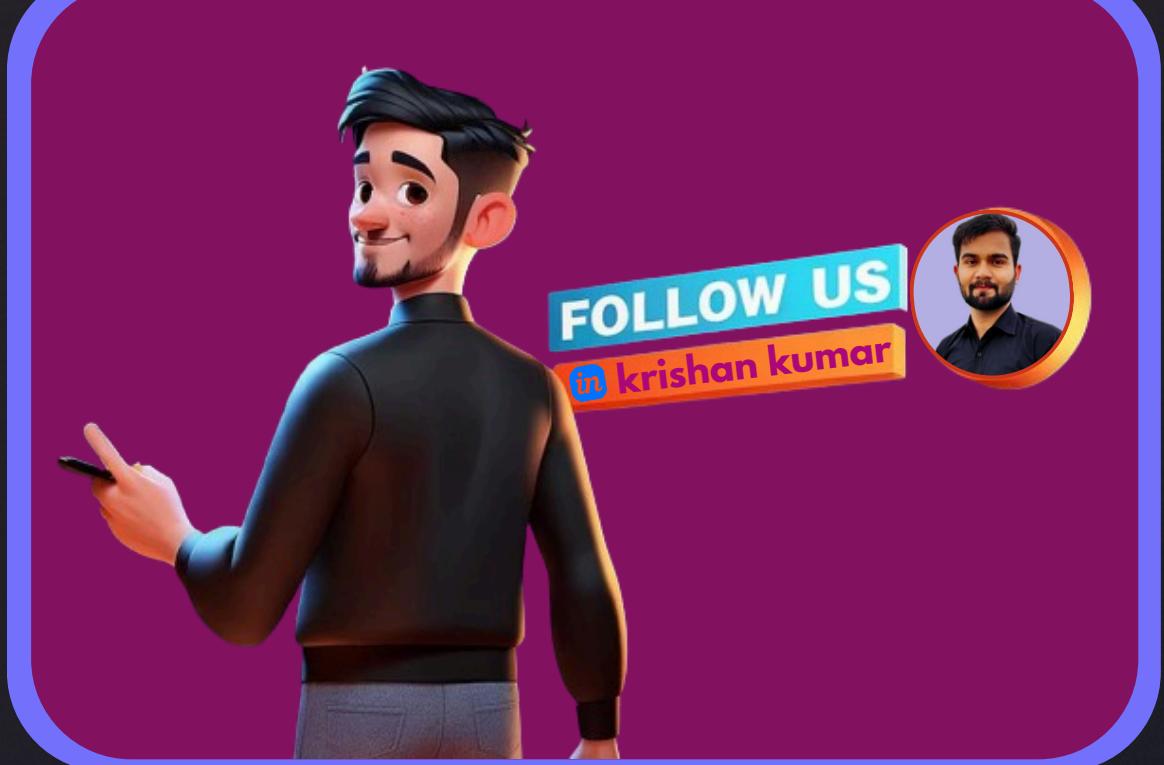
## → Conclusion:

The total number of records in the output when joining two tables depends on the type of join and the presence of duplicate key values.

Understanding the join type is crucial to predict the number of resulting records.



wanna see some  
Counter Questions



# **1. How does a LEFT JOIN differ from an INNER JOIN when there are no matching records in the second table?**

→ In a LEFT JOIN, unmatched rows from the first table are included with NULL values for the second table's columns,

**while INNER JOIN only includes matching rows.**



## **2. What happens when you perform a CROSS JOIN on two tables with no common keys?**

→ A CROSS JOIN produces a Cartesian product,

**where every row from the first table is combined with every row from the second table.**



*Next Question*

### **3. How can you handle duplicate records resulting from an INNER JOIN?**

- You can use **DISTINCT** in the **SELECT** clause or implement specific filtering conditions to eliminate duplicates.



*Next Question*

## **4. In what scenarios would a FULL JOIN be more useful than a LEFT or RIGHT JOIN?**

- A **FULL JOIN** is useful when you need to retrieve all records from both tables, regardless of matching conditions, and include **NULL** for non-matching rows.



## **5. Why might the number of records increase significantly when using a JOIN with duplicate key values?**

→ **Duplicate key values multiply combinations between tables,**

**as each matching row in one table is paired with every matching row in the other.**



**you completed one interview question  
with me,**

**can you do me a favour**



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