

# Data Analytics Project

20. The SQL Joins



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# Introduction

1. SQL Joins facilitate combining data from multiple tables in relational databases.
2. Joins establish relationships between related tables for meaningful data retrieval.
3. Joins are essential for comprehensive data analysis and reporting.



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## SQL Joins: Importance

1. Joins are essential for analyzing interconnected data spread across various tables.
2. Joins enable efficient and accurate querying of complex databases.
3. Joins facilitate comprehensive data analysis and reporting.



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# SQL Joins: Example

**Scenario:** A retail company stores **sales** data in one **table** and **customer information** in another.

**Requirement:** Retrieve sales data along with customer details.

**Solution:** Use an **INNER JOIN** to combine **sales** data with **customer information** based on a common key, such as **customer ID**.

**Result:** Each sales record is augmented with customer details, facilitating comprehensive analysis and personalized reporting.



# SQL Joins: Types

Below are the different types of SQL Joins which are used to combine multiple tables in a query.

1. INNER JOIN
2. LEFT JOIN
3. RIGHT JOIN
4. FULL OUTER JOIN
5. CROSS JOIN
6. SELF JOIN
7. NATURAL JOIN



# SQL Joins: Inner Join

Inner Join selects ALL ROWS and COLUMNS from both the tables including the common column from both the tables.

It is also known as *Simple Join*.

## SYNTAX:

```
SELECT column1, column2  
FROM table1  
INNER JOIN table2  
ON table1.column = table2.column;
```



# SQL Joins: Left Join

Left Join selects **ALL ROWS** from the **LEFT** table and **MATCHING ROWS** from **RIGHT TABLE**.

It is also known as ***Left Outer Join***.

## SYNTAX:

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



# SQL Joins: Right Join

Right Join selects ALL ROWS from the RIGHT table and MATCHING ROWS from LEFT TABLE.

It is also known as *Right Outer Join*.

## SYNTAX:

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



# SQL Joins: Full Outer Join

Full Outer Join selects ALL ROWS from BOTH the tables. For no matches, NULL will be the result

It is also known as *Full Join*.

## SYNTAX:

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



# SQL Joins: Cross Join

Cross Join selects **ALL POSSIBLE COMBINATIONS** of rows **from BOTH Tables**.

It is also known as *Cartesian Join*.

## SYNTAX:

```
SELECT *  
FROM table1  
CROSS JOIN table2;
```



# SQL Joins: Self Join

Self Join selects ALL DATA from the SAME TABLE as it is joined on COMMON COLUMN.

It is also known as *Recursive Join*.

## SYNTAX:

```
SELECT t1.column1, t2.column2  
FROM table1 t1  
JOIN table2 t2  
ON t1.column = t2.column;
```



# SQL Joins: Natural Join

Natural Join selects ALL ROWS and COLUMNS from both the tables including the common column only once.

It is also known as *Equi Join*.

## SYNTAX:

```
SELECT *  
FROM table t1  
NATURAL JOIN table t2;
```



**THANK YOU!!!** FOR YOUR SUPPORT! For Now...

Keep Learning, Keep Sharing & Keep Following  
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