Types of Joins

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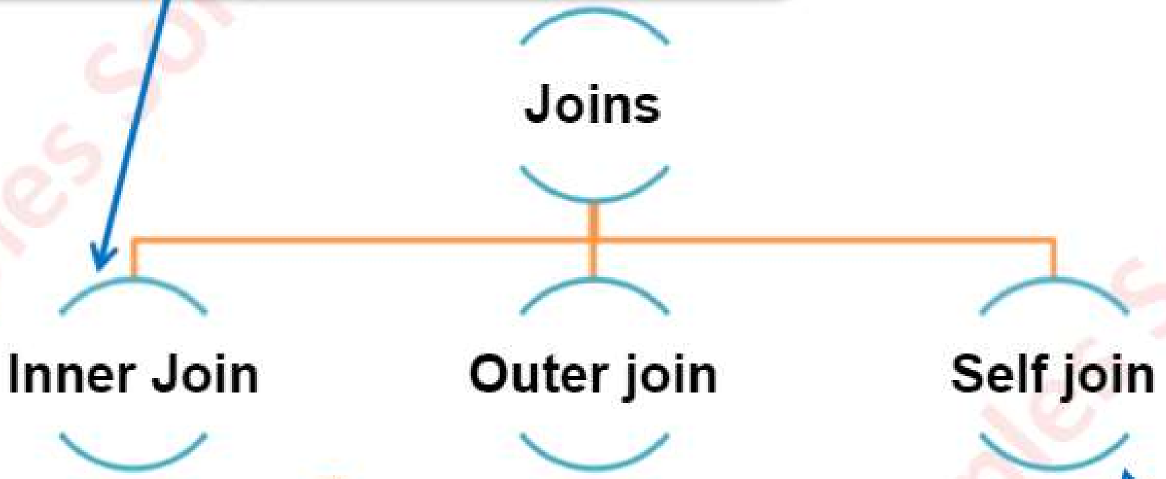
An inner join also called as simple join is a join of two or more tables that returns only those rows that satisfy the join condition.



A self join is a join of a table to itself.

An outer join returns all rows from one table and only those rows from a secondary table where the join condition is met.

Inner joins Types

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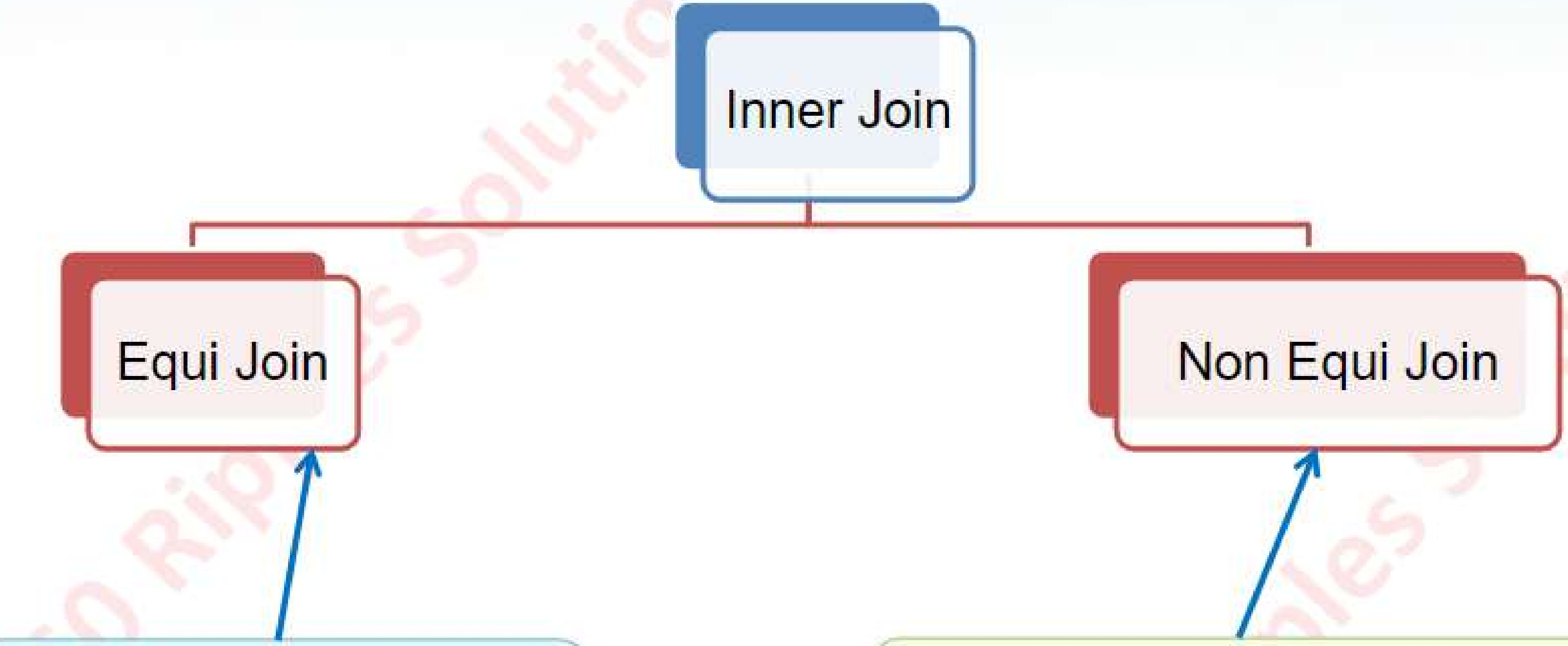
Inner Join

Equi Join

Non Equi Join

An equi join is a join condition containing an equality operator.

An non equi join is a join condition containing an operator other than the equality operator.

What is a Equi Join ?

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This is a join where more than one tables are joined together with a common column that exists in both the tables.

The "equal to (=)" operator is used to compare the rows of the two tables.

How to write a Equi Join?

```
SELECT column_name(s)
FROM table_1 INNER JOIN table_2
ON  table_1.column_name=table_2.column_name
```

This is the equi join condition which joins two tables with the same name.

Illustration for Equi Join

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Let us assume a cinema theatre scenario to better understand joins, assuming two tables

- **Customer -** Has columns customer_id (Primary Key), FirstName,Last_Name, Address, Contact_no.
- **Tickets -** Has columns Ticket_Id , customer_id, RowName,Seat_no, Show_date,Show_Time.

Scenario #1: This retrieves all customers details who has booked tickets.

```
SELECT C.FirstName, C.LastName, T.Ticket_Id,T.RowName
        FROM Customer C INNER JOIN Ticket T
        ON C.customer_Id=T.Customer_Id;
```

Result: The above query retrieves all the records where the customer id's in customer table matches with the customer id's in ticket table.

Illustration For Equi Join

Click to Continue

Customer

Customer_id	First Name	Last Name	Address	Contact_no
1	Adam	Job	Temple St,US	1234
2	Jack	Steve	Temple Road, UK	4567
3	Raj	Mohan	Anna Nagar, India	8901

Ticket_Details

Ticket_Id	Customer_Id	Seat_No
101	1	J1
201	1	J2
301	2	A3
401	2	A4
501	5	K8

Result :

First Name	Last Name	Ticket_ID
Adam	Job	101
Adam	Job	201
Jack	Steve	301
Jack	Steve	401

The highlighted records which satisfies the condition are only retrieved.

Non-Equi Join

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Non-Equi Joins are the ones in which two or more tables are joined together with the help of a common column that exist. The join is done using operators such as >=,<=, <> to compare values of two tables.

How to write a non equi join?

```
SELECT column_name(s)
FROM table_1 inner join table_2
ON
table_1.column_name>=table_2.column_na
me
```

Illustration for Non Equi Join

Click to Continue

Let us assume a financial investment scenario to better understand joins, assuming two tables

- **Customer -**   Has columns customer_id (Primary Key), FirstName,Last_Name, Address, Contact_no, Income.
- **Investment_Fund-** Has columns Investment_Id , Min_Inv_Amount, Expected_Income,Inv_name,Inv_desc.

Scenario #1: Retrieve all the customer and their eligible investment details by the picking the investments where the customers Income is greater than equal to investment's expected income

```
SELECT C.FirstName, C.LastName

FROM Customer C inner join Investment_fund I

on C.Income >=I.Expected_Income;
```

Illustration For Non Equi Join

Click to Continue

Customer

Customer_id	First Name	Last Name	Address	Income
1	Adam	Job	Temple St,US	1000
2	Jack	Steve	Temple Road, UK	800

Investment

Investment_Id	Investment_Name	Expected_Income
101	LIC	1400
201	Bharti	3000
301	Reliance	2000
401	Tata	900
501	Religare	700

Result :

First Name	Last Name	Investment_id
Adam	Job	401
Adam	Job	501
Jack	Steve	501

The highlighted records which satisfies the condition are only retrieved.

Inner Join on three tables

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Joining three tables and retrieving data from all the three tables.

Illustration: select b.ticket_id,name,passenger_name from bus_ticket b inner join user u inner join ticket_passenger p on u.user_id=b.user_id and p.ticket_id=b.ticket_id;