Joins

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- Join is a Query in which data retrieved from more than one table.
  - Cartesian Product
  - Inner Join
  - Outer Join
  - Semi join
  - Natural join

Cartesian product

- It produce all rows from those table that are take pertain in join process

- SQL Query for Cartesian product

```
Select *from table_name,Table_name2
```

Inner Join

- It produce only those rows from both tables that have same value for the common attribute
- It is also known as equijoins
- SQL Query

  - Select *from table1 inner join table2 on table1.id = table2.id
  - Select *from table1 , table2 where table1.id = table2.id
  - Select *from table1 tb1, table2 tb2 where tb1.id = tb2.id

Outer Join

- It produce both matching and non-matching rows from one more tables
- Inner join Plus the missing rows from one or more table
  - LEFT Outer Join
  - RIGHT Outer Join
  - FULL Outer Join

Outer Join

- Left Outer Join :- Inner Join plus it produce non-matching rows from the left table
- Right Outer Join :- Inner Join plus it produce non-matching rows from the right table
- Full Outer Join :- Inner Join Plus it produce non-matching rows from the both tables

Outer Join

- Left Outer Join SQL

```
Select *from table1 Left outer join table2 on table1.id = table2.id
```

- Right Outer Join SQL

```
Select *from table1 Right outer join table2 on table1.id = table2.id
```

- Full Outer join SQL

```
Select *from table1 Full outer join table2 on table1.id = table2.id
```

Semi Join

- In semi join, first we take the natural join/inner join of two relation then we project the attributes of the first table only .
- So after join and matching the common attributes of both relation only attributes of the first table are projected.

Natural Join

- Natural join does not use any comparison operator. It does not concatenate the way a Cartesian product does. We can perform a Natural Join only if there is at least one common attribute that exists between two relations. In addition, the attributes must have the same name and domain.

Natural Join

- Natural join acts on those matching attributes where the values of attributes in both the relations are same.
- SQL

select *from table1 natural join table2

select attr,attr2 from table1 natural join table2

Self Join

- Self join is used to join a table to itself
- SQL Query

```
select  a.column ,  b.column  from table a , table b
where  a.common = b.common
```