JOIN means to combine something. In case of SQL, JOIN means **"to combine two or more tables"**.

Types of JOIN:

1. Inner join.
2. Left outer join/Left join.
3. Right outer join/Right join.
4. Full outer join/full join.
5. Cross join/Cartesian join.
6. Natural join.
7. Self Join.

Table 1: Studentdetail

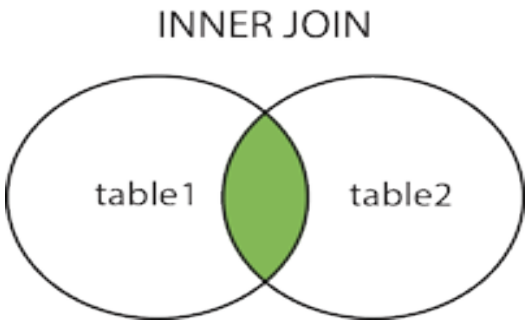
RegisterNo	Name	Department	Address	Samedept
5001	Jayanthi	ECE	Chennai	5003
5002	Mahalakshmi	IT	Tiruvallur	5004
5003	Kumaresan	ECE	Hosur	5001
5004	Jujupretha	IT	Srirangam	5002
5005	Sugitha	EEE	Chennai	5006
5006	Karthi	EEE	Madhurai	5005
5007	Jenifer	Mech	Erode	5008
5008	Varun	Mech	Salem	5007
5009	Jashvan	Arch	Salem	5010
5010	Yuvash	Arch	Namakkal	5009

Table2: deptdetails

deptid	Department
101	ECE
102	EEE
103	IT
104	CSE
105	ARCH
106	MECH

Inner join.

The INNER JOIN keyword selects records that have matching values in both tables.



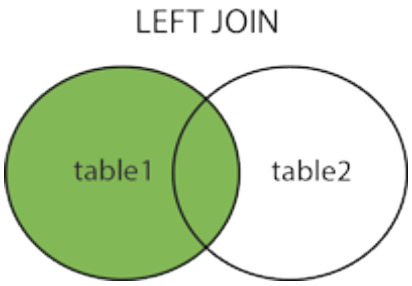

```
2 •  SELECT studentdetail.RegisterNo, deptdetails.Department, studentdetail.Name
3    FROM studentdetail
4    INNER JOIN deptdetails ON studentdetail.Department=deptdetails.Department;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

RegisterNo	Department	Name
5001	ECE	Jayanthi
5002	IT	Mahalakshmi
5003	ECE	Kumaresan
5004	IT	Jujupretha
5005	EEE	Sugitha
5006	EEE	Karthi
5007	MECH	Jenifer
5008	MECH	Varun
5009	ARCH	Jashvan
5010	ARCH	Yuvash

Left outer join/Left join.

The LEFT JOIN keyword returns all records from the left table (table1), and the matching records from the right table (table2). The result is 0 records from the right side, if there is no match.



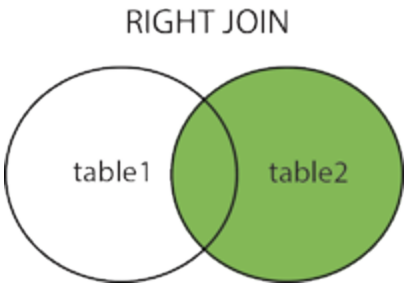

```
6 •  SELECT studentdetail.Name, deptdetails.Department
7    FROM deptdetails
8    LEFT JOIN studentdetail ON studentdetail.Department = deptdetails.Department
9    ORDER BY studentdetail.Name;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Name	Department
NULL	CSE
NULL	Others
Jashvan	ARCH
Jayanthi	ECE
Jenifer	MECH
Jujupretha	IT
Karthi	EEE
Kumaresan	ECE
Mahalakshmi	IT
Sugitha	EEE
Varun	MECH
Yuvash	ARCH

Right outer join/Right join.

The RIGHT JOIN keyword returns all records from the right table (table2), and the matching records from the left table (table1). The result is 0 records from the left side, if there is no match.



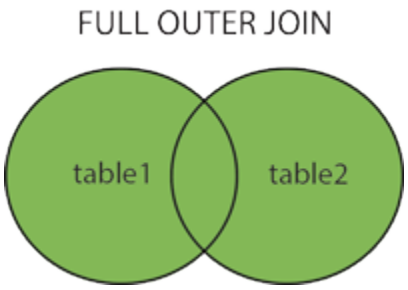

```
11 •  SELECT studentdetail.name, studentdetail.address, deptdetails.department
12    FROM studentdetail
13    RIGHT JOIN deptdetails ON studentdetail.Department = deptdetails.Department
14    ORDER BY studentdetail.registerno;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

name	address	department
NULL	NULL	CSE
NULL	NULL	Others
Jayanthi	Chennai	ECE
Mahalakshmi	Tiruvallur	IT
Kumaresan	Hosur	ECE
Jujupretha	Srirangam	IT
Sugitha	Chennai	EEE
Karthi	Madhurai	EEE
Jenifer	Erode	MECH
Varun	Salem	MECH
Jashvan	Salem	ARCH
Yuvash	Namakkal	ARCH

Full outer join/Full join

The FULL OUTER JOIN keyword returns all records when there is a match in left (table1) or right (table2) table records. But it doest not support in SQL so we can use Union keyword.



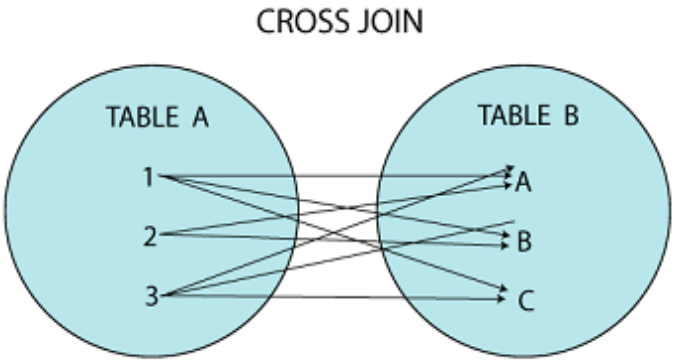

```
16 •  SELECT Name FROM studentdetail
17    UNION
18    SELECT Deptid FROM deptdetails
19    ORDER BY name;
```

Result Grid | Filter Rows: | Export:

Name
101
102
103
104
105
106
107
Jashvan
Jayanthi
Jenifer
Jujupre...
Karthi
Kumare...
Mahala...
Sugitha
Varun
Yuvash

Cross join/Cartesian join

The CROSS JOIN is used to **generate a paired combination of each row of the first table with each row of the second table**. This join type is also known as cartesian join



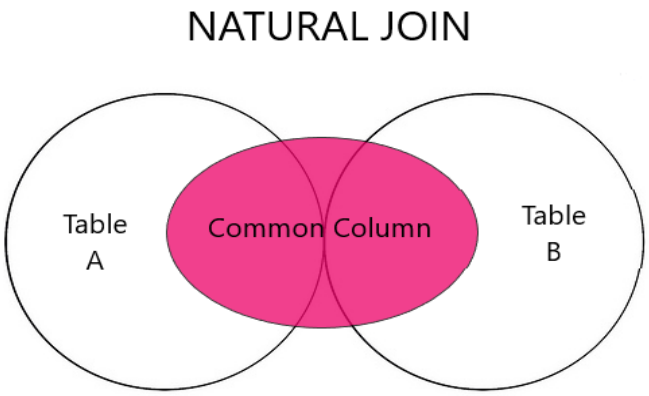

```
25 •  SELECT studentdetail.name , studentdetail.department, deptdetails.deptid
26    FROM studentdetail
27    CROSS JOIN deptdetails;
28
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

name	department	deptid
Jayanthi	ECE	101
Jayanthi	ECE	102
Jayanthi	ECE	103
Jayanthi	ECE	104
Jayanthi	ECE	105
Jayanthi	ECE	106
Jayanthi	ECE	107
Mahalakshmi	IT	101
Mahalakshmi	IT	102
Mahalakshmi	IT	103
Mahalakshmi	IT	104
Mahalakshmi	IT	105
Mahalakshmi	IT	106
Mahalakshmi	IT	107
Kumaresan	ECE	101
Kumaresan	ECE	102
Kumaresan	ECE	103

Natural join.

In MySQL, the NATURAL JOIN is such a **join that performs the same task as an INNER or LEFT JOIN**, in which the ON or USING clause refers to all columns that the tables to be joined have in common.




```
29 •  SELECT *
30    FROM studentdetail
31    NATURAL JOIN deptdetails;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Department	RegisterNo	Name	address	Samedept	deptid
ECE	5001	Jayanthi	Chennai	5003	101
IT	5002	Mahalakshmi	Tiruvallur	5004	103
ECE	5003	Kumaresan	Hosur	5001	101
IT	5004	Jujupretha	Srirangam	5002	103
EEE	5005	Sugitha	Chennai	5006	102
EEE	5006	Karthi	Madhurai	5005	102
Mech	5007	Jenifer	Erode	5008	106
Mech	5008	Varun	Salem	5007	106
Arch	5009	Jashvan	Salem	5010	105
Arch	5010	Yuvash	Namakkal	5009	105

Self Join:

A SELF JOIN is **a join that is used to join a table with itself**.

Self Join

```
21 •   SELECT A.name , B. name as samedept
22     FROM studentdetail A, studentdetail B
23     WHERE A.Department = B.Department;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

name	samedept
Jayanthi	Jayanthi
Kumaresan	Jayanthi
Mahalakshmi	Mahalakshmi
Jujupretha	Mahalakshmi
Jayanthi	Kumaresan
Kumaresan	Kumaresan
Mahalakshmi	Jujupretha
Jujupretha	Jujupretha
Sugitha	Sugitha
Karthi	Sugitha
Sugitha	Karthi
Karthi	Karthi
Jenifer	Jenifer
Varun	Jenifer
Jenifer	Varun
Varun	Varun