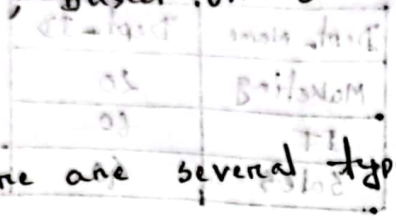
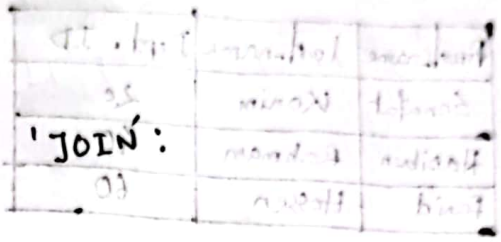
JOIN:

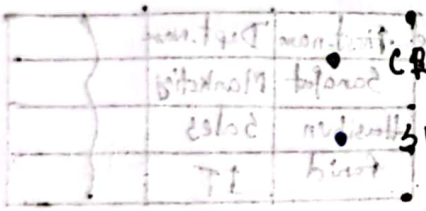
'JOIN' in MySQL is used to combine rows from two or more tables, based on a related column between them.





There are several types of 'JOIN':

- INNER JOIN
- LEFT JOIN or LEFT OUTER JOIN
- RIGHT JOIN or RIGHT OUTER JOIN
- FULL JOIN or FULL OUTER JOIN



- CROSS JOIN
- SELF JOIN

JOIN table without join query / with join query:

Employees

first_name	last_name	Dept. ID
Sanafat	Karim	20
Hasibun	Rahman	40
Farid	Hossen	60

Departments

Dept. Name	Dept_ID
Marketing	20
IT	60
Sales	40

Query: Print all the employees first name along with their department name.

without join:

```
SELECT Employees.first_name, Departments.Dept_Name
FROM   Employees , Departments
WHERE  Employees.Dept_ID = Departments.Dept_ID ;
```

first_name	Dept.Name
Sanafat	Marketing
Hasibun	Sales
Farid	IT

with join:

```
SELECT  Employees.first_name, Departments.Dept_Name
FROM    Employees.
```

(i) `JOIN Departments ON Employees.Dept_ID = Departments.Dept_ID;`

(ii) `JOIN Departments USING (Dept.ID);`

→ when column name is same in both table.

- **INNER JOIN / JOIN:**

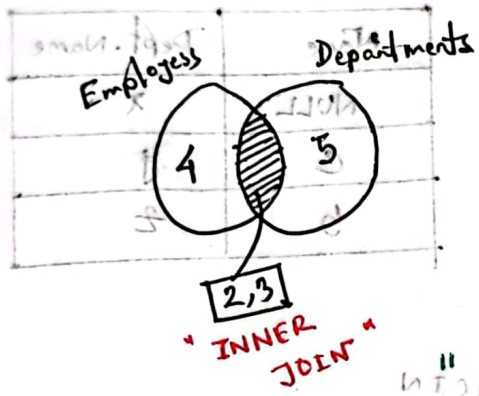
"Returns records that have matching values in both tables."

Employees

Name	Dept. ID
a	4
b	2
c	3

Departments

Dept. ID	Dept. Name
5	x
3	y
2	z



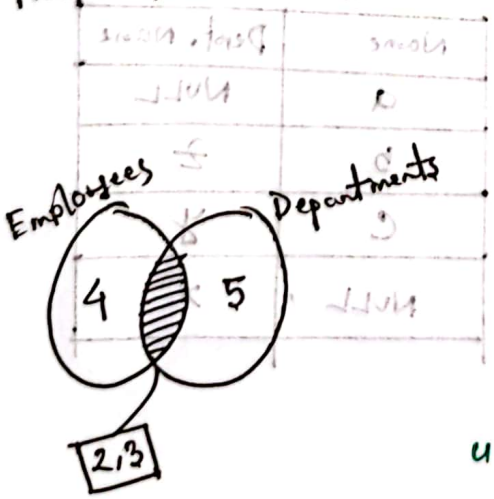
Result

Name	Dept. Name
b	z
c	y

```
SELECT Name
FROM Employees
INNER JOIN Departments
ON Employees.Dept-ID = Departments.Dept-ID;
```

- **LEFT JOIN:**

Returns all records from the left table and the matched records from the right table. The result is NULL from the right side, if there is no match.

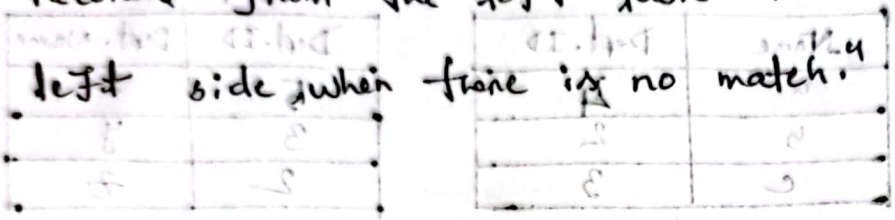


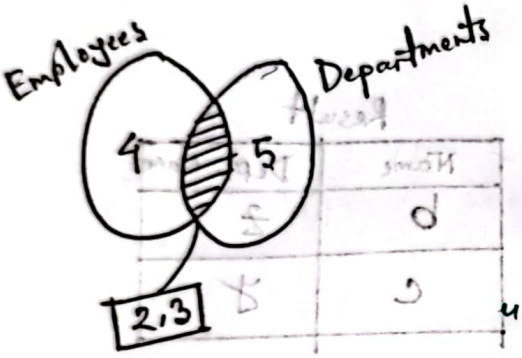
Name	Dept. Name
a	NULL
b	z
c	y

```
SELECT
FROM
LEFT JOIN
ON
```

- **RIGHT JOIN:**

- Returns all records from the right table, and the matched records from the left table. The result is, NULL from the left side when there is no match.





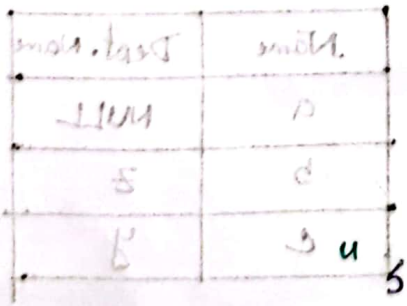
Result

Name	Dept. Name
NULL	x
c	y
b	z

```
SELECT
FROM
RIGHT JOIN
ON
```

- **CROSS JOIN:**

- Returns the cartesian product of the two tables, all possible combinations of rows from both table.



Result

Name	Dept. Name
a	NULL
b	z
c	y
NULL	x

```
SELECT Name
FROM
CROSS JOIN
ON
```

- **SELF JOIN :**

A self join is a regular join but the table is joined with itself.

Employees

Name	EmpID	MgrID
a	100	NULL
b	101	100
c	102	NULL
d	103	102

```
SELECT e.Name, m.Name
FROM Employees As e
    JOIN Employees As m
    ON e.EmpID = m.MgrID;
```