```
CREATE TABLE EMPLOYEE (
EMP_ID INT NOT NULL,
EMP_NAME VARCHAR(20) NOT NULL,
DEPT_ID INT,
PRIMARY KEY (EMP_ID),
FOREIGN KEY (DEPT_ID) REFERENCES DEPARTMENTS(DEPT_ID)
);

SELECT * FROM EMPLOYEE
INSERT INTO EMPLOYEE (EMP_ID, EMP_NAME, DEPT_ID) VALUES (1, 'JOHN', 10), (2, 'ALICE', 20), (3, 'BOB', NULL), (4, 'CHARLIE', 30), (5, 'DAVID', 10)

CREATE TABLE DEPARTMENTS (
DEPT_ID INT NOT NULL PRIMARY KEY,
DEPT_NAME VARCHAR(20) NOT NULL
);
```

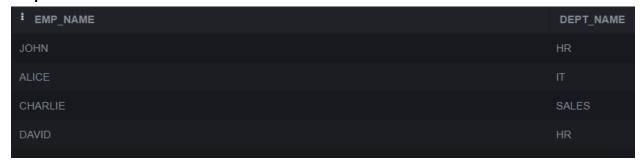
#### **SELECT \* FROM DEPARTMENTS**

INSERT INTO DEPARTMENTS (DEPT\_ID, DEPT\_NAME) VALUES (10, 'HR'), (20, 'IT'), (30, 'SALES'), (40, 'MARKETING')

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

SELECT EMP\_NAME, DEPT\_NAME
FROM EMPLOYEE
INNER JOIN DEPARTMENTS ON EMPLOYEE.DEPT\_ID = DEPARTMENTS.DEPT\_ID

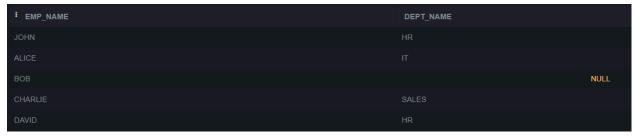
#### **Output:**



2. 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.

SELECT EMP\_NAME, DEPT\_NAME
FROM EMPLOYEE
LEFT JOIN DEPARTMENTS ON EMPLOYEE.DEPT\_ID = DEPARTMENTS.DEPT\_ID

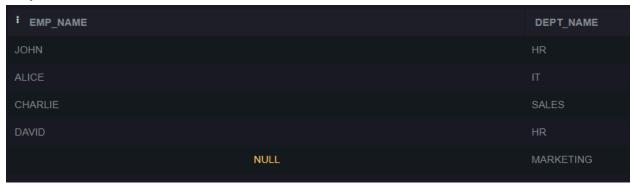
### **Output:**



3. 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.

SELECT EMP\_NAME, DEPT\_NAME
FROM EMPLOYEE
RIGHT JOIN DEPARTMENTS ON EMPLOYEE.DEPT\_ID = DEPARTMENTS.DEPT\_ID

### **Output:**



4. CROSS JOIN - Returns the Cartesian product of the two tables, i.e., all possible combinations of rows.

SELECT EMP\_NAME, DEPT\_NAME FROM EMPLOYEE CROSS JOIN DEPARTMENTS

# **Output:**

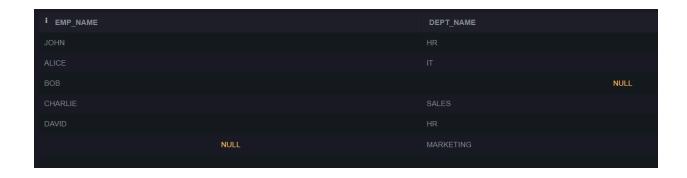
•	
i emp_name	DEPT_NAME
JOHN	HR
JOHN	ІТ
JOHN	SALES
JOHN	MARKETING
ALICE	HR
ALICE	ІТ
ALICE	SALES
ALICE	MARKETING
вов	HR
вов	ІТ
вов	SALES
вов	MARKETING
CHARLIE	HR
CHARLIE	ІТ
CHARLIE	SALES
CHARLIE	MARKETING
DAVID	HR

5. FULL OUTER JOIN - The FULL OUTER JOIN keyword returns all records when there is a match in left (table1) or right (table2) table records.

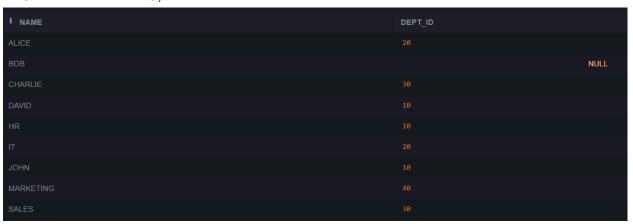
Tip: FULL OUTER JOIN and FULL JOIN are the same.

SELECT EMP\_NAME, DEPT\_NAME
FROM EMPLOYEE
FULL OUTER JOIN DEPARTMENTS ON EMPLOYEE.DEPT\_ID =
DEPARTMENTS.DEPT\_ID

# **Output:**



UNION - Combines the results of two or more SELECT statements SELECT EMP\_NAME AS NAME, DEPT\_ID FROM EMPLOYEE UNION SELECT DEPT\_NAME AS NAME, DEPT\_ID FROM DEPARTMENTS;



**GROUP BY:** The GROUP BY statement groups rows that have the same values into summary rows, like "find the number of customers in each country".

The GROUP BY statement is often used with aggregate functions (COUNT(), MAX(), MIN(), SUM(), AVG()) to group the result-set by one or more columns.