SQL `GROUP BY` Clause

The `GROUP BY` clause in SQL is used to **group rows that have the same values** in specified columns into summary rows. It is often used with aggregate functions such as `COUNT()`, `SUM()`, `AVG()`, `MIN()`, and `MAX()` to perform calculations on each group of rows. This is useful when you need to get aggregated results for different categories or groups within your dataset.

```sql
SELECT column1, column2, aggregate_function(column3)
FROM table_name
WHERE condition
GROUP BY column1, column2;
```

- `column1, column2` : Columns by which the data will be grouped.
- `aggregate_function(column3)` : An aggregate function such as `COUNT()`, `SUM()`, `AVG()`, etc., applied to `column3` for each group.
- `WHERE` : An optional clause that filters rows before grouping.
- `GROUP BY` : Defines how the rows are grouped.

Examples of `GROUP BY` Usage

1. Count the Number of Employees in Each Department

```sql
SELECT Department, COUNT(*) AS EmployeeCount
FROM Employees
GROUP BY Department;
```

This query counts the number of employees in each department by grouping the results based on the `Department` column.

2. Find the Total Salary in Each Department

```sql
SELECT Department, SUM(Salary) AS TotalSalary
FROM Employees
GROUP BY Department;
```

Here, the `SUM()` function is used to calculate the total salary per department.