**GROUP BY and HAVING in SQL Server**

**1. GROUP BY Clause**

The GROUP BY clause in SQL Server is used to group rows with the same values in specified columns and perform aggregate functions like COUNT(), SUM(), AVG(), MAX(), MIN(), etc.

**Syntax:**

SELECT column\_name, AGGREGATE\_FUNCTION(column\_name)

FROM table\_name

GROUP BY column\_name;

**Example:**

SELECT Department, COUNT(EmployeeID) AS TotalEmployees

FROM Employees

GROUP BY Department;

This query groups employees by department and counts the number of employees in each department.

**2. HAVING Clause**

The HAVING clause is used to filter the results after grouping, similar to the WHERE clause but specifically for aggregate functions.

**Syntax:**

SELECT column\_name, AGGREGATE\_FUNCTION(column\_name)

FROM table\_name

GROUP BY column\_name

HAVING condition;

**Example:**

SELECT Department, COUNT(EmployeeID) AS TotalEmployees

FROM Employees

GROUP BY Department

HAVING COUNT(EmployeeID) > 5;

This query retrieves departments where the number of employees is greater than 5.

**Difference Between WHERE and HAVING**

| **Feature** | **WHERE** | **HAVING** |
| --- | --- | --- |
| Used For | Filtering individual rows before grouping | Filtering groups after aggregation |
| Can Use Aggregate Functions | ❌ No | ✅ Yes |
| Works Before/After GROUP BY | Before GROUP BY | After GROUP BY |

**Example with both WHERE and HAVING:**

SELECT Department, COUNT(EmployeeID) AS TotalEmployees

FROM Employees

WHERE Salary > 50000 -- Filters employees before grouping

GROUP BY Department

HAVING COUNT(EmployeeID) > 5; -- Filters groups after aggregation

This filters out employees with a salary below 50,000, then groups by department, and finally selects only the departments with more than 5 employees.