

GROUPING SETS in SQL Server

Explicitly defines a custom list of grouping combinations (grouping sets) you want in the result. It is the underlying mechanism for both ROLLUP and CUBE.

GROUPING SETS lets you explicitly control which groupings (totals/subtotals) you want in one single query.

In simple terms

ROLLUP → hierarchical totals

CUBE → all possible totals

GROUPING SETS → only the totals you choose

Syntax

```
SELECT column1, column2, aggregate_function(column)
      FROM table_name
      GROUP BY GROUPING SETS (
          (column1, column2),
          (column1),
          (column2),
          ())
      );
```

Example:

```
CREATE TABLE Sales
(
    CustomerName VARCHAR(30),
    ProductName VARCHAR(30),
    Amount INT
);

INSERT INTO Sales VALUES
('Ravi', 'Laptop', 50000),
('Ravi', 'Mouse', 2000),
('Ravi', 'Keyboard', 3000),
('Neha', 'Laptop', 52000),
('Neha', 'Mouse', 2500),
('Amit', 'Laptop', 48000);
```

Customer-wise and Product-wise Totals (No Detail Rows)

```
SELECT
    CustomerName,
    ProductName,
    SUM(Amount) AS TotalAmount
FROM Sales
GROUP BY GROUPING SETS
(
    (CustomerName),
```

```

        (ProductName)
)
ORDER BY CustomerName, ProductName;

```

| | CustomerName | ProductName | TotalAmount |
|---|--------------|-------------|-------------|
| 1 | NULL | Keyboard | 3000 |
| 2 | NULL | Laptop | 150000 |
| 3 | NULL | Mouse | 4500 |
| 4 | Amit | NULL | 48000 |
| 5 | Neha | NULL | 54500 |
| 6 | Ravi | NULL | 55000 |

Detail Rows + Customer Totals + Grand Total

```

SELECT
    CASE
        WHEN GROUPING(CustomerName) = 1 THEN 'All Customers'
        ELSE CustomerName
    END AS Customer,
    CASE
        WHEN GROUPING(ProductName) = 1 THEN 'All Products'
        ELSE ProductName
    END AS Product,
    SUM(Amount) AS TotalAmount
FROM Sales
GROUP BY GROUPING SETS
(
    (CustomerName, ProductName),
    (CustomerName),
    ()
)
ORDER BY GROUPING(CustomerName), Customer;

```

| | Customer | Product | TotalAmount |
|----|---------------|--------------|-------------|
| 1 | Amit | Laptop | 48000 |
| 2 | Amit | All Products | 48000 |
| 3 | Neha | Laptop | 52000 |
| 4 | Neha | Mouse | 2500 |
| 5 | Neha | All Products | 54500 |
| 6 | Ravi | Keyboard | 3000 |
| 7 | Ravi | Laptop | 50000 |
| 8 | Ravi | Mouse | 2000 |
| 9 | Ravi | All Products | 55000 |
| 10 | All Customers | All Products | 157500 |

Comparison (Customer–Product)

| Feature | ROLLUP CUBE GROUPING SETS | | |
|---------------------|---------------------------|---|----------|
| Detail rows | ✓ | ✓ | Optional |
| Customer subtotal | ✓ | ✓ | ✓ |
| Product subtotal | ✗ | ✓ | Optional |
| Grand total | ✓ | ✓ | Optional |
| Control over output | ✗ | ✗ | ✓ BEST |