

Practical No. 4.

Title : Apply Group By, Order By & Having Clause.

Aim : Understanding or Study of Group By, Order By & Having Clause

Theory : 1] Group By clause
2] Order By clause
3] Having clause.

1] Group By clause

In SQL, the Group By clause is used to group a set of rows into a set of summary rows based on the values in one or more columns. The Group By clause is usually used in conjunction with aggregating functions such as SUM, AVG, MAX, MIN & COUNT to calculate a value for each group.

Here is the syntax for using the Group By clause in a select statement :

```
SELECT column1, column2, ----  
    aggregatingfunction (columnName)  
FROM tableName  
WHERE condition  
GROUP BY column1, column2, ----
```

The Group By clause follows the WHERE clause in a SELECT statement & precedes the ORDER BY clause.



2] Order By clause

In SQL, the Order By clause is used to sort the result set of a SELECT statement. The ORDER BY clause can be used to sort the result set by one or more columns in ascending or descending order.

Here is the syntax for using the ORDER BY clause in a select statement:

```
SELECT column1, column2, ---  
FROM tableName  
WHERE condition  
GROUP BY column1, column2, ---  
HAVING condition  
ORDER BY column1, column2, ---  
ASC / DESC;
```

The ORDER BY clause follows the GROUP BY clause in a SELECT statement & precedes the LIMIT clause.

By default, the ORDER BY clause sorts the result set in ascending order.

To sort the result in descending order you can use the DESC keyword.



3] Having Clause

In SQL, the HAVING clause is used to filter the result set of a SELECT statement based on aggregated values. The HAVING clause is used in conjunction with the GROUP BY clause & is similar to the WHERE clause but operates on aggregated values rather than individual rows of data.

Here is the syntax for using the HAVING clause in a SELECT statement:

```
SELECT column1, column2, ...,  
    aggregating function (column)  
FROM tableName  
WHERE condition  
GROUP BY column1, column2, ...  
HAVING condition ;
```

The Having clause follows the GROUP BY clause in a SELECT statement & precedes the ORDER BY clause.

Conclusion:

The GROUP BY, HAVING & ORDER BY clause are all commonly used in SQL to group, filter, & sort the result set of a SELECT statement.

- GROUP BY

This clause is used to group rows based on the values in one or more columns & also you can use aggregating functions.



- HAVING clause

The HAVING clause is used to filter the result set based on aggregated values.

- ORDER BY

This clause is used to sort the result set based on the values in one or more columns.

These clauses can be used to analyze & summarize data in database, as well as to present the data in a specific order for further analysis or reporting.