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Class: SY B Tech AIPS Panel C

Batch: C1

Course: DBMS

Assignment : 5

SOL Queries on : Functions - single Row, Aggregate functions, Date formatting, Subquery, Group by - Having, set Operations, View, TCL commands

Aim: write multiple select commands to execute queries on the given data set.

Objective: To get basic understanding of aggregate functions, Order by clause, subquery, select using subquery, nested query, correlated subquery, ALL, ANY, EXISTS, SOME, basic TCL commands

Problem Statement:

Create tables and solve given queries using subqueries.

Theory:

Aggregate functions:

single row Functions Operate on a single column of a relation of string, Date Functions single row in the table returning single values as an output. Functions

multiple row Functions Act on a multiple row in the relation returning single values as an output. Avg, min, max, sum, count

Order by

The order by is used to sort the result set in either ascending or descending order.

Group by

The group by clause is used in collaboration with the aggregate functions to arrange identical data into groups. It is used to group rows that have the same values into summary rows.

SET operations

UNION: Used to combine the result sets of two or more select statements into single result.

Table A

ID	Name
1	A
2	B
3	C

Table B

ID	Name
2	B
3	C
4	D

Union

select * from ~~Table~~ A

union

select * from B

ID Name

1 A

2 B

3 C

4 D

UNION ALL: Does not eliminate duplicate rows from the combined result set.

```
select * from A
union all
select * from B;
```

ID	Name
1	A
2	B
3	C
2	B
3	C
4	D

INTERSECT: Used to retrieve common records between two select statements

```
select * from A
INTERSECT
select * from B;
```

ID	Name
1	A
2	B

Subqueries

- A query within another SQL query and embedded within the WHERE clause. Used to return data that will be used in the main query as a condition to further restrict the data to be retrieved.

Example

```
> select * from Customers
where ID in (select ID from Customers
where salary > 4500);
```

Input: Database

Output: Data as per request

FAQs

Q. Explain types of subqueries -

- single-row subquery: A subquery that returns only one row as its result.
- multiple-row subquery: A subquery that returns multiple rows as its result.
- multiple-column subquery: A subquery that returns multiple columns as its result, which can be used with comparison operators like IN, AND/OR or ALL.

Q. When subquery is used.

Subqueries are used in SQL to retrieve data that will be used in the main query for various purposes such as filtering, calculations, comparisons allowing for more complex and precise data retrieval.

Q. How to get groupwise data from table -

By using 'group by' clause

Select column1, aggregate-function (column2)

From table

group by column1;

Q- Use of having clause:

Used to filter group data based on aggregate function results, allowing you to apply conditions to the groups returned by a 'group by' clause.

> select CustomerId, sum(price) as Total Price
From Orders

group by CustomerId

having sum (OrderPrice) > 1000;

Q- How to display data from view. Are the views updatable?

To display data from a view a simple select statement is used. Views are updatable depending on various factors, like the complexity, underlying tables' structure, and whether the view contains any aggregate functions or joins -