

Experiment – 7

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Branch: BE CSE AIML

Section/Group: 21AML-9-A

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Subject Name: DBMS

Subject Code: 21CSH-243

AIM:- To implement the concept of Grouping of Data

The SQL GROUP BY Statement

The GROUP BY statement groups rows that have the same values into summary rows, like "find the number of customers in each country".

The GROUP BY statement is often used with aggregate functions (COUNT(), MAX(), MIN(), SUM(), AVG()) to group the result-set by one or more columns.

GROUP BY Syntax

SELECT column_name(s)**FROM** table_name**WHERE** condition**GROUP BY** column_name(s)**ORDER BY** column_name(s);

Demo Database

Below is a selection from the "Customers" table in the Northwind sample database:

CustomerID	ContactName	Address	City	PostalCode	Country
	CustomerName				

1	Alfreds Futterkiste	Maria Anders	Obere Str. 57	Berlin	12209	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Avda. de la Constitución 2222	México D.F. México	05021	
3	Antonio Moreno Taquería	Antonio Moreno	Mataderos 2312	D.F.	05023	Mexico
4	Around the Horn	Thomas Hardy	120 Hanover Sq.	London	WA1 1DP	Mexico
5	Berglunds snabbköp	Christina Berglund	Berguvsvägen 8	Luleå	S-958 22	UK Sweden

SQL GROUP BY Examples

The following SQL statement lists the number of customers in each country: Example

```
SELECT COUNT(CustomerID), Country
```

```
FROM Customers
```

```
GROUP BY Country;
```

The following SQL statement lists the number of customers in each country, sorted high to low: Example

```
SELECT COUNT(CustomerID), Country
```

```
FROM Customers
```

```
GROUP BY Country
```

```
ORDER BY COUNT(CustomerID) DESC;
```

Demo Database

Below is a selection from the "Orders" table in the Northwind sample database:

OrderID	CustomerID	EmployeeID	OrderDate	ShipperID
10248	90	5	1996-07-04	3
10249	81	6	1996-07-05	1
10250	34	4	1996-07-08	2

And a selection from the "Shippers" table:

ShipperID	ShipperName
1	Speedy Express
2	United Package
3	Federal Shipping

GROUP BY With JOIN Example

The following SQL statement lists the number of orders sent by each shipper: Example

```
SELECT Shippers.ShipperName, COUNT(Orders.OrderID) AS NumberOfOrders FROM
Orders
```

```
LEFT JOIN Shippers ON Orders.ShipperID = Shippers.ShipperID
```

```
GROUP BY ShipperName;
```

The SQL HAVING Clause

The HAVING clause was added to SQL because the WHERE keyword cannot be used with aggregate functions. HAVING Syntax

```
SELECT column_name(s)
```

FROM table_name

WHERE condition

GROUP BY column_name(s)

HAVING condition

ORDER BY column_name(s);

Demo Database

Below is a selection from the "Customers" table in the Northwind sample database:

CustomerID	CustomerName	ContactName	Address	City	PostalCode	Country
1	Alfreds Futterkiste	Maria Anders	Obere Str. 57	Berlin	12209	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Avda. de la Constitución 2222	México D.F.	05021	Mexico
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SQL HAVING Examples

The following SQL statement lists the number of customers in each country. Only include countries with more than 5 customers: Example

```
SELECT COUNT(CustomerID), Country
```

```
FROM Customers
```

```
GROUP BY Country
```

```
HAVING COUNT(CustomerID) > 5;
```

The following SQL statement lists the number of customers in each country, sorted high to low (Only include countries with more than 5 customers): Example

```
SELECT COUNT(CustomerID), Country
```

```
FROM Customers
```

```
GROUP BY Country
```

```
HAVING COUNT(CustomerID) > 5
```

```
ORDER BY COUNT(CustomerID) DESC;
```

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			