

LAB # 5:

**SQL DISTINCT. WHERE. AND & OR. ORDER BY.
SELECT TOP COMMANDS**

Objective (aim) of the experiment

To practice and implement SQL Commands (DISTINCT, WHERE, AND & OR, ORDER BY, SELECT TOP COMMANDS).

Scoring Rubrics for Lab 5:

S#	Task	Weightage	Obtained	Signature and Date
1	Using the 'Distinct' command correctly	20 %		
2	Using the 'Where' statement correctly	30 %		
3	Using the 'And' command correctly	10 %		
4	Using the 'Or' command correctly	10 %		
5	Using the 'Order By' command(s) correctly	15%		
6	Using the 'Select Top' command correctly	15%		
Total marks obtained in this lab		100%	%	

Equipment used

<u>Sl. No.</u>	<u>Facilities Required</u>	<u>Quantity</u>
1	System	1
2	Operating System	Windows 7
3	DBMS	Sql Server Management Studio 2012

TASKS

The SELECT DISTINCT statement is used to return only distinct (different) values. The SQL SELECT DISTINCT Statement

In a table, a column may contain many duplicate values; and sometimes you only want to list the different (distinct) values.

The DISTINCT keyword can be used to return only distinct (different) values.

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SQL SELECT DISTINCT Syntax

```
SELECT DISTINCT column_name,column_name  
FROM table_name;
```

Demo Database

In this tutorial we will use the well-known 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
3	Antonio Moreno Taquería	Antonio Moreno	Mataderos 2312	México D.F.	05023	Mexico
4	Around the Horn	Thomas Hardy	120 Hanover Sq.	London	WA1 1DP	UK
5	Berglunds snabbköp	Christina Berglund	Berguvsvägen 8	Luleå	S-958 22	Sweden

Below is a selection from the "Customers" table:

SELECT DISTINCT Example

The following SQL statement selects only the distinct values from the "City" columns from the "Customers" table:

Example

```
SELECT DISTINCT City FROM Customers;
```

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The WHERE clause is used to filter

records. The SQL WHERE Clause

The WHERE clause is used to extract only those records that fulfill a specified

criterion. SQL WHERE Syntax

```
SELECT column_name,column_name
```

```
FROM table_name
```

```
WHERE column_name operator value;
```

Demo Database

In this tutorial we will use the well-known 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
3	Antonio Moreno Taquería	Antonio Moreno	Mataderos 2312	México D.F.	05023	Mexico
4	Around the Horn	Thomas Hardy	120 Hanover Sq.	London	WA1 1DP	UK
5	Berglunds snabbköp	Christina Berglund	Berguvsvägen 8	Luleå	S-958 22	Sweden

Below is a selection from the "Customers" table:

WHERE Clause Example

The following SQL statement selects all the customers from the country "Mexico", in the "Customers" table:

Example

```
SELECT * FROM
```

```
Customers WHERE
```

```
Country='Mexico';
```

Text Fields vs. Numeric Fields

SQL requires single quotes around text values (most database systems will also allow double quotes).

However, numeric fields should not be enclosed in

quotes: Example

```
SELECT * FROM Customers
```

```
WHERE CustomerID=1;
```

Operators in The WHERE

Operator	Description
The following operators can be used in the WHERE clause:	
<>	Not equal. Note: In some versions of SQL this operator may be written as !=
>	Greater than
<	Less than
>=	Greater than or equal

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<=	Less than or equal
BETWEEN	Between an inclusive range
LIKE	Search for a pattern
IN	To specify multiple possible values for a column

The AND & OR operators are used to filter records based on more than one condition.

The SQL AND & OR Operators

The AND operator displays a record if both the first condition AND the second condition are true.

The OR operator displays a record if either the first condition OR the second condition is true. Demo Database

In this tutorial we will use the well-known Northwind sample database. Below is a selection from the "Customers" table:

Custo merID	CustomerName	ContactNa me	Address	City	PostalCod e	Country
1	Alfreds Futterkiste	Maria Anders	Obere Str. 57	Berlin	12209	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Avda. de la Constitució n 2222	México D.F.	05021	Mexico
3	Antonio Moreno Taquería	Antonio Moreno	Mataderos 2312	México D.F.	05023	Mexico
4	Around the Horn	Thomas	120 Hanover	London	WA1 1DP	UK

		Hardy	Sq.			
5	Berglunds snabbköp	Christina Berglund	Berguvsvägen 8	Luleå	S-958 22	Sweden

AND Operator Example

The following SQL statement selects all customers from the country "Germany" AND the city "Berlin", in the "Customers" table:

Example

```
SELECT * FROM
Customers WHERE
Country='Germany' AND
City='Berlin';
```

OR Operator Example

The following SQL statement selects all customers from the city "Berlin" OR "München", in the "Customers" table:

Example

```
SELECT * FROM
Customers WHERE
City='Berlin'
OR City='München';
```

Combining AND &

OR

You can also combine AND and OR (use parenthesis to form complex expressions).

The following SQL statement selects all customers from the country "Germany" and the city must be equal to "Berlin" OR "München", in the "Customers" table:

Example

```
SELECT * FROM
Customers WHERE
Country='Germany'
AND (City='Berlin' OR
City='München'); The SQL ORDER
BY Keyword
```

The ORDER BY keyword is used to sort the result-set by one or more columns.

The ORDER BY keyword sorts the records in ascending order by default. To sort the

```
SELECT column_name,column_name
```

```
FROM table_name
```

```
ORDER BY column_name,column_name ASC|DESC;
```

Demo Database

In this tutorial we will use the well-known Northwind sample database. Below is a selection from the "Customers" table:

Custo merID	CustomerNam e	ContactNa me	Address	City	PostalCod e	Country
1	Alfreds Futterkiste	Maria Anders	Obere Str. 57	Berlin	12209	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Avda. de la Constitució n 2222	México D.F.	05021	Mexico
3	Antonio Moren o Taquer ía	Antonio Moreno	Mataderos 2312	México D.F.	05023	Mexico

4	Around the Horn	Thomas Hardy	120 Hanover Sq.	London	WA1 1DP	UK
5	Berglunds snabbköp	Christina Berglund	Berguvsvägen 8	Luleå	S-958 22	Sweden

ORDER BY Example

The following SQL statement selects all customers from the "Customers" table, sorted by the "Country" column:

Example

```
SELECT * FROM
```

```
Customers ORDER BY
```

```
Country; ORDER BY
```

```
DESC Example
```

The following SQL statement selects all customers from the "Customers" table, sorted DESCENDING by the "Country" column:

Example

```
SELECT * FROM
```

```
Customers ORDER BY
```

```
Country DESC;
```

ORDER BY Several Columns Example

The following SQL statement selects all customers from the "Customers" table, sorted by the "Country" and the "CustomerName" column:

Example

```
SELECT * FROM Customers
```

```
ORDER BY
```

```
Country, CustomerName; The
```

```
SQL SELECT TOP Clause
```


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The SELECT TOP clause is used to specify the number of records to return.

The SELECT TOP clause can be very useful on large tables with thousands of records. Returning a large number of records can impact on performance.

Note: Not all database systems support the SELECT TOP

clause. SQL Server / MS Access Syntax

```
SELECT TOP number|percent column_name(s)
FROM table_name;
```

SQL SELECT TOP Equivalent in MySQL and Oracle

MySQL Syntax

```
SELECT column_name(s)
FROM table_name
LIMIT number;
```

Example

```
SELECT * FROM Persons
LIMIT 5;
```

Oracle

Syntax

```
SELECT column_name(s)
FROM table_name
WHERE ROWNUM <= number;
```

Example

```
SELECT *
FROM Persons
```

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WHERE ROWNUM <=5;

Demo Database

In this tutorial we will use the well-known Northwind sample database. Below is a selection from the "Customers" table:

Custo merID	CustomerName	ContactNa me	Address	City	PostalCod e	Country
1	Alfreds Futterkiste	Maria Anders	Obere Str. 57	Berlin	12209	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Avda. de la Constitució n 2222	México D.F.	05021	Mexico
3	Antonio Moreno Taquería	Antonio Moreno	Mataderos 2312	México D.F.	05023	Mexico
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SQL SELECT TOP Example

The following SQL statement selects the two first records from the "Customers" table: Example

```
SELECT TOP 2 * FROM
```

```
Customers; SQL SELECT TOP
```

```
PERCENT Example
```

The following SQL statement selects the first 50% of the records from the

"Customers" table: Example

```
SELECT TOP 50 PERCENT * FROM
```

```
Customers; EXPECTED DELIVERABLE
```

A spool file showing all executions of the above queries.