Session Overview

- Identify the use of `INSERT`, `UPDATE`, and `DELETE` in the manipulation of data.

- Explain the `SELECT` command in detail.

- Explain the use of `LIKE`, `IN`, `BETWEEN`, and `DISTINCT` clauses.

- Explain `MERGE` command and its usage.

SELECT Commands in MySQL

A `SELECT` query is used to display results in a structured way with proper column names and organized records.

The `SELECT` query displays results based on one or more conditions mentioned by the user.

Syntax: `SELECT * FROM table_name;`

`SELECT column1, column2, column3... columnN FROM table_name;`

Simple SELECT Statements

Information of all the employees can be displayed using the SELECT query.

For example, a SELECT query can be used in Railways Database to display all information about trains, train numbers, timings and so on.

Following command is used to fetch all the records from the **emp_details** table:

```
SELECT * FROM emp_details;
```

WHERE Clause with Operators

MySQL WHERE Clause with a single condition:

- WHERE clause with a single condition returns records based on that particular condition.

MySQL WHERE Clause with AND operator:

- WHERE clause with AND operator includes two conditions and returns results fulfilling both the conditions.

MySQL WHERE Clause with OR operator:

- WHERE clause with OR operator includes two conditions and returns data fulfilling either of the two conditions.

MySQL WHERE Clause with a combination of AND and OR conditions:

- Using AND and OR clauses with a WHERE clause filters the results even more.

Keywords in MySQL

LIKE	• `LIKE` keyword is used to fetch records that match a given beginning character, ending character, or in between characters of a column. • Following command displays information of employees whose name starts with the letter 'A': `SELECT * FROM emp_details  t Name LIKE 'A%'`
IN	• `IN` keyword is used to retrieve records by checking the possible values from a given column. It is used with a single column. • Following command displays information of employees who belong to the department of Finance, Sales, or Legal: `SELECT * FROM emp_details WHERE dept IN ('Finance', 'Sales', Legal');`

BETWEEN	• The `BETWEEN` operator chooses values from a specified range.
	`SELECT column_name(s) FROM table_name`
	`WHERE column_name BETWEEN value1 AND value2;`

DISTINCT Clause

MySQL also provides basic clauses that can be directly used with `SELECT`, such as `DISTINCT` that fetches unique values from a table.

MySQL Distinct Clause with Single Expression:

- A `DISTINCT` clause with a single expression fetches unique values from one column.
- The query will display the names of the departments existing in the organization only once.
- `SELECT DISTINCT Dept FROM emp_details;`

MYSQL Distinct Clause with Multiple Expressions:

- A `DISTINCT` clause with multiple expressions means that it fetches unique values from more than one column.
- Following query returns only the distinct values of the columns combined: `SELECT DISTINCT Name, Location FROM emp_details;`

INSERT Commands in MySQL

The `INSERT` query is used to add new records to the table.

`TIMESTAMP` is a data type that contains the current date and time stored in the system.

`SELECT TIMESTAMP("2017-07-23", "13:10:11");`

Following is the syntax of the `INSERT` query:

```
INSERT INTO table_name (column1, column2, column3,
...)  VALUES (value1, value2, value3, ...);
OR
INSERT INTO table_name VALUES
(value1, value2, value3, ...);
```

Updating Data Using UPDATE Command

Modification of data in a table can be done using the UPDATE query.

Updating a specific column of a row in a table with a single UPDATE statement.

Updating multiple columns of a row in a table with a single UPDATE statement: It is used to change the values of specific columns from a record.

DELETE Commands in MySQL

With the DELETE query, the user can delete specific records or entire records of the table using the WHERE clause.

Deleting all records from a table in a single DELETE command	Deleting specific rows from a table
• Following is the syntax to delete all records of a table at once: DELETE FROM table_name;	• Following is a command to delete details of all employees belonging to the 'Legal' department' in the emp_details table: DELETE FROM emp_details WHERE Dept = 'Legal';

Summary

- A query is an SQL statement to communicate with the database for some data.

- MySQL supports many commands including `SELECT`, `INSERT`, `UPDATE`, and `DELETE`.

- `SELECT` command is the most popular command used to display records of a table.

- `INSERT` command helps to add new records to a table in the database.

- Using `UPDATE`, users can modify existing records in a table.

- Multiple rows and columns can be updated using the `UPDATE` command.

- `DELETE` command can delete a single record, multiple records, or all records at once.