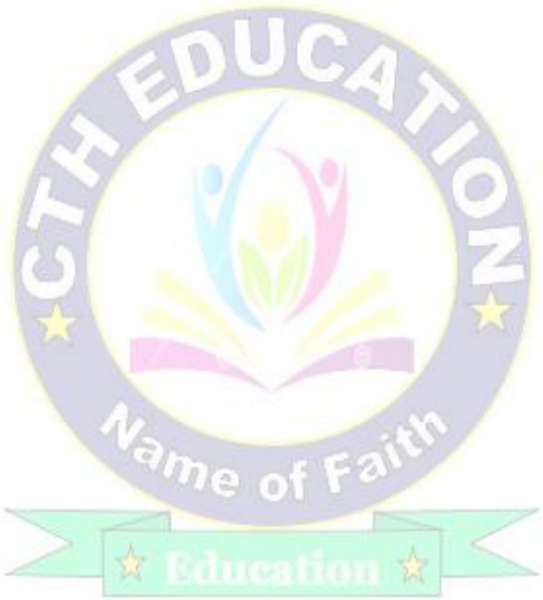
Unit – 05: Database Operations

- Introduction to MySQL –
  - Create a database,
  - Connecting to a MySQL database: MySQL database server from PHP,
- Database operations: Insert data, Retrieving the Query result, Update and delete operations on table.

Questions to be discussed:

1. Discuss about MySQL in PHP. How to create MySQL database?
2. Explain how to Connecting a MySQL database with server in PHP?
3. Define different MySQL database operations in PHP.



Introduction to MySQL in PHP:

- MySQL is an open-source relational database management system (RDBMS).
- It is the most popular database system used with PHP.
- MySQL is developed, distributed, and supported by Oracle Corporation.
- The data in a MySQL database are stored in tables which consists of columns and rows.
- MySQL is ideal for both small and large applications.
- MySQL is very fast, reliable, and easy to use database system.
- It uses standard SQL.

How to connect PHP with MySQL Database?

- There are three ways of working with MySQl and PHP
  1. MySQLi (object-oriented)
  2. MySQLi (procedural)
  3. PDO (PHP Data Objects)

Connecting to MySQL database using PHP:

- We can use the MySQLi object-oriented procedure to establish a connection to MySQL database from a PHP script.

Syntax:

```
<?php
$servername = "localhost";
$username = "username";
$password = "password";

// Creating connection
$conn = new mysqli($servername, $username, $password);

// Checking connection
if ($conn->connect_error) {
   die("Connection failed: " . $conn->connect_error);
}
echo "Connected successfully";
?>
```

Output:

Connected successfully

PHP Create a MySQL Database:

- A database consists of one or more tables.
- You will need special CREATE privileges to create or to delete a MySQL database.
- Create a MySQL Database Using MySQLi and PDO
- The following examples create a database named "myDB":

Syntax:

```
<?php
$servername = "localhost";
$username = "username";
$password = "password";

// Create connection
$conn = new mysqli($servername, $username, $password);
// Check connection
if ($conn->connect_error) {
  die("Connection failed: " . $conn->connect_error);
}

// Create database
$sql = "CREATE DATABASE myDB";
if ($conn->query($sql) === TRUE)
{
  echo "Database created successfully";
}
else
{
  echo "Error creating database: " . $conn->error;
}

$conn->close();
?>
```

CRUD Operations in PHP and MySQL:

- **Crud operation** in php refer to the four basic functions used in DB: **Create**, **Read**, **Update**, **Delete**.
- In PHP and MySQL, **CRUD operations** are commonly used for building dynamic web applications that require the management of data.
- **Create** involves inserting new records into a database, while **Read** retrieves data from the database.
- **Update** modifies existing records, and **Delete** removes records from the database.
- In PHP, these operations are performed using SQL queries, which are sent to the MySQL database.
- By using these CRUD operations, developers can easily manage and manipulate data within a web application, making it a crucial aspect of web development with PHP and MySQL.

Insert Data Into MySQL Using MySQLi and PDO

- After a database and a table have been created, we can start adding data in them.
- The INSERT INTO statement is used to add new records to a MySQL table:

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

Select and Filter Data From a MySQL Database

- The WHERE clause is used to filter records.
- The WHERE clause is used to extract only those records that fulfill a specified condition.

```
SELECT column_name(s)
FROM table_name
WHERE column_name operator value
```

Delete Data From a MySQL Table Using MySQLi and PDO

- The DELETE statement is used to delete records from a table:

```
DELETE FROM table_name
WHERE some_column = some_value
```

Update Data In a MySQL Table Using MySQLi and PDO

- The UPDATE statement is used to update existing records in a table:

```
UPDATE table_name
SET column1=value, column2=value2,...
WHERE some_column=some_value
```