Installing & Configuring Web Server - PHP

- Step 1 : Install Apache Web Server
    - Command : `yum install httpd -y`
- Step 2 : Install PHP and other tools
    - Commands :
```
dnf module list php
dnf module -y enable php:8.1
dnf module -y install php:8.1/common
yum install mysql -y
yum install php-mysqli -y
```
- Step 3 : Check the installed PHP version and enable httpd service
    - Command : `php -v`
    - Command : `systemctl enable --now httpd`
- Step 4 : Create a test page
    - Commands :
```
cd /var/www/html
vi php_test.php
```
- Step 5 : Paste below content > Save and exit the file

```
<!DOCTYPE html>
<html>
<body>

<h1>My first PHP page</h1>

<?php
echo "Hello World!";
?>

</body>
</html>
```

- Step 6 : Now open the browser and type below

`http://<Web server IP Address>/php_test.php`

- Step 7 : Now you should see the test page 👍

MySQL Database Installation & Configuration

- Step 1 : Install MySQL Server
  - Command : `dnf -y install mysql-server`

- Step 2 : Configure the character set
  - Command : `vi /etc/my.cnf.d/charset.cnf`
  - Insert below in the same file

```
[mysqld]
character-set-server = utf8mb4

[client]
default-character-set = utf8mb4
```

- Step 2 : Enable the Mysql Service
  - Command : `systemctl enable --now mysqld`

- Now configure the Database
  - Command : `mysql_secure_installation`

- After the setup, use below command to login to MySQL
  - Command 1 : `mysql -u root -p`
  - Command 2 : `select user,host from mysql.user;`
  - Command 3 : `show databases;`

- Test Database creation commands
  - Command 1 : `create database test_database;`
  - Command 2 : `create table test_database.test_table (id int, name varchar(50), address varchar(50), primary key (id));`
  - Command 3 : `insert into test_database.test_table(id, name, address) values("031", "CentOS", "India");`
  - Command 4 : `select * from test_database.test_table;`
  - Command 5 : `drop database test_database;`
  - Command 6 : `exit`

User Data Collector Application - Installation & Configuration

We need to prepare the MySQL Database for our PHP code in the DB host

- Step 1 : Login to DB server > MySQL login and Create new database called “udc”
  - Command : `mysql -u root -p`
  - Command : `create database udc;`

- Step 2 : Create new user called “udc” and assign permissions for the new user
  - Command : `CREATE USER 'udc'@'%' IDENTIFIED BY 'new_password';`
  - Command : `GRANT ALL PRIVILEGES ON udc.* TO 'udc'@'%';`

- Step 3 : Login to MySQL server from the web server host and verify the connection
  - Command : `mysql -h <DB Server IP> -u udc -p`

- Step 4 : Now create a Table for our PHP application
  - Command : `CREATE TABLE users ( id INT AUTO_INCREMENT PRIMARY KEY, name VARCHAR(255) NOT NULL, age INT NOT NULL, country VARCHAR(255) NOT NULL );`

- Step 5 : Now create folders “`/var/udc/uploads`” for our PHP Application

Database Connection Test Page

We need to ensure the DB connection with below PHP code

- Command 1 : `vi /var/www/html/db_check.php`
- Command 2 : Copy below content > Paste in the file > Modify > Save > Exit
- Command 3 : `php var/www/html/db_check.php`
- Ensure the output is positive

```
<?php
// MySQL database configuration
$servername = "localhost";
$username = "user name";
$password = "password";
$dbname = "database name";


// Create a database connection
$conn = new mysqli($servername, $username, $password, $dbname);

// Check for connection errors
if ($conn->connect_error) {
     die("Connection failed: " . $conn->connect_error);
}

// Check if the connection is alive using ping
if ($conn->ping()) {
     echo "MySQL server connection is alive.";
} else {
     echo "MySQL server connection is not alive.";
}

// Close the database connection
$conn->close();
?>
```

Main Application Page

The Actual PHP main page code is below, please copy it and paste in “/var/www/html/main.php” file

```
<!DOCTYPE html>
<html>
<head>
        <title>User Data Collection</title>
</head>
<body>
        <?php
        // MySQL database configuration
        $servername = "localhost";
        $username = "user name";
        $password ="password";
        $dbname = "database name";

        // Create a database connection
        $conn = new mysqli($servername, $username, $password, $dbname);

        // Check connection
        if ($conn->connect_error) {
        die("Connection failed: " . $conn->connect_error);
        }

        if ($_SERVER["REQUEST_METHOD"] == "POST") {
        // Collect user data
        $name = $_POST["name"];
        $age = $_POST["age"];
        $country = $_POST["country"];

        // Insert data into the MySQL database
        $sql = "INSERT INTO users (name, age, country) VALUES ('$name', $age, '$country')";
        if ($conn->query($sql) === TRUE) {
        echo "User data has been successfully stored in the database.<br>";
        } else {
        echo "Error: " . $sql . "<br>" . $conn->error;
        }

        // Handle file upload
        $uploadDir = '/var/udc/uploads/';
        $uploadFile = $uploadDir . basename($_FILES['userfile']['name']);

        if (move_uploaded_file($_FILES['userfile']['tmp_name'], $uploadFile)) {
        echo "File is valid, and it has been successfully uploaded.<br>";
        } else {
        echo "File upload failed.<br>";
        }
        }
        ?>

        <h2>Enter User Information</h2>
        <form method="post" enctype="multipart/form-data">
        Name: <input type="text" name="name"><br>
        Age: <input type="number" name="age"><br>
        Country: <input type="text" name="country"><br>
        File Upload: <input type="file" name="userfile"><br>
        <input type="submit" value="Submit">
        </form>

        <?php
        // Close the database connection
        $conn->close();
        ?>
</body>
</html>
```