Deploying PHP application on AWS EC2 instance.

Introduction

This project shows how to deploy a PHP web application on an Amazon EC2 server using the LAMP stack (Linux, Apache, MariaDB, PHP). It explains the full process, including launching an EC2 instance, connecting to it with SSH, installing the required software, setting up the web server, and hosting a signup form application.

The setup includes:

Amazon EC2 instance (Amazon Linux)

Apache (httpd) as the web server

MariaDB as the database

PHP for backend processing

Requirements

Before starting, ensure you have:

An AWS account with access to launch EC2 instances

A key pair (.pem file) to connect to your EC2 instance

Basic knowledge of Linux commands and SSH

Security group configured to allow:

```
Port 22 (SSH) → for connecting to the server

Port 80 (HTTP) → for accessing the web application

Port 3306 (MySQL/MariaDB) → if connecting to the database remotely
```

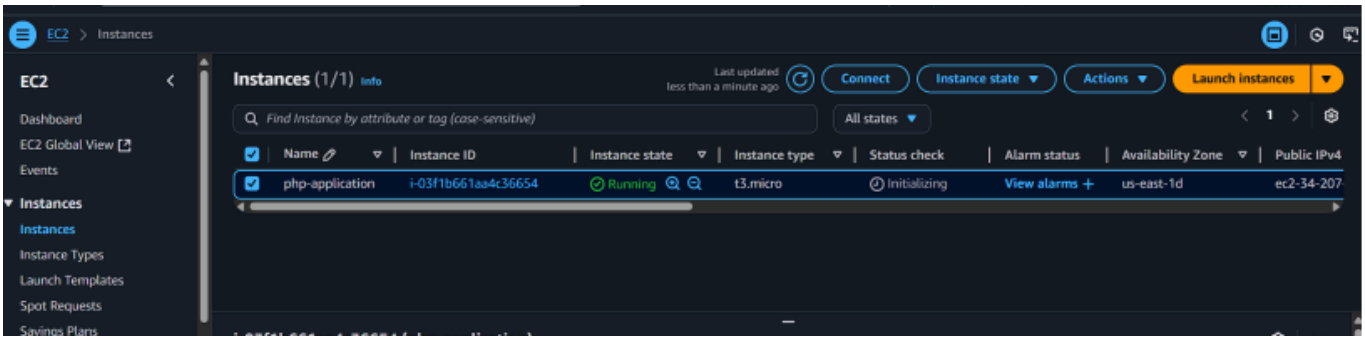
Installed tools on your local machine:

```
SSH client (e.g., Git Bash)
```

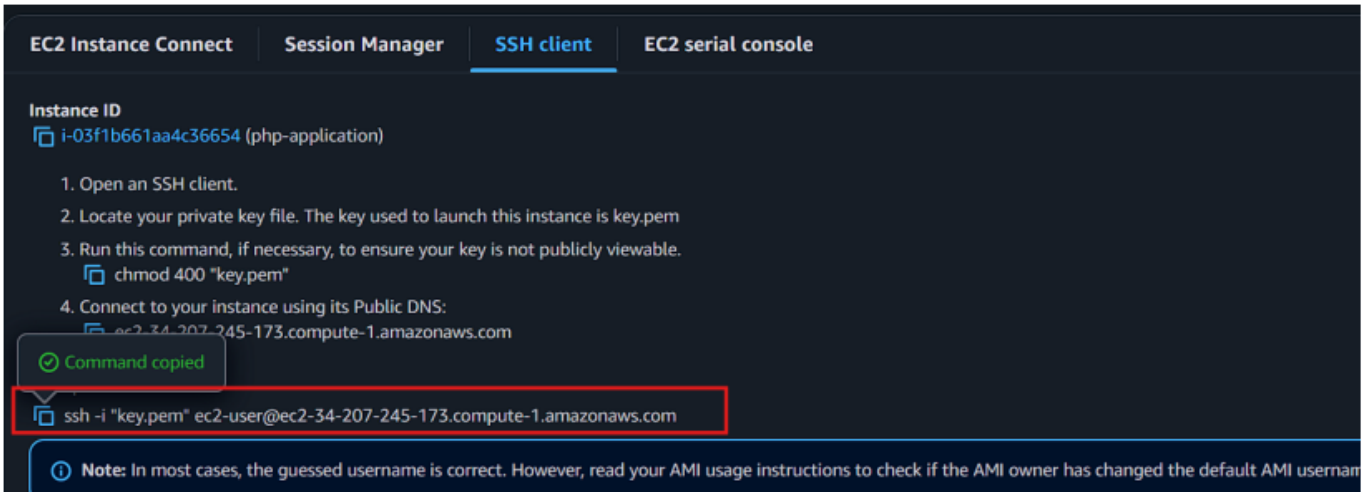
Steps for Deployment

Step 1: Launch EC2 instance and Establishing a secure connection to your EC2 instance

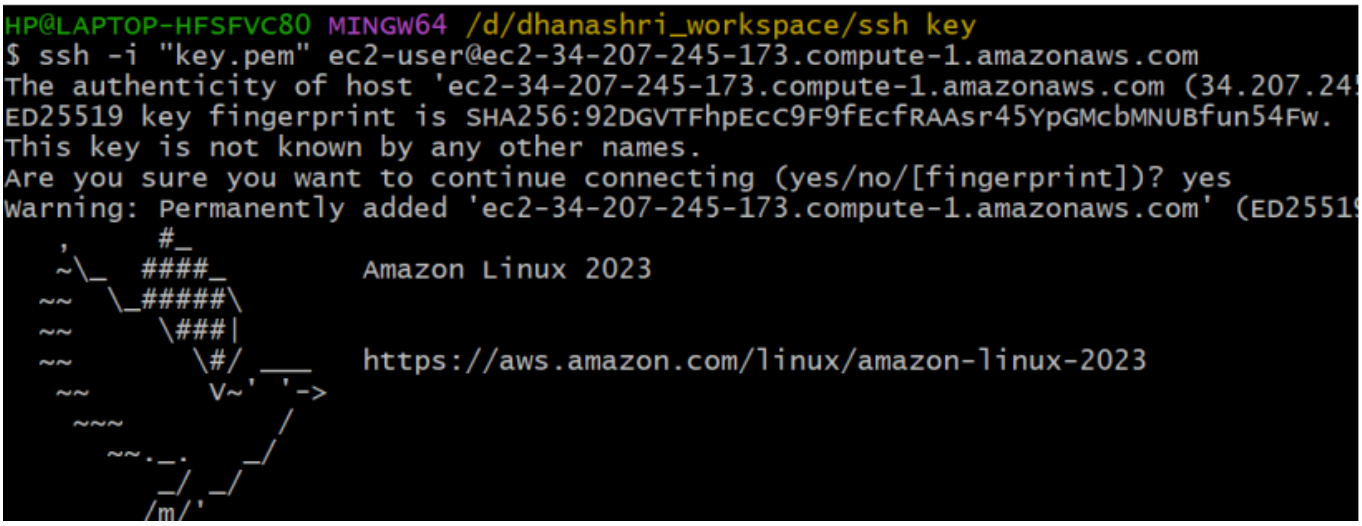
1. Launch instance



2. Copy the SSH command

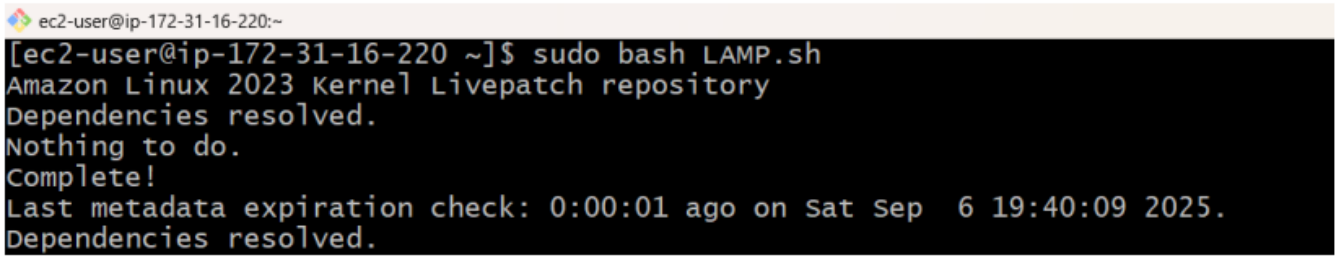


3. Paste command in Git bash



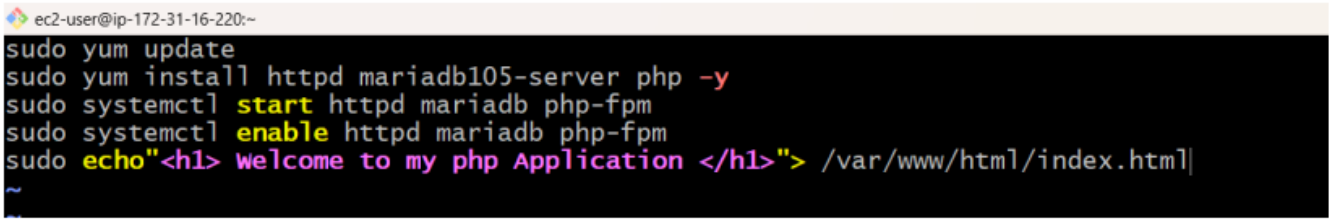
Step 2: Automating LAMP Stack Setup on AWS EC2

1. Create a LAMP.sh file

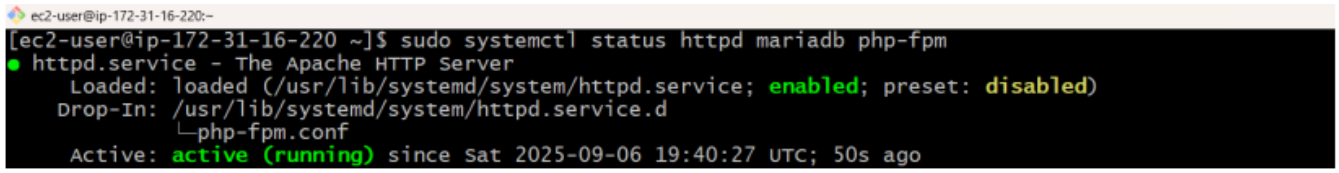


2. Insert the code for installing apache, mysql and php

```
sudo yum update
sudo yum install httpd mariadb105-server php -y
sudo systemctl start httpd mariadb php-fpm
sudo systemctl enable httpd mariadb php-fpm
sudo echo"<h1> Welcome to my php Application </h1>">
/var/www/html/index.html
```

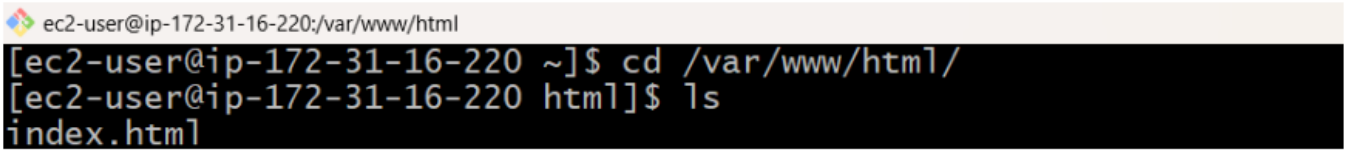


3. Check the status of apache, mysql and php



Step 3: Change the Directory to Default Directory

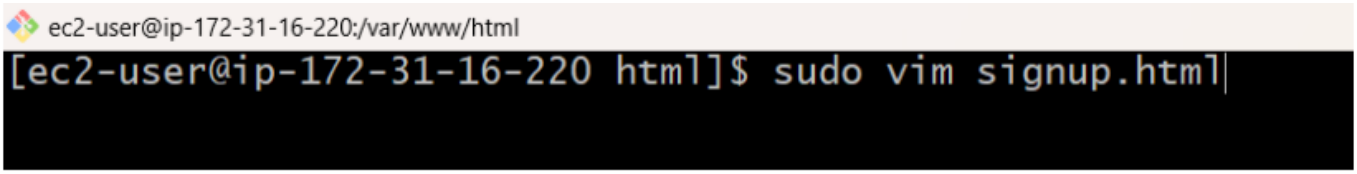
```
cd /var/www/html/
```



Step 4: Building the Signup Page

1. Create a Signup.html file.

```
sudo vim signup.html
```



2. Code of Signup.html

ec2-user@ip-172-31-16-220:/var/www/html

```
<!DOCTYPE html>
<html>
<head>
  <title>Signup Form</title>
</head>
<body>
  <h2>Signup Form</h2>
  <form action="submit.php" method="post">

    <label for="name">Name:</label><br>
    <input type="text" id="name" name="name" required><br><br>

    <label for="email">Email:</label><br>
    <input type="email" id="email" name="email" required><br><br>

    <label for="website">Website:</label><br>
    <input type="url" id="website" name="website"><br><br>

    <label for="comment">Comment:</label><br>
    <textarea id="comment" name="comment" rows="4" cols="50"></textarea><br><br>

    <label>Gender:</label><br>
    <input type="radio" id="female" name="gender" value="female" required>
    <label for="female">Female</label><br>

    <input type="radio" id="male" name="gender" value="male">
    <label for="male">Male</label><br>

    <input type="radio" id="other" name="gender" value="other">
    <label for="other">Other</label><br><br>

    <input type="submit" value="Submit">
  </form>
</body>
</html>
```

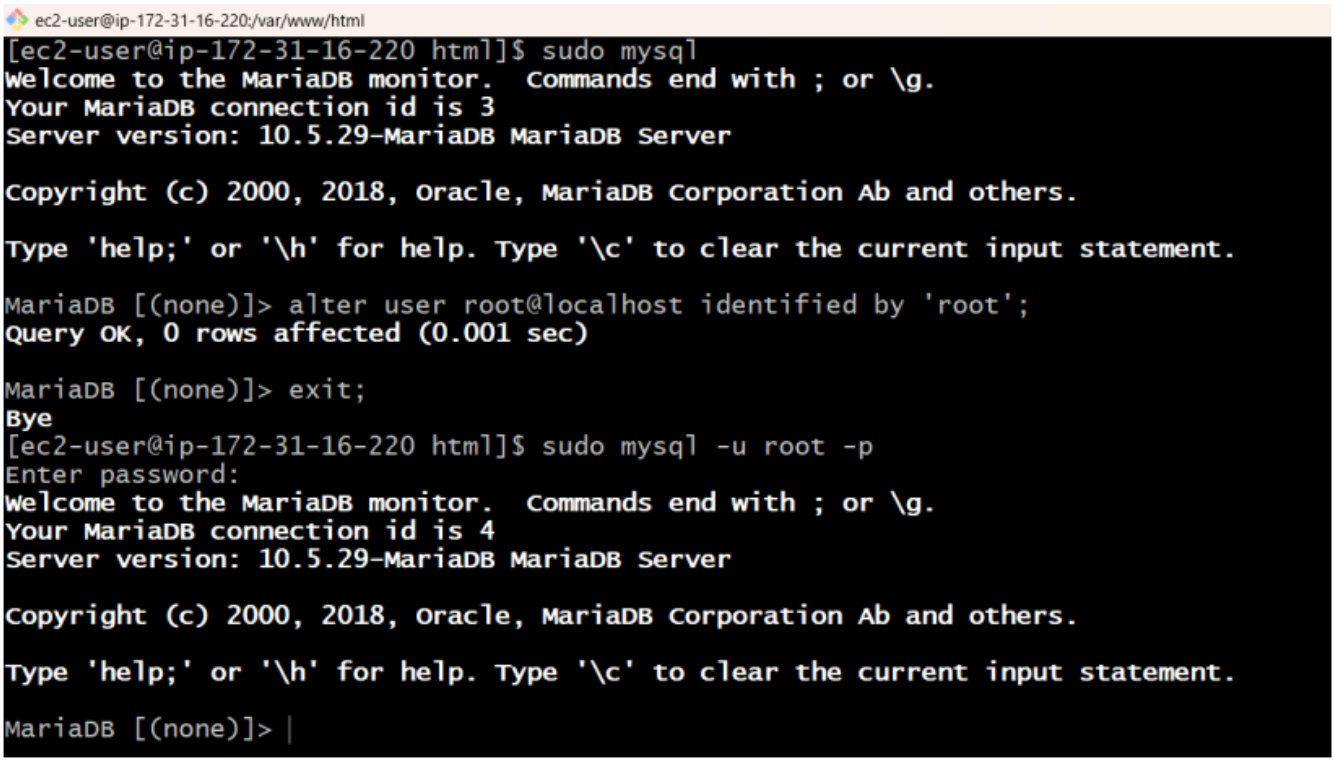
Step 5: Configure the Database (MariaDB)

1. Generate the username and password.

```
sudo mysql
alter user root@localhost identified by 'root';
```

2. Login to Mysql (mariadb105-server)

```
sudo mysql -u root -p
```



3. Create Database

```
#create database
create database FCT;
#to see all databases
show databases;
#to use that database
use FCT;
```

```
MariaDB [(none)]> create database FCT;
Query OK, 1 row affected (0.000 sec)

MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| FCT                |
| information_schema |
| mysql              |
| performance_schema |
+--------------------+
4 rows in set (0.000 sec)

MariaDB [(none)]> use FCT;
Database changed
MariaDB [FCT]>
```

4. Create table accoring to the signup form.

```
#create table
CREATE TABLE users (
id INT PRIMARY KEY AUTO_INCREMENT,
name VARCHAR(50) NOT NULL,
email VARCHAR(100) NOT NULL UNIQUE,
website VARCHAR(255),
gender ENUM('male', 'female', 'other') NOT NULL,
comment TEXT
);
```

```
MariaDB [FCT]> CREATE TABLE users (
    ->     id INT PRIMARY KEY AUTO_INCREMENT,
    ->     name VARCHAR(50) NOT NULL,
    ->     email VARCHAR(100) NOT NULL UNIQUE,
    ->     website VARCHAR(255),
    ->     gender ENUM('male', 'female', 'other') NOT NULL,
    ->     comment TEXT
    -> );
Query OK, 0 rows affected (0.012 sec)
```

5. Describe the table

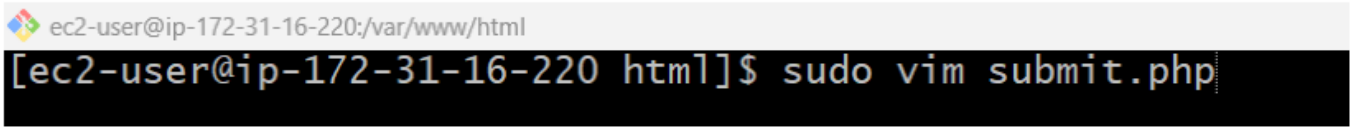
```
desc users;
```

```
MariaDB [FCT]> desc users;
+---------+---------------------------------+------+-----+---------+----------------+
| Field   | Type                            | Null | Key | Default | Extra          |
+---------+---------------------------------+------+-----+---------+----------------+
| id      | int(11)                         | NO   | PRI | NULL    | auto_increment |
| name    | varchar(50)                     | NO   |     | NULL    |                |
| email   | varchar(100)                    | NO   | UNI | NULL    |                |
| website | varchar(255)                    | YES  |     | NULL    |                |
| gender  | enum('male','female','other')   | NO   |     | NULL    |                |
| comment | text                            | YES  |     | NULL    |                |
+---------+---------------------------------+------+-----+---------+----------------+
6 rows in set (0.001 sec)
```

Step 6: Connect Form to Database with submit.php

1. Create the file submit.php

```
sudo vim submit.php
```



2. Code of submit.php

ec2-user@ip-172-31-16-220:/var/www/html

```php
<?php
error_reporting(E_ALL);
ini_set('display_errors', 1);

// Get form data safely
$name    = $_POST['name'] ?? '';
$email   = $_POST['email'] ?? '';
$website = $_POST['website'] ?? '';
$comment = $_POST['comment'] ?? '';
$gender  = $_POST['gender'] ?? '';

// Database connection
$servername = "localhost";
$username   = "root";
$password   = "root";
$dbname     = "FCT";

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

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

Step 7: Install PHP-MySQL Connector

```
sudo yum install php8.4-mysqlnd.x86_64
```

ec2-user@ip-172-31-16-220:/var/www/html

```
[ec2-user@ip-172-31-16-220 html]$ sudo yum install php8.4-mysqlnd.x86_64
Last metadata expiration check: 0:26:05 ago on Sat Sep  6 19:40:09 2025.
Dependencies resolved.
================================================================================
 Package                        Architecture            Version
================================================================================
Installing:
 php8.4-mysqlnd                 x86_64                  8.4.10-1.amzn2023.0

Transaction Summary
================================================================================
Install  1 Package

Total download size: 156 k
```

Step 8: Restart the services

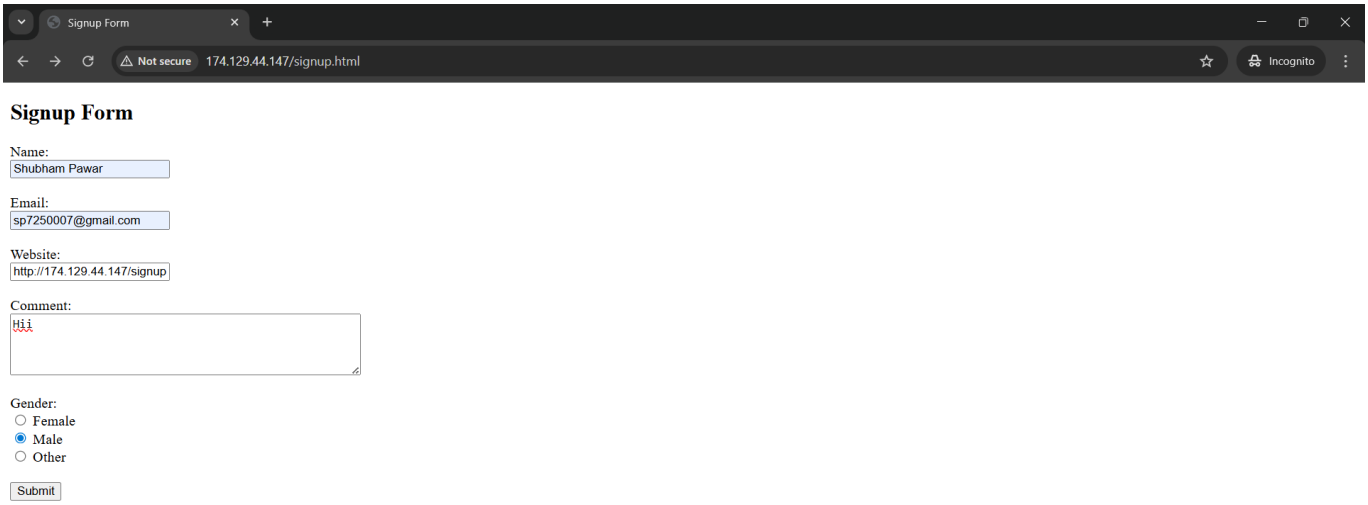
```
sudo systemctl restart httpd mariadb php-fpm
```

```
[ec2-user@ip-172-31-16-220 html]$ sudo systemctl restart httpd mariadb php-fpm
[ec2-user@ip-172-31-16-220 html]$
```

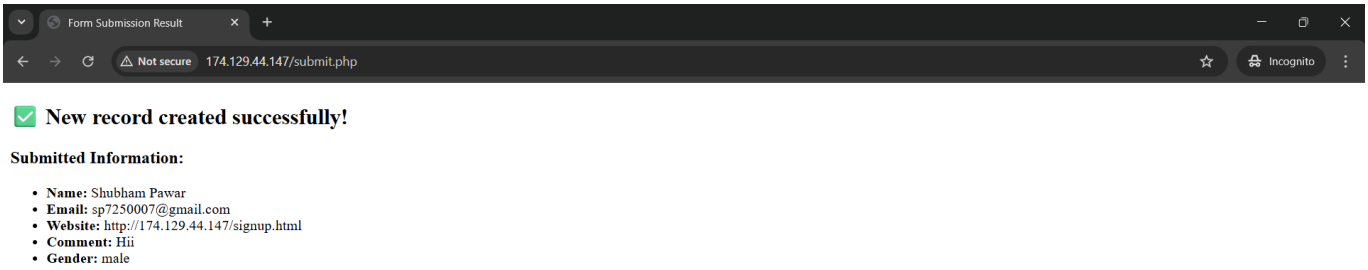
Step 9: Deploy and Test the Signup Form

1. Copy the public IP and Paste the public IP in any browser

2. Signup.html



3. Submit.php



Summary

In this project, we deployed a PHP-based signup form on an AWS EC2 instance using the LAMP stack (Linux, Apache, MariaDB, PHP). We launched and set up an EC2 instance with Amazon Linux, then used a custom lamp.sh script to install the LAMP stack automatically. After that, we built a signup.html form and connected it to a MariaDB database with submit.php, which saved user input into the database. To enable communication between PHP and MariaDB, we added the PHP-MySQL connector. Finally, we tested the form in a browser and confirmed that the data was stored successfully.