WAPH-Web Application Programming and Hacking

Instructor: Dr. Phu Phung

Mini Facebook

Team – 01

Team members

1. Tulasiram Nakkanaboina, nakkantm@mail.uc.edu
2. Vihasith Rasala, rasalavh@mail.uc.edu
3. Grahika Rampudi, Rampudga@mail.uc.edu
4. Sai Sandeep Pasham, pashamsp@mail.uc.edu

Team members respective headshots

Project Management Information

Source code repository (private access): **Click_here**

Project homepage (public): **Click_here**

Revision History

Date	Version	Description
26/03/2024	0.0	Initial draft
26/03/2024	0.1	Drafting template overview
26/03/2024	1.0	Sprint 1 update

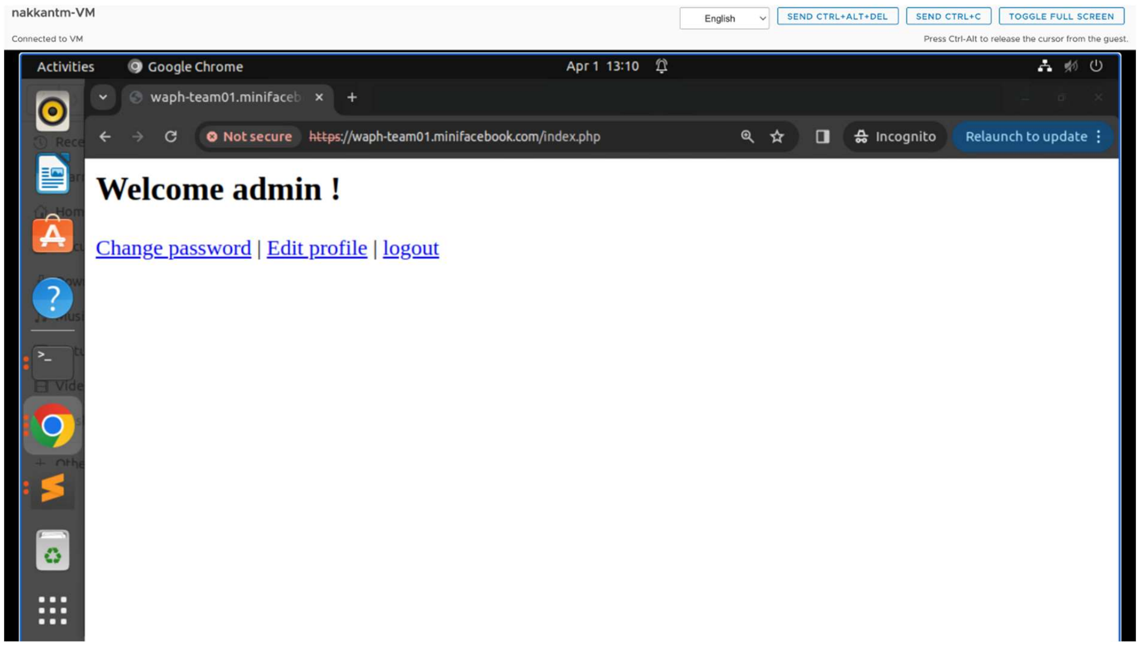
Overview

This Project aims to develop a Mini Facebook web application using full stack web development technologies, secure programming/hacking principles, and the practices of agile development. This is a team project where all the team members collaborated and worked together to create a database, creating simple login page and created an index.html containing information about course overview, each member headshot and each member personal portfolio link. We divided the tasks among us and pushed the code files into the main branch.

System Analysis

During the initial phase that is for the sprint 0 of the project, we constructed the website utilizing the system configuration file, which was utilized and modified for the WAPH-team project file. The hosts file in the etc folder was updated with the public URL: waph-team01.minifacebook.com alongside the IP address.

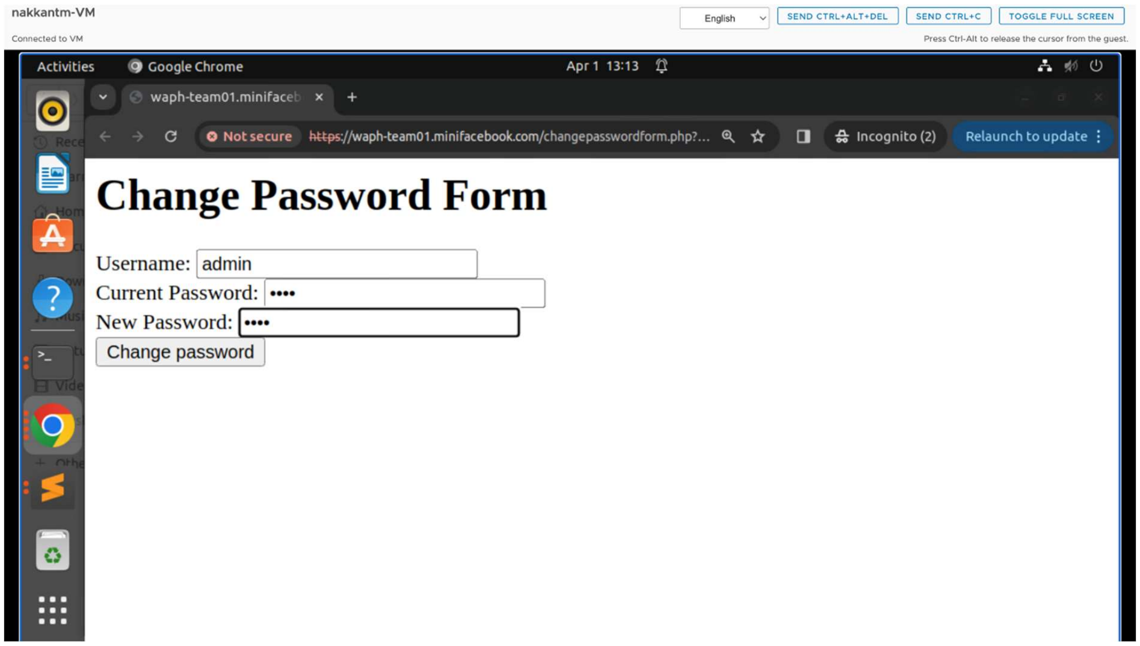
Demo screenshots



Welcome admin !

Change password | Edit profile | logout

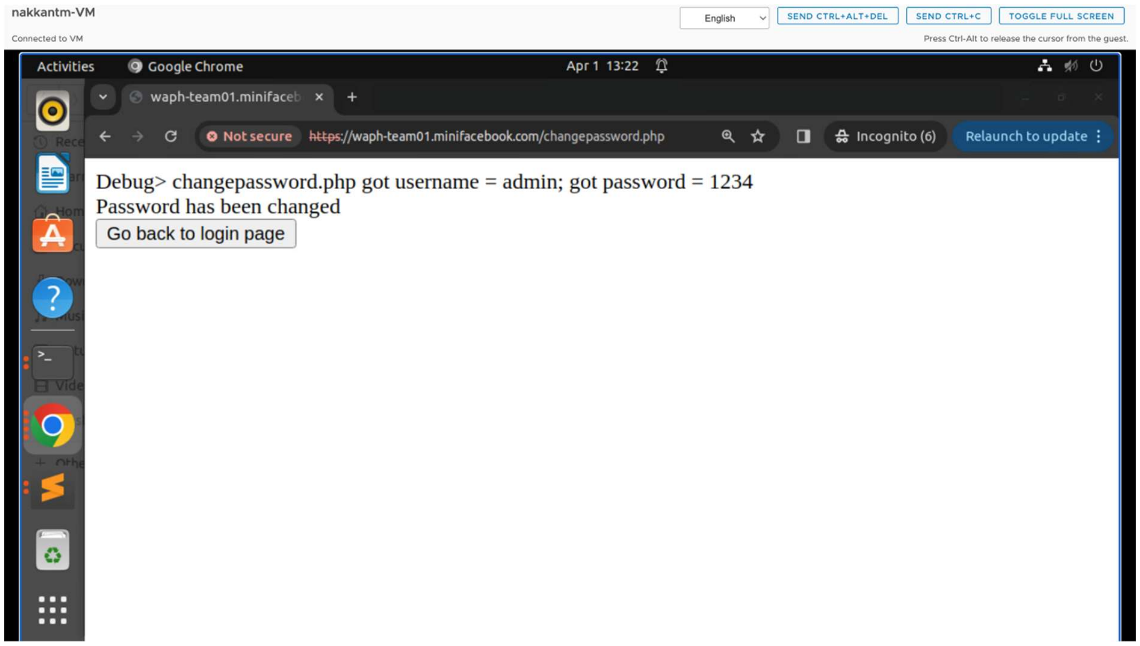
Figure 1 login admin page



Change Password Form

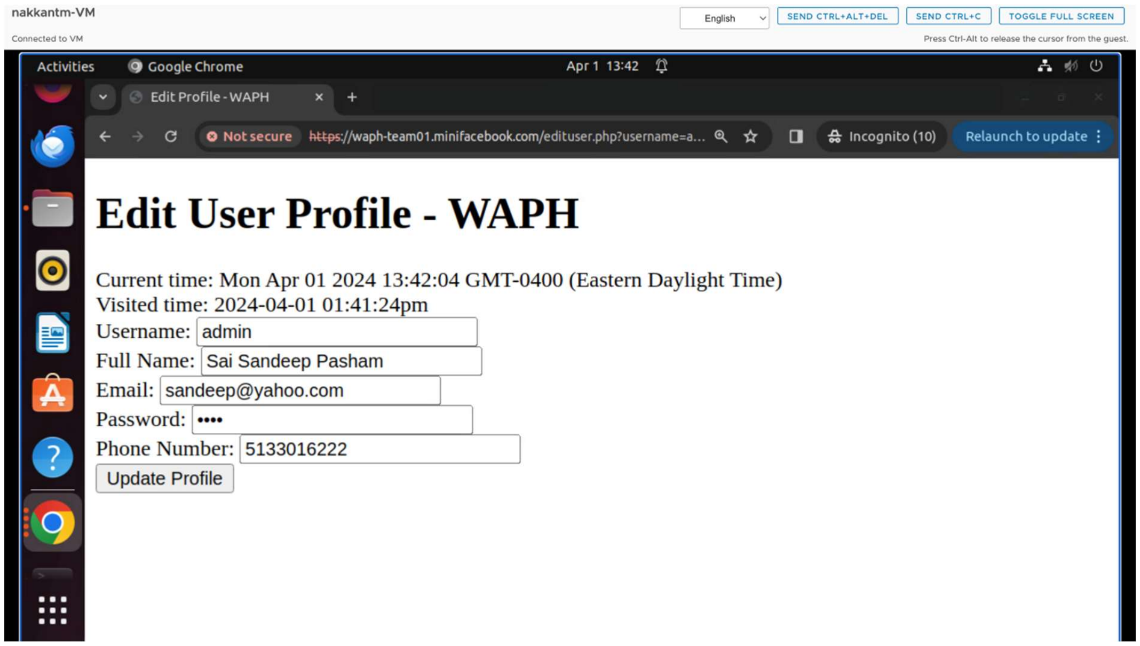
Username: admin
Current Password: ••••
New Password: ••••
Change password

Figure 2 change password form



```
Debug> changepassword.php got username = admin; got password = 1234
Password has been changed
```
Go back to login page

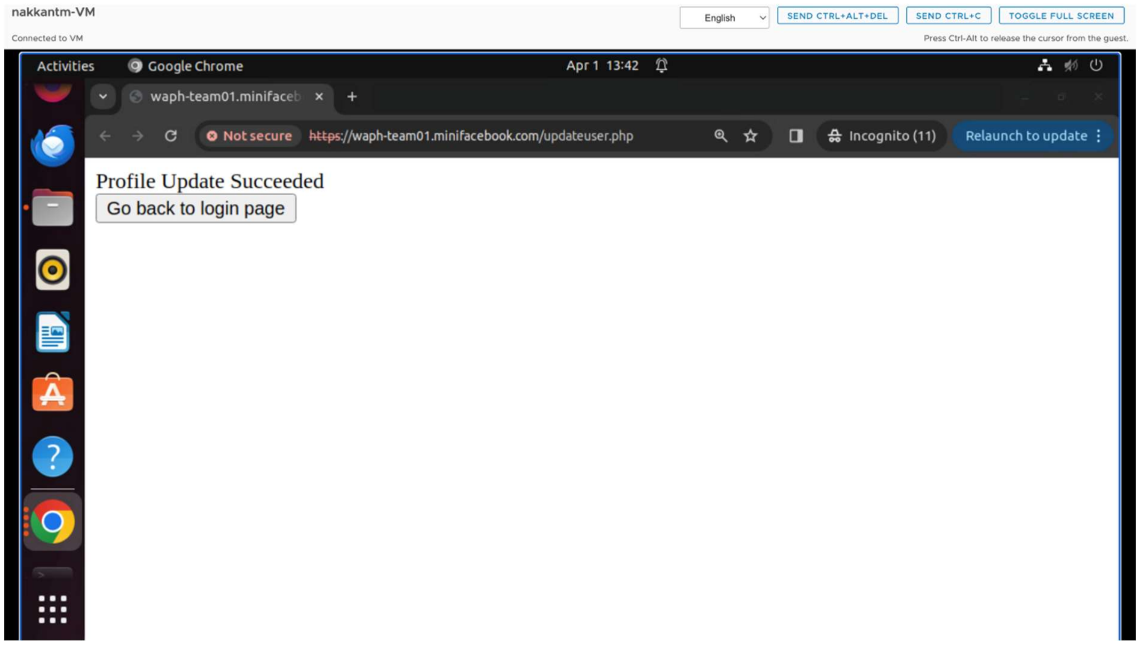
Figure 3 password changed successfully



Edit User Profile - WAPH

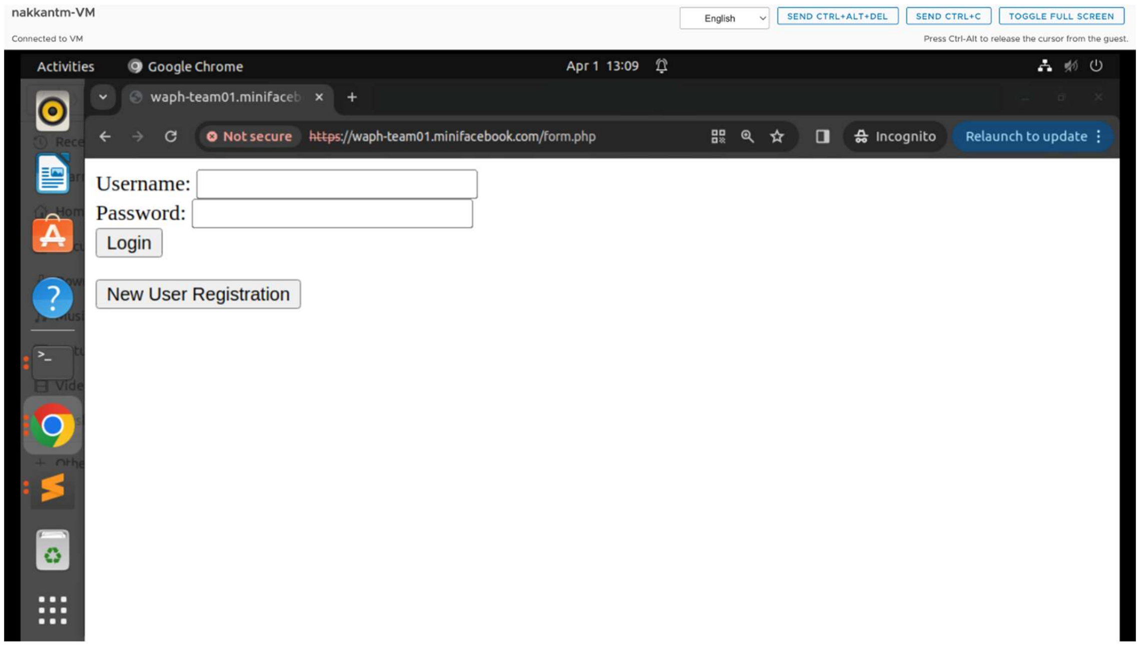
Current time: Mon Apr 01 2024 13:42:04 GMT-0400 (Eastern Daylight Time)
Visited time: 2024-04-01 01:41:24pm
Username: admin
Full Name: Sai Sandeep Pasham
Email: sandeep@yahoo.com
Password: ••••
Phone Number: 5133016222

Figure 4 edit user profile



Profile Update Succeeded

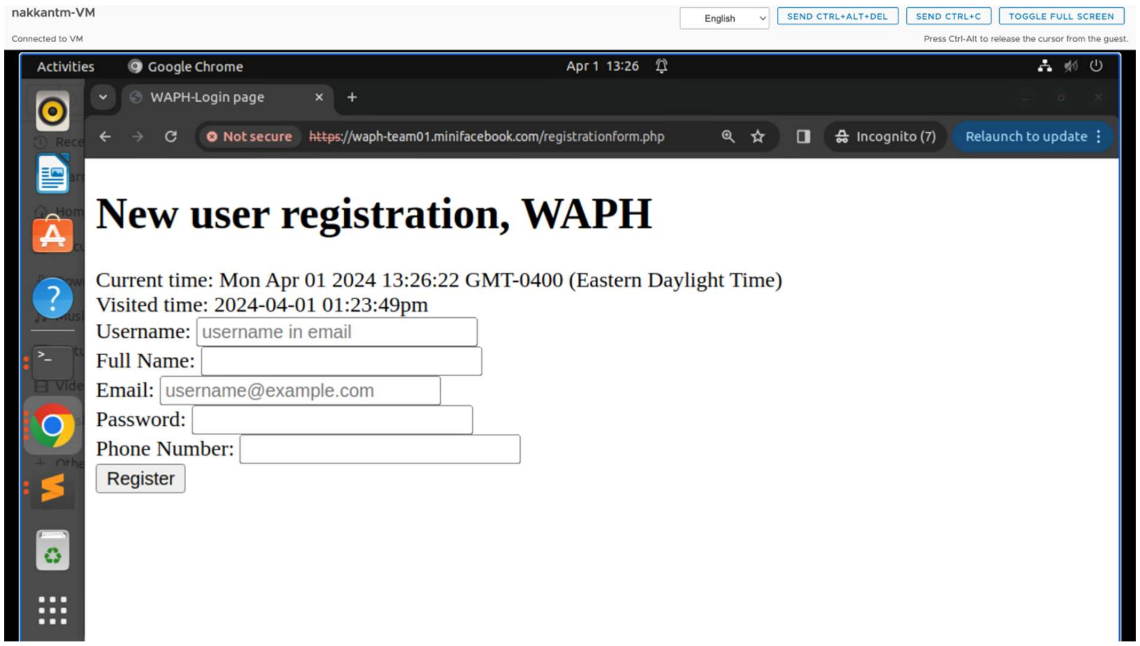
Figure 5 update profile



Username:
Password:
Login

New User Registration

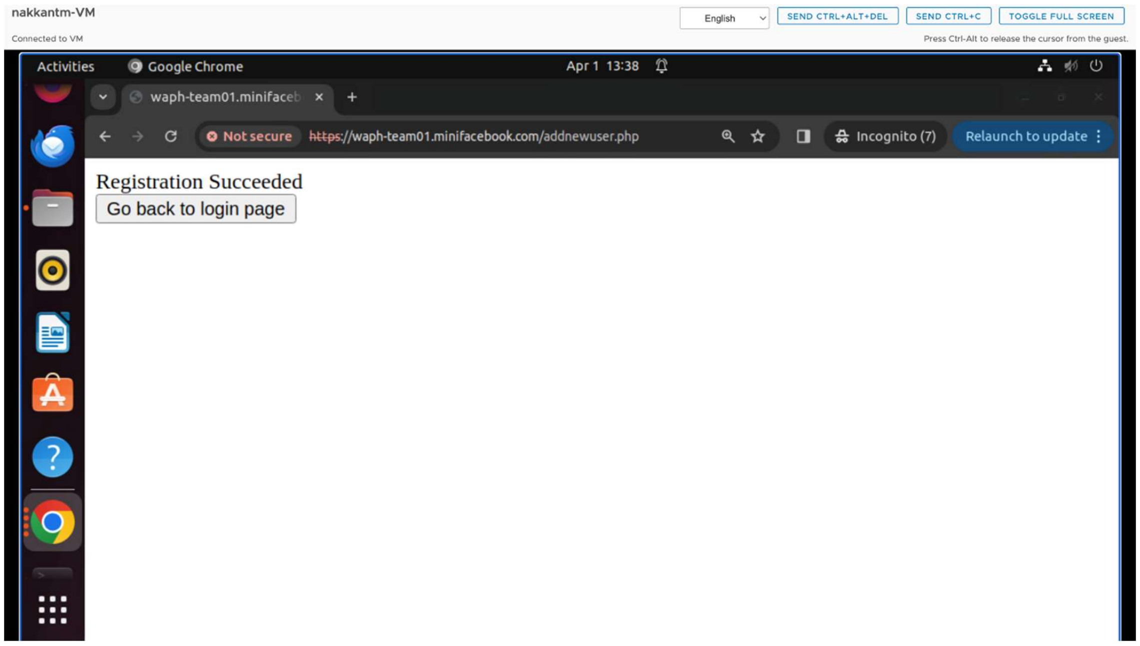
Figure 6 login page



New user registration, WAPH

Current time: Mon Apr 01 2024 13:26:22 GMT-0400 (Eastern Daylight Time)
Visited time: 2024-04-01 01:23:49pm
Username: username in email
Full Name:
Email: username@example.com
Password:
Phone Number:
Register

Figure 7 new user registration form



Registration Succeeded

Go back to login page

Figure 8 succesful registation form

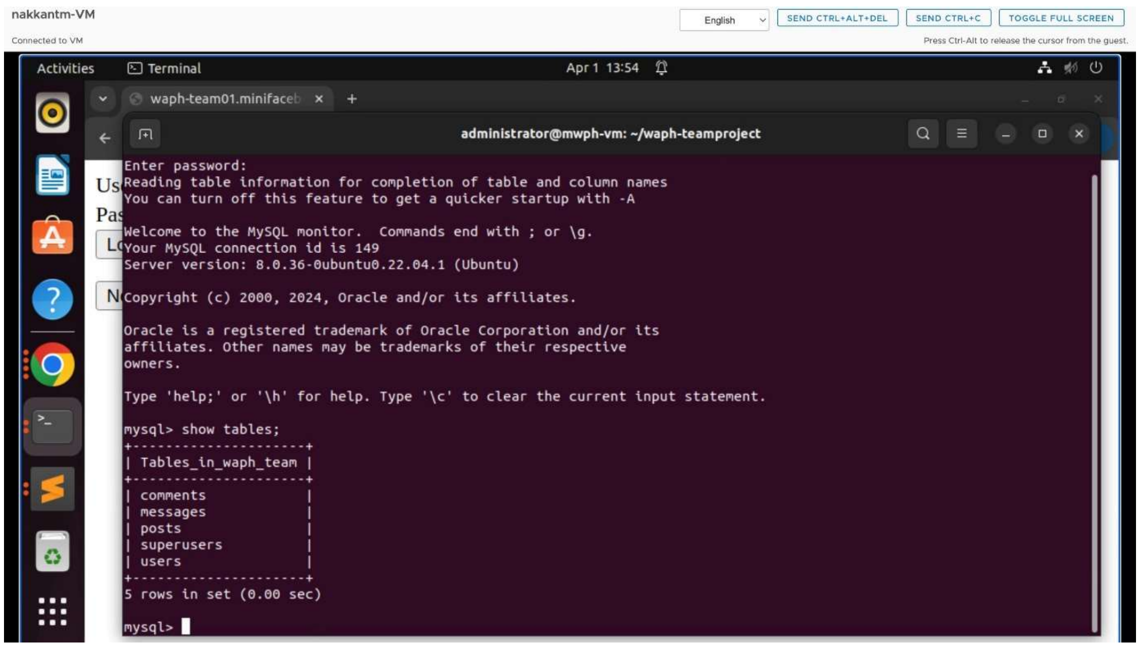
Functional Requirements

- **Features for posting like images and texts:** Enabling users to create and share posts with images/texts.
- **Database setup:** Configuring database system for storing application data securely.
- **Notification add on:** Implementing notification system for relevant user alerts.
- **Forms for authentication and user registration:** Implementing secure login and registration forms for user access.
- **Search functionality:** Enabling users to search for specific content within application.
- **Messaging features:** Integrating private messaging functionalities for user communication.

Non - Functional Requirements

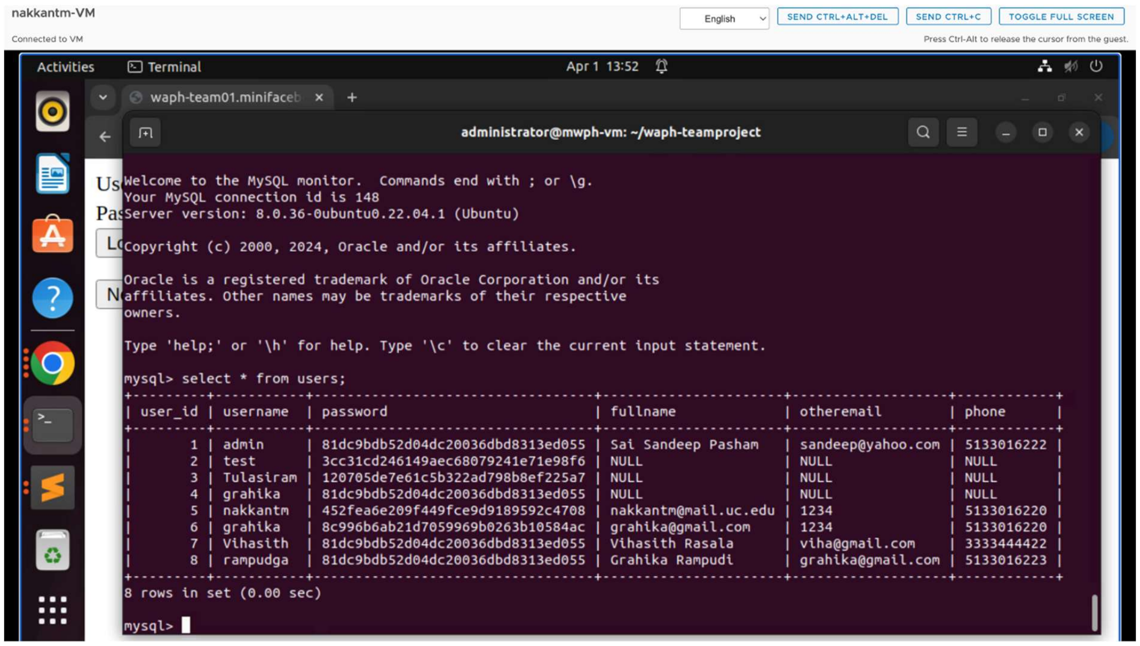
- **Error handling:** Managing errors for smoother user experience and application stability.
- **Implementing security features:** Strengthening application security through implementation of various security measures.
- **Cookies:** Utilizing cookies for managing session information and enhancing user experience.
- **Session information:** Handling session data to maintain user context and interactions.

Database



```
Enter password:
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 149
Server version: 8.0.36-0ubuntu0.22.04.1 (Ubuntu)

Copyright (c) 2000, 2024, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show tables;
+--------------------+
| Tables_in_waph_team |
+--------------------+
| comments           |
| messages           |
| posts              |
| superusers         |
| users              |
+--------------------+
5 rows in set (0.00 sec)

mysql> 
```

Figure 9 tables which stores the data



```
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 148
Server version: 8.0.36-0ubuntu0.22.04.1 (Ubuntu)

Copyright (c) 2000, 2024, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> select * from users;
+---------+-----------+----------------------------------+---------------------+-------------------+------------+
| user_id | username  | password                         | fullname            | otheremail        | phone      |
+---------+-----------+----------------------------------+---------------------+-------------------+------------+
|       1 | admin     | 81dc9bdb52d04dc20036dbd8313ed055 | Sai Sandeep Pasham  | sandeep@yahoo.com | 5133016222 |
|       2 | test      | 3cc31cd246149aec68079241e71e98f6 | NULL                | NULL              | NULL       |
|       3 | Tulasiram | 120705de7e61c5b322ad798b8ef225a7 | NULL                | NULL              | NULL       |
|       4 | grahika   | 81dc9bdb52d04dc20036dbd8313ed055 | NULL                | NULL              | NULL       |
|       5 | nakkantm  | 452fea6e209f449fce9d9189592c4708 | nakkantm@mail.uc.edu | 1234             | 5133016220 |
|       6 | grahika   | 8c996b6ab21d7059969b0263b10584ac | grahika@gmail.com   | 1234              | 5133016220 |
|       7 | Vihasith  | 81dc9bdb52d04dc20036dbd8313ed055 | Vihasith Rasala     | viha@gmail.com    | 3333444422 |
|       8 | rampudga  | 81dc9bdb52d04dc20036dbd8313ed055 | Grahika Rampudi     | grahika@gmail.com | 5133016223 |
+---------+-----------+----------------------------------+---------------------+-------------------+------------+
8 rows in set (0.00 sec)

mysql> 
```

Figure 10 user tables

User Interface

Front-End:

Edit Profile Feature: Users can modify their full name, email, and phone number.

Change Password Option: Users can change their password if facing any issues.

Posts Visibility Setting: Upon logging in, users can view site's posted content.

Back-End:

Database Creation: Established a database with essential tables for the application.

Users Table: Stores user information including full name, username, password, email, and phone number.

Posts Table: Records posts from various users, containing fields like Post ID, Title, Content, Post Date, and Owner.

Database Integration: Connected the database with the front end to save user inputs.

Implementation

Security Analysis

Scrum Process

Sprint 0

Duration: 22/03/2024-03/31/2024

Completed Tasks:

1. Our team has successfully established both public and private repositories

named “waph-teamproject” and “waph-team01.github.io” correspondingly.

2. SSL certificates and keys for the team project have been generated.

3. HTTPS has been configured within the local domain name to ensure secure

communication.

4. A database has been set up for the system.

5. Individual home pages have been developed for all team members, and

their respective lab files have been transferred to the team directory.

6. Testing of the index.html page has been carried out, yielding the anticipated

performance and functionality as observed during the tests.

Contributions:

1. Tulasiram Nakkanaboina, 11 commits, 7 hours, contributed in generating

the SSL keys and certificates.

2. Vihasith Rasala, 8 commits, 6 hours, contributed in documentation of

README file and organizing the data.

5

3. Grahika Rampudi, 8 commits, 7 hours, contributed in creating the personal

page of our team which includes details of our team members.

4. Sai Sandeep Pasham, 7 commits, 6 hours, contributed in creating the

database-data.sql, index.html page which includes the details of admin

login.

Sprint 1

Duration: 03/28/2024-04/01/2024

Completed Tasks:

1. Established the database according to the outlined criteria.
2. Developed both login and registration forms.
3. Executed fundamental features for authenticated users, such as password modification.

Contributions:

1. Tulasiram Nakkanaboina, 11 commits, 7 hours, contributed in creating user registration and profile edit php files snd further developed index.php file

2. Vihasith Rasala, 15 commits, 6 hours, contributed in documentation of

README file and organizing the data. Created and developed logout php file.

3. Grahika Rampudi, 8 commits, 7 hours, contributed in creating and organizing the database and it's implementation in back end of web application.

4. Sai Sandeep Pasham, 7 commits, 6 hours, contributed in creating the change password and login php files.

Spring Retrospection

- The main problem we faced for a team call is unmatched schedule of team members. We are usually doing our team meetings in late nights.
- Online calls didn't meet the expected progress of the project, so we are making ourselves available for physical sessions which is difficult.
- Proper collaborative dashboards require premium subscriptions for third party applications.
- Sandbox doesn't work properly which is a dot in a white page.
- Team members use different OS like MacOS or windows where it's difficult to work in virtual machine setup if it's a Macbook.

Appendix

Form.php:

```
<form action="index.php" method="POST" class="form login">

  Username: <input type="text" class="text_field" name="username" /><br>

  Password: <input type="password" class="text_field" name="password" /><br>

  <button class="button" type="submit">

    Login

  </button>

</form>

<button class="button" onclick="window.location.href='registrationform.php';">

    New User Registration

  </button>
```

Index.php:

```
<?php

session_set_cookie_params(15*60, "/", "waph-team01.mini.facebook.com", TRUE, TRUE);

session_start();

require "database.php";


if (isset($_POST["username"]) && isset($_POST["password"])) {

  $username = $_POST["username"];

  $password = $_POST["password"];


  if (checklogin_mysql($username, $password)) {

    $_SESSION["authenticated"] = TRUE;

    $_SESSION["username"] = $username;

    $_SESSION["browser"] = $_SERVER["HTTP_USER_AGENT"];

  } else {

    session_destroy();

    echo "<script>alert('Invalid Username or password please
recheck');window.location='form.php';</script>";
```

```
        die();
    }
}

if (!isset($_SESSION["authenticated"]) || $_SESSION["authenticated"] != TRUE) {
    session_destroy();
    echo "<script>alert('You have not logged in. Please login first');</script>";
    header("Refresh:0; url=form.php");
    die();
}

if ($_SESSION["browser"] != $_SERVER["HTTP_USER_AGENT"]) {
    session_destroy();
    echo "<script>alert('Session hijack detected')</script>";
    header("Refresh:0; url=form.php");
    die();
}
?>
<h2> Welcome <?php echo htmlentities($_SESSION['username']); ?> !</h2>
<a href="changepasswordform.php?username=<?php echo
urlencode($_SESSION['username']); ?>">Change password</a> | <a
href="edituser.php?username=<?php echo urlencode($_SESSION['username']); ?>">Edit
profile</a> | <a href ="logout.php">logout
</a>
```

Changepasswordform.php:

```
<h1>Change Password Form</h1>
<form action="changepassword.php" method="POST" class="form login">
Username: <input type="text" class="text_field" name="username" value="<?php echo
isset($_GET['username']) ? htmlentities($_GET['username']) : ''; ?>" readonly /> <br>
Current Password: <input type="password" class="text_field" name="password" /> <br>
New Password: <input type="password" class="text_field" name="newpassword" /> <br>
<button class="button" type="submit"> Change password </button>
```

Edituser.php:

```
<!DOCTYPE html>
<html lang="en">
<head>
 <meta charset="utf-8">
 <title>Edit Profile - WAPH</title>
 <script type="text/javascript">
  function displayTime() {
   document.getElementById('digit-clock').innerHTML = "Current time: " + new Date();
  }
  setInterval(displayTime, 500);

  function validateForm() {
   var email = document.forms["editProfileForm"]["email"].value;
   var phone = document.forms["editProfileForm"]["phone"].value;

   // Email validation
   var emailPattern = /^[\w.-]+@[\w-]+(\.[\w-]+)*$/;
   if (!emailPattern.test(email)) {
    alert("Please enter a valid email address");
    return false;
   }

   // Phone number validation
   var phonePattern = /^\d{10}$/;
   if (!phonePattern.test(phone)) {
    alert("Please enter a valid 10-digit phone number");
    return false;
   }
  }
 </script>
```

```
</head>

<body>

  <h1>Edit User Profile - WAPH</h1>

  <div id="digit-clock"></div>

<?php

  echo "Visited time: " . date("Y-m-d h:i:sa");

?>

  <form name="editProfileForm" action="updateuser.php" method="POST" class="form edit-profile" onsubmit="return validateForm();">

    Username: <input type="text" class="text_field" name="username" value="<?php echo isset($_GET['username']) ? htmlentities($_GET['username']) : ''; ?>" readonly /> <br>

    Full Name: <input type="text" class="text_field" name="fullName" required><br>

    Email: <input type="email" class="text_field" name="email" required placeholder="username@example.com"><br>

    Password: <input type="password" class="text_field" name="password" required><br>

    Phone Number: <input type="tel" class="text_field" name="phoneNumber" required pattern="[0-9]{10}" title="Please enter a 10-digit phone number"><br>

    <button class="button" type="submit">Update Profile</button>

  </form>

</body>

</html>
```

registrationform.php:

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="utf-8">

  <title>WAPH-Login page</title>

  <script type="text/javascript">

    function displayTime() {

      document.getElementById('digit-clock').innerHTML = "Current time: " + new Date();

    }

    setInterval(displayTime, 500);
    function validateForm() {
      var email = document.forms["registrationForm"]["email"].value;
      var phone = document.forms["registrationForm"]["phone"].value;

      // Email validation
      var emailPattern = /^[\w.-]+@[\w-]+(\.[\w-]+)*$/;
      if (!emailPattern.test(email)) {
        alert("Please enter a valid email address");
        return false;
      }

      // Phone number validation
      var phonePattern = /^\d{10}$/;
      if (!phonePattern.test(phoneNumber)) {
        alert("Please enter a valid 10-digit phone number");
        return false;
      }
    }
  </script>
</head>
<body>
  <h1>New user registration, WAPH</h1>
  <div id="digit-clock"></div>
<?php
  echo "Visited time: " . date("Y-m-d h:i:sa");
?>
  <form name="registrationForm" action="addnewuser.php" method="POST" class="form login"
onsubmit="return validateForm();">
    Username: <input type="text" class="text_field" name="username" required
    pattern="^[\w.-]+@[\w-]+(.[\w-]+)*$"
    title="Email address is required as username"
    placeholder="username in email"
    onchange="this.setCustomerValidity(this.validity.patternMismatch?this.title: '');" /> <br>
    Full Name: <input type="text" class="text_field" name="fullName" required><br>
    Email: <input type="email" class="text_field" name="email" required
placeholder="username@example.com"><br>
    Password: <input type="password" class="text_field" name="password" required><br>
    Phone Number: <input type="tel" class="text_field" name="phoneNumber" required
pattern="[0-9]{10}" title="Please enter a 10-digit phone number"><br>
    <button class="button" type="submit">Register</button>
  </form>
</body>
</html>
```