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Università degli Studi di Messina

Hospital Management Website

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Introduction

The Hospital Website project is designed to help manage hospital tasks. It helps patients to book appointments, register, and contact the hospital online. The website also provides tools for hospital staff to manage appointments, patient information, and administrative duties.

Programming languages

- **PHP: I used PHP to handle the backend of the website. It helps manage things like connecting to the database and processing user input.**

- **HTML: I used HTML to create the structure of the website. It organizes the content, such as text and images, on each web page.**

- **CSS: I used CSS to style the website. It controls how the website looks, including colors, fonts, and layout.**

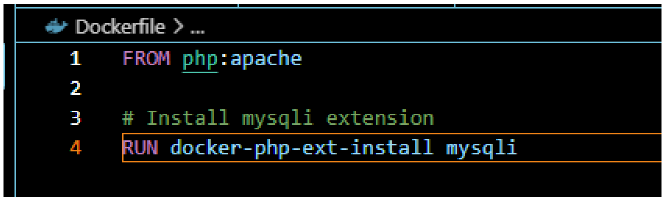
- **JavaScript: I used JavaScript to make the website interactive. It adds features like form validation make the site more engaging.**

Database Implementation

For the backend of this project, I used Docker to containerize the application.

Dockerfile

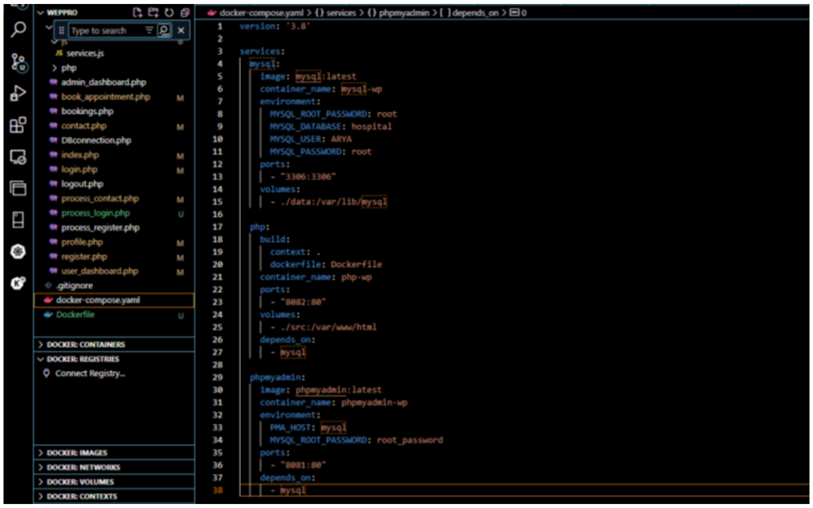
The Dockerfile is used to create the PHP environment. It starts from a PHP with Apache base image and installs the mysqli extension to enable communication between PHP and the MySQL database.



```dockerfile
FROM php:apache

# Install mysqli extension
RUN docker-php-ext-install mysqli
```

Docker Compose

The docker-compose.yaml file defines the services needed for the application:



```yaml
version: '3.8'

services:
  mysql:
    image: mysql:latest
    container_name: mysql-wp
    environment:
      MYSQL_ROOT_PASSWORD: root
      MYSQL_DATABASE: hospital
      MYSQL_USER: ARYA
      MYSQL_PASSWORD: root
    ports:
      - "3306:3306"
    volumes:
      - ./data:/var/lib/mysql

  php:
    build:
      context: .
      dockerfile: Dockerfile
    container_name: php-wp
    ports:
      - "8082:80"
    volumes:
      - ./src:/var/www/html
    depends_on:
      - mysql

  phpmyadmin:
    image: phpmyadmin:latest
    container_name: phpmyadmin-wp
    environment:
      PMA_HOST: mysql
      MYSQL_ROOT_PASSWORD: root_password
    ports:
      - "8081:80"
    depends_on:
      - mysql
```

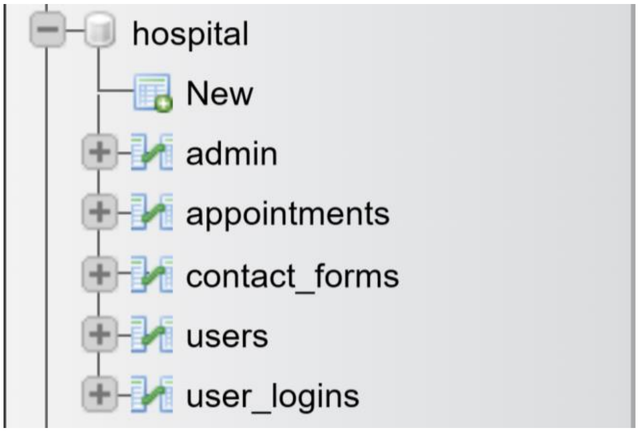
- **MySQL: Runs the MySQL database, configured with necessary credentials and a database named hospital.**
- **PHP: Builds the PHP application from the Dockerfile and runs it on port 8082, with dependencies on the MySQL service.**
- **phpMyAdmin: Provides a web interface to manage the MySQL database, accessible on port 8081.**

Commands Used

To build and start the services, I used docker-compose up --build.

Database Tables

1. **admin Table: Manages admins credentials.**
2. **appointments Table: Stores information about the appointments.**
3. **contact_forms Table: Captures messages sent by patients.**
4. **users Table: Stores registered user information.**
5. **user_logins Table: Tracks user login activities.**

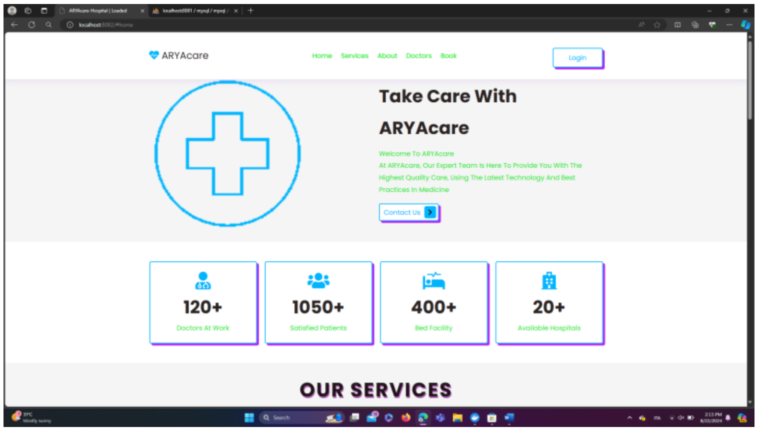


Website presentation

The ARYAcare Hospital homepage contains sections like services, information about the hospital, and doctors this design that helps users to find what they need, such as booking appointments or logging in.

HOME PAGE:

1.The first section of the ARYAcare Hospital homepage has a clear and simple design. There’s also a Contact Us button, making it easy for visitors to send message to the hospital’s staff.



Take Care With

ARYAcare

Welcome To ARYAcare

At ARYAcare, Our Expert Team Is Here To Provide You With The Highest Quality Care, Using The Latest Technology And Best Practices In Medicine

120+ Doctors At Work

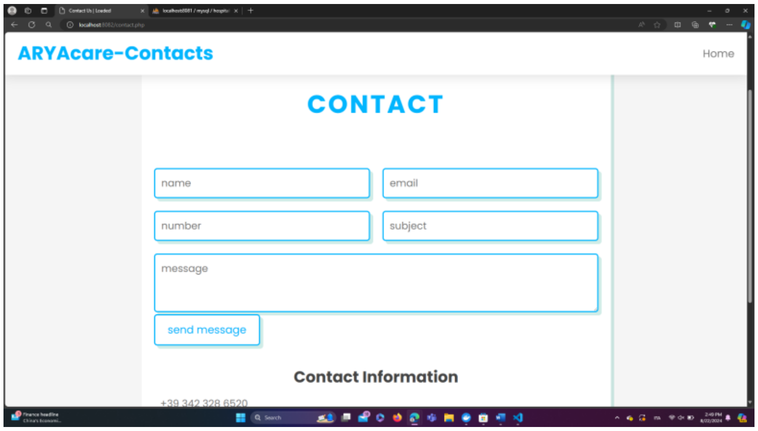
1050+ Satisfied Patients

400+ Bed Facility

20+ Available Hospitals

OUR SERVICES

2. The Contact Us section allows users to send messages to the hospital by filling out a form. The submitted information is saved in the hospital's database for staff to review.

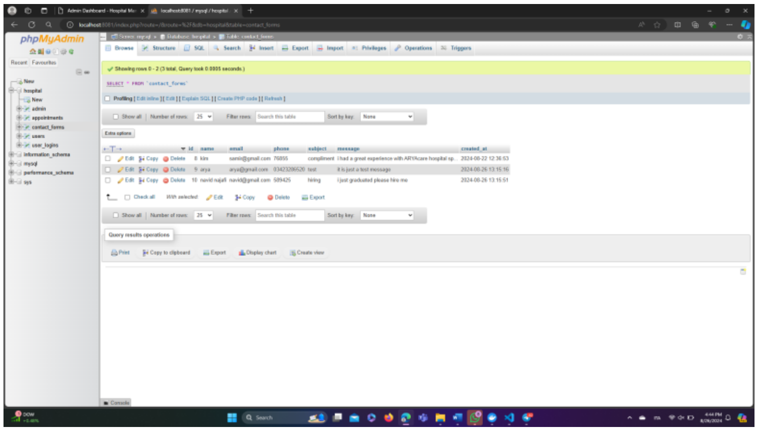


ARYAcare-Contacts

CONTACT

Contact Information

+39 342 328 6520



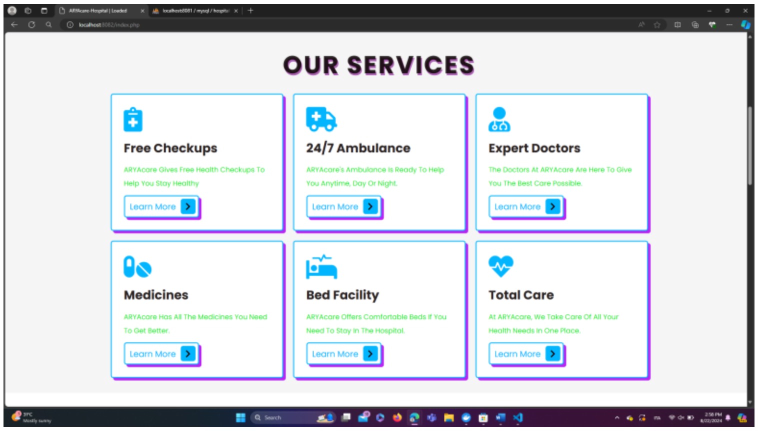
Server: mysql » Database: hospital » Table: contact_forms

✓ Showing rows 0 - 2 (3 total, Query took 0.0005 seconds.)

```
SELECT * FROM `contact_forms`
```

id	name	email	phone	subject	message	created_at
8	kin	samir@gmail.com	76055	compliment	I had a great experience with ARYAcare hospital sp...	2024-08-22 12:36:53
9	arya	arya@gmail.com	03423286520	test	it is just a test message	2024-08-26 13:15:16
10	navid najafi	navid@gmail.com	589425	hiring	i just graduated please hire me	2024-08-26 13:15:51

3. This is the Services section and users can learn more about each service by clicking on the Learn More button.



OUR SERVICES

Free Checkups

ARYAcare Gives Free Health Checkups To Help You Stay Healthy

24/7 Ambulance

ARYAcare's Ambulance Is Ready To Help You Anytime, Day Or Night.

Expert Doctors

The Doctors At ARYAcare Are Here To Give You The Best Care Possible.

Medicines

ARYAcare Has All The Medicines You Need To Get Better.

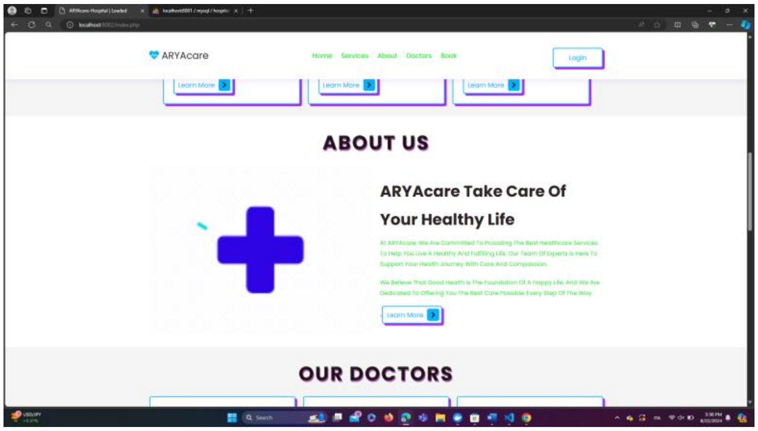
Bed Facility

ARYAcare Offers Comfortable Beds If You Need To Stay In The Hospital.

Total Care

At ARYAcare, We Take Care Of All Your Health Needs In One Place.

4. The About Us section with a "Learn More" button that lets users explore more details about the hospital.



ABOUT US

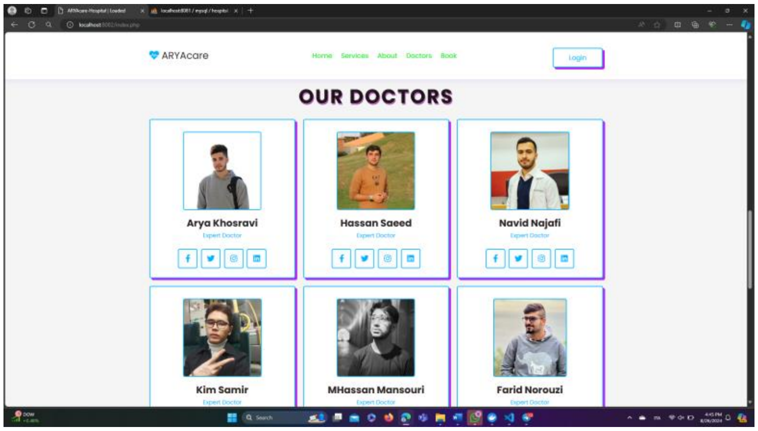
ARYAcare Take Care Of Your Healthy Life

At ARYAcare, We Are Committed To Providing The Best Healthcare Services To Help You Live A Healthy And Fulfilling Life. Our Team Of Experts Is Here To Support Your Health Journey With Care And Compassion.

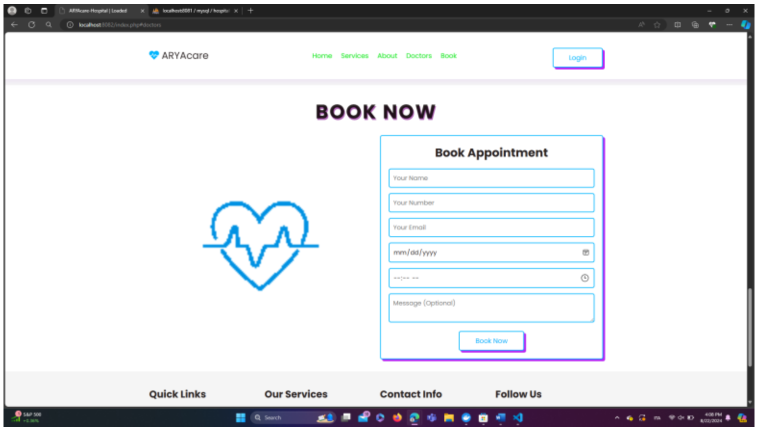
We Believe That Good Health Is The Foundation Of A Happy Life, And We Are Dedicated To Offering You The Best Care Possible, Every Step Of The Way.

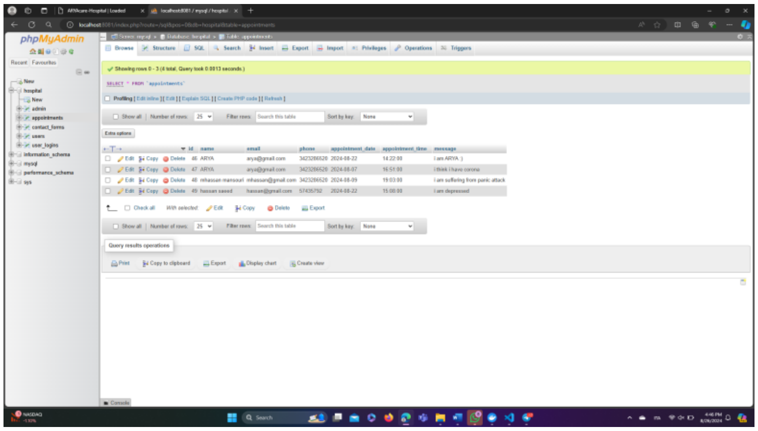
OUR DOCTORS

5. in doctors section you can see the doctors at ARYAcare, displaying their names, photos, and social media links.



6. **The booking section allows users to fill out a form to request an appointment. but before they can complete the booking, they must log in ensuring that only registered users can make appointments. Once logged in the booking information is stored in the database where the hospital staff can view and manage the appointments as shown in the database screenshot.**



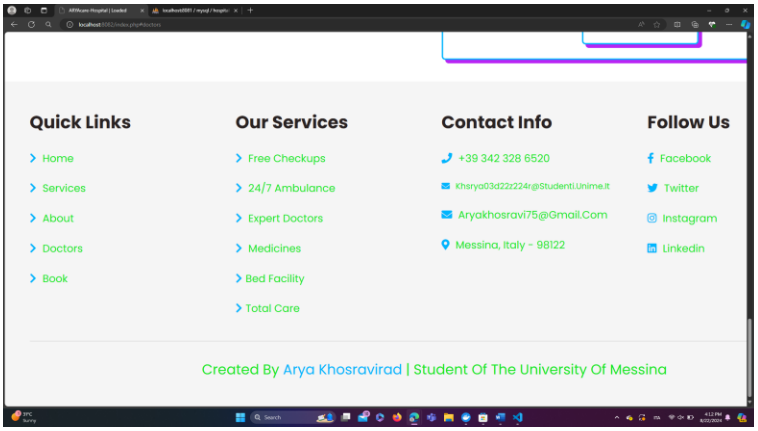


✓ Showing rows 0 - 3 (4 total, Query took 0.0013 seconds.)

```
SELECT * FROM `appointments`
```

id	name	email	phone	appointment_date	appointment_time	message
46	ARYA	arya@gmail.com	3423266520	2024-08-22	14:22:00	I am ARYA :)
47	ARYA	arya@gmail.com	3423266520	2024-08-07	16:51:00	i think i have corona
48	mhassan mansouri	mhassan@gmail.com	3423266520	2024-08-09	19:03:00	i am suffering from panic attack
49	hassan saeed	hassan@gmail.com	57435752	2024-08-22	15:08:00	i am depressed

7. **The Footer section provides quick access to important links and contact information. This section ensures that all information and navigation options are easily accessible at the bottom of the page.**



Quick Links

- Home
- Services
- About
- Doctors
- Book

Our Services

- Free Checkups
- 24/7 Ambulance
- Expert Doctors
- Medicines
- Bed Facility
- Total Care

Contact Info

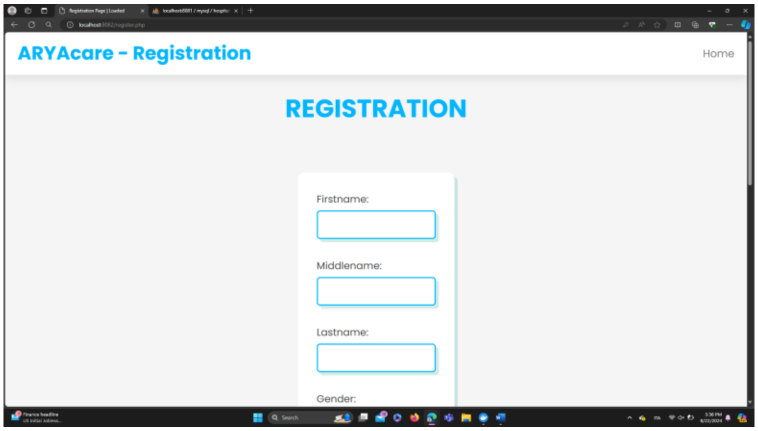
☎ +39 342 328 6520
✉ Khsrya03d22z224r@Studenti.Unime.it
✉ Aryakhosravi75@Gmail.Com
Messina, Italy - 98122

Follow Us

- Facebook
- Twitter
- Instagram
- Linkedin

Created By Arya Khosravirad | Student Of The University Of Messina

8. **The Registration section lets new users sign up by entering their details like name, gender, and contact information. After submitting the form, the user's information is saved in the users table in hospital's database**



ARYAcare - Registration

Home

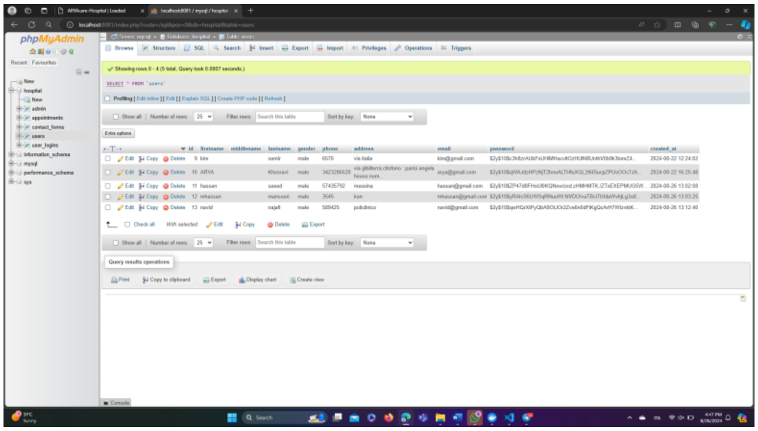
REGISTRATION

Firstname:

Middlename:

Lastname:

Gender:

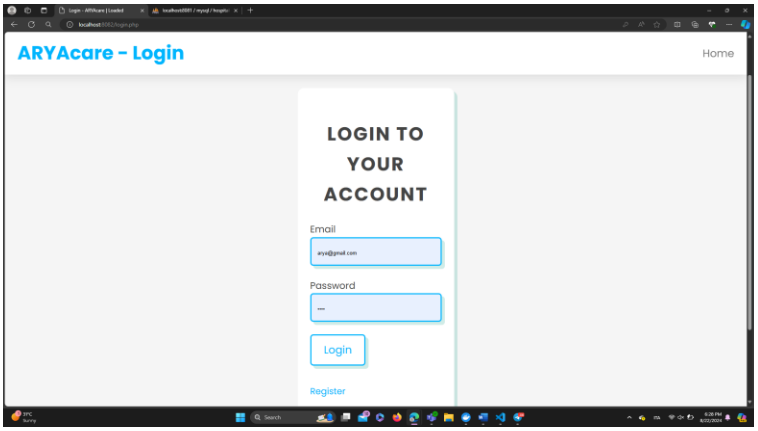


✓ Showing rows 0 - 4 (5 total, Query took 0.0007 seconds.)

```
SELECT * FROM `users`
```

id	firstname	middlename	lastname	gender	phone	address	email	password	created_at
9	kim		samir	male	6570	via italia	kim@gmail.com	$2y$10$c3h8zrAUbFsUHMHacvltOzHUIN8UnthV0b9k3tonZ4...	2024-08-22 12:24:02
10	ARYA		Khosravi	male	3423286520	via gibilterra,citofono : parisi angela house num...	arya@gmail.com	$2y$10$qWAJdzHPzNjT2hnoALTHfuXGL2t6ISucpZPUsOOc7JA...	2024-08-22 16:25:48
11	hassan		saeed	male	57436792	messina	hassan@gmail.com	$2y$10$ZP47d8FHoUl0KQNewizxd.zHMHMTK.lZTxEXEPMUG5W...	2024-08-26 13:02:08
12	mhassan		mansouri	male	3545	iran	mhassan@gmail.com	$2y$10$yRAlcS6UWSqRNuuWi.NVDOnaTBci7UldaWvhjLg3o8...	2024-08-26 13:03:25
13	navid		najafi	male	589425	policlinico	navid@gmail.com	$2y$10$qwHQrXtPyQbA9OUOr2Zve6n8dFlKgQcArH7WbvktK...	2024-08-26 13:12:40

9. **The Login page allows users and admins to enter their email and password to access their accounts. After logging in the user's login time is recorded in the database.**



ARYAcare - Login

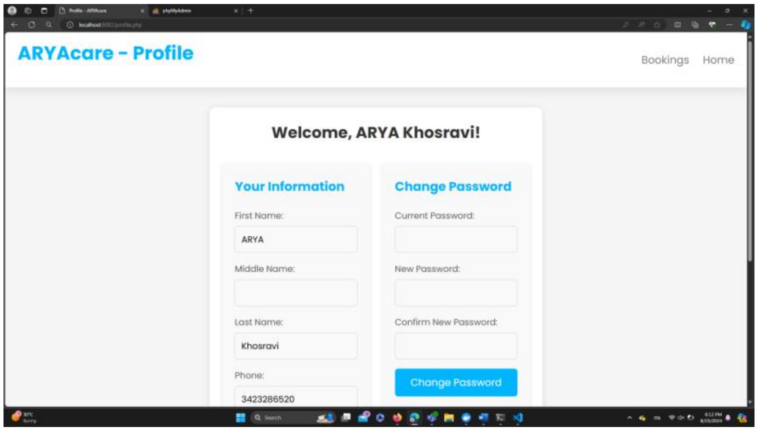
Home

LOGIN TO YOUR ACCOUNT

Email: arya@gmail.com

Password: ...

10. **After logging in the user can view profile section to update their personal information such as their name and contact details password the users can manage their bookings where they can see and modify the details of their appointments.**



ARYAcare - Profile

Bookings Home

Welcome, ARYA Khosravi!

Your Information

First Name: ARYA

Middle Name:

Last Name: Khosravi

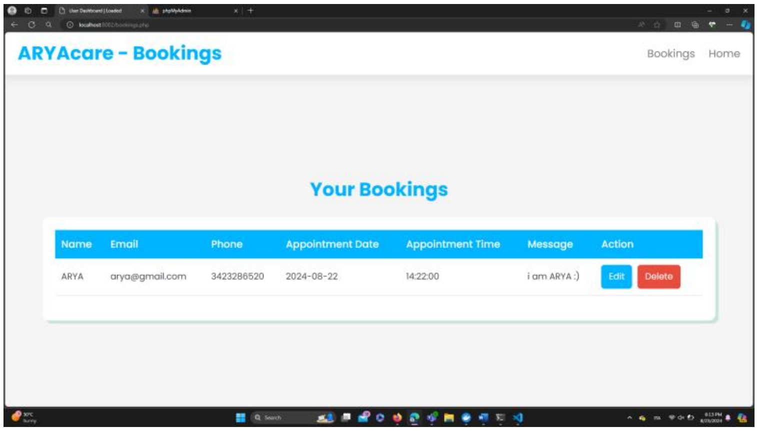
Phone: 3423286520

Change Password

Current Password:

New Password:

Confirm New Password:



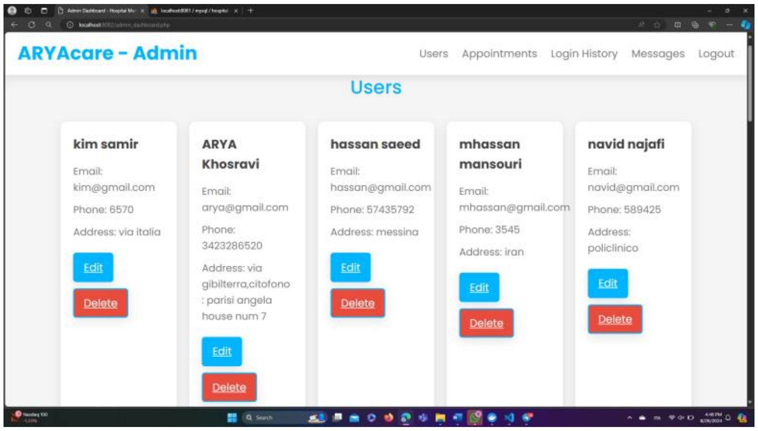
ARYAcare - Bookings

Bookings Home

Your Bookings

Name	Email	Phone	Appointment Date	Appointment Time	Message	Action
ARYA	arya@gmail.com	3423286520	2024-08-22	14:22:00	i am ARYA :)	Edit Delete

11. This time I logged in as an admin i can manage user information including editing or deleting user profiles and control users appointments login history and messages.



ARYAcare - Admin

Users

kim samir
Email: kim@gmail.com
Phone: 6570
Address: via italia

ARYA Khosravi
Email: arya@gmail.com
Phone: 3423286520
Address: via gibilterra,citofono : parisi angela house num 7

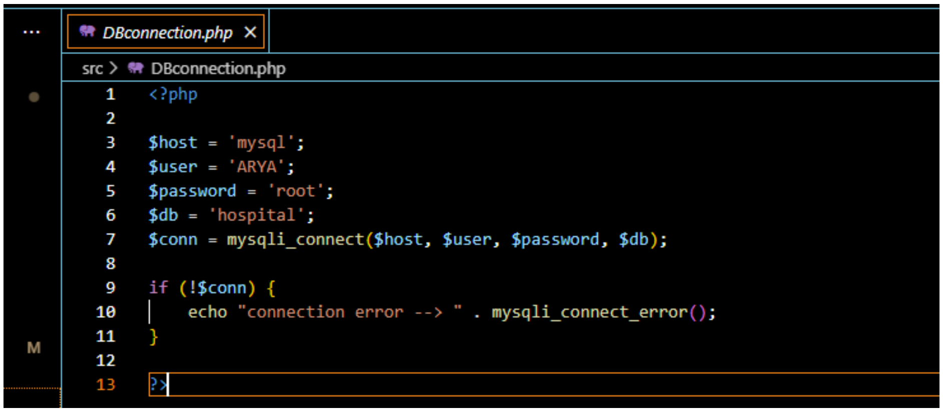
hassan saeed
Email: hassan@gmail.com
Phone: 57435792
Address: messina

mhassan mansouri
Email: mhassan@gmail.com
Phone: 3545
Address: iran

navid najafi
Email: navid@gmail.com
Phone: 589425
Address: policlinico

Codes implementation

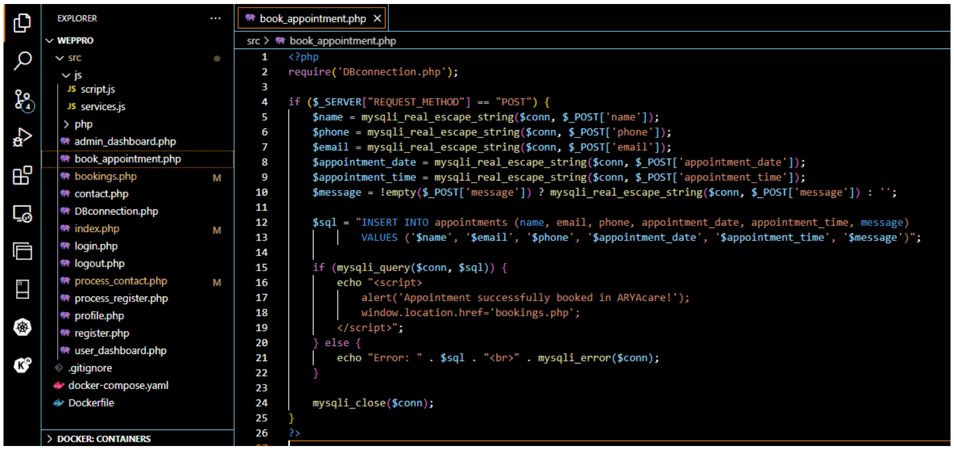
The DBconnection.php script connects the website to the MySQL database using the provided host, username, password, and database name. If the connection fails, it shows an error message.



```php
<?php

$host = 'mysql';
$user = 'ARYA';
$password = 'root';
$db = 'hospital';
$conn = mysqli_connect($host, $user, $password, $db);

if (!$conn) {
    echo "connection error --> " . mysqli_connect_error();
}

?>
```

Booking process:

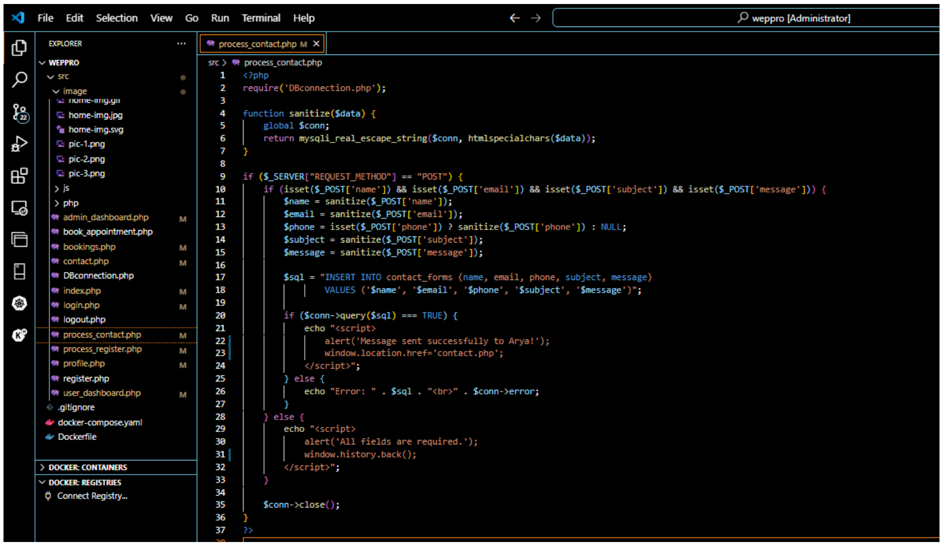
The booking process starts on the user_dasboard.php page, where users fill out a form to book an appointment. This form sends the information to book_appointment.php, which saves the details like name, phone, email, and appointment time into the database. If the booking is successful, the user is notified and redirected to the bookings page.



```php
<?php
require('DBconnection.php');

if ($_SERVER["REQUEST_METHOD"] == "POST") {
    $name = mysqli_real_escape_string($conn, $_POST['name']);
    $phone = mysqli_real_escape_string($conn, $_POST['phone']);
    $email = mysqli_real_escape_string($conn, $_POST['email']);
    $appointment_date = mysqli_real_escape_string($conn, $_POST['appointment_date']);
    $appointment_time = mysqli_real_escape_string($conn, $_POST['appointment_time']);
    $message = !empty($_POST['message']) ? mysqli_real_escape_string($conn, $_POST['message']) : '';

    $sql = "INSERT INTO appointments (name, email, phone, appointment_date, appointment_time, message)
            VALUES ('$name', '$email', '$phone', '$appointment_date', '$appointment_time', '$message')";

    if (mysqli_query($conn, $sql)) {
        echo "<script>
            alert('Appointment successfully booked in ARYAcare!');
            window.location.href='bookings.php';
        </script>";
    } else {
        echo "Error: " . $sql . "<br>" . mysqli_error($conn);
    }

    mysqli_close($conn);
}
?>
```

Contact process:

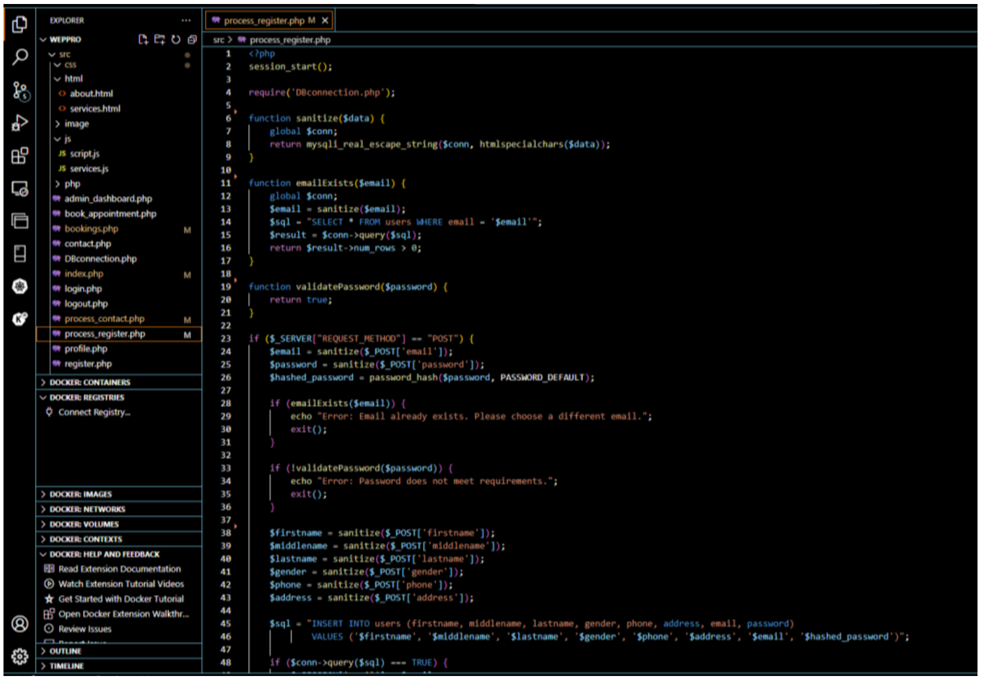
The contacts.php page lets users fill out a form with their contact details. When they submit the form, the information is sent to process_contact.php, which saves it in contact_forms table. And user will see a confirmation message.



```php
<?php
require('DBconnection.php');

function sanitize($data) {
    global $conn;
    return mysqli_real_escape_string($conn, htmlspecialchars($data));
}

if ($_SERVER["REQUEST_METHOD"] == "POST") {
    if (isset($_POST['name']) && isset($_POST['email']) && isset($_POST['subject']) && isset($_POST['message'])) {
        $name = sanitize($_POST['name']);
        $email = sanitize($_POST['email']);
        $phone = isset($_POST['phone']) ? sanitize($_POST['phone']) : NULL;
        $subject = sanitize($_POST['subject']);
        $message = sanitize($_POST['message']);

        $sql = "INSERT INTO contact_forms (name, email, phone, subject, message)
                VALUES ('$name', '$email', '$phone', '$subject', '$message')";

        if ($conn->query($sql) === TRUE) {
            echo "<script>
                alert('Message sent successfully to Arya!');
                window.location.href='contact.php';
            </script>";
        } else {
            echo "Error: " . $sql . "<br>" . $conn->error;
        }
    } else {
        echo "<script>
            alert('All fields are required.');
            window.history.back();
        </script>";
    }

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

Registration Process:

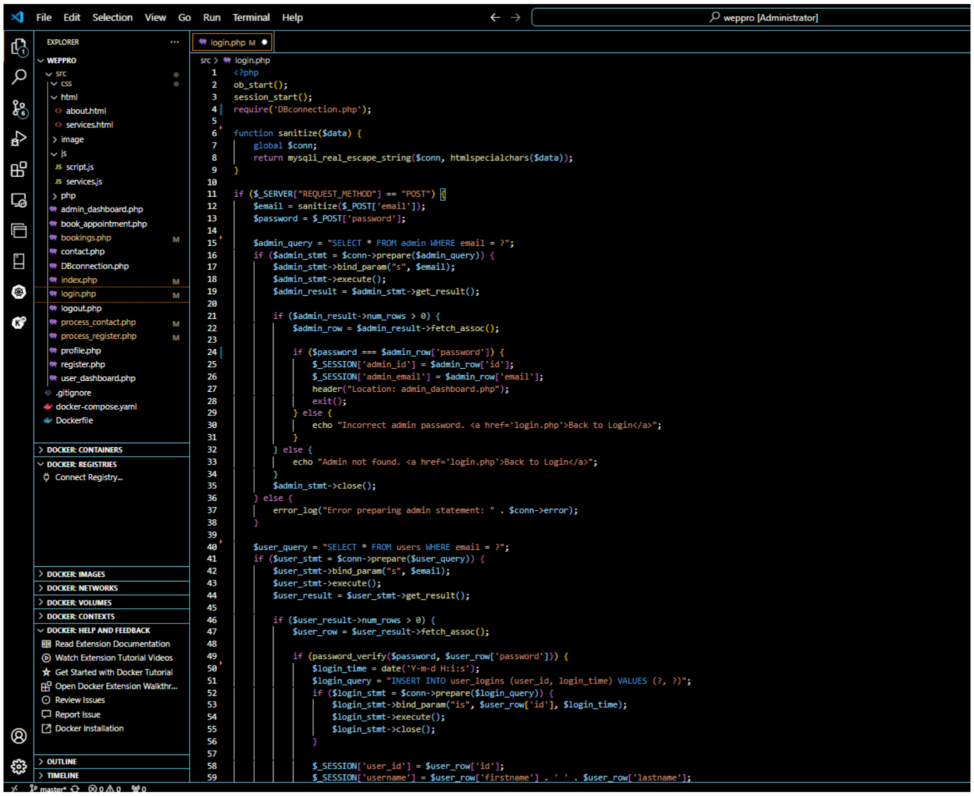
The register.php page allows users to fill out a form create an account. When the form is submitted, process_register.php handles the registration by sanitizing the input data, checking if the email already exists, and hashing the password for security. If everything is valid, the user's information is stored in the database, and they are redirected to the homepage.



```php
<?php
session_start();

require('DBconnection.php');

function sanitize($data) {
    global $conn;
    return mysqli_real_escape_string($conn, htmlspecialchars($data));
}

function emailExists($email) {
    global $conn;
    $email = sanitize($email);
    $sql = "SELECT * FROM users WHERE email = '$email'";
    $result = $conn->query($sql);
    return $result->num_rows > 0;
}

function validatePassword($password) {
    return true;
}

if ($_SERVER["REQUEST_METHOD"] == "POST") {
    $email = sanitize($_POST['email']);
    $password = sanitize($_POST['password']);
    $hashed_password = password_hash($password, PASSWORD_DEFAULT);

    if (emailExists($email)) {
        echo "Error: Email already exists. Please choose a different email.";
        exit();
    }

    if (!validatePassword($password)) {
        echo "Error: Password does not meet requirements.";
        exit();
    }

    $firstname = sanitize($_POST['firstname']);
    $middlename = sanitize($_POST['middlename']);
    $lastname = sanitize($_POST['lastname']);
    $gender = sanitize($_POST['gender']);
    $phone = sanitize($_POST['phone']);
    $address = sanitize($_POST['address']);

    $sql = "INSERT INTO users (firstname, middlename, lastname, gender, phone, address, email, password)
            VALUES ('$firstname', '$middlename', '$lastname', '$gender', '$phone', '$address', '$email', '$hashed_password')";

    if ($conn->query($sql) === TRUE) {
```

Login Process Explanation

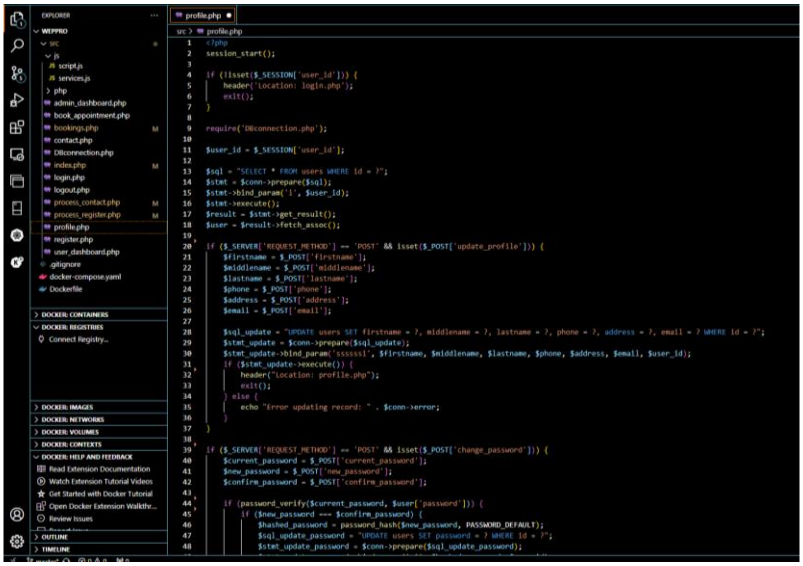
The login.php script handles the login process for both admin and users. When a user submits their email and password, the script first checks if the credentials match an admin account. If so, the admin is redirected to the admin dashboard. If not, it checks the credentials matches the user accounts. If a match is found the user is logged in, their login time is recorded, and they are redirected to the user dashboard. If the credentials are incorrect, an error message is displayed.



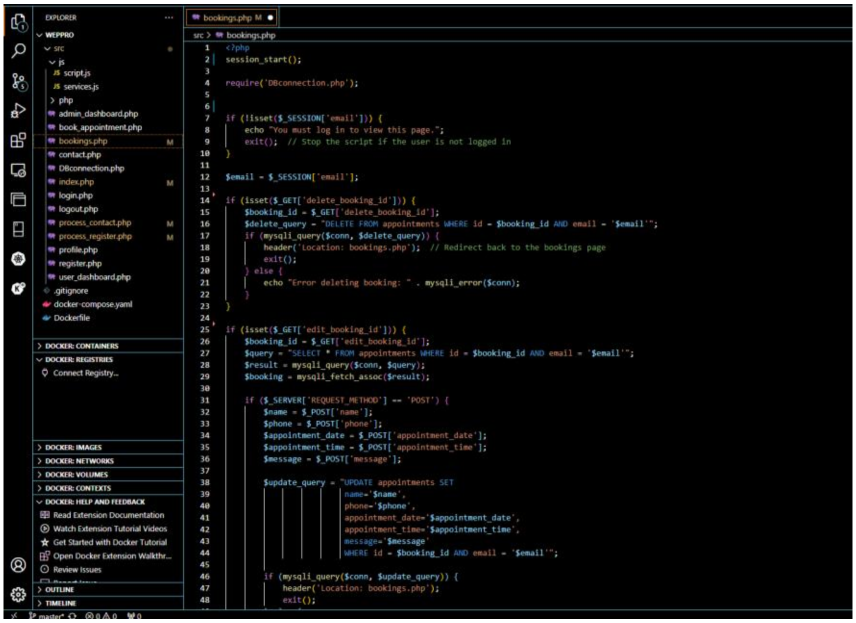
```php
<?php
ob_start();
session_start();
require('DBconnection.php');

function sanitize($data) {
    global $conn;
    return mysqli_real_escape_string($conn, htmlspecialchars($data));
}

if ($_SERVER["REQUEST_METHOD"] == "POST") {
    $email = sanitize($_POST['email']);
    $password = $_POST['password'];

    $admin_query = "SELECT * FROM admin WHERE email = ?";
    if ($admin_stmt = $conn->prepare($admin_query)) {
        $admin_stmt->bind_param("s", $email);
        $admin_stmt->execute();
        $admin_result = $admin_stmt->get_result();

        if ($admin_result->num_rows > 0) {
            $admin_row = $admin_result->fetch_assoc();

            if ($password === $admin_row['password']) {
                $_SESSION['admin_id'] = $admin_row['id'];
                $_SESSION['admin_email'] = $admin_row['email'];
                header("Location: admin_dashboard.php");
                exit();
            } else {
                echo "Incorrect admin password. <a href='login.php'>Back to Login</a>";
            }
        } else {
            echo "Admin not found. <a href='login.php'>Back to Login</a>";
        }
        $admin_stmt->close();
    } else {
        error_log("Error preparing admin statement: " . $conn->error);
    }

    $user_query = "SELECT * FROM users WHERE email = ?";
    if ($user_stmt = $conn->prepare($user_query)) {
        $user_stmt->bind_param("s", $email);
        $user_stmt->execute();
        $user_result = $user_stmt->get_result();

        if ($user_result->num_rows > 0) {
            $user_row = $user_result->fetch_assoc();

            if (password_verify($password, $user_row['password'])) {
                $login_time = date('Y-m-d H:i:s');
                $login_query = "INSERT INTO user_logins (user_id, login_time) VALUES (?, ?)";
                if ($login_stmt = $conn->prepare($login_query)) {
                    $login_stmt->bind_param("is", $user_row['id'], $login_time);
                    $login_stmt->execute();
                    $login_stmt->close();
                }

                $_SESSION['user_id'] = $user_row['id'];
                $_SESSION['username'] = $user_row['firstname'] . ' ' . $user_row['lastname'];
```

Uesr Profile:

After users log in, there is a Profile section in their dashboard where they can update their personal information and change their password. In this section, they can also manage their appointments through the Bookings section.



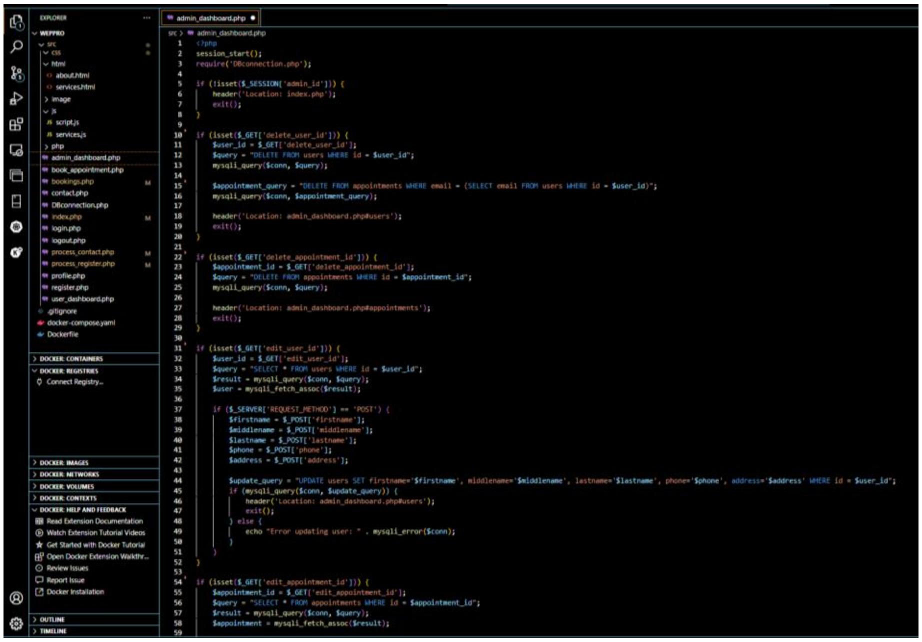
```php
<?php
session_start();

if (!isset($_SESSION['user_id'])) {
    header('Location: login.php');
    exit();
}

require('DBconnection.php');

$user_id = $_SESSION['user_id'];

$sql = "SELECT * FROM users WHERE id = ?";
$stmt = $conn->prepare($sql);
$stmt->bind_param('i', $user_id);
$stmt->execute();
$result = $stmt->get_result();
$user = $result->fetch_assoc();

if ($_SERVER['REQUEST_METHOD'] == 'POST' && isset($_POST['update_profile'])) {
    $firstname = $_POST['firstname'];
    $middlename = $_POST['middlename'];
    $lastname = $_POST['lastname'];
    $phone = $_POST['phone'];
    $address = $_POST['address'];
    $email = $_POST['email'];

    $sql_update = "UPDATE users SET firstname = ?, middlename = ?, lastname = ?, phone = ?, address = ?, email = ? WHERE id = ?";
    $stmt_update = $conn->prepare($sql_update);
    $stmt_update->bind_param('ssssssi', $firstname, $middlename, $lastname, $phone, $address, $email, $user_id);
    if ($stmt_update->execute()) {
        header("Location: profile.php");
        exit();
    } else {
        echo "Error updating record: " . $conn->error;
    }
}

if ($_SERVER['REQUEST_METHOD'] == 'POST' && isset($_POST['change_password'])) {
    $current_password = $_POST['current_password'];
    $new_password = $_POST['new_password'];
    $confirm_password = $_POST['confirm_password'];

    if (password_verify($current_password, $user['password'])) {
        if ($new_password === $confirm_password) {
            $hashed_password = password_hash($new_password, PASSWORD_DEFAULT);
            $sql_update_password = "UPDATE users SET password = ? WHERE id = ?";
            $stmt_update_password = $conn->prepare($sql_update_password);
```



```php
<?php
session_start();

require('DBconnection.php');


if (!isset($_SESSION['email'])) {
    echo "You must log in to view this page.";
    exit();  // Stop the script if the user is not logged in
}

$email = $_SESSION['email'];

if (isset($_GET['delete_booking_id'])) {
    $booking_id = $_GET['delete_booking_id'];
    $delete_query = "DELETE FROM appointments WHERE id = $booking_id AND email = '$email'";
    if (mysqli_query($conn, $delete_query)) {
        header('Location: bookings.php');  // Redirect back to the bookings page
        exit();
    } else {
        echo "Error deleting booking: " . mysqli_error($conn);
    }
}

if (isset($_GET['edit_booking_id'])) {
    $booking_id = $_GET['edit_booking_id'];
    $query = "SELECT * FROM appointments WHERE id = $booking_id AND email = '$email'";
    $result = mysqli_query($conn, $query);
    $booking = mysqli_fetch_assoc($result);

    if ($_SERVER['REQUEST_METHOD'] == 'POST') {
        $name = $_POST['name'];
        $phone = $_POST['phone'];
        $appointment_date = $_POST['appointment_date'];
        $appointment_time = $_POST['appointment_time'];
        $message = $_POST['message'];

        $update_query = "UPDATE appointments SET
                        name='$name',
                        phone='$phone',
                        appointment_date='$appointment_date',
                        appointment_time='$appointment_time',
                        message='$message'
                        WHERE id = $booking_id AND email = '$email'";

        if (mysqli_query($conn, $update_query)) {
            header('Location: bookings.php');
            exit();
```

Admin Dashboard:

After logging in, the admin can view and edit user details, delete users, manage their appointments, and view the history of user logins and view the the messages sent by users.



```php
<?php
session_start();
require('DBconnection.php');

if (!isset($_SESSION['admin_id'])) {
    header('Location: index.php');
    exit();
}

if (isset($_GET['delete_user_id'])) {
    $user_id = $_GET['delete_user_id'];
    $query = "DELETE FROM users WHERE id = $user_id";
    mysqli_query($conn, $query);

    $appointment_query = "DELETE FROM appointments WHERE email = (SELECT email FROM users WHERE id = $user_id)";
    mysqli_query($conn, $appointment_query);

    header('Location: admin_dashboard.php#users');
    exit();
}

if (isset($_GET['delete_appointment_id'])) {
    $appointment_id = $_GET['delete_appointment_id'];
    $query = "DELETE FROM appointments WHERE id = $appointment_id";
    mysqli_query($conn, $query);

    header('Location: admin_dashboard.php#appointments');
    exit();
}

if (isset($_GET['edit_user_id'])) {
    $user_id = $_GET['edit_user_id'];
    $query = "SELECT * FROM users WHERE id = $user_id";
    $result = mysqli_query($conn, $query);
    $user = mysqli_fetch_assoc($result);

    if ($_SERVER['REQUEST_METHOD'] == 'POST') {
        $firstname = $_POST['firstname'];
        $middlename = $_POST['middlename'];
        $lastname = $_POST['lastname'];
        $phone = $_POST['phone'];
        $address = $_POST['address'];

        $update_query = "UPDATE users SET firstname='$firstname', middlename='$middlename', lastname='$lastname', phone='$phone', address='$address' WHERE id = $user_id";
        if (mysqli_query($conn, $update_query)) {
            header('Location: admin_dashboard.php#users');
            exit();
        } else {
            echo "Error updating user: " . mysqli_error($conn);
        }
    }
}

if (isset($_GET['edit_appointment_id'])) {
    $appointment_id = $_GET['edit_appointment_id'];
    $query = "SELECT * FROM appointments WHERE id = $appointment_id";
    $result = mysqli_query($conn, $query);
    $appointment = mysqli_fetch_assoc($result);
```

Conclusion:

the ARYAcare website provides an easy to use platform for both users and admins. Users can manage their profiles and appointments, while admins have full control over the system with effective management. This setup helps deliver high quality healthcare services in an organized way.

References:

1. PHP Official Documentation
2. MySQL Official Documentation
3. MDN Web Docs on HTML
4. MDN Web Docs on CSS
5. MDN Web Docs on JavaScript