

Era Beauty Spa Booking System

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Abstract

The Spa Booking System is a web-based platform created to improve and expedite the spa booking procedure. It offers clients and spa management a practical and effective platform that can help book spa treatments more conveniently and more modernly. Spa managers profit from a centralized dashboard for scheduling and appointment management, while clients can conveniently explore spa services, check availability, and make appointments. The system provides business analysis therapist scheduling capabilities and automated alerts that show a lower number of no-shows. In the spa business, this approach increases productivity and improves client experience

1. Introduction

The internet business trend is moving towards technology, with increased use of online platforms for corporate operations. The beauty industry is also anticipated to grow, especially in the spa sector. An online spa booking system is a web-based tool designed for cosmetology treatments, addressing the high demand for stylist services. Contrary to popular belief, implementing an online booking system is not technically difficult and offers a convenient way to schedule spa appointments.

The case study focuses on Era Beauty Spa in Jasin, Melaka, catering exclusively to female clients. The spa relies on an outdated manual data management system, using books to record customer information. This approach is inefficient, prone to errors, and poses security risks. Implementing an online spa booking system is proposed to address these issues. The system would automate data capture, organize booking schedules, and provide sales and customer preferences reporting capabilities. Overall, adopting a spa booking system is presented as a more effective and efficient solution for managing customer data and enhancing the overall spa experience.

2. Related Work

This project is focus on Era Beauty Spa. The common user is the customer and the administrator is the staff. The first user in this proposed system is an administrator . The administrator of this system is the Era Beauty Spa staff at the spa. The administrator also must log in to the booking spa system. The administrator is responsible for managing the booking for customer's records and they also generate the reports or invoices. The second user is the customer user who must fill the booking in this system. They must register and log in to this system while viewing the lists of services in this spa.

This booking system webpage uses five modules: the modules for login and registration, catalog, booking, review, and reporting. Customers and employees can register here and log in to access the Era Beauty website,

respectively, using the registration and login module. A list of Era Beauty services, including body massages, facials, flower showers, beautifying manicures, and haircuts, is included in the second section of the catalog. The third module is the booking module, where clients may schedule services by completing pre-created forms with information about their name, date of birth, preferred service, time, and other details. The testimonial module, which is the fourth module, includes reviews from clients who have utilized Era Beauty Spa services. For customers who have never been and have never utilized the service here, it may thus be used as a reference. Last is the reporting module, which makes all customer reservations made using the booking system visible to the staff.

Table 1 shows the comparisons among three equivalent systems that can quickly and clearly describe the differentiations among those equivalent systems.

Table 1: System's Comparison

Features/System	Kapas Beauty Spa	Purnama Spa	Seri Wajah Aesthetic Muslimah	Era Beauty Spa System
Login and Registration	No	No	No	Yes
Booking	Yes	Yes	Yes	Yes
Catalog	Yes	Yes	Yes	Yes
Review	Yes	No	Yes	Yes
Payment method	Online banking	Online banking	Online banking	Online banking
Report	No	No	No	Yes

As can be seen from Table 1 those systems seem to have some variances and similarities. The proposed system is designed more by using these comparisons as a guide. The systems with many platforms are among the selected ones. A system made up of different spa owners will be developed using this system. Customers will find it easier to schedule spas thanks to this. Meanwhile, the spa owner may receive data from this system that shows how their business is doing each month.

3. Methodology

This project used a prototype model for the system development, which consists of six stages in total. **Table 2** illustrates that stages of the project development that entail specific assignments and outputs that must be produced throughout. Apart from that, the production will finish in the allotted number of days.

Table 2: Software development activities and their task

Phase	Activity	Deliverable
Planning	1. Determine the developed system's objective, problem statement and scope.	-Objective -Problem Statement -Scope -Proposal
	2. There are four(4) methods to collect the information. a) Interview b) Internet c) Discussion	

Analysis	<ol style="list-style-type: none"> 1. Identify User requirements, system requirement 2. Identify the comparison between the existing system and the proposed system. 3. Generate process model flow. 	Analysis produces -UML -ERD -Flowchart
Design	<ol style="list-style-type: none"> 1. Simple explanation about designing a module for the suggestion system. <ol style="list-style-type: none"> i. Login and Registration module ii. Catalog module iii. Booking module iv. Review module v. Reporting module 	Design produce: -system architecture -schema and data dictionaries. -user interface (wireframe).
System Prototype	<ol style="list-style-type: none"> 1. For this phase, early-stage testing will be done. The tester system consists of: <ol style="list-style-type: none"> i. Administrator ii. Common User 	An administrator is staff and the common user is a customer.
Testing	<ol style="list-style-type: none"> 1. Is the final phase. This phase will ensure user acceptance based on several aspects among them: <ol style="list-style-type: none"> i. Suitability interface ii. Functionality. 	-The user receives a system developed by two(2) aspects emphasized in the testing phase.

4. Analysis and Design

4.1 System Requirement

Functional requirements define the functionality of a produced system as a specific behavior that converts input into output. Non-functional requirements define the standards by which a system's functioning is evaluated, as opposed to its behavior or purpose. **Tables 3** and **4** show the functional and non-functional requirements for the proposed system.

Table 3: Functional requirements.

No	Module	Description
1	Registration and Login Module	<ul style="list-style-type: none"> • Allow the new users to register a new account before login. • Allow the existing users to login with the username and password. • Redirect the valid users to the dashboard when successful login.

2	Catalog Module	<ul style="list-style-type: none"> Allow customers to choose the services that are in this spa. Allow admin to update their services.
3	Booking module	<ul style="list-style-type: none"> Allow customers to fill out the form to make a booking. Allow customers to make a payment using PayPal.
4	Review Module	<ul style="list-style-type: none"> Allow customers to give reviews for this spa. Allow admin to view reviews from customers who have tried the service.
5	Report Module	<ul style="list-style-type: none"> Allow admin to view monthly sales and order status from customers. Allow admin to display when they update the services.

Table 4: Non-functional requirements.

No	Requirement	Description
1	Performance	The system should be always usable, and an internet connection is required for the system.
2	Operational	The system should be available 99.9% of the time, excluding scheduled maintenance to ensure users can access it when needed.
3	Security	The system should be user-friendly and employ secure login methods to ensure users have appropriate permissions.
4	Reporting and Analytics	The system should generate reports and analytics on time to provide insights into spa performance, booking trends, and customer preferences.

The user requirements are explained in **Table 5**. The system's users consist of the admin and the customer.

Table 5: User requirements.

No	Requirement
1.	All customers and admins must have an account with a valid username and password to access personalized features.
2.	Customers can browse and view the list of spa services offered by detailed descriptions, images, and pricing for each service.
3.	Admin can also update the service in this system to ensure the system is always updated.
4.	Customers can make a booking for the service that is offered by choosing specific services that are provided.
5.	Customers can also add to their cart the service if they want to do more than one service.
6.	The admin can also view customer details on the admin page.
7.	Customers can give reviews for the spa after they make a service.
8.	Admin can display the customer's booking history report and the service that has been updated.
9.	Admin also can view monthly sales and order status of the customer in report page.

4.2.3 Flowchart

A flowchart is a diagram that shows a sequence of actions. Because it presents the phases consecutively, it is typically used to show the flow of an algorithm, workflow, or process. Processes are frequently demonstrated in flowcharts as a variety of boxes with arrows linking them in the correct sequence. All the labor procedures entailing every system process are also depicted in the flow chart. The flowcharts for the administrator and customer processes are displayed in **Figures 3** and **4** respectively.

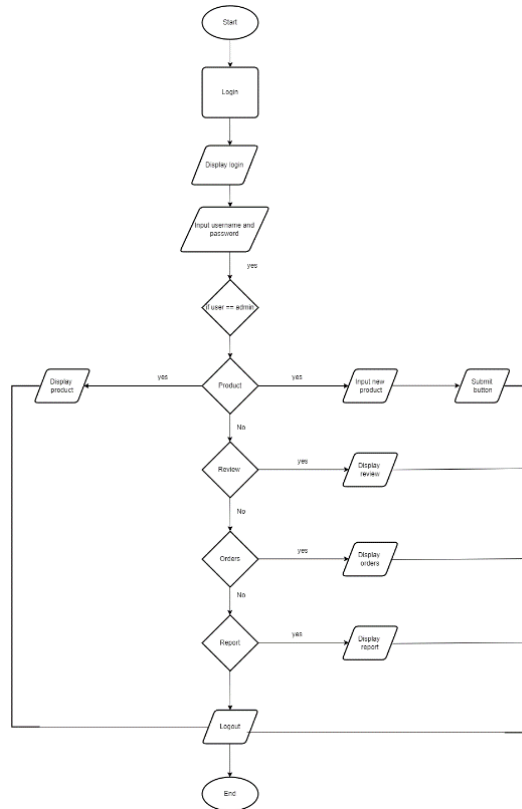


Figure 3: Flowchart for Admin

Figure 3 shows Flowchart for admin process. **Figure 4** shows a flowchart process for the admin. To begin this procedure, the admin must log in to the system. Only if there are no existing accounts does the admin need to create a new account on the system. Upon logging in successfully, the admin can update the catalog. The customer's booking must then be approved by administrators during the booking procedure. The final method by which an admin might produce an audit report is the report process. Admin has the last option to log out of the system.

The design is set up so customers can access the booking system via web browsers on desktop computers, mobile devices, and portable computers. The client's job under the client method was to show data and information on the screen, but nearly all processing was done on demand at the server end. The client in a thin client-server architecture is the web browser. This design was chosen because it eliminates the need for users to software on their computers other than the ubiquitous web browser included with practically all modern smartphones and PC operating systems. Additionally, customers would not need a powerful PC; they could use any PC with a web browser, including desktop, laptop, and mobile devices. Because the servers would often be subjected to high loads, they would require a greater configuration (in terms of hardware). The design of the depo injection appointment scheduling system is shown in **Figure 5**.

4.3.2 Interface Design

The interface serves as the primary communication between the user and the customer. Therefore, necessary to provide a user-friendly interface so that the user can communicate with the system. A well-designed user interface may help the user navigate the system without being confusing. Therefore, it is essential to maintain an interface that is manageable and straightforward.

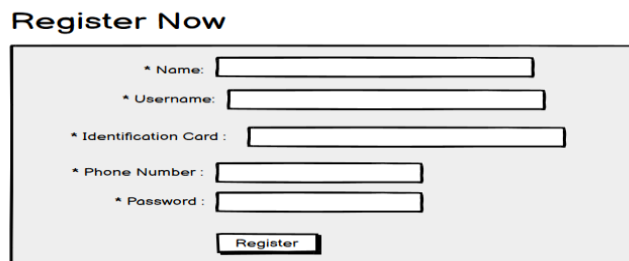


Figure 6: Interface of Era Beauty Spa Registration page

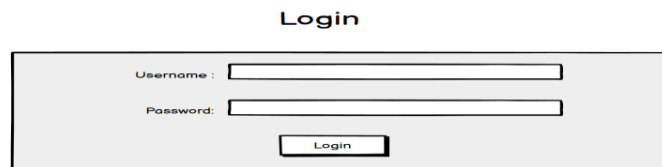


Figure 7: Interface of Era Beauty Spa Login page

Figures 6 and 7 show the Era Beauty Spa system in login and registration on the main page. This page is for admin, and customer needs to log in and register an account if only the customer does not have an account available in the system. After the customer successfully logs in to the system, the customer will be able to view the catalog provided to view the service available at the Era Beauty Spa system. So, for admin, To begin this procedure, the admin must log in to the system. Only if there are no existing accounts does the admin need to create a new account on the system. Upon logging in successfully, the admin can update the catalog.

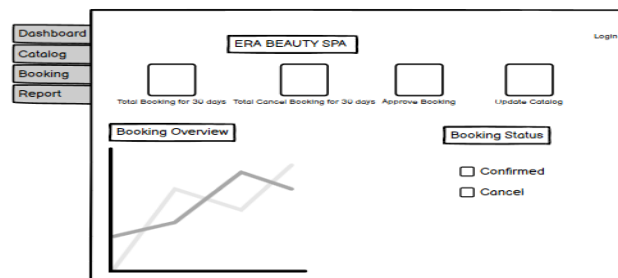


Figure 8: Interface of Era Beauty Spa Dashboard Admin

Figure 8 shows the Era Beauty Spa system in the dashboard admin for overview booking. This page contains the total booking for 30 days by the customer, the total canceled booking for 30 days, the approved booking

that the admin makes approval from the customer, and the admin that already updates the catalog for a customer. This page also displays a graph for customers who confirm and cancel bookings.

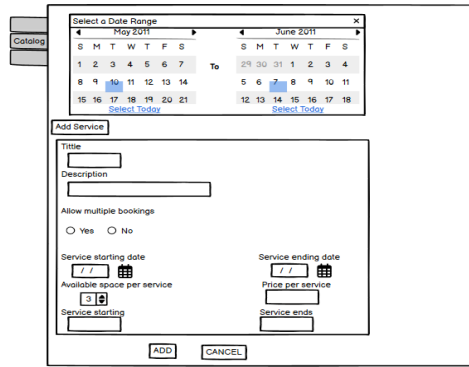


Figure 9: Interface of Era Beauty Spa Catalog Admin

Figure 9 shows the catalog for admin add and update for customer view. Admin also can select the date whether the spa is closed or not and have to update the date whether the date is double booking or not for customer selection. Admin must fill in the form make the system constantly be updated.

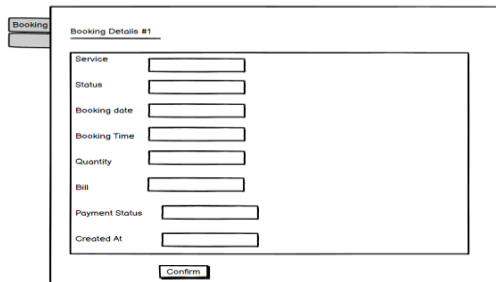


Figure 10: Interface of Era Beauty Spa Booking Admin

Figure 10 shows the booking admin interface. This page is for admin booking approval for customers who want to make a booking. If a customer has already filled out the booking form this form will be sent to admin to approve the booking by clicking the button "Confirm" to continue the booking process.

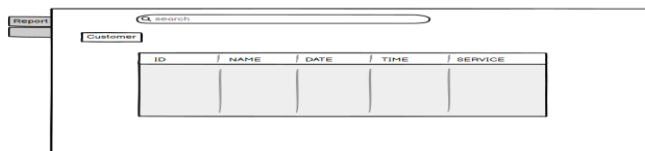


Figure 11: Interface of Era Beauty Spa Report Admin

Figure 11 shows the interface of the report admin. The admin can generate the report based on the list of reports provided in the system. The report will display the name of the customer who has already made a booking, the date, time, and service they do. So, it is easy for the admin to view the number of bookings of customers that use this system to make a booking in the Era Beauty Spa Booking System.

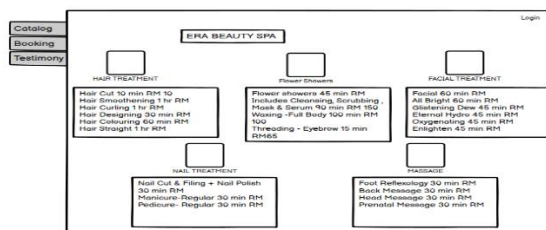


Figure 12: Interface for Era Beauty Spa Catalog Customer

Figure 12 shows the interface catalog for customers. This page will display the service available in Era Beauty Spa, allowing customers to view the catalog. Besides, this interface will display the picture of the service for customer view and already contains the price and time taken that will take for each of the services provided. So, it will be easy for the customer to set their time by viewing the service that has been chosen.

Figure 13: Interface for Era Beauty Spa Booking Customer

Figure 13 shows the user booking interface. The user booking interface will display a booking form so the customer can make a booking to book the service that they want. In this booking form, it will display the type of services that the customer chooses. Customers fill out a booking form with ID, name, date, and time. After the customer has filled in the booking form, it is required for the customer to click “Submit” to continue the booking process and click the button “Receipt” to display the receipt of the booking the customer booked. So, the customer can get the receipt and pay at the counter.

Figure 14: Interface for Era Beauty Spa Review Customer

Figure 14 shows the interface review for a customer. This page will display the picture of a customer who has already done and used the service provided in this spa. So, the customer can give feedback on whether the service is good or bad, and it will be improved by viewing the customer’s feedback. If customers need more details about this spa, they can call by phone number that has been provided or just email and also has an address to customer goes through to the spa.

4.4 System Implementation

This chapter will cover the features and components of the web application system, which was created with the help of the Hypertext Preprocessor (PHP) and has a database management system called Xampp. The installation and flow of the Era Beauty Spa Booking System are demonstrated using the example data. Therefore, the fundamental features' implementation and coding will be shown, and each function's partial core program code will be discussed.

Figure 15 and **Figure 16** shows the server-side coding and the user interface of the account registration.

```

PSM > register.php
7
8 if(isset($_POST['register'])){
9
10 $name = $_POST['name'];
11 $email = $_POST['email'];
12 $password = $_POST['password'];
13 $confirmPassword = $_POST['confirmPassword'];
14
    
```

Figure 15: Account Registration Source Code.

filtering can further boost the catalog module's usability and functionality. For the Era Beauty Spa Booking System to engage consumers and make their shopping experience easier, a solid approach to product display is necessary.

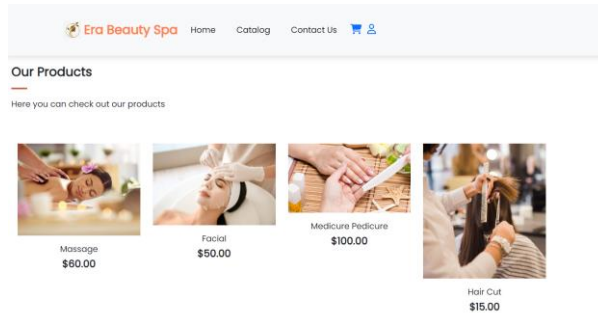


Figure 20: Catalog Module User Interface.

Figure 20 shows the user interface of the catalog page. Generally, the user interface consists of images of the service and the price.

b. Booking Module

Figure 21 and **Figure 22** show the server-side coding and the user interface of the booking module.

```
<div class="form-group checkout-small-element">
  <label>Name</label>
  <input type="text" class="form-control" id="checkout-name" name="name" placeholder="Name" required/>
</div>
<form id="checkout-form">
  <div class="form-group checkout-small-element">
    <label>Email</label>
    <input type="text" class="form-control" id="checkout-email" name="email" placeholder="Email" required/>
  </div>
  <div class="form-group checkout-small-element">
    <label>Phone</label>
    <input type="tel" class="form-control" id="checkout-phone" name="phone" placeholder="Phone" required/>
  </div>
</form>
```

Figure 21: Booking Module Source Code.

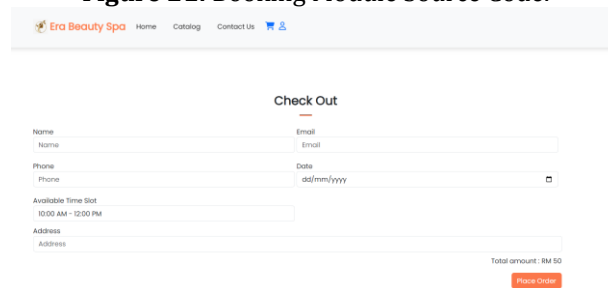


Figure 22: Booking Module User Interface.

Next, **Figure 22** shows the user interface of the booking page. So, customer must fill out the form by inserting their details such as name, phone number, time slot, address, email, and date. There is a "Place Order" button, which the user clicks to submit their order and initiate the payment process.

c. Review Module

Figure 23 and **Figure 24** show the server-side coding and the user interface of the review module.

```
<?php
include('server/connection.php');

if ($_SERVER['REQUEST_METHOD'] === 'POST') {
  if (isset($_POST['message']) && !empty($_POST['message'])) {
    $message = $_POST['message'];

    $stmt = $conn->prepare("INSERT INTO reviews (message) VALUES (?)");
    $stmt->bind_param('s', $message);

    if ($stmt->execute()) {
      echo "Feedback submitted successfully!";
    } else {
      echo "Error: " . $conn->error;
    }
    $stmt->close();
  } else {
    echo "Error: Message is required.";
  }
}
?>
```

Figure 23: Review Module Source Code.

Based on **Figure 23**, this code is for the review code the customer will give the feedback about the service provided.

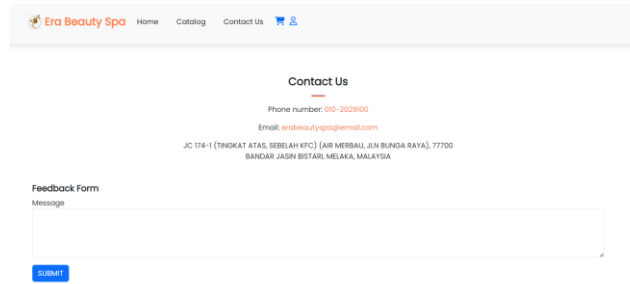


Figure 24: Review Module User Interface.

Based on **Figure 24**, customers need to give a review about whether is good or not. There is a “Submit” button, which the user clicks to submit their review.

d. Login Module for Administrator.

Figure 25 and **Figure 26** show the server-side coding and the user interface of the review module.

```

$stmt->store_email();
if ($stmt->num_rows() > 0) {
    $stmt->fetch();
    $SESSION['admin_id'] = $admin_id;
    $SESSION['admin_name'] = $admin_name;
    $SESSION['admin_email'] = $admin_email;
    $SESSION['admin_logged_in'] = true;
    header('location: index.php?login_success=logged in successfully');
}
else{
    header('location: login.php?error=could not verify your account');
}

```

Figure 25: Login Module Source Code.

The login module, which enables admin to access their accounts and authenticate themselves is an essential component.

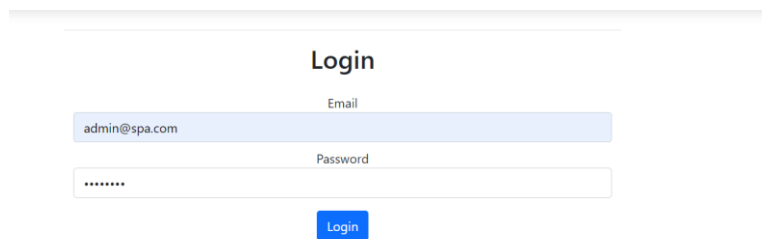


Figure 26: Login Module Administrator.

Based on **Figure 26** shows that an admin must insert their email and password to enter the admin page.

e. Report Module for Administrator.

Figure 27 and **Figure 28** shows the server-side coding and the user interface of the review module.

```

<!-- Graph -->
<?php

$query = "SELECT SUM(order_cost) AS total_sales, DATE_FORMAT(order_date, '%Y-%m') AS month_year
FROM orders
GROUP BY DATE_FORMAT(order_date, '%Y-%m')";
$result = mysqli_query($conn, $query);

```

Figure 27: Report Module Source Code.

Based on **Figure 27** shows that the `mysqli_query` function is used to execute the SQL query stored in the `$query` variable. The result of the `mysqli_query` function is stored in the `$result` variable to month monthly total sales by querying a report table in a MySQL database.

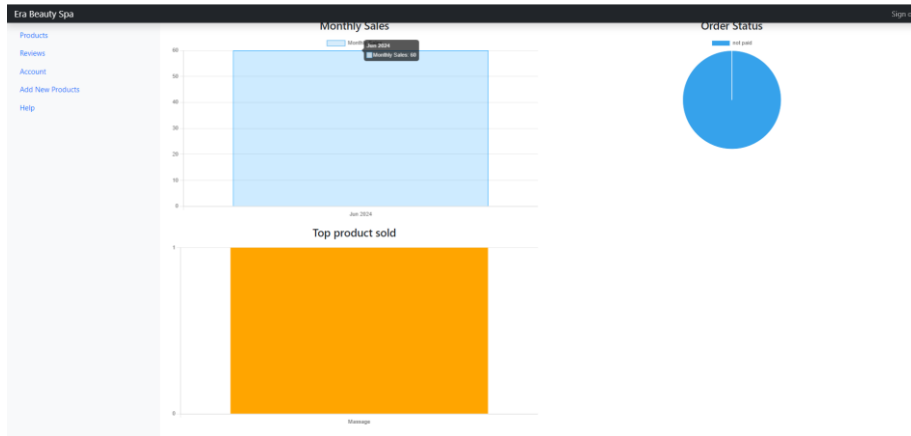


Figure 28: Report Module Administrator.

Figure 28 shows the graph about monthly sales for Era Beauty Spa from the customers who make a booking, sales, and top services from the customers.

f. Products Module for Administrator.

Figure 29 and **Figure 30** show the server-side coding and the user interface of the review module.

```

<?php foreach($products as $product) {
    <tr>
        <td><?php echo $product['product_id'];</td>
        <td><img src='../assets/imgs/' . $product['product_image'] . ".jpg" alt="" width="70px" height="70px"></td>
        <td><?php echo $product['product_name'];</td>
        <td><?php echo $product['product_price'];</td>
        <td><?php echo $product['product_special_offer'];</td>
        <td><?php echo $product['product_category'];</td>
        <td><?php echo $product['product_color'];</td>
        <td><?php echo "edit_images.php?product_id=" . $product['product_id'] . "&product_name=" . $product['product_name'];</td>
        <td><?php echo "edit_product.php?product_id=" . $product['product_id'];</td>
        <td><?php echo "delete_product.php?product_id=" . $product['product_id'];</td>
    </tr>
}
    
```

Figure 29: Products Module Source Code.

Based on **Figure 29** shows that this code will display a table of product information. It extracts information from a product array, displays it in a table, and provides buttons to edit or delete each product.

Product ID	Product Image	Product Name	Product Price	Product Offer	Product Category	Edit Image	Edit	Delete
1		Massage	\$80.00	10%	Facial	Edit Image	Edit	Delete
2		Facial	\$50.00	0%	Facial	Edit Image	Edit	Delete
3		Massage Pedicure	\$100.00	0%	Hair	Edit Image	Edit	Delete
4		Hair Cut	\$15.00	0%	Hair	Edit Image	Edit	Delete
5		Rebonding	\$80.00	0%	Hair	Edit Image	Edit	Delete

Figure 30: Products Module Administrator.

Based on **Figure 30** shows the list of products that will be edited and deleted will be updated in the customer's catalog.

g. Reviews Module for Administrator.

Figure 31 and **Figure 32** show the server-side coding and the user interface of the review module.

```

<?php
// Output data of each row
while ($row = mysqli_fetch_assoc($result)) {
    <tr>
        <td><?php echo $row['id'];</td>
        <td><?php echo $row['message'];</td>
        <td><?php echo $row['time_created'];</td>
        <!-- Add more columns as needed -->
    </tr>
}
    
```

Figure 31: Reviews Module Source Code.

Based on **Figure 31** shows that the reviews' source code will be displayed on the admin page after the customer gives the reviews.



Figure 32: Reviews Module Administrator.

Figure 32 shows the list of customer reviews. This module allows administrators to view and manage customer reviews left on the Era Beauty Spa website.

h. Create a Product Module for the Administrator.

Figure 33 and **Figure 34** show the server-side coding and the user interface of the review module.

```
if(isset($_POST['create_product'])){
    $product_name = $_POST['name'];
    $product_description = $_POST['description'];
    $product_price = $_POST['price'];
    $product_special_offer = $_POST['offer'];
    $product_category = $_POST['category'];
    $product_color = $_POST['color'];
```

Figure 33: Create Product Module Source Code.

Based on **Figure 33** shows the code to create a product in Era Beauty Spa for the customer’s view. The INSERT INTO statement acts like a command telling the database to insert new data into a specific table. In this case, the table you insert data into is called products.



Figure 34: Create Product Module Administrator.

Figure 34 shows that the admin must insert the form to create a new product for Era Beauty Spa when it is available, such as the title of the service, description, price of the special offer/sale, and category of the service.

4.5 System Functional Testing

The user will test the system in the final step to see whether the application satisfies their business demands. The program will be sent to production when this procedure is finished and the software has passed. Testing was done on modules to verify the connection on every system interface, as well as tests on users and administrators, to create the system. The test's purpose is to evaluate the system's functional dependability and the outcomes of alpha testing. The goal is to confirm alpha regarding direction or overall structure and determine any necessary adjustments. The purpose of alpha testing is to provide system input and output. The system functioning test plan is displayed in Table 5.1.

Attributes	Data Type	Expected Result	PASS/FAIL
Register module			
1.	Registration form	The users fill up the registration form	PASS
2.	Correct name, email, password and confirm password.	The users provide the correct name, email, password and confirm password.	PASS
3.	Incorrect name, email, password and confirm password.	The users provide incorrect name, email, password and confirm password.	PASS
Login Module			
4.	Login successful	The user and administrators entered the correct username and password.	PASS
5.	Login error	The user and administrators entered an incorrect username and password.	PASS

6.	Display customer details	The customer details entered on display are correct.	PASS
Catalog Module			
7.	Product Details	The user can choose what service they want.	PASS
8.	Add product	The user can add to a cart to make more than one service.	PASS
9.	Manage product	The system can allow the user to edit and remove products.	PASS
10.	Confirm checkout product	The user clicks checkout to view the booking.	PASS
Order Module			
15.	Product add to cart	The users select a product add to cart	PASS
17.	Display the total product price	The total product price display	PASS
18.	View cart	The product details	PASS
Booking Module			
	Booking product	The user must fill out the form to make a booking.	PASS
	Booking successful	The user made a booking.	PASS
	Confirm place order	The user clicks place order to make a payment.	PASS
Payment			
	Checkout details	The user clicks place order to view the payment	PASS
	Confirm payment	The user clicks pay and chooses Paypal as the payment method.	PASS
Manage Project Details			
16.	Product Details	The administrators click ADD NEW product button.	PASS
17.	Update Product Details	The admin clicks the Edit and EDIT image button to update the product.	PASS
18.	Delete Product	The administrators click the DELETE button to delete a product.	PASS

5.0 Conclusion

In conclusion, this project's e-commerce system has been constructed effectively and has achieved the goals mentioned in Chapter 1. The technology makes it easier for administrators and users to make payments and has a neat database for keeping track of product information. Compared to other systems, this one makes the process of surveying and product finding more straightforward. Even though the main goals have been met, there is still an opportunity for advancements to be made in the future to increase the system's functionality and use.

Acknowledgement

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