



# Development of an Online Shopping System for BinDawood

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**Abstract:** BinDawood's online shopping system is an alternative for customers to buy a wide range of goods from physical stores, including electronics, home decor, clothing, food and fruits. This system is a practical and reliable alternative to traditional retail as it allows customers to escape traffic and long queues while their purchases are delivered on time. The system stands out because it places a strong emphasis on customer satisfaction and was created with Visual Studio. By evaluating customer satisfaction through reviews and feedback, the system ensures that the quality of service is at its best in its online operations. This purchasing system is expected to give customers a convenient option to view a large number of product ranges, save users time and effort, and guarantee that supplies are well prepared.

**Keywords:** Online Shopping system, manage, online web

## 1. Introduction

The practice of clients making purchases online is referred to as "online shopping" in the context of electronic commerce. It saves time and effort, offers a larger assortment of goods at reduced prices, and guarantees the quality of the goods distributed [1]. Since its inception, the Internet has grown into a technology that is today used everywhere and has a global reach. As the Internet has developed and spread around the world, a variety of businesses have made use of e-commerce, which is described as the process of buying and selling goods or services over the Internet and consists of a set of tools, processes, and data for buyers and sellers [2].

On the other hand, online shopping is an e-commerce activity that comprises making a purchase using a credit or debit card from a seller's website and having the things delivered to the buyer's address. Researching and conducting Internet searches are also required steps in the online purchasing process. E-commerce includes online shopping as one of its components [3]. Customers can use digital platforms for online shopping to purchase goods from anywhere in the world. The biggest benefit of online shopping is having access to international markets [4]. More goods in many stores is starting to be sold only online.

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Even though many people buy and sell things online, conventional face-to-face sales techniques are still commonly used. It has its own advantages and is a reliable sort of business. For instance, Bin Dawood, a retailer of apparel, furniture, and electronics, still offers direct sales in its retail locations. Spreadsheet software and a ledger are used to record the inventory of goods. These businesses require a database management system to manage their business data due to the increase in business inventory items. This is due to the difficulty of using spreadsheet software and books to keep track of transactions, the most recent number of stocks ordered, and inventory revisions. It may result in lost records, data duplication, and incorrect data entry. While the most recent trend in online sales has demonstrated its capacity to grow the company. Customers can purchase gadgets, home decor, clothing, consumables, and fresh fruit online from Bin Dawood Store through its website. The suggested strategy offers a viable alternative to conventional commerce for online shopping. Additionally, online purchases from the store's website have increased.

There are five sections in this paper. Section 1 describes the project's background, while Section 2 discusses works that are related to it. The method is detailed in Section 3, and Chapter 4 provides a summary of the findings and discussion. Section 5 provides the conclusion.

## 2. Related Work

Comparative studies were conducted on three related systems to the proposed system. the first system Fordeal Webshop and online market platform based in the United Arab Emirates that specialized in fashion, electronics, clothing, computers, and food. Its services are mostly focused on accessing the internet through web browsers on computers and mobile devices.

The second system is Jolly Chic Web, a website that offers a variety of goods such as apparel, shoes, accessories, jewellery, perfume, children's clothing, and home goods. More than 300 pieces are sold each day. Using PayPal or credit cards like Visa or Mastercard to make purchases and pay for them is possible through the application. Only the Gulf countries and the Kingdom of Saudi Arabia are eligible for cash-on-delivery through the application, and it costs an extra \$10 or more. the advantage of direct dispatch to the customer, wherever they may be in Saudi Arabia or other Arab countries.

The third system is "eBay," another online retailer with a history of selling entire cities online. The website eBay is just like any other. eBay operates, or to put it another way, it operates through the sale of things by users. All of the products on eBay are added to the website by users who have eBay accounts because it is a non-product website. Nowadays, it takes a lot of time for consumers to move from one store to another when they go shopping. E-commerce has made this process simpler and more dependable. Online shopping is the act of a customer purchasing something directly from a vendor without the need of an intermediary service [5] - [7].

The newly developed system is online shopping for Bin Dawood store. Using the inventory on hand and the online shopping system, the store can carry out sales requests. Additionally, it contributes to Bin Dawood's business expansion. The use of technology could increase a store's ability to see product details. This increases the frequency and efficiency of sales as a result. Additionally, it has a greater and more consistent ability to prevent interruptions in the marketing and production of goods. As a result, it will take the initiative to address client loss and obsolescence while enhancing team productivity and store revenues.

Important features of the newly developed system include system administration, sales and delivery management, and reporting. This technique, it is hoped, would benefit Bin Dawood in improving and increasing its sales and earnings. **Table 1** compares the existing system to the newly developed system.

**Table 1: System's Comparison**

Features	Fordeal	Jollychic	eBay	Proposed System
System type	Web-based	Web-based	Wed-based Android and iOS	Web-based
1. Login module	√	√	√	√
2. Registration module	√	√	√	√
3. Customer Feedback	√	√	√	√
4. Add modify	√	√	√	√
5. Delete item from the cart	√	√	√	√
6. Cancel an order after it is placed	X	X	√	√
7. Categorize product	√	√	√	√
8. Secure connection	X	X	X	√
9. View order	√	√	√	√
10. Live chat	X	√	X	√

**Table 2: Project Description**

Phase	Task	Output
Planning phase	The identifying problem, scope, and objectives. And then find out how to build the web-based and its features based on the data collected	Project Proposal Gantt chart
Analysis phase	Analyzing the existing system, determines the functional and non-functional requirements for the system, determine the system module and user.	Requirement DFD, ERD, Flowchart
Design phase	Using the appropriate programming language, create the overall system's interface.	System Architecture Design, Database design, User interface design.
Implementation Phase	Develop the system to include all the functions and features Conduct testing on the system and repair the fault of the system.	Code program, system/web-based database schema Test case.
Documentation phase	Discussion on what documentation should be created for future reference and maintenance.	Final report.

### 3. Methodology

The prototype model has been chosen as the basis for the development of the system. Since time is critical, iterative development and system prototyping are perfect solutions because they enable the development team to modify the functionality of the system in response to specific delivery dates [8]. **Table 2** gives the project description along the methodology phase.

The functional requirement defines the functionalities of the system in which it converts the input obtained into output. **Table 3** shows the functional requirements for the system.

**Table 3: Functional requirements**

No.	Modules	Explanation
1.	Registration Module	<ul style="list-style-type: none"> <li>System should allow Customers to register into the system</li> <li>System only allows a customer to register with the right credentials</li> <li>System will show errors if the customer put in the wrong input</li> </ul>
2.	Login Module	<ul style="list-style-type: none"> <li>System only takes username and password to log in</li> <li>System displays error if the wrong input is inserted</li> <li>System will redirect to the main page when successful</li> </ul>
3.	Customer Module	<ul style="list-style-type: none"> <li>The system should allow the administrator to search/add/edit/delete Customer details.</li> </ul>
4.	Product Module	<ul style="list-style-type: none"> <li>The system should allow the administrator to search/add/edit/delete product details</li> </ul>
5.	Drivers Module	<ul style="list-style-type: none"> <li>The system should allow the driver to view order details.</li> <li>The system should allow the driver to accept current orders.</li> <li>The system should allow the driver to confirm delivery.</li> </ul>
6.	Live chat	<ul style="list-style-type: none"> <li>The system should allow the user to send message</li> <li>The system should display the message to the administrator</li> </ul>
7.	Coupons	<ul style="list-style-type: none"> <li>The system should allow the administrator to add a new coupon</li> <li>The system should allow the administrator to add a coupon to specific product</li> </ul>

A system's non-functional requirements specify the criteria for evaluating its operational performance, rather than the system's specific behaviour or functions. **Table 4** displays the system's non-functional requirements. User requirement defines what the users of the system expect from the system. **Table 5** shows the user requirement for the developed system.

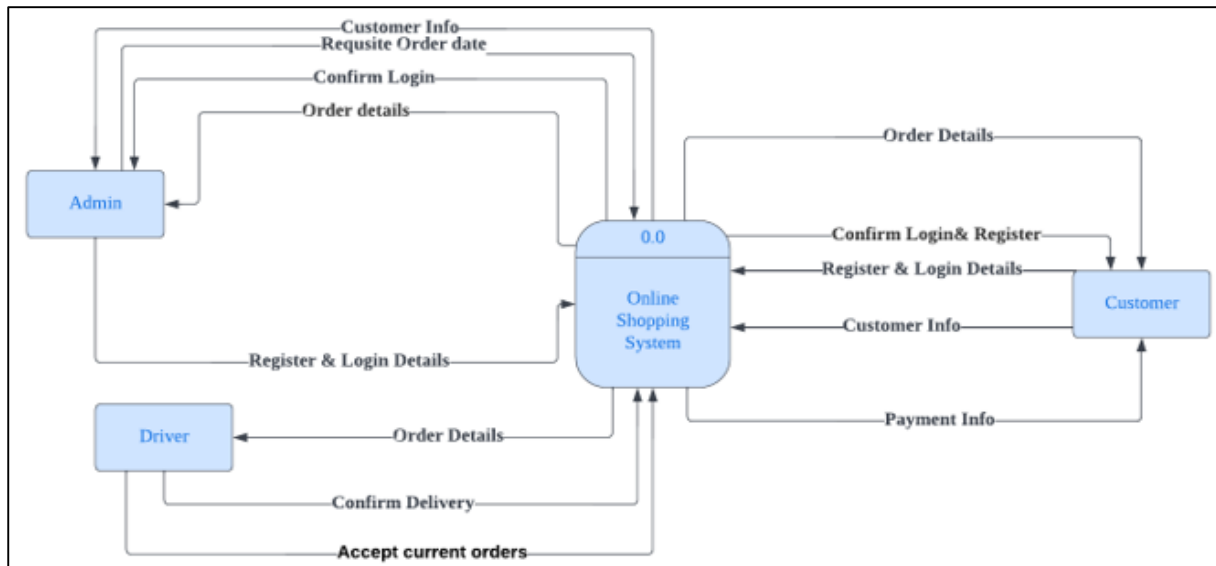
**Table 4: Non-functional requirements**

No.	Requirement	Explanation
1.	Reliability	The system must never crash or hang due to anything other than an operating system error.
2.	Security and Privacy	System access is always limited to only authenticated users.
3.	Usability	The user interfaces should be intuitive and simple to use for users with any level of technical knowledge.
4.	Availability	The entire system should be accessible year-round, except for scheduled maintenance. The maintenance interval should be short and predetermined

**Table 5: User requirement for the proposed system**

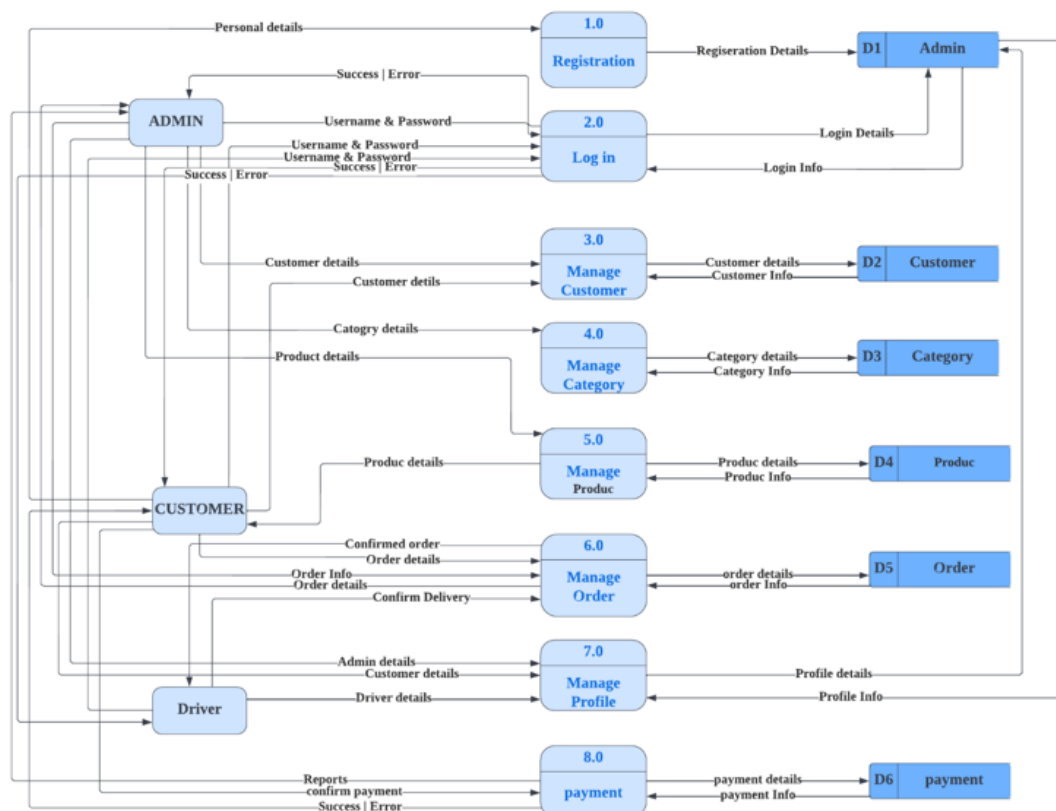
No.	User requirements
i.	The administrator will be able to Log in to the system
ii.	The administrator will be able to view and edit customer profile
iii.	The administrator should be able to view, edit, search and delete customer details.
iv.	The administrator will be able to add and delete product details
v.	The administrator will be able to view and edit the product.
vi.	The administrator will be able to add and delete the product category
vii.	The administrator will be able to view and edit the product category
viii.	The administrator be able to add and delete the driver's details
ix.	The administrator will be able to view and edit the driver's profile
x.	The administrator will be able to Logout to the account

The analysis is the process of studying and researching all the data collected by the built framework. This phase's objective is to offer system environment developers a full understanding. Using a computer system to develop an alternate system that will increase system efficiency. A system review that identifies and describes the requirements for the new system being built. **Figure 1** shows a context diagram that is drawn for this system.

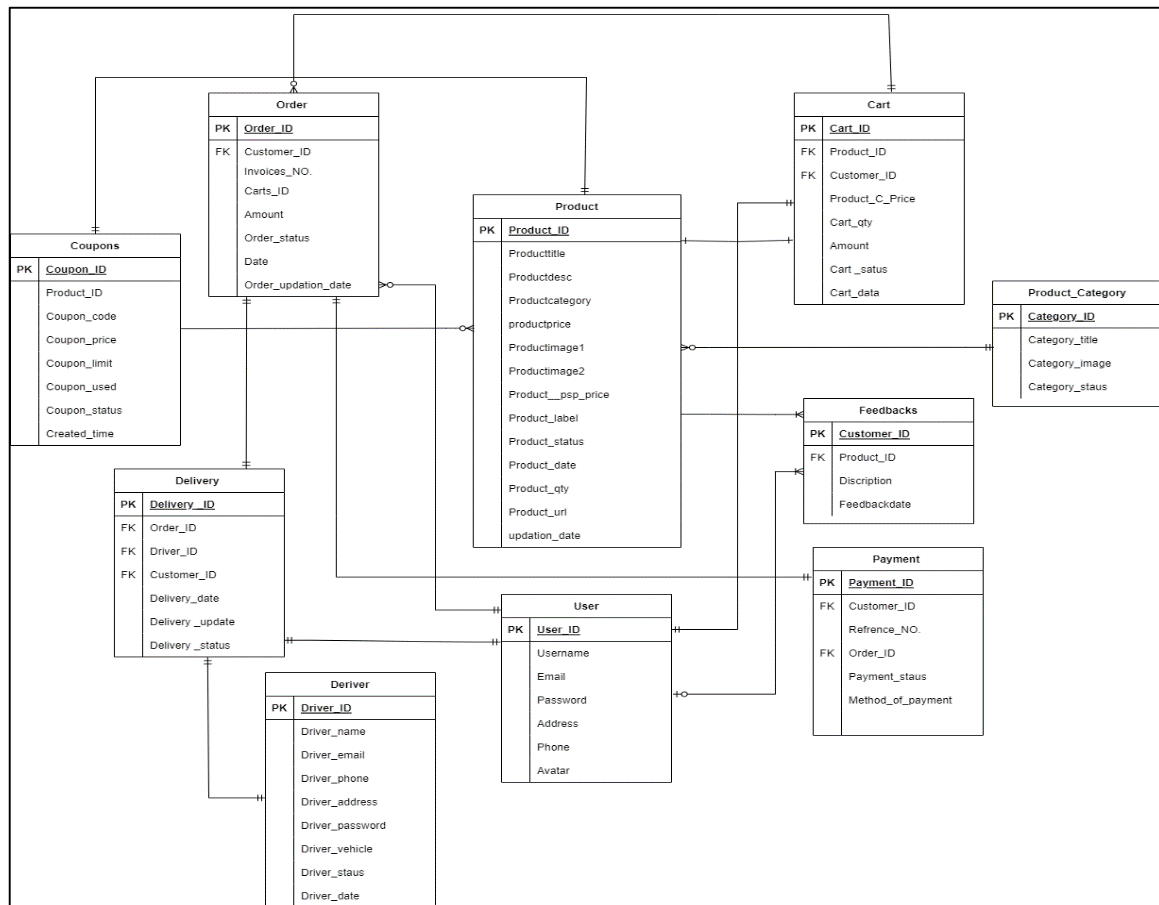


**Figure 1: DFD Context diagram**

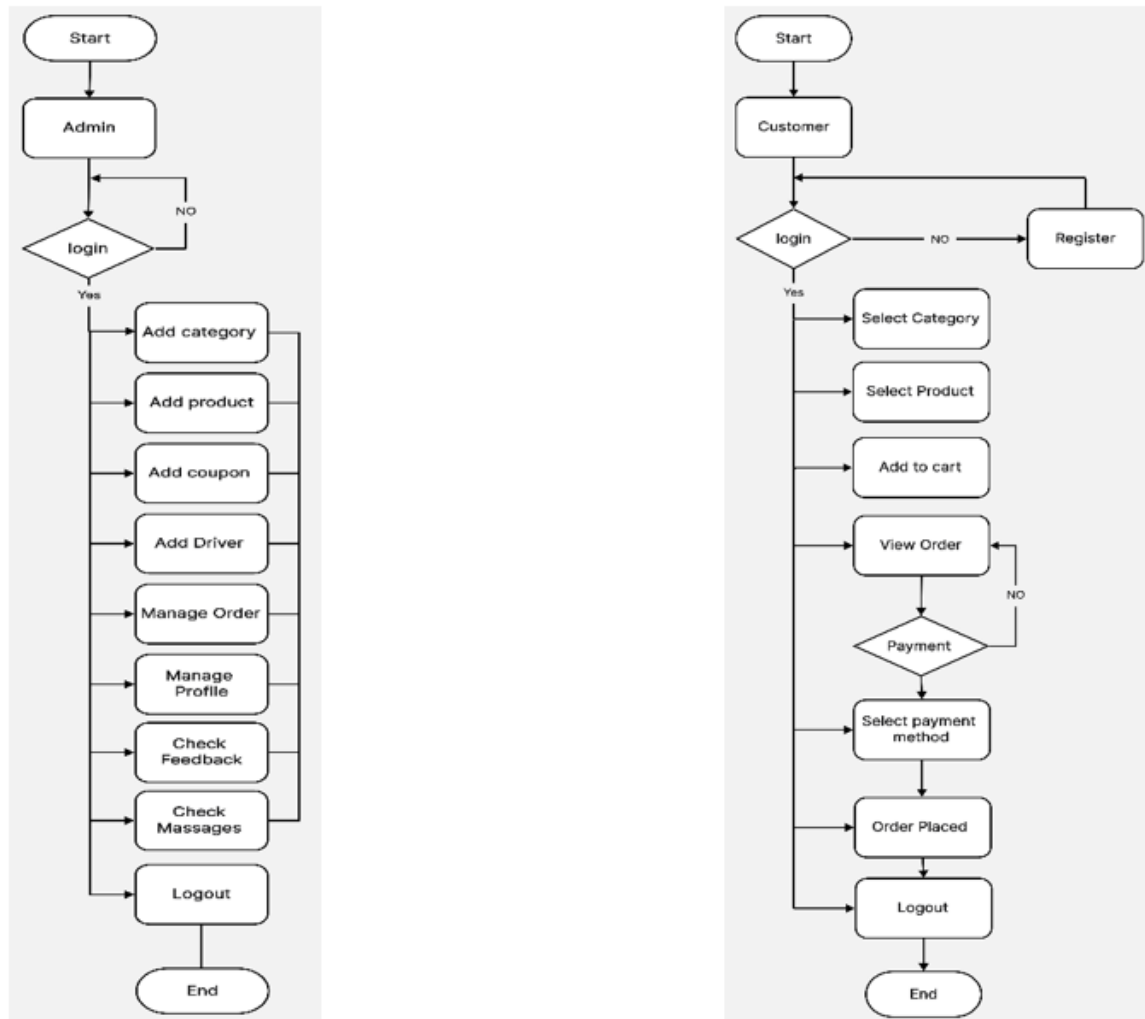
**Figure 2** shows the DFD level 0 which is the decomposition of the system process shown in the context diagram. There are eight processes, three external entities, and six data stores. **Figure 3** depicts the entity relationship diagram with six entities.



**Figure 2: DFD level 0**



**Figure 3: Entity Relationship Diagram**



**Figure 4: Administrator and Customer Flowchart**

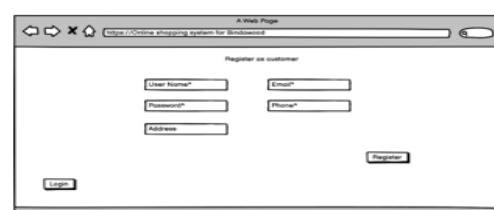
**Figure 4** shows the administrator and customer flowchart process. the process of the flowchart for Administrator is as flows Administrator needs to login to the system by entering the username and password if username and password are correct then the Administrator can log in successfully if the not correct error message will aper and redirect to the login page. After successfully login Administrator can add a category, add product, manage orders, manage customers, manage profiles, check feedback and logout.

The customer should login to the system by entering their username and password. If the username and password are accurate, the customer will be able to login successfully. As an alternative, if a customer does not have an account, they can register by providing the correct customer information, and if the registration is successful, customers can log in. After successfully logging in, customers can select a category, select a product, add the product to the cart, and view the order list, as well as make a payment if they choose to do so. If they don't, the system will return customers to the order list.

The system user interface has been designed and is shown in **Figures 5 -8**.



**Figure 5: Login Interface Design**



**Figure 6: Registration Interface Design**

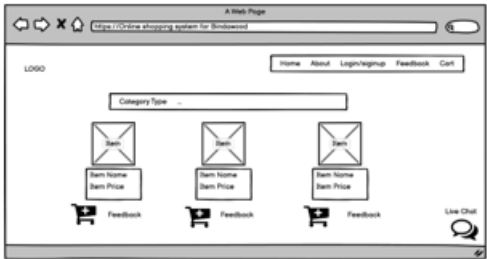


Figure 7: Home page Interface Design



Figure 8: Product Information

#### 4. Results and Discussion

This section describes the system implementation process and the system testing for the developed system. All planned processes and tasks for the development of the 'Online Shopping System For bin Dawood' project have been completed successfully.

##### 4.1 Functional Module Development

This section describes the development of functional modules in a system. Program code is provided to aid clarification. **Figures 9** and **10** show the server-side coding and the user interface of the user login.

```
1 <?php
2 include("connection.php");
3 $message = '';
4 if(isset($_POST["login"]))
5 {
6     $email = $_POST['email'];
7     $password = $_POST['password'];
8     $query = 'SELECT * FROM users WHERE (email = :email)';
9     $values = [':email' => $email];
10    try
11    {
```

Figure 9: Account Login Source Code

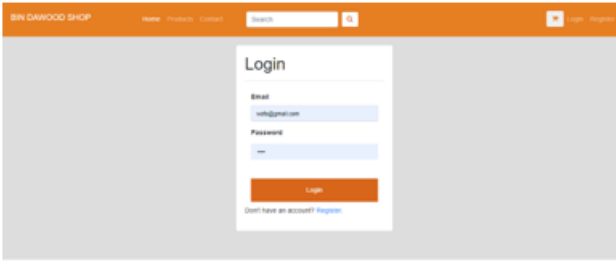


Figure 10: Account Login Page

**Figures 11** and **12** show the coding and the user interface of the account registration. Users can enter information such as name, email address, phone number, address, and password in the interface's input fields. An error message will appear if the user submits the form without filling out all or some of the required fields, depending on the situation.

```
1 <?php
2 include("connection.php");
3 session_start();
4 include "function.php";
5 $message = '';
6 $error_name = '';
7 $error_email = '';
8 $error_password = '';
9 $error_address = '';
10 $error_phone = '';
11 $name = '';
12 $email = '';
13 $password = '';
14 $address = '';
15 $phone = '';
16 $status = 1;
17
18 if(isset($_POST["register"]))
```

Figure 11: Customer Registration Code



Figure 12: Customer Registration Page



```

$message = "";
$product_id = $_GET['product_id'];
$stmt = $connect->prepare("select * from products where product_url='{$product_id}'");
$stmt->execute();
// set the resulting array to associative
$result = $stmt->fetchAll(PDO::FETCH_ASSOC);
foreach($result->fetchAll() as $k=>$row_pro) {
    $pro_id = $row_pro['product_id'];
    $pro_title = $row_pro['product_title'];
    $pro_image = $row_pro['product_img1'];
    $pro_image2 = $row_pro['product_img2'];
    $pro_image3 = $row_pro['product_img3'];
    $pro_price = $row_pro['product_price'];
    $pro_sale_price = $row_pro['product_ssp_price'];
    $pro_label = $row_pro['product_label'];
    $pro_desc = $row_pro['product_desc'];
    $pro_date = $row_pro['date'];
    $product_status = $row_pro['status'];
    $pro_url = $row_pro['product_url'];
    $current_qty = $row_pro['qty'];
}

```

Figure 13: Add Product Code

Figure 14: Add Product Page

This PHP code retrieves data from a MySQL database table called "products" and stores the data in variables. The code uses a while loop to fetch each row in the table, one by one, until there are no more rows left. Adding a product is a procedure performed by the administrator, which names the product to avoid duplication. All required fields must include the correct data type. After adding an operation, the administrator can edit or delete product details. **Figures 13** and **14** show the add product implementation. **Figures 15** and **16** show the coupon management module implementation.

```

<?php
$i = 0;
$get_pro = "select * from orders join users on orders.customer_id=users.user_id
join payments on orders.order_id=payments.order_id order by orders.order_id DESC";
$run_pro = mysqli_query($connection,$get_pro);
while($row_pro=mysqli_fetch_array($run_pro)){
    $order_id = $row_pro['order_id'];
    $invoice_no = $row_pro['invoice_no'];
    $customer_name = $row_pro['name'];
    $total_amount = $row_pro['amount'];
    $date = $row_pro['date'];
    $order_status = $row_pro['order_status'];
    $cart = $row_pro['carts_id'];
    $unserialized_array = unserialize($cart);
    $payment_status = $row_pro['payment_status'];
    $i++;
}
}

```

Figure 15: Manage Order Code

#	Order Code	Customer	Number of products	Total Amount	Status	Date	Quick Action
1	#BND516377720	waifa	1	RM41,003.00	Order placed	2 days ago	View Edit Delete
2	#BND5162971562	waifa	2	RM44,403.00	Order placed	5 days ago	View Edit Delete
3	#BND5162709020	waifa	1	RM45,580.00	Order placed	8 days ago	View Edit Delete
4	#BND5126724748	Mukhtar Sari	1	RM41,200.00	Order placed	5 days ago	View Edit Delete
5	#BND513314380	Mukhtar Sari	2	RM43,850.00	Order placed	6 days ago	View Edit Delete
6	#BND54475580	waifa	3	RM47,850.00	Order placed	1 week ago	View Edit Delete
7	#BND5206882070	Mukhtar Sari	2	RM45,600.00	Order confirmed	1 week ago	View Edit Delete
8	#BND5175022256	Tamko	5	RM45.00	Order confirmed	1 week ago	View Edit Delete
9	#BND5182088625	Mukhtar Sari	2	RM100,706.00	Order placed	1 week ago	View Edit Delete

Figure 16: Manage Order Page

```

<?php
$i = 0;
$get_pro = "select * from coupons order by coupon_id DESC";
$run_pro = mysqli_query($connection,$get_pro);
while($row_pro=mysqli_fetch_array($run_pro)){
    $coupon_name = $row_pro['coupon_name'];
    $coupon_code = $row_pro['coupon_code'];
    $coupon_price = $row_pro['coupon_price'];
    $coupon_limit = $row_pro['coupon_limit'];
    $coupon_status = $row_pro['coupon_status'];
    $coupon_used = $row_pro['coupon_used'];
    $coupon_id = $row_pro['coupon_id'];
}
}

```

Figure 17: Manage Coupon Code

#	Coupon name	Coupon code	Coupon limit	Coupon used	Coupon status	Quick action
1	33	33	34	0	Active	View Edit Delete
2	22	22	2	2	Active	View Edit Delete
3	SECOND COUPON	SECOND002	10	0	Active	View Edit Delete
4	First coupon	FIRST002	100	11	Active	View Edit Delete

Figure 18: Manage Coupon Page

## 4.2 Testing

The purpose of testing is to show that the system does what it is intended to do and to discover any problems before it is used. Since different levels of testing strategy have been implemented in different areas of the system, including testing the database and its components, as well as testing interface performance, website usability, and functionality, the testing will assist in identifying error areas and vulnerabilities. In this chapter, there are three main types of testing: the test plan, the test case, and the test results.

**Table 5: Test Case for Account Registration Module**

<b>Module: Account Registration and Login</b>				
Test Case ID	Description	Expected Result	Actual	Result
M1-1	To check whether user can register for an account	The user should be able to create for an account	The user has successfully created for an account	Pass
M1-2	To check whether a administrator can login into the system	The administrator should be able to login into the system	The administrator has successfully logged into the system	Pass
M1-3	To check whether the system will restrict login whenever a wrong credential is entered	The system should restrict login when an incorrect credentials has been entered	The system restricted the login when an incorrect or no credentials has been entered	Pass

The functionality of this system has been tested throughout the entirety of the development process. Each function of this system has been tested with all other functions to ensure its operation and to correct both logical and grammatical errors. If there were any problems, they were corrected early enough. However, after the implementation was complete, the system was tested to ensure that it satisfies its requirements and objectives. **Tables 5 – 10** summarize the testing result.

**Table 6: Product System Test**

<b>Module: Product System Test</b>				
Test Case ID	Description	Expected Result	Actual	Result
M1-1	To check whether administrator can add product	The administrator should be able to create a new product	The administrator has successfully created new product.	Pass
M1-2	To check whether an administrator can edit	The administrator should be able to edit product into the system	The administrator has successfully edit product into the system	Pass
M1-3	To check whether the administrator can delete a product.	The system should able an administrator to delete a product.	The administrator has successfully deleted the product from the system.	Pass

**Table 7: Product Category Test**

<b>Module: Product Category</b>				
Test Case ID	Description	Expected Result	Actual	Result
M1-1	To check whether can administrator add product category into the system	The administrator should be able to create a new product category into the system	The administrator has successfully created new product category	Pass
M1-2	To check whether an administrator can edit the product category	The administrator should be able to edit a product category into the system	The administrator has successfully edit for a product category into the system	Pass
M1-3	To check whether the administrator can delete a product category.	The system should able an administrator to delete a product category into the system.	The administrator has successfully deleted a product category into the system.	Pass

**Table 8: Product Order Test**

<b>Module: Order</b>				
Test Case ID	Description	Expected Result	Actual	Result
M1-1	To check whether can administrator to display a complete order into the system	The administrator should be able to View a complete order.	The administrator has successfully viewed a confirm order.	Pass
M1-2	To check whether an administrator can delete order.	The administrator should be able to delete order into the system	The administrator has successfully deleted order into the system	Pass

**Table 9: Product Coupon Test**

<b>Module: Product Category</b>				
Test Case ID	Description	Expected Result	Actual	Result
M1-1	To check whether can administrator add coupons	The administrator should be able to create a new coupon for each product	The administrator has successfully created new coupon.	Pass
M1-2	To check whether an administrator can edit the coupon.	The administrator should be able to edit a coupon into the system.	The administrator has successfully edited for a coupon into the system	Pass
M1-3	To check whether the administrator can delete a coupon.	The system should able an administrator to delete a coupon into the system.	The administrator has successfully deleted a coupon into the system.	Pass

**Table 10: Driver Management Module Test**

<b>Module: Driver</b>				
Test Case ID	Description	Expected Result	Actual	Result
M1-1	To check whether can administrator add driver	The administrator should be able to create a new driver with email and password	The administrator has successfully created new driver.	Pass
M1-2	To check whether an administrator can edit driver details	The administrator should be able to edit driver details.	The administrator has successfully edited for driver.	Pass
M1-3	To check whether the administrator can delete a driver.	The system should able an administrator to delete driver into the system.	The administrator has successfully deleted a driver into the system.	Pass

## 5. Conclusion

The project's scheduled procedures and activities for "Online Shopping System For Bin Dawood" have all been successfully completed. The project's scope has been established. The goals and their range are picked. The construction literature was researched. The procedure for project development and evaluation was explained and looked at. The project's testing and implementation plans were carried out effectively. Reports and project documentation have been completed. The system will also get more improvements and capabilities in accordance with the request for more development.

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