



COLLEGE OF COMPUTING, INFORMATICS AND MATHEMATICS

CDCS253

BACHELOR OF COMPUTER SCIENCE (HONS.) MULTIMEDIA COMPUTING

CSC584 – ENTERPRISE PROGRAMMING

REPORT: Web Application System

TITLE: Discount & Coupon Management Portal

PREPARED BY:

NAMA	NO. PELAJAR
MUHAMMAD DANISH HAIKAL BIN HALIT	2023674632
MUHAMAD IRFAN HAIKAL BIN MUHAMAD SAMAN @ AZIZUL KAMAR	2023239584
MUHAMMAD IZYANUDDIN BIN AMINUDDIN	2023213274
MUHAMMAD RIDHWAN BIN RAMLAN	2023415174

KUMPULAN: CDCS2534A

LECTURER: SIR MUHAMAD RIDHWAN BIN MOHAMAD RAZALI

6 JULY 2025

## TABLE OF CONTENTS

<b>TABLE OF CONTENTS.....</b>	<b>2</b>
<b>1.0 INTRODUCTION.....</b>	<b>3</b>
<b>2.0 OBJECTIVES.....</b>	<b>3</b>
<b>3.0 PROBLEM STATEMENT.....</b>	<b>3</b>
<b>4.0 Final Database Design.....</b>	<b>4</b>
<b>5.0 MVC Framework Design.....</b>	<b>5</b>
<b>6.0 USER MANUAL.....</b>	<b>6</b>
1.0 Login Page.....	6
2.0 Register Page.....	7
3.0 Homepage.....	8
4.0 Dashboard page.....	9
5.0 Add Page.....	10
6.0 Manage Page.....	12
<b>7.0 CONCLUSION.....</b>	<b>15</b>

## **1.0 INTRODUCTION**

In today's competitive e-commerce and retail landscape, promotional campaigns such as discounts and coupon codes play a critical role in attracting customers, driving sales, and fostering loyalty. A Discount & Coupon Management Portal is an enterprise-grade web application designed to centralize the creation, distribution, monitoring, and analytics of all promotional offers across multiple channels (websites, mobile apps, in-store systems). By providing a unified platform, businesses can ensure consistency of marketing messages, automate complex rules (e.g., stackable coupons, time-limited offers), and gain real-time insight into campaign performance. This portal not only streamlines operational workflows for marketing and sales teams but also enhances the end-customer experience by delivering accurate and personalized promotions.

## **2.0 OBJECTIVES**

The primary objectives of the Discount & Coupon Management Portal are to:

### **1. Centralize Promotion Management**

- Offer a single interface for creating, editing, and deleting discount codes and coupon campaigns.
- Support hierarchical organization of promotions (global, regional, product-level).

### **2. Automate Business Rules**

- Implement flexible rule engines for eligibility (e.g., discount code).
- Schedule promotions with start/end dates, usage limits, and automatic activation/deactivation.

### **3. Enable Multi-Channel Distribution**

- Provide APIs and integrations for web stores, mobile apps, POS systems, and third-party marketplaces.
- Generate shareable links, QR codes, and printable vouchers.

### **4. Deliver Real-Time Analytics & Reporting**

- Track key metrics such as redemption rates, incremental revenue, and coupon leakage.
- Visualize performance dashboards and exportable reports for stakeholders.

### **5. Ensure Security & Compliance**

- Implement role-based access control so only authorized marketing and finance personnel can manage promotions.
- Provide audit trails for creation, modification, and redemption events to meet audit and legal requirements.

## **3.0 PROBLEM STATEMENT**

Many organizations today manage discounts and coupon codes in a fragmented, manual fashion—using spreadsheets, siloed marketing tools, or hard-coded logic within individual systems. This approach leads to inconsistencies (duplicate or conflicting offers), limited visibility into campaign effectiveness, and

increased operational overhead for support teams. Without a centralized rule engine, businesses struggle to enforce complex eligibility criteria, leading to coupon misuse or customer frustration when promotions do not apply as advertised. Furthermore, the lack of real-time tracking hinders timely decision-making and optimization of marketing spend. The Discount & Coupon Management Portal is proposed to address these challenges by consolidating all promotional workflows into a single, scalable, and secure platform.

## 4.0 Final Database Design

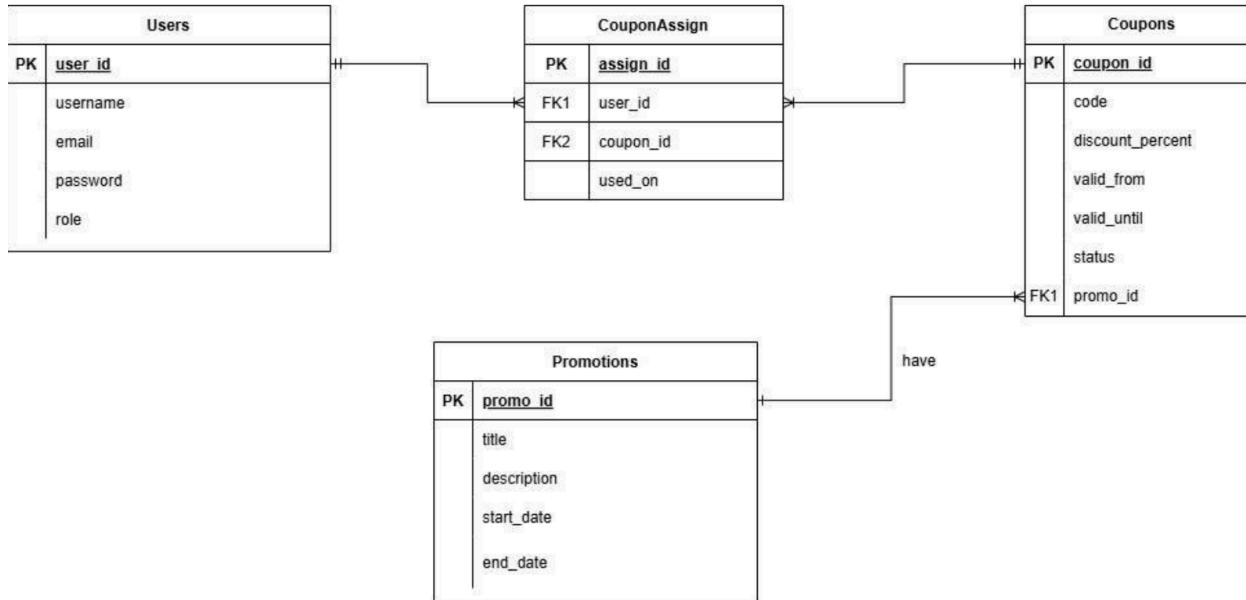


Figure 1.0 shows the ERD for Discount & Coupon Management Portal

The ERD consists of four tables: Users, CouponAssign, Coupons, and Promotions. The Users table stores user details such as user\_id, username, email, password, and role, with user\_id as the primary key. The CouponAssign table links Users and Coupons, with assign\_id as its primary key and foreign keys user\_id and coupon\_id to connect to the respective tables. It also tracks when a coupon is used through the used\_on attribute. The Coupons table contains coupon details like coupon\_id, code, discount\_percent, valid\_from, valid\_until, and status, and is related to Promotions through the promo\_id foreign key. Finally, the Promotions table holds information about each promotion, including promo\_id, title, description, start\_date, and end\_date. The CouponAssign table acts as a bridge between Users and Coupons, while Coupons is linked to Promotions, establishing relationships between the entities in the system.

## 5.0 MVC Framework Design

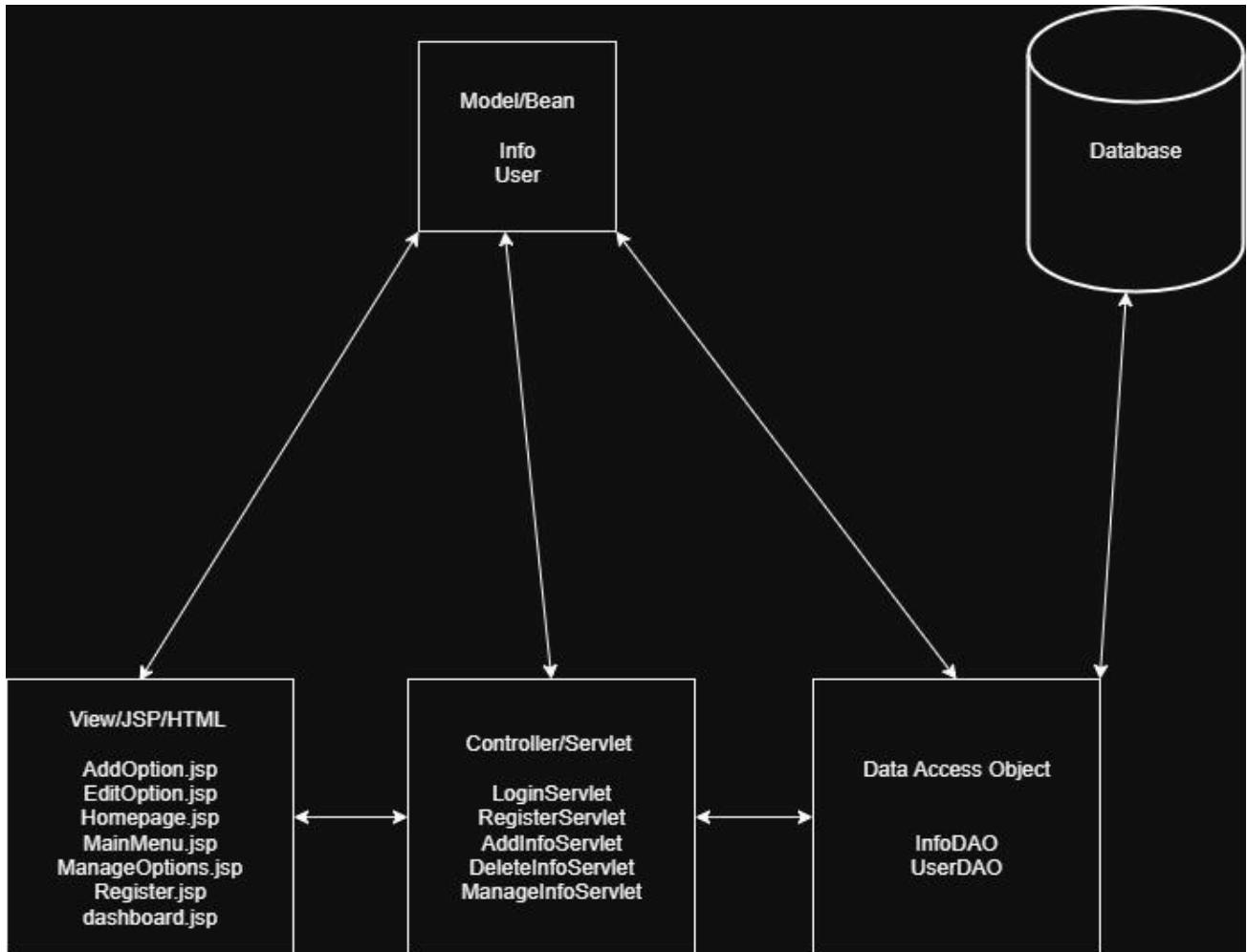


Figure 2.0 shows the Model View Controller (MVC) Framework Design for the Discount & Coupon Management Portal

## 6.0 USER MANUAL

### 1.0 Login Page

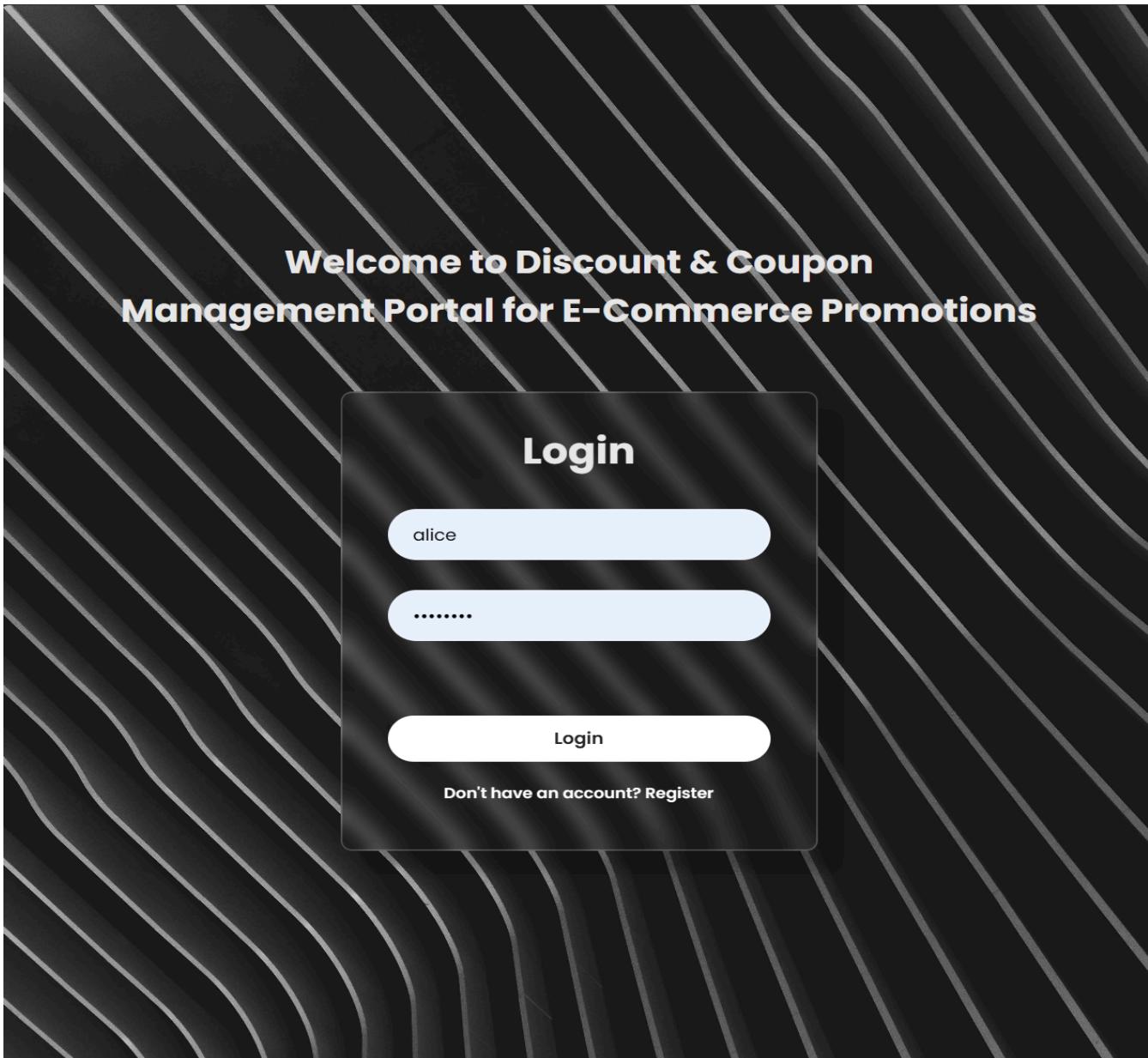


Figure 1.0 shows the Login Page, in this page Users must insert their username and password in the form and click the “Login” button to enter into the website. If they haven't registered yet, they can click on the “Don't have an account? Register” button to access Register Page

## 2.0 Register Page

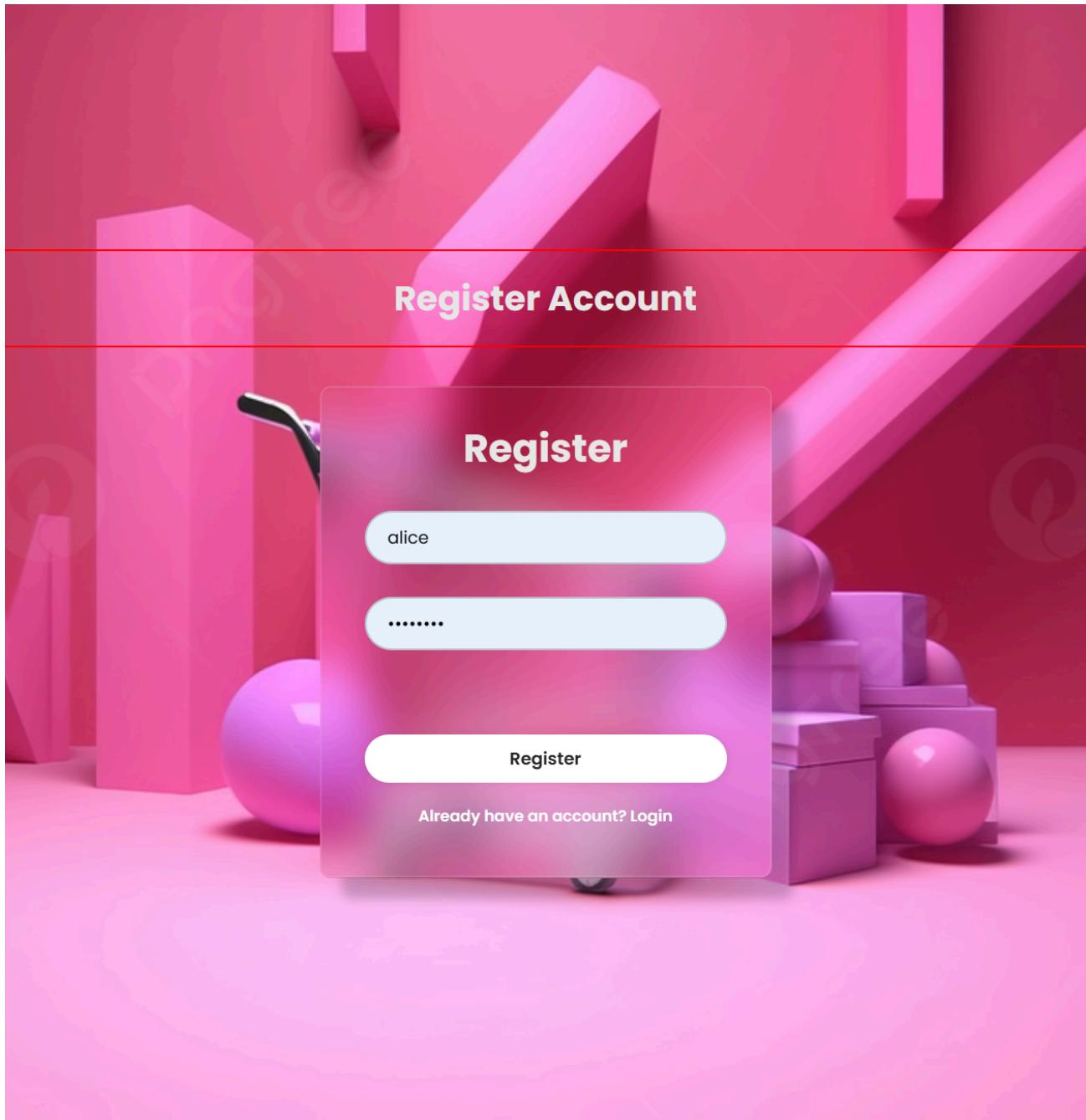


Figure 2.0 shows the Register Page, in this page user can enter their desired username and password to register as a new user. When they have registered, they can proceed with login by clicking “Already have an account? Login” button.

### 3.0 Homepage

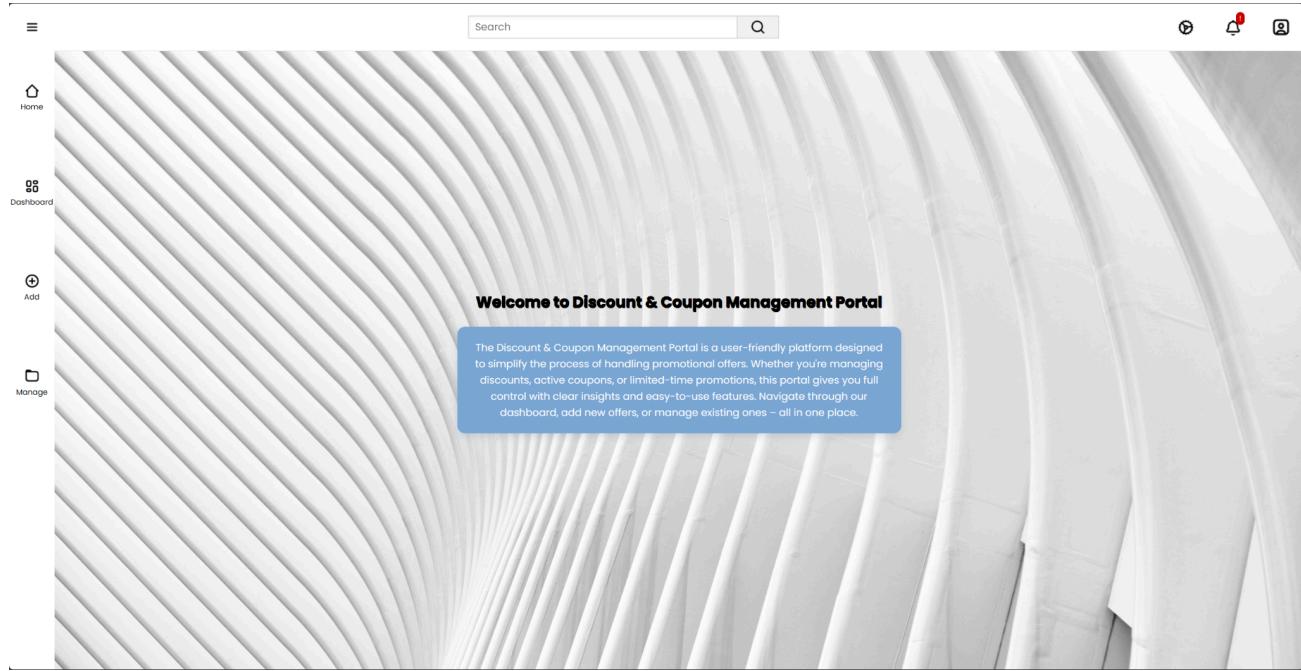


Figure 3.0 shows when users are greeted with a welcome message in the homepage when they login into the system. There are four side navigation bars in the web which are Home, Dashboard, Add page and Manage Page.

## 4.0 Dashboard page

The dashboard page features a header with two summary boxes: 'Coupons' (2) and 'Promotions' (2). Below this, there are two main sections: 'List of Coupons' and 'List of Promotions', each containing a table with specific details.

**List of Coupons**

Coupon Code	Discount	Expiry Date
50OFF	50%	2025-12-31
35DAYS	35%	2025-07-31

**List of Promotions**

Promotion Title	Description	Valid Until
Merdeka Sale	Need scream "MERDEKA" to earn the promotion price.	2025-08-31
Raya Sale	Sepasang baju raya dengan harga sebelai baju raya	2025-09-11

Figure 4.0 shows the Dashboard page. In this page, users can see list of coupons and promotions that are currently available in the system database

## 5.0 Add Page

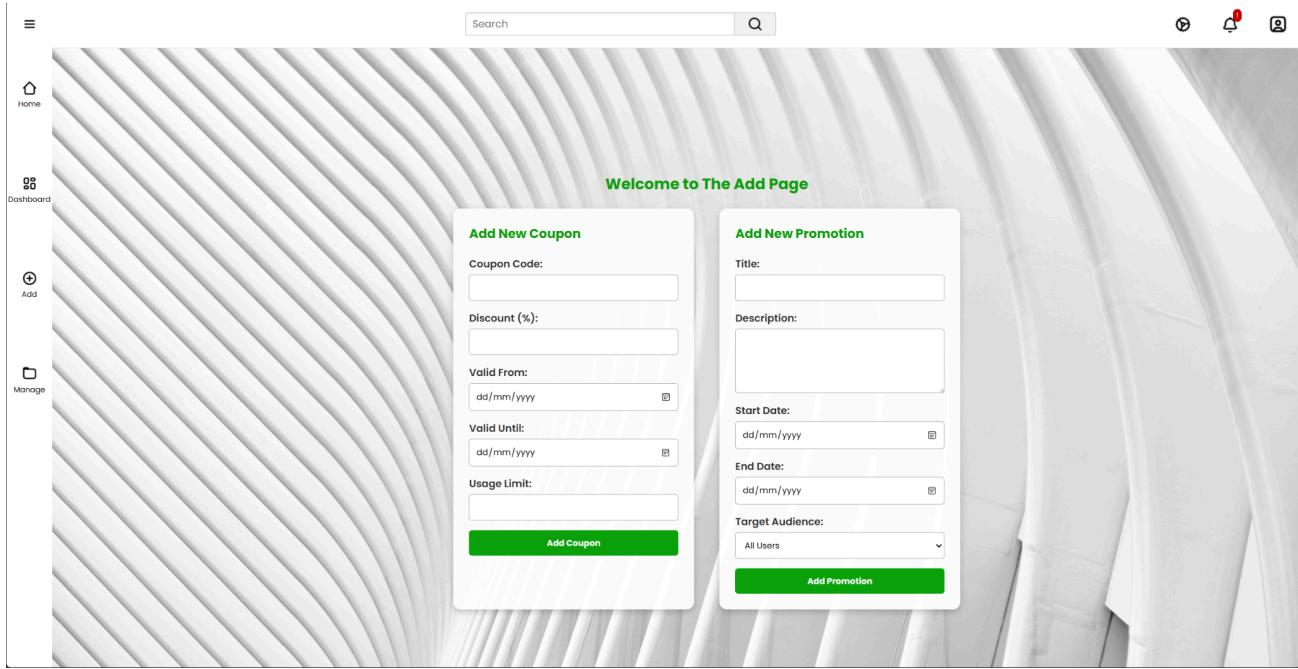


Figure 5.1 shows the Add Page. In this page user can add new coupons or promotions into the system.

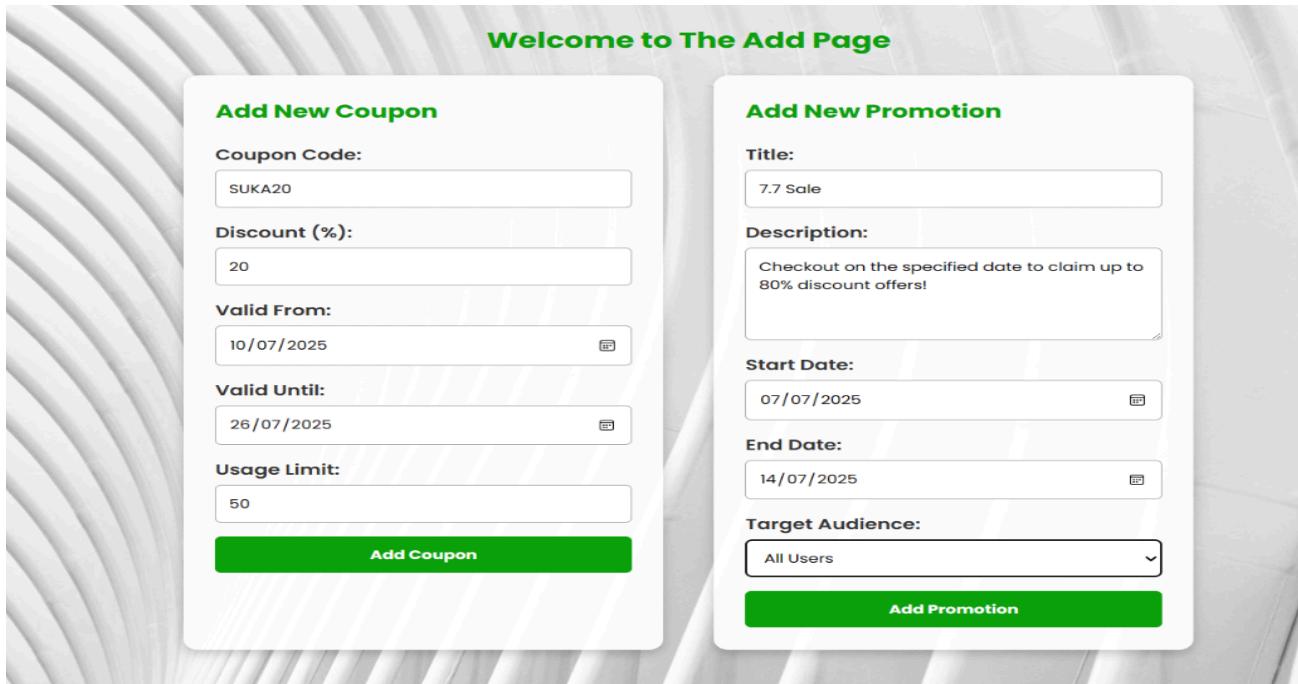


Figure 5.2 shows when user insert necessary details like Coupon Code, date, title, etc. into the form to add a new coupon or promotion. Added coupons and promotions will be shown in the dashboard.

The screenshot displays a user interface for managing promotional offers. At the top, there are two summary boxes: 'Coupons' (3) and 'Promotions' (3). Below these are two sections: 'List of Coupons' and 'List of Promotions', each containing a table with specific details.

**List of Coupons**

Coupon Code	Discount	Expiry Date
50OFF	50%	2025-12-31
35DAYS	35%	2025-07-31
SUKA20	20%	2025-07-26

**List of Promotions**

Promotion Title	Description	Valid Until
Merdeka Sale	Need scream "MERDEKA" to earn the promotion price.	2025-08-31
Raya Sale	Sepasang baju raya dengan harga sehelai baju raya	2025-09-11
7.7 Sale	Checkout on the specified date to claim up to 80% discount offers!	2025-07-14

Figure 5.3 shows the newly added coupons and promotions inside the system

## 6.0 Manage Page

The screenshot shows a user interface for managing promotions and coupons. On the left, there is a sidebar with icons for Home, Dashboard, Add, and Manage. The main area has a search bar at the top. Below it, a section titled "Welcome To the Manage Page" contains two tables: "Manage Promotions" and "Manage Coupons".

**Manage Promotions**

Title	Description	Start Date	End Date	Actions
Merdeka Sale	Need scream "MERDEKA" to earn the promotion price.	2025-07-09	2025-08-31	Edit   Delete
Raya Sale	Sepasang baju raya dengan harga sehingga baju raya	2025-07-09	2025-09-11	Edit   Delete
7.7 Sale	Checkout on the specified date to claim up to 80% discount offers!	2025-07-07	2025-07-14	Edit   Delete

**Manage Coupons**

Code	Discount	Valid From	Valid Until	Actions
50OFF	50%	2025-07-09	2025-12-31	Edit   Delete
35DAYS	35%	2025-07-09	2025-07-31	Edit   Delete
SUKA20	20%	2025-07-10	2025-07-26	Edit   Delete

Figure 6.1 shows the Manage Page, user can either delete or edit the coupons and promotions inside the page by clicking the “Edit” or “Delete” button.

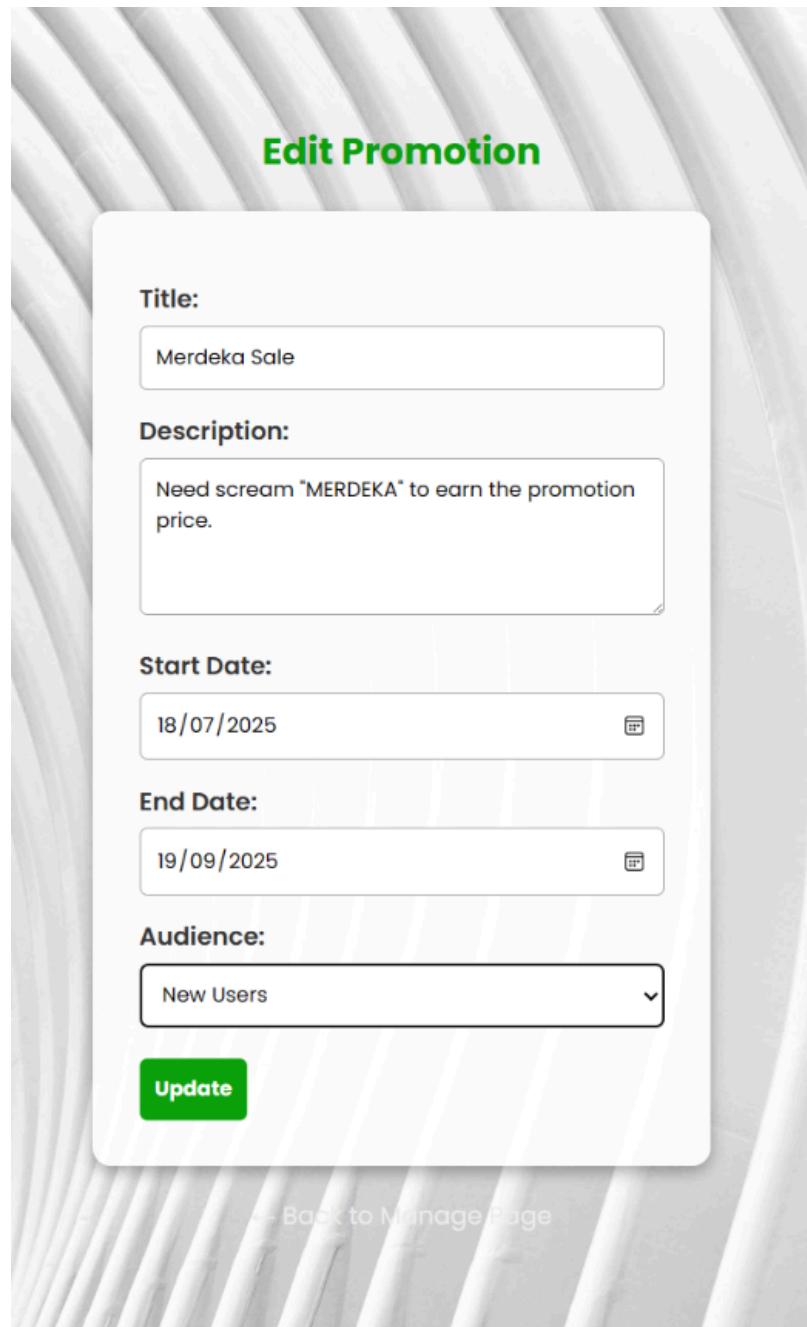


Figure 6.2 shows the user can edit the desired information of the promotion. For example, user can change the date from 9/7/2025 - 31/8/2025 to 18/7/2025 - 19/9/2025 and change the audience from "All Users" to "New Users". Click on the Update button to update the information of the promotion.

Welcome To the Manage Page				
Successfully updated promotion.				
Manage Promotions				
Title	Description	Start Date	End Date	Actions
Merdeka Sale	Need scream "MERDEKA" to earn the promotion price.	2025-07-18	2025-09-19	Edit   Delete
Raya Sale	Sepasang baju raya dengan harga sehelai baju raya	2025-07-09	2025-09-11	Edit   Delete
7.7 Sale	Checkout on the specified date to claim up to 80% discount offers!	2025-07-07	2025-07-14	Edit   Delete

Figure 6.3 shows the updated date for the “Merdeka Sale” promotion

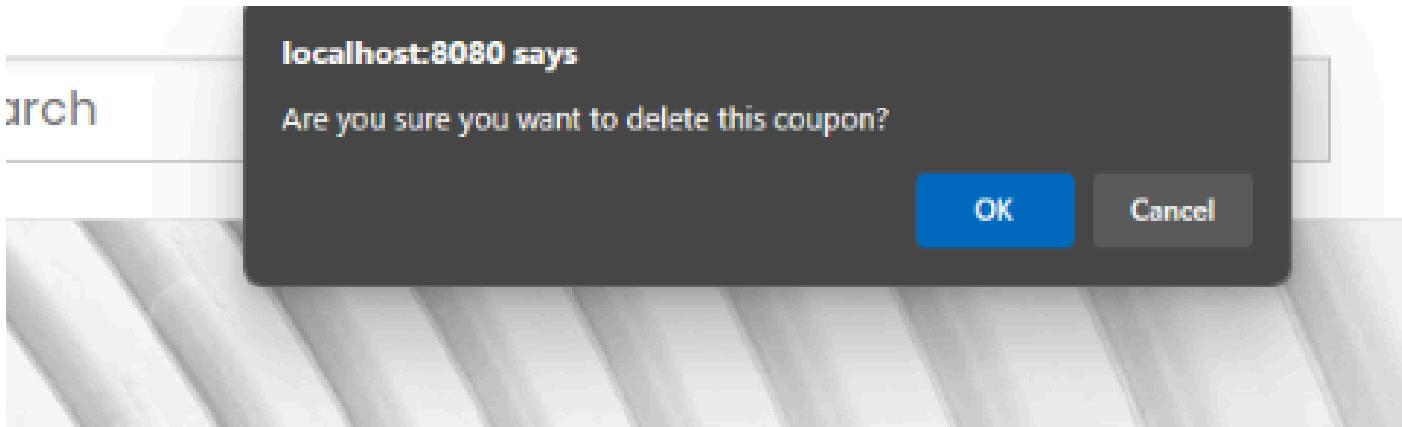


Figure 6.4 shows a popup when the user click on the Delete button on a coupon asking for their confirmation before deleting the coupon.

Manage Coupons				
Code	Discount	Valid From	Valid Until	Actions
50OFF	50%	2025-07-09	2025-12-31	Edit   Delete
35DAYS	35%	2025-07-09	2025-07-31	Edit   Delete

Figure 6.5 shows the updated coupons table with “SUKA20” coupon being deleted from the system.

## **7.0 CONCLUSION**

The Discount & Coupon Management Portal offers a comprehensive solution to the fragmented and error-prone practices of traditional coupon handling. By centralizing the creation, distribution, and tracking of all promotional offers, it empowers marketing teams to design complex campaigns with confidence, while ensuring customers receive accurate and timely incentives. Real-time analytics and a flexible rule engine enable data-driven decision making and rapid iteration, maximizing return on promotional spend. Role-based access and audit trails ensure operational security and compliance. Ultimately, this portal not only streamlines internal workflows and reduces manual effort, but also delivers a seamless, trustworthy experience for end users—driving engagement, loyalty, and revenue growth across all sales channels.