

# FACULTY OF COMPUTING




**BCS2243**

**WEB ENGINEERING**

**SEMESTER I 2024/2025**

**TITLE** : *Web Engineering Group Project*  
**SECTION** : 02  
**LECTURER** : DR NOORLIN BINTI MOHD ALI

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<b>1. PROBLEM STATEMENT .....</b>	<b>3</b>
<b>2. PROPOSED SOLUTION.....</b>	<b>3</b>
<b>5. PROJECT REQUIREMENTS .....</b>	<b>15</b>
<b>6. PROPOSED DESIGN.....</b>	<b>17</b>
<b>7. DATA DESIGN.....</b>	<b>21</b>
<b>8. VISUAL DESIGN.....</b>	<b>34</b>
<b>Presentation Model - MODULE 1 .....</b>	<b>34</b>
<b>Presentation Model – MODULE 2 .....</b>	<b>39</b>
<b>Presentation Model – MODULE 3 .....</b>	<b>42</b>
<b>Presentation Interface .....</b>	<b>45</b>
<b>MODULE 1.....</b>	<b>45</b>
<b>Presentation Interface .....</b>	<b>48</b>
<b>MODULE 2.....</b>	<b>48</b>
<b>Presentation Interface .....</b>	<b>50</b>
<b>MODULE 3.....</b>	<b>50</b>
<b>9. SYSTEM USER INTERFACE (UI) .....</b>	<b>52</b>
<b>MODULE 1.....</b>	<b>52</b>
<b>MODULE 2.....</b>	<b>55</b>
<b>MODULE 3.....</b>	<b>58</b>
<b>10. TESTING PLAN.....</b>	<b>59</b>
<b>11. DEPLOYMENT PLAN .....</b>	<b>61</b>
<b>12. TEAM MANAGEMENT.....</b>	<b>62</b>
<b>REFERENCE.....</b>	<b>63</b>
<b>APPENDIX .....</b>	<b>64</b>

## **1. PROBLEM STATEMENT**

In today's digital age, university students rely heavily on electronic devices for research, communication, and project management. However, despite the growing prevalence of digital resources, there remains a significant need for printing services in the daily academic life of students. Printing is essential for producing hard copies of assignments, research papers, lecture notes, and reference materials. These physical copies are often required for submission, presentation, and study purposes, where printed documents may provide easier access and better organization compared to digital formats.

Furthermore, in collaborative academic environments, printed materials facilitate group discussions, note-taking, and the sharing of information in a tangible form, enhancing the learning experience. Despite advancements in digital technologies, the demand for accessible, affordable, and reliable printing services remains crucial. Students face challenges when print facilities are inadequate, costly, or difficult to access, which disrupts academic productivity and efficiency.

Thus, the problem lies in the lack of sufficient, cost-effective, and easily accessible printing services that cater to the diverse and frequent needs of university students. Ensuring the availability of reliable printing services on campus is vital for maintaining academic excellence, supporting learning activities, and ensuring students have the tools they need to succeed in their studies.

## **2. PROPOSED SOLUTION**

The **UMPSA Koop Printing Management System (RapidPrint)** is a web-based platform that integrates the functionalities outlined in the four modules. It is designed to digitize the university's printing services, ensuring efficiency, transparency, and convenience for students, staff, and administrators. Below, the proposed solution is elaborated with direct references to the four modules provided:

## **Module 1: Login, Manage Koperasi Branch, and Printing Package**

### **1. Centralized User Access and Role-Based Authentication:**

- The system will feature a login page for different types of users: students, UMPSA Koop staff, and administrators.
- Students (both undergraduate and postgraduate) will use their credentials to access personalized dashboards, while administrators and staff will have access to role-specific functionalities.
- Role-based permissions ensure users only interact with the components relevant to their responsibilities.

### **2. Branch Management:**

- Administrators can manage details for UMPSA Koop branches in Gombang and Pekan, including adding or updating branch-specific information such as operational hours and available printing services.

### **3. Printing Package Management:**

- Administrators can add, modify, or deactivate printing packages (e.g., A4 color printing, booklet binding, etc.) based on availability or machine maintenance.
- The system will display these packages dynamically to students, and temporarily disabled options will be indicated to prevent failed orders.

### **4. Administrator Dashboard for Insights:**

- Administrators will have access to analytics and reports on branch activity, popular printing packages, and trends, presented through graphs and charts. This facilitates better decision-making regarding resource allocation and service optimization.

## **Module 2: Manage User and Membership Points**

### **1. User Registration and Verification:**

- Students will create accounts by submitting their student ID for verification. The system will allow the administrator to approve or reject registrations based on valid documentation.
- Verified students gain full access to the system, while unverified users remain restricted to browsing printing options.

### **2. User Profile Management:**

- Students can update their profiles, including contact information, password settings, and membership details.

- Administrators can manage all user profiles, including deactivating accounts if required.

### **3. Membership Card System with Points Accumulation:**

- Upon registration, students receive a digital membership card with a unique QR code.
- For every transaction, students accumulate points based on their spending, which can be redeemed for discounts or free printing. For example, "Earn 1 point for every RM1 spent."
- Points balance can be tracked via the dashboard, encouraging frequent usage of UMPSA Koop services.

### **4. User Dashboard with Personal Insights:**

- Students will see their order history, accumulated points, and membership benefits in a personalized dashboard.
- Graphical insights, such as a monthly breakdown of printing expenses or points earned, provide added value.

## **Module 3: Manage Order and Payment**

### **1. Order Submission and Tracking:**

- Students can upload files, select printing options (e.g., color, size, quantity), and submit orders via the system.
- A real-time order tracker will update the status of their orders (e.g., "Order Received," "Printing in Progress," "Ready for Pickup").
- Students will receive notifications when their orders are completed or if issues arise, such as machine breakdowns.

### **2. Payment Options:**

Flexible payment methods include:

- Using membership points (e.g., redeeming 100 points for RM10 off printing).
- Online payment through integration with banking APIs.
- Cash payment upon pickup at the branch.

Upon payment, a QR code will be generated as proof of purchase and can be scanned at the branch for order collection.

### **3. Administrator Dashboard for Financial Insights:**

- Administrators will view branch-specific and overall financial performance, such as total sales and payment trends.

- Graphical insights will aid in identifying peak order times and optimizing staff scheduling.

## **Module 4: Manage Printing**

### **1. Order Management by UMPSA Koop Staff:**

- Staff will have a dedicated module to view all incoming orders, update order statuses (e.g., "Printing in Progress"), and manage invoices.
- Staff can modify or cancel orders in case of errors or requests from students.

### **2. Order Completion and Pickup:**

- Once printing is completed, the status will be updated to "Order Complete." Upon student collection, the status will change to "Collected."
- This transparent workflow ensures that all stakeholders remain informed and reduces miscommunication.

### **3. Reward System for Staff:**

- A built-in rewards program incentivizes staff based on monthly printing sales performance; For example, staff achieving over RM350 in sales receive RM120 as a bonus.
- Staff dashboards will display total sales and bonuses earned for the month. A QR code linking to a detailed performance report can be scanned for additional insights.

### **4. Staff Dashboard with Operational Metrics:**

- Staff will access order processing metrics, such as the total number of completed orders or pending tasks, ensuring accountability and efficiency.

These modules are evenly distributed among our group members as shown in the table below.

Group Member	Module
Muhamad Aliff Aiman Bin Shahni	Module 1 – Login, Manage Koperasi branch and printing package
Afiq Zahiruddin Bin Abdullah Taibi	Module 2 – Manage user and membership point
Muhammad Nur Aiman Bin Ali	Module 3 – Manage order and payment
Everyone	Module 4 – Manage printing

The four modules work cohesively to streamline UMPSA Koop's printing services.

- **For Students:**  
Students enjoy a seamless experience from order submission to pick up. The membership system and rewards program encourage loyalty, while dashboards provide valuable insights into their activities.
- **For Staff:**  
Staff can efficiently manage orders and track their performance metrics, with incentives motivating them to improve service quality.
- **For Administrators:**  
Administrators gain comprehensive oversight of operations, branch performance, and customer behavior, enabling data-driven decisions for service optimization.

Through this integration, the RapidPrint system not only addresses the challenges in the current manual workflow but also establishes a scalable platform for UMPSA Koop's long-term growth and operational excellence.

### 3. REVIEW OF TWO EXISTING SYSTEMS

## Staples Print & Marketing Services (<https://www.staples.com/services/printing/>)

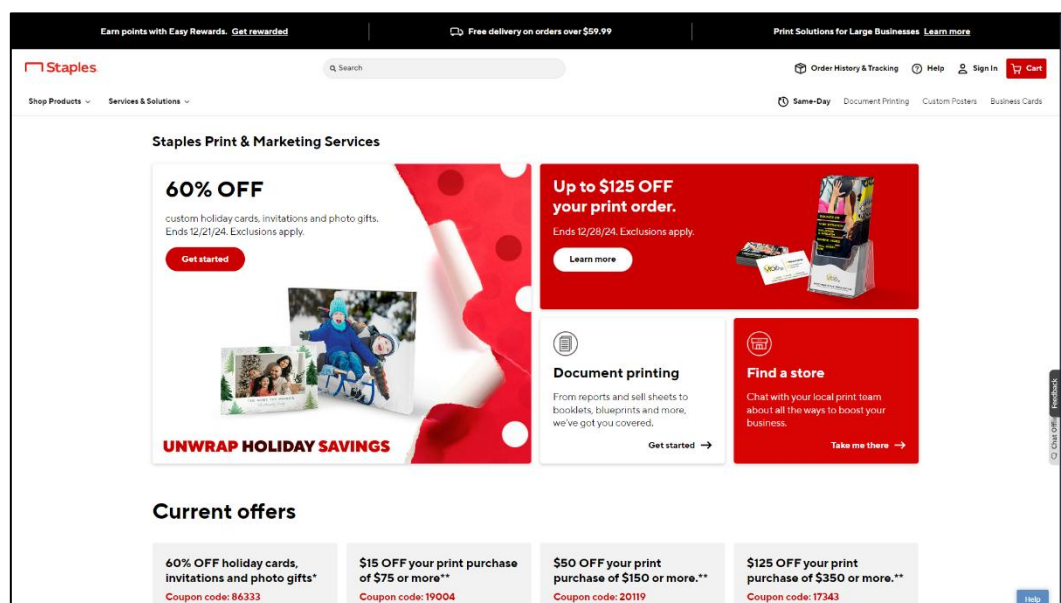
Staples is a leading provider of printing and marketing solutions, offering both in-store and online services for individual and business customers. Its printing services are well-known for their accessibility, efficiency, and customization options.

### Key Features:

- **Online Document Submission:** Customers can upload files directly through the website and select printing preferences (e.g., color, paper type, and binding).
- **Branch Pickup or Delivery:** Users can opt for local branch pickup or delivery to their preferred location.
- **Order Tracking:** The system provides real-time tracking of order status, ensuring transparency.
- **Custom Printing Solutions:** Offers a wide range of printing services, from business cards and brochures to large-scale banners and promotional items.
- **Payment Flexibility:** Customers can pay online using credit/debit cards or at the branch during pickup.

### Relevance to RapidPrint:

Staples' online system highlights the importance of convenience, real-time order tracking, and customized printing options, which RapidPrint can emulate. Additionally, Staples' ability to handle high-volume printing demands makes it a valuable reference for ensuring scalability in RapidPrint.



## FedEx Office Print Services (<https://www.office.fedex.com/default/>)



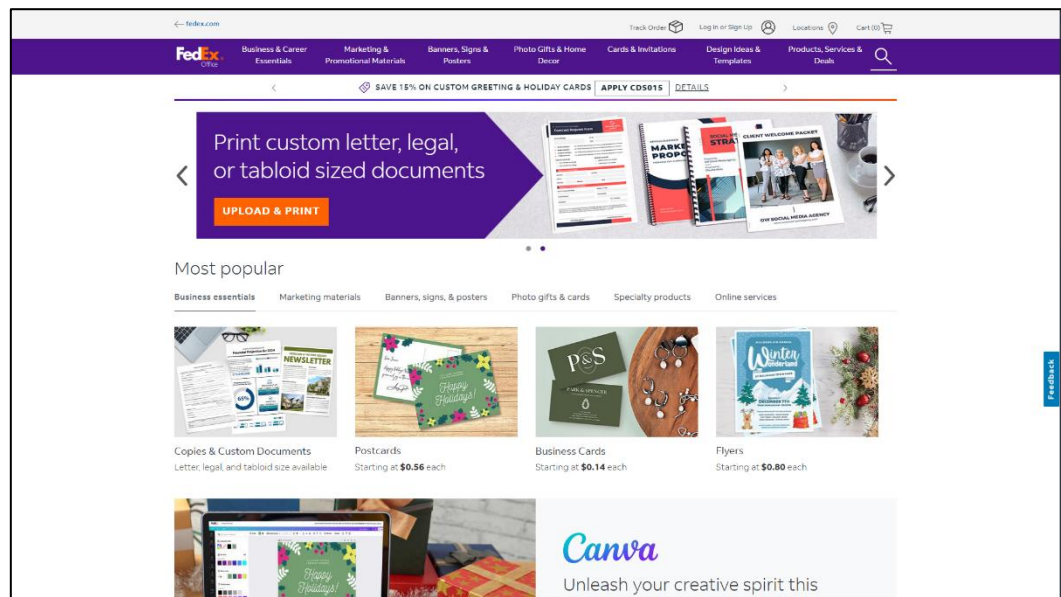
FedEx Office is a globally recognized provider of printing services with a focus on both personal and corporate needs. Its system integrates advanced features to simplify the printing process for users.

### Key Features:

- **Custom Printing Interface:** Customers can upload documents, preview print options, and customize features like size, color, and lamination.
- **Membership Rewards:** FedEx Office offers loyalty points for customers who frequently use their services. Points can be redeemed for discounts or free prints.
- **Mobile App Integration:** FedEx's app allows users to manage orders, track status, and even reorder past jobs.
- **Secure Document Management:** Provides encryption for uploaded files to protect sensitive information.
- **Order Scheduling:** Users can schedule pickup times to avoid waiting in queues.

### Relevance to RapidPrint:

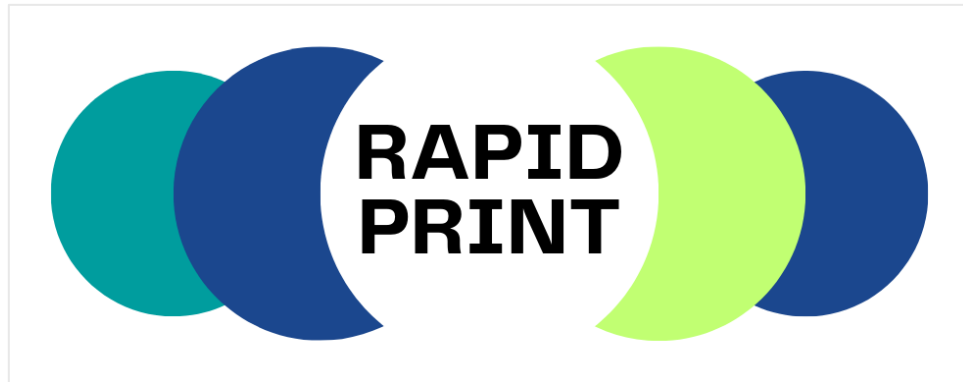
FedEx Office demonstrates the power of a well-integrated loyalty program and mobile access for customer convenience. The emphasis on secure document handling and flexible scheduling is highly applicable to the UMPSA Koop environment, where data privacy and time management are critical.



### Comparison table between the existing web systems and RapidPrint:

<b>Feature</b>	<b>Staples Printing</b>	<b>FedEx Office Printing</b>	<b>RapidPrint (Planned)</b>
Online Order Submission	Yes	Yes	Yes
Membership/Rewards Program	No	Yes	Yes
Secure Document Handling	No	Yes	Yes
Real-Time Order Tracking	Yes	Yes	Yes
Payment Options	Online or In-Store	Online or In-Store	Membership Points or Online
Pickup Scheduling	Yes	Yes	Yes

By analyzing these two systems, RapidPrint can combine the strengths of both: offering comprehensive printing services, robust order management, a loyalty program, and advanced features like real-time tracking and secure document handling.



**Figure 1 - Logo of RapidPrint (UMPSA Koop Printing Management System)**

#### **4. PROJECT MANAGEMENT FRAMEWORK**

The RapidPrint Printing Management System will adopt an Agile style, facilitating iterative development, stakeholder involvement, and ongoing enhancement. The framework comprises the subsequent phases:

##### **Phase 1: Planning (Weeks 1-2)**

- Establish project objectives and delineate scope according to stakeholder requirements.

Establish the development team and allocate roles:

- Project Manager: Supervises project advancement and guarantees prompt communication.
- Developers: Accountable for certain modules (e.g., authentication, user administration).
- Tester: Conducts all testing activities and ensures system reliability.
- Deployment Lead: Oversees hosting and deployment operations.
- Develop a comprehensive timeline (see the Gantt chart).
- Conduct requirement analysis to ensure alignment with stakeholder needs.

##### **Phase 2: Design (Weeks 2-3)**

- Outputs:
  - Use case diagrams, access models, and use case scenarios.
  - UI wireframes for essential components (e.g., login interface, dashboards).
  - Entity-Relationship Diagram (ERD) and data dictionary.

##### **Phase 3: Development (Weeks 3-6)**

- Create distinct modules with CRUD operations:
  - Module 1: Authentication System.
  - Module 2: Management of Users and Memberships.
  - Module 3: Management of Orders and Payments.
  - Consolidate all modules (e.g., authentication, order processing, analytics).
  - Develop a relational database that adheres to the third normal form (3NF).

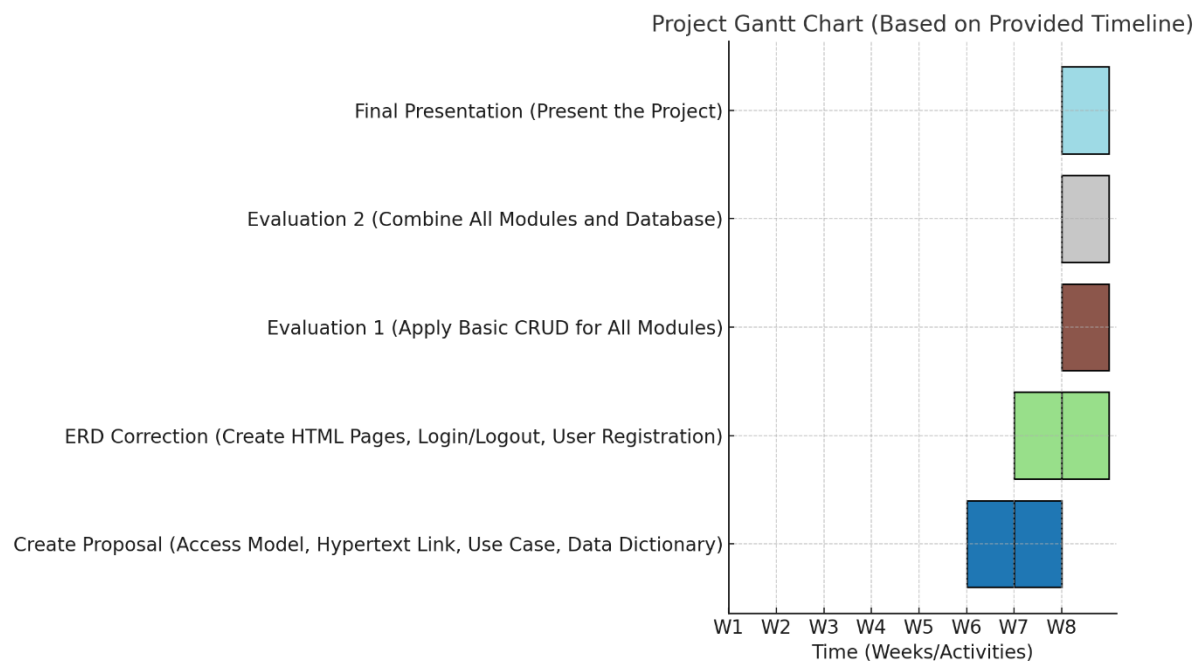
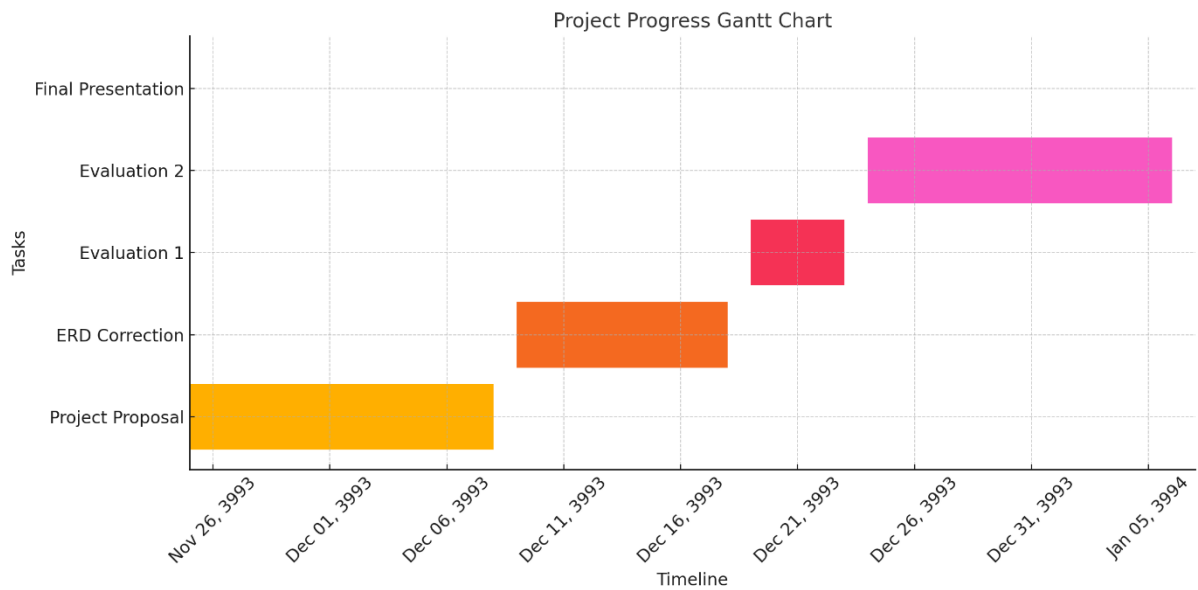
#### **Phase 4: Evaluation (Weeks 6-7)**

- Execution:
  - Unit testing: Validate discrete modules.
  - Integration testing: Evaluate relationships across components.
  - System testing: Verify comprehensive system dependability.
  - Usability evaluation: Analyze user interface and navigation.
  - Performance evaluation: Assess response times and scalability.
  - Execute User Acceptance Testing (UAT) with stakeholders to verify the system's functionality.

#### **Phase 5: Implementation (Weeks 7-8)**

- Deploy the web application on the Indah server or an alternate hosting service.
- Deliver training and documentation for users and stakeholders.
- Collect post-deployment comments and resolve any concerns.

## Development Plan (Gantt Chart)



## 5. PROJECT REQUIREMENTS

### **Functional Requirements**

- **Authentication System**
  - Secure access for three user categories: administrators, customers (students), and staff.
  - Sessions to guarantee secure access and customization (e.g., displaying the user's name upon login).
- **User Management:**
  - Registration of users with student ID verification by the administrator.
  - Profile management, allowing users to update personal details and manage accounts.
  - QR-based membership card generation, enabling customers to track points and make payments.
- **Branch and Printing Package Management:**
  - CRUD operations (Create, Read, Update, Delete) for UMPSA Koop branches.
  - Management of printing packages, including the ability to suspend packages during maintenance.
- **Order and Payment Management:**
  - Customers can browse, filter, select, and confirm printing packages.
  - Support for both cash payments and membership card payments.
  - Automatic generation of QR codes for order confirmation and status tracking.
- **Printing Management:**
  - Staff can manage and update order statuses (e.g., "Order Complete" or "Collected").
  - Automatic generation of invoices for each order.
  - Bonus reward system for staff based on monthly printing sales.
- **Dashboard Reporting:**
  - Graphical reports for administrators (e.g., sales analysis), customers (e.g., order history), and staff (e.g., performance tracking).

## **Non- Functional Requirements**

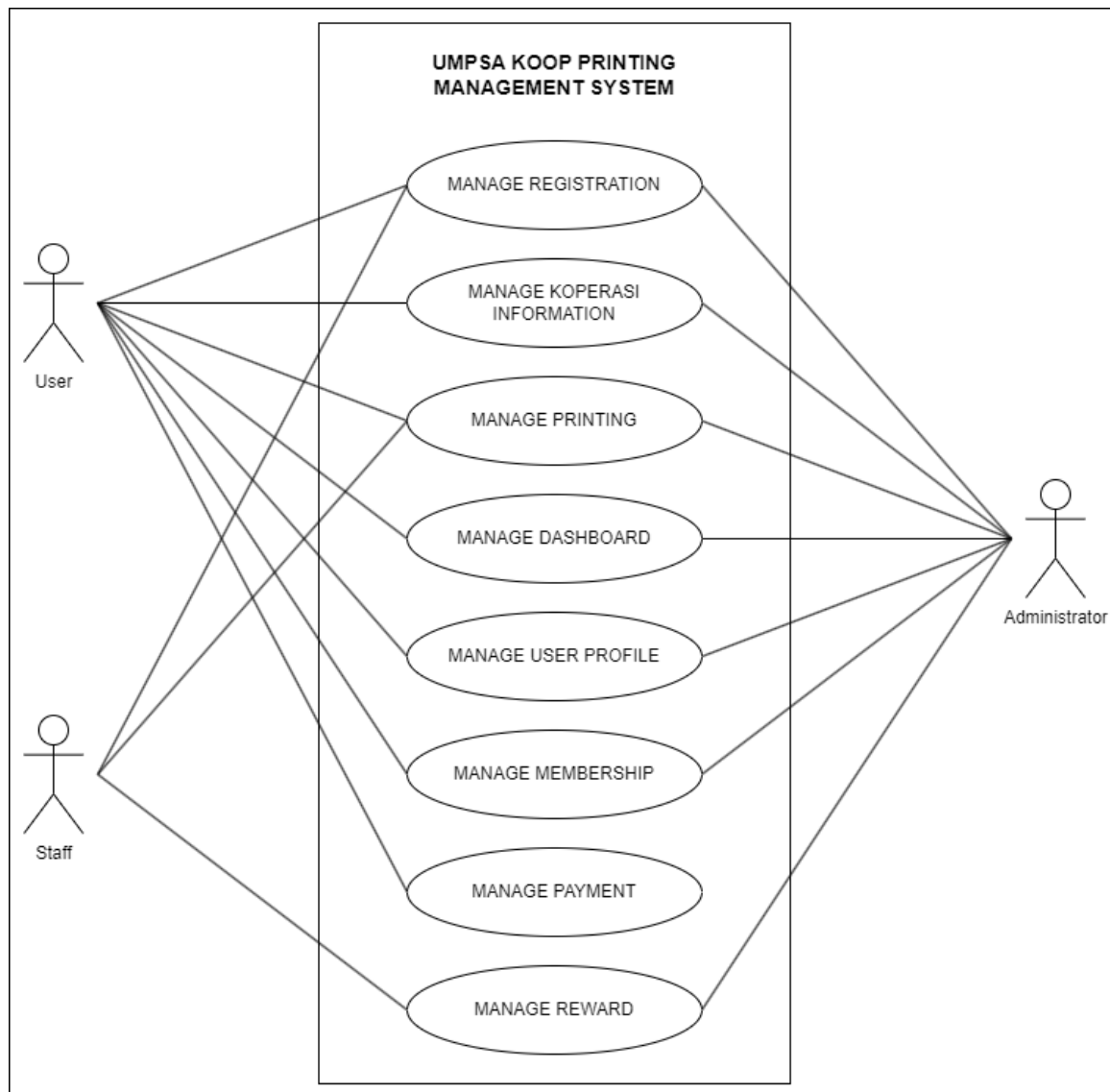
These are the quality standards the system must meet:

- **Performance:**
  - The system should handle concurrent users with minimal response time.
- **Security:**
  - Role-based access control, encrypted data transmission, and secure user authentication.
- **Usability:**
  - A user-friendly interface designed with intuitive navigation and responsiveness for desktop and mobile users.
- **Reliability:**
  - The system should maintain consistent uptime during business hours.
- **Compatibility:**
  - Support for modern web browsers and devices.
- **Scalability:**
  - Ability to add more branches, users, or features without significant redesign.
- **Maintainability:**
  - Well-documented code and database design for easier debugging and updates.



## 6. PROPOSED DESIGN

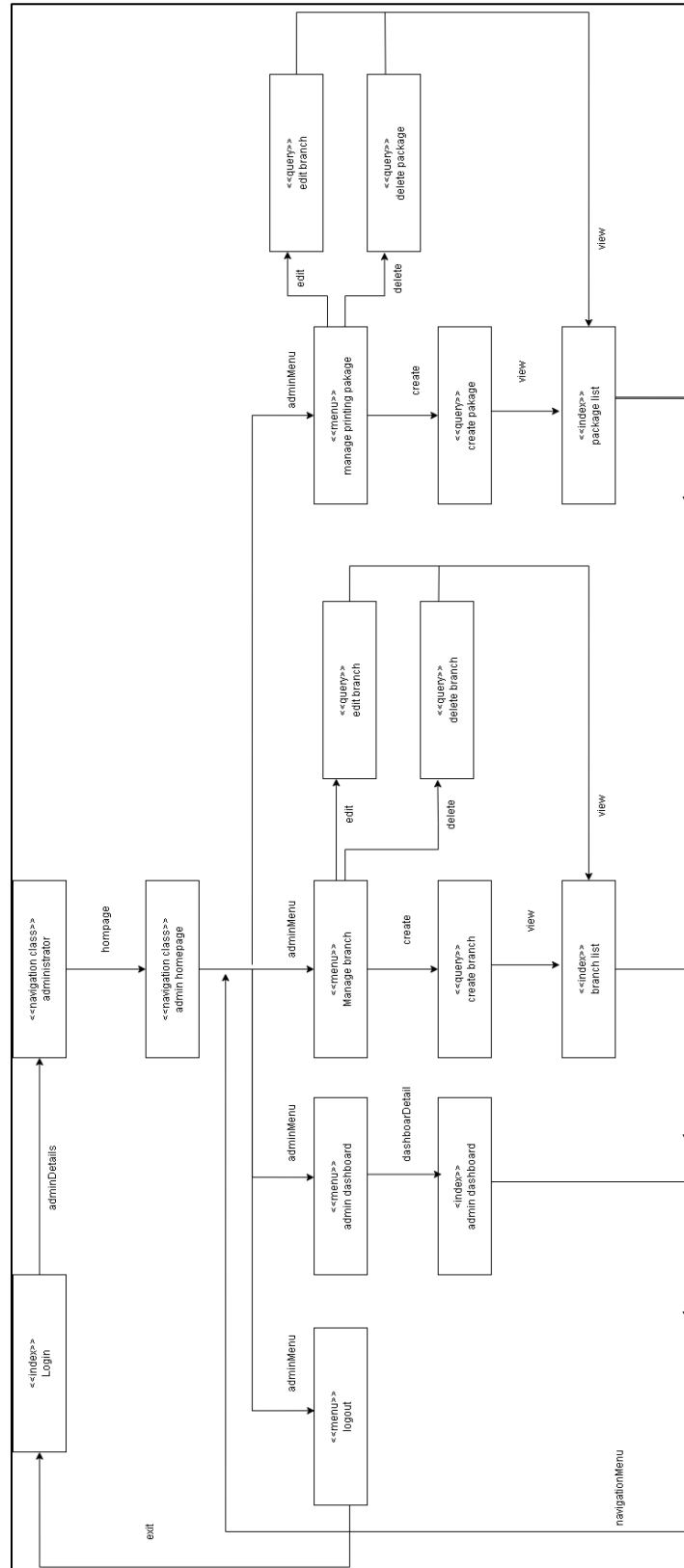
### Use Case Diagram for UMPSA Koop Printing Management System



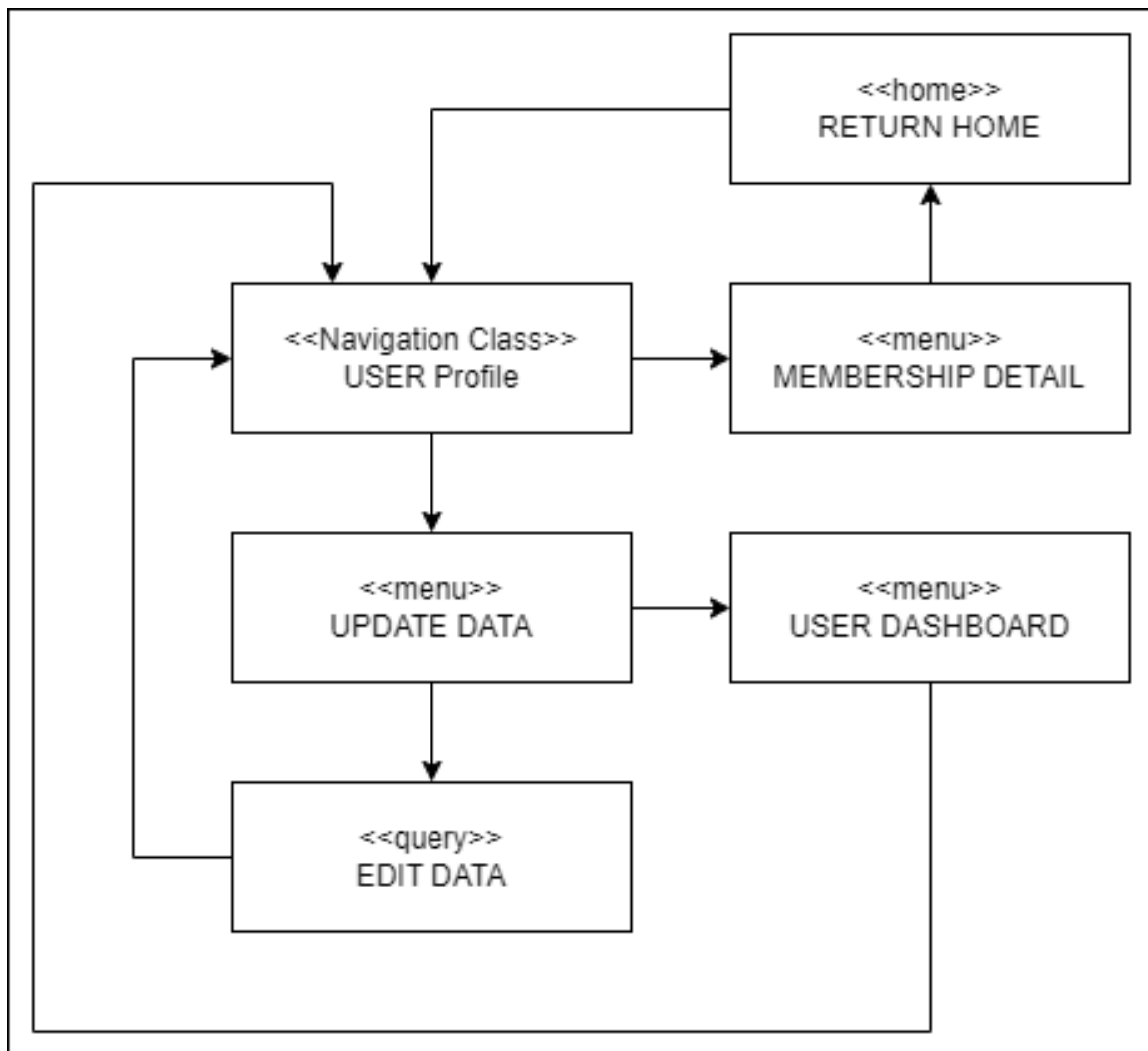
**Figure 2 - Use Case Diagram for RapidPrint System**

## Access Model

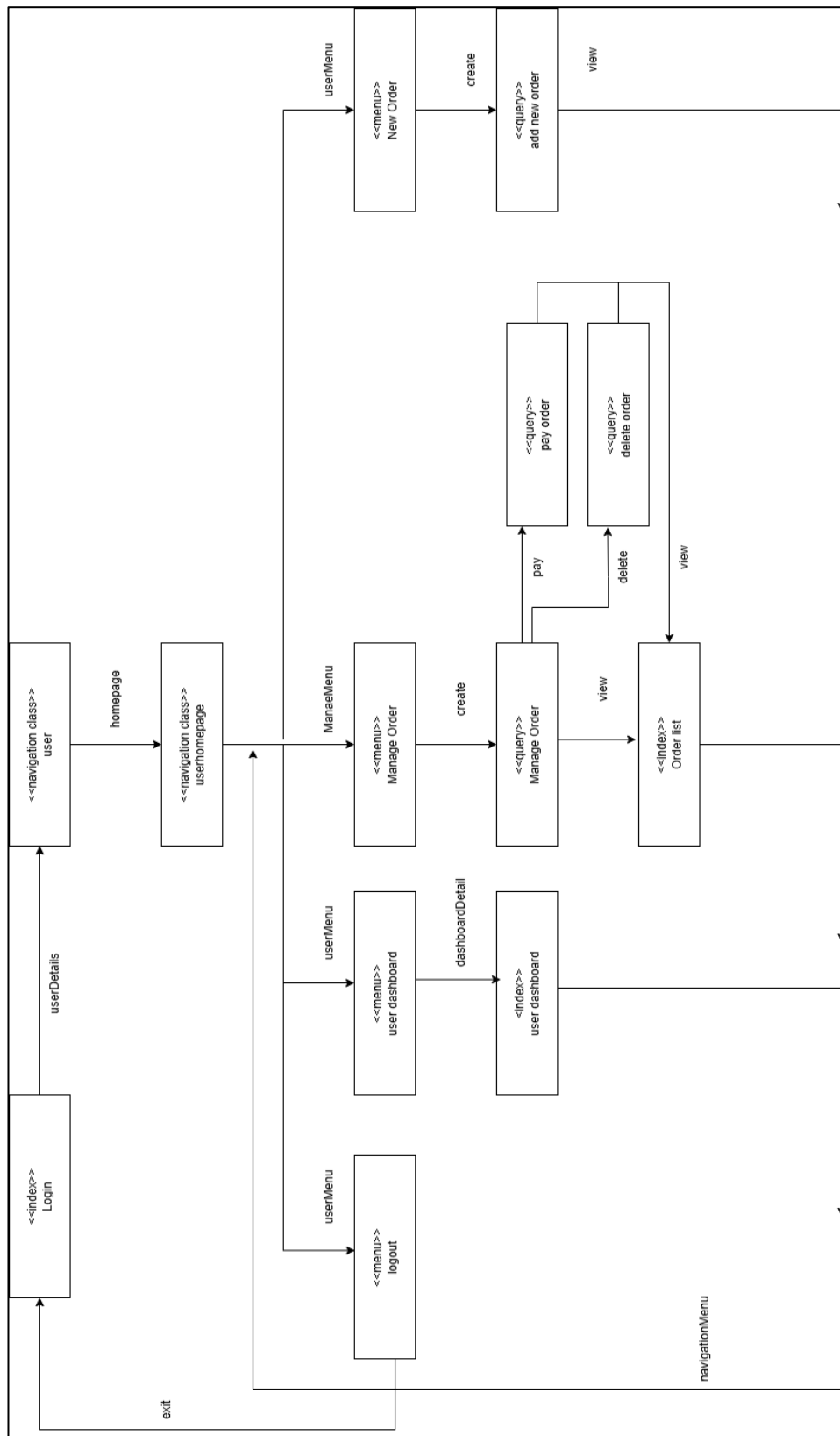
### MODULE 1



## MODULE 2



## MODULE 3



## 7. DATA DESIGN

### Data Dictionary and Sample Data

#### MODULE 1

##### User Table

Field name	Data Type	Description	Constraints	Sample Data
id	INT(11)	Unique identifier for each user	PK	1
username	VARCHAR (255)	Login username for the user	Unique, Not Null	Aliff Aiman
matricid	VARCHAR (50)	User matric id	Not Null	CA21036
email	VARCHAR (255)	Email address of the user	Unique, Non-null, Valid format	Admin@gmail.com
password	VARCHAR (255)	User password with hash	Not Null	@*^@^((@((
campus	VARCHAR (50)	Campus of user (Gambang or Pekan).	Default: Active	Active
role	VARCHAR (50)	Role of the user (Administrator, Staff, Customer).	Not Null	Admin

**Branch Table**

Field name	Data Type	Description	Constraints	Sample Data
BranchID	INT	Unique identifier for each branch	PK	1
BranchName	VARCHAR(100)	Name of the Koperasi branch.	Unique, Not Null	GKOOOP
Location	VARCHAR(255)	Physical address of the branch.	Not Null	Gambang
Status	VARCHAR(25)	Indicates if the branch is operational.	Default: Active	Active

**Package Table**

Field name	Data Type	Description	Constraints	Sample Data
PackageID	INT	Unique identifier for each printing package.	Primary Key, Auto Increment	1
PackageName	VARCHAR(100)	Name of the printing package.	Not Null, Unique	Premium
Price	DECIMAL(10,2)	Cost of the printing package.	Not Null	1.00
Description	TEXT	Details about the printing package.	Nullable	Mahal
Status	ENUM(Active, Suspended)	Indicates if the package is available or suspended.	Default: Active	Active

## **MODULE 2**

### **1. User Registration**

Field Name	Data Type	Description	Constraints	Sample Data
user_id	Integer (Primary Key)	Unique identifier for each user.	Auto-increment, Non-null	101
username	String (50)	Username for the account.	Unique, Non-null, Max 50 chars	ahmad_azmi
password	String (255)	Encrypted password for user account.	Non-null	5f4dcc3b5aa765d61d8327deb882cf99
email	String (100)	Email address of the user.	Unique, Non-null, Valid format	ahmad.azmi@student.my
student_card	Binary	Uploaded copy of the student card for verification.	Non-null	binary_data
status	Enum	Status of the user's verification process.	Default: Pending	Approved
registered_by	String (50)	Administrator who registered the user.	Non-null	admin_halim
registration_date	DateTime	Timestamp of when the user was registered.	Non-null, Auto-generated	2024-11-20 14:30:00

### **2. User Profile Management**

Field Name	Data Type	Description	Constraints	Sample Data
user_id	Integer (Foreign Key)	Unique identifier linking to the user_id in registration.	Non-null	101
first_name	String (50)	First name of the user.	Non-null, Max 50 chars	Ahmad
last_name	String (50)	Last name of the user.	Non-null, Max 50 chars	Azmi
phone_number	String (15)	Contact number of the user.	Optional	+60123456789

address	String (255)	Residential address of the user.	Optional	No. 45, Jalan Bukit Bintang, Kuala Lumpur
profile_picture	Binary	Profile picture of the user.	Optional	binary_data
last_updated_by	String (50)	Administrator who last updated the profile.	Non-null	admin_rahman
last_updated_date	DateTime	Timestamp of the last profile update.	Non-null	2024-11-25 10:15:00

### 3. RapidPrint Membership Card

Field Name	Data Type	Description	Constraints	Sample Data
membership_id	Integer (Primary Key)	Unique identifier for the membership card.	Auto-increment, Non-null	5001
user_id	Integer (Foreign Key)	Link to the user_id in user registration.	Non-null	101
qr_code	String (255)	QR code for the membership card.	Unique, Non-null	QR5001azmi123
balance	Decimal (10, 2)	Money balance on the membership card.	Default: 0.00	150.00
points	Integer	Total points accumulated by the customer.	Default: 0	45
membership_status	Enum	Status of the membership (e.g., Active, Cancelled).	Default: Active	Active
creation_date	DateTime	Timestamp of when the membership was created.	Non-null, Auto-generated	2024-11-22 16:00:00
cancellation_date	DateTime	Timestamp of membership cancellation (if applicable).	Optional	NULL

### 4. User Dashboard

Field Name	Data Type	Description	Constraints	Sample Data
dashboard_id	Integer (Primary Key)	Unique identifier for each dashboard record.	Auto-increment, Non-null	3001



user_id	Integer (Foreign Key)	Link to the user_id in user registration.	Non-null	101
total_orders	Integer	Total number of printing orders made by the user.	Default: 0	12
total_spent	Decimal (10, 2)	Total amount of money spent by the user.	Default: 0.00	380.75
total_points	Integer	Total points accumulated by the user.	Default: 0	45
recent_activity	JSON	Logs of recent activities (e.g., orders, top-ups).	Optional	[{"order_id": 2001, "date": "2024-11-25"}]
report_generated	Binary	Generated reports in graphical formats (e.g., charts).	Optional	binary_chart_data
last_updated_date	DateTime	Timestamp of the last dashboard update.	Non-null	2024-11-26 08:45:00

### **MODULE 3**

#### **1.Users Table**

Attribute	Data Type	Description	Constraints	Sample
user_id	INT	Unique identifier for a user	Primary Key, Auto Increment	101
user_type	ENUM	Type of user (e.g., "Student," "Administrator")	NOT NULL	Student
name	VARCHAR(255)	Full name of the user	NOT NULL	Aman
email	VARCHAR(255)	User's email address	UNIQUE, NOT NULL	Aimanm12@gmail.com
phone_number	VARCHAR(20)	Contact number	NULLABLE	01245567
points_balance	INT	Membership points available for redemption	DEFAULT 0	234

## 2. Orders Table

Attribute	Data Type	Description	Constraints	Sample
order_id	INT	Unique identifier for an order	Primary Key, Auto Increment	123
user_id	INT	ID of the user who placed the order	Foreign Key (Users.user_id)	435252
file_url	VARCHAR(255)	Path/URL to the uploaded file	NOT NULL	C:/download
print_options	JSON	Stores print options (color, size, quantity)	NOT NULL	color
status	ENUM	Status of the order (e.g., "Received," "In Progress," "Ready for Pickup")	NOT NULL	In Progress
created_at	TIMESTAMP	Date and time of order submission	DEFAULT CURRENT_TIMESTAMP	12/2/2024

## 3. Payments Table

Attribute	Data Type	Description	Constraints	Sample
payment_id	INT	Unique identifier for a payment	Primary Key, Auto Increment	1234
order_id	INT	Associated order ID	Foreign Key (Orders.order_id)	1232134
amount	DECIMAL(10,2)	Total payment amount	NOT NULL	RM43
payment_method	ENUM	Method of payment (e.g.,	NOT NULL	Online

		"Points," "Online," "Cash")		
qr_code	VARCHAR(255 )	QR code generated as proof of payment	NULLABLE	Screensho t
payment_date	TIMESTAMP	Date and time of payment	DEFAULT CURRENT_TIMESTAMP	12/2/2024

#### 4. Notifications Table

Attribute	Data Type	Description	Constraints	Sample
notification_id	INT	Unique identifier for a notification	Primary Key, Auto Increment	aman12
user_id	INT	ID of the user receiving the notification	Foreign Key (Users.user_id)	12334
message	TEXT	Notification content/messag e	NOT NULL	Successful 1
created_at	TIMESTAM P	Date and time of notification	DEFAULT CURRENT_TIMESTAMP	12/7/2024
read_status	BOOLEAN	Whether the notification has been read	DEFAULT FALSE	

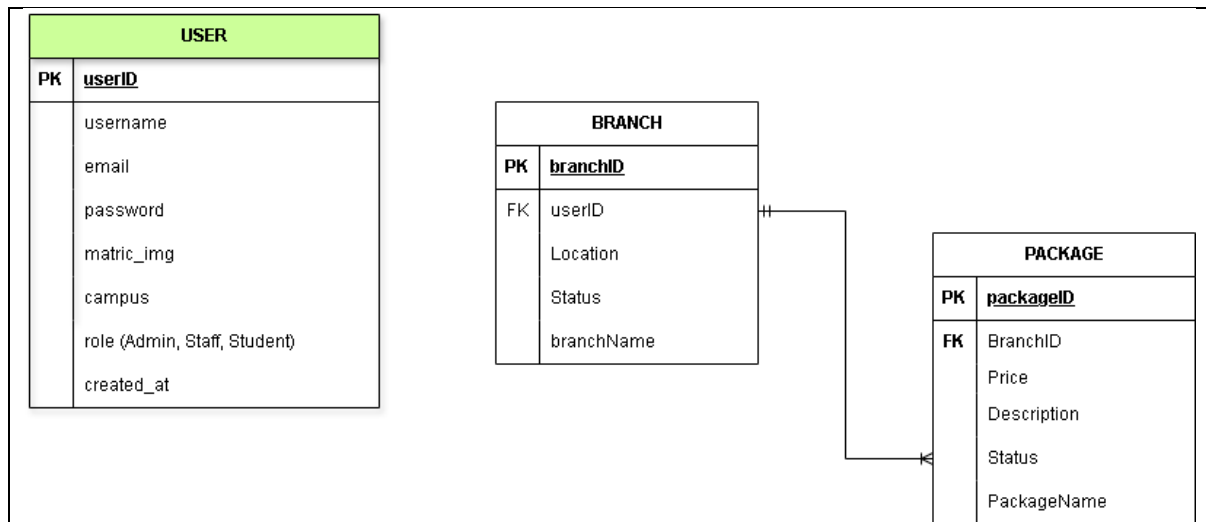
#### 5. orderLineTable

Attribute	Data Type	Description	Constraints	Sample
orderLineID	INT	Unique identifier for a orderLine	Primary Key, Auto Increment	12
orderId	INT	Unique identifier for a orderId	Foreign Key (orders.orderID)	12
packageID	INT	Unique identifier for a packageID	Foreign Key (package.packageID)	1

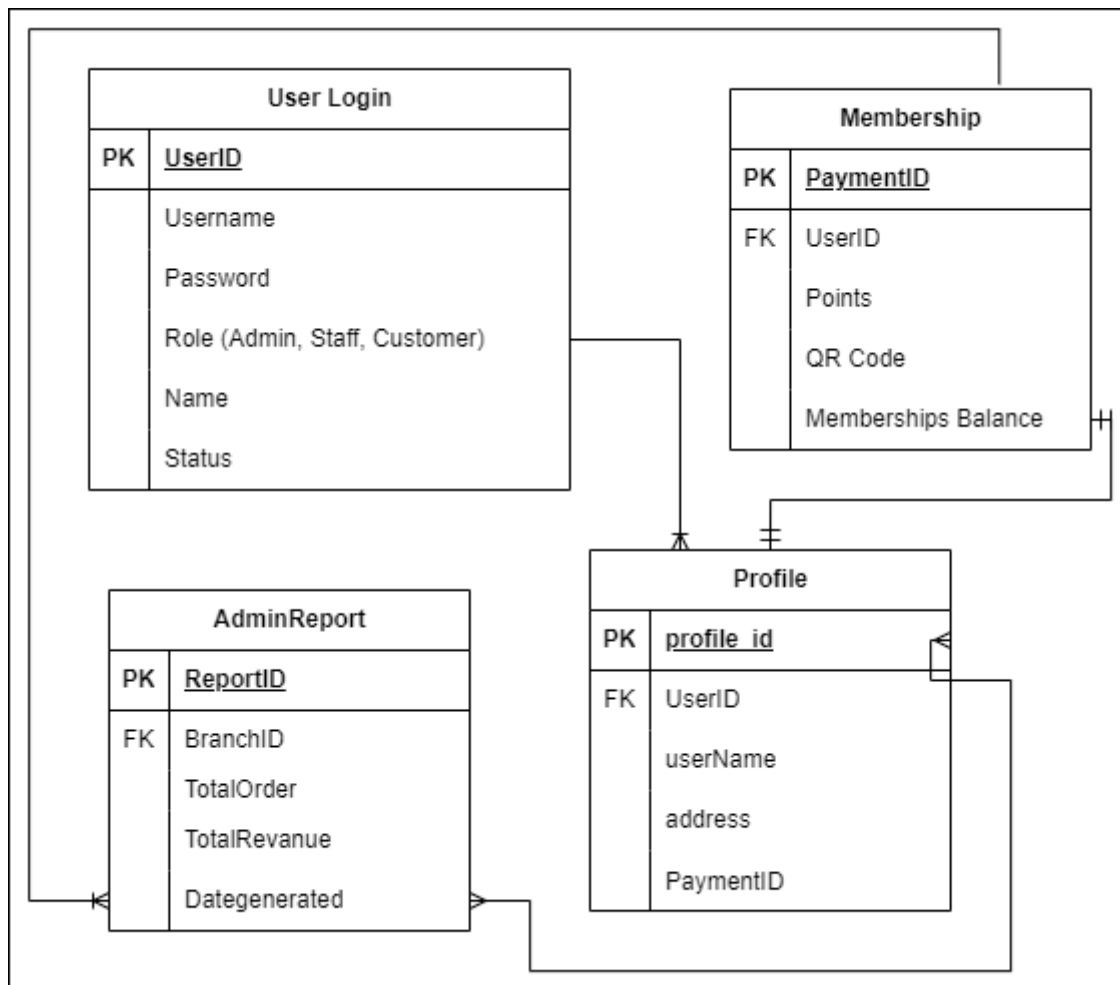
quantity	INT	Quantity of a orderline		20
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## Entity Relationship Diagram

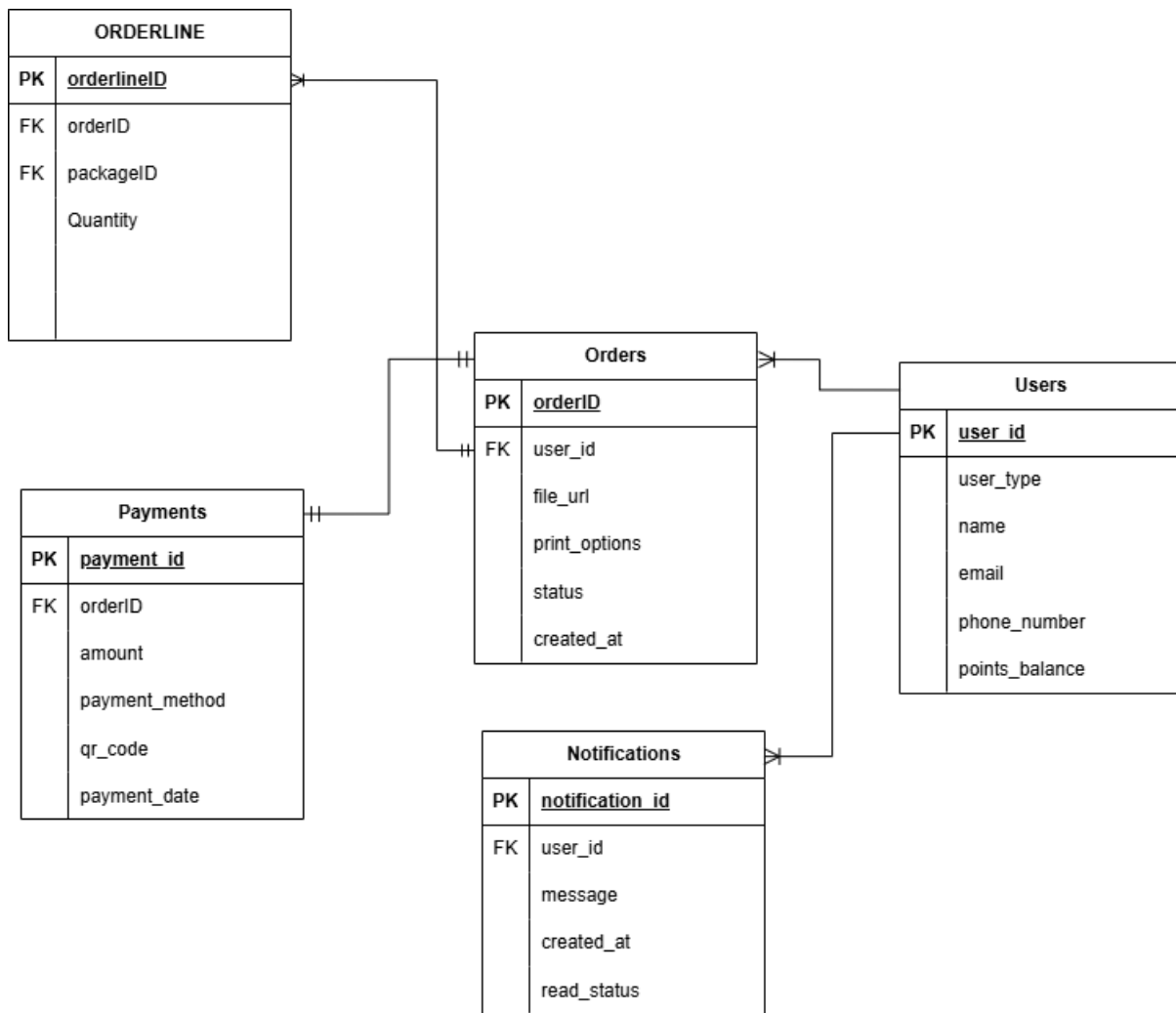
### MODULE 1



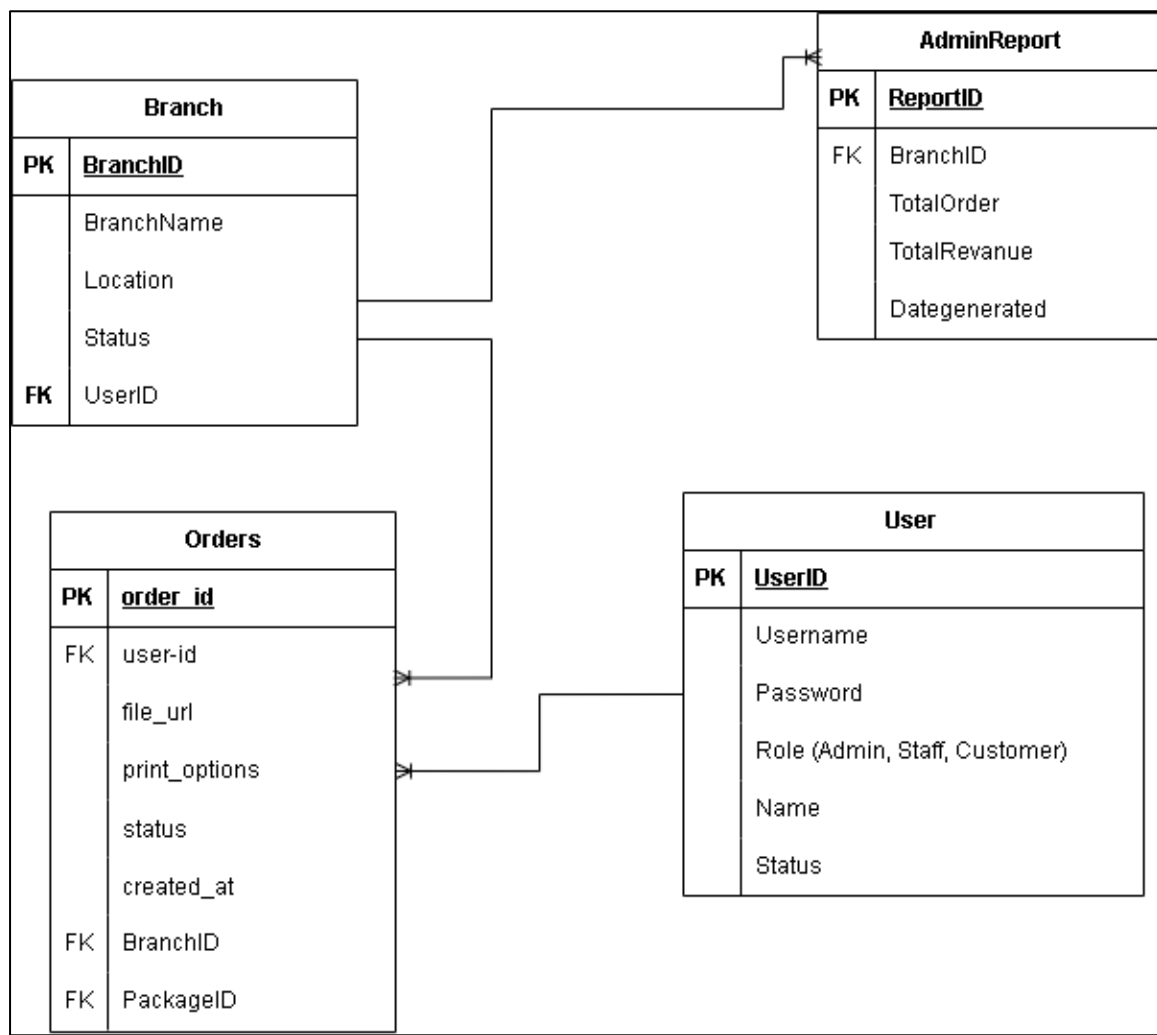
## MODULE 2



### **MODULE 3**

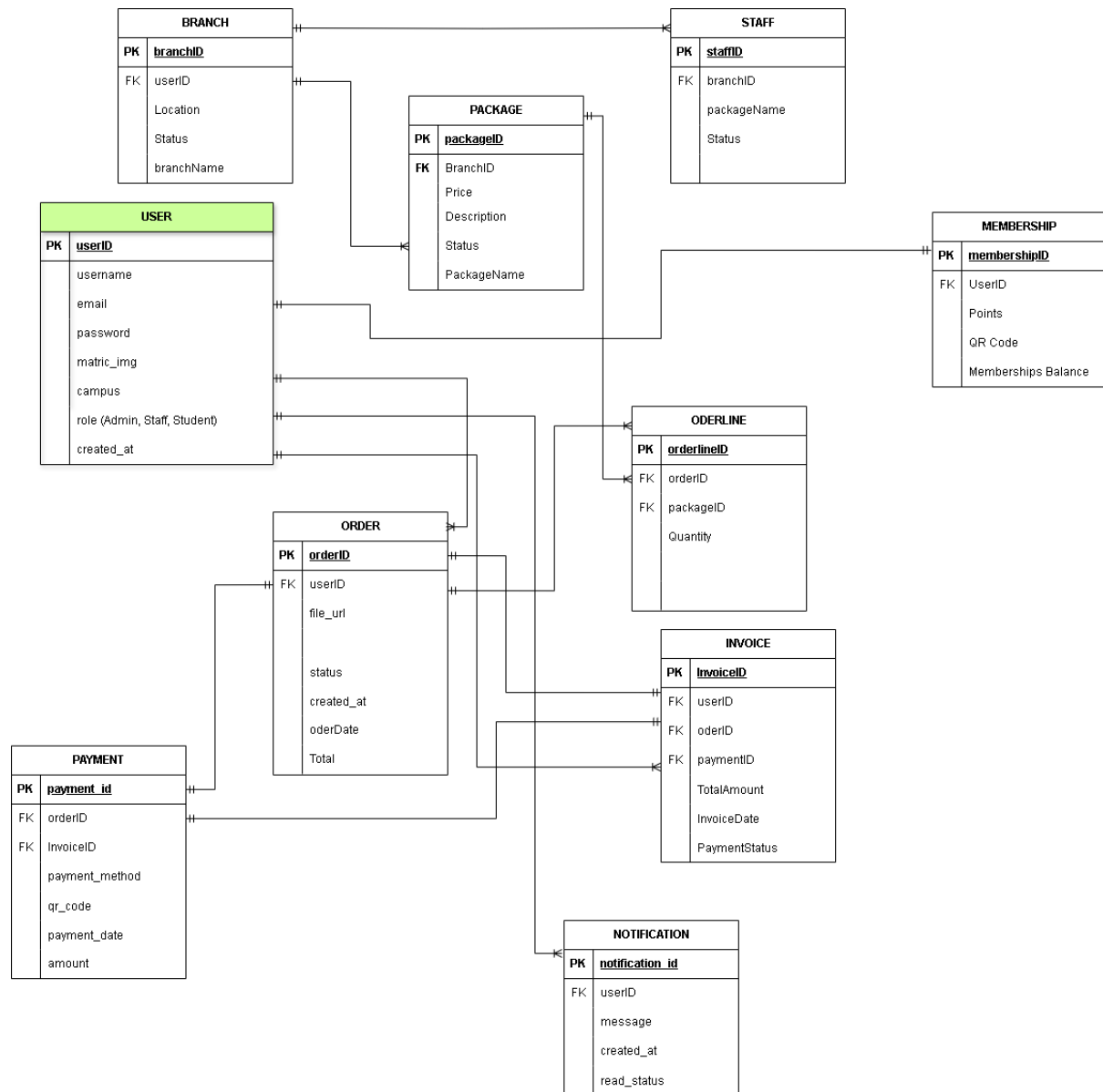


## MODULE 4



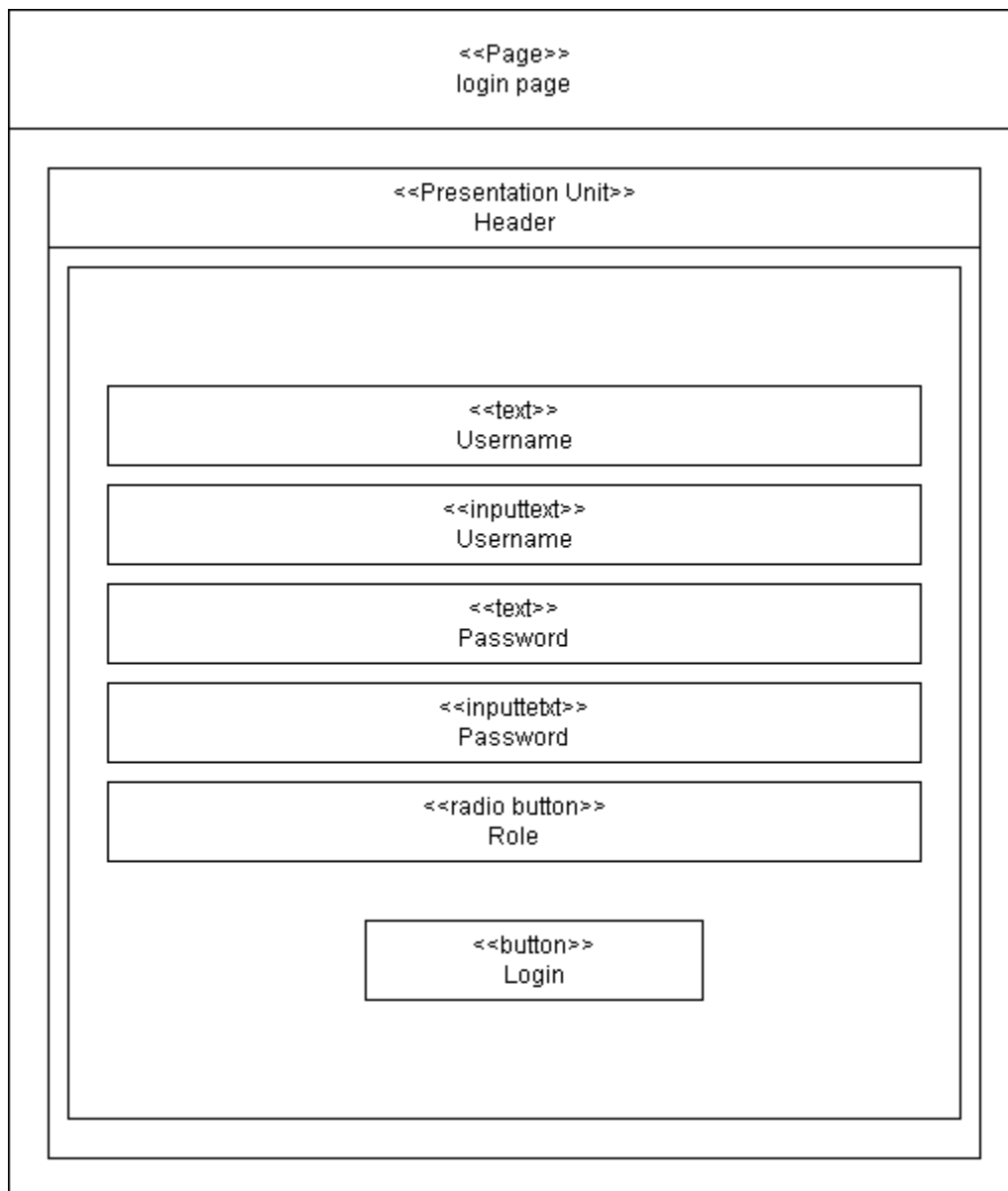


## ERD COMBINED

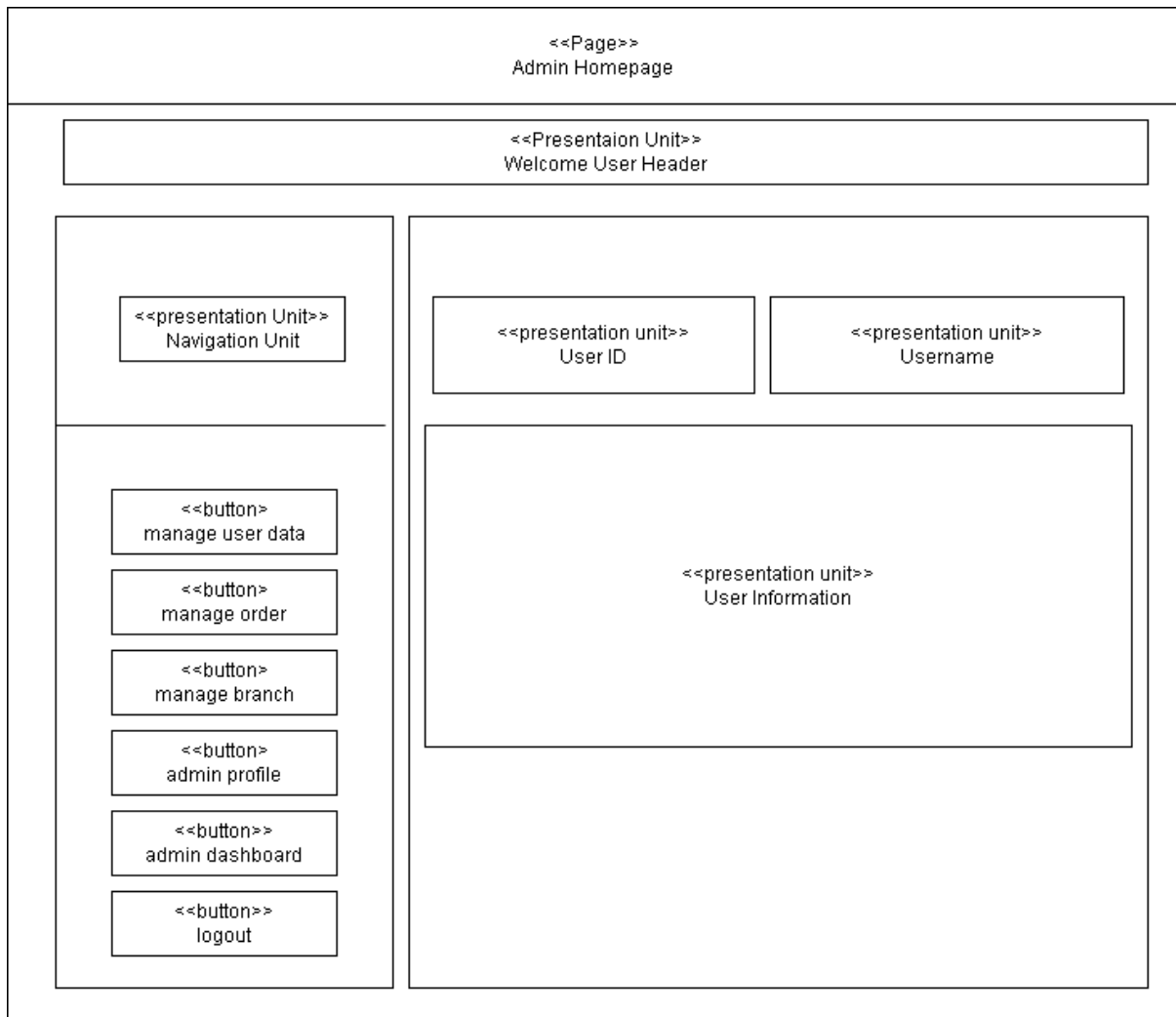


## 8. VISUAL DESIGN

### Presentation Model - MODULE 1



*Figure 3 Presentation Model: Login*



*Figure 4 Presentation Model: (Homepage)*

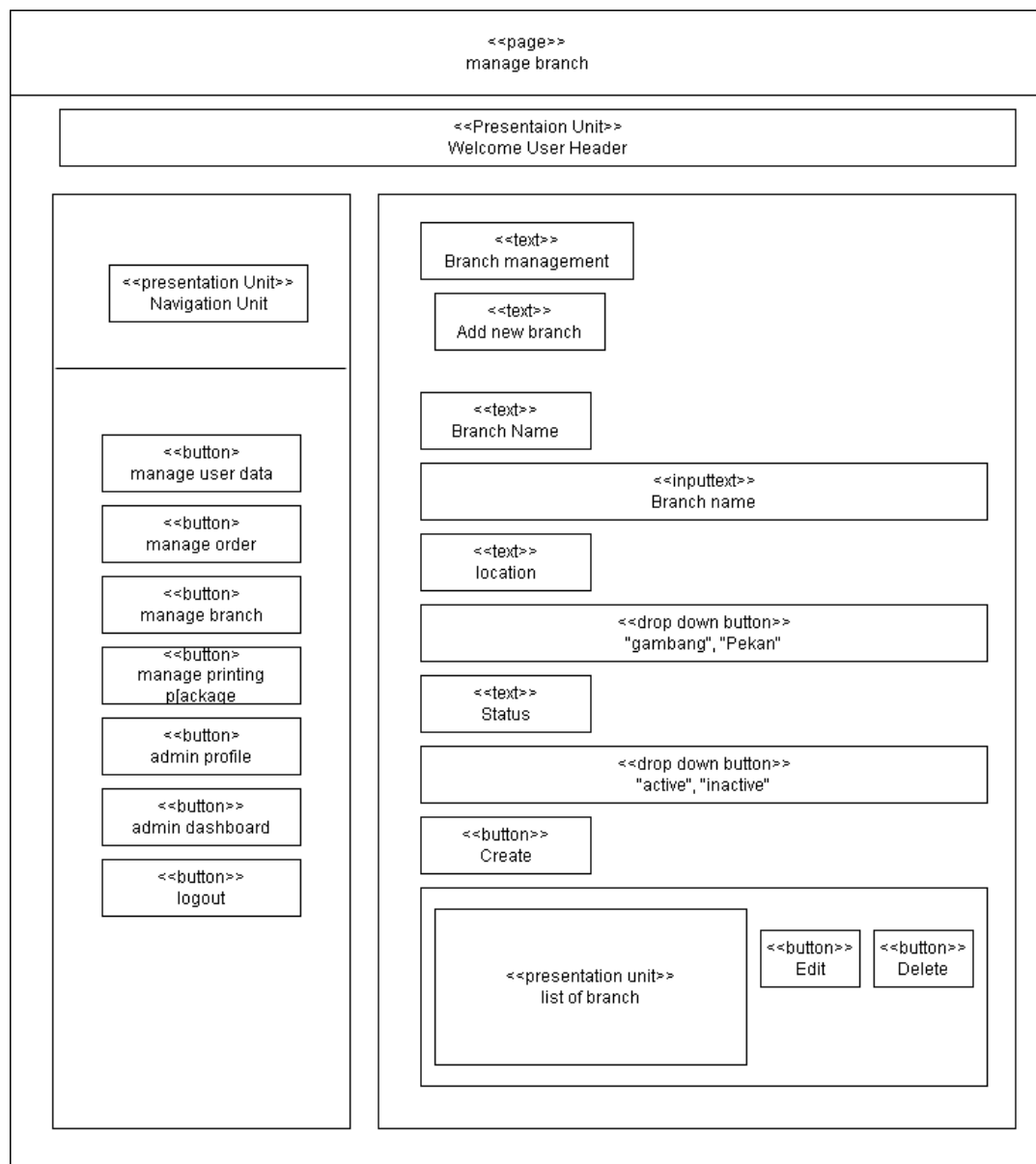


Figure 5: Presentation model Manage branch

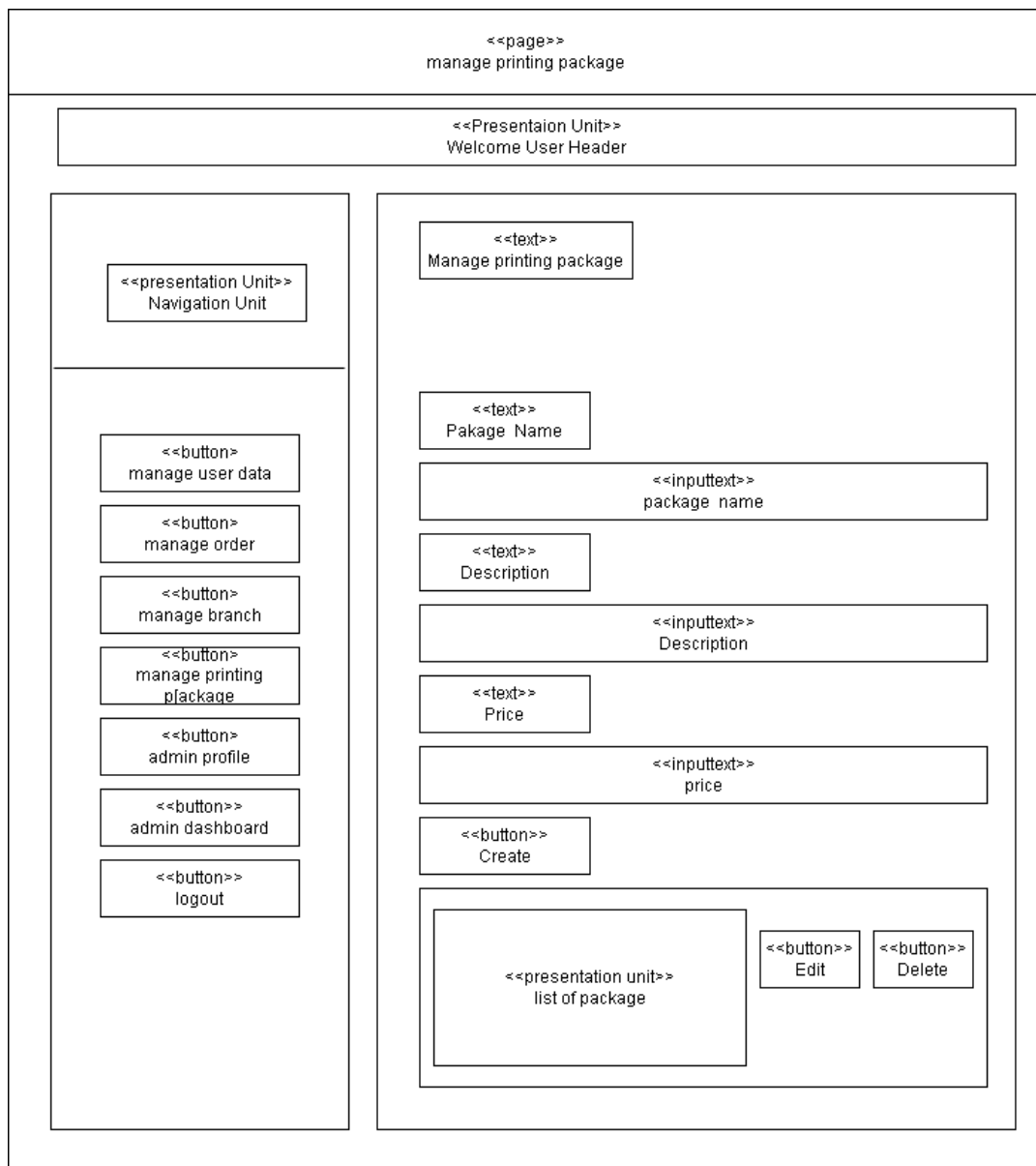
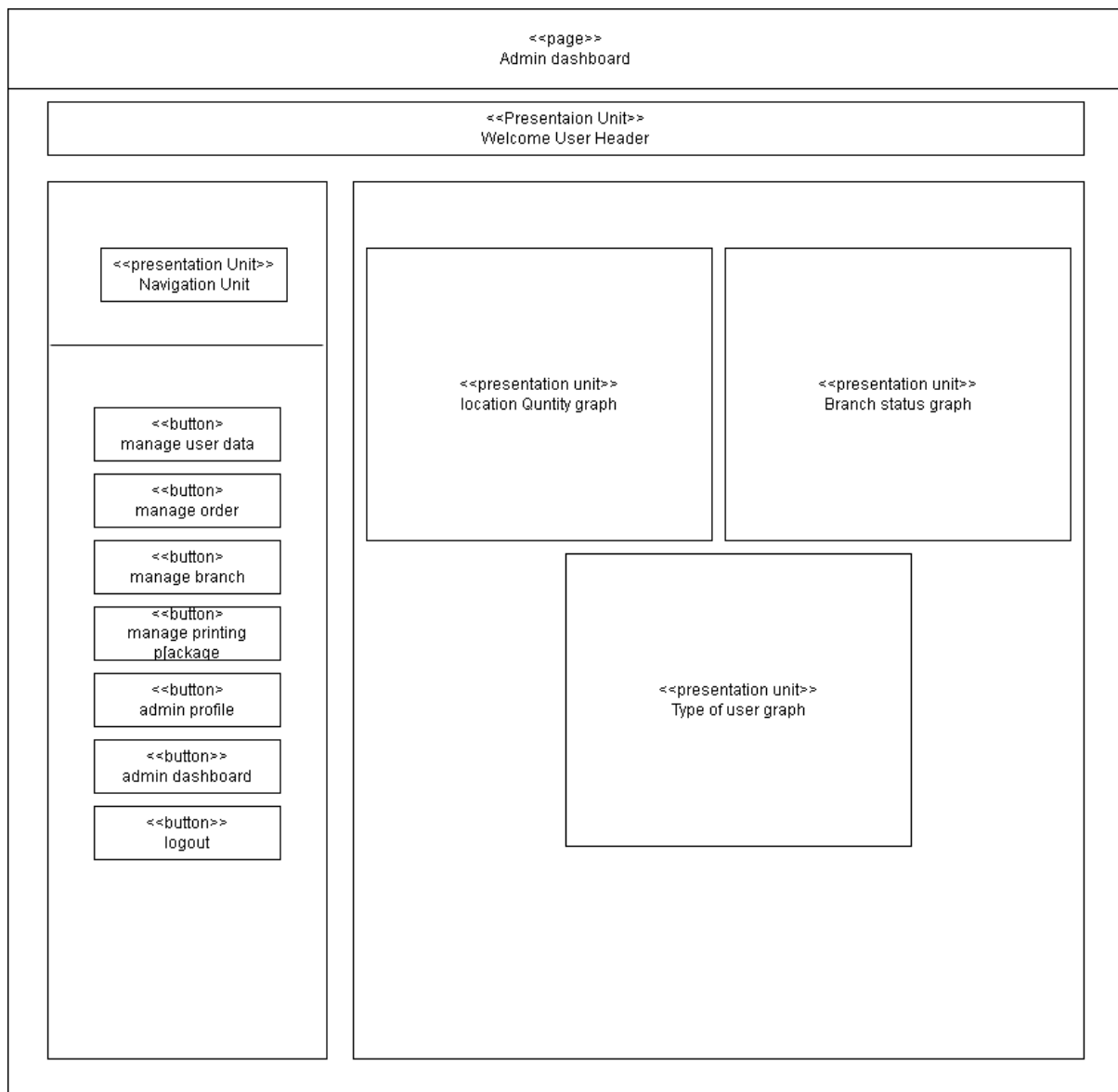


Figure 6: Presentation Model (manage printing package)



*Figure 7 : Presentation Model (Administrator dashboard)*

## Presentation Model – MODULE 2

### User Registration

<div>&lt;&lt;Page&gt;&gt;</div>	
<div>&lt;&lt;label&gt;&gt; registration</div>	
<div>&lt;&lt;text&gt;&gt; <del>Rapidprint</del> registration</div>	
<div>&lt;&lt;input&gt;&gt; USERID</div>	<div>&lt;&lt;text&gt;&gt; NAME</div>
<div>&lt;&lt;input text&gt;&gt; <del>userID</del></div>	<div>&lt;&lt;input text&gt;&gt; name</div>
<div>&lt;&lt;text&gt;&gt; Email</div>	<div>&lt;&lt;text&gt;&gt; Role</div>
<div>&lt;&lt;input email&gt;&gt; email</div>	<div>&lt;&lt;option text&gt;&gt; role</div>
<div>&lt;&lt;text&gt;&gt; Password</div>	<div>&lt;&lt;text&gt;&gt; <del>MembershipCardID</del></div>
<div>&lt;&lt;input text&gt;&gt; password</div>	<div>&lt;&lt;input text&gt;&gt; <del>membershipcardID</del></div>
<div>&lt;&lt;button&gt;&gt; submit</div>	

## User Profile Management

dashboard

profile

membership

userID

username

membership ID Card

user profile details

username

userID

email

role

password

username

userID

email

role

password

update

## RapidPrint Membership Card

dashboard

profile

membership

userID

username

membership ID Card

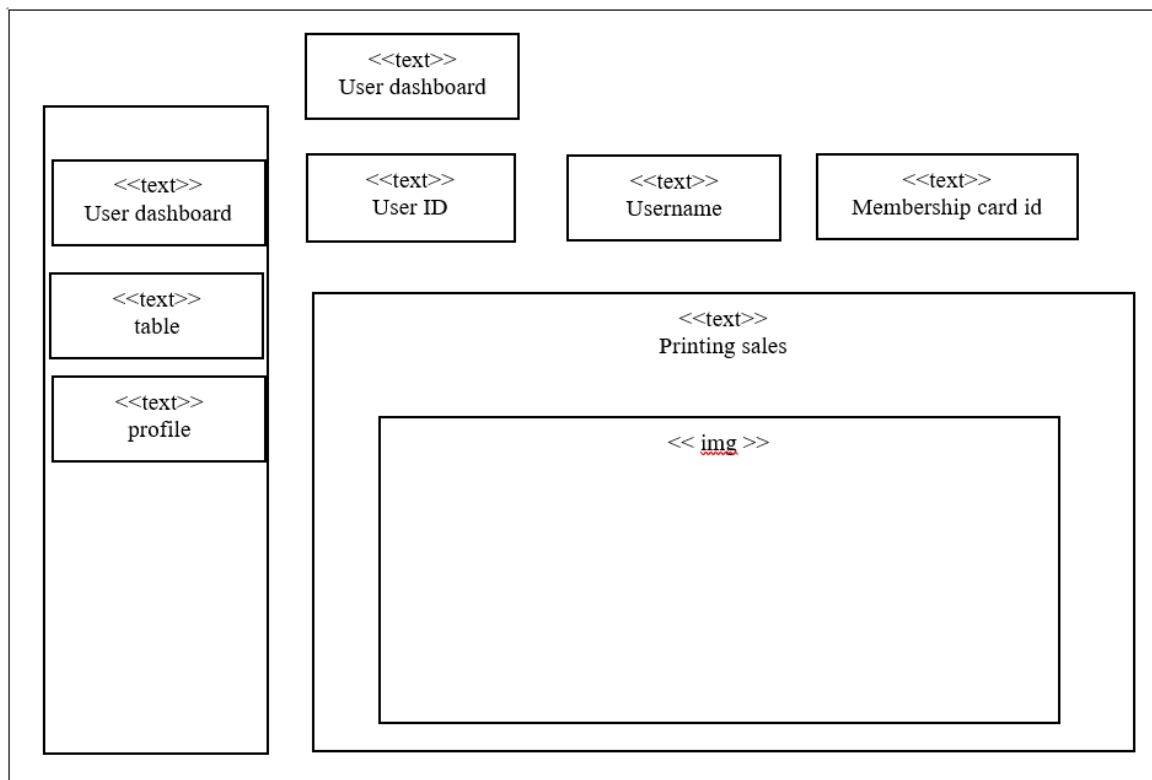
membership ID

membership QR

membership QR

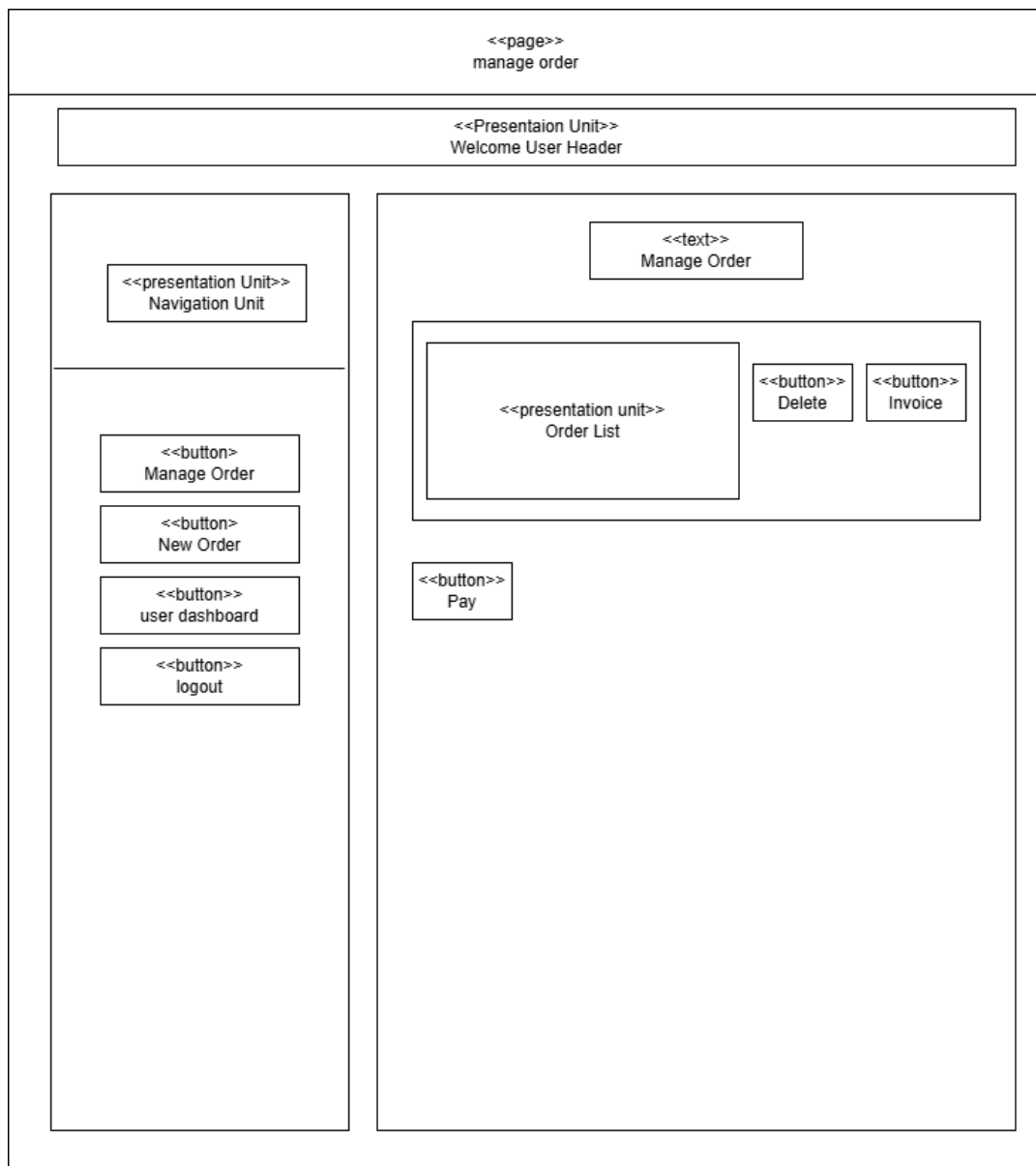


## User Dashboard



## Presentation Model – MODULE 3

### Manage Order



## New Order

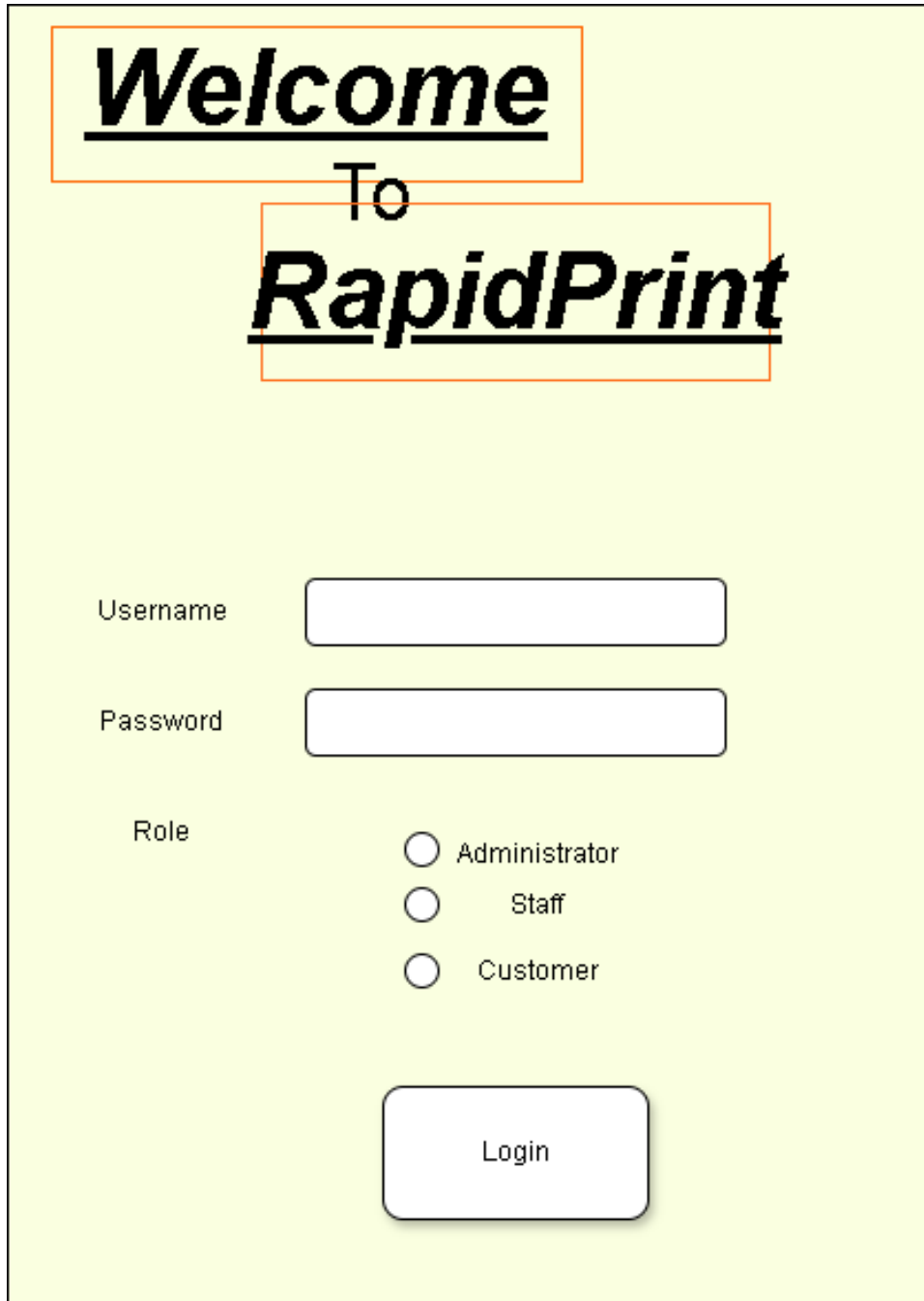
<<page>> New Order	
<<Presentaion Unit>> User Header	
<<presentation Unit>> Navigation Unit	<<text>> Create a New Order
<<button> Manage Order	<<text>> Select Branch
<<button> New Order	<<drop down button>> "gambang", "Pekan"
<<button>> user dashboard	<<text>> Upload Document
<<button>> logout	<<upload>> Document
	<<text>> Select Package
	<<drop down button>> "Select a Package", "BW(0.20)", "Color(0.50)"
	<<text>> Quantity
	<<number>> "min=1"
	<<Display>> Total Price(RM)
	<<button>> add to order

## Payment

<div>&lt;&lt;Page&gt;&gt; Payment</div>
<div>&lt;&lt;Presentaio Unit&gt;&gt; Payment</div> <div>&lt;&lt;text&gt; Checkout</div> <div><div>&lt;&lt;text&gt;&gt; Amount Due(RM):</div><div>&lt;&lt;input text&gt;&gt; Amount</div><div>&lt;&lt;opton text&gt;&gt; payment method</div><div>&lt;&lt;button&gt;&gt; Pay Now</div></div>

## Presentation Interface

### MODULE 1



The image shows a user login page with a light yellow background. At the top, the text "Welcome To RapidPrint" is displayed in a large, bold, black font. "Welcome" and "RapidPrint" are underlined and enclosed in orange rectangular boxes. Below the title, there are three input fields: "Username", "Password", and "Role". The "Role" field is a radio button selection with three options: "Administrator", "Staff", and "Customer". At the bottom, there is a "Login" button.

**Welcome**  
To  
**RapidPrint**

Username

Password

Role

- ☐ Administrator
- ☐ Staff
- ☐ Customer

Login

Figure 8: User Login page

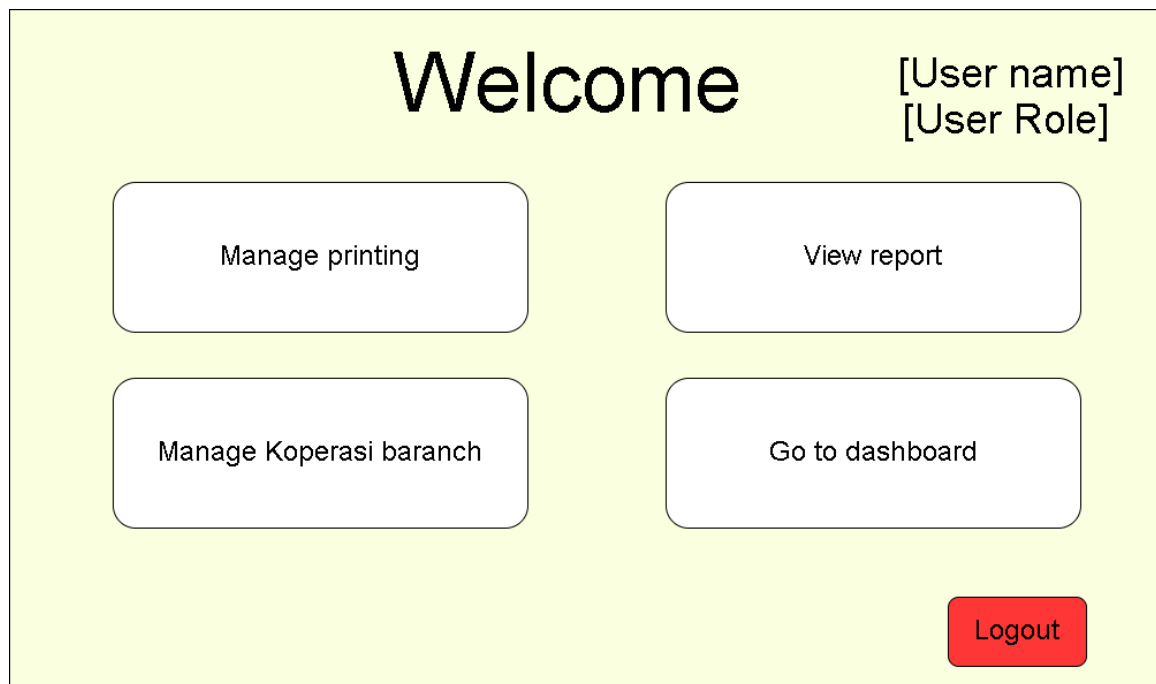


Figure 9: User Main page

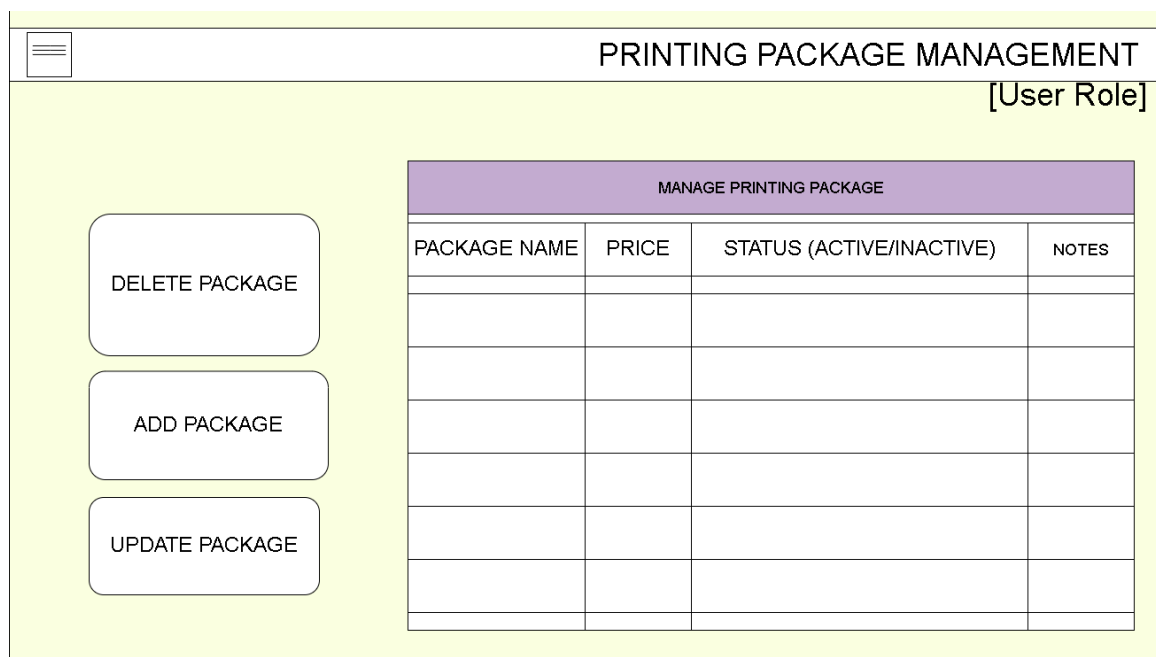


Figure 10 : Printing package management

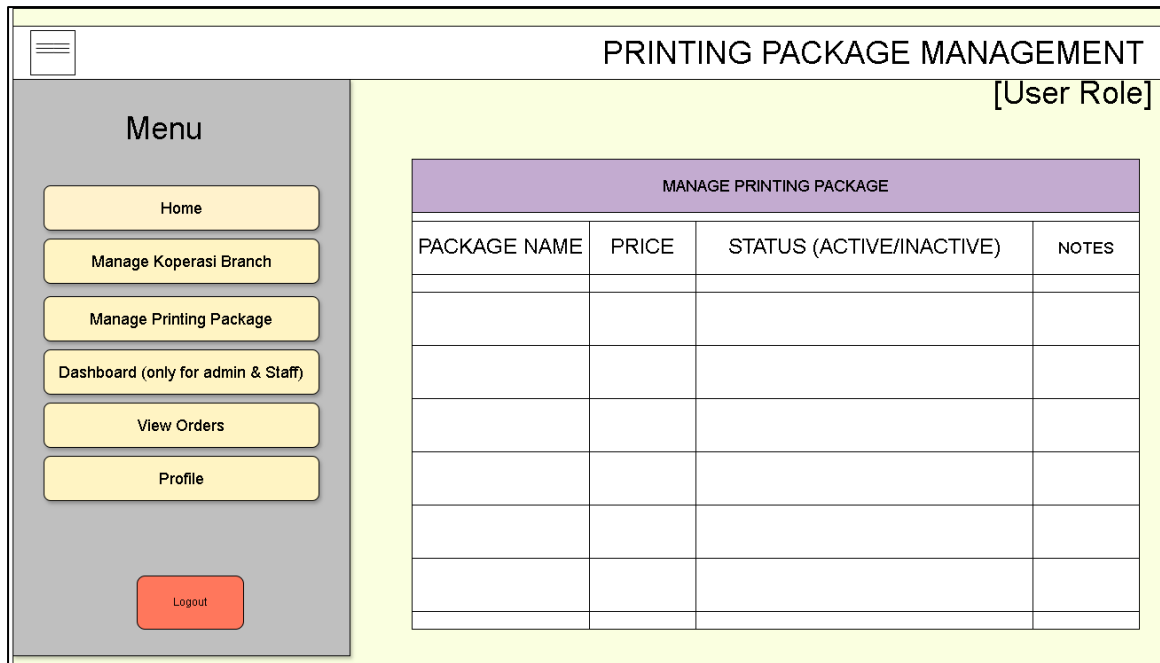


Figure 11 User Menu UI

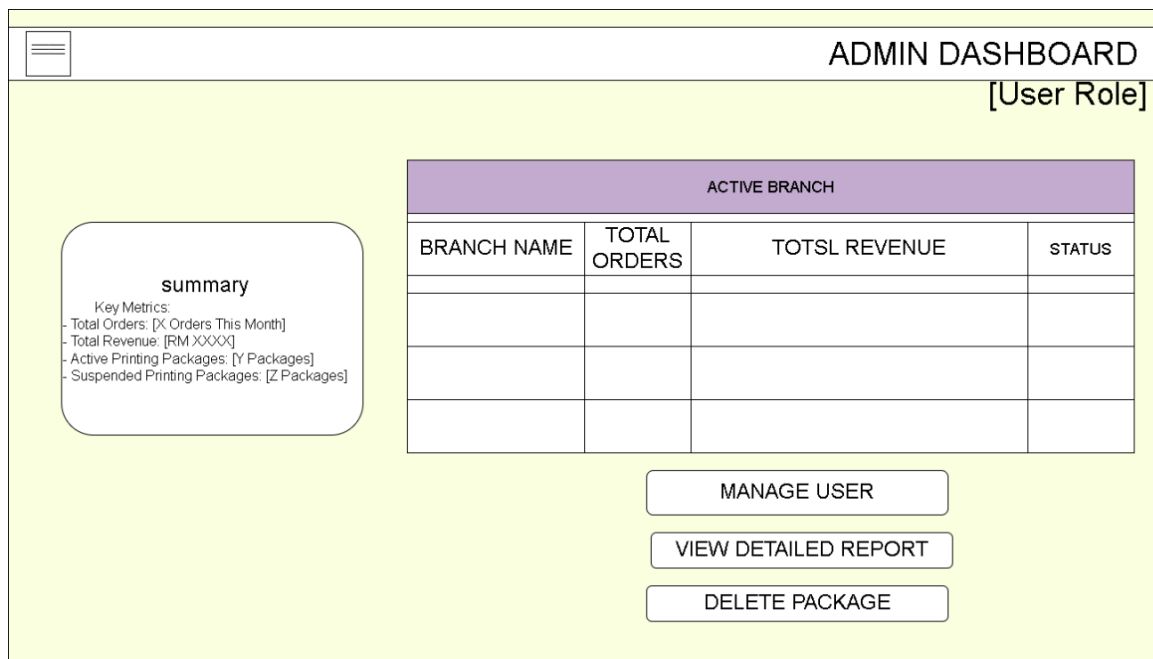


Figure 12: Admin Dashboard

## Presentation Interface

### MODULE 2

#### User Registration

### RapidPrint Registration

UserID	Name
<input type="text"/>	<input type="text"/>
Email	Role
<input type="text"/>	<input type="radio"/> admin <input checked="" type="radio"/> staff
	<input type="radio"/> customer
Password	Membership Card ID
<input type="text"/>	<input type="text"/>
<input type="button" value="Submit"/>	

#### User Profile Management

dashboard

membership

profile

user ID  
CB23113

username  
afiq zahiruddin

membership card id  
123456789

user profile details

username

user ID

Email

role

password



## RapidPrint Membership Card

dashboard

membership

profile

user ID  
CB23113

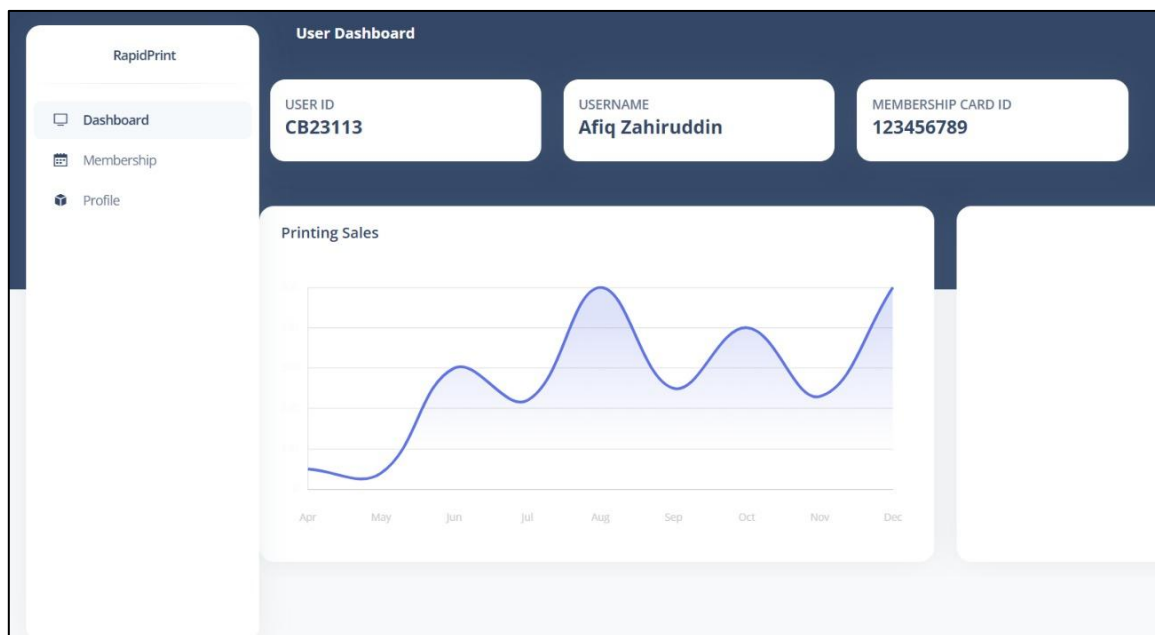
username  
afiq zahiruddin

membership card id  
123456789

membership ID  
123456789

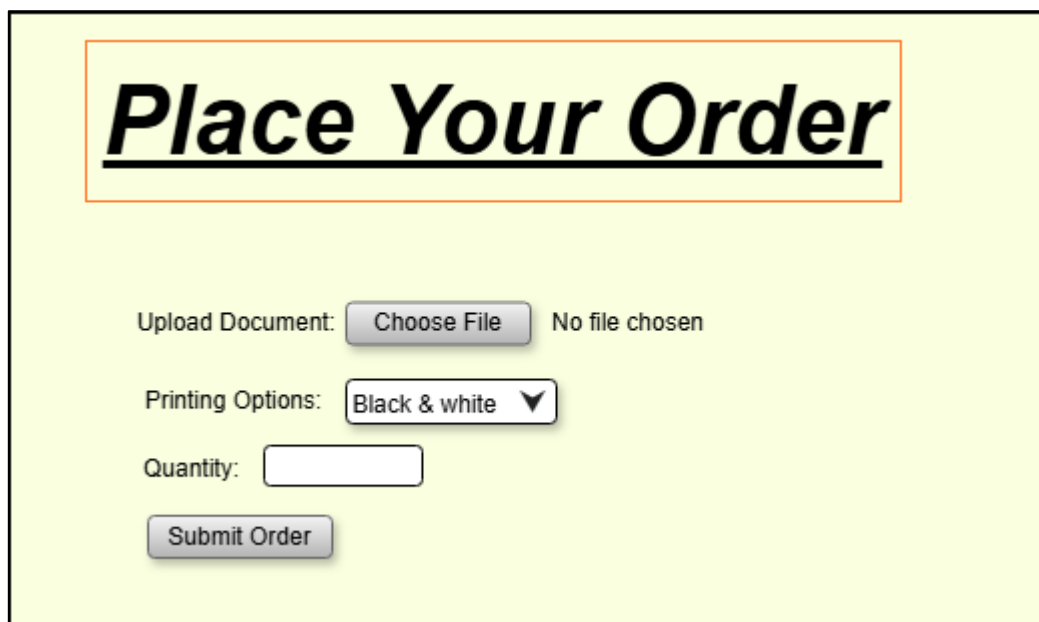
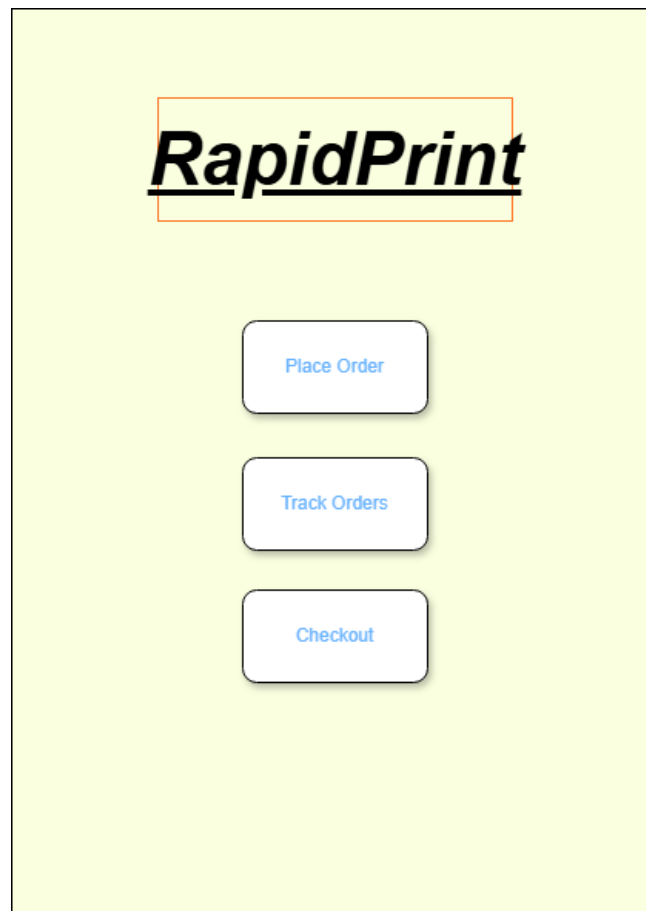
membership QR

## User Dashboard



## Presentation Interface

### MODULE 3



A form titled **Place Your Order** in a large, bold, black serif font, enclosed in an orange rectangular border. Below the title, the form contains the following elements:

- Upload Document:** A label followed by a grey button labeled "Choose File" and the text "No file chosen".
- Printing Options:** A label followed by a dropdown menu showing "Black & white" with a downward arrow.
- Quantity:** A label followed by a white text input field.
- Submit Order:** A grey button.

## **Track Your Orders**

Order ID	File	Options	Status
101	Assignment.pdf	Color, 2 Copies	In Proress

## **Checkout**

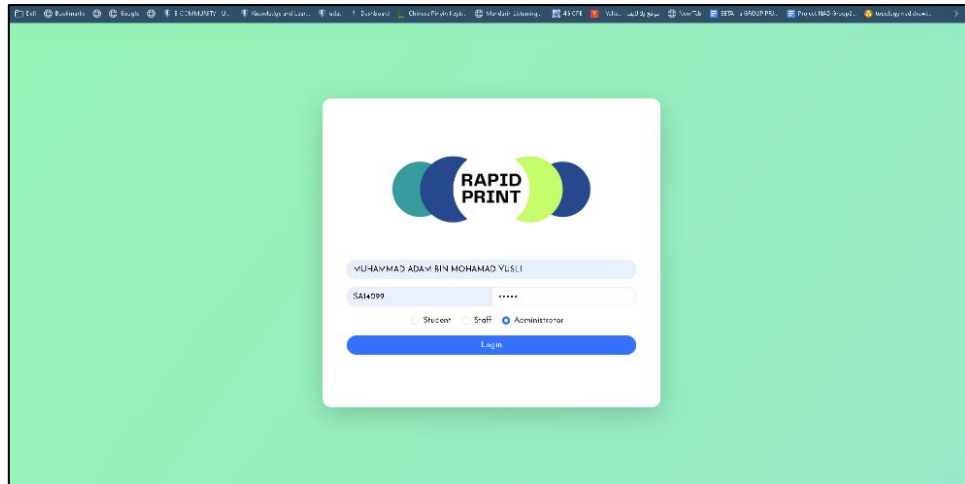
Amount Due (RM):

Payment Method:  ▼

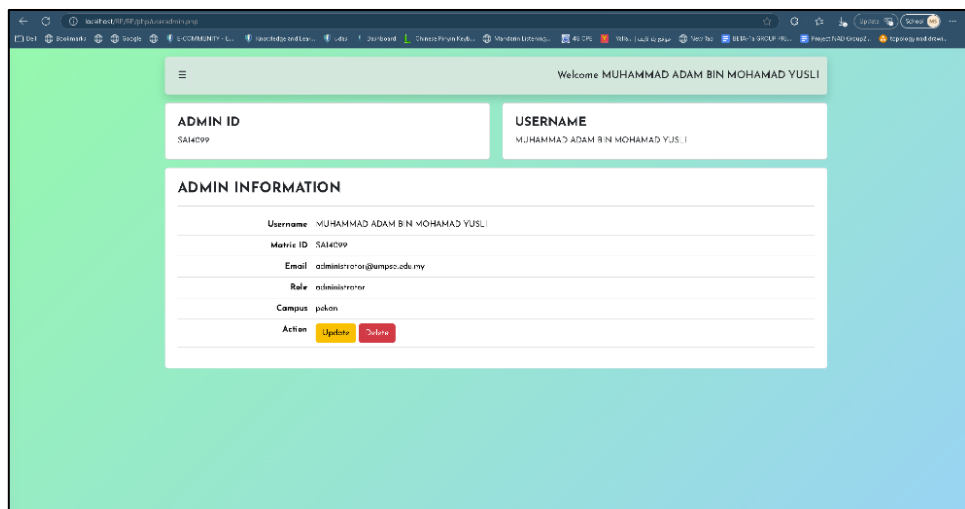
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## 9. SYSTEM USER INTERFACE (UI)

### MODULE 1



*User login page*



*Admin homepage*

Welcome MUHAMMAD ADAM BIN MOHAMAD YUSLI

### Branch Management

Here, you can view and update details for UMPSA Koop branches in Gombong and Pekon, including Branch specific information such as operational hours and available printing services

#### Add New Branch

Branch Name:

Location:

Status:

Create Branch

ID	Branch Name	Location	Status	Actions
1	MareanKOOP	Gombong	Inactive	<a href="#">Edit</a> <a href="#">Delete</a>
2	FKPTSKOOP	Pekan	Active	<a href="#">Edit</a> <a href="#">Delete</a>
3	FKOMKOOPppp	Gombong	Inactive	<a href="#">Edit</a> <a href="#">Delete</a>
5	ukuKOOP	Pekan	Active	<a href="#">Edit</a> <a href="#">Delete</a>
5	rad	Gombong	Active	<a href="#">Edit</a> <a href="#">Delete</a>

Admins create branch page

MUHAMMAD ADAM BIN MOHAMAD YUSLI

### Branch Management

Here, you can view and update details for UMPSA Koop branches in Gombong and Pekon, including Branch specific information such as operational hours and available printing services

#### Add New Branch

Branch Name:

Location:

Status:

Create Branch

ID	Branch Name	Location	Status	Actions
1	MareanKOOP	Gombong	Inactive	<a href="#">Edit</a> <a href="#">Delete</a>
2	FKPTSKOOP	Pekan	Active	<a href="#">Edit</a> <a href="#">Delete</a>
3	FKOMKOOPppp	Gombong	Inactive	<a href="#">Edit</a> <a href="#">Delete</a>
5	ukuKOOP	Pekan	Active	<a href="#">Edit</a> <a href="#">Delete</a>
5	rad	Gombong	Active	<a href="#">Edit</a> <a href="#">Delete</a>

Edit Branch

Branch Name:

Location:

Status:

Update Branch

Edit branch popup

Welcome MUHAMMAD ADAM BIN MOHAMAD YUSLI

### Manage Printing Packages

Here, you can create, update, and delete printing packages available to customers

Package Name:

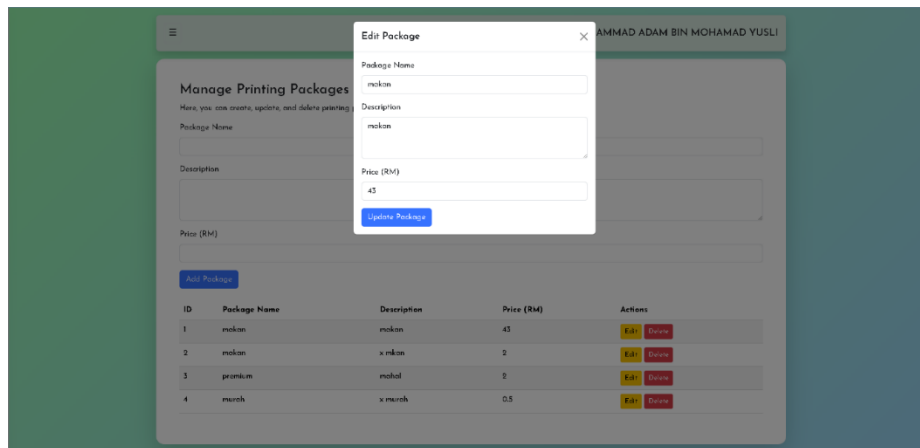
Description:

Price (RM):

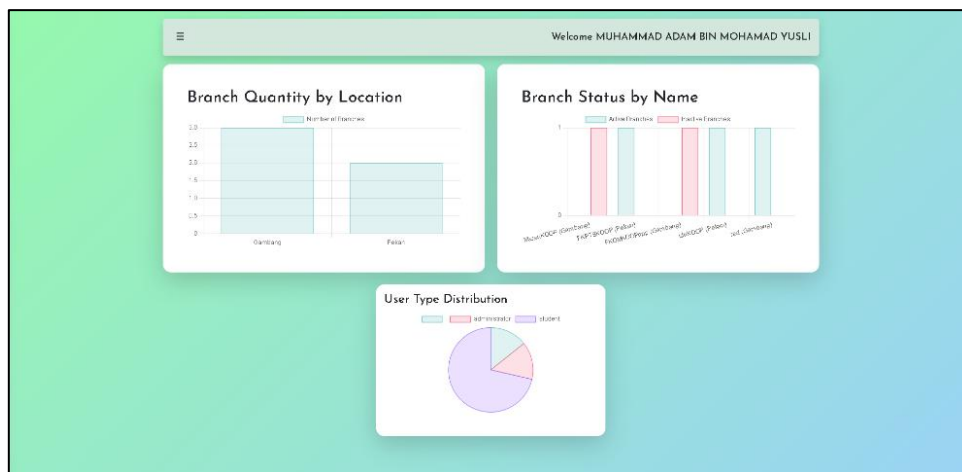
Add Package

ID	Package Name	Description	Price (RM)	Actions
1	mekan	mekan	43	<a href="#">Edit</a> <a href="#">Delete</a>
2	mekan	x mekan	9	<a href="#">Edit</a> <a href="#">Delete</a>
3	premium	mahal	9	<a href="#">Edit</a> <a href="#">Delete</a>
4	murah	x murah	0.5	<a href="#">Edit</a> <a href="#">Delete</a>

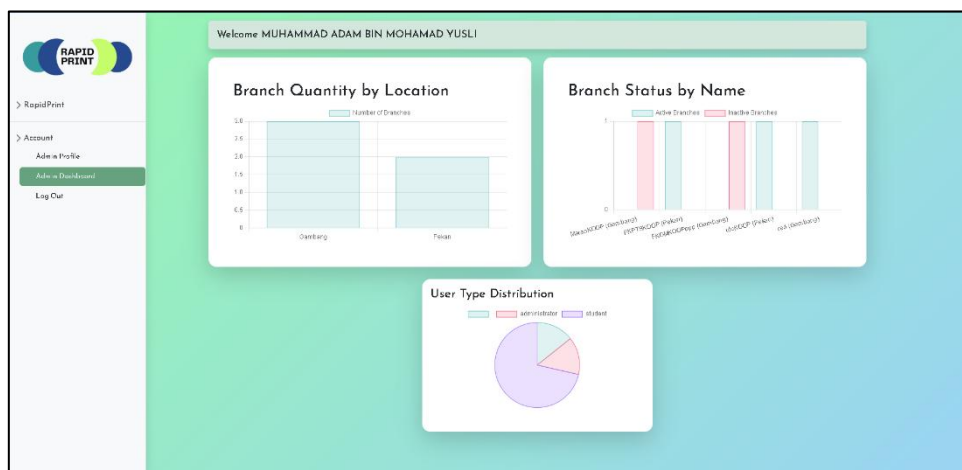
Manage package page



*Edit package popup*

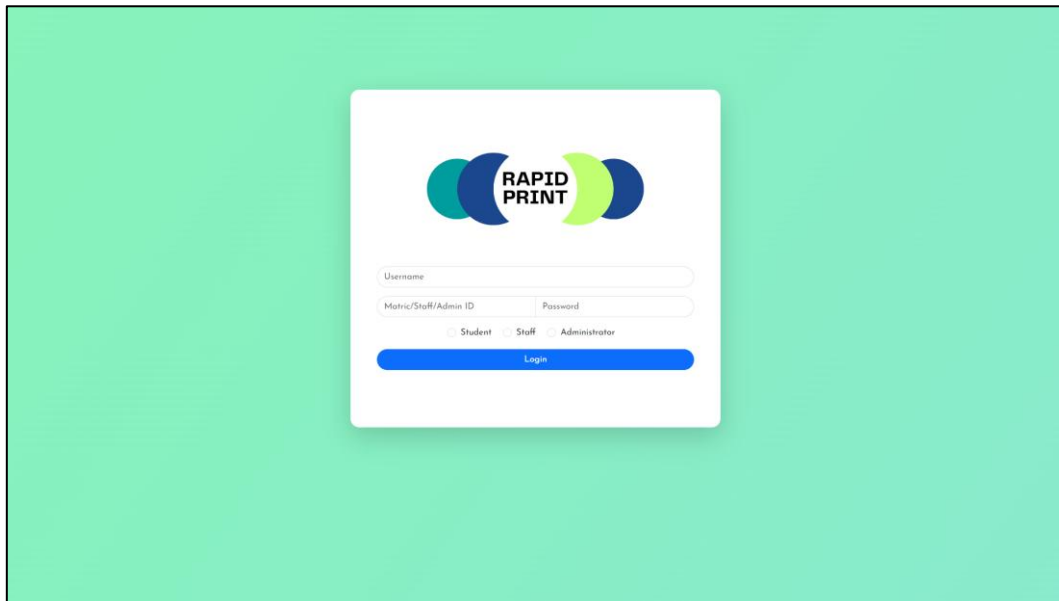


*Admin dashboard*



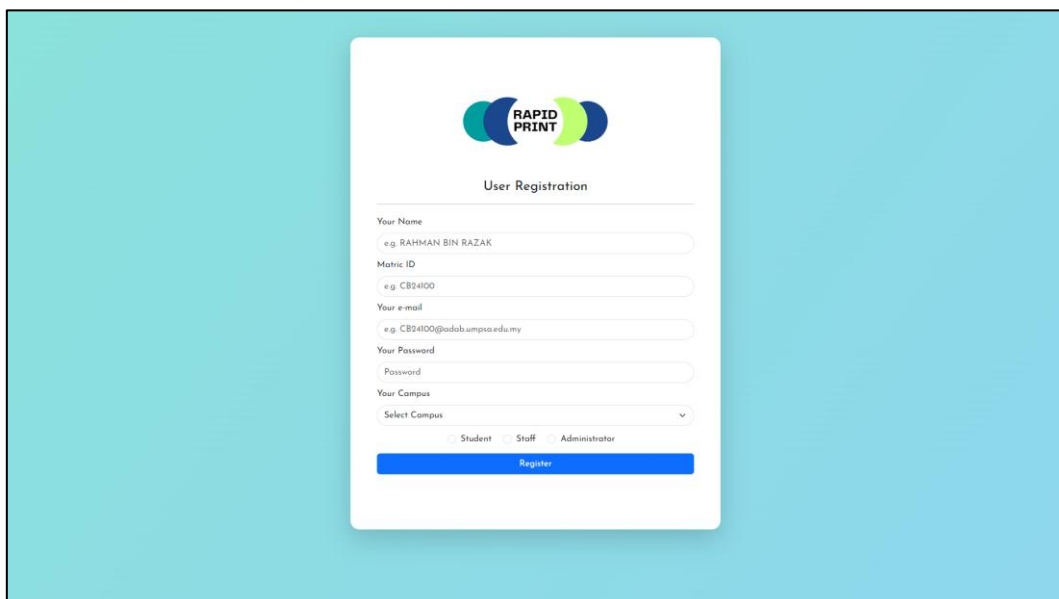
*Menu Navigation*

## MODULE 2



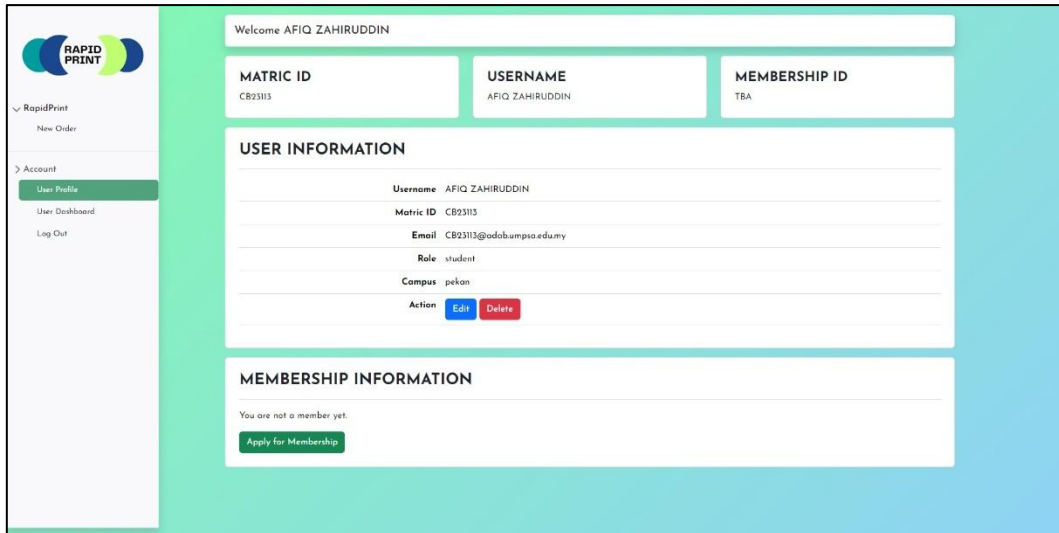
The User Login Interface is a white rectangular form centered on a light green background. At the top is the 'RAPID PRINT' logo, which consists of three overlapping circles in teal, blue, and lime green, with the text 'RAPID PRINT' in black. Below the logo are four input fields: 'Username', 'Matric/Staff/Admin ID', and 'Password'. The 'Matric/Staff/Admin ID' and 'Password' fields are grouped together. Below these fields are three radio buttons labeled 'Student', 'Staff', and 'Administrator'. At the bottom is a blue button with the text 'Login'.

User Login Interface



The User Registration Interface is a white rectangular form centered on a light blue background. At the top is the 'RAPID PRINT' logo, which consists of three overlapping circles in teal, blue, and lime green, with the text 'RAPID PRINT' in black. Below the logo is the title 'User Registration'. The form contains several input fields: 'Your Name' (with an example 'e.g. RAHMAN BIN RAZAK'), 'Matric ID' (with an example 'e.g. CB24100'), 'Your e-mail' (with an example 'e.g. CB24100@adab.umpva.edu.my'), 'Your Password', and 'Your Campus' (a dropdown menu with 'Select Campus' and a downward arrow). Below these fields are three radio buttons labeled 'Student', 'Staff', and 'Administrator'. At the bottom is a blue button with the text 'Register'.

User Registration Interface



The screenshot shows a user profile page for a student named AFIQ ZAHIRUDDIN. The page has a light blue and green color scheme. On the left is a sidebar with the 'RAPID PRINT' logo and navigation links: 'New Order', 'Account', 'User Profile' (highlighted), 'User Dashboard', and 'Log Out'. The main content area is divided into three sections: 'Welcome AFIQ ZAHIRUDDIN', 'USER INFORMATION', and 'MEMBERSHIP INFORMATION'. The 'USER INFORMATION' section contains fields for Username, Matric ID, Email, Role, and Campus, with 'Edit' and 'Delete' buttons at the bottom. The 'MEMBERSHIP INFORMATION' section states 'You are not a member yet.' and has an 'Apply for Membership' button.

Welcome AFIQ ZAHIRUDDIN		
<b>MATRIC ID</b> CB23113	<b>USERNAME</b> AFIQ ZAHIRUDDIN	<b>MEMBERSHIP ID</b> TBA

**USER INFORMATION**

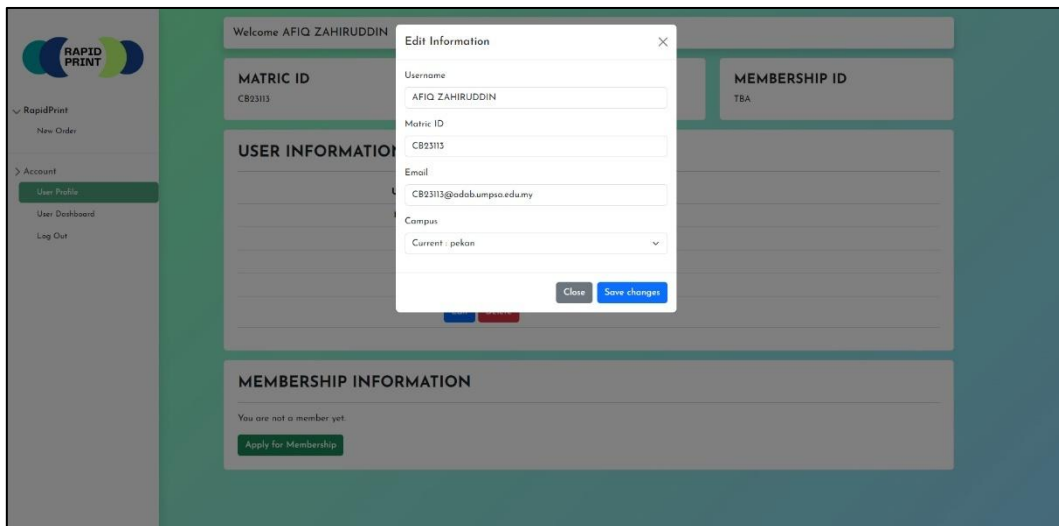
Username	AFIQ ZAHIRUDDIN
Matric ID	CB23113
Email	CB23113@adabumpsia.edu.my
Role	student
Campus	pekan
Action	<a href="#">Edit</a> <a href="#">Delete</a>

**MEMBERSHIP INFORMATION**

You are not a member yet.

[Apply for Membership](#)

User Profile Interface – Student



This screenshot shows the same user profile page as above, but with an 'Edit Information' modal window open. The modal is a white box with a close button (X) in the top right corner. It contains input fields for Username, Matric ID, Email, and a dropdown menu for Campus. The 'Save changes' button is highlighted in blue. The background of the page is dimmed to show the modal.

Welcome AFIQ ZAHIRUDDIN		
<b>MATRIC ID</b> CB23113	<b>USERNAME</b> AFIQ ZAHIRUDDIN	<b>MEMBERSHIP ID</b> TBA

**USER INFORMATION**

Username	AFIQ ZAHIRUDDIN
Matric ID	CB23113
Email	CB23113@adabumpsia.edu.my
Campus	Current : pekan
<a href="#">Close</a> <a href="#">Save changes</a>	

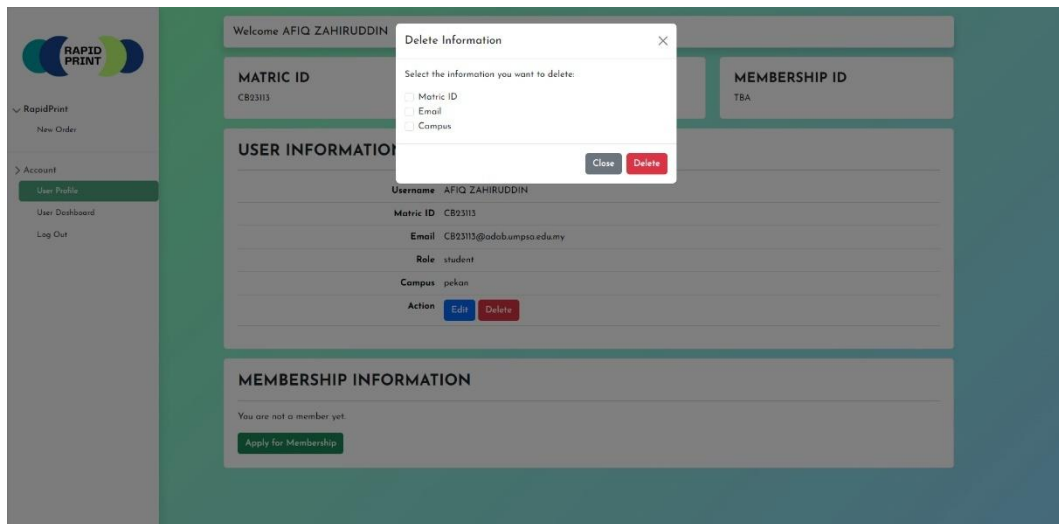
**MEMBERSHIP INFORMATION**

You are not a member yet.

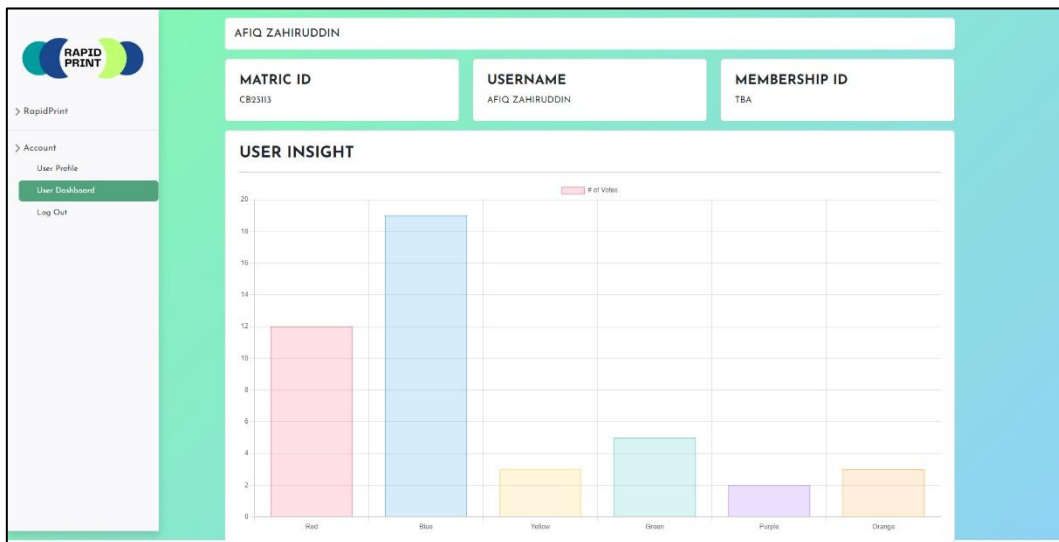
[Apply for Membership](#)

User Profile Interface – Student (Edit Information)





User Profile Interface – Student (Delete Information)



User Profile Interface – Student (User Dashboard)

## MODULE 3

The screenshot shows a web application interface with a light green background. At the top, there is a header bar with a hamburger menu icon on the left and the user name 'AFIQ ZAHIRUDDIN BIN ABDULLAH TAIBI' on the right. In the center, a white modal box titled 'Create a New Order' is displayed. The form inside the modal includes the following fields: 'Select Branch' with a dropdown menu showing 'Choose an active branch'; 'Upload Document' with a 'Choose File' button and the text 'No file chosen'; 'Select Package' with a dropdown menu showing 'Choose a package'; 'Quantity' with a text input field containing the value '1'; and 'Total Price (RM)' with a text input field. At the bottom of the modal, there is a blue button labeled 'Add to Orders'.

Users add order interface

The screenshot shows a web application interface with a light green background. At the top, there is a header bar with a hamburger menu icon on the left and the user name 'AFIQ ZAHIRUDDIN BIN ABDULLAH TAIBI' on the right. In the center, a white modal box titled 'Manage Order' is displayed. The modal contains a table with the following data:

Select	Order ID	Date Created	Status	Total Amount (RM)	Payment Status	Actions
<input type="checkbox"/>	4	2025-01-06 09:24:56	complete	0.20	Paid	<button>Delete</button> <button>Review</button>
<input type="checkbox"/>	6	2025-01-06 09:29:07	pending	0.90	Paid	<button>Delete</button> <button>Review</button>
<input type="checkbox"/>	6	2025-01-06 09:29:07	pending	0.40	Paid	<button>Delete</button> <button>Review</button>
<input type="checkbox"/>	9	2025-01-06 04:47:32	pending	0.40	Paid	<button>Delete</button> <button>Review</button>
<input type="checkbox"/>	10	2025-01-06 04:55:30	pending	0.80	Unpaid	<button>Delete</button> <button>Review</button>
<input type="checkbox"/>	15	2025-01-06 09:35:27	pending	0.60	Paid	<button>Delete</button> <button>Review</button>

Below the table, there is a green button labeled 'Pay'. At the top right of the modal, there is a blue button labeled 'Add Order'.

Users manage order interface

## **10. TESTING PLAN**

### **Content Testing**

Content testing emphasizes the detection of faults within the textual, graphical, and structural elements of the web application. This entails verifying for:

- Syntactic problems, including typographical errors, grammatical inaccuracies, or incorrect formatting.
- Semantic mistakes, including inconsistencies or deficiencies in the presented content.
- Structural flaws may encompass chaotic or inadequately linked content.

### **Interface Testing**

Interface testing assesses the usability and coherence of the web application's design. This encompasses:

- Evaluating the efficacy of the interface in directing users.
- Ensuring that the feedback mechanisms and design features exhibit uniformity throughout the application.

### **Navigation Testing**

Navigation testing verifies the proper functionality of all navigational components. This encompasses:

- Evaluating all internal and external hyperlinks, together with anchors and navigation menus.
- Confirming that each link leads users to the designated content or functionality without issues.

### **Component Evaluation**

Component testing, or function testing, emphasizes the validation of the discrete functions within the online application. Black box testing methodologies will be employed to verify that each module functions as designed, particularly for input and output management.

### **Configuration Testing**

Configuration testing guarantees uniform performance across various client-side and server-side configurations. The team shall:

- Evaluate compatibility across diverse web browsers and OS systems.
- Diagnose and rectify environment-specific problems that could impact user experience.

### **Security Testing**

Security testing detects system flaws and guarantees the prevention of unwanted access. This includes the evaluation of user authentication, role-based access control, and resilience against potential security threats.

### **Performance Testing**

Performance testing evaluates the web application's responsiveness, stability, and scalability under diverse load scenarios. Essential metrics encompass reaction time and the system's capacity to accommodate several concurrent users.

## **11. DEPLOYMENT PLAN**

### **Explain the Release Procedure**

- A systematic deployment pipeline will be established, outlining the necessary procedures for the proper launch of the system. Versioning mechanisms will be devised for forthcoming updates.

### **Arrange the Publication**

- The release will be planned in alignment with the academic timetable and stakeholder availability to facilitate seamless implementation.

### **Convey Modifications**

- Stakeholders will be informed of the release and any related changes via explicit communication channels, including emails or dashboard notifications.

### **Formulate Contingency Strategies**

- A backup mechanism will be implemented to mitigate potential deployment failures, guaranteeing minimal impact.

### **Implement Support Systems**

- Extensive documentation will be developed to aid users. Channels for feedback, such a contact form or help desk, will be established for reporting issues.

### **Educate Internal Teams**

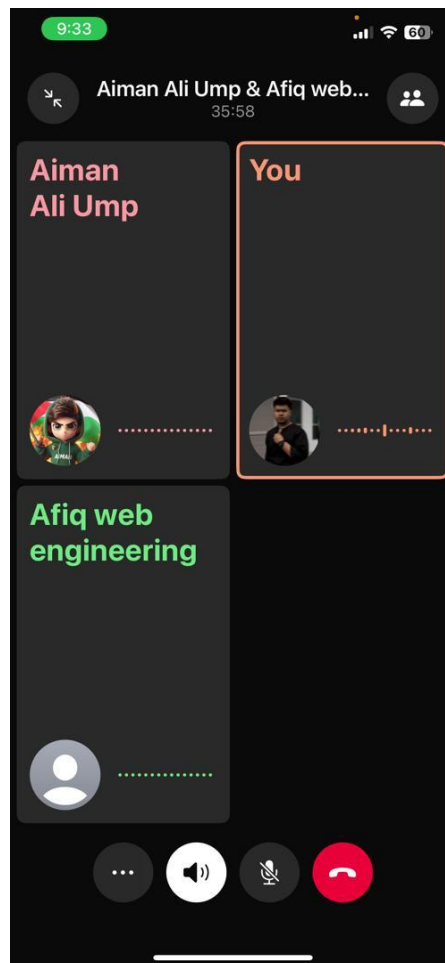
- The development team will receive training to become acquainted with the system's functionality and maintenance protocols.

### **Address Concerns**

- A bug-tracking system will be established to document and resolve any issues encountered after deployment. This will guarantee that issues are addressed swiftly and efficiently.

## 12. TEAM MANAGEMENT

### WhatsApp Group Call Discussion



We use WhatsApp as our main communication platform during the project development phase to make sure that team members are working together and coordinated effectively. We may brainstorm ideas, discuss and exchange thoughts, and give immediate feedback on different project areas using its phone call feature. Even if we are working remotely or are unable to meet in person, this method enables us to keep a clear grasp of one another's viewpoints and guarantees that everyone remains in agreement with the project's goals and deadlines.

## REFERENCE

- Nishadha, & Creately. (2024, March 23). *What is an Entity Relationship Diagram (ERD)? | An Introduction to ER Diagram*. Creately. <https://creately.com/guides/er-diagrams-tutorial/>
- *What is Data Dictionary - Data terminology*. (n.d.). <https://dataedo.com/kb/data-glossary/what-is-data-dictionary>
- MockPlus. (n.d.). <https://www.mockplus.com/learn/ui-design/ui-design-elements>
- Bhardwaj, D. (2024, June 13). *What is Test Plan? Its components, types, and example*. <https://www.lambdatest.com/learning-hub/test-plan>
- Parker, A. (2024, September 26). *Deployment Diagram: UML Tutorial with EXAMPLE*. Guru99. <https://www.guru99.com/deployment-diagram-uml-example.html>
- Solutions, G. (2024, July 12). *Functional and Non-Functional Requirements - with examples* | Medium. *Medium*. <https://medium.com/@growsolutions/functional-and-non-functional-requirements-the-ultimate-checklist-with-examples-cde16aba33d7>
- *Staples® official online store*. (n.d.). Staples.com. <https://www.staples.com/?msocid=3ec3a9a62f70640828dfba532ed96548>
- *Online & In-Store Printing Services | FedEx Office*. (n.d.). <https://www.office.fedex.com/>

## APPENDIX

The screenshot shows the Staples website's 'Print & Marketing Services' section. At the top, there are navigation links for 'Earn points with Easy Rewards', 'Free delivery on orders over \$59.99', and 'Print Solutions for Large Businesses'. The main content area features several promotional banners:

- 60% OFF** custom holiday cards, invitations and photo gifts. Ends 12/21/24. Exclusions apply. [Get started](#)
- Up to \$125 OFF** your print order. Ends 12/28/24. Exclusions apply. [Learn more](#)
- Document printing**: From reports and sell sheets to booklets, blueprints and more, we've got you covered. [Get started](#)
- Find a store**: Chat with your local print team about all the ways to boost your business. [Take me there](#)

Below these banners is a 'Current offers' section with four coupon codes:

- 60% OFF** holiday cards, invitations and photo gifts\*. Coupon code: 86333
- \$15 OFF** your print purchase of \$75 or more\*\*. Coupon code: 19004
- \$50 OFF** your print purchase of \$150 or more\*\*. Coupon code: 20119
- \$125 OFF** your print purchase of \$350 or more\*\*. Coupon code: 17343

The screenshot shows the FedEx website's print services section. The top navigation bar includes links for 'FedEx Office', 'Business & Career Essentials', 'Marketing & Promotional Materials', 'Banners, Signs & Posters', 'Photo Gifts & Home Decor', 'Cards & Invitations', 'Design Ideas & Templates', and 'Products, Services & Deals'. A prominent banner at the top reads 'Print custom letter, legal, or tabloid sized documents' with an 'UPLOAD & PRINT' button. Below this, a 'Most popular' section displays four categories of print services:

- Copies & Custom Documents**: Letter, legal, and tabloid size available.
- Postcards**: Starting at \$0.56 each.
- Business Cards**: Starting at \$0.14 each.
- Flyers**: Starting at \$0.80 each.

At the bottom, there is a Canva advertisement with the text 'Unleash your creative spirit this holiday season'.

