

# Project Report: FamilyMart Portal & API



**Duration:** 2024 – Present



**Role:** Software Engineer

✂ **Technologies Used:** CodeIgniter, PHP, MySQL, JavaScript, jQuery, AJAX, Bootstrap, Cron Jobs, RESTful APIs

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## 1. Project Background

The **FamilyMart Portal & API** is a **comprehensive system** designed to enhance **operational efficiency** through:

- ✓ **User activity tracking & audit logging**
- ✓ **Automated downtime detection using schedulers**
- ✓ **Advanced stock management for inventory tracking**
- ✓ **Permission-based access control for secure data handling**
- ✓ **Seamless API integration for real-time data processing**

The system ensures **scalability, security, and ease of use** while catering to FamilyMart's operational needs.

## 2. Key Responsibilities & Contributions

### ◆ Database Optimization & Performance Enhancement

- **Optimized MySQL database queries**, reducing query execution time and improving response speed.
- Implemented **efficient indexing strategies** for high-volume transactions.
- Designed **scalable database schemas** to accommodate future expansion.

### ◆ Front-End Development & User-Centric Design

- Developed an **intuitive UI** based on **client requirements**, ensuring seamless user experience.
- Implemented **responsive design principles**, making the system accessible across multiple devices.
- Used **AJAX for real-time updates**, improving system interactivity.

### ◆ Backend Development with CodeIgniter

- Built a **robust backend using CodeIgniter**, ensuring a modular and maintainable architecture.

- Developed **customized functionalities** tailored to FamilyMart's operational workflows.
- Integrated **cron jobs** to automate downtime detection and system alerts.
- ◆ **User Role & Permission-Based Access**
  - Designed and implemented a **complex role-based access control (RBAC)** system.
  - Ensured **granular control over pages and functions** based on user roles.
  - Enhanced security by **restricting unauthorized access** to sensitive data.
- ◆ **System Testing & Maintenance**
  - Conducted **comprehensive testing** (unit, integration, and user acceptance tests) to ensure **system stability**.
  - Provided **ongoing support**, troubleshooting issues, and implementing necessary enhancements.

### 3. FamilyMart API Development (2025)

- ◆ **API Design & Implementation**
  - **Developed RESTful API** for seamless data exchange between FamilyMart systems.
  - Facilitated **data insertion & retrieval** for real-time transaction processing.
  - Ensured **secure authentication & authorization mechanisms** using API tokens.
- ◆ **Machine Downtime Logging**
  - Designed API endpoints to **log and track machine downtime data**.
  - Implemented **automated logging mechanisms** for accurate reporting.
  - Integrated logging data with **FamilyMart Portal** for centralized monitoring.
- ◆ **API Integration with FamilyMart Portal**
  - Connected API with **existing portal functionalities** to enhance data consistency.
  - Automated data synchronization for **inventory tracking & machine status updates**.
  - Ensured **real-time API response** for instant data retrieval.

#### 4. Challenges & Solutions

Challenges	Solutions Implemented
Handling large volumes of inventory data efficiently	Optimized <b>MySQL queries</b> and implemented <b>asynchronous data processing</b> .
Ensuring secure, role-based access for multiple users	Developed a <b>granular permission system</b> using <b>RBAC (Role-Based Access Control)</b> .
Detecting and managing system downtime automatically	Integrated <b>cron jobs</b> for <b>automated monitoring &amp; alerts</b> .
Ensuring system stability & reducing downtime	Conducted <b>regular system audits &amp; performance optimizations</b> .
API security and authentication	Implemented <b>API token-based authentication</b> for secure access.

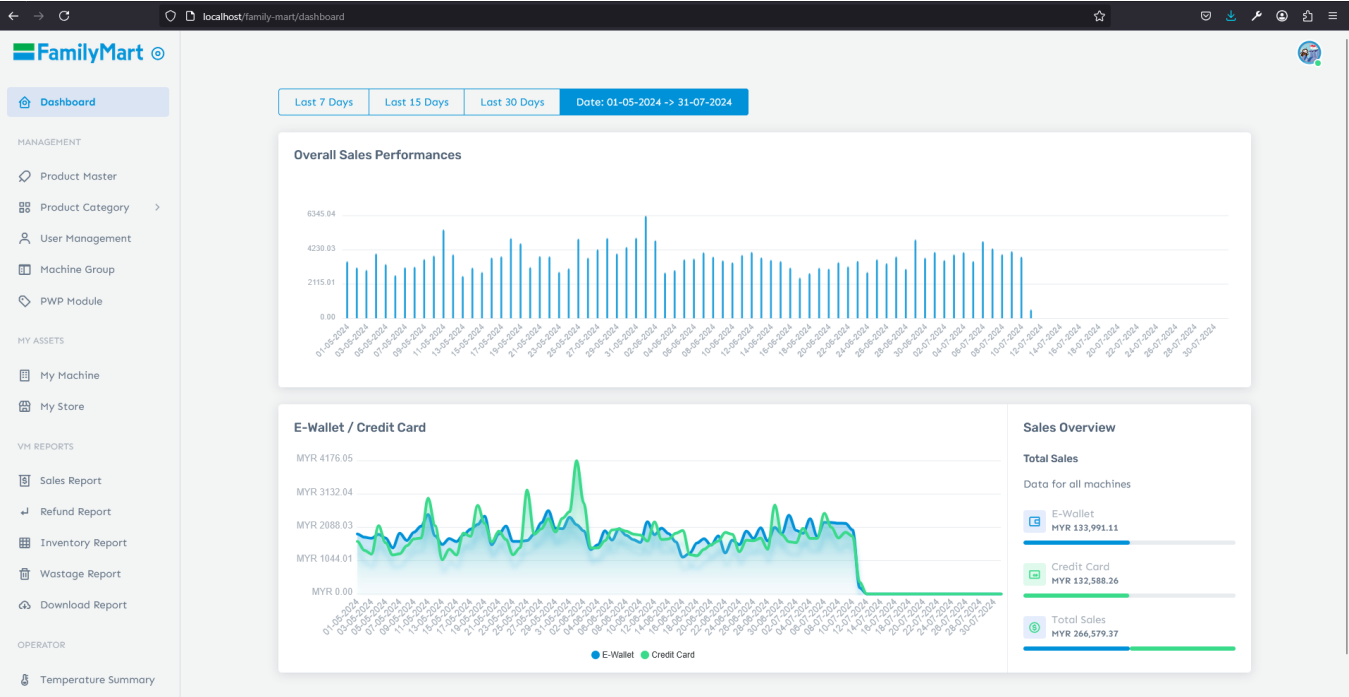
#### 5. Impact & Results

- ✓ **Improved Efficiency:** Optimized database performance reduced **load times by 40%**.
- ✓ **Enhanced Security:** The **role-based access system** prevented unauthorized access.
- ✓ **Automated Monitoring:** Reduced manual intervention for downtime detection.
- ✓ **Seamless API Communication:** Improved **data consistency** between systems.
- ✓ **User Satisfaction:** Positive client feedback due to a **seamless UI & user-friendly interface**.

## 6. Screenshots & Visuals

(Disclaimer: All data shown in the screenshots is for testing purposes only.)

### 1) Dashboard



### 2) User Management – Permission Settings

The 'Permission Settings' page allows administrators to manage user access to different system modules. The table below lists the permissions for the user 'Shuhada Aina Binti Shahnul Nazril'.

MODULE NAME	READ	EDIT	CREATE	DELETE	MORE
DASHBOARD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No
PRODUCT MASTER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	More
USER MANAGEMENT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	More
MACHINE GROUP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No
MY MACHINE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	More
MY STORE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No
SALES REPORT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	More
REFUND REPORT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	More
INVENTORY REPORT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	More
WASTAGE REPORT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	More
DOWNLOAD REPORT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No
TEMPERATURE SUMMARY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No
REPLENISHMENT SUMMARY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No
GHL TRANSACTION	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No
DOWNTIME	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No

### 3) Product List

FamilyMart

Dashboard

MANAGEMENT

Product Master

Product Category

User Management

Machine Group

PWP Module

MY ASSETS

My Machine

My Store

VM REPORTS

Sales Report

Refund Report

Inventory Report

Wastage Report

Download Report

OPERATOR











Temperature Summary

Management / Product Master

Import CSVAdd Product

Show 10 entries

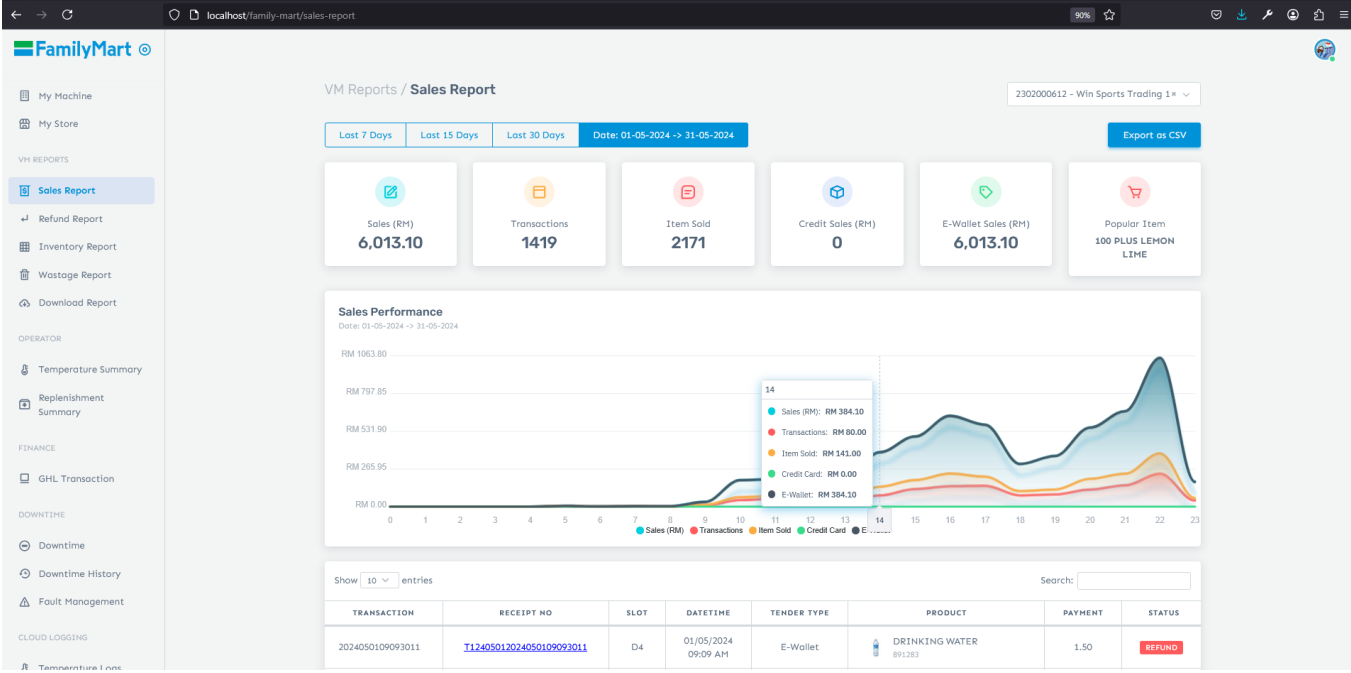
Search:

PRODUCT	CATEGORY	PRODUCT GROUP	SALES UNIT	CATEGORY CODE	PRODUCT GROUP CODE
 7 DAYS CROISSANT CORN 223252	Biscuit	Biscuits	EA	247	74101
 CADBURY DAIRY MILK 114752	Snack	Snack	EA	218	41021
 F&N ZAPPLE 71258	Carbonat Drink	Fruit Juice	EA	958	60601
 TWISTIES CHICKEN 42587	Snack	Snack	EA	218	41021
 TWISTIES CHEESE 11475	Snack	Snack	EA	218	41021
 COCA-COLA 7458	Carbonat Drink	Fruit Juice	EA	958	60601
 TWISTIES BBQ 2155	Snack	Snack	EA	218	41021
 F&N STRAWBERT 142544	Carbonat Drink	Fruit Juice	EA	958	60601
 F&N BUAH 21825	Carbonat Drink	Fruit Juice	EA	958	60601
 JULIE'S PEANUT 21456	Biscuit	Biscuits	EA	247	74101

Showing 1 to 10 of 39 entries

Previous1234Next

### 4) Sale Report



5) Download Report

FamilyMart

MY ASSETS

My Machine

My Store

VH REPORTS

Sales Report

Refund Report

Inventory Report

Wastage Report

Download Report

OPERATOR

Temperature Summary

Replenishment Summary

Reports / Download Report

1411202400 - Hospital Pantai, KL

Last 7 DaysLast 15 DaysLast 30 DaysDate: 01-11-2024 -> 31-12-2024

Show 10 entries

Search:

FILE	ACTIONS
replenishment_report_M1411_20241114102909.csv	Download
replenishment_report_M1411_20241114104945.csv	Download
replenishment_report_M1411_20241114105251.csv	Download
replenishment_report_M1411_20241114110123.csv	Download
wastage_report_M1411_20241114104945.csv	Download
stock_take_report_M1411_20241114102948.csv	Download

Showing 1 to 1 of 1 entries (filtered from 112 total entries)

Previous1Next

6) Temperature Logs

FamilyMart

Download Report

OPERATOR

Temperature Summary

Replenishment Summary

FINANCE

GHL Transaction

DOWNTIME

Downtime

Downtime History

Fault Management

CLOUD LOGGING

Temperature Logs

INVENTORY

Refill Service

Stock Take

LOSS

Audit Trails

Cloud Logging / Temperature Logs

2302000612 - Win Sports Trading 1

Date: 20-06-2024


Export as CSV

Temperature Logs

On: 20-06-2024

Main Machine

Sub Machine



Show 10 entries

Search:

INDEX	TEMPERATURE (MAIN, SUB) - °C	TIME
1	7	20/06/2024 12:11 AM

7) Refill Service

FamilyMart

Download Report

OPERATOR

Temperature Summary

Replenishment Summary

FINANCE

GHL Transaction

DOWNTIME

Downtime

Downtime History

Fault Management

CLOUD LOGGING

Temperature Logs

INVENTORY

Refill Service

Stock Take

LOGS

Audit Trails

Inventory / Refill Service

1411202400 - Hospital Pantal, KL

Search...

PRODUCT	SLOT LABEL	STOCK IN	OVERFLOW	STOCK OUT	CURRENT INV.	LATEST INV.	MAX CAP.
F&N Soda 1248	A1	0	0	0	3	3	6
Vida C 1125	A2	0	0	0	7	7	9
Coffee 1126	A3	0	2	0	4	2	5
F&N Soda 1248	A4	0	0	0	6	6	6
F&N Soda 1248	A5	0	0	0	5	5	6
F&N Soda 1248	A6	0	0	1	5	4	6
Red Bull 1124	A7	0	0	0	5	5	8
Potato Chip 1123	A8	0	0	0	6	6	8
F&N Grape 1252	B1	0	0	0	5	5	6

Submit

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8) Audit Trails

FamilyMart

Download Report

OPERATOR

Temperature Summary

Replenishment Summary

FINANCE

GHL Transaction

DOWNTIME

Downtime

Downtime History

Fault Management

CLOUD LOGGING

Temperature Logs

INVENTORY

Refill Service

Stock Take

LOGS

Audit Trails

Cloud Logging / Audit Trails

Last 7 DaysLast 15 DaysLast 30 DaysDate: 03-03-2025 -> 17-03-2025Export to Excel

Show 10 entriesSearch:

DATE & TIME	ACTION	DESCRIPTION	BY
2025-03-10 09:03:24	Login	User have successfully logged in	Shuhada Alina Binti Shahnul Nazril
2025-03-10 09:15:45	Login	User have successfully logged in	Shuhada Alina Binti Shahnul Nazril
2025-03-10 09:26:05	Login	User have successfully logged in	Shuhada Alina Binti Shahnul Nazril
2025-03-10 09:27:04	Product Master	User added a product with Item Code: 223252	Shuhada Alina Binti Shahnul Nazril
2025-03-10 09:32:22	Logout	User logged out due to inactivity	Unknown
2025-03-10 09:42:15	Logout	User logged out due to inactivity	Unknown
2025-03-17 10:29:27	Login	User have successfully logged in	Shuhada Alina Binti Shahnul Nazril
2025-03-17 10:32:13	Login	User have successfully logged in	Shuhada Alina Binti Shahnul Nazril

Showing 1 to 8 of 8 entriesPrevious1Next

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7. Conclusion

The **FamilyMart Portal & API** successfully streamlined **inventory management**, **user access control**, and **system monitoring** while **enhancing real-time data synchronization**.