



Vending Machine Sale Transaction Management System

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Abstract

Managing vending machine sales data manually introduces significant risks – data inaccuracies, delayed reporting, and inefficient inventory updates. To address these challenges, a Daily Vending Machine Sales Transaction Management System was developed in collaboration with [Company name], designed to streamline data management, reduce inventory discrepancies, and enable accurate daily sales tracking.

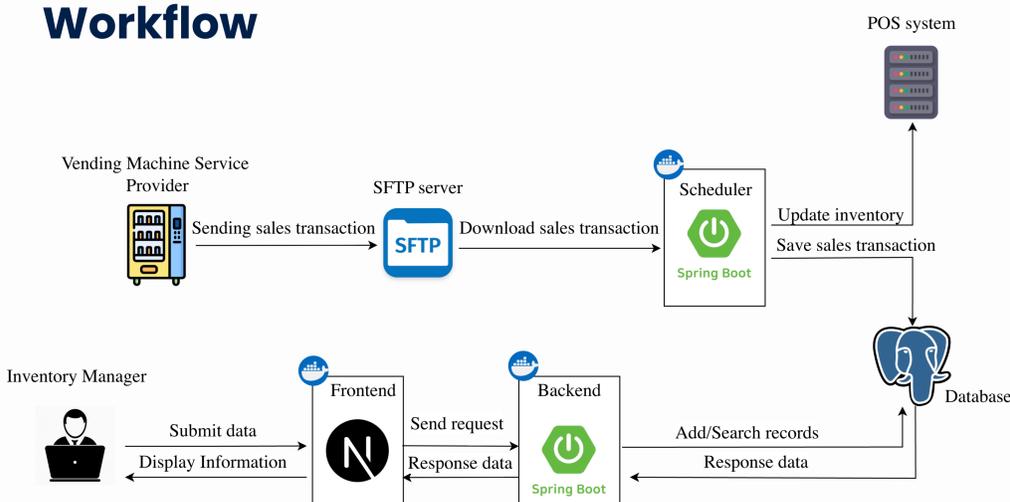
Development followed an Agile Scrum methodology, using Next.js for the frontend and Spring Boot with Java for the backend. At the core of the system is an automated scheduler that retrieves and processes daily sales data, synchronizes inventory records, and presents the results through an intuitive management interface. The result is a system that replaces error-prone manual workflows with a reliable, efficient process for managing vending machine sales and inventory operations.

Introduction

Vending machines are widely used as a retail channel for distributing beverages, snacks, and consumer products, requiring accurate daily sales monitoring and inventory management. However, in many organizations, sales data processing and inventory updates are still performed manually, leading to delays and potential errors.

This project presents the development of a Daily Vending Machine Sales Transaction Management System designed to automate sales data processing, improve inventory accuracy, and support daily operational tasks. Developed in collaboration with the development team using modern web technologies and Agile methodology, the system provides automated data processing, centralized monitoring, and a user-friendly interface to enhance efficiency and reliability in vending machine sales management.

Workflow



The team used Jira for sprint planning and issue tracking, and Microsoft Teams for daily communication and progress updates.

Results

UI of the management system

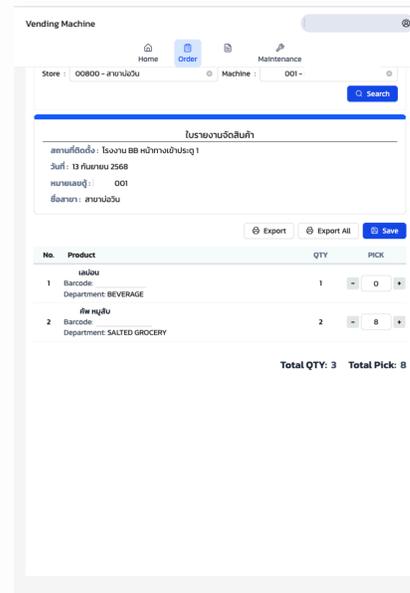


Figure 1: Stock order page

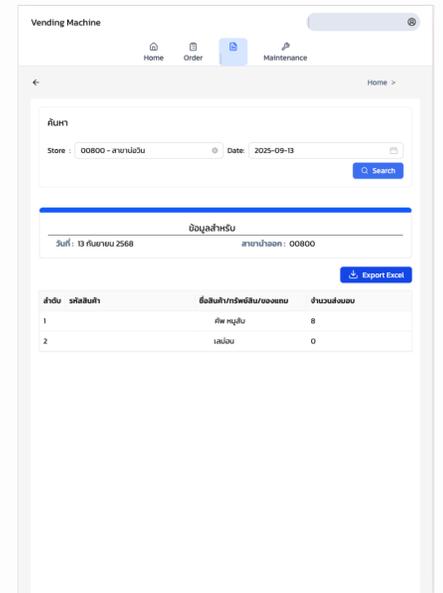


Figure 2: Summary order page

Code coverage of the scheduler system

Code coverage is a software testing metric that measures the percentage of source code executed by automated tests, helping us see which parts of the code are tested and which are not.

Element	Missed Instructions	Cov.
ExcelToDatabaseService	0	100%
CsvToDatabaseService	0	100%
SaveOrderToPosService	0	100%
RemoteFilesVeloceService	0	100%
SchedulerService	0	100%
InsertSalesDailyService	0	100%
LocalFilesVeloceService	0	100%
Total	0 of 2,860	100%

Figure 3: Code coverage of the scheduler system

Conclusion

This project presented the design and development of a Daily Vending Machine Sales Transaction Management System to address inefficiencies in manual sales data processing and inventory management. By automating the retrieval and processing of daily sales transactions, the system improves data accuracy, reduces manual workload, and ensures timely inventory updates. Developed using an Agile Scrum-based approach with modern web technologies, the system integrates an automated scheduler and user-friendly interface to support efficient monitoring and inventory management. The implemented solution minimizes data-related errors, streamlines operational workflows, and enhances overall efficiency and decision-making in vending machine retail operations.

Poster



Full References

