



TRƯỜNG ĐẠI HỌC FPT

MINISTRY OF EDUCATION AND TRAINING

FPT UNIVERSITY

Capstone Project Document

Inventory Management Software for Distributors

SEP490_G8	
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Capstone Project code	IMSD

- Hanoi, April 2023 -

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Acknowledgement

The IMSD Project finally has been finished after the team worked together for 4 months. This project would have not been completed without the support of many people. We want to thank all of them.

Firstly, we especially thank our mentor, Mrs. Kieu Thi Thu Huong for giving us the golden experience and supporting us during this journey. Her guidance and encouragement have been invaluable to our team, not only in terms of technical expertise but also in teaching us how to effectively collaborate and work as a cohesive unit. Mrs. Huong also imparted upon us the importance of maintaining a positive attitude when confronted with challenges. We believe that this philosophy was integral to the success of our project.

Secondly, we would like to thank all of the lectures of FPT University for giving us the greatest experiences and knowledge. Additionally, this project would not have been possible without the necessary knowledge from our lecturers at FPT University for the last 4 years.

Thirdly, we would also like to thank Chinh Bac distributor and some inventory for giving the advice about our business analysis process of inventory management.

Lastly, we would be remiss in not mentioning our family, especially our parents, partners, and friends. Their belief in us has kept our spirits and motivation high during this process.

Definition and Acronyms

Acronym	Definition
IMSD	Inventory Management Software for Distributors
BA	Business Analysis
BR	Business Rule
ERD	Entity Relationship Diagram
GUI	Graphical User Interface
PM	Project Manager
SDD	Software Design Description
SPMP	Software Project Management Plan
SRS	Software Requirement Specification
UAT	User Acceptance Test
UC	Use Case

API	Application Program Interface
WMS	Warehouse management system
JWT	JSON Web Token
SDS	Software Design Specification
UI	User interface
UX	User experience
DBMS	Database Management System
UML	Unified Modeling Language
N/A	Not available
VND	Viet Nam dong
DTO	Data transfer object
ORM	Object Relational Mapping

I. Project Introduction

1. Overview

1.1 Project Information

- Project name: Inventory Management Software for Distributors
- Project code: IMSD
- Group name: SEP490_G8
- Software type: Website
- Timeline: January 2023 - April 2023

1.2 Project Team

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2. Product Background

The warehouse management system (WMS) project aims to implement a software application that can automate and streamline various warehouse processes to improve the efficiency and effectiveness of warehouse operations. The need for the project arises due to the inefficiencies and errors in manual warehouse management processes, making it difficult to manage inventory levels, locations, and movements. Once implemented, the WMS will bring significant benefits such as increased productivity, reduced labour costs, improved inventory accuracy, and valuable insights into warehouse operations.

3. Existing Systems

3.1 KiotViet

KiotViet provides simple and cost-effective solutions, helping small, medium and micro enterprises to do business more easily and efficiently. All a user has to do is add the user's specific contact details, the warehouse, and they'll quickly create an inventory for that business



Figure 3.1.1 - Website KiotViet

Summary of the advantages and disadvantages of KiotViet

Pros	Cons
<ul style="list-style-type: none">- The interface is clean, simple and will take care of the work for you.- User experience is good, anyone can use and customize it easily.	Regarding customer service, technical support is a bit slow.

3.2 Sapo

Sapo has all the features you need in an inventory management software. Sapo creates an ecosystem that supports growth comprehensive distributors

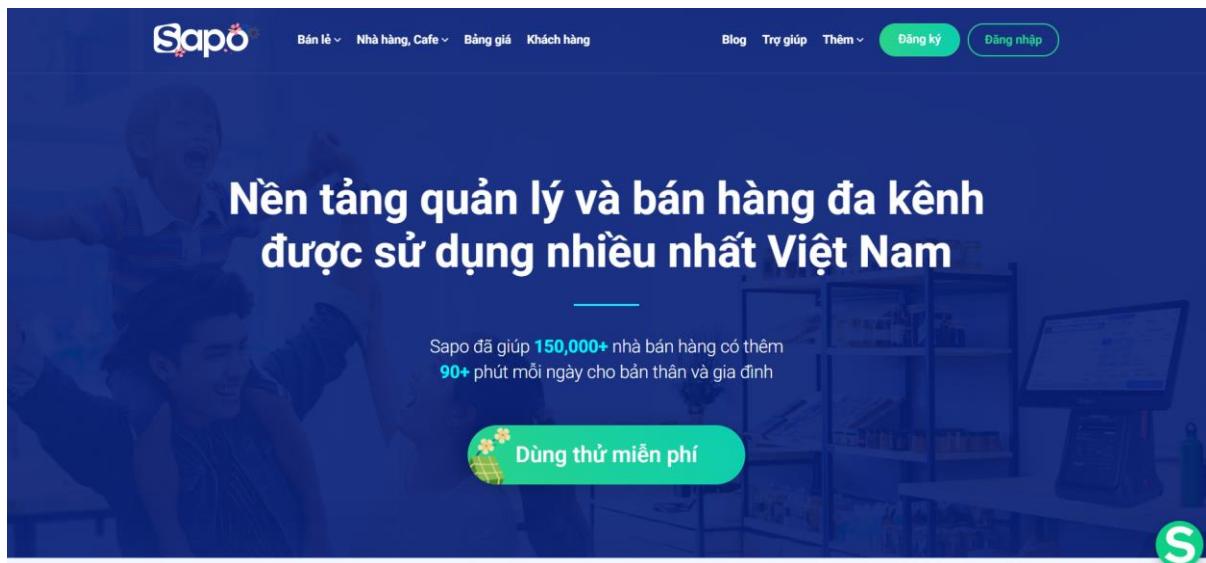


Figure 3.2.1 - Website SapoSystem

Summary of the advantages and disadvantages of Sapo

Pros	Cons
Have a Sapo app on your phone for tracking.	<ul style="list-style-type: none">- Although the Sapo software interface is beautiful, the menu displays many items. Therefore, it will be difficult for viewers to remember when they first look at it.- Too many types of reports are not really necessary.

3.3 SUNO

Suno helps owners manage all aspects of the store: from calculating sales money, managing inventory of goods, managing revenue and expenditure of money, taking care of customers to analyzing business results easily.

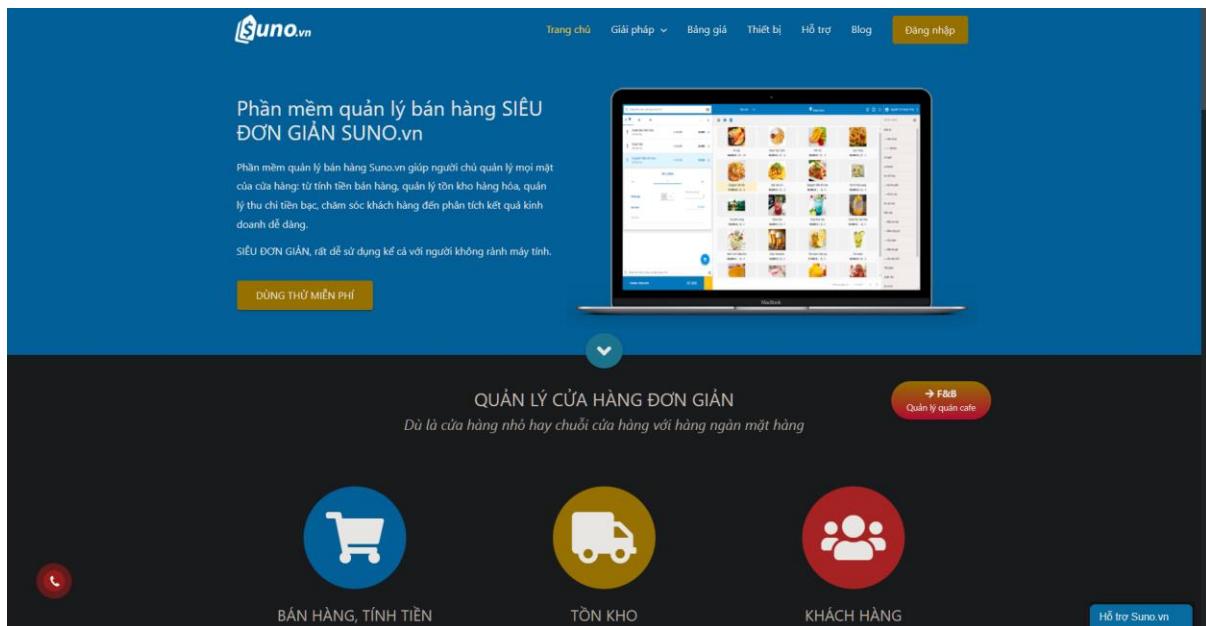


Figure 3.3.1 - Website SUNO

Summary of the advantages and disadvantages of Sapo

Pros	Cons
Easy to use	Focus on selling business, not inventory management.

4. Business Opportunity

Implementing a warehouse management system (WMS) presents a significant business opportunity for organizations that manage a large volume of inventory. The WMS can help organizations improve warehouse operations by automating and streamlining various processes, reducing labor costs, improving inventory accuracy, and providing real-time inventory visibility and control. These benefits can lead to increased productivity, higher customer satisfaction, and reduced costs, providing a competitive advantage in the marketplace. Additionally, the continued growth of e-commerce and omnichannel sales strategies creates a growing demand for efficient and effective warehouse management, making the implementation of a WMS a viable and strategic business opportunity for organizations.

5. Software Product Vision

In the digital era, it is essential to use inventory management software to easily manage inventory. The product vision for the warehouse management system (WMS) is to provide a comprehensive software solution that can automate and streamline various warehouse processes, improving the efficiency and effectiveness of warehouse operations.

6. Project Scope & Limitations

6.1 Major Features

There are 3 types of user in IMSD System:

Type of User	Description
Owner	People who is the owner of the inventory
Storekeeper	The storekeeper of the inventory
Seller	The seller of the inventory

IMSD System will provide the following functions to the above users:

#	Feature	Description
FE-01	Authentication	Use this feature to signup, login and logout on the website.
FE-02	Inventory management	Use this feature to overview the categories, products, suppliers in inventory, price and manage them.
FE-03	Manage import orders	Use this feature to import goods to the inventory
FE-04	Manage export orders	Use this feature to export goods from the inventory
FE-05	Checking inventory	Use this feature to modify the number of goods in inventory.
FE-06	Inventory returns	Feature to receive goods from customers and return them to the manufacturer
FE-07	Manage Staff	The owner use this feature to register new staff, active/deactivate staff and view information of staff of the inventory
FE-08	Manage Profile	Users use this feature to change their profile
FE-09	Dashboard	Have an overview of the inventory's revenue

6.2 Limitations & Exclusions

LI	Description
01	Website is only applicable to small companies and few departments.
02	The system does not support importing and exporting excel files now.
03	The system is referenced from the practical needs of small confectionery warehouses, so it may not be suitable for all warehouses in the country.
04	Due to technical and time limitations, the system has not yet supported the control of the shipping process and the shipping status of the products.
05	The system supports many warehouse owners to use by registering an account with email; However, it is not supported to separate each repository owner as a separate domain.
06	The system does not yet support warehouse capacity management.
07	Do not support mobile applications.
08	Multiple product images uploaded.
09	The cost of services on the product environment has not been estimated yet.

II. Project Management Plan

1. Overview

1.1 WBS & Estimation

#	WBS Item	Complexity	Est. Effort (man-days)
	Inventory Management Software for Distributors		387
1	Project Initiating		10
1.1	Determine project scope	Medium	5
1.2	Create report 1 (Project Introduction)	Medium	5
2	Project Planning		17
2.1	Create report 2 (Project Management Plan)	Complex	5
2.2	Training technical	Complex	10
2.4	Team meeting	Simple	2
3	Project Executing		302
3.1	Iteration 1		87
3.1.2	Requirement & Design		18
3.1.1.1	Define requirements & Create SRS of manage goods and authentication	Complex	3
3.1.1.2	Analysis requirements	Complex	3
3.1.1.3	Define main use cases	Medium	2
3.1.1.4	Define & analyse the main business flow	Complex	3
3.1.1.5	Design screen	Medium	2
3.1.1.6	Create Testing Plan	Simple	2
3.1.1.7	Create SDD	Medium	3
3.1.2	Code & Implementation		53
3.1.2.1	Back-end		28
	Configuration & Setup environment	Medium	3
	Create base project	Medium	3
3.1.2.1.1	Authentication		
	Login, register, forgot password API	Simple	4
	Authentication API using JWT	Medium	4
3.1.2.1.2	Inventory management API		

	Product list API	Simple	3
	Search product	Simple	1
	Sort product	Simple	1
	Filter product	Simple	2
	Paging product list	Simple	3
	Add product, service	Medium	4
3.1.2.2	Front-end		25
	Configuration & Setup environment	Medium	4
	Create base project	Medium	4
3.1.2.2.1	Authentication		
	Login	Simple	1
	Logout	Simple	1
	Forgot password	Simple	1
3.1.2.2.2	Inventory owner screen		
	Product list	Simple	1
	Search product	Simple	1
	Sort product	Simple	1
	Filter product	Simple	1
	Paging product list	Simple	1
	Add product, service	Medium	3
3.1.2.2.3	Checking inventory screen		
	Checking list all products	Simple	2
	Search, sort, filter product	Simple	2
	Create inventory check sheet	Medium	2
3.1.3	Document		8
	Update SRS	Complex	4
	Update SDS	Complex	4
3.1.4	Testing		8
	Execute Unit Test	Medium	4
	Execute Integration Test	Medium	4
3.1.5	Summary & Deploy Iteration 1	Medium	1
3.2	Iteration 2		75
3.2.1	Back-end Coding		29
3.2.1.1	Create models and relationship	Complex	3
	Import Orders	Simple	1
	Import Order Details	Simple	1

3.2.1.2	Import Api		
	Post API	Medium	2
	Put API	Medium	2
	Approve API	Simple	1
	Deny API	Simple	1
	Get API	Simple	1
	Import	Complex	2
3.2.1.3	Create models and relationship		
	Export Orders	Simple	2
	Export Order Details	Simple	2
3.2.1.4	Export Api		
	Post API	Medium	2
	Put API	Medium	2
	Approve API	Simple	1
	Deny API	Simple	2
	Get Api	Simple	2
	Export	Complex	2
3.2.1.5	Deploy	Simple	1
3.2.2	Front-end Coding		30
3.2.2.1	Import goods screen		
	Manage list of import good report screen	Medium	3
	Create import goods report screen	Complex	4
	Edit import goods report screen	Complex	4
	Confirm import goods report	Simple	2
	Import goods report detail screen	Simple	2
3.2.2.2	Export goods screen		
	Manage list of export good report screen	Medium	3
	Create export goods report screen	Complex	4
	Edit export goods report screen	Complex	4
	Confirm export goods report	Simple	2
	Export goods report detail screen	Simple	2
3.2.3	Document		8
	Update SRS	Medium	4
	Update SDS	Medium	4
3.2.4	Testing		12
	Create Test case	Medium	4

	Execute Unit Test	Medium	4
	Execute Integration Test	Medium	4
3.2.5	Summary & Deploy Iteration 2	Medium	1
3.3	Iteration 3		68
3.3.1	Back-end Coding		24
3.3.1.1	Create models and relationship	Medium	3
	Return Orders	Simple	1
	Return Order Details	Simple	1
3.3.1.2	Returns Api		
	Post API	Complex	3
	Get API	Simple	2
3.3.1.3	Create models and relationship		
	Stocktake Notes	Simple	2
	Stocktake Note Details	Simple	2
3.3.1.4	Stocktake Api		
	Post API	Medium	2
	Put API	Medium	2
	Approve API	Simple	1
	Deny API	Simple	1
	Stocktake	Complex	3
3.3.1.5	Deploy	Simple	1
3.3.2	Front-end Coding		27
3.3.2.1	Return goods screen		
	Manage list of return report screen	Medium	2
	Manage list of return goods to supplier screen	Medium	2
	Create report of return goods screen	Complex	3
	Create report of return goods to supplier screen	Complex	3
	Return goods report detail screen	Simple	1
	Return goods to supplier report detail screen	Simple	1
3.3.2.2	Check goods screen		
	Manage list of check good report screen	Medium	3
	Create check goods report screen	Complex	4
	Edit check goods report screen	Complex	4

	Confirm check goods report	Simple	2
	Check goods report detail screen	Simple	2
3.3.3	Document		8
	Update SRS	Medium	4
	Update SDS	Medium	4
3.3.4	Testing		12
	Create Test case	Medium	4
	Execute Unit Test	Medium	4
	Execute Integration Test	Medium	4
3.3.5	Summary & Deploy Iteration 3	Medium	1
3.4	Iteration 4		71
3.4.1	Back-end Coding		27
3.4.1.1	Users API	Medium	5
	Post API	Medium	5
	Put API	Medium	5
	Change password	Simple	2
	Get API	Simple	2
	Dashboard API	Complex	8
3.4.1.2	Deploy	Simple	1
3.4.2	Front-end Coding		27
3.4.2.1	Manage staff		
	Manage list of staff in inventory	Simple	3
	Create new staff	Simple	5
	View/ Edit staff detail	Medium	5
3.4.2.2	Profile		
	View/ Edit profile detail	Medium	8
3.4.2.3	Dashboard screen	Medium	6
3.4.3	Document		8
	Update SRS	Medium	4
	Update SDS	Medium	4
3.4.4	Testing		12
	Create Test case	Medium	4
	Execute Unit Test	Medium	4
	Execute Integration Test	Medium	4
3.4.5	Summary & Deploy Iteration 4	Medium	1
4	System Testing		25

	Update report 5 - test document	Medium	10
	Execute system testing & Fix bugs	Complex	14
	Deploy final version	Simple	1
5	Project Monitoring and Controlling		25
5.1	Create report 6 (Software User Guides)	Complex	5
5.2	Perform project communication	Medium	5
5.3	Monitor and control scope	Medium	5
5.4	Monitor and control risk	Medium	5
5.5	Tracking progress	Medium	5
6	Project Closing		8
6.1	Create final report	Medium	2
6.3	Thesis defense presentation	Complex	5
6.4	Close Project	Medium	1
Total Estimated Effort (man-days)			387

1.2 Project Objectives

- Timeliness: The project must be finished before April 14, 2023
- Allocated Effort (man-days): **387**
- Defect Distribution:

#	Quantity Stage	No. of Defects	% of Defects	Notes
1	Reviewing	71	6.5%	Before closing the issue, the tester and the leader will review
2	Unit Test	87	8%	Developer creates and tests
3	Integration Test	536	49.2%	The tester creates and tests
4	System Test	292	26.8%	The tester creates and tests
5	User Acceptance Test	104	9.5%	Customer verifies system
Total		1090	100%	

1.3 Project Risks

#	Risk Description	Impact	Possibility	Prevention	Correction
1	Requirement changes.	Medium	Medium	All members discuss the project requirements carefully before starting implementation.	Ensure resources are appropriately allocated to accommodate new requirements.
2	Technical problems, app crashes, can happen when the software doesn't work properly and something goes wrong.	High	Medium	We fixed it by performing early testing stages, and at the same time re-doing a lot of regression tests to ensure that no new bugs arise when fixing old bugs.	Common functions work as required. Try catch the errors
3	Illness or absence of team members so that they cannot complete tasks/ lack of tasks under deadline.	Low	Medium	Members have to notify the team about illness or absence periods and the plan of how to keep up with the work process.	Ensure that the absence of a member won't affect others and always have plans to deal with this problem.
4	Members have argued, conflicted with others, leads to stressful working environments.	Medium	High	Define clear tasks for each member and agree on ideas before starting work.	All members discuss resolving the conflict.
5	Members lack the knowledge and skills to complete a particular task.	High	Medium	Training all members before starting the project.	Members inform about their lack of skills, and other team member's support.
6	The library used in the project is no longer supported	Low	Low	Choose a reputable library with active maintenance on GitHub.	Choose alternative libraries or code.
7	Source Code Conflicted	Medium	Medium	Follow the commit and pull request process agreed from the start	Ask for support from team lead

2. Management Approach

2.1 Project Process

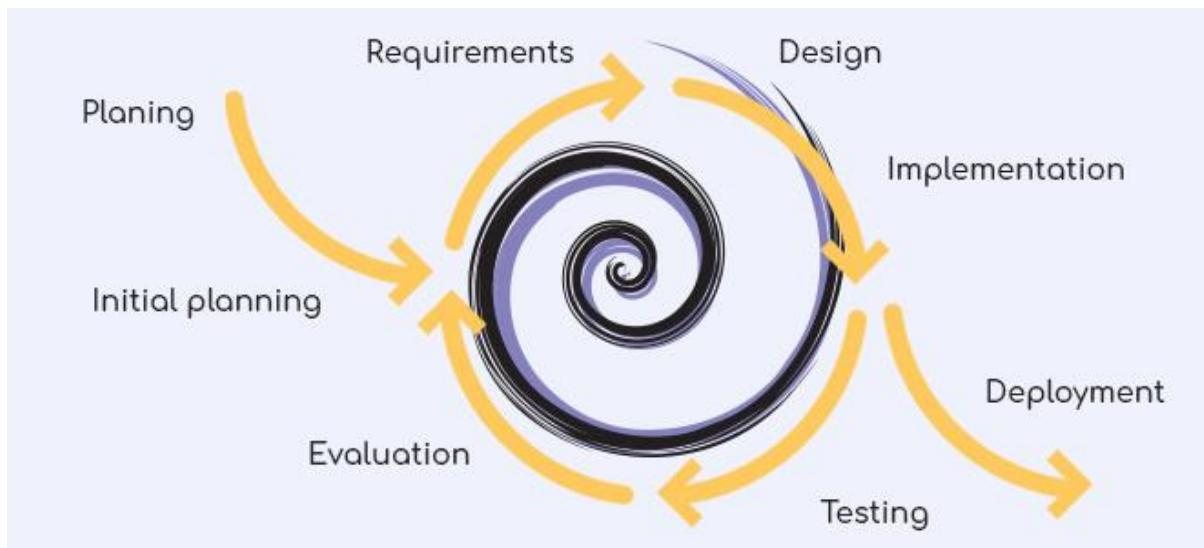


Figure 2.1.1 - Iterative and Incremental model

The project will apply the Iterative and Incremental model after carefully investigating the software development model. In an iterative & incremental model, a deliverable state is first achieved by building a partial implementation of a full system. The iterative and incremental model is frequently utilised when the scope of the project is big, the major requirements are defined clearly, some more details will be added later in software development. By using this software process model, we break down the developing system task into a series of smaller tasks which will be completed separately, allowing us to take advantage of what was learned during the development of earlier parts of the system. The nature of this project makes the chosen model a suitable model, those are:

- You can develop some main functions that prioritise requirements first. Requirements changes can be easily accommodated.
- Testing and debugging during smaller iterations is easy.
- Easier to manage risk easier because risk segments are identified and dealt with during its iteration.
- Customers can provide feedback to each product increment, thus avoiding surprises at the end of development.
- Customers get important functionality early.
- Requirements changes can be easily accommodated.
- The duration for this project is 15 weeks and can't be extendable.
- Some new technology is being used and being learnt by the development team while working on this project.
- Features, technologies are mostly defined right from the beginning.
- Easier to test

2.2 Quality Management

2.2.1 Defect prevention

- If any defect is found, the tester or developer must inform the developer immediately at that time
- The development team must evaluate the defects carefully like “How bad is the defect and how does it damage the system?”, “How long does it take to fix the defect?”, “Will the new fixing bring another defect?”
- The time spent for fixing must be specified clearly
- Always plan for anything that could happen at any time.
- After any implement time, a overview through the system must be carried out

2.2.2 Reviewing

- The curator must be and not biased toward any of the project members. If there is any error, the person must immediately notify the person responsible for the defect
- Defects should be recorded on the Bug Tracking software with details such as priority.
- The person responsible for defects found must-have solutions to fix the defect as quickly as possible

2.2.3 Unit Testing

- The curator must prepare the test cases carefully and accurately and must not ignore any cases. Test cases should be appropriate for the functionality of the system.
- Defects should be recorded on the Bug Tracking software with details such as priority.
- The person responsible for defects found must-have solutions to fix the defect as quickly as possible.

2.2.4 Integration Testing

- The curator must prepare the test cases carefully and accurately and must not ignore any cases. Test cases should be appropriate for the functionality of the system.
- Defects should be recorded on the Bug Tracking software with details such as priority
- The person responsible for defects found must-have solutions to fix the defect as quickly as possible
- Internal modules within the system work smoothly.

2.2.5 System Testing

- The curator must prepare test cases carefully and accurately. The test cases must match well with the system and system and architecture design.
- Defects should be recorded on the Bug Tracking software with details such as priority.
- The person responsible for defects found must-have solutions to fix the defect as quickly as possible.
- System testing test cases cover the entire system functionality and the communication under development with external systems.

2.2.6 Acceptance Testing

- The curator must prepare test cases carefully and accurately. The test cases must match well with the system and system and architecture design.
- Defects should be recorded on the Bug Tracking software with details such as priority.
- The person responsible for defects found must have solutions to fix the defect as quickly as possible.

2.3 Training Plan

Training Area	Participants	Duration	Waiver Criteria
NextJs, Typescript(Front-end for Web)	DucNDT, PhuongNN	03/01/2023 - 13/01/2023	Mandatory
Asp.Net Web API, Restful API	KienNT, LamND	03/01/2023 - 13/01/2023	Mandatory
Coding Convention	All team member	03/01/2023 - 13/01/2023	Mandatory
Azure (deploy API)	LamND	03/01/2023 - 13/01/2023	Mandatory
Vercel (deploy NextJS)	DucNDT	03/01/2023 - 13/01/2023	Mandatory
Jira tools	DucNDT	03/01/2023 - 13/01/2023	Mandatory
Git, Github	All team member	03/01/2023 - 13/01/2023	Mandatory

3. Project deliverable

#	Deliverable	Start Date	End Date	Note
1	Project Idea	05/01/2023	10/01/2023	
2	Report 1 – Project Introduction	11/01/2023	16/01/2023	Product background Existing systems Business opportunity Product vision Project scope & limitations
3	Report 2 – Project Management Plan	13/01/2023	27/01/2023	WBS Project process Plan and schedule Project organisation Project communication Configuration management
4	Report 3 – SRS v1	27/01/2023	09/02/2023	Business rules Use case diagram Use case Functional requirements Non-functional requirements
5	Report 4 – Software Design v1	27/01/2023	10/02/2023	System architecture Back-end architecture Front-end architecture Database design
6	Code & Implement Sprint 1 (Authen & Manage Goods)	27/01/2023	13/02/2023	Detail design Code & Unit test Integration & System test cases
7	Report 5 - Test Document v1	02/02/2023	12/02/2023	Create test case for iteration Execute test iteration 1
8	Code & Implement Sprint 2 (Import/ export goods)	14/02/2023	27/02/2023	Detail design Code & Unit test Integration & System test cases
9	Report 3 – SRS v2	14/02/2023	27/02/2023	Business rules Use case diagram Use case Functional Requirements Non-functional requirements
10	Report 4 – Software Design v2	14/02/2023	27/02/2023	System architecture Back-end architecture Front-end architecture Database design

11	Report 5 - Test Document v2	14/02/2023	27/02/2023	Create test case for iteration Execute test iteration 2
12	Code & Implement Sprint 3	28/02/2023	14/03/2023	Detail design Code & Unit test Integration & System test cases
13	Report 3 – SRS v3	28/02/2023	14/03/2023	Business rules Use case diagram Use case Functional Requirements Non-functional requirements
14	Report 4 – Software Design v3	28/02/2023	14/03/2023	System Architecture Back-end Architecture Front-end Architecture Database design
15	Report 5 - Test Document v3	28/02/2023	13/03/2023	Create test case for iteration Execute test iteration 3
16	Code & Implement Sprint 4	14/03/2023	30/03/2023	Detail design Code & Unit test Integration & System test cases
17	Report 3 – SRS v4	14/03/2023	30/03/2023	Business rules Use case diagram Use case Functional Requirements Non-functional requirements
18	Report 4 – Software Design v4	14/03/2023	30/03/2023	System architecture Back-end architecture Front-end architecture Database design
19	Report 5 - Test Document v4	14/03/2023	30/03/2023	Test model Test plan Test cases Test reports
20	Report 6 - Software User Guides	01/04/2023	10/04/2023	Deliverable package Installation guides User manual
21	Final Code, Test, Docs and Report 7	01/04/2023	18/04/2023	All reports Presentation slide Source code

4. Responsibility Assignments

4.1 Team & Structures

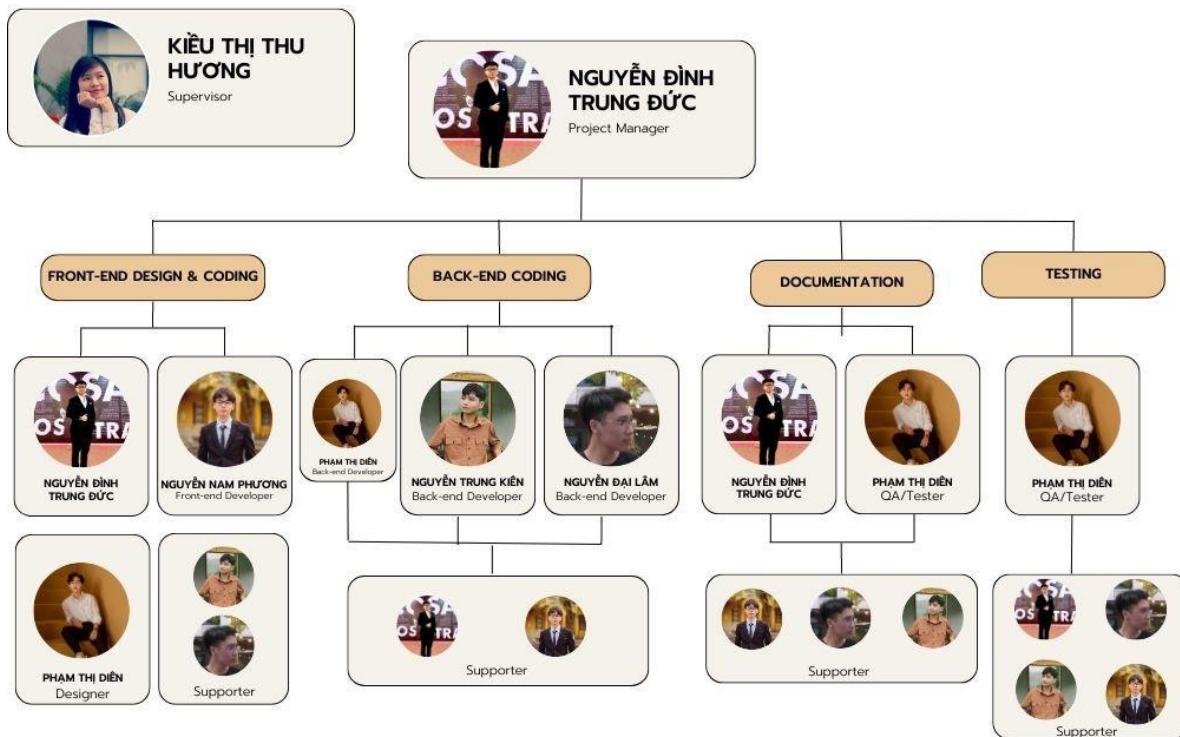


Figure 4.1.1 - Team and Structures

4.2 Role & Responsibilities

Role	Responsibility
Project Manager	<p>Represent the team to communicate with supervisor and stakeholders.</p> <p>Break tasks and assign them to team members, talk to members to identify blocker and help them solve it.</p> <p>Responsible for keeping the team's focus on the main goal.</p>
Analysis Leader	<p>Analyze requirements.</p> <p>Define scope and create SRS document.</p> <p>Design entity relationship diagram.</p>
Analysis Member	<p>Receive task from Analysis Leader.</p> <p>Define business process flow and object state.</p> <p>Capture and specifically describe the use case.</p>

Design Leader	Research UI/UX for website design and create design system components for the front-end team.
Design Member	Follow design leader work. Detail design for the front-end team.
Technical Leader	Design software architecture, research hard technical problems and solve them. Support team member on technical problems. Research and implement UX for the front-end team. Implement and set up an environment for deployment.
Document Leader	Responsible for Final report and detail report quality and writing documents.
Document Member	Creating and writing documents.
Test Leader	Define test cases and assign them to test members, supervise and ensure test quality.
Test Member	Create test cases. Implement test case and log defect to file issue.

4.3 Responsibility Assignments

D~Do; R~Review; S~Support; I~Informed

Responsibility	DucNDT	PhuongN N	LamN D	KienN T	DienPT
Project Planning & Tracking	D	I	I	I	S
Prepare Project Introduction Document	D	S	S	S	S
Prepare SRS Document	R	D	S/I	D	D
Gathering Requirements	D	R	D	R	D

Prepare SDD Document	R	D	D	D	R
Prepare Test Document	R	D	I	S	D
Implement Back-end	I	I	D	D	R
Implement Front-end	D	D	I	I	I
Execute Test	D	D	I	I	D
Prepare Test Cases	R	R	R	R	D
Prepare Deployment Environment	D	I	D	I	I
Prepare Presentation	D	D	D	D	D

4.4. Project Communications

Communication Item	Target	Purpose	Frequency	Type, Tool, Method(s)
Asynchronous messaging	All members	Discuss tasks, analyze features, coding helps...	Anytime	Messenger
Team weekly meeting	All team members	Review plan, schedule, members' work achievements during the week and report the project's progress and status	9:00 pm every Tuesday	Online through Facebook, Google Meet

Daily meeting	Team members	Report the progress that members achieved each day	9:00 pm everyday	Online through Facebook, Messenger, Meet, Gmail
Unscheduled meeting	All team members	When there's a critical problem that needs to be resolved immediately, discuss then solve that problem	When member find important problems	Online through Facebook, Google Meet

5. Configuration Management

5.1 Document Management

- Document tools: Google Docs and Google Sheets
- File management: Google Drive

5.2 Source Code Management

- Source code is managed and versioned by Git on GitHub
- New feature developmaster is used for the latest relevant process:
 - Push to its own branch (e.g., backend/log-in)
 - Create a pull request to branch develop
 - Review and approve by team member

5.3 Tools & Infrastructures

Category	Tools & Techniques
Programming languages	TypeScript, C#
Framework	Next.js, Entity Framework Core
API	RESTful API
API management tool	Postman, SwaggerUI 
DBMS	SQL Server 
IDEs/Editors	Visual Studio Code, Visual Studio 
UML tools	Draw.io, Lucid
Documentation	MS Office, Google Docs/Sheets/Slides 

Version Control	GitHub (Source Codes), Google Drive (Documents)
Deployment server	Azure, Vercel
Project management tool	Trello

III. Software Requirement Specification

1. Overall Description

1.1 Product Overview

IMSD is a software system that makes it easier and more convenient for distributors to import and export products. In addition, the software also supports product management functions. Software to increase efficiency in the working process. The context diagram below illustrates the external entities and system interfaces for version 1.0. The system is expected to evolve over several releases.

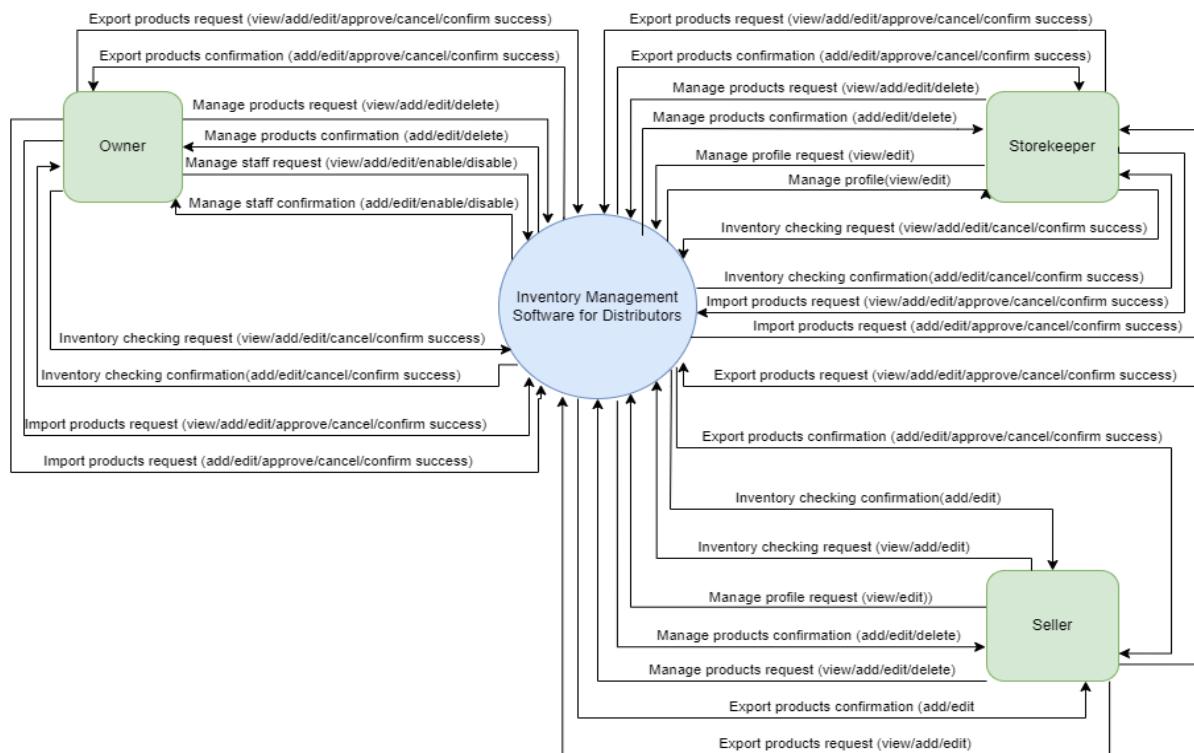


Figure 1.1.1 - Context diagram

2. User Requirements

2.1 Actors

#	Actor	Description
1	Owner	Have full permission to manage the system.

2	Seller	The person who creates orders to import, export, check or return Products.
3	Storekeeper	The person who manage all product in the warehouse of the system

2.2 Use Cases

2.2.1 Diagrams

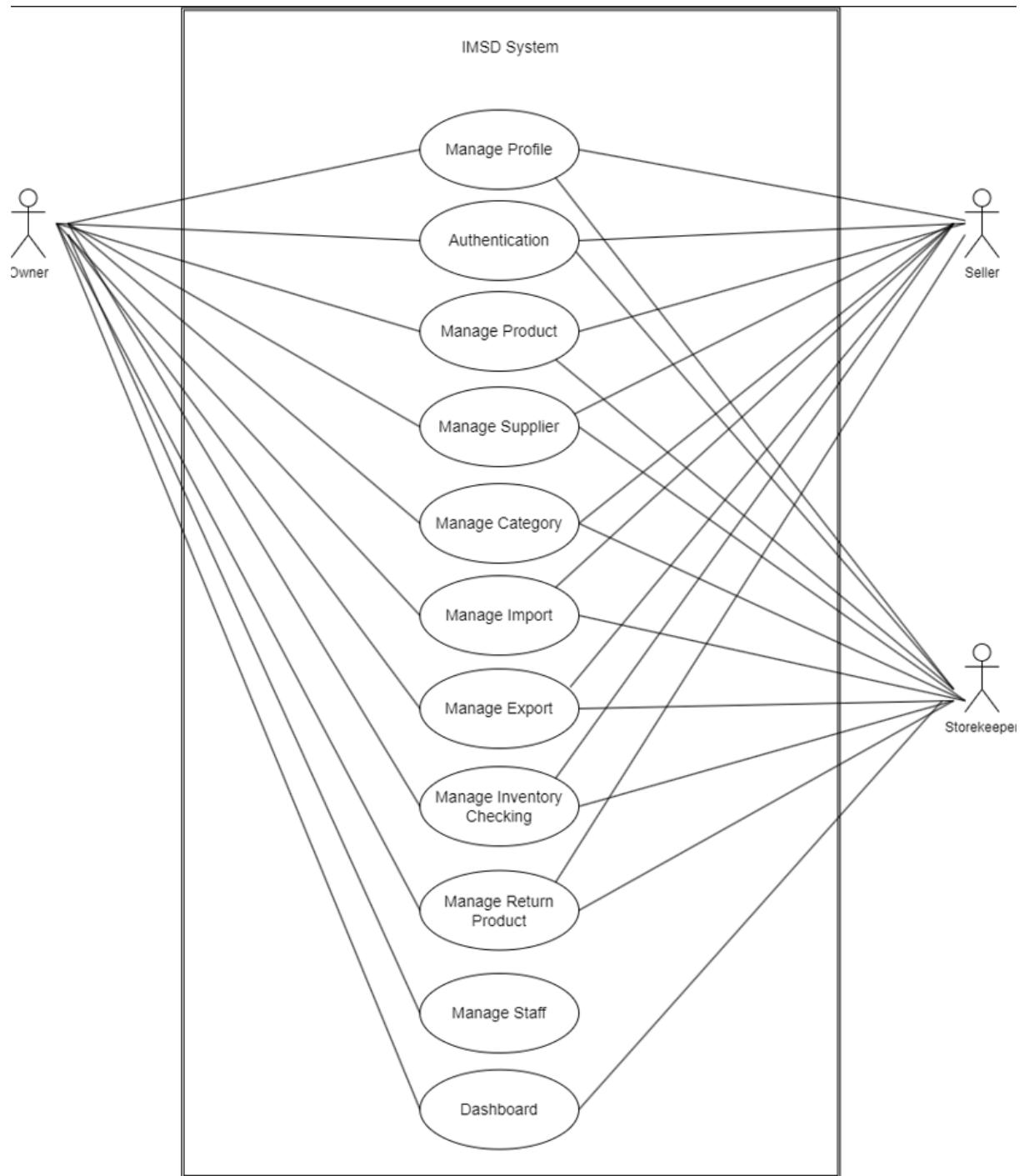


Figure 2.2.1 - Overview Use Case Diagram

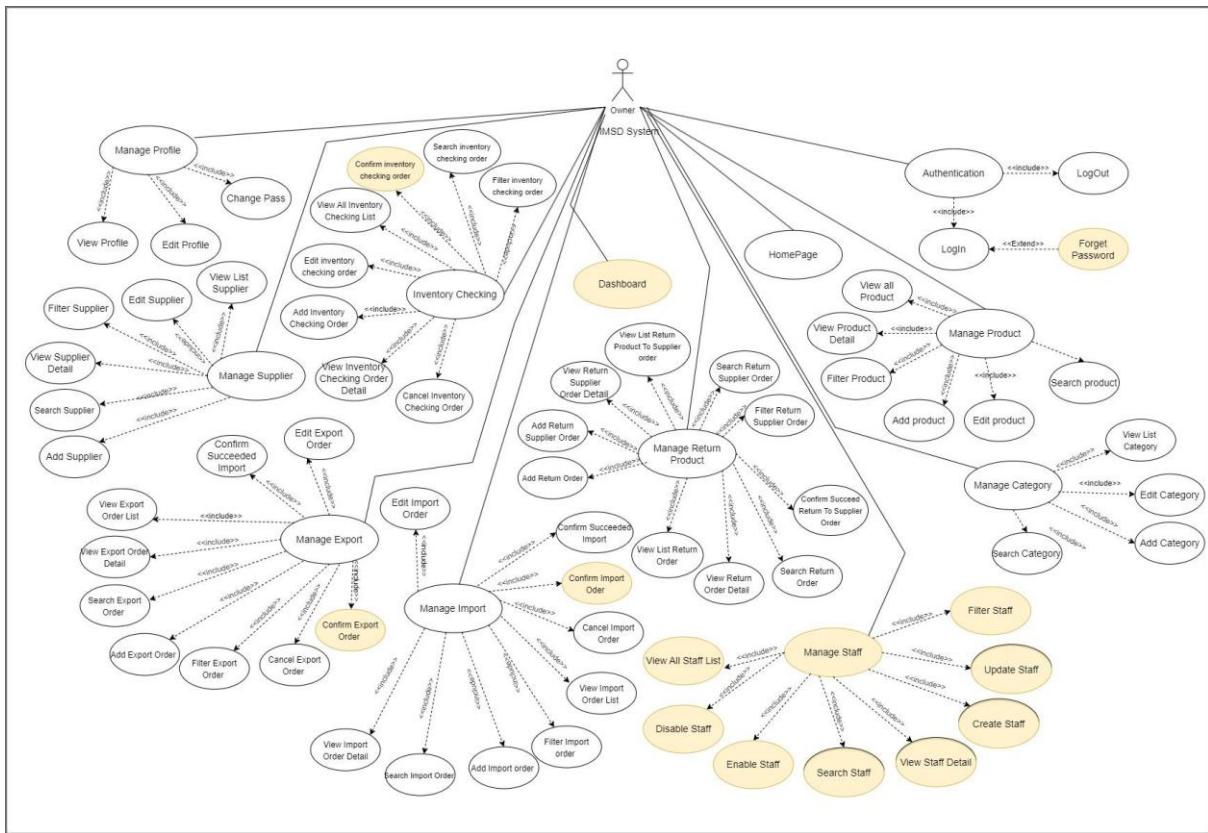


Figure 2.2.2 - Owner Detail Use Case Diagram

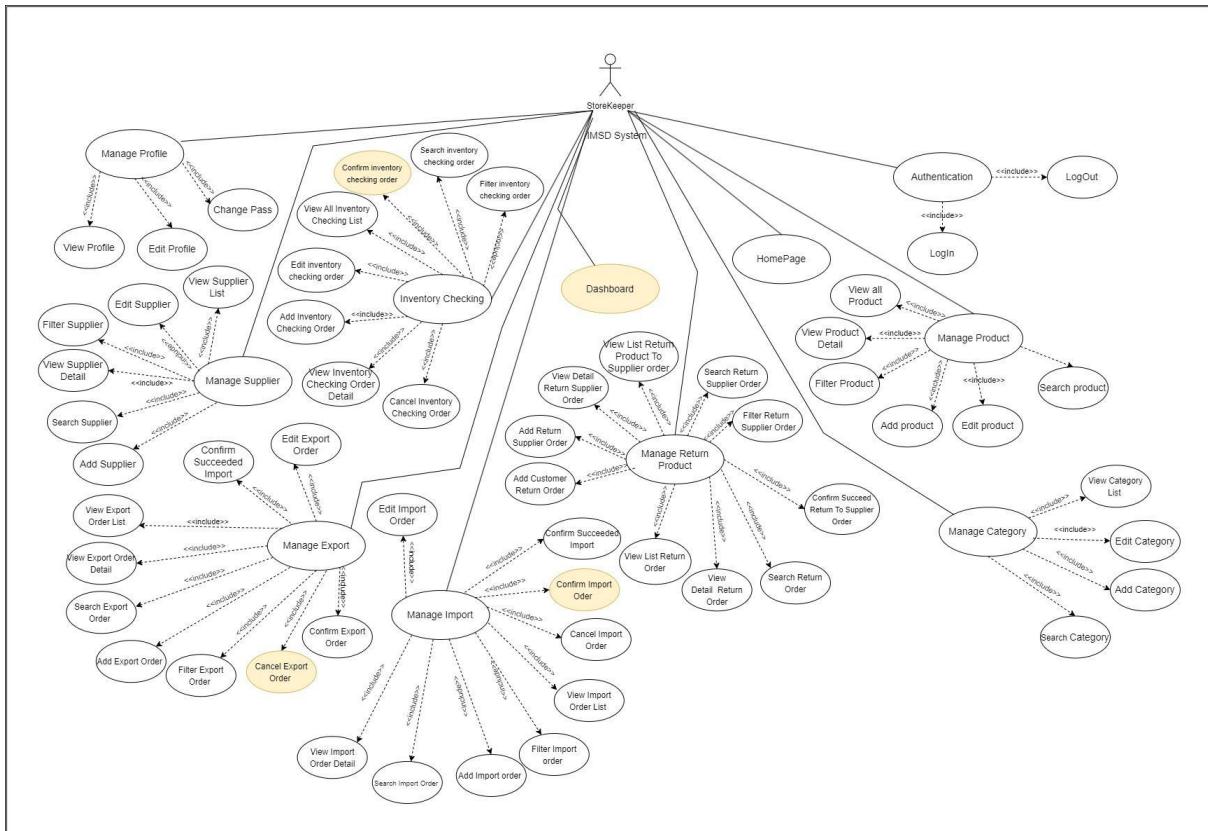


Figure 2.2.3 - Storekeeper Detail Use Case Diagram

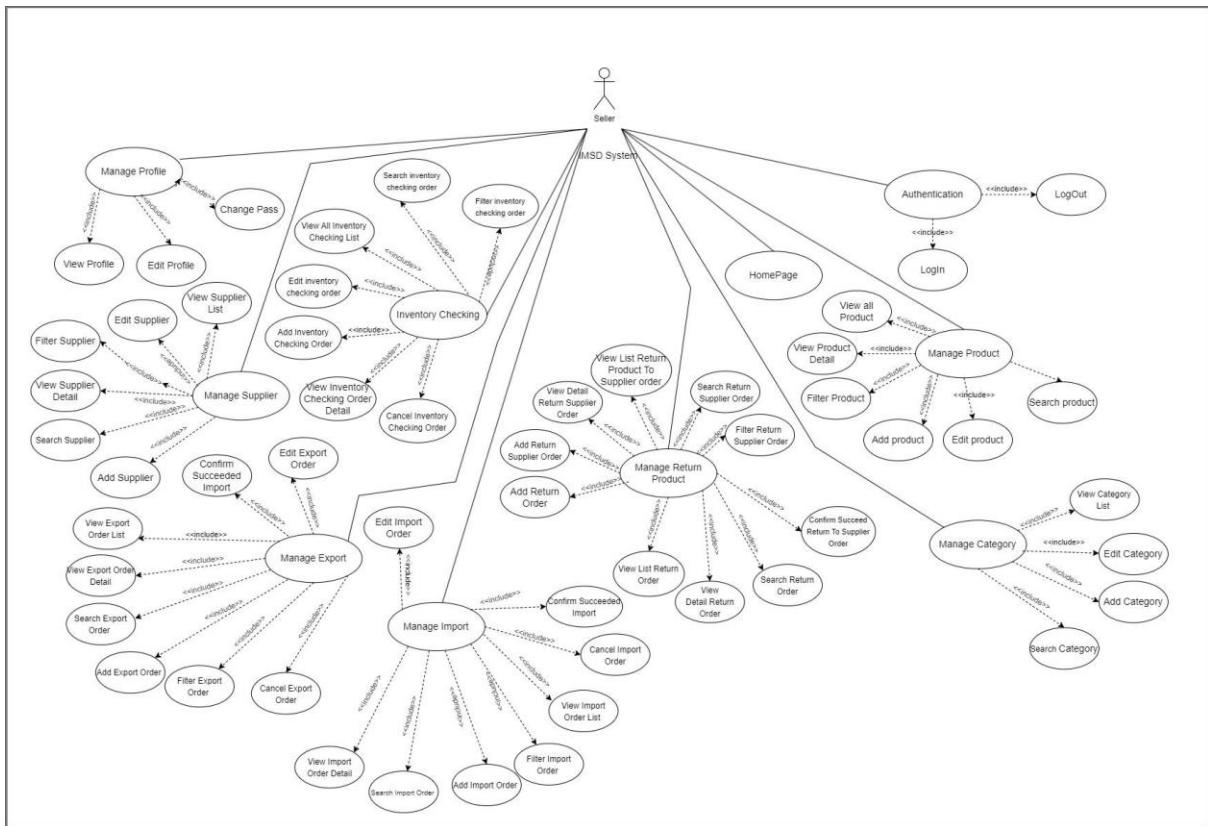


Figure 2.2.4 - Seller Detail Use Case Diagram

2.2.2 Descriptions

ID	Use Case	Actors	Use Case Description
01	Login	Owner, Seller, Storekeeper	User login to the system.
02	Logout	Owner, Seller, Storekeeper	User wants to logout the system.
03	Forget Password	Owner	The owner does not remember the password and wants to change it.
04	Signup	Owner	User who do not have an account want to register in the system.
05	View All Products	Owner, Seller, Storekeeper	User can view all Product
06	View Product Details	Owner, Seller, Storekeeper	User can find all the details of the product: Name, category, product code, manufacturer, unit measure, wrap unit measure, color and all the quantity.
07	Products Filter	Owner, Seller, Storekeeper	User can filter product by supplier, category
08	Add Product	Owner, Storekeeper	User can add a new product
09	Edit Product	Owner, Storekeeper	User can edit product informations

10	Search Product	Owner, Storekeeper	User can search product by name, code name, barcode
11	View Profile	Owner, Seller, Storekeeper	A User can view all his/her profile information
12	Edit Profile	Owner, Seller, Storekeeper	A user can update his/her profile information
13	Change Password	Owner, Seller, Storekeeper	A user can edit his/her password account.
14	Create Staff	Owner	The owner creates a new staff with the given information.
15	Disable Staff	Owner	The owner can disable a staff member
16	Enable Staff	Owner	The owner can enable a staff member
17	View Staff List	Owner	The owner lists all the staff accounts to manage.
18	View Staff Detail	Owner	The owner can view all the details of a staff member
19	Edit Staff	Owner	The owner uses this function to edit the staff.
20	Search Staff	Owner	User can search product by staff name, staff code, phone number
21	Filter Staff	Owner	User can filter staff by position, status
22	View List of Suppliers	Owner, Seller, Storekeeper	User wants to list all the suppliers to manage
23	Add Supplier	Owner, Seller, Storekeeper	A user wants to add a new supplier to the database.
24	Edit Supplier	Owner, Seller, Storekeeper	A user can edit the name, address, email and phone of the supplier
25	View Detail Suppliers	Owner, Seller, Storekeeper	A user can find all the details of the supplier: supplier name, phone number, Email, address, notes
26	Search Supplier	Owner, Seller, Storekeeper	A user wants to search the supplier he/she need by word(s) of name and filer
27	Filter Supplier	Owner, Seller, Storekeeper	User can filter supplier by supplier, status
28	View List of Categories	Owner, Seller, Storekeeper	A user can list all the categories
29	Add Category	Owner, Seller, Storekeeper	A user can create a new category.
30	Edit Category	Owner, Seller, Storekeeper	A user edits the name and note of category
31	Search Category	Owner, Seller, Storekeeper	A user can search the category by name
32	View Export Order List	Owner, Seller, Storekeeper	A user can view all the export orders with its status and the pending import Order.

33	Add Export Order	Owner, Seller, Storekeeper	A user exports consignment(s) of product(s)
34	View Export Order Details	Owner, Seller, Storekeeper	A user can see details of the export Order.
35	Search Export Order	Owner, Seller, Storekeeper	A user can search the export Order by export order code
36	Filter Export Order	Owner, Seller, Storekeeper	A user can filter the export order by status
37	Cancel Export Order	Owner, Seller, Storekeeper	A user cancels an export Order
38	Confirm Export Order	Owner, Storekeeper	Only the Owner and Storekeeper can confirm the export Order which is pending the confirmation.
39	Confirm Succeed Export	Owner, Seller, Storekeeper	User can confirm successful export
40	Edit Export Order	Owner, Seller, Storekeeper	User can edit export order informations
41	View Import Order List	Owner, Seller, Storekeeper	A user can view all the Import orders with its status and the pending import Order.
42	Add Import Order	Owner, Seller, Storekeeper	A user imports consignment(s) of product(s)
43	View Import Order Details	Owner, Seller, Storekeeper	A user can see details of the Import Order.
44	Search Import Order	Owner, Seller, Storekeeper	A user can search the import Order by name
45	Filter Import Order	Owner, Seller, Storekeeper	A user can filter the import order by status
46	Cancel Import Order	Owner, Storekeeper	A user cancels an import Order.
47	Confirm Import Order	Owner, Storekeeper	Only the Owner and Storekeeper can confirm the import order which is pending the confirmation.
48	Confirm Succeed Import	Owner, Seller, Storekeeper	User can confirm successful import
49	Edit Import Order	Owner, Seller, Storekeeper	User can edit import order informations
50	View All Inventory Checking Order	Owner, Seller, Storekeeper	A user can view all the inventory checking orders with its status and the pending inventory checking order.
51	View Inventory Checking Order Details	Owner, Seller, Storekeeper	A user can see details of inventory checking order
52	Search Inventory Checking Order	Owner, Seller, Storekeeper	User can search inventory checking order by inventory order code
53	Filter Inventory Checking Order	Owner, Seller, Storekeeper	User can filter inventory checking order by status

54	Edit Inventory Checking Order	Owner, Seller, Storekeeper	A user edits the inventory checking order while the order is in the checkout status
55	Add Inventory Checking Order	Owner, Seller, Storekeeper	User can add a new inventory checking order
56	Cancel Inventory Checking Order	Owner, Seller, Storekeeper	User can cancel a inventory checking order
57	Confirm Inventory Checking Order	Owner, Seller, Storekeeper	User can confirm a inventory checking order
58	View List Return Product To Supplier order	Owner, Seller, Storekeeper	User uses to view the list of return supplier orders for suppliers
59	View Return To Supplier Order Detail	Owner, Seller, Storekeeper	A user can see details of return supplier order
60	Confirm Succeed Return To Supplier Order	Owner, Seller, Storekeeper	User can confirm received the product of the successful return order
61	Add Return To Supplier Order	Owner, Seller, Storekeeper	Users use to return product to suppliers
62	Search Return Supplier Order	Owner, Seller, Storekeeper	User can search return supplier order by supplier, staff create order, return supplier order code
63	Filter Return Supplier Order	Owner, Seller, Storekeeper	User can filter return order supplier by supplier
64	View Return Order List	Owner, Seller, Storekeeper	User uses to view the list of customer return product to warehouse order
65	View Return Order Details	Owner, Seller, Storekeeper	A user can see details of customer return order
66	Add Return Order	Owner, Seller, Storekeeper	User uses to create a return order when the customer wants to return the warehouse
67	Search Return Order	Owner, Seller, Storekeeper	User can search return supplier order by staff create order, return order code
68	View dashboard	Owner, Seller, Storekeeper	User can have an overview with the business of the inventory

3. Functional Requirements

3.1 System Functional Overview

3.1.1 Screen Flow

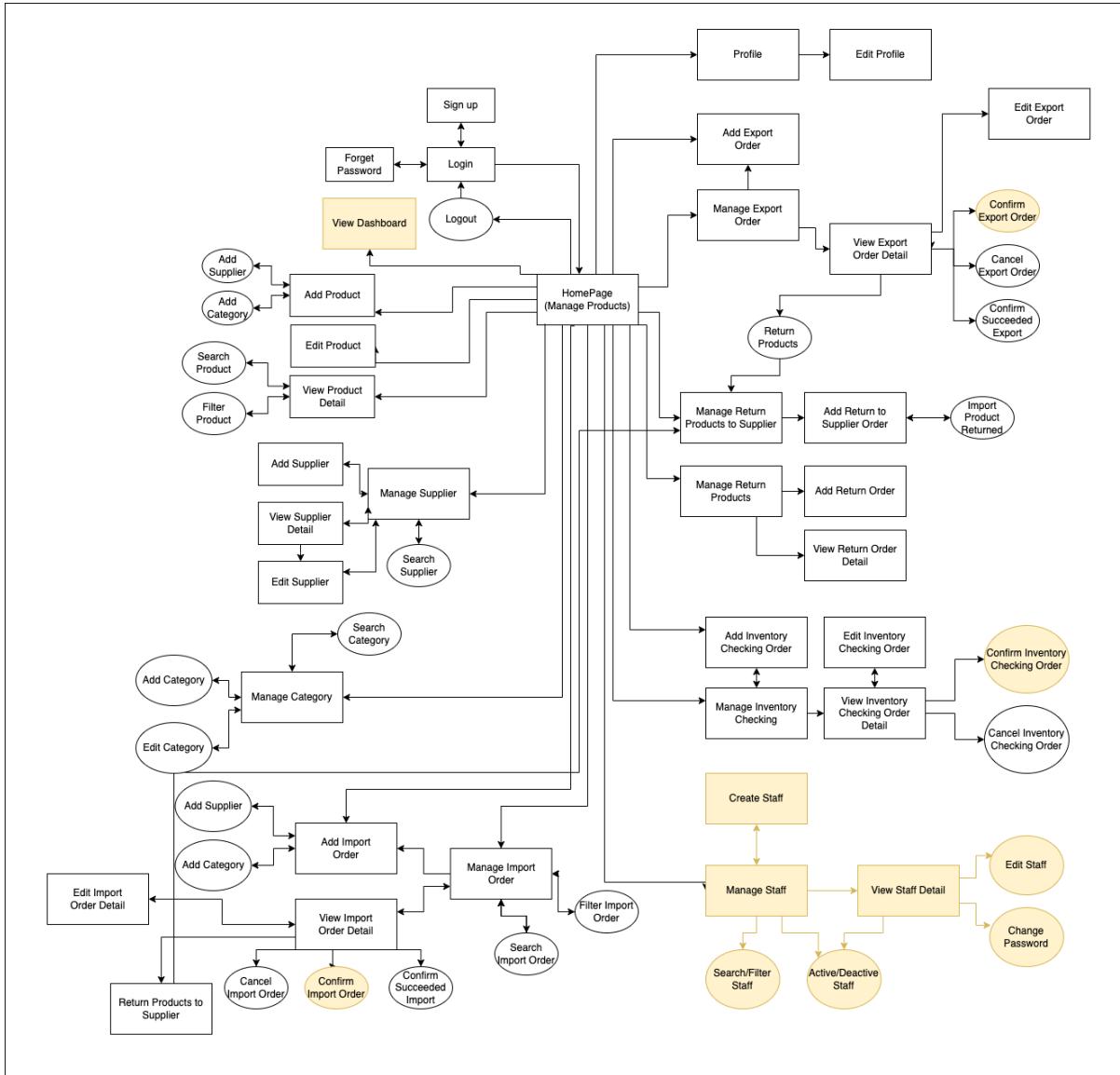


Figure 3.1.1 - Owner Detail Screen Flow Diagram

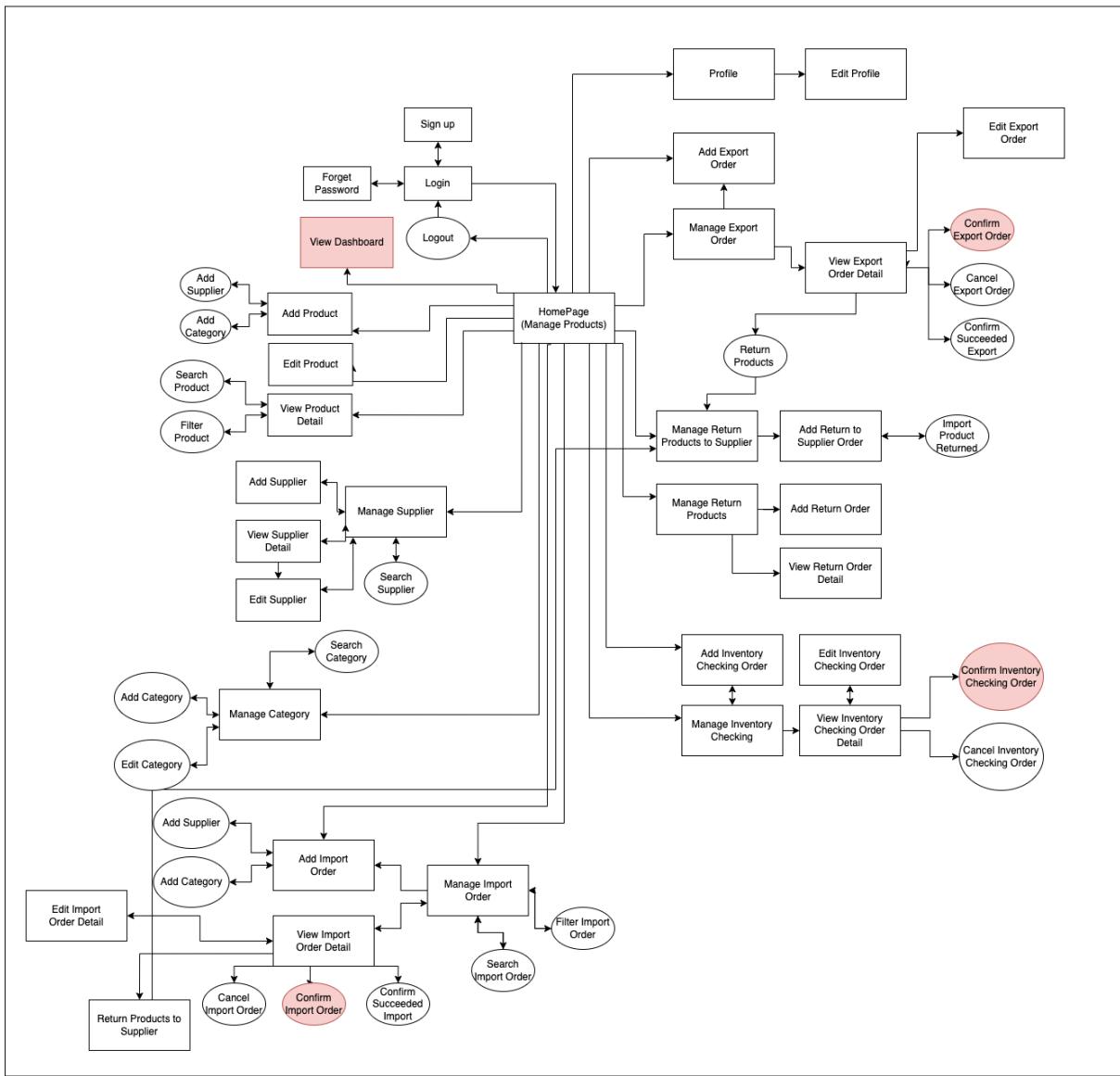


Figure 3.1.2 - Storekeeper Detail Screen Flow Diagram

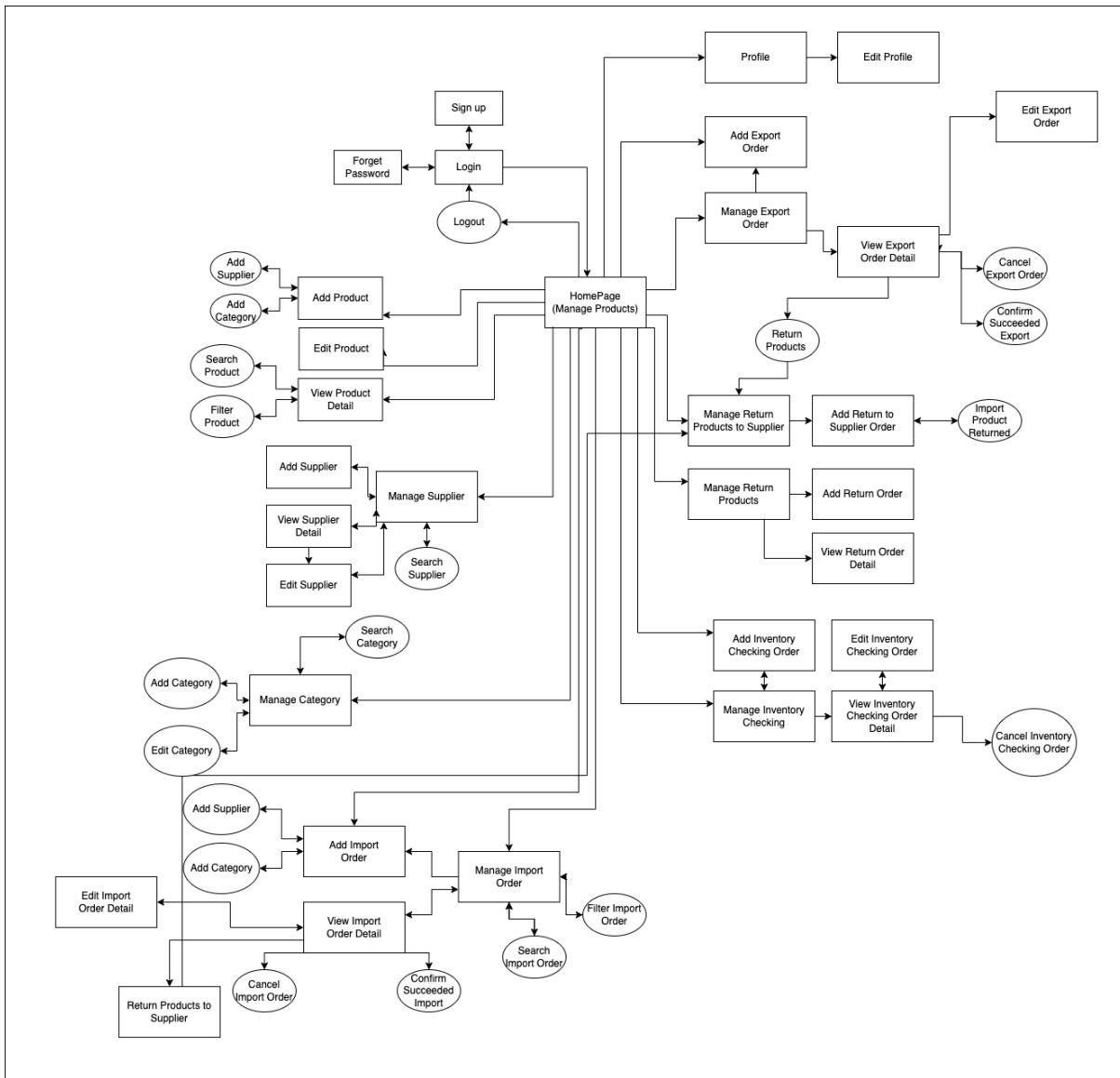


Figure 3.1.3 - Seller Detail Screen Flow Diagram

3.1.2 Screen Descriptions

#	Feature	Screen	Description
01	Authentication	Login	The user uses this screen to login to the website.
02	Authentication	Logout	The user logs out to end the working session in the browser.
03	Authentication	Forgot password	The user uses this screen to reset the password.
04	Authentication	Signup	The user uses this screen to sign up to the website.
05	Profile	Profile	The user can view user details.
06	Profile	Edit Profile	The user can change the profile information.
07	Profile	Change Password	The user can change the password.

08	Manage Staff	Create staff	The owner can create new staff for their inventory.
09	Manage Staff	Active/Deactive staff	The owner can activate/ deactivate staff.
10	Manage Staff	Manage Staff	The screen displays all the staff of the inventory.
11	Manage Staff	Update Staff	The owner uses this function to update the staff information.
12	Manage Staff	View Staff Detail	The owner can view the details of the staff.
13	Manage Staff	Change Password	The owner can change the password of their staff.
14	Manage Staff	Search/ Filter Staff	The user can search/filter the staff in the "Manage Staff" screen.
15	Manage Product	Manage Product	The user can view all the products in the system.
16	Manage Product	View Product Details	The screen displays all the details of the product. Display history of the product.
17	Manage Product	Search and Filter Product	The user can search and filter the product by name, barcode,...
18	Manage Product	Add Product	The user can add a new product to the inventory.
19	Manage Product	Edit Product Detail	The user can edit the product's detailed information.
20	Manage Product	Add Supplier	Show popup to quick add supplier when add new product.
21	Manage Product	Add Category	Show popup to quickly add categories when adding a new product.
22	Manage Supplier	Manage Supplier	The screen displays all the suppliers in the inventory.
23	Manage Supplier	Add Supplier	The user can add a new supplier to the inventory.
24	Manage Supplier	Edit Supplier	The user can edit the supplier's detailed information.
25	Manage Supplier	View Supplier Details	The screen displays the details of the supplier.
26	Manage Supplier	Search Supplier	The user can search the supplier by name.
27	Manage Category	Manage Category	The screen displays all the categories in the inventory.
28	Manage Category	Create category	The user can add a new category to the inventory.
29	Manage Category	Edit category	The user can change the information of the category.
30	Manage Category	Search category	The user can search the category by name.
31	Manage Import Order	Add Import Order	The screen provides an import form for importing products to the warehouse.
32	Manage Import Order	Manage Import Order	The screen displays all the import orders in the system.
33	Manage Import Order	View Import Order Details	The screen displays all the details of an import order.

34	Manage Import Order	Edit Import Order Detail	Users can edit import order when the order has not been confirmed.
35	Manage Import Order	Search/Filter Import order	The user can search, filter the import order.
36	Manage Import Order	Confirm import order	The user can confirm the import order.
37	Manage Import Order	Cancel import order	The user can cancel the import order.
38	Manage Import Order	Confirm Succeeded Import	User uses to confirm successful import.
39	Manage Import Order	Add Supplier	Show popup to quickly add suppliers when adding a new product.
40	Manage Import Order	Add Category	Show popup to quickly add categories when adding a new product.
41	Manage Export Order	Add Export Order	The screen provides an export form for importing products to the warehouse..
42	Manage Export Order	Edit Export Order Details	Users can edit export orders when the order has not been confirmed.
43	Manage Export Order	Manage Export Order	The screen displays all the export orders in the system.
44	Manage Export Order	View Export Order Details	The screen displays all the details of an export order..
45	Manage Export Order	Search Export Order	The user can search the export order.
46	Manage Export Order	Filter Export Order	The user can filter the import order.
47	Manage Export Order	Confirm Export Order	The user can confirm the export order.
48	Manage Export Order	Cancel export Order	The user can cancel the export order.
49	Manage Export Order	Confirm Succeed Export	User uses to confirm successful export.
50	Manage Inventory Checking	Manage Inventory Checking	The screen displays all the inventory checking orders in the system.
51	Manage Inventory Checking	View Inventory Checking Order Details	The screen displays all the details of an inventory checking order.
52	Manage Inventory Checking	Edit Inventory Checking Order	The user can edit the inventory checking order.
53	Manage Inventory Checking	Add Inventory Checking Order	The user can add the inventory checking order.
54	Manage Inventory Checking	Cancel Inventory Checking Order	The user can cancel the inventory checking order.

55	Manage Inventory Checking	Confirm inventory checking order	The user can confirm the inventory checking order.
56	Manage Inventory Checking	Search inventory checking order	The user can search the inventory checking order by inventory checking order code.
57	Manage Inventory Checking	Filter inventory checking order	The user can filter the inventory checking order by status.
58	Manage Return Product	Manage return products to supplier	The screen displays all the return supplier orders of the system.
59	Manage Return Product	View details return supplier order	The screen displays all the details of a return supplier order.
60	Manage Return Product	Add return supplier order	The screen provides a form to return the product to the supplier.
61	Manage Return Product	Manage return products	The screen displays all the customer return orders of the system.
62	Manage Return Product	View detail customer return order	The screen displays all the details of a customer return order..
63	Manage Return Product	Add customer return order	The screen provides a form to create an order for customers to return products to the warehouse.
64	Dashboard	View dashboard	The screen displays information about income and statistics of the system.

3.1.3 Screen Authorization

Screen	Owner	Seller	Storekeeper
Homepage	X	X	X
Login	X	X	X
Logout	X	X	X
Forgot Password	X	X	X
Sign Up	X	X	X
Edit Profile	X	X	X
Change password	X	X	X
Create staff	X		
Enable/Disable staff	X		
View staff list	X		
Edit staff	X		
View staff detail	X		
View all Product	X	X	X
View Product Detail	X	X	X
Product Filter	X	X	X
Add product	X	X	X

Edit product	X	X	X
View list supplier	X	X	X
Create supplier	X	X	X
Edit supplier	X	X	X
View detail supplier	X	X	X
Search supplier	X	X	X
View list category	X	X	X
Create category	X	X	X
Edit category	X	X	X
View detail category	X	X	X
Search category	X	X	X
Add import order	X	X	X
View import order list	X	X	X
View import order detail	X	X	X
Search import order	X	X	X
Filter import order	X	X	X
Confirm import order	X		X
Confirm succeed import	X	X	X
Cancel import order	X	X	X
Add export order	X	X	X
View export order list	X	X	X
View export order detail	X	X	X
Search export order	X	X	X
Filter export order	X	X	X
Confirm export order	X		X
Confirm succeed export	X	X	X
Cancel export order	X	X	X
View All Inventory Checking List	X	X	X
View Inventory Checking Detail	X	X	X
Edit Inventory Checking Order	X		X
Add Inventory Checking Order	X	X	X
Cancel Inventory Checking Order	X		X
View list return supplier order	X	X	X
View detail return supplier order	X	X	X
Add return supplier order	X	X	X
View list customer return order	X	X	X
View detail customer return order	X	X	X
Add customer return order	X	X	X
View dashboard	X		X

3.1.4 Non-Screen Functions

#	Feature	System Function	Description
1	Signup new Account	.Net.Mail	.Net namespace to send email.
2	Forget Password	.Net.Mail	.Net namespace to send email.
3	Data store	Azure SQL Database	Server hosting site.
4	API Server	Azure Web App	Web application hosting site.
5	Media library	imagekit.io	A media library store to keep photos.
6	Record data in Dashboard	Quartz	Use cron expressions to schedule background tasks.

3.1.5 Entity Relationship Diagram

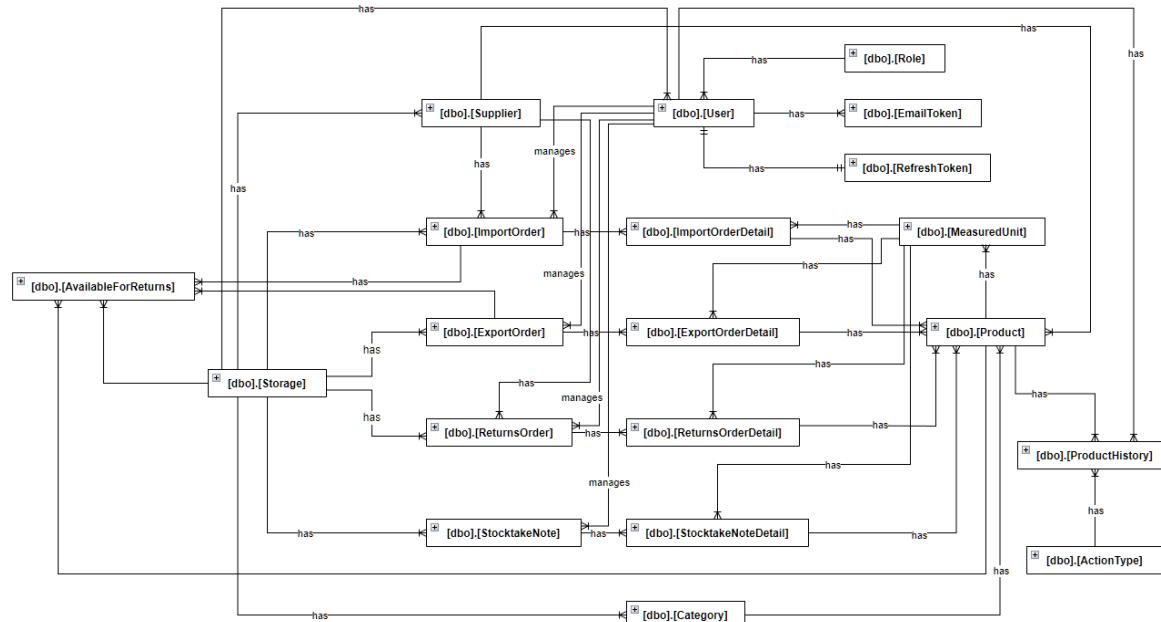


Figure 3.1.1 - Entity Relationship Diagram

Entities Description

#	Entity	Description
1	AvailableForReturns	Remaining amount of products that can be returned.
2	Category	The classification or grouping of requirements based on their type.
3	Supplier	The company which provides products to storage.
4	EmailToken	The token is sent to the user's email to verify actions.
5	RefreshToken	Used to obtain a new access token after the expiration of the original access token.

6	Storage	A physical space used for storing and organizing items.
7	User	Represents an individual who interacts with the system.
8	Role	A defined set of permissions or responsibilities assigned to a user or group, determining their access and actions within a system or platform.
9	ActionType	Represents an action that affects a product's property.
10	ImportOrder	Represents a request to import products into a storage.
11	ImportOrderDetail	Provides specific information and details associated with a particular import order.
12	ExportOrder	Represents a request to export products from a storage.
13	ExportOrderDetail	Provides specific information and details associated with a particular export order.
14	ReturnsOrder	Represents a request to return products from customers or a request to return products to suppliers.
15	ReturnsOrderDetail	Provides specific information and details associated with a particular return order.
16	StocktakeNote	Captures the results of a physical inventory count, documenting the actual stock levels of products in storage.
17	StocktakeNoteDetail	Provides specific information and details associated with a particular stocktake note.
18	ProductHistory	Captures the chronological record of changes, updates, or modifications made to a specific product.
19	MeasuredUnit	Represents a standard unit of measurement used for quantifying or expressing the quantity, size, or amount of a product.
20	Product	Represents an item including its attributes, characteristics, and details, serving as a core element of inventory and management process.

3.2 Authentication

3.2.1 Login

- Function trigger: This function is triggered when a user attempts to log into the system.
- Pre-condition:
 1. The user must have a registered account with status enabled in the system.
 2. The user must provide valid login credentials, such as username/email and password.
- Post-condition:
 1. The user is authenticated and logged in to the system.
 2. The user is redirected to the homepage.
- Function description: As an owner/storekeeper/seller, I want a function to login to my system.

Screen Layout:

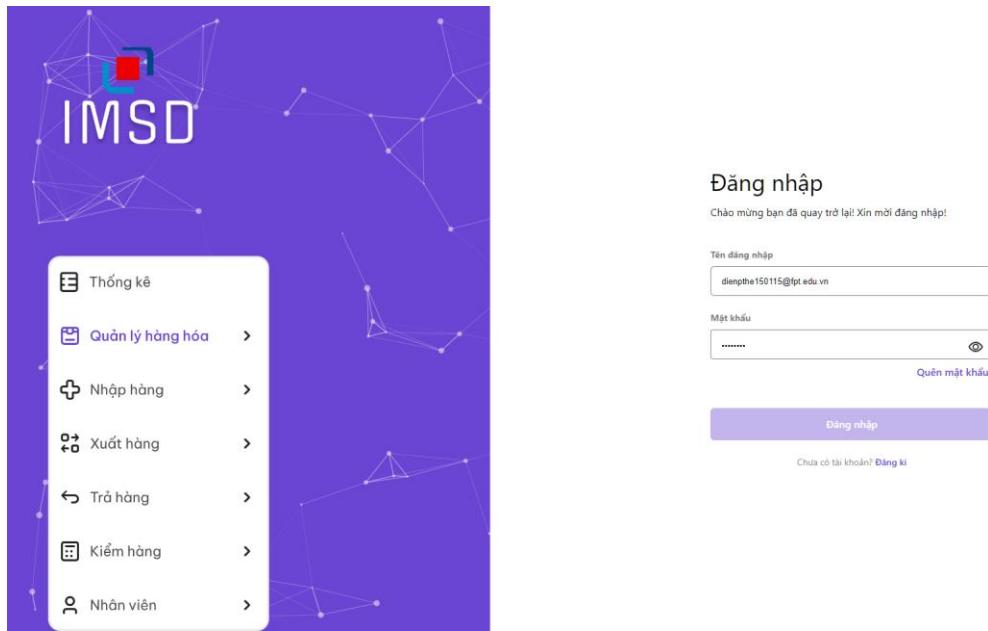


Figure 3.2.1 - Login Screen Layout

- Function details: This function collects user credentials, authenticates them, grants access based on permissions, and logs activity for security and auditing purposes. For details, if users log in with email, they are identified as an owner. If they log in with usercode, they are identified as staff.
- Normal Flow:
 1. Access the website system by direct link.
 2. Enter username and password.
 3. Click the “Đăng nhập” button to login to the system.
 4. Homepage is displayed.
- Alternative Flow: N/A
- Exception:
 1. Username or password is wrong.
 - 1.1 (After normal flow from step 3)
 - 1.2 Error toast message “Email hoặc mật khẩu sai” is displayed.
 2. Username or password field is not filled.
 - 2.1 (After normal flow from step 2)
 - 2.2 The “Đăng nhập” button is disabled till all fields are filled.
- Business rules: BR-02, BR-05, BR-10, BR-15

3.2.2 Logout

- Function trigger: This function is triggered when a user requests to log out of the system.
- Pre-condition: User must be logged in to the system.
- Post-condition:
 1. User is logged out of the system.
 2. User is redirected to the login page.
- Function description: As an owner/storekeeper/seller, I want a function to log out of my system when I want to change my account.

Screen Layout:

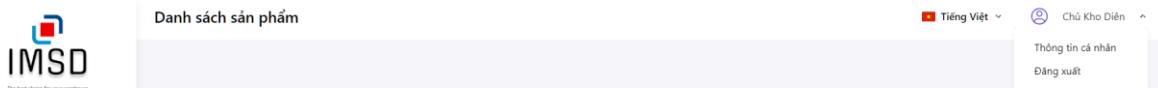


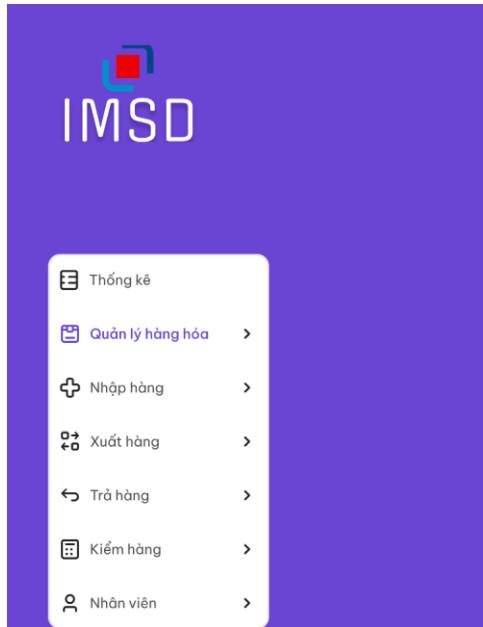
Figure 3.2.2 - Logout Layout

- Function details: The "User Logout" function allows logged-in users to securely end their session and log out of the system. This function is crucial for security reasons and prevents unauthorized access to the system's resources.
- Normal Flow:
 1. The user clicks on Profile avatar to show options.
 2. The user clicks on “Đăng xuất”.
 3. The website ends the user's session and redirects to the login screen.
- Alternative Flow: N/A
- Exception:
 1. User tries to access a page or perform an action after they have logged out of the system.
 - 1.1 The page is automatically redirected to the login page.
- Business rules: N/A

3.2.3 Forgot password

- Function trigger: This function is triggered when an owner forgets their password and requests the server to reset it.
- Pre-condition:
 1. The owner must have a registered account in the system.
 2. The users must have access to their registered email address.
- Post-condition:
 1. An email is sent to the user, with a link to reset his/her password.
 2. User is prompted to set a new password upon logging in.
- Function description: As an owner, I want a function to recover my password by using my email in case I forget it.

Screen



Layout:

♀

Quên mật khẩu?

Nhập tài khoản hòm thư đã liên kết với tài khoản của bạn!
(Đối với chủ kho)

Email

Gửi

← Quay lại đăng nhập

Figure 3.2.3 - Forgot Password Screen Layout - Input email



✉

Kiểm tra hòm thư điện tử của bạn

Chúng tôi đã gửi tin nhắn cài lại mật khẩu đến hòm thư của bạn.

Không nhận được thư nào? Gửi lại mail xác nhận

58

← Quay lại trang đăng nhập

Gửi email cài lại mật khẩu thành công!

Figure 3.2.4 - Forgot Password Screen Layout - Check your email

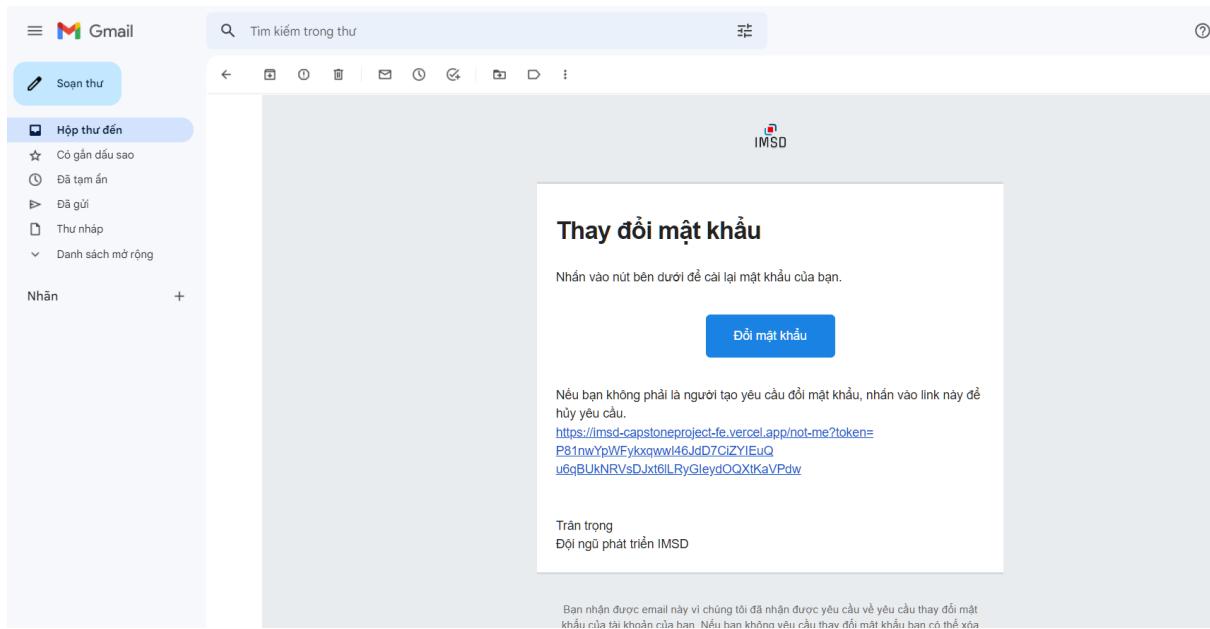


Figure 3.2.5 - Forgot Password Screen Layout - Click confirmation link on email

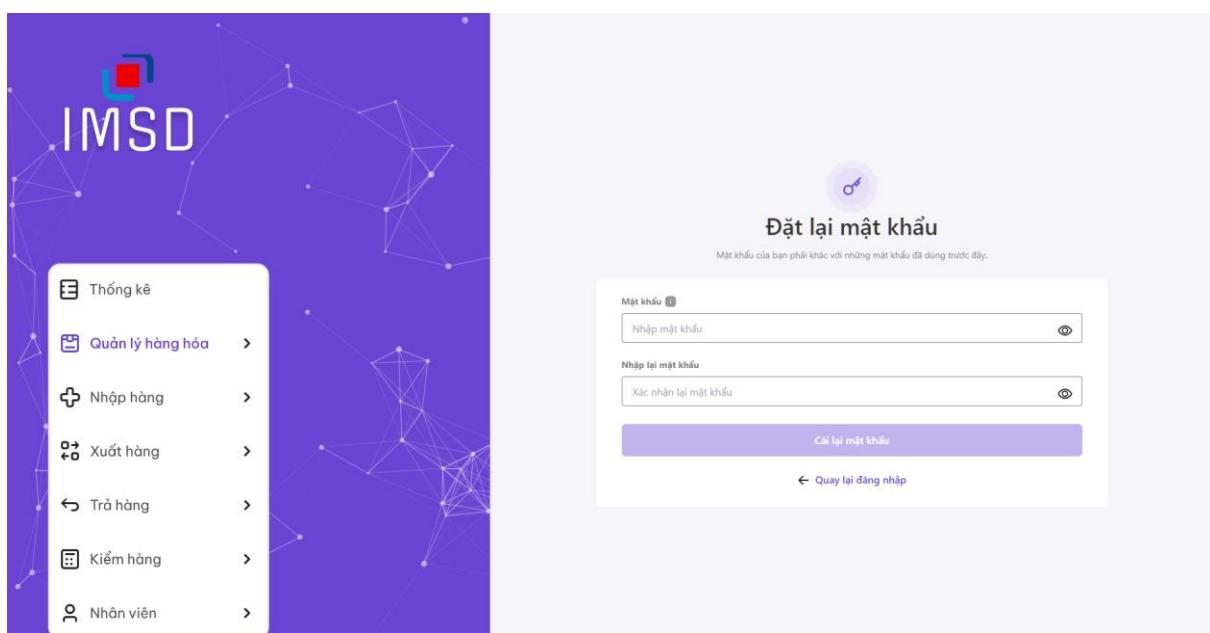


Figure 3.2.6 - Forgot Password Screen Layout - Change new password

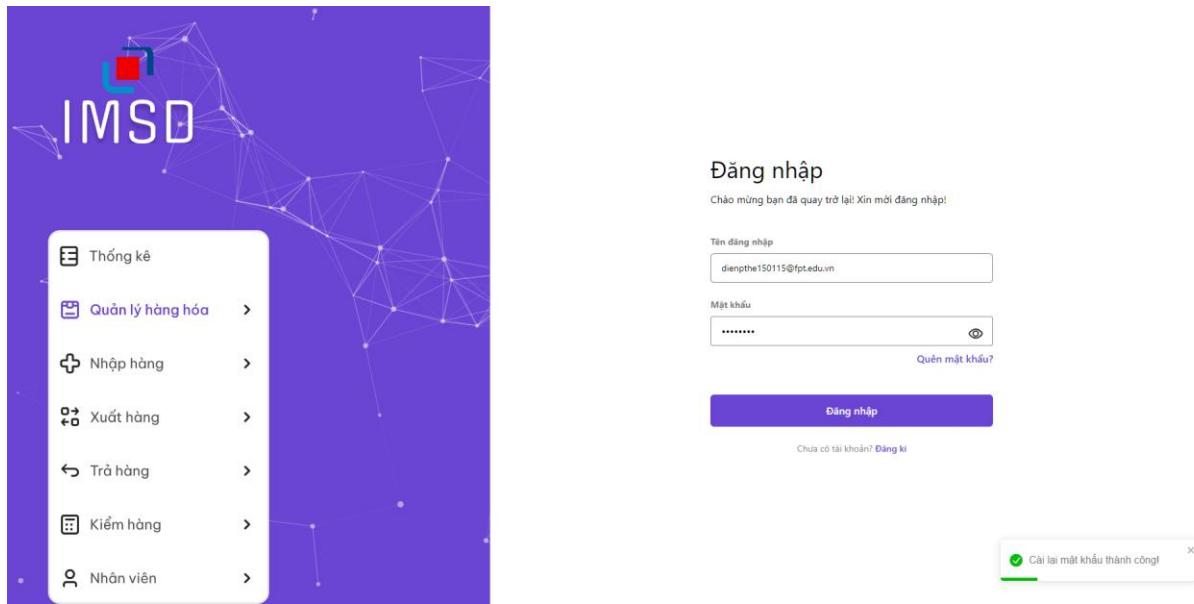


Figure 3.2.7 - Forgot Password Screen Layout - Login normally

- Function details: This function allows owners to reset their password by verifying their identity through an email process, and then updating their password in the system.
- Normal Flow:
 1. The user clicks on “Quên mật khẩu” on the login page.
 2. The user types email and clicks the “Gửi” button.
 3. Website redirects to email check screen.
 4. The user goes to the email, clicks the sent link, then returns to the web.
 5. Web page redirects to new password setting screen.
 6. The user types a new password and confirms the password.
 7. The system redirects to the login page.
- Alternative Flow: N/A
- Exception:
 1. The email is not sent to the owner.
 - 1.1 (After normal flow from step 3)
 - 1.2 There is no email sent to the user.
 - 1.3 The user can go back to the webpage and wait 60 seconds to resend the email.
 2. Email does not exist.
 - 2.1 (After normal flow from step 2)
 - 2.2 A toast message shows error “Địa chỉ email không tồn tại”.
 3. Password and confirm password is not matched.
 - 1.1 (After normal flow from step 6)
 - 1.2 The inline error message “Mật khẩu phải trùng nhau” is displayed till confirm password matches the password.

3.2.4 Signup

- Function trigger: This function is triggered when an owner attempts to create a new account in the system.
- Pre-condition: User must provide valid registration information, including email, password, and any other required fields.
- Post-condition:

1. User's account is created in the system.
 2. The system displays a successful email confirmation screen.
- Function description: As an owner, I want to create a new account to manage a new warehouse.

Screen Layout:

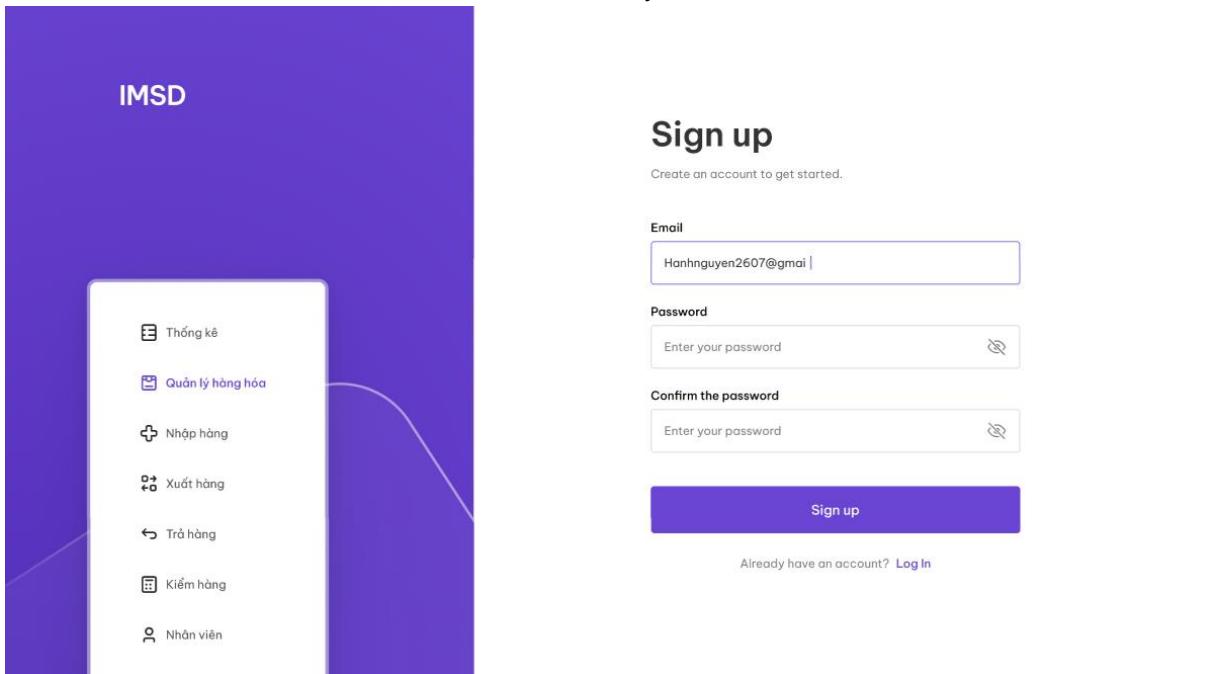


Figure 3.2.8 - Signup Screen Layout - Enter email and password

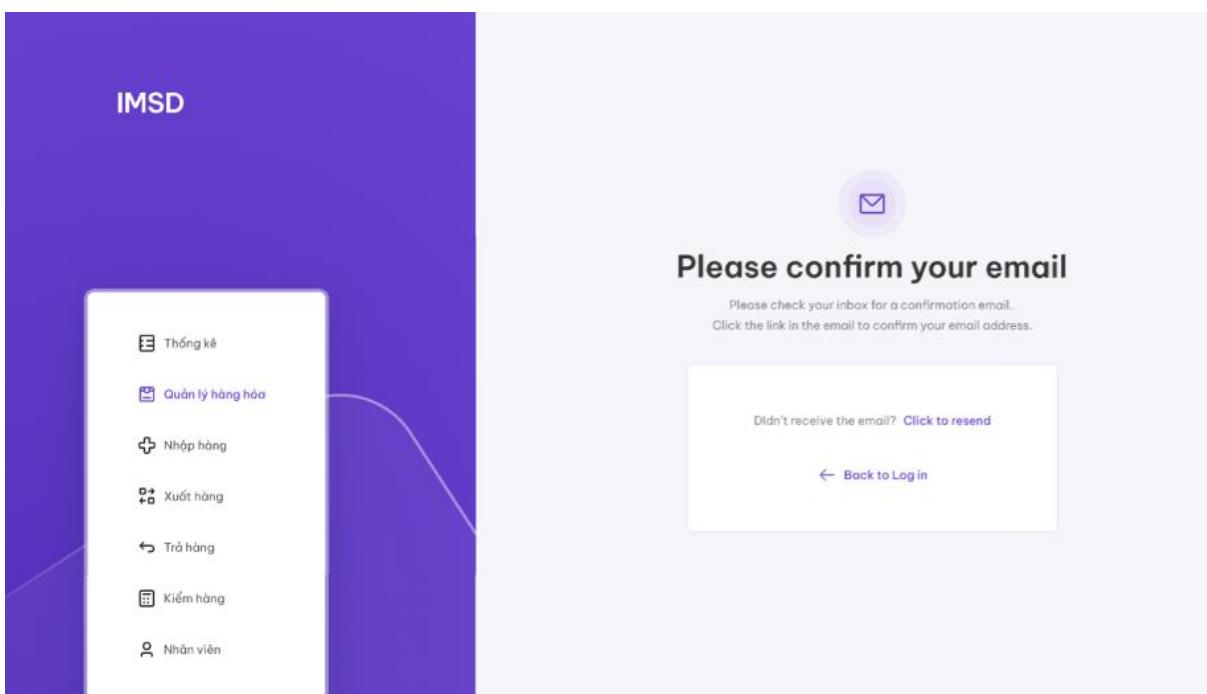


Figure 3.2.9 - Signup Screen Layout - Check your email

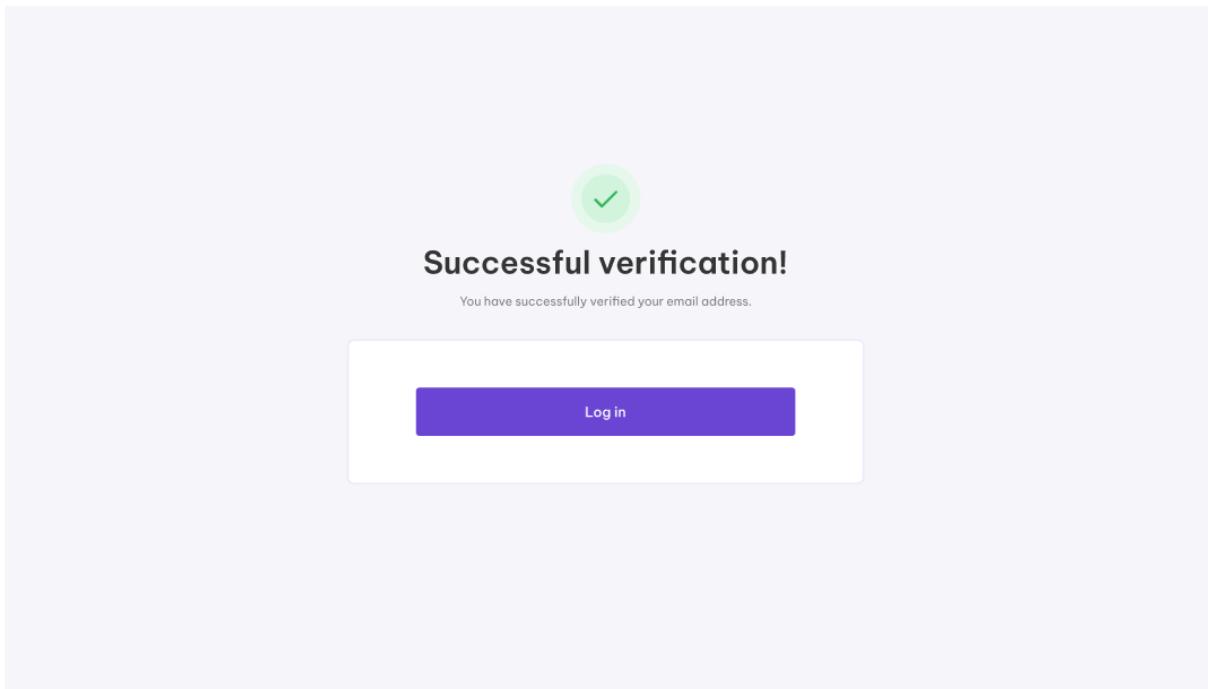


Figure 3.2.10 - Signup Screen Layout - Successful verification

- Function details: This function allows owners to create a new account by providing their personal information, which is then validated, stored securely in the system, and used for future authentication and authorization.
- Normal Flow:
 1. The user clicks on the “Đăng kí” button to redirect to the sign up page.
 2. Enter email, password and confirm the password.
 3. Click the “Đăng kí” button to login to the system.
 4. Show email confirmation screen.
 5. User returns to user's gmail click the link to confirm
 6. Display successful email confirmation screen.
- Alternative Flow: N/A
- Exception:
 1. Password and confirm password is not matched.
 - 1.1 (After normal flow from step 2)
 - 1.2 The inline error message “Mật khẩu phải trùng nhau” is displayed till confirm password matches the password.
 2. Email or password field is not filled.
 - 2.1 (After normal flow from step 2)
 - 2.2 The “Đăng kí” button is disabled till all fields are filled.
 3. Email is already registered.
 - 3.1 (After normal flow from step 2)
 - 3.2 The toast error message “This email is already existed” is displayed.
- Business rules: BR-02, BR-10

3.3 Manage Product

3.3.1 View all products

- Function trigger: This function is triggered when a user requests to view all available products in the system.
- Pre-condition: The user must be logged in to the system.
- Post-condition: User is presented with a list of all available products in the system.
- Function description: As an owner/storekeeper/seller, I want to view a list of all products existing in the system.

Screen Layout:

Mã SP	Ảnh	Tên sản phẩm	Nhà cung cấp	Loại	Tồn kho	Đơn vị	Ngày khởi tạo	Trạng thái
SP11		Sữa chua Vinamilk Probi	Công ty Sữa Việt Nam Vinamilk	Sữa chua	400	Hộp	17/04/2023 14:17	Đang giao dịch
SP10		sữa chua Vinamilk có đường 100g	Công ty Sữa Việt Nam Vinamilk	Sữa chua	199	Hộp	17/04/2023 13:58	Đang giao dịch
SP9		Sữa tươi nguyên chất tiệt trùng - Vinamilk...	Công ty Sữa Việt Nam Vinamilk	Sữa	789	Hộp	15/04/2023 16:37	Đang giao dịch
SP8		Nước tăng lực Red Bull Lon Xanh 250ml	Công ty TNHH Việt Nam VIFOTEX	Nước ngọt	0	Lon	15/04/2023 16:28	Đang giao dịch
SP7		Nước tăng lực RedBull vị truyền thống 250 ml	Công ty TNHH Việt Nam VIFOTEX	Nước ngọt	100	Lon	15/04/2023 16:26	Đang giao dịch

Figure 3.3.1 - Manage Products Screen Layout - View all products

Mã SP	Ảnh	Tên sản phẩm	Nhà cung cấp	Loại	Tồn kho	Đơn vị	Ngày khởi tạo	Trạng thái
SP16		Bánh nướng custas	Hải Hà bakery	Bánh nướng	0	Hộp	21/04/2023 02:54	Đang giao dịch
He160491		Bánh Oreo	Kinh Đô	Bánh ngọt	0	---	20/04/2023 08:04	Đang giao dịch
SP14		Bánh chocopie cacao	Hải Hà bakery	Bánh ngọt	0	Hộp	19/04/2023 14:48	Đang giao dịch

Figure 3.3.2 - Manage Products Screen Layout - Search products

Figure 3.3.3 - Manage Products Screen Layout - Filter products

- Function details: This function retrieves and displays all products available in the system, including their details and related information. Users can also search the products by inputting the search bar and filter products by supplier or category. Users can delete filters by clicking the “X” button on this filter.
- Normal Flow:
 1. The user click “Sản phẩm” from “Quản lý kho hàng” in the sidebar
 2. System presents the list of products to the user, displaying each product's name, description, price, and any other relevant information.
 3. The user can filter and sort the list of products based on their preferences.
- Alternative Flow: N/A
- Exception:
 1. There is no product in the system.
 - 1.1 (After normal flow from step 1)
 - 1.2 The table will show the message “Không dữ liệu”
- Business rules: N/A

3.3.2 View product details

- Function trigger: This function is triggered when a user selects a specific product to view its details.
- Pre-condition:
 1. The user must be logged in to the system.
 2. The user must select a specific product to view its details.
- Post-condition: User is presented with the detailed information of the selected product.
- Function description: As an owner/storekeeper/seller, I want to view details of a product in the system.

Screen Layout:

Figure 3.3.4 - Manage Products Screen Layout - View product details

- Function details: This function retrieves and displays the detailed information about a specific product, such as its name, description, price, images, and notes, based on the product ID. At this screen, we can see the history of changing the quantity of the product every time an action is taken for that product. User can click on button “Chỉnh sửa sản phẩm” to quick edit the product.
- Normal Flow:
 1. Click the “Quản lý hàng hoá” button from the left navbar.
 2. Click the “Sản phẩm” button to view list of products.
 3. Click on the eye button on the right of each product to view its details.
- Alternative Flow: N/A
- Exception: N/A
- Business rules: BR-04

3.3.3 Add product

- Function trigger: The user wants to add a new product or a list of new products.
- Pre-condition: The user has logged into the system.
- Post-condition: New product is added to the system.
- Function description: As an owner/storekeeper/seller, I want to add a new product to the system.

Screen Layout:

Figure 3.3.5 - Manage Products Screen Layout - Add a new product

- Function details: This function allows authorized users to add a new product to the system by providing its details, requiring name, supplier and category, and other details such as description, price, and images, which are then validated and stored in the database for future use.
- Normal Flow:
 1. Click the “Sản phẩm” button from the left navbar.
 2. Click the “Quản lý hàng hoá” button to view list of products.
 3. Click on the “Thêm sản phẩm” button to redirect to add new product page.
 4. Input details of product.
 5. Click on “Thêm sản phẩm” button.
- Alternative Flow: N/A
- Exception:
 1. Product added is missing some required fields.
 - 1.1. (After normal flow from step 4)
 - 1.2. User needs to fill all required fields to add a new product, if required fields are not filled, the button is disabled.
 2. User input wrong data types.
 - 2.1. (After normal flow from step 4)
 - 2.2. Users must input accurate data types of fields, for example the cost price must be integer.
- Business rules: BR-04, BR-05, BR-07, BR-19

3.3.4 Edit product

- Function trigger: This function is triggered when an authorized user attempts to edit an existing product in the system.
- Pre-condition:

1. The user must be logged in to the system with appropriate privileges to edit a product.
 2. The user must select a specific product to edit.
- Post-condition: The selected product is updated with the new information provided by the user.
 - Function description: As an owner/storekeeper/seller, I want a function to edit products.

Screen Layout:

The screenshot shows the 'Chỉnh sửa sản phẩm' (Edit Product) screen. The left sidebar includes categories like 'Thống kê', 'Quản lý hàng hóa', 'Sản phẩm', 'Nhà cung cấp', 'Loại sản phẩm', 'Nhập hàng', 'Xuất hàng', 'Trả hàng', 'Kiểm hàng', and 'Nhân viên'. The main form has sections for 'Thông tin chung' (Basic Information) and 'Thông tin bổ sung' (Additional Information). In 'Thông tin chung', fields include 'Tên sản phẩm' (Water GoodMood), 'Nhà cung cấp' (Hülu Hưng), 'Loại sản phẩm' (Nước ngọt), 'Mã sản phẩm' (SP13), 'Mã barcode' (SP13), 'Đơn vị tính' (Thùng), 'Giá nhập' (0), 'Giá bán' (0), 'Khởi tạo kho hàng' (checked), 'Tồn kho ban đầu' (empty), 'Giá nhập' (empty), and 'Thêm đơn vị quy đổi' (checked). In 'Thông tin bổ sung', fields include 'Ngưỡng tồn' (Dưới - Trên), 'Ghi chú sản phẩm' (empty), 'Trạng thái' (checked), and a 'Lưu sản phẩm' (Save Product) button. A central modal dialog box titled 'Xác nhận hành động' (Action Confirmation) asks 'Bạn có chắc chắn muốn chỉnh sửa sản phẩm không?' (Are you sure you want to edit the product?).

Figure 3.3.6 - Manage Products Screen Layout - Edit product

This screenshot is similar to Figure 3.3.6 but focuses on the confirmation dialog box in the center. The dialog box is titled 'Xác nhận hành động' and contains the question 'Bạn có chắc chắn muốn chỉnh sửa sản phẩm không?'. The background shows the same product editing interface with the 'Lưu sản phẩm' button highlighted in green at the bottom right.

Figure 3.3.7 - Manage Products Screen Layout - Edit product confirmation

- Function details: This function allows authorized users to modify the details of an existing product, such as its name, description, price, and images, based on the product ID, which are then validated and updated in the database for future use. Users can not edit the Initial inventory, cost price, conversion unit and quantity in respective units.
- Normal Flow:
 1. Click the “Sản phẩm” button from the left navbar.
 2. Click the “Quản lý hàng hóa” button to view list of products.
 3. Click on the eye button on the right of each product to view its details.
 4. Click on the “Chỉnh sửa sản phẩm” button to redirect to the edit product page.
 5. Edit details of product.
 6. Click on the “Chỉnh sửa” to confirm action.
- Alternative Flow:
 1. Click the “Sản phẩm” button from the left navbar.
 2. Click the “Quản lý hàng hóa” button to view list of products.
 3. Click on the pen icon on the right of each product to redirect to the edit product page.
 4. Edit details of product.
 5. Click on the “Chỉnh sửa” to confirm action.
- Exception:
 1. Product edited is missing some required fields.
 - 1.1. (After normal flow from step 5)
 - 1.2. User needs to fill all required fields to edit the product, if required fields are not filled, the button is disabled..
 2. User input wrong data types.
 - 2.1. (After normal flow from step 5)
 - 2.2. Users must input accurate data types of fields, for example the cost price must be integer.
- Business rules: BR-04, BR-05, BR-07, BR-19

3.4 Manage Supplier

3.4.1 View list of suppliers

- Function trigger: This function is triggered when a user wants to see all of the suppliers available in the system.
- Pre-condition: The user must be logged in to the system.
- Post-condition: The user is presented with a list of suppliers available in the system.
- Function description: As an owner/storekeeper/seller, I want a function to view a list of suppliers.

Screen Layout:

Figure 3.4.1 - Manage Suppliers Screen Layout - View all suppliers

- Function details: This function retrieves and displays all the supplier information available in the system, including their name, contact details, email, status and address.
- Normal Flow:
 1. Click the “Quản lý hàng hoá” button.
 2. Click on the “Nhà cung cấp” button on the dropdown list.
 3. The website shows all the suppliers in the system.
- Alternative Flow: N/A
- Exception:
 1. List of suppliers is empty.
 - 1.1. (After normal flow from step 2)
 - 1.2. The website shows the inline message “Không dữ liệu”
- Business rules: N/A

3.4.2 Search supplier

- Function trigger: A(n) owner/seller/storekeeper wants to use a method to search the supplier by supplier name.
- Pre-condition: The user logged in the system and currently in the supplier list screen.
- Post-condition: The website displays the suppliers by search category name or phone number.
- Function description: As a(n) owner/seller/storekeeper, I want to search the supplier by supplier name or phone number.

Screen Layout:

Figure 3.4.2 - Manage Suppliers Screen Layout - Search suppliers

- Function details: The owner/seller/storekeeper searches the supplier by name input on the search bar. After inputting the supplier name, the system will display the suppliers with the name entered in the search bar
- Normal Flow:
 1. The user types the keyword they want to search.
 2. The table will show all the suppliers containing the keyword by text search
- Alternative Flow: N/A
- Exception:
 1. The system has no supplier containing the keyword that the user searches for.
 - 1.1. (After normal flow from step 1)
 - 1.2. The table will show the message “không dữ liệu”.
- Business rules: N/A

3.4.3 Create supplier

- Function trigger: This function is triggered when an authorized user attempts to create a new supplier in the system.
- Pre-condition: The user must be logged in to the system with appropriate privileges to create a new supplier.
- Post-condition: A new supplier is created in the system with the information provided by the user..
- Function description: As an owner/storekeeper/seller, I want a function to create a new supplier to provide new products to my warehouse.

Screen Layout:

Figure 3.4.3 - Manage Suppliers Screen Layout - Create a new supplier

- Function details: This function allows authorized users to add a new supplier to the system by providing their details, requiring supplier name and phone number, and other details such as email, address and note, which are then validated and stored in the database for future use.
- Normal Flow:
 1. The user clicks on “Thêm nhà cung cấp” on the supplier list screen.
 2. The user fills needed information.
 3. The user click “Thêm nhà cung cấp” and confirm.
 4. The supplier has been added to the system and the website back to the supplier list screen.
- Alternative Flow: N/A
- Exception:
 1. Supplier added is missing some fields.
 - 1.1. (After normal flow from step 2)
 - 1.2. User needs to fill all required fields to add a new supplier, if required fields are not filled, the button is disabled.
 2. User input wrong data types.
 - 2.1. (After normal flow from step 2)
 - 2.2. Users must input accurate data types of fields.
- Business rules: BR-01, BR-02, BR-04, BR-06

3.4.4 Edit supplier

- Function trigger: The user wants to edit details of a supplier.
- Pre-condition:
 1. The user must be logged in to the system.
 2. The user must select a specific supplier to edit.
- Post-condition: Details of the user are updated.

- Function description: As a user, I want to edit details of a supplier.

Screen Layout:

The screenshot shows the 'Chỉnh sửa nhà cung cấp' (Edit Supplier) page. On the left, there's a sidebar with the IMSD logo and a navigation menu. The 'Quản lý hàng hóa' option is highlighted. The main content area has a title 'Chỉnh sửa nhà cung cấp'. It contains a form with the following fields:

- Thông tin chung**
- Tên nhà cung cấp *: Công ty TNHH Việt Nam VIFOTEX
- Số điện thoại *: 0346260046
- Email: vifotexco@gmail.com
- Trạng thái giao dịch: A toggle switch is set to the 'on' position.
- Tỉnh/Thành phố: Hà Nội
- Quận/ huyện: Thanh Trì
- Phường/Xã: Chọn Phường/Xã
- Địa chỉ chi tiết: A large text input field.
- Ghi chú nhà cung cấp: Another large text input field.

 At the bottom are two buttons: 'Hủy' (Cancel) and 'Chỉnh sửa' (Edit).

Figure 3.4.4 - Manage Suppliers Screen Layout - Edit supplier

- Function details: This function allows authorized users to modify the details of an existing supplier, such as their name and contact details, based on the supplier ID, which are then validated and updated in the database for future use.
- Normal Flow:
 1. Access the website system by direct link.
 2. Log into the system.
 3. Click the “Quản lý hàng hóa” button.
 4. Click on the “Nhà cung cấp” button on the dropdown list.
 5. Click on the eye icon beside one supplier to view its details.
 6. Click on “Chỉnh sửa nhà cung cấp” button to redirect to “Edit supplier” page.
 7. Update details for supplier and confirm.
- Alternative Flow:
 1. Access the website system by direct link.
 2. Log into the system.
 3. Click the “Quản lý hàng hóa” button.
 4. Click on the “Nhà cung cấp” button on the dropdown list.
 5. Click on the pen icon beside one supplier to edit its details.
 6. Update details for supplier and confirm.
- Exception:
 1. Supplier edited is missing some fields.
 - 1.1. (After normal flow from step 6)
 - 1.2. User needs to fill all required fields to edit the supplier, if required fields are not filled, the button is disabled.

2. User input wrong data types.
 - 2.1. (After normal flow from step 5)
 - 2.2. Users must input accurate data types of fields, for example the phone number must not contain letters.
- Business rules: BR-01, BR-02, BR-04, BR-06

3.4.5 View details of supplier

- Function trigger: This function is triggered when a user selects a specific supplier to view its details.
- Pre-condition:
 1. The user must be logged in to the system.
 2. The user must select a specific supplier to view details.
- Post-condition: User is presented with detailed information about the selected supplier.
- Function description: As an owner/storekeeper/seller, I want a function to view supplier details.

Screen Layout:

Figure 3.4.5 - Manage Suppliers Screen Layout - View supplier details

- Function details: This function retrieves and displays the detailed information about a specific supplier, such as their name, contact details, and product offerings, based on the supplier ID.
- Normal Flow:
 1. Click on the eye icon beside one supplier to view its details.
 2. The website shows all the details of the supplier and the products they supply.
- Alternative Flow: N/A
- Exception: N/A

3.5 Manage Category

3.5.1 View list categories

- Function trigger: The user wants to view the list of categories.

- Pre-condition: The user has logged into the system.
- Post-condition: A list of categories can be viewed by the user.
- Function description: As a user, I want to view the list of categories.

Screen Layout:

Figure 3.5.1 - Manage Categories Screen Layout - View all categories

- Function details: This function retrieves and displays all the available categories in the system, including their name, description based on search options specified.
- Normal Flow:
 1. The user clicks on “Quản lý hàng hóa”
 2. The user clicks on “Loại sản phẩm”.
 3. The website displays all the categories on the category table.
- Alternative Flow: N/A
- Exception:
 1. List of categories is empty.
 - 1.1. (After normal flow from step 2)
 - 1.2. The table shows the message “Không dữ liệu”.
- Business rules: N/A

3.5.2 Search category

- Function trigger: A(n) owner/seller/storekeeper wants to use a method to search the category by category name.
- Pre-condition: The user logged in the system and currently in the category list screen.
- Post-condition: The website displays the categories by search category name.
- Function description: As a(n) owner/seller/storekeeper, I want to search the category by category name.

Screen Layout:

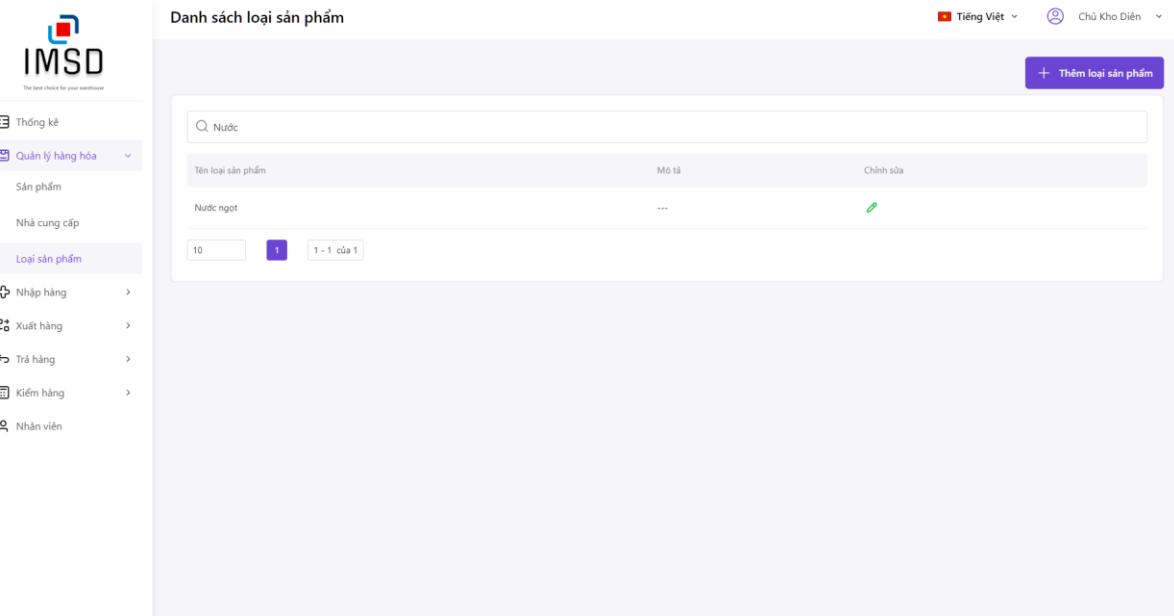


Figure 3.5.1 - Manage Categories Screen Layout - View all categories

- Function details: The owner/seller/storekeeper searches the category by name input on the search bar. After inputting the category name, the system will display the categories with the name entered in the search bar
- Normal Flow:
 1. The user types the keyword they want to search.
 2. The table will show all the categories containing the keyword by text search
- Alternative Flow: N/A
- Exception:
 1. The system has no category containing the keyword that the user searches for.
 - 1.1. (After normal flow from step 1)
 - 1.2. The table will show the message “Không dữ liệu”.
- Business rules: N/A

3.5.2 Create category

- Function trigger: This function is triggered when a user wants to add a new category to the system.
- Pre-condition: The user must be logged in to the system.
- Post-condition: A new category is added to the system.
- Function description: As a user, I want to add a new category to the system.

Screen Layout:

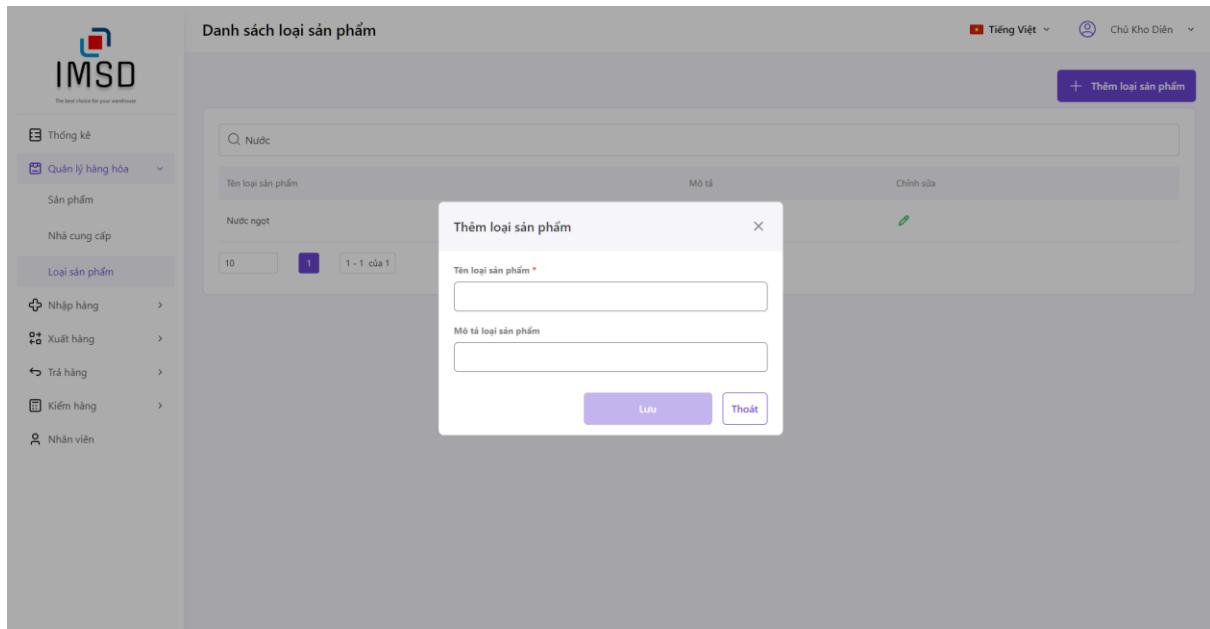


Figure 3.5.2 - Manage Categories Screen Layout - Create a new category

- Function details: This function allows authorized users to create a new product category by providing its name and description which are then validated and stored in the database for future use.
- Normal Flow:
 1. The user clicks on “Quản lý hàng hóa”
 2. The user clicks on “Loại sản phẩm”.
 3. The user clicks on “Thêm loại sản phẩm” button to redirect to “Add category” page.
 4. The user inputs name and description for the new category.
 5. The user confirms action.
- Alternative Flow: N/A
- Exception:
 1. The fields are not filled.
 - 1.1 (After normal flow from step 5)
 - 1.2 The button “Thêm sản phẩm” is disabled.
- Business rules: BR-04, BR-06

3.5.3 Edit category

- Function trigger: This function is triggered when a user wants to view all categories available in the system.
- Pre-condition: The user must be logged in to the system.
- Post-condition: User is presented with a list of categories available in the system.
- Function description: As an owner/storekeeper/seller, I want a function to view all categories existing in the system.

Screen Layout:

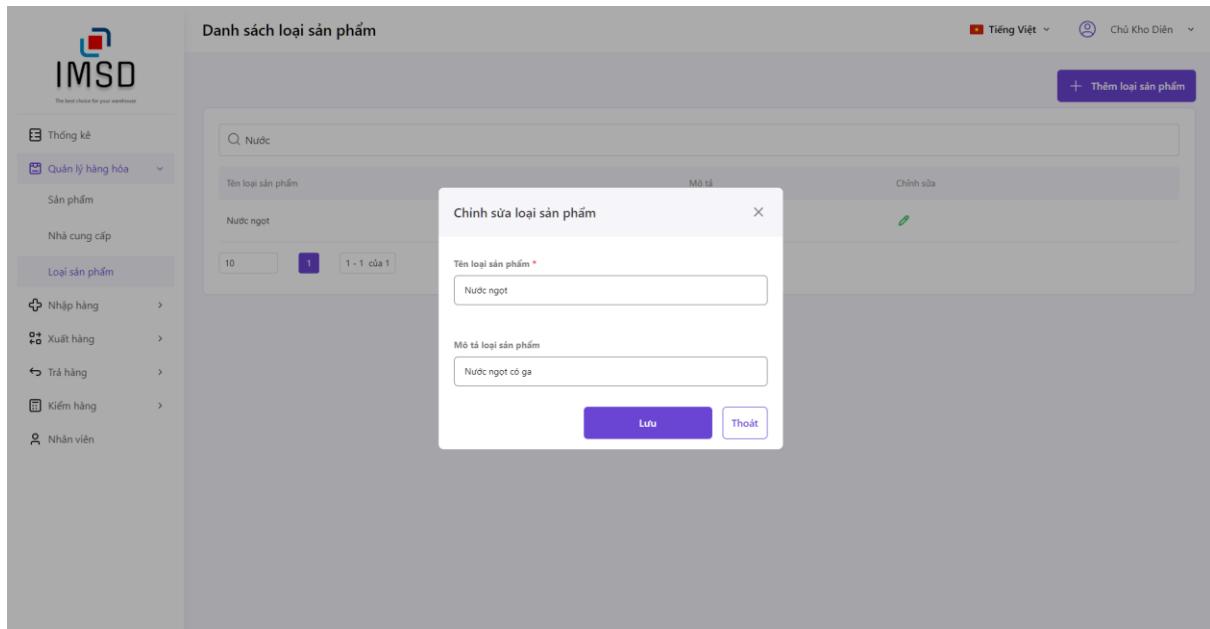


Figure 3.5.3 - Manage Categories Screen Layout - Edit category

- Function details: This function allows authorized users to modify the details of an existing product category, such as its name and description, based on the category ID, which are then validated and updated in the database for future use.
- Normal Flow:
 1. The user clicks on “Quản lý hàng hóa”
 2. The user clicks on “Loại sản phẩm”.
 3. The user clicks on the pen icon of one category to redirect to the “Edit category” page.
 4. The user inputs name and description to edit the category.
 5. The user confirms action.
- Alternative Flow: N/A
- Exception:
 1. The filled information has wrong validation.
 - 1.1. (After normal flow from step 4)
 - 1.2. The website shows the error message for each field that has wrong validation.
- Business rules: BR-04, BR-06

3.6 Manage Import Order

3.6.1 View import order list

- Function trigger: A(n) owner/seller/storekeeper wants to view the import order list.
- Pre-condition: The user logged in the system and currently in the import screen.
- Post-condition: The website displays the import order list.
- Function description: As a(n) owner/seller/storekeeper, I want to view the import orders list in the system.

Screen Layout:

Mã đơn nhập	Ghi chú	Nhà cung cấp	Ngày khởi tạo	Tổng tiền	Trạng thái
NAHA9	Công ty Sữa Việt Nam Vinamilk		19/04/2023 18:37	1,500,000 đ	Đang xử lý
NAHA8	Công ty Sữa Việt Nam Vinamilk		19/04/2023 18:26	1,890,000 đ	Đang nhập hàng
NAHA7	Công ty Sữa Việt Nam Vinamilk		19/04/2023 07:57	72,000 đ	Đã hủy
NAHA6	Đại lý nước giải khát Hựu Hưng		19/04/2023 07:55	1,440,000 đ	Hoàn thành
NAHA5	Công ty TNHH Việt Nam VIFOTEX		18/04/2023 15:53	27,000 đ	Hoàn thành

Figure 3.6.1 - Manage Import Orders Screen Layout - View all import orders

- Function details: The owner/seller/storekeeper can view all the import orders with the newest creation date first including: SP Code, Photo Product, Name Supplier, Inventory, Type, Unit, Initiation Date, Status. The button “Tạo đơn nhập hàng” appears for all 3 roles: owner/seller/storekeeper.
- Normal Flow:
 1. The user clicks on “Nhập hàng”
 2. The user clicks on “Danh sách nhập hàng”
 3. The system will show the import order list
- Alternative Flow: N/A
- Exception:
 1. The system has no import order.
 - 1.1. (After normal flow from step 2)
 - 1.2. The table will show the message “không dữ liệu”.
- Business rules: BR-05, BR-14

3.6.2 Search import order

- Function trigger: A(n) owner/seller/storekeeper wants to use a method to search the import order by import order code or supplier name.
- Pre-condition: The user logged in the system and currently in the import order list screen.
- Post-condition: The website displays the import order by search import order code or supplier name.
- Function description: As a(n) owner/seller/storekeeper, I want to search the import order by import order code or supplier name.

Screen Layout:

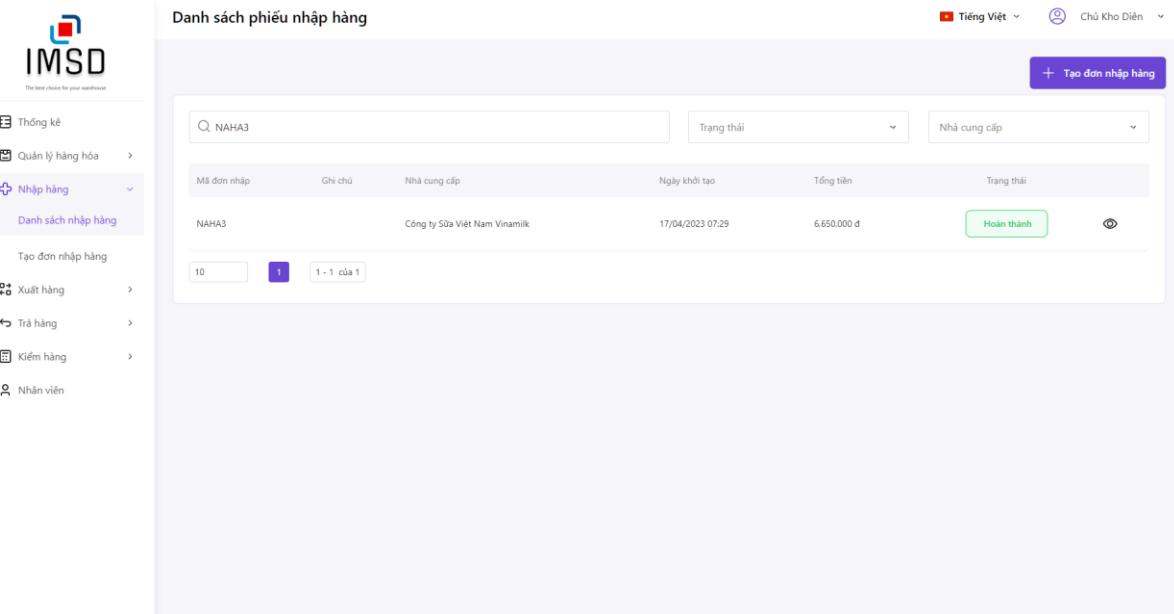


Figure 3.6.2 - Manage Import Orders Screen Layout - Search import orders

- Function details: The owner/seller/storekeeper searches the import orders by import order code or supplier name input on the search bar. After inputting the import order code or supplier name, the system will display the import orders with the word entered in the search bar. The user can search and filter at the same time. The table will show all import orders containing the keyword by text search and in the selected filter
- Normal Flow:
 1. The user clicks on “Nhập hàng”.
 2. The user clicks on “Danh sách nhập hàng”.
 3. The user types the keyword they want to search.
 4. The table will show all the import orders containing the word by text search.
- Alternative Flow: N/A
- Exception:
 1. The system has no import order containing the keyword that the user searches for.
 - 1.1. (After normal flow from step 3)
 - 1.2. The table will show the message “Không dữ liệu”.
- Business rules: BR-05, BR-14

3.6.3 Filter import order

- Function trigger: A(n) owner/seller/storekeeper wants to use a method to filter the import order list.
- Pre-condition: The user logged in the system and currently in the import order list screen.
- Post-condition: The website displays the import order list by filters.
- Function description: As a(n) owner/seller/storekeeper, I want to filter the import order in import order list

Screen Layout:

The screenshot shows the IMSD software interface for managing import orders. The left sidebar includes options like Thống kê, Quản lý hàng hóa, Nhập hàng (selected), Danh sách nhập hàng, Tạo đơn nhập hàng, Xuất hàng, Trả hàng, Kiểm hàng, and Nhân viên. The main area is titled 'Danh sách phiếu nhập hàng' and features a search bar with 'Nhà cung cấp: Công ty Sữa Việt Nam Vinamilk'. Below the search bar is a table with columns: Mã đơn nhập, Ghi chú, Nhà cung cấp, Ngày khởi tạo, Tổng tiền, and Trạng thái. The table contains four rows of data, each with a green 'Hoàn thành' button and a 'Details' icon. At the bottom of the table is a pagination section showing page 1 of 4.

Figure 3.6.3 - Manage Import Orders Screen Layout - Filter import orders by supplier

This screenshot shows the same software interface as Figure 3.6.3, but with a different filter applied. The search bar now displays 'Trạng thái: Hoàn thành'. The table below shows the same four import orders, all of which are marked as 'Hoàn thành' (Completed). The rest of the interface is identical to Figure 3.6.3.

Figure 3.6.4 - Manage Import Orders Screen Layout - Filter import orders by status

- Function details: The owner/seller/storekeeper filters the import orders by choosing status of order or supplier on the search bar. After choosing those fields, the system will display the import orders which match all conditions. The user can press the “X” icon to turn off the filter. The user can search and filter at the same time. The table will show all import orders containing the keyword by text search and in the selected filter
- Normal Flow:
 1. The user clicks on “Nhập hàng”.
 2. The user clicks on “Danh sách nhập hàng”.
 3. The user chooses from the dropdown lists to filter import orders.
 4. The table will show all the import orders with that filter.

- Alternative Flow: N/A
- Exception:
 1. The system has no import order that fits the filter.
 - 1.1. (After normal flow from step 3)
 - 1.2. The table will show the message “Không dữ liệu”.
- Business rules: BR-05, BR-14

3.6.4 View import order details

- Function trigger: A(n) owner/seller/storekeeper wants to view details of an import order.
- Pre-condition: The user logged in the system and currently in the import order list screen.
- Post-condition: The website displays details of an import order.
- Function description: As a(n) owner/seller/storekeeper, I want to view the details of import order.

Screen Layout:

The screenshot shows the IMSD software interface for managing import orders. At the top, there's a navigation bar with the IMSD logo and language selection (Tiếng Việt). The main area displays a pending import order (#NAHA8) with the status "Đang xử lý". The order was created on 19/04/2023 at 18:26. The process flow shows three steps: TẠO ĐƠN (Completed), DUYỆT ĐƠN (In Progress), and HOÀN THÀNH (Completed). To the right, there's a sidebar for "Thông tin bổ sung" (Additional information) showing the creator ("Chủ Kho Điện") and a note field. Below the status bar, there's a section for "Nhà cung cấp" (Supplier) with a dropdown menu showing "Công ty Sữa Việt Nam Vinamilk". The main content area contains a table titled "Thông tin sản phẩm nhập vào" (Import product information) with two rows of data:

STT	Ảnh	Tên sản phẩm	SL nhập	Đơn vị	Đơn giá	Chiết khấu	Thành tiền
1		Sữa chua Vinamilk Probi	100	Hộp	10000 đ	10 %	900.000 đ
2		sữa chua Vinamilk có...	100	Hộp	5000 đ	10 %	450.000 đ

Figure 3.6.5 - Manage Import Orders Screen Layout - View pending import order details

The screenshot shows the IMSD software interface for managing import orders. The main title is '#NAHA8' with the status 'Đang nhập hàng' (Processing). The workflow steps are TẠO ĐƠN (Created) → DUYỆT ĐƠN (Approved) → HOÀN THÀNH (Completed). Both 'TẠO ĐƠN' and 'DUYỆT ĐƠN' steps have a checkmark, while 'HOÀN THÀNH' has a circle with a dot. The date and time for each step are 19/04/2023 18:26. On the right, there's a 'Nhân hàng' (Bank) section and a 'Thông tin bổ sung' (Additional information) panel showing 'Ngày tạo đơn: 19/04/2023 18:26'. Below these are sections for 'Nhà cung cấp' (Supplier) and 'Thông tin sản phẩm nhập vào' (Import product information), which lists two items: Sữa chua Vinamilk Probi and Sữa chua Vinamilk có... with their respective details like quantity, unit, price, and discount.

Figure 3.6.6 - Manage Import Orders Screen Layout - View confirmed import order details

This screenshot shows the same software interface but for a cancelled import order '#NAHA7'. The status is 'Đã hủy' (Cancelled). The workflow steps are TẠO ĐƠN → DUYỆT ĐƠN → HOÀN THÀNH. Only 'TẠO ĐƠN' has a checkmark; 'DUYỆT ĐƠN' has a red X, and 'HOÀN THÀNH' has a circle with a dot. The date and time for 'TẠO ĐƠN' are 19/04/2023 07:57. The 'Thông tin sản phẩm nhập vào' section shows one item: Sữa tươi nguyên chất... with a quantity of 12, unit Hộp, price 6000 đ, and 0% discount, totaling 72,000 đ. A note at the bottom states 'Tổng giá trị đơn hàng: 72,000'.

Figure 3.6.7 - Manage Import Orders Screen Layout - View cancelled import order details

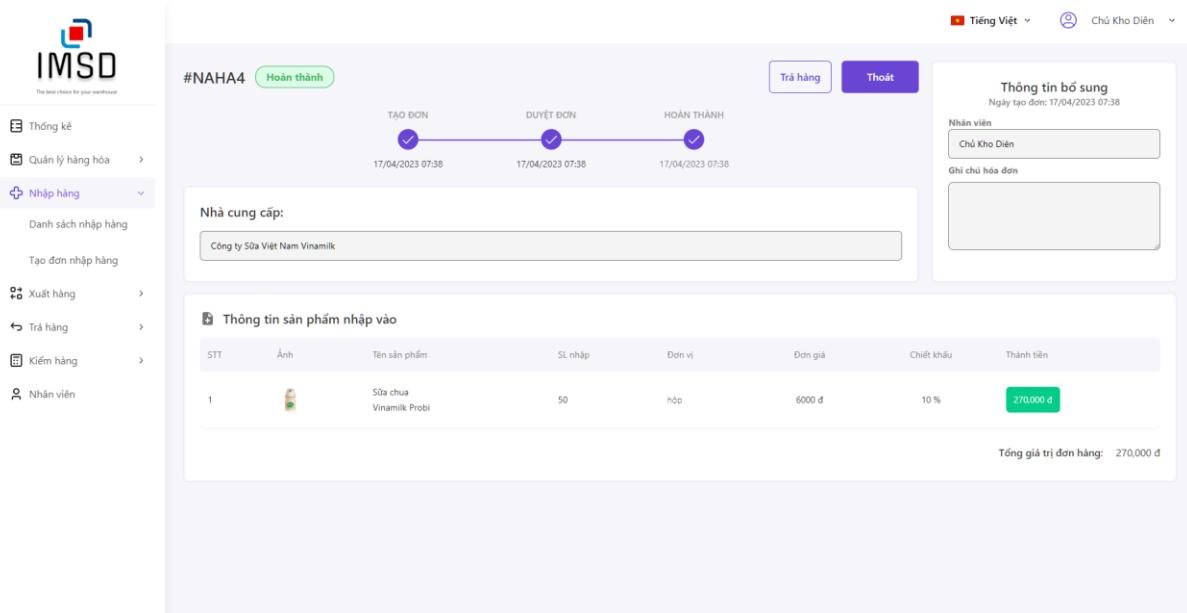


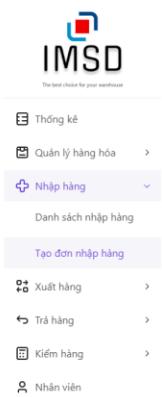
Figure 3.6.8 - Manage Import Orders Screen Layout - View success import order details

- Function details: The owner/seller/storekeeper views the details of the import order about the supplier, who creates, date, note, details of import products. The confirm succeed, cancel, edit available for 3 roles: owner, storekeeper, seller. The confirmed action is only available for the owner and storekeeper. The user can click the "Trả hàng" button to add a return to supplier order.
- Normal Flow:
 1. The user clicks on “Nhập hàng”.
 2. The user clicks on “Danh sách nhập hàng”.
 3. The user clicks on the eye icon of a specific import order.
 4. The website will display the details of the import order
- Alternative Flow:
 1. The user clicks on “Quản lý hàng hóa”.
 2. The user clicks on “Sản phẩm”.
 3. Click on the eye button on the right of each product to view its details.
 4. The user selects an order from the quantity change history of each product to be able to access the details of that order
 5. The website will display the details of the import order
- Exception: N/A
- Business rules: BR-03, BR-05, BR-14

3.6.5 Add import order

- Function trigger: A(n) owner/seller/storekeeper wants to add a new import order.
- Pre-condition: The user logged in the system.
- Post-condition: An import order created in the database. The website displays the Import Order List screen.
- Function description: As a(n) owner/seller/storekeeper, I want to add a new import order to the system.

Screen



Tạo hóa đơn nhập hàng

TAO ĐƠN (1) DUYỆT ĐƠN (2) HOÀN THÀNH (3)

Chọn nhà cung cấp

Nhà cung cấp

Thông tin sản phẩm nhập vào

Tìm kiếm theo tên, mã sản phẩm, mã vạch

Thêm nhanh sản phẩm

STT	Ảnh	Tên sản phẩm	SL nhập	Đơn vị	Đơn giá	Chiết khấu	Thành tiền
Không dữ liệu							

Tổng giá trị đơn hàng: 0 đ

Tạo hóa đơn nhập hàng

Layout:

Tiếng Việt

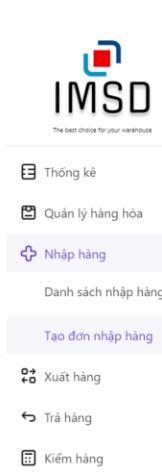


Thông tin bổ sung

Chọn nhân viên

Chủ Kho Diện

Ghi chú hóa đơn



Chọn nhà cung cấp

Công ty Sữa Việt Nam Vinamilk - 0375416126

Thông tin sản phẩm nhập vào

Tìm kiếm theo tên, mã sản phẩm, mã vạch

Sữa chua Vinamilk Probi SP11 DVT: Hộp	Giá nhập: 10.000 đ Tồn: 290
Sữa chua Vinamilk có đường 100g SP10 DVT: Hộp	Giá nhập: 5.000 đ Tồn: 118
Sữa tươi nguyên chất tiệt trùng - Vinamilk 100% Organic SP9 DVT: Hộp	Giá nhập: 6.000 đ Tồn: 699

Tổng giá trị đơn hàng: 0 đ

Tạo hóa đơn nhập hàng

Figure 3.6.9 - Manage Import Orders Screen Layout - Add a new import order

- Choose products

STT	Ánh	Tên sản phẩm	SL nhập	Đơn vị	Đơn giá	Chiết khấu	Thành tiền
1		Sữa chua Vinamilk Probi	5kg	hộp	10000 đ	0 %	500,000 đ
2		Sữa chua Vinamilk có...	0	Hộp	5000 đ	0 %	0 đ

Tổng giá trị đơn hàng: 500,000 đ

Tạo hóa đơn nhập hàng

Figure 3.6.11 - Manage Import Orders Screen Layout - Add a new import order
- Input amount and cost price

STT	Ánh	Tên sản phẩm	SL nhập	Đơn vị	Đơn giá	Chiết khấu	Thành tiền
1		Sữa chua Vinamilk Probi	5kg	hộp	10000 đ	0 %	500,000 đ
2		Sữa chua Vinamilk có...	0	Hộp	5000 đ	0 %	250,000 đ

Tổng giá trị đơn hàng: 750,000 đ

Tạo hóa đơn nhập hàng

Figure 3.6.12 - Manage Import Orders Screen Layout - Add a new import order
- Confirmation

- Function details: The owner/seller chooses the supplier and chooses the product from the supplier and adds quantity and unit price of each product, unit, discount. Then fill the information in the right hand panel like choose staff, note. They can click “Tạo hóa đơn nhập hàng” and confirm the action to finish adding import product order of the system.
- Normal Flow:
 1. The user clicks on “Nhập hàng”.
 2. The user clicks on “Tạo đơn nhập hàng”.
 3. The user chooses the supplier.

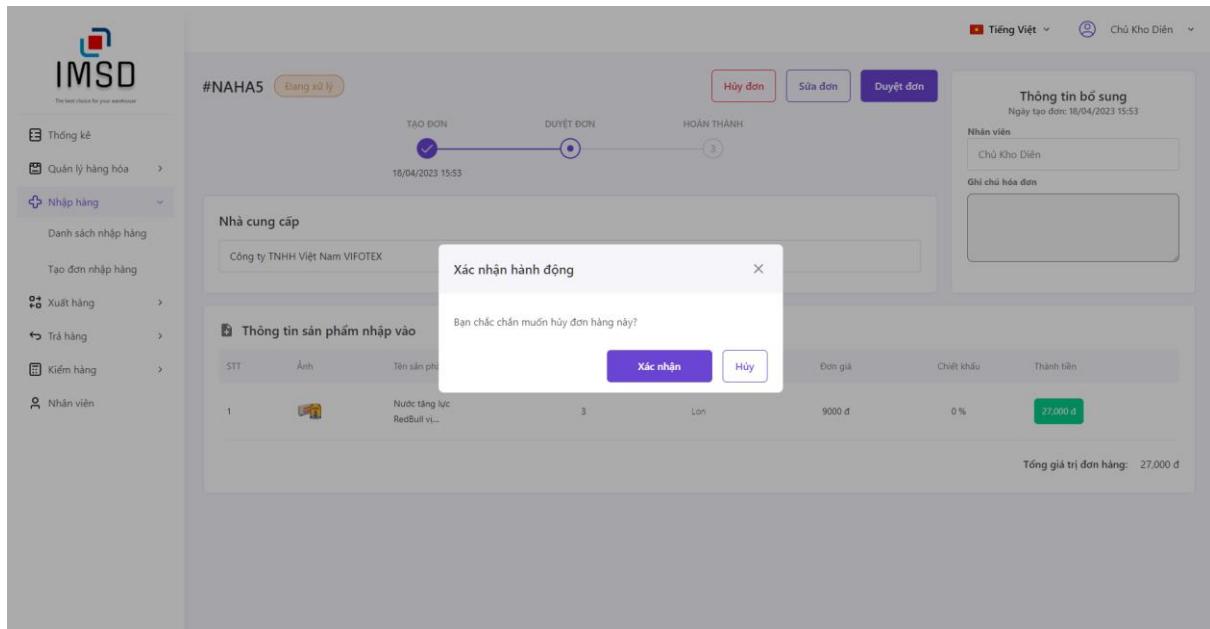
4. The user chooses the product of the supplier they want to import to the warehouse, type the quantity and the unit price of the product, unit, discount.
 5. The user fills the needed import information on the right panel like staff, note. If the user does not select an employee, the system will default to the logging in user as the order creator
 6. The products in the order are calculated the total price according to the formula:

$$\text{Total money} = \text{Quantity} \times \text{unit price of the product} \times (100\% - \text{discount})$$
 7. The user click “Tạo hóa đơn nhập hàng” to add new import order.
 8. The website pops the confirm message, user click "Xác nhận" button, the order will have the status “Đang xử lý” and goes to the Import Order List screen.
- Alternative Flow:
 1. Open Add Import Order from the Import Order List screen.
 - 1.1. (After normal flow from step 1)
 - 1.2. The user clicks “Danh sách nhập hàng”.
 - 1.3. The user clicks “Tạo đơn nhập hàng”.
 - 1.4. (Continue normal flow from step 3)
 2. Users want to quickly import products while creating import orders
 - 2.1. (After normal flow from step 3)
 - 2.2. The user clicks the "Thêm nhanh sản phẩm" button
 - 2.3. User enters required fields then click "Thêm sản phẩm" button.
 - 2.4. (Continue normal flow from step 4)
 - Exception:
 1. The user does not choose any products to import.
 - 1.1. (After normal flow from step 3)
 - 1.2. The user does not choose any products to import.
 - 1.2. “Tạo hóa đơn nhập hàng” button is disabled.
 2. User does not enter required fields when quickly adding products
 - 2.1. (After normal flow from step 3)
 - 2.2. The user clicks the "Thêm nhanh sản phẩm" button.
 - 2.3. User not enters required fields then click "Thêm sản phẩm" button.
 - 2.4. “Thêm sản phẩm” button is disabled.
 - Business rules: BR-01, BR-03, BR-04, BR-05, BR-06, BR-07, BR-14, BR-20

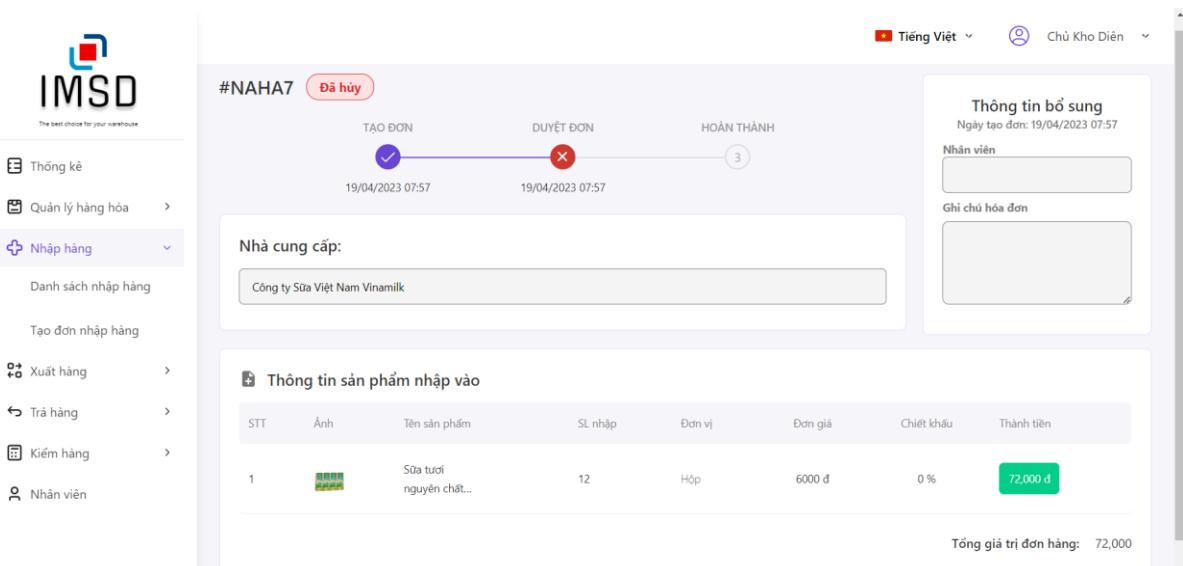
3.6.6 Cancel import order

- Function trigger: A(n) owner/seller/storekeeper wants to use a method to cancel the import order.
- Pre-condition: The user logged in the system and currently in the Import Order Detail screen.
- Post-condition: The import order status changed to cancelled. The website displays the Import Order Detail screen.
- Function description: As a(n) owner/seller/storekeeper, I want to cancel the import order.

Screen Layout:



*Figure 3.6.13 - Manage Import Orders Screen Layout - Cancel import order
- Confirm cancellation*



*Figure 3.6.14 - Manage Import Orders Screen Layout - Cancel import order
- Cancelled import order details*

- Function details: The owner/seller/storekeeper selects the order in the "Đang xử lý" status to cancel. After pressing the cancel button and confirming the action, the system will redirect to import order detail with status of cancelled.
- Normal Flow:
 1. The user clicks on “Nhập hàng”.
 2. The user clicks on “Danh sách nhập hàng”.
 3. The user selects the order in the “Đang xử lý” and click on eye icon.

4. The user clicks on the “Hủy đơn” button and press “Xác nhận” when the popup displays.
 5. The import order changes the status to “Đã hủy” and the website goes back to the Import Order Detail screen.
- Alternative Flow: N/A
 - Exception:
 1. User did not select order in "Đang xử lý" status
 - 1.1. (After normal flow from step 2).
 - 1.2. User did not select order in "Đang xử lý" status.
 - 1.3. There is no “Hủy đơn” button and cannot cancel that order.
 - Business rules: BR-03, BR-05, BR-14

3.6.7 Confirm import order

- Function trigger: A(n) owner/storekeeper wants to use a method to confirm an import order.
- Pre-condition: The user logged in the system and currently in the Import Order Detail screen.
- Post-condition: The status of import orders has changed from being processed to waiting for import. The website displays the Import Order Detail screen.
- Function description: As a(n) owner/storekeeper, I want to confirm an import order.

Screen

Layout:

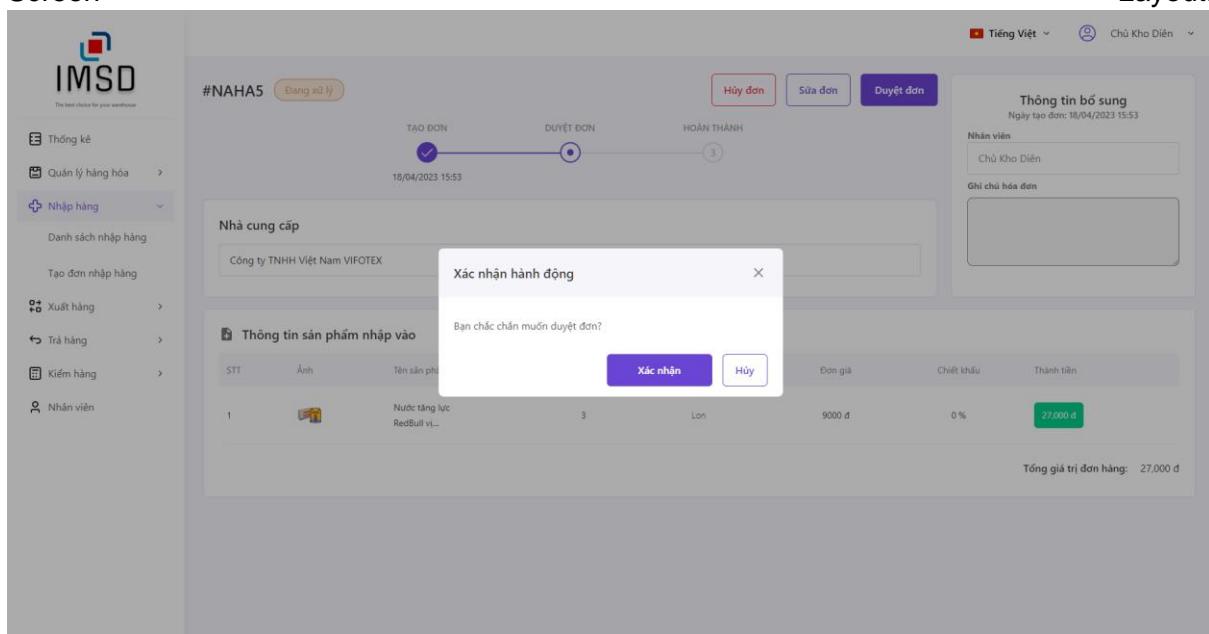


Figure 3.6.15 - Manage Import Orders Screen Layout - Confirm import order

- Confirmation

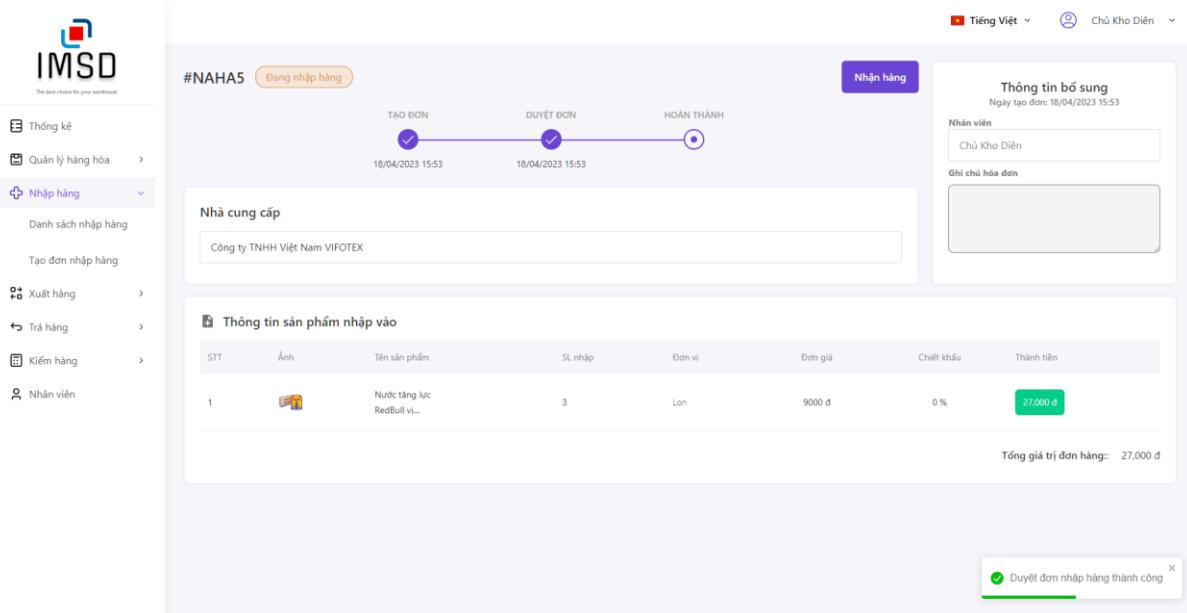


Figure 3.6.16 - Manage Import Orders Screen Layout - Cancel import order

- Confirmed import order details

- Function details: The owner/storekeeper can confirm an import order when he/she checks everything is correct with the reality.
- Normal Flow:
 1. The user clicks on “Nhập hàng”.
 2. The user clicks on “Danh sách nhập hàng”.
 3. The user selects the order in the “Đang xử lý” and click on eye icon.
 4. The user clicks “Duyệt đơn” Button.
 5. The user presses “Xác nhận” when the popup displays.
 6. The import order changes the status to “Chờ nhận hàng” and the website goes back to the Import Order Detail screen
- Alternative Flow: N/A
- Exception:
 1. User did not select order in "Đang xử lý" status
 - 1.1. (After normal flow from step 2).
 - 1.2. User did not select order in "Đang xử lý" status.
 - 1.3. There is no “Duyệt đơn” button and cannot confirm that order.
 2. User login with seller role
 - 2.1. (After normal flow from step 3).
 - 2.2. There is no “Duyệt đơn” button and cannot confirm that order.
- Business rules: BR-03, BR-05, BR-14

3.6.8 Edit import order

- Function trigger: A(n) owner/storekeeper/seller wants to use a method to edit the details of an import order.
- Pre-condition: The user logged in the system and currently in the Import Order Detail screen.
- Post-condition: The import order information changed. The website displays the Import Order Detail screen.

- Function description: As a(n) owner/seller/storekeeper, I want to edit the details of an import order.

Screen Layout:

Figure 3.6.17 - Manage Import Orders Screen Layout - Edit import order

Figure 3.6.18 - Manage Import Orders Screen Layout - Edit import order confirmation

- Function details: The owner/seller/storekeeper changes the supplier and changes the product from the supplier. Users can edit the quantity and unit price of each product, unit, discount. Then edit the information in the right hand panel like choose staff, note. They can click "Lưu" and confirm the action to finish editing the import product order of the system.
- Normal Flow:
 1. The user clicks “Sửa đơn” Button.
 2. The user chooses/changes the supplier.

3. The user chooses/removes the product of the supplier they want to import to the warehouse, type the quantity and the unit price of the product, unit, discount.
 4. The user edit the needed import information on the right panel like staff, note. If the user does not select an staff, the system will default to the logging in user as the order creator
 5. The products in the order are calculated the total price according to the formula:
Total money = Quantity x unit price of the product x (100% - discount)
 6. The user clicks the “Lưu” button and presses “Xác nhận” when the popup displays.
 7. The website goes back to the Import Order Detail screen after updating the edited information.
- Alternative Flow:
 1. The user want to quickly import products while edit import orders
 - 1.1. (After normal flow from step 2)
 - 1.2. The user clicks the "Thêm nhanh sản phẩm" button
 - 1.3. User enters required fields then click "Thêm sản phẩm" button.
 - 1.4. (Continue normal flow from step 4)
 - Exception:
 1. The user does not enter required fields when quickly adding products
 - 1.1. (After normal flow from step 2)
 - 1.2. The user clicks the "Thêm nhanh sản phẩm" button
 - 1.3. User not enters required fields then click "Thêm sản phẩm" button.
 - 1.4. "Thêm sản phẩm" button is disabled.
 - Business rules: BR-01, BR-03, BR-04, BR-05, BR-06, BR-07, BR-14, BR-20

3.6.9 Confirm succeed import

- Function trigger:A(n) owner/seller/storekeeper who wants to use a method to confirm a successful warehouse import.
- Pre-condition:The user logged in the system, the order has been approved and currently in the Import Order Detail screen.
- Post-condition:The import order status changed to complete. The website displays the Import Order Detail screen with complete status.
- Function description:As a(n) owner/seller/storekeeper, I want to confirm succeed import order.

Screen Layout:

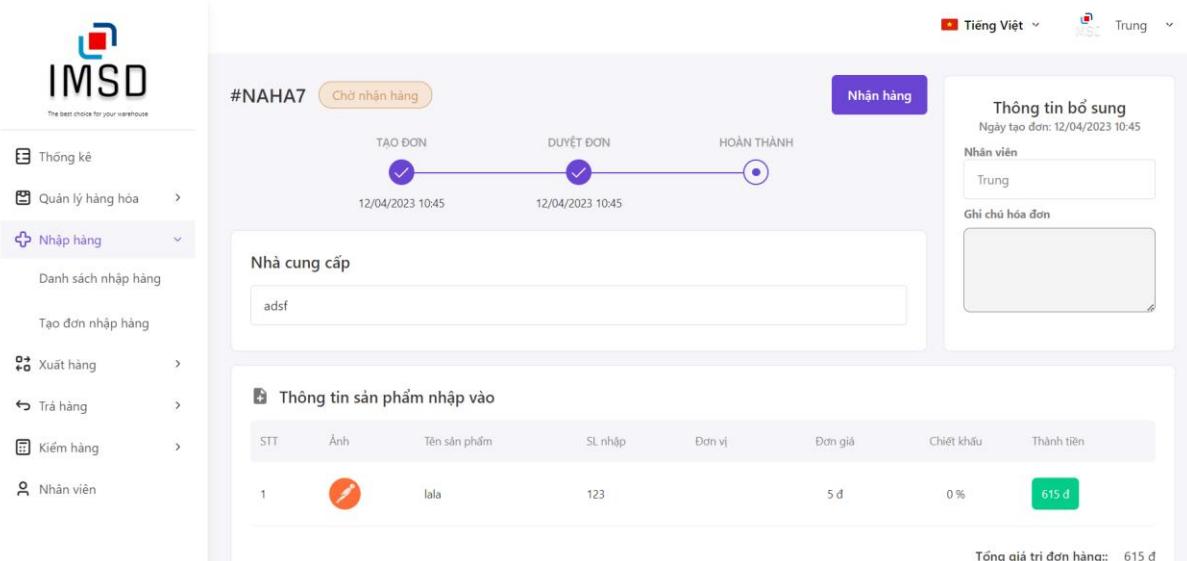


Figure 3.6.19 - Manage Import Orders Screen Layout - Confirm succeed import order

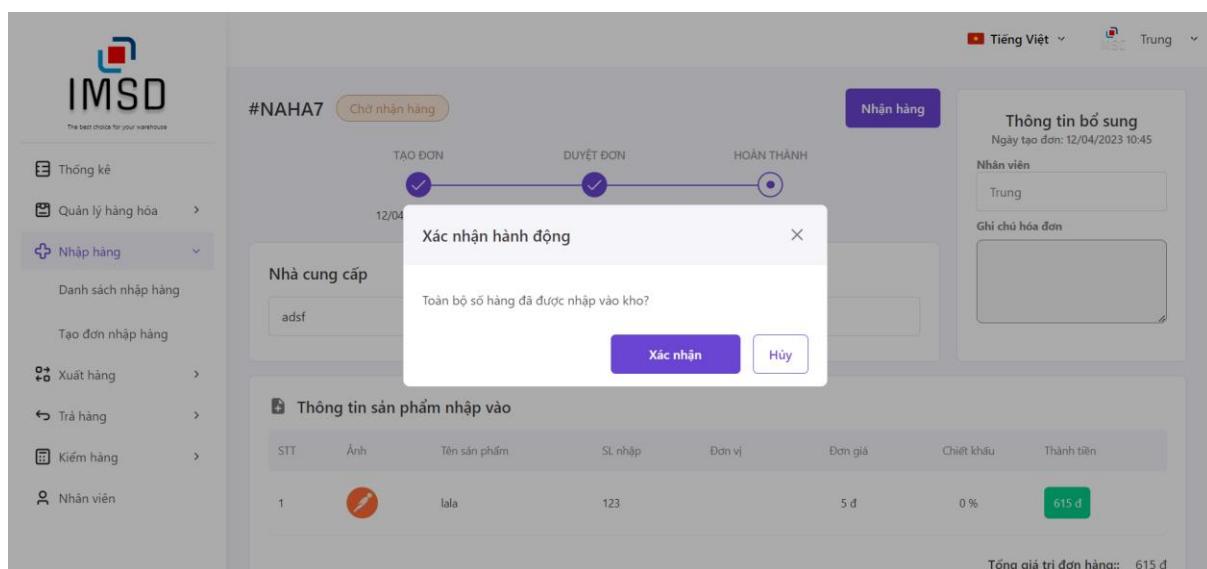


Figure 3.6.20 - Manage Import Orders Screen Layout - Confirmation succeed import order

- Function details: The product owner/seller/storekeeper selects the order in the "Đang nhập hàng" status to confirm success. After pressing the receive button and confirming the action, the system will redirect to import order detail with status of complete.
- Normal Flow:
 1. The user clicks on “Nhập hàng”.
 2. The user clicks on “Danh sách nhập hàng”.
 3. The user selects the order in the "Đang nhập hàng" and clicks on the eye icon.
 4. The user clicks on the “Nhận hàng” button and press “Xác nhận” when the popup displays.
 5. The import order changes the status to “Hoàn thành” and the website goes back to the Import Order Detail screen.
- Alternative Flow: N/A

- Exception:
 1. The user did not select order in "Đang nhận hàng" status
 - 1.1. (After normal flow from step 2).
 - 1.2. User did not select order in "Đang nhận hàng" status.
 - 1.3. There is no "Nhận hàng" button and cannot confirm the order.
- Business rules: BR-03, BR-05, BR-14

3.7 Manage Export Orders

3.7.1 View export order list

- Function trigger: A(n) owner/seller/storekeeper wants to use a method to view all the export orders.
- Pre-condition: The user logged in the system and currently in the export order screen.
- Post-condition: The website displays the Export Order List screen.
- Function description: As a(n) owner/seller/storekeeper, I want to view all the export orders in the system.

Screen

Mã đơn xuất	Ghi chú	Ngày xuất	Tổng tiền	Trạng thái
XUHA6	Đơn hàng bao gồm 1 món quà	18/04/2023 06:47	1,983.000 đ	Đang xử lý
XUHA5	---	18/04/2023 06:43	457.461 đ	Hoàn thành
XUHA4	---	17/04/2023 08:13	300.000 đ	Hoàn thành
XUHA3	---	17/04/2023 07:29	2,660.000 đ	Hoàn thành
XUHA2	---	17/04/2023 07:25	1,140.000 đ	Hoàn thành
XUHA1	---	17/04/2023 07:24	570.000 đ	Hoàn thành

Layout:

Figure 3.7.1 - Manage Export Orders Screen Layout - View all export orders

- Function details: The owner/seller/storekeeper can view all the export orders with the newest creation date first. The button “Tạo đơn xuất hàng” appears for all 3 roles: owner/seller/storekeeper.
- Normal Flow:
 1. The user clicks “Xuất hàng”
 2. The user clicks “Danh sách xuất hàng”
 3. The website displays all the export orders in the system.
- Alternative Flow: N/A
- Exception:
 1. The system has no export order.
 - 1.1. (After normal flow from step 2)
 - 1.2. The table will show the message “không dữ liệu”.
- Business rules: BR-05, BR-14

3.7.2 Search export order

- Function trigger: A(n) owner/seller/storekeeper wants to use a method to search the export order by export order code.
- Pre-condition: The user logged in the system and currently in the export order list screen.
- Post-condition: The website displays the export order by search export order code.
- Function description: As a(n) owner/seller/storekeeper, I want to search the export order by export order code.

Screen Layout:

Figure 3.7.2 - Manage Export Orders Screen Layout - Search export orders

- Function details: The owner/seller/storekeeper searches the export orders by export order code input on the search bar. After inputting the export order code, the system will display the export orders with the word entered in the search bar. The user can search and filter at the same time. The table will show all export orders containing the keyword by text search and in the selected filter
- Normal Flow:
 1. The user clicks on “Xuất hàng”
 2. The user clicks on “Danh sách xuất hàng”
 3. The user types the keyword they want to search.
 4. The table will show all the export orders containing the word by text search.
- Alternative Flow: N/A
- Exception:
 1. The system has no export order containing the keyword that the user searches for.
 - 1.1. (After normal flow from step 3)
 - 1.2. The table will show the message “Không dữ liệu”.
- Business rules: BR-05, BR-14

3.7.3 Filter export order

- Function trigger: A(n) owner/seller/storekeeper wants to use a method to filter the export order list.
- Pre-condition: The user logged in the system and currently in the export order list screen.
- Post-condition: The website displays the export order list by filters.
- Function description: As a(n) owner/seller/storekeeper, I want to filter the export order in export order list

Screen Layout:

Mã đơn xuất	Ghép chủ	Ngày xuất	Tổng tiền
XUHAS	---	18/04/2023 06:43	457.461 đ
XUHA4	---	17/04/2023 08:13	300.000 đ
XUHA3	---	17/04/2023 07:29	2.660.000 đ
XUHA2	---	17/04/2023 07:25	1.140.000 đ
XUHA1	---	17/04/2023 07:24	570.000 đ

Figure 3.7.3 - Manage Export Orders Screen Layout - Filter export orders

- Function details: The owner/seller/storekeeper filters the export orders by choosing status of order. After choosing those fields, the system will display the export orders which match all conditions. The user can press the x icon to turn off the filter. The user can search and filter at the same time. The table will show all export orders containing the keyword by text search and in the selected filter
- Normal Flow:
 1. The user clicks on “Xuất hàng”.
 2. The user clicks on “Danh sách xuất hàng”.
 3. The user chooses from the dropdown lists to filter export orders.
 4. The table will show all the export orders with that filter.
- Alternative Flow: N/A
- Exception:
 1. The system has no export order that fits the filter.
 - 1.1. (After normal flow from step 3)
 - 1.2. The table will show the message “Không dữ liệu”.
- Business rules: BR-05, BR-14

3.7.4 View export order detail

- Function trigger: A(n) owner/seller/storekeeper wants to view details of an export order.
- Pre-condition: The user logged in the system.

- Post-condition: The website displays details of the export order.
- Function description: As a(n) owner/seller/storekeeper, I want to view the detail of export order.

Screen Layout:

STT	Ảnh	Tên sản phẩm	SL xuất	Đơn vị	Đơn giá	Chiết khấu	Thành tiền
1		Sữa chua Vinamilk Probi	40	Hộp	10000 đ	0 %	400.000 đ
2		sữa chua Vinamilk cõ...	99	Hộp	7000 đ	0 %	693.000 đ
3		Sữa tươi nguyên chất...	89	Hộp	10000 đ	0 %	890.000 đ

Tổng giá trị đơn hàng: 1.983.000 đ

Figure 3.7.4 - Manage Export Orders Screen Layout - View export order details

- Pending export order details

STT	Ảnh	Tên sản phẩm	SL xuất	Đơn vị	Đơn giá	Chiết khấu	Thành tiền
1		Sữa chua Vinamilk Probi	40	Hộp	10000 đ	0 %	400.000 đ
2		sữa chua Vinamilk cõ...	99	Hộp	7000 đ	0 %	693.000 đ
3		Sữa tươi nguyên chất...	89	Hộp	10000 đ	0 %	890.000 đ

Tổng giá trị đơn hàng: 1.983.000 đ

Figure 3.7.5 - Manage Export Orders Screen Layout - View export order details

- Cancelled export order details

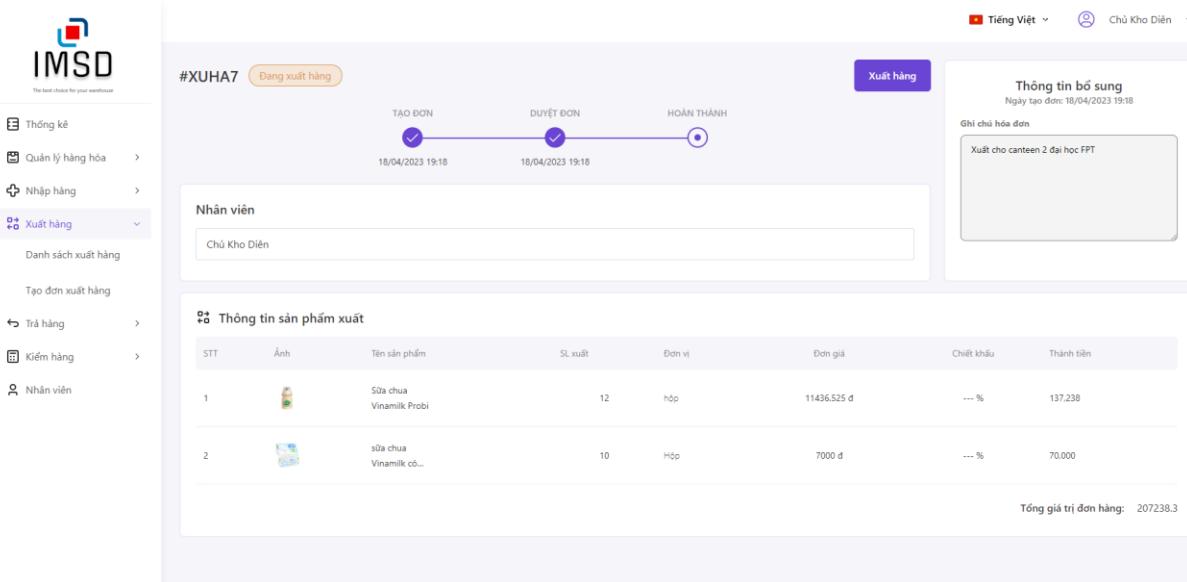


Figure 3.7.6 - Manage Export Orders Screen Layout - View export order details

- Confirmed export order details

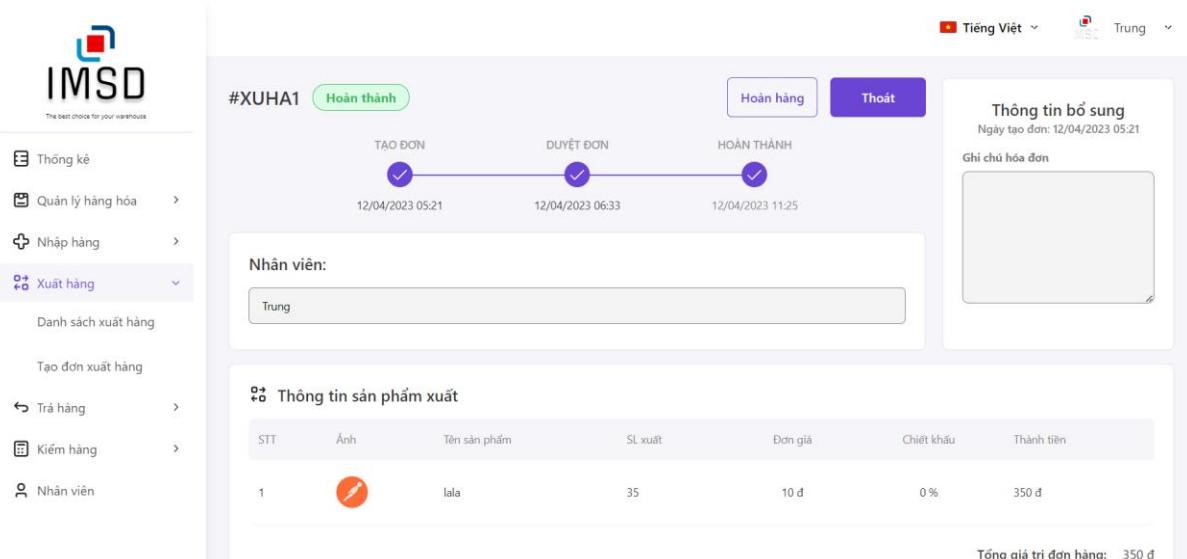


Figure 3.7.7 - Manage Export Orders Screen Layout - View export order details

- Success export order details

- Function details: The owner/seller/storekeeper views the details of the export order about the staff who creates, date, note, details of export products. The confirm succeed, cancel, edit available for 3 roles: owner, storekeeper, seller. The confirmed action is only available for the owner and storekeeper. Users can click the "Hoàn hàng" button to add a return order.
- Normal Flow:
 1. The user clicks on “Xuất hàng”
 2. The user clicks “Danh sách xuất hàng”

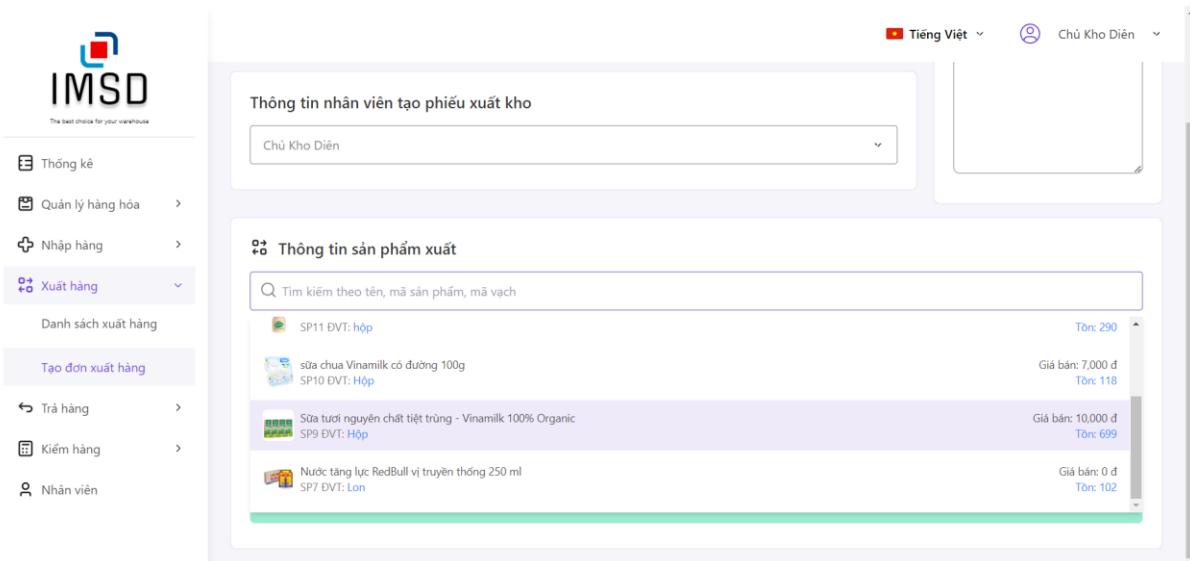
3. The user clicks on the eye button on the right of each export order to view its details.
 4. The website will display the details of the export order
- Alternative Flow:
 1. The user clicks on “Quản lý hàng hóa”.
 2. The user clicks on “Sản phẩm”.
 3. Click on the eye button on the right of each product to view its details.
 4. The user selects an order from the quantity change history of each product to be able to access the details of that order
 5. The website will display the details of the import order
 - Exception: N/A
 - Business rules: BR-03, BR-05, BR-14

3.7.5 Add export order

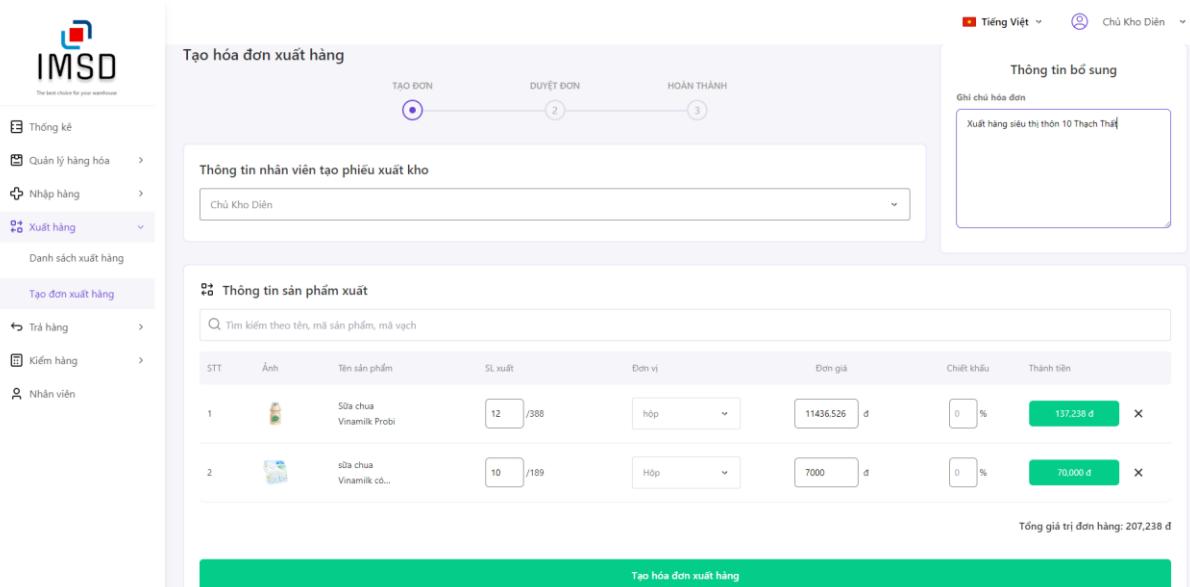
- Function trigger: A(n) owner/seller/storekeeper wants to create a new export order.
- Pre-condition: The user logged in the system.
- Post-condition: An export order created in the database. The website displays the Export Order List screen.
- Function description: As a(n) owner/seller/storekeeper, I want to add a new export order to the system.

Screen Layout:

Figure 3.7.8 - Manage Export Orders Screen Layout - Add a new export order



*Figure 3.7.9 - Manage Export Orders Screen Layout - Add a new export order
- Choose products*



*Figure 3.7.10 - Manage Export Orders Screen Layout - Add a new export order
- Input amount and cost price*

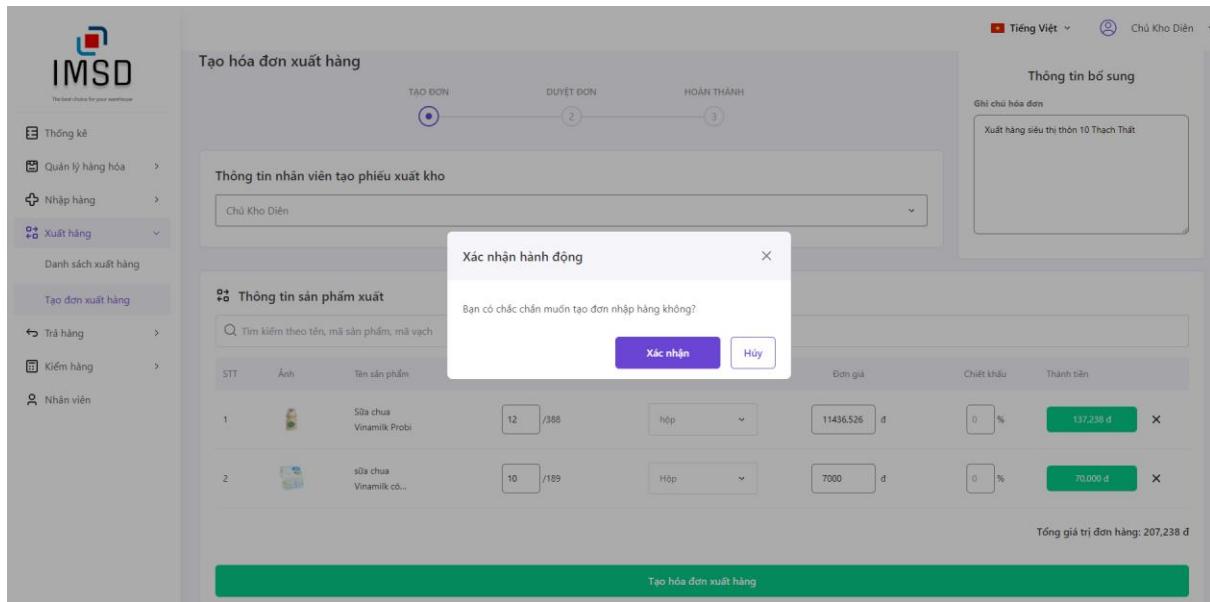


Figure 3.7.11 - Manage Export Orders Screen Layout - Add a new export order

- Confirmation

- Function details: The owner/seller chooses the staff then chooses the product and adds quantity, unit price of each product, unit, discount. Then fill the information in the right hand panel like choose note. They can click “Tạo hóa đơn xuất hàng” and confirming the action to finish add export product order of the system
- Normal Flow:
 1. The user clicks on “Xuất hàng”
 2. The user clicks on “Tạo đơn xuất hàng”
 3. The user chooses the staff. If the user does not select an staff, the system will default to the logging in user as the order creator
 4. The user chooses the product they want to export to the warehouse, type the quantity and the unit price of the product, unit, discount.
 5. The user fills the needed export information on the right panel like the note.
 6. The products in the order are calculated the total price according to the formula:
Total money = Quantity x unit price of the product x (100% - discount)
 7. The user click “Tạo hóa đơn xuất hàng” to add new export order.
 8. The website pops the confirm message, user click "Xác nhận" button, the order will have the status “Đang xử lý” and goes to the Export Order List screen.
- Alternative Flow:
 1. Open Add Export Order from the Export Order List screen.
 - 1.1. (After normal flow from step 1)
 - 1.2. The user clicks “Danh sách xuất hàng”.
 - 1.3. The user clicks “Tạo đơn xuất hàng”.
 - 1.4. (Continue normal flow from step 3)
- Exception:
 1. The user does not choose any products to export.
 - 1.1. (After normal flow from step 3)

- 1.2 The user does not choose any products to export.
- 1.2. "Tạo hóa đơn xuất hàng" button is disabled
- Business rules: BR-03, BR-04, BR-05, BR-06, BR-07, BR-14, BR-20

3.7.6 Cancel export order

- Function trigger: A(n) owner/seller/storekeeper wants to use a method to cancel the export order list.
- Pre-condition: The user logged in the system and currently in the Export Order Detail screen.
- Post-condition: The export order status changed to cancelled. The website displays the Export Order Detail screen.
- Function description: As a(n) owner/seller/storekeeper, I want to cancel the export order.

Screen Layout:

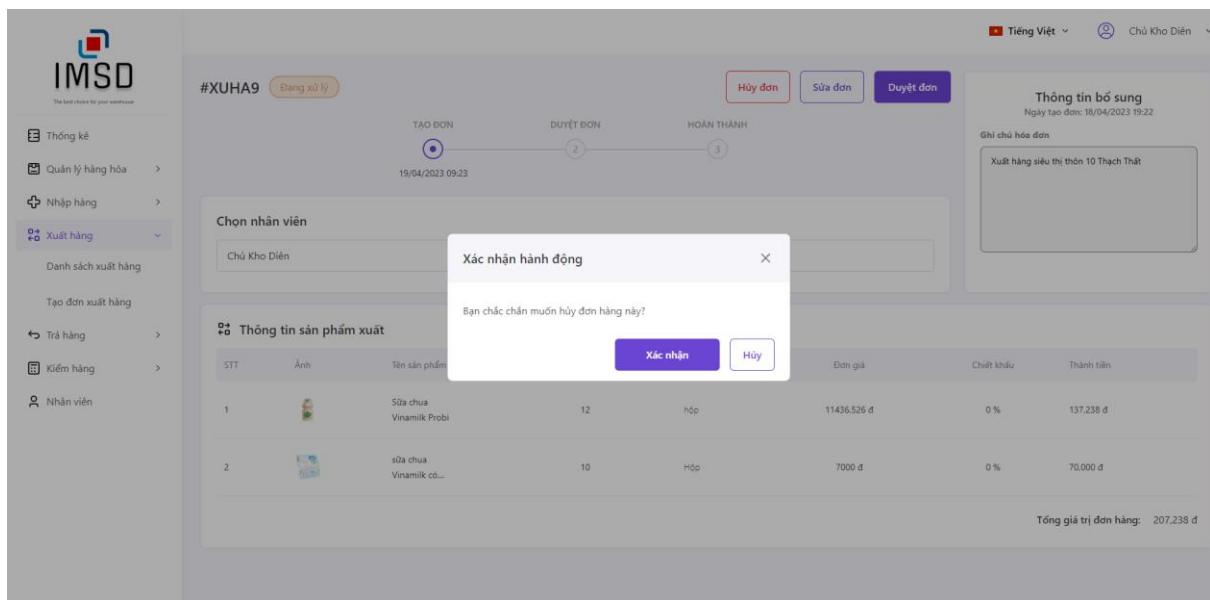


Figure 3.7.12 - Manage Export Orders Screen Layout - Cancel export order

- Confirm cancellation

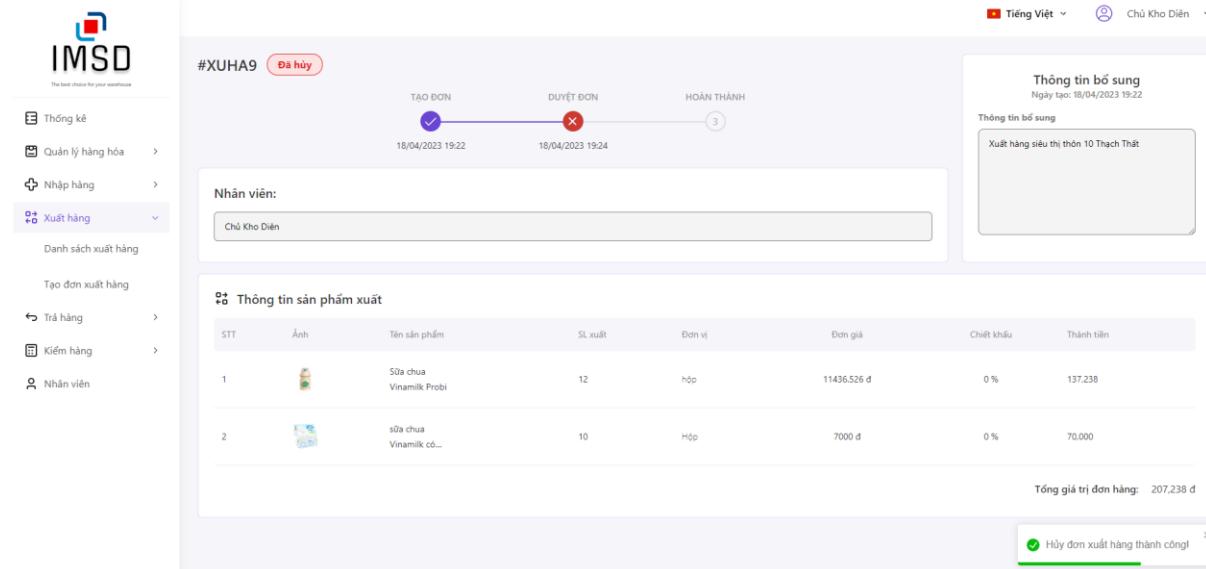


Figure 3.7.13 - Manage Export Orders Screen Layout - Cancel export order

- Cancelled export order details

- Function details: The owner/seller/storekeeper selects the order in the "Đang xử lý" status to cancel. After pressing the cancel button and confirming the action, the system will redirect to export order detail with status of cancelled.
- Normal Flow:
 1. The user clicks on “Xuất hàng”.
 2. The user clicks on “Danh sách xuất hàng”.
 3. The user selects the order in the "Đang xử lý" and click on eye icon.
 4. The user clicks on the “Hủy đơn” button and press “Xác nhận” when the popup displays.
 5. The export order changes the status to “Đã hủy” and the website goes back to the Export Order Detail screen
- Alternative Flow: N/A
- Exception:
 1. The user did not select order in "Đang xử lý" status
 - 1.1. (After normal flow from step 2).
 - 1.2. User did not select order in "Đang xử lý" status.
 - 1.3. There is no “Hủy đơn” button and cannot cancel that order.
- Business rules: BR-03, BR-05, BR-14

3.7.7 Confirm export order

- Function trigger: A(n) owner/storekeeper wants to use a method to confirm an export order.
- Pre-condition: The user logged in the system and currently in the Export Order Detail screen.
- Post-condition: The status of export orders has changed from being processed to waiting for export. The website displays the Export Order Detail screen.
- Function description: As a(n) owner/storekeeper, I want to confirm an export order.

Screen Layout:

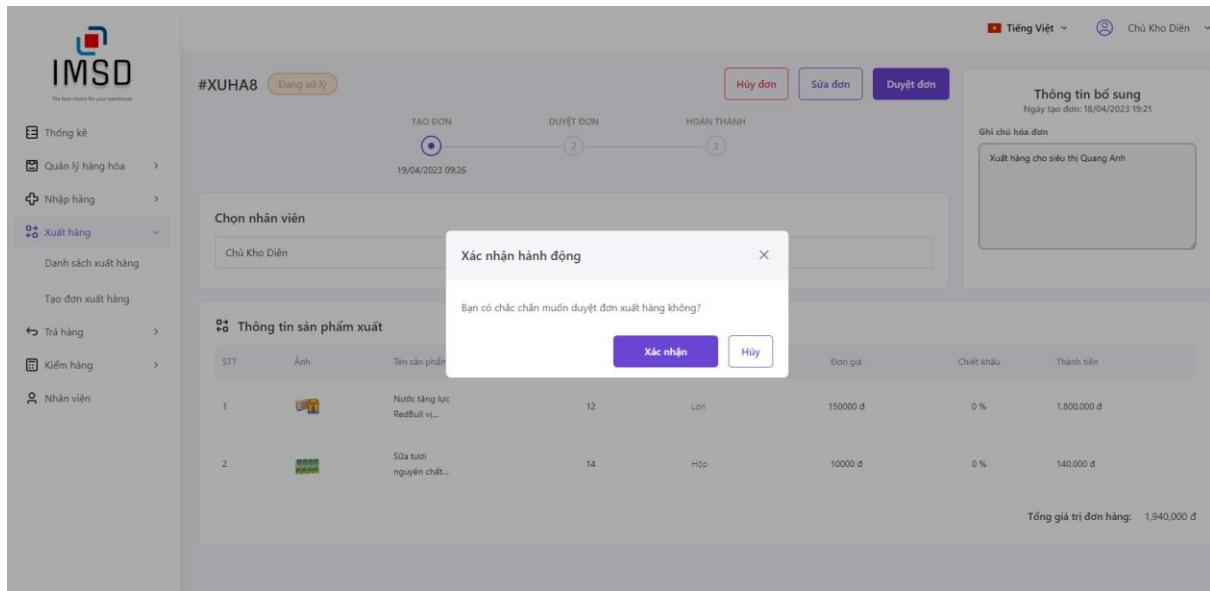


Figure 3.7.14 - Manage Export Orders Screen Layout - Confirm export order

- Confirmation

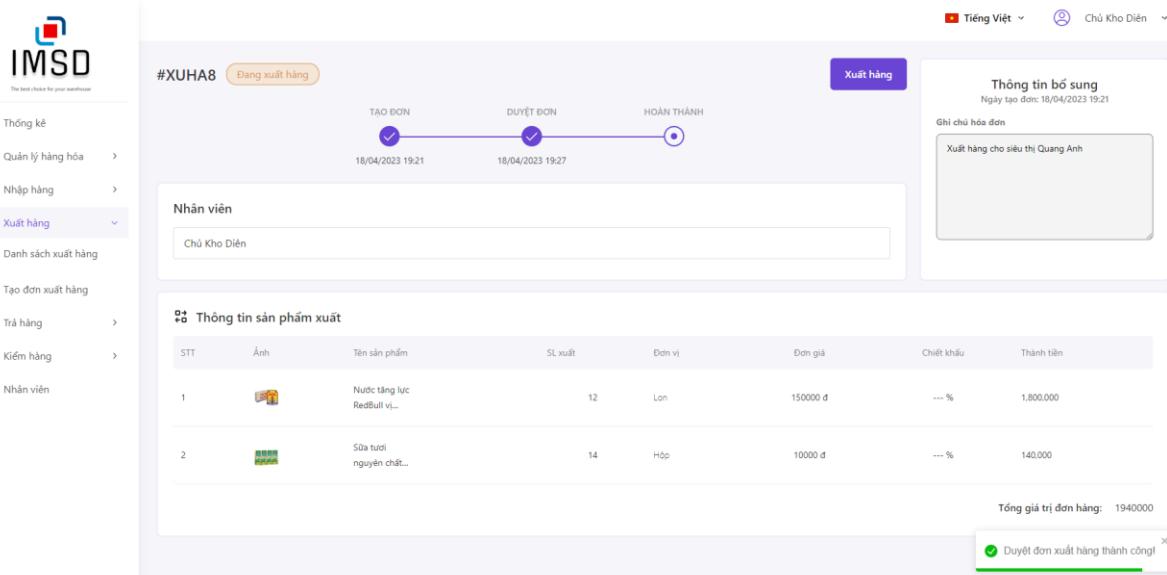


Figure 3.7.15 - Manage export Orders Screen Layout - Cancel export order

- Confirmed export order details

- Function details: The owner/storekeeper can confirm an export order when he/she checks everything is correct with the reality.
- Normal Flow:
 1. The user clicks on “Xuất hàng”.
 2. The user clicks on “Danh sách xuất hàng”.
 3. The user selects the order in the “Đang xử lý” and click on eye icon.
 4. The user clicks “Duyệt đơn” Button.
 5. The user presses “Xác nhận” when the popup displays.
 6. The export order changes the status to “Chờ xuất hàng”
 7. The export order changes the status to “Chờ xuất hàng” and the website goes back to the Export Order Detail screen.

- Alternative Flow: N/A
- Exception:
 1. The user did not select order in "Đang xử lý" status
 - 1.1. (After normal flow from step 2).
 - 1.2. User did not select order in "Đang xử lý" status.
 - 1.3. There is no "Duyệt đơn" button and cannot confirm that order.
 2. The user login with seller role
 - 2.1. (After normal flow from step 3).
 - 2.2. There is no "Duyệt đơn" button and cannot confirm that order.
- Business rules: BR-03, BR-05, BR-14

3.7.8 Edit export order

- Function trigger: A(n) owner/storekeeper/seller wants to use a method to edit the details of an export order.
- Pre-condition: The user logged in the system and currently in the Export Order Detail screen.
- Post-condition: The export order information changed. The website displays the Export Order Detail screen.
- Function description: As a(n) owner/seller/storekeeper, I want to edit the details of an export order.

Screen Layout:

The screenshot shows the IMSD software interface for managing export orders. The top navigation bar includes the IMSD logo, language selection (Tiếng Việt), and user information (Chủ Kho Điện). The main content area is titled "#XUHA10 Chờ duyệt đơn". It displays the order status timeline: TẠO ĐƠN (18/04/2023 19:29), DUYỆT ĐƠN (highlighted with a blue circle), and HOÀN THÀNH (3). Below the timeline, there's a dropdown for selecting a staff member (Chọn nhân viên) and a section for additional information (Thông tin bổ sung) with a note about shipping to BigC. The central part of the screen shows the order details for two items: Sữa chua Vinamilk Probi and sữa chua Vinamilk cỏ... The total value of the order is listed at the bottom as 277,238 đ.

STT	Ảnh	Tên sản phẩm	Số lượng	Đơn vị	Đơn giá	Chiết khấu	Thành tiền
1		Sữa chua Vinamilk Probi	12 /388	Hộp	11436.526 đ	0 %	137,238 đ
2		sữa chua Vinamilk cỏ...	20 /189	Hộp	7000 đ	0 %	140,000 đ

Figure 3.7.16 - Manage Export Orders Screen Layout - Edit export order

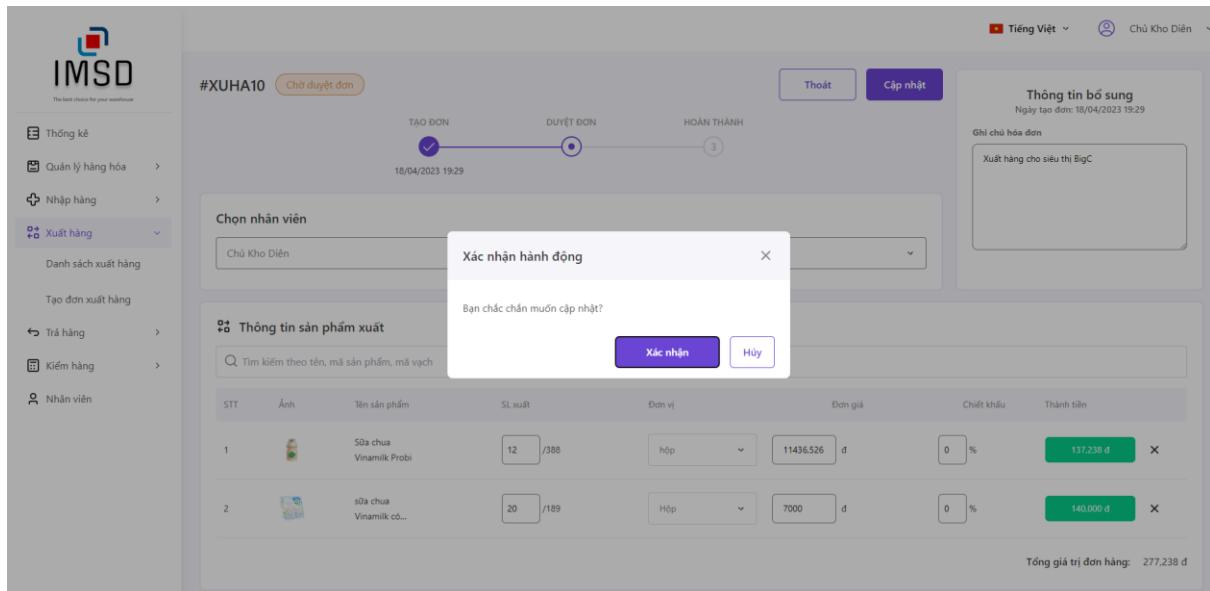


Figure 3.7.16 - Manage Export Orders Screen Layout - Edit export order confirmation

- Function details: The owner/seller/storekeeper changes the staff and changes the product. The user can edit the quantity and unit price of each product, unit, discount. Then edit the information in the right hand panel like choose note. They can click “Cập nhật” and confirming the action to finish edit export product order of the system
- Normal Flow:
 1. The user clicks “Sửa đơn” Button.
 2. The user chooses/changes the staff. If the user does not select an staff, the system will default to the logging in user as the order creator
 3. The user chooses/removes the product they want to export to the warehouse, type the quantity and the unit price of the product, unit, discount.
 4. The user edits the needed export information on the right panel like the note.
 5. The products in the order are calculated the total price according to the formula:
Total money = Quantity x unit price of the product x (100% - discount)
 6. The user clicks the “Cập nhật” button and press “Xác nhận” when the popup displays.
 7. The website goes back to the Export Order Detail screen after updating the edited information.
- Alternative Flow: N/A
- Exception: N/A
- Business rules: BR-03, BR-04, BR-05, BR-06, BR-07, BR-14, BR-20

3.7.9 Confirm succeed export

- Function trigger: A(n) owner/seller/storekeeper who wants to use a method to confirm a successful warehouse export.
- Pre-condition: The user logged in the system, the order has been approved and currently in the Export Order Detail screen.
- Post-condition: The Export order status changed to complete. The website displays the Export Order Detail screen with complete status.

- Function description: As a(n) owner/seller/storekeeper, I want to confirm succeed export order

Screen Layout:

#XUHA10 Đang xuất hàng

Xuất hàng

TẠO ĐƠN ✓ 18/04/2023 19:29

DUYỆT ĐƠN ✓ 18/04/2023 19:32

HOÀN THÀNH ●

Nhân viên
Chủ Kho Điện

Thông tin sản phẩm xuất

STT	Ảnh	Tên sản phẩm	SL xuất	Đơn vị	Đơn giá	Chiết khấu	Thành tiền
1		Sữa chua Vinamilk Probi	12	Hộp	11436526 đ	--- %	137.238
2		Sữa chua Vinamilk cố...	20	Hộp	7000 đ	--- %	140.000

Tổng giá trị đơn hàng: 277238.3

Thông tin bổ sung
Ngày tạo đơn: 18/04/2023 19:29
Ghi chú hóa đơn
Xuất hàng cho siêu thị BigC

Figure 3.7.17 - Manage Export Orders Screen Layout - Confirmed export order details

#XUHA10 Đang xuất hàng

Xuất hàng

TẠO ĐƠN ✓ 18/04/2023 19:29

DUYỆT ĐƠN ✓ 18/04/2023 19:32

HOÀN THÀNH ●

Nhân viên
Chủ Kho Điện

Xác nhận hành động

Bạn có chắc chắn đơn hàng đã xuất khỏi kho

Xác nhận **Hủy**

Thông tin sản phẩm xuất

STT	Ảnh	Tên sản phẩm	SL xuất	Đơn vị	Đơn giá	Chiết khấu	Thành tiền
1		Sữa chua Vinamilk Probi	12	Hộp	11436526 đ	--- %	137.238
2		Sữa chua Vinamilk cố...	20	Hộp	7000 đ	--- %	140.000

Tổng giá trị đơn hàng: 277238.3

Thông tin bổ sung
Ngày tạo đơn: 18/04/2023 19:29
Ghi chú hóa đơn
Xuất hàng cho siêu thị BigC

Figure 3.7.18 - Manage Export Orders Screen Layout - Success confirmation

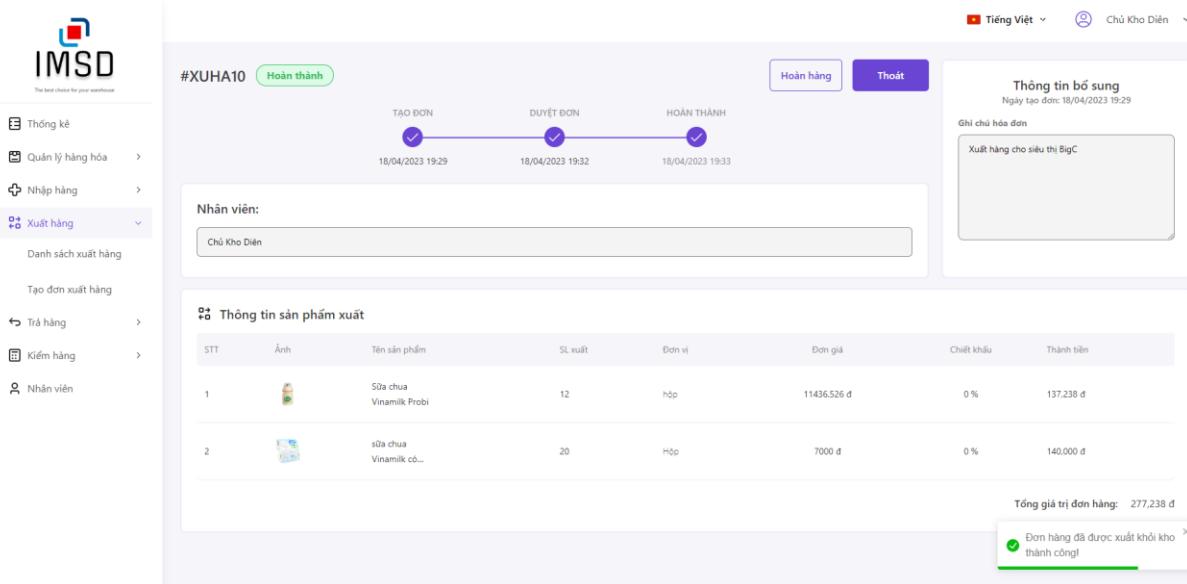


Figure 3.7.17 - Manage Export Orders Screen Layout - Success export order details

- Function details: The product owner/seller/storekeeper selects the order in the "Đang xuất hàng" status to confirm success. After pressing the export product button and confirming the action, the system will redirect to export order detail with status of complete.
- Normal Flow:
 1. The user clicks on “Xuất hàng”.
 2. The user clicks on “Dánh sách xuất hàng”.
 3. The user selects the order in the "Đang xuất hàng" and clicks on the eye icon.
 4. The user clicks on the “Xuất hàng” button and press “Xác nhận” when the popup displays.
 5. The export order changes the status to “Hoàn thành” and the website goes back to the Export Order Detail screen.
- Alternative Flow: N/A
- Exception:
 1. The user did not select order in "Đang xuất hàng" status
 - 1.1. (After normal flow from step 2).
 - 1.2. User did not select order in "Đang xuất hàng" status.
 - 1.3. There is no “Xuất hàng” button and cannot confirm the order.
- Business rules: BR-03, BR-05, BR-14

3.8 Manage Inventory Checking

3.8.1 View inventory checking order list

- Function trigger: The owner/storekeeper wants to view all inventory checking lists.
- Pre-condition: The user logged in the system.
- Post-condition: The system shows inventory checking lists screen.
- Function description: As a(n) owner/storekeeper, I want to view all inventory checking lists.

Screen Layout:

Figure 3.8.1 - Manage Inventory Checking Order Screen Layout

- View all inventory checking orders

- Function details: The owner/seller/storekeeper can view all the inventory checking orders with the newest creation date first in the system. The button “Tạo phiếu kiểm” displays for the owner, store keeper and seller.
- Normal Flow:
 1. The user clicks on “Kiểm hàng”.
 2. The user clicks on “Lịch sử kiểm hàng”.
 3. The system will show all the inventory checking history in the system.
- Alternative Flow: N/A
- Exception:
 1. There is no inventory checking history in the system
 - 1.1. (After normal flow from step 2)
 - 1.2. The table will show the message “Không dữ liệu”.
- Business rules: BR-03

3.8.2. Search inventory checking order

- Function trigger: A(n) owner/storekeeper/seller wants to use a method to search the inventory checking order by inventory checking order code.
- Pre-condition: The user logged in the system and currently in the inventory checking order list screen.
- Post-condition: The website displays the inventory checking order by searching by inventory checking order code.
- Function description: As a(n) owner/seller/storekeeper, I want to search the inventory checking order by inventory checking order code.

Screen Layout:

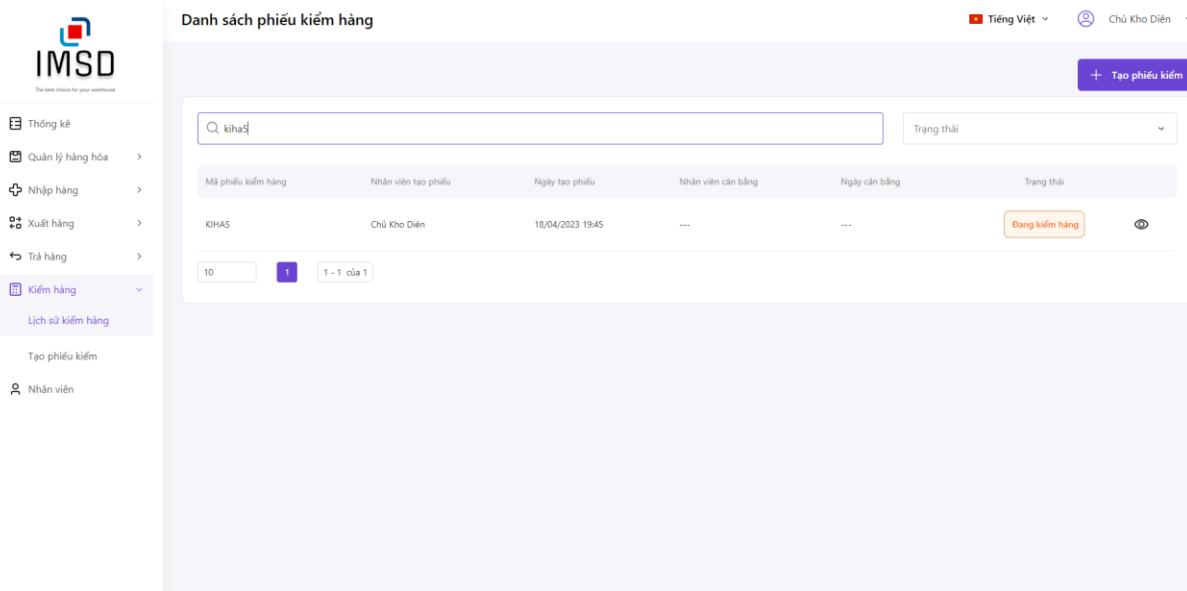


Figure 3.8.2 - Manage Inventory Checking Order Screen Layout

- Search inventory checking orders

- Function details: The owner/seller/storekeeper searches the inventory checking order by inventory checking order code input on the search bar. After inputting the inventory checking order code, the system will display the inventory checking orders with the word entered in the search bar. The user can search and filter at the same time. The table will show all inventory checking orders containing the keyword by text search and in the selected filter
- Normal Flow:
 1. The user clicks on “Kiểm hàng”
 2. The user clicks on “Lịch sử kiểm hàng”
 3. The user types the keyword they want to search.
 4. The table will show all inventory checking orders containing the word by text search.
- Alternative Flow: N/A
- Exception:
 1. The system has no inventory checking order containing the keyword that the user searches for.
 - 1.1. (After normal flow from step 3)
 - 1.2. The table will show the message “Không dữ liệu”.
- Business rules: BR-03, BR-06

3.8.3. Filter inventory checking order

- Function trigger: A(n) owner/seller/storekeeper wants to use a method to filter the inventory checking order list.
- Pre-condition: The user logged in the system and currently in the Inventory Checking Order List screen.
- Post-condition: The website displays the inventory checking order list by filters.

- Function description: As a(n) owner/seller/storekeeper, I want to filter the inventory checking order by filters in the inventory checking order list.

Screen Layout:

Mã đơn trả hàng	Nhà cung cấp	Người tạo đơn	Ngày trả hàng	Giá trị trả hàng	
TAHA7	Công ty Sữa Việt Nam Vinamilk	Chủ Kho Diện	18/04/2023 19:38	0 đ	Đang trả hàng
TAHA5	Công ty Sữa Việt Nam Vinamilk	Chủ Kho Diện	18/04/2023 19:36	0 đ	Đã nhập lại hàng trả
TAHA4	Công ty Sữa Việt Nam Vinamilk	Thủ Kho Minh	18/04/2023 04:23	0 đ	Đã nhập lại hàng trả
TAHA1	Công ty Sữa Việt Nam Vinamilk	Thủ Kho Minh	17/04/2023 07:31	0 đ	Đã nhập lại hàng trả

Figure 3.8.3 - Manage Inventory Checking Order Screen Layout

- Filter inventory checking orders

- Function details: The owner/seller/storekeeper filters the inventory checking orders by choosing status of order. After choosing those fields, the system will display the inventory checking orders which match all conditions. The user can press the x icon to turn off the filter. The user can search and filter at the same time. The table will show all inventory checking orders containing the keyword by text search and in the selected filter.
- Normal Flow:
 1. The user clicks on “Kiểm hàng”
 2. The user clicks on “Lịch sử kiểm hàng”
 3. The user chooses from the dropdown lists to filter inventory checking orders.
 4. The table will show all the inventory checking orders with that filter.
- Alternative Flow: N/A
- Exception:
 1. The system has no inventory checking order that fits the filter.
 - 1.1. (After normal flow from step 3)
 - 1.2. The table will show the message “Không dữ liệu”.
- Business rules: BR-03, BR-06

3.8.4 View inventory checking order detail

- Function trigger: A(n) owner/seller/storekeeper wants to view inventory checking details.
- Pre-condition: The user logged in the system and currently in the inventory checking list screen.
- Post-condition: The system shows details of an inventory checking.

- Function description: As a(n) owner/storekeeper, I want to view inventory checking details.

Screen Layout:

The screenshot shows the 'Chi tiết đơn kiểm hàng' (Inventory Check Details) page. The top navigation bar includes language selection ('Tiếng Việt') and user information ('Chủ Kho Điện'). Below the header, there are three buttons: 'Hủy đơn' (Cancel), 'Sửa đơn' (Edit), and 'Duyệt đơn' (Review). The main content area is divided into sections: 'Thông tin đơn' (Order Information) and 'Thông tin sản phẩm kiểm' (Check Product Information). The 'Thông tin đơn' section displays the date of the check (19/04/2023), the checker ('Chủ Kho Điện'), and a note ('Kiểm hàng hết quý I'). The 'Thông tin sản phẩm kiểm' section lists two items: SP11 (Sữa chua Vinamilk Probi) and SP10 (sữa chua Vinamilk cõ...), both marked as 'Hết hạn sử dụng' (Expired).

STT	Ảnh	Mã SP	Tên sản phẩm	Đơn vị	Tồn chỉ nhánh	Tồn thực tế	Lêch	Lý do
1		SP11	Sữa chua Vinamilk Probi	hộp	351	350	-1	Khác
2		SP10	sữa chua Vinamilk cõ...	Hộp	121	120	-1	Hết hạn sử dụng

Figure 3.8.4 - Manage Inventory Checking Order Screen Layout

- View inventory checking order details

This screenshot is identical to Figure 3.8.4, showing the same 'Chi tiết đơn kiểm hàng' (Inventory Check Details) page. It displays a cancelled check-in order (KIHA6) from 18/04/2023 at 19:46, checked by 'Chủ Kho Điện'. The note 'Kiểm hàng hết quý I' is present. The product information table shows three items: SP11 (Sữa chua Vinamilk Probi), SP10 (sữa chua Vinamilk cõ...), and SP9 (Sữa tươi nguyên chất...), all marked as 'Hết hạn sử dụng' (Expired).

STT	Ảnh	Mã SP	Tên sản phẩm	Đơn vị	Tồn chỉ nhánh	Tồn thực tế	Lêch	Lý do
1		SP11	Sữa chua Vinamilk Probi	hộp	351	350	-1	Khác
2		SP10	sữa chua Vinamilk cõ...	Hộp	121	120	-1	Hết hạn sử dụng
3		SP9	Sữa tươi nguyên chất...	Hộp	789	789	+---	---

Figure 3.8.5 - Manage Inventory Checking Order Screen Layout

- View cancelled inventory checking order details

STT	Ảnh	Mã SP	Tên sản phẩm	Đơn vị	Tồn chi nhánh	Tồn thực tế	Lệch	Li do
1		SP11	Sữa chua Vinamilk Probi	hộp	351	350	-1	Hư hỏng
2		SP10	sữa chua Vinamilk cõ...	Hộp	121	120	-1	Hư hỏng

Figure 3.8.6 - Manage Inventory Checking Order Screen Layout

- View success inventory checking order details

- Function details: The owner/seller/storekeeper can view the inventory order details, about the staff who creates, the staff who balance warehouse, date, note, details of inventory checking order. The cancel, edit available for 3 roles: owner, storekeeper, seller. The confirmed action is only available for the owner and storekeeper.
- Normal Flow:
 1. The user clicks on “Kiểm hàng”.
 2. The user clicks on “Lịch sử kiểm hàng”.
 3. The user clicks on the eye icon.
 4. The website will display the details of the inventory checking order.
- Alternative Flow:
 1. The user clicks on “Quản lý hàng hóa”.
 2. The user clicks on “Sản phẩm”.
 3. Click on the eye button on the right of each product to view its details.
 4. The user selects an order from the quantity change history of each product to be able to access the details of that order
 5. The website will display the details of the import order
- Exception: N/A
- Business rules: BR-03

3.8.5 Add inventory checking order

- Function trigger: A(n) owner/storekeeper wants to add a new inventory checking order.
- Pre-condition: The user logged in the system.
- Post-condition: A new inventory checking order is added to the database. The website displays the Inventory Checking Order List screen.
- Function description: As a(n) owner/storekeeper, I want to add a new inventory checking order to the system.

Screen Layout:

Figure 3.8.7 - Manage Inventory Checking Order Screen Layout

- Add a new inventory checking order

STT	Ảnh	Mã SP	Tên sản phẩm	Đơn vị	Tên chi nhánh	Tồn thực tế	Lý do
Không dữ liệu							
Tạo đơn kiểm hàng							

Figure 3.8.8 - Manage Inventory Checking Order Screen Layout

- Add a new inventory checking order

Figure 3.8.9 - Manage Inventory Checking Order Screen Layout

- Add a new inventory checking order

Figure 3.8.10 - Manage Inventory Checking Order Screen Layout

- Adding confirmation

- Function details: The owner/seller chooses the staff then chooses the product and adds the actual warehouse quantity, reason and note. They can click “Tạo đơn kiểm hàng” and confirming the action to finish add inventory checking order of the system.
- Normal Flow:
 1. The user clicks on “Kiểm hàng”.
 2. The user clicks on “Tạo phiếu kiểm”.

3. The user can choose the staff. If the user does not select any staff, the system will default to the logging in user as the order creator.
 4. The user chooses the product they want to check, the user input the actual warehouse quantity, reason and note.
 5. The user clicks the “Tạo đơn kiểm hàng” button and press “Xác nhận” when the popup displays.
 6. The website goes back to the Inventory Checking Order List screen and the order will have the status “Đang kiểm hàng”.
- Alternative Flow:
 1. Open Add Inventory Checking Order from the Inventory Checking Order List screen.
 - 1.1. (After normal flow from step 1)
 - 1.2. The user clicks “Lịch sử kiểm hàng”.
 - 1.3. The user clicks “Tạo phiếu kiểm”.
 - 1.4. (Continue normal flow from step 3)
 - Exception:
 1. The user does not choose any products to check.
 - 1.1. (After normal flow from step 1)
 - 1.2. The user does not choose any products to check.
 - 1.2. “Tạo đơn kiểm hàng” button is disabled
 - Business rules: BR-03, BR-06

3.8.6 Edit inventory checking order

- Function trigger: A(n) owner/storekeeper/seller wants to use a method to edit the inventory checking order details.
- Pre-condition: The user logged in the system and currently in the Inventory Checking Order Detail screen.
- Post-condition: The information of an inventory checking order changed. The website displays the Inventory Checking Order Detail screen.
- Function description: As a(n) owner/seller/storekeeper, I want to edit the details of an inventory checking order.

Screen Layout:

The screenshot shows the IMSD software interface with the following details:

- Header:** IMSD (The best choice for your warehouse), Tiếng Việt, Chủ Kho Điện, Thoát, Lưu.
- Left Sidebar:** Thông kê, Quản lý hàng hóa, Nhập hàng, Xuất hàng, Trả hàng, Kiểm hàng (selected), Lịch sử kiểm hàng, Tạo phiếu kiểm, Nhân viên.
- Main Content - Section 1: Thông tin đơn**
 - Ngày kiểm hàng: 19/04/2023 09:04
 - Nhân viên: Chủ Kho Điện
 - Ghi chú: Kiểm hàng quý!
- Main Content - Section 2: Thông tin sản phẩm kiểm**
 - Tìm kiếm theo tên, mã sản phẩm, mã vạch
 - Bảng danh sách sản phẩm:

STT	Ảnh	Mã SP	Tên sản phẩm	Đơn vị	Tồn chỉ nhánh	Tồn thực tế	Lịch	Lý do
1		SP11	Sữa chua Vinamilk Probi	hộp	350	349	-1	Khác

Figure 3.8.11 - Manage Inventory Checking Order Screen Layout

- Edit inventory checking order details

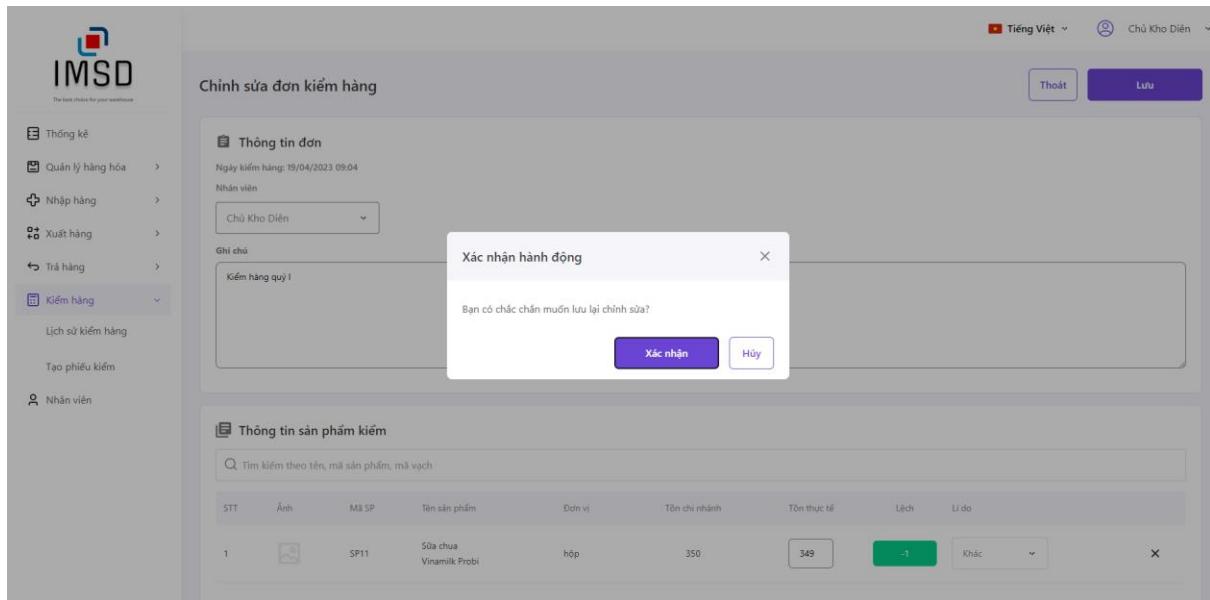


Figure 3.8.12 - Manage Inventory Checking Order Screen Layout

- Editing confirmation

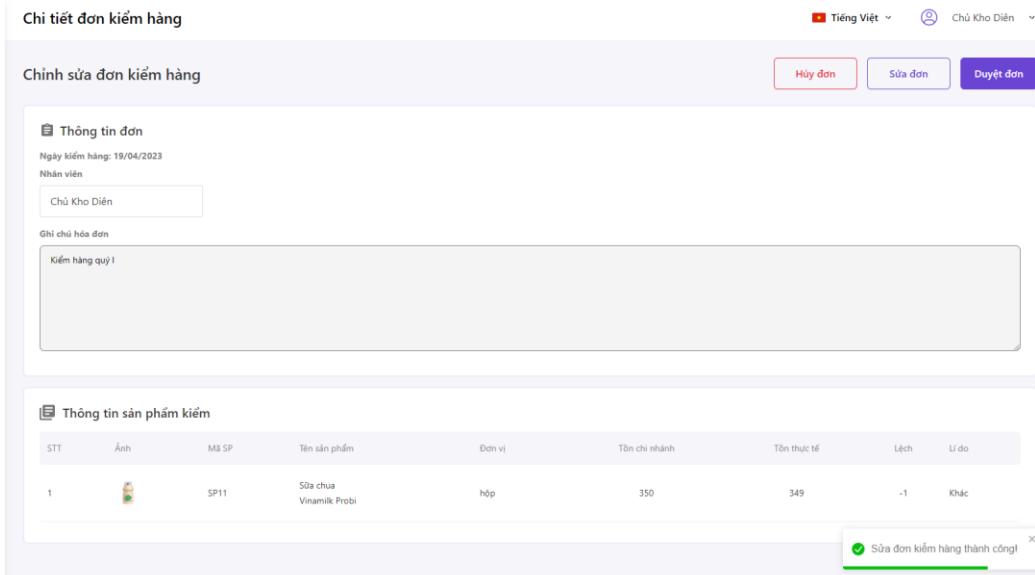


Figure 3.8.13 - Manage Inventory Checking Order Screen Layout

- Edit successfully

- Function details: The owner/seller/storekeeper can change the staff and change the product. The user can edit the actual warehouse quantity, reason and note. They can

click the “Lưu” button” and confirm the action to finish editing the inventory checking order of the system.

- Normal Flow:
 1. The user clicks “Sửa đơn” Button.
 2. The user can change the staff. If the user does not select any staff, the system will default to the logging in user as the order creator.
 3. The user chooses/removes the product they want to check, the user can edit the actual warehouse quantity, reason and note.
 4. The user clicks the “Lưu” button and press “Xác nhận” when the popup displays.
 5. The website goes back to the Inventory Checking Detail screen after updating the edited information.
- Alternative Flow: N/A
- Exception: N/A
- Business rules: BR-03, BR-04, BR-05, BR-06

3.8.7 Cancel inventory checking order

- Function trigger: A(n) owner/storekeeper wants to use a method to cancel an inventory checking order.
- Pre-condition: The user logged in the system and currently in the Inventory Checking Order Detail screen.
- Post-condition: The inventory checking order status has changed to cancelled. The website moves to the detail screen of inventory checking order.
- Function description: As a(n) owner/storekeeper, I want to cancel an inventory checking order.

Screen Layout:

STT	Ảnh	Mã SP	Tên sản phẩm	Đơn vị	Tồn chi nhánh	Tồn thực tế	Lệch	Lý do
1		SP11	Sữa chua Vinamilk Probi	Hộp	350	349	-1	Khác
2		SP10	sữa chua Vinamilk có...	Hộp	120	110	-10	Hư hỏng

Figure 3.8.14 - Manage Inventory Checking Order Screen Layout

- Cancel inventory checking order

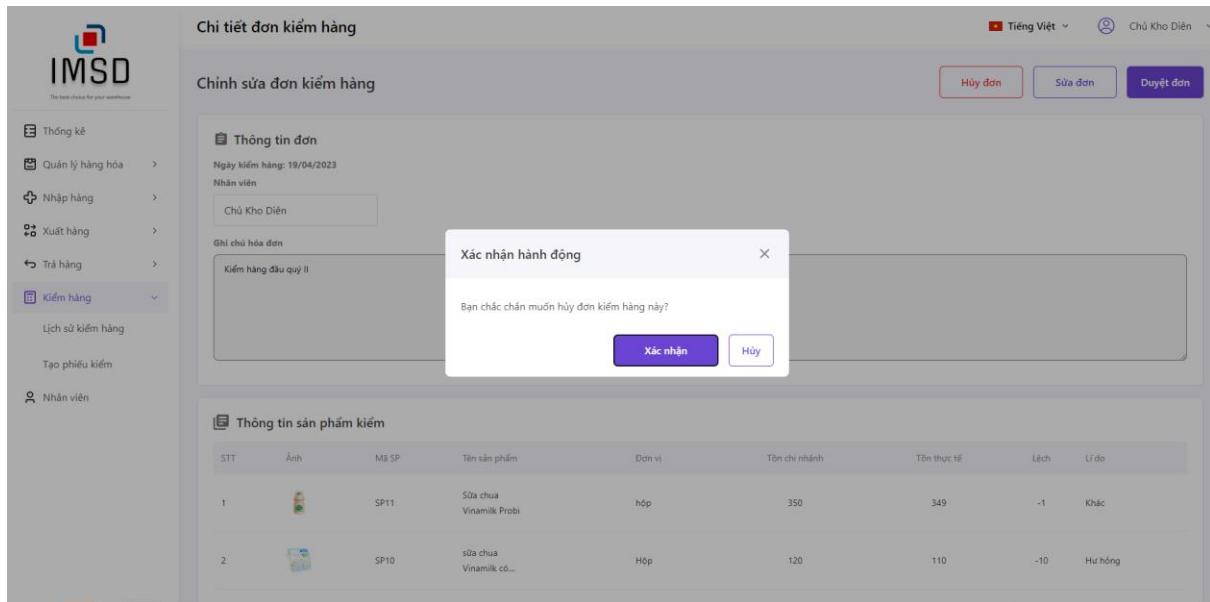


Figure 3.8.15 - Manage Inventory Checking Order Screen Layout

- Cancel confirmation

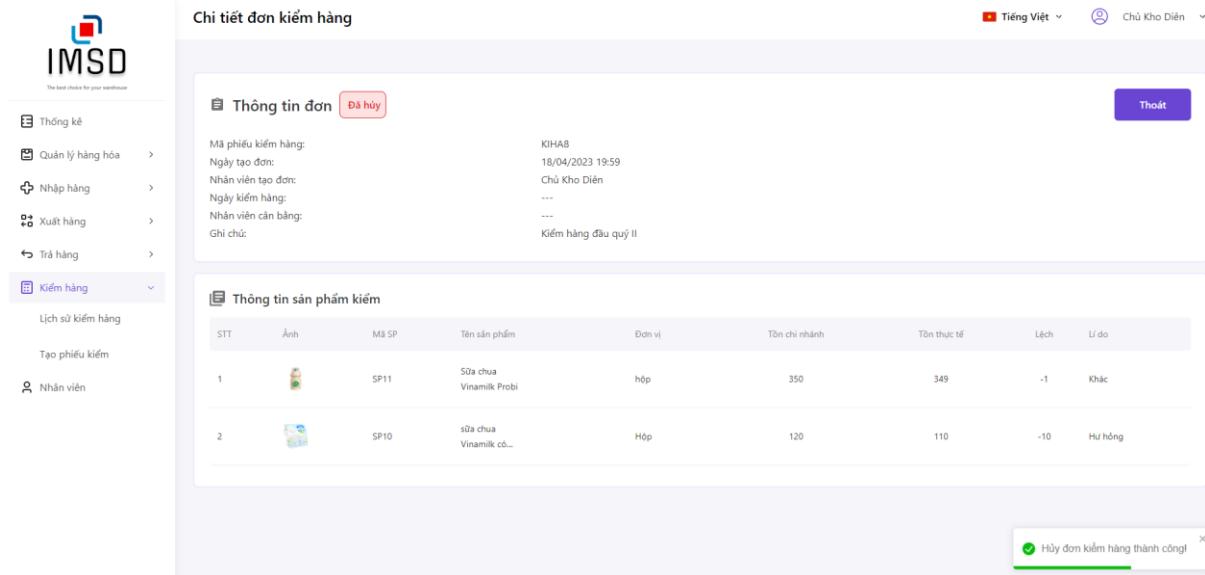


Figure 3.8.16 - Manage Inventory Checking Order Screen Layout

- Cancel successfully

- Function details: The owner/seller/storekeeper selects the order in the "Đang kiểm hàng" status to cancel. After pressing the cancel button and confirming the action, the system will redirect to inventory checking order detail with status of cancelled.
- Normal Flow:
 1. The user clicks on “Kiểm hàng”.
 2. The user clicks on “Lịch sử kiểm hàng”.
 3. The user selects the order in the "Đang kiểm hàng" and click on eye icon.

4. The user clicks on the “Hủy đơn” button and press “Xác nhận” when the popup displays.
 5. The inventory checking order changes the status to “Đã hủy” and the website goes back to the Inventory Checking Order Detail screen.
- Alternative Flow: N/A
 - Exception:
 1. The user did not select order in "Đang kiểm hàng" status
 - 1.1. (After normal flow from step 2).
 - 1.2. User did not select order in "Đang kiểm hàng" status.
 - 1.3. There is no “Hủy đơn” button and cannot cancel that order.
 - Business rules: BR-03, BR-06

3.8.8 Confirm inventory checking order

- Function trigger: A(n) owner/storekeeper wants to use a method to confirm an inventory checking order.
- Pre-condition: The user logged in the system and currently in the Inventory Checking Order List screen.
- Post-condition: The status of inventory checking order has changed checking to complete. The website displays the Inventory Checking Order Detail screen.
- Function description: As a(n) owner/seller/storekeeper, I want to confirm an inventory checking order.

Screen Layout:

STT	Ảnh	Mã SP	Tên sản phẩm	Đơn vị	Tồn chi nhánh	Tồn thực tế	Lệch	Lý do
1		SP11	Sữa chua Vinamilk Probi	hộp	350	349	-1	Khác

Figure 3.8.17 - Manage Inventory Checking Order Screen Layout

- Confirm inventory checking order

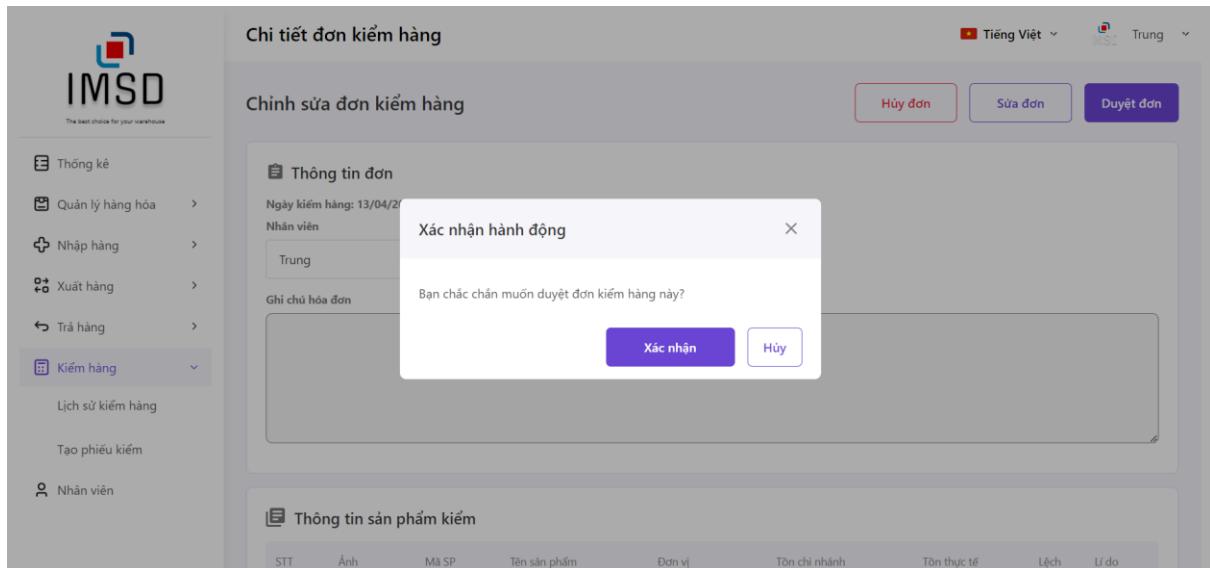


Figure 3.8.18 - Manage Inventory Checking Order Screen Layout

- Confirmation

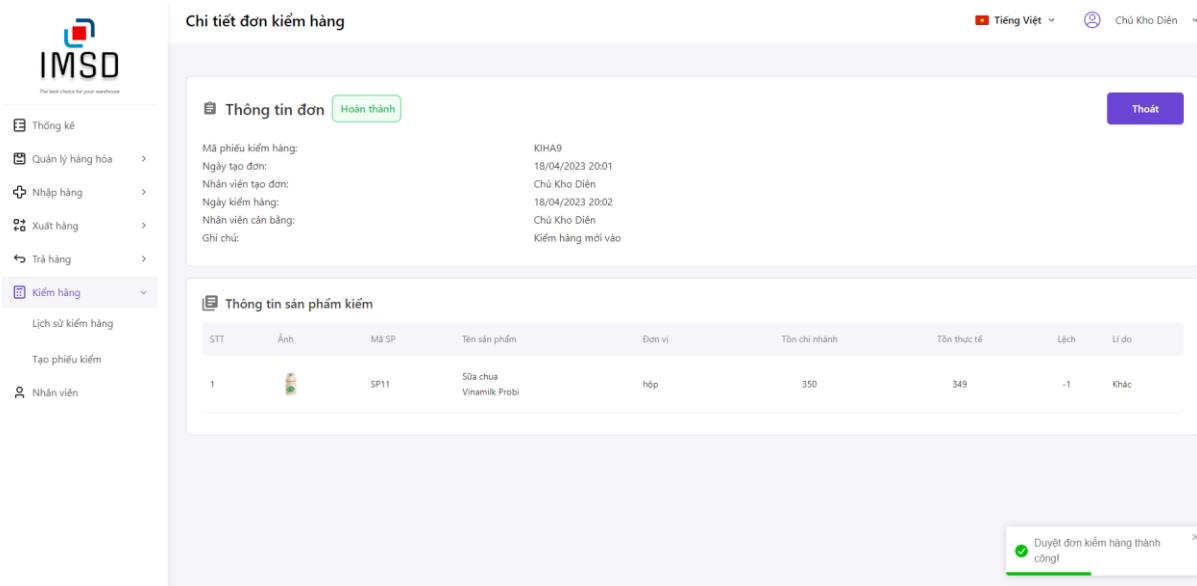


Figure 3.8.19 - Manage Inventory Checking Order Screen Layout

- Confirm successfully

- Function details: The owner/storekeeper can confirm an inventory checking order when he/she checks everything is correct with the reality. After pressing the approve button and confirming the action, the system will redirect the inventory checking order detail with status complete.
- Normal Flow:
 1. The user clicks on “Kiểm hàng”.
 2. The user clicks on “Lịch sử kiểm hàng”.
 3. The user selects the order in the “Đang kiểm hàng” and click on eye icon.

4. The user clicks on the “Duyệt đơn” button and press “Xác nhận” when the popup displays.
 5. The inventory checking order changes the status to “Hoàn thành” and the website goes back to the Inventory Checking Order Detail screen.
- Alternative Flow: N/A
 - Exception:
 1. The user did not select order in "Đang kiểm hàng" status
 - 1.1. (After normal flow from step 2).
 - 1.2. User did not select order in "Đang kiểm hàng" status.
 - 1.3. There is no “Duyệt đơn” button and cannot confirm that order.
 2. The user login with seller role
 - 2.1. (After normal flow from step 3).
 - 2.2. There is no “Duyệt đơn” button and cannot confirm that order.
 - Business rules: BR-03, BR-06

3.9 Manage Staff

3.9.1 View staff list

- Function trigger: This function is triggered when an owner wants to see all of the staff in the system.
- Pre-condition: The user must be logged in to the system with the owner role and currently in the manage staff page.
- Post-condition: The user can view a list of all staff members in the system.
- Function description: As an owner, I want to view a list of staff.

Screen Layout:

Mã nhân viên	Ảnh	Tên nhân viên	Số điện thoại	Chức vụ	Trạng thái hoạt động
banhanglinh		Bán hàng Linh	0356789523	Nhân viên bán hàng	<input checked="" type="checkbox"/>
banhangkien		Kiên	---	Nhân viên bán hàng	<input checked="" type="checkbox"/>
thukophuong		Phương	---	Thủ kho	<input checked="" type="checkbox"/>
thukhominh		Thủ Kho Minh	---	Thủ kho	<input checked="" type="checkbox"/>

Figure 3.9.1 - Manage Staff Screen Layout - View staff list

- Function details: The owner can view all staff members in the system on the staff table.
- Normal Flow:
 1. Login with an owner role account.
 2. The user clicks on “Nhân viên”.
 3. The website will show all staff members in the system.

- Alternative Flow: N/A
- Exception:
 1. List of suppliers is empty.
 - 1.1. (After normal flow from step 1)
 - 1.2. The table shows the message “Không dữ liệu”.
- Business rules: BR-01, BR-02, BR-12

3.9.2 Search staff

- Function trigger: This function triggers when an owner searches the staff by staff name, staff code or staff phone number.
- Pre-condition:
 1. The user must be logged in to the system with the owner role to access the manage staff page
 2. The user must be currently in the manage staff page.
- Post-condition: The website displays the list of user matching search data.
- Function description: As an owner, I want to search the staff by staff code, staff name or phone number.

Screen Layout:

Mã nhân viên	Ảnh	Tên nhân viên	Số điện thoại	Chức vụ	Trạng thái hoạt động
banhanglinh		Bán hàng Linh	0356789523	Nhân viên bán hàng	<input checked="" type="checkbox"/>
banhangkien		Kiên	---	Nhân viên bán hàng	<input checked="" type="checkbox"/>

Figure 3.9.2 - Manage Staff Screen Layout - Search staff

- Function details: The owner searches the staff by staff name, staff code or staff phone number input on the search bar. After inputting the user staff name, staff code or staff phone number, the system will display the users with the staff name, staff code or staff phone number entered in the search bar.
- Normal Flow:
 1. Login with an owner role account
 2. The user clicks on “Nhân viên”.
 3. The user types the staff name, staff code or staff phone number of the staff they want to search.
- Alternative Flow: N/A
- Exception:
 1. The system has no user containing the keyword that the user searches for.

- 1.1. (After normal flow from step 4)
 - 1.2. The table will show the message “Không dữ liệu”.
- Business rules: BR-01, BR-02, BR-12

3.9.3 Filter staff

- Function trigger: An owner wants to use a method to filter the staff list by role or status.
- Pre-condition:
 1. The user must be logged in to the system with the owner role to access the manage staff page
 2. The user must be currently in the manage staff page
- Post-condition: The website displays the staff list filtered by role or status.
- Function description: As an owner, I want to filter the specific staff list by role or status.

Screen Layout:

Figure 3.9.3 - Manage Staff Screen Layout - Filter staff

- Function details: The owner filters the staff list by choosing the state or role of the user. After choosing those fields, the system will display the staff who match all conditions. User can click on the X icon in the right of a filter tag to delete that tag
- Normal Flow:
 1. Login with an owner role account
 2. The user clicks on “Nhân viên”.
 3. The user chooses from the role or status dropdown lists to filter users.
- Alternative Flow: N/A
- Exception:
 1. The system has no user that fits the filter.
 - 1.1. (After normal flow from step 4)
 - 1.2. The table will show the message “Không dữ liệu”.
- Business rules: BR-01, BR-02, BR-12

3.9.4 View staff details

- Function trigger: The function is triggered when the owner selects a staff to view his/her information.

- Pre-condition:
 1. The user must be logged in to the system.
 2. The user account must be owner role
 3. The user must select a specific staff to view details.
- Post-condition: User is presented with detailed information about the selected staff.
- Function description: As an owner, I want to view the staff in detail.

Screen Layout:

Figure 3.9.4 - Manage Staff Screen Layout - View staff details

- Function details: The owner views all information of the staff that they choose.
- Normal Flow:
 1. Login with an owner role account
 2. The user clicks on “Nhân viên”.
 3. The user clicks on “Danh sách nhân viên”.
 4. The user clicks on the eye icon to see details of this staff.
 5. The system will show all details of this staff.
- Alternative Flow: N/A
- Exception:
 1. List of suppliers is empty.
 - 1.1. (After normal flow from step 2)
 - 1.2. The table shows the message “Không dữ liệu”.
- Business rules: BR-01, BR-02, BR-12

3.9.5 Edit staff

- Function trigger: This function is triggered when an owner attempts to edit an existing staff in the system.
- Pre-condition:
 1. The user must be logged in to the system with the owner role to edit a staff.
 2. The user must select a specific staff to edit.
- Post-condition: The selected staff updated with the new information provided by the user.

- Function description: As an owner, I want to edit information of my staff in the system.

Screen Layout:

Figure 3.9.5 - Manage Staff Screen Layout - Edit staff

- Function details: This function allows the owner to modify the details of an existing staff, such as name, staff code, role, identity number, and phone number, based on the staff ID, which are then validated and updated in the database for future use.
- Normal Flow:
 1. Login with an owner role account
 2. The user clicks on “Nhân viên”.
 3. The user clicks on the eye icon in the right of a specific staff row to redirect to the edit staff page.
 4. The user inputs details of new staff and confirms.
- Alternative Flow: N/A
- Exception:
 1. The details of the staff are missing some required fields.
 - 1.1. (After normal flow from step 5)
 - 1.2. User has to fill in all the missing information.
 2. The size of the uploaded avatar is more than 5mb.
 - 2.1 (After normal flow from step 5)
 - 2.2. The website show a toast message “Kích thước ảnh không được quá 5mb”.
- Business Rules: BR-01, BR-06, BR-09, BR-10, BR-22

3.9.6 Create new staff

- Function trigger: The function is triggered when an owner selects the "Đăng ký nhân viên mới" option from the Staff page.

- Pre-condition: The user must be logged in to the system with an owner account to create new staff.
- Post-condition: The system adds the new staff to the system database and displays a confirmation message to the user.
- Function description: As an owner, I want a function to add a new staff to my system.

Screen Layout:

Tạo nhân viên mới

Thông tin cá nhân

Họ và tên *: Lâm

Chức vụ: Thủ kho

Số CCCD/CMND: Nhập số CCCD/CMND

Tên đăng nhập *: lamthukho

Mật khẩu *:

Số điện thoại: Nhập số điện thoại

Giới tính: Nam

Ngày sinh: dd/mm/yyyy

Ảnh đại diện

Thêm ảnh

Hủy

Lưu

Figure 3.9.6 - Manage Staff Screen Layout - Create new staff

Tạo nhân viên mới

Thông tin cá nhân

Họ và tên *: thukhoLam

Chức vụ: Thủ kho

Số CCCD/CMND: Nhập số CCCD/CMND

Tên đăng nhập *: nnphuong22

Xác nhận hành động

Bạn có chắc chắn muốn tạo nhân viên không?

Xác nhận

Hủy

Ảnh đại diện

Thêm ảnh

Hủy

Lưu

Figure 3.9.7 - Manage Staff Screen Layout - Confirm creating new staff

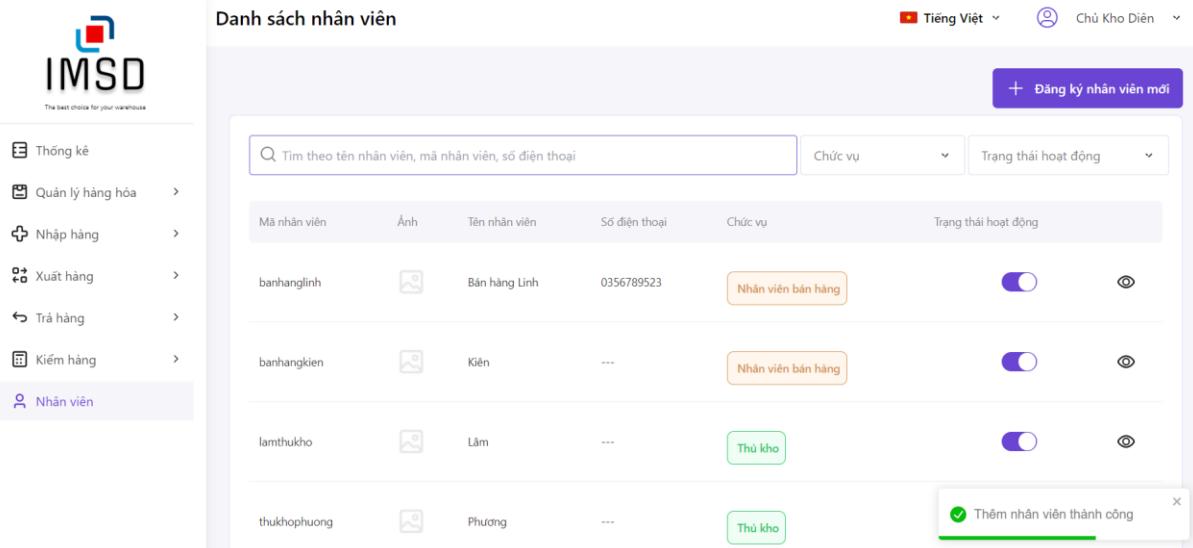


Figure 3.9.8 - Manage Staff Screen Layout - Create staff successfully

- Function details: This function allows the owner to add a new staff member to the system by providing its details, such as name, staff code, role, identity number, and phone number, which are then validated and stored in the database for future use.
- Normal Flow:
 1. Login with an owner role account
 2. Clicks on “Nhân viên”.
 3. Clicks on “Đăng ký nhân viên mới” button.
 4. Inputs details of new staff and confirms.
- Alternative Flow: N/A
- Exception:
 1. The details of the staff are missing some required fields.
 - 1.1. (After normal flow from step 5)
 - 1.2. The owner has to fill in all the missing information .
 2. The size of uploaded avatar is more than 5mb
 - 2.1. (After normal flow from step 5)
 - 2.2. The website show a toast message “Kích thước ảnh không được quá 5mb”.
- Business Rules: BR-01, BR-05, BR-06, BR-09, BR-10, BR-22, BR-24

3.9.7 Enable/Disable staff

- Function trigger: An owner wants to use a method to enable/disable status of the staff who currently has the status of disabled/enabled.
- Pre-condition:
 1. The user must be logged in to the system with the owner role to enable/disable a staff.
 2. The user must choose a staff with status of disabled/enabled to perform enable/disable.
- Post-condition: The website displays the popup to confirm the enabled/disabled action. After confirming, the staff's status will be enabled/disabled.

- Function description: As an owner, I want to enable/disable the status of a staff member who has an account in my storage.

Screen Layout:

Figure 3.9.9 - Manage Staff Screen Layout - Enable/Disable staff

Figure 3.9.10 - Manage Staff Screen Layout - Enable/Disable confirmation

Mã nhân viên	Ảnh	Tên nhân viên	Số điện thoại	Chức vụ	Trạng thái hoạt động
banhanglinh		Bán hàng Linh	0356789523	Nhân viên bán hàng	
banhangkien		Kiên	---	Nhân viên bán hàng	
lamthukho		Lâm	---	Thủ kho	
thukhophuong		Phương	---	Thủ kho	
thukhominh		Thú Kho Minh	---	Thủ kho	

10 1 1 - 5 của 5

Vô hiệu hóa tài khoản thành công

Figure 3.9.11 - Manage Staff Screen Layout - Enable/Disable successfully

- Function details: This function changes the working status of a staff from disabled/enabled to enabled/disabled. The staff after enabled can be in charge of internal action of the website. Meanwhile, the staff after disabled can't access the page any more.
- Normal Flow:
 1. Login with an owner role account
 2. Clicks on “Nhân viên”.
 3. Clicks on the status switch of the selected staff.
 4. Press confirm the action when the popup displays
- Alternative Flow: N/A
- Exception:
 1. The staff is already enabled/ disabled.
 - 1.1. (After normal flow from step 5)
 - 1.2. The table will show the message “Có lỗi xảy ra, vui lòng kiểm tra lại”.
- Business rules: BR-01,BR-02,BR-12

3.10 Manage Profile

3.10.1 View profile

- Function trigger: This function is triggered when the owner/seller/storekeeper wants to view his/her profile information.
- Pre-condition:
 1. The user logged in the system.
 2. The user is currently in the profile screen.
- Post-condition: The user can view their profile that they input in the system.
- Function description:As a(n) owner/seller/storekeeper, I want to view my personal information which I save in the system.

Screen Layout:

The screenshot shows the 'Chỉnh sửa hồ sơ' (Edit Profile) screen. At the top right, there are language and user profile icons. On the left, a sidebar menu includes 'Thống kê', 'Quản lý hàng hóa', 'Nhập hàng', 'Xuất hàng', 'Trả hàng', 'Kiểm hàng', and 'Nhân viên'. The main area has a title 'Thông tin cá nhân' and several input fields: 'Họ và tên *' (Name), 'Chức vụ' (Position), 'Số CCCD/CMND' (ID Card/Passport Number), 'Tên đăng nhập' (Login Name), 'Số điện thoại' (Phone Number), 'Giới tính' (Gender), 'Ngày sinh' (Date of Birth), and a large 'Địa chỉ chi tiết' (Detailed Address) text area. To the right is a 'Ảnh đại diện' (Avatar) section with a camera icon and a 'Thêm ảnh' (Add Photo) button. A purple 'Lưu' (Save) button is at the bottom.

Figure 3.10.1 - Manage Profile Screen Layout - View profile

- Function details: The owner/seller/storekeeper views his/her full personal information. The screen provides functions to view personal information.
- Normal Flow:
 1. Log into the system.
 2. The user clicks the avatar in the right of the header, then clicks "Thông tin cá nhân".
- Alternative Flow: N/A
- Exception:
 1. The access token is expired and user doesn't re-login yet
 - 1.1 After finishing step 2 in normal flow a long time which is enough for the access token to be expired.
 - 1.2 The system will redirect to the login page.
- Business rules: BR-01, BR-09, BR-12

3.10.2 Edit user profile

- Function trigger: This function is triggered when an authorised user requests to update their profile information.
- Pre-condition:
 1. The user must be authenticated and logged in.
 2. The user must be inside the profile screen.
- Post-condition: User's profile information is updated with the new information provided by the user.
- Function description: As a(n) owner/seller/storekeeper, I want to edit my personal information which I saved in the system before.

Screen Layout:

Figure 3.10.2 - Manage Profile Screen Layout - Edit user profile

- Function details: This function allows authorized users with the owner role to modify the details of an existing staff, such as their name (which is required), identity number, gender, avatar and phone number, based on the staff ID, which are then validated and updated in the database for future use.
- Normal Flow:
 1. Log into the system.
 2. The user clicks the avatar in the right of the header, then clicks “Thông tin cá nhân”.
 3. The user updates their profile information, such as name, email, phone number, avatar and address, in the corresponding input fields.
 4. The user clicks on “Lưu” button to submit.
- Alternative Flow: N/A
- Exception:
 1. The details of the user are missing some required fields.
 - 1.1. (After normal flow from step 4)
 - 1.2. User has to fill in all the missing information .
 2. The size of uploaded avatar is more than 5mb
 - 2.1. (After normal flow from step 5)
 - 2.2. The website show a toast message “Kích thước ảnh không được quá 5mb”
- Business Rules: BR-01, BR-06, BR-09, BR-10, BR-22

3.10.3 Change password

- Function trigger: This function is triggered when a user requests to change their current password.
- Pre-condition:
 1. The user logged in the system.

2. The user is currently in the profile screen
 3. The user must provide a new password that meets the system's password requirements as well as a re-password that is similar to the new password.
 4. The user clicks on the “Lưu” button to save the new password.
- Post-condition: User's password is changed in the system.
 - Function description: As a(n) owner/seller/storekeeper, I want to change the current password of my account.

Screen Layout:

Figure 3.10.3 - Manage Profile Screen Layout - Change password

- Function details: The user can update the password for his/her account. The current password will be shown in the current password box. The user can click on the eye icon in the right of the input box to see the password.
- Normal Flow:
 1. Access the website system by direct link.
 2. Log into the system.
 3. The user clicks the avatar in the right of the header, then clicks “Thông tin cá nhân”.
 4. User enters their new password and confirms the new password into the input fields.
 5. The user clicks on the “Lưu” button to submit.
- Alternative Flow: N/A
- Exception:
 1. Password and confirm password is not matched.
 - 1.1 (After normal flow from step 4)
 - 1.2 The inline error message “Mật khẩu phải trùng nhau” is displayed till confirm password matches the password.
 2. Password or confirm password field is not filled.
 - 2.1 (After normal flow from step 4)
 - 2.2 The “Lưu” button is disabled till all fields are filled.
- Business Rules: BR-10

3.11 Manage Return Product

3.11.1 View list return supplier order

- Function trigger: A(n) owner/seller/storekeeper wants to view all the return supplier orders.
- Pre-condition: The user logged in the system.
 1. The user must be authenticated and logged in.
 2. The user must be inside the return supplier order screen.
- Post-condition: The website displays the Return Supplier Order List screen.
- Function description: As a(n) owner/seller/storekeeper, I want to view all the return supplier orders in the system.

Screen

Mã đơn trả hàng	Nhà cung cấp	Người tạo đơn	Ngày trả hàng	Giá trị trả hàng	Trạng thái	Lý do
TAHA7	Công ty Sữa Việt Nam Vinamilk	Chủ Kho Diên	18/04/2023 19:38	0 đ	Đang trả hàng	Hàng rách hộp trong quá trình...
TAHA6	Công ty TNHH Việt Nam VIFOTEX	Chủ Kho Diên	18/04/2023 19:36	0 đ	Đang trả hàng	Hàng ẩm mốc
TAHA5	Công ty Sữa Việt Nam Vinamilk	Chủ Kho Diên	18/04/2023 19:36	0 đ	Đang trả hàng	Hàng móp méo hộp
TAHA4	Công ty Sữa Việt Nam Vinamilk	Thú Kho Minh	18/04/2023 04:23	0 đ	Đã nhập lại hàng trả	hàng lỗi
TAHA1	Công ty Sữa Việt Nam Vinamilk	Thú Kho Minh	17/04/2023 07:31	0 đ	Đã nhập lại hàng trả	hàng vỡ do quá trình vận...

Figure 3.11.1 - Manage Return Product Screen Layout - View all return supplier orders

- Function details: The owner/seller/storekeeper can view all the return supplier orders. The user can filter the return supplier orders by supplier
- Normal Flow:
 1. Log into the system.
 2. The user clicks “Trả hàng”.
 3. The user clicks “Trả hàng về nhà cung cấp”.
 4. The website displays all the return supplier orders in the system
- Alternative Flow: N/A
- Exception:
 1. List of categories is empty.
 - 1.1. (After normal flow from step 4)
 - 1.2. The table shows the message “Không dữ liệu”.
- Business Rules: BR-05, BR-06, BR-14

3.11.2 Search return supplier order

- Function trigger: A(n) owner/seller/storekeeper wants to use a method to search the return supplier order by supplier's name or return code or order creator's name.

- Pre-condition: The user logged in the system and currently in the return supplier order list screen
- Post-condition: The website displays the return supplier orders by searching suppliers' names or return code or order creator's name.
- Function description: As a(n) owner/seller/storekeeper, I want to search the users by suppliers' names or return code or order creator's name.

Screen Layout:

Mã đơn trả hàng	Nhà cung cấp	Người tạo đơn	Ngày trả hàng	Giá trị trả hàng	Trạng thái	Lý do
TAHA7	Công ty Sữa Việt Nam Vinamilk	Chủ Kho Diên	18/04/2023 19:38	0 đ	Đang trả hàng	Hàng rách hộp trong quá trìn...
TAHA5	Công ty Sữa Việt Nam Vinamilk	Chủ Kho Diên	18/04/2023 19:36	0 đ	Đang trả hàng	Hàng m López hộp
TAHA4	Công ty Sữa Việt Nam Vinamilk	Thủ Kho Minh	18/04/2023 04:23	0 đ	Đã nhập lại hàng trả	hàng lỗi
TAHA1	Công ty Sữa Việt Nam Vinamilk	Thủ Kho Minh	17/04/2023 07:31	0 đ	Đã nhập lại hàng trả	hàng vỡ do quá trình vận...

Figure 3.11.2 - Manage Return Product Screen Layout - Search return supplier orders

- Function details: The owner searches the return supplier orders by supplier's name or return code or order creator's name input on the search bar. After inputting the supplier's name or return code or order creator's name, the system will display the return supplier orders with the name entered in the search bar. The user can search and filter at the same time. The table will show all return supplier orders containing the keyword by text search and in the selected filter.
- Normal Flow:
 1. Log into the system.
 2. The user clicks "Trả hàng".
 3. The user clicks "Trả hàng về nhà cung cấp".
 4. The user types the keyword about supplier's name or return code or order creator's name that they want to search.
 5. The table will show all the return supplier orders containing the keyword by text search.
- Alternative Flow: N/A
- Exception:
 1. The system has no user containing the keyword that the user searches for.
 - 1.1. (After normal flow from step 5)
 - 1.2. The table will show the message "Không tìm thấy kết quả phù hợp".
- Business Rules: BR-05, BR-06, BR-14

3.11.3 Filter return supplier order

- Function trigger: A(n) owner/seller/storekeeper wants to use a method to filter the return supplier order list.
- Pre-condition: The user logged in the system and currently in the return order list screen.
- Post-condition: The website displays the return order list by filters.
- Function description: As a(n) owner/seller/storekeeper, I want to search the return order by filters.

Screen Layout:

Mã đơn trả hàng	Nhà cung cấp	Người tạo đơn	Ngày trả hàng	Giá trị trả hàng
TAHA7	Công ty Sữa Việt Nam Vinamilk	Chủ Kho Diện	18/04/2023 19:38	0 đ
TAHAS5	Công ty Sữa Việt Nam Vinamilk	Chủ Kho Diện	18/04/2023 19:36	0 đ
TAHA4	Công ty Sữa Việt Nam Vinamilk	Thủ Kho Minh	18/04/2023 04:23	0 đ
TAHA1	Công ty Sữa Việt Nam Vinamilk	Thủ Kho Minh	17/04/2023 07:31	0 đ

Figure 3.11.3 - Manage Return Product Screen Layout - Filter return supplier orders

- Function details: The owner/seller/storekeeper filters the return orders by choosing the supplier of order. After choosing those fields, the system will display the return orders which match all conditions. The user can search and filter at the same time. The table will show all return supplier orders containing the keyword by text search and in the selected filter.
- Normal Flow:
 1. Log into the system.
 2. The user clicks on “Trả hàng”.
 3. The user clicks on “Trả hàng về nhà cung cấp”.
 4. The user chooses suppliers from the dropdown lists to filter return orders.
 5. The table will show all the return orders contributed by the selected supplier.
- Alternative Flow: N/A
- Exception:
 1. The system has no return order that matches the filter.
 - 1.1. (After normal flow from step 5)
 - 1.2. The table will show the message “Không dữ liệu”.
- Business Rules: BR-05, BR-06, BR-14

3.11.4 View detail return supplier order

- Function trigger: A(n) owner/seller/storekeeper wants to use a method to view the details of a return supplier order.
- Pre-condition: The user logged in the system and currently in the Return Supplier Order List screen.
- Post-condition: The website displays the Return Supplier Order Detail screen.
- Function description: As a(n) owner/seller/storekeeper, I want to view the details of a return supplier order.

Screen Layout:

Figure 3.11.4 - Manage Return Product Screen Layout - View return supplier order details

- Function details: The owner/seller/storekeeper views the details of the return supplier order about products that return with the order information like note supplier's name, create date, order creator, return product information. The confirmed success is available for 2 roles: owner, storekeeper. The reference to the import Order. The user can click the "Nhập lại hàng trả" button to return the order to the supplier.
- Normal Flow:
 1. Log into the system.
 2. Click in the "Trả hàng", then click the "Trả hàng về nhà cung cấp"
 3. The user clicks into the eye icon of a return supplier order in the Return Supplier Order List screen.
 4. The website displays the details of the return supplier order.
- Alternative Flow:
 1. Log into the system.
 2. Click in the "Quản lý hàng hóa", then click the "Sản phẩm"
 3. The user clicks into the eye icon of a product in the Product List screen.
 4. The user clicks into the return supplier code of a specific code
 5. The website displays the details of the return supplier order.
- Exception: N/A
- Business Rules: BR-05, BR-06, BR-14

3.11.5 Add return supplier order

- Function trigger: A(n) owner/seller/storekeeper wants to create a new return supplier order.
- Pre-condition:
 1. The user must be authenticated and logged in.
 2. The user must be inside the return supplier order screen.
- Post-condition: A new return supplier is created in the database. The website then displays the return supplier order screen.
- Function description: As a(n) owner/seller/storekeeper, I want to create a new return supplier order to the system.

Screen Layout:

Figure 3.11.5 - Manage Return Product Screen Layout - Add a new return supplier order

Figure 3.11.6 - Manage Return Product Screen Layout - Choose supplier

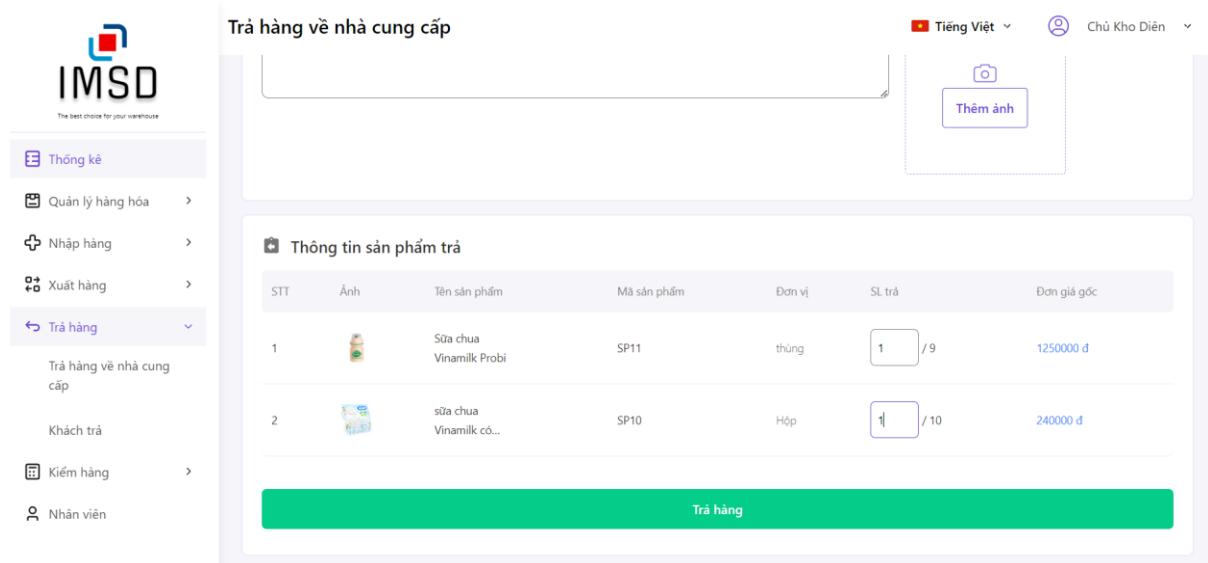


Figure 3.11.7 - Manage Return Product Screen Layout - Choose products

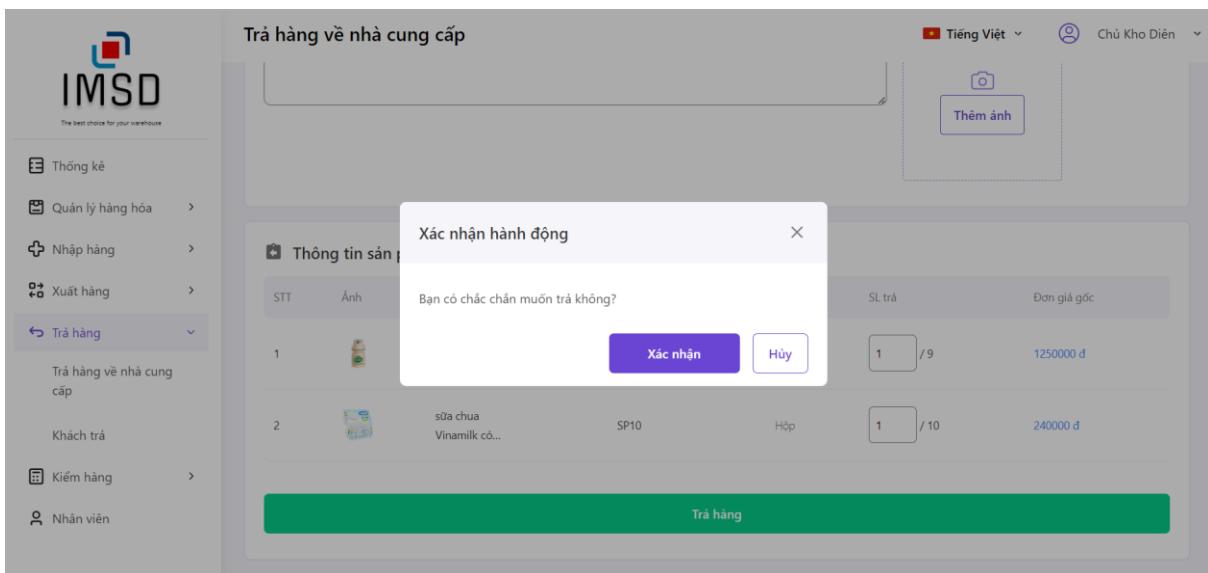


Figure 3.11.8 - Manage Return Product Screen Layout - Return confirmation

Figure 3.11.9 - Manage Return Product Screen Layout - Return successfully

- Function details: The owner/seller/storekeeper chooses the import order from the drop down list to return (required). The user can change the order created staff, add return reason as well as image. Then input the number of product returns in the product table below. They can click “Trả hàng” to finish creating a return supplier order. The user must return at least 1 product in the product list. Otherwise, the action will fail.
- Normal Flow:
 1. Log into the system.
 2. The user clicks on “Trả hàng” from the navbar.
 3. Click on the “Trả hàng về nhà cung cấp”
 4. The user clicks on “Tạo đơn trả hàng” button.
 5. The user chooses the import order to be returned (this is required). return reason, image, order created staff. If the user does not select an employee, the system will default to the logging in user as the order creator.
 6. After the user chooses the return import order and finishes the return order information, the below table will display all products in the import order. The user must input at least 1 product among all the products inside the import order.
 7. The user clicks “Trả hàng” to add a new return supplier order.
 8. The website pops the confirm message, the user clicks the "Xác nhận" button, the order will have the status “Đang trả hàng” and goes to the Return Supplier List screen.
- Alternative Flow: N/A
- Exception:
 1. The user does not choose any import order to return.
 - 1.1. (After normal flow from step 5)
 - 1.2 The user does not choose any import to return.
 - 1.2. “Trả hàng” button is disabled.
 2. The user does not return any product in the import order(left the return number of all products as 0).
 - 1.1. (After normal flow from step 6)

- 1.2 The user clicks “Trả hàng” to add a new return supplier order.
- 1.2. The website pops the error message.
- Business Rules: BR-06, BR-22
- 3.11.6 Confirm return supplier order**
- Function trigger: A(n) owner/storekeeper wants to use a method to confirm a return supplier order.
 - Pre-condition: The user logged in the system with the owner/ storekeeper account and currently in the Return Supplier Order Detail screen.
 - Post-condition: The status of return supplier orders has changed from in returning to Reimported returns. The website displays the Return Supplier Order Detail screen of that order.
 - Function description: As a(n) owner/storekeeper, I want to confirm a Return Supplier Order.

Screen

Layout:

Figure 3.11.10 - Manage Return Product Screen Layout - Confirm return supplier order

Figure 3.11.11 - Manage Return Product Screen Layout - Confirmation

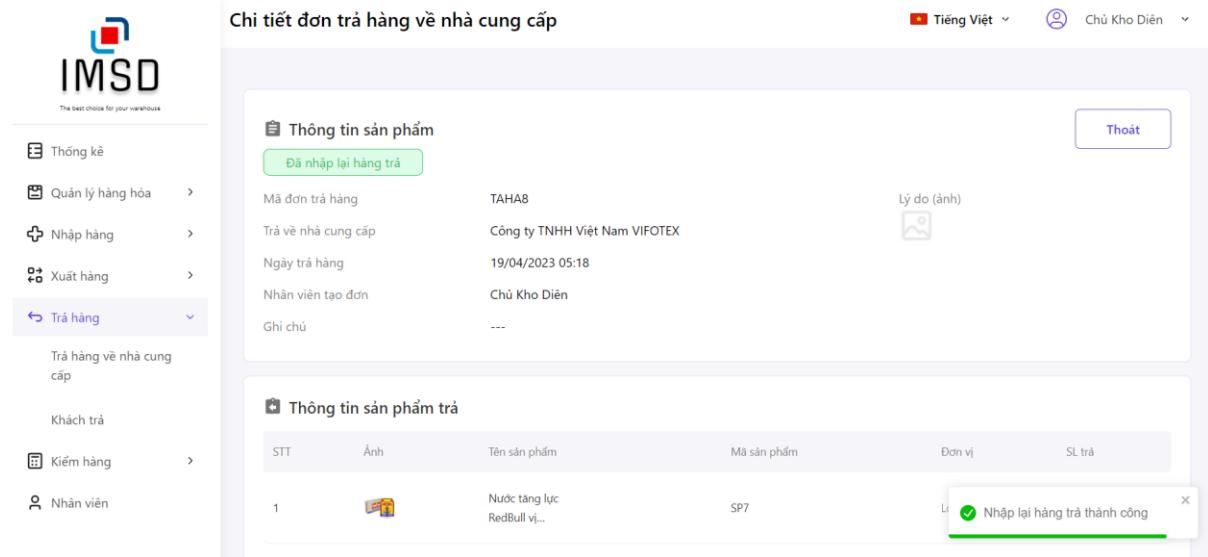


Figure 3.11.11 - Manage Return Product Screen Layout - Confirm successfully

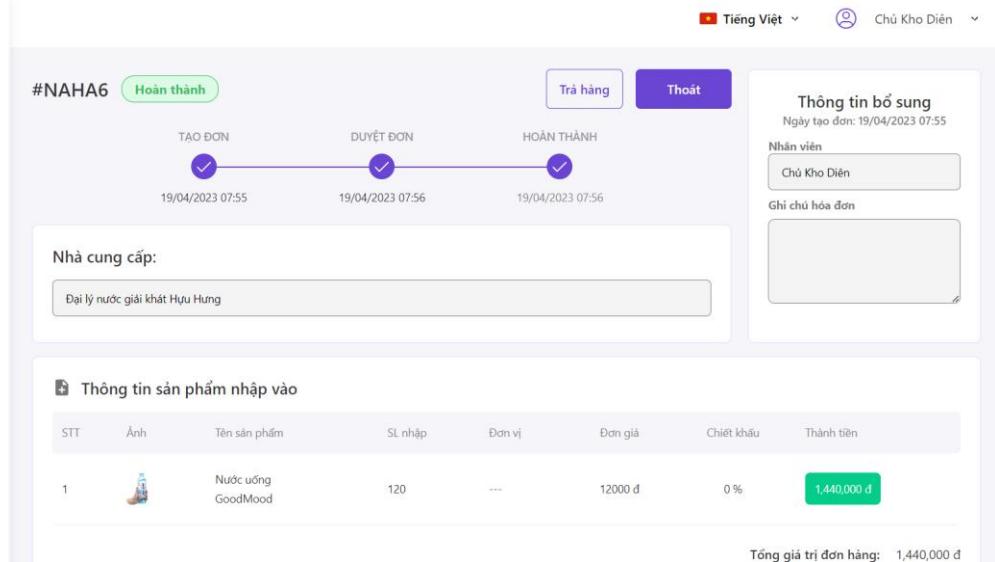


Figure 3.11.12 - Manage Return Product Screen Layout - Confirm return supplier order

Figure 3.11.13 - Manage Return Product Screen Layout - Confirm return supplier order

- Function details: The owner/storekeeper can confirm a return supplier order when he/she checks everything is correct with the reality.
- Normal Flow:
 1. Log into the system with the owner/ storekeeper account.
 2. The user clicks on “Trả hàng”.
 3. The user clicks on “Trả hàng về nhà cung cấp”.
 4. The user selects the order in the "Đang xử lý" and click on eye icon.
 5. The user clicks “Nhập lại hàng trả” Button.
 6. The user presses “Xác nhận” when the popup displays.
 7. The import order changes the status to “Reimported returns” and the website goes back to the Import Order Detail screen.
- Alternative Flow: N/A
- Exception:
 1. User did not select order in "Đang xử lý" status
 - 1.1. (After normal flow from step 4).
 - 1.2. User did not select order in "Đang xử lý" status.
 - 1.3. There is no “Nhập lại hàng trả” button and cannot confirm that order.
 2. User login with seller role
 - 2.1. (After normal flow from step 5).
 - 2.2. There is no “Duyệt đơn” button and cannot confirm that order.
- Business Rules: BR-06, BR-22

3.11.7 View list of customer return order

- Function trigger: A(n) owner/seller/storekeeper wants to view a list of customer return orders.
- Pre-condition:
 1. The user must be authenticated and logged in.
 2. The user must be inside the customer return order screen.

- Post-condition: The website displays the customer return order list screen.
- Function description: As a(n) owner/seller/storekeeper, I want to view a list of customer return orders.

Screen Layout:

Mã đơn trả hàng	Người tạo đơn	Ngày trả hàng	Giá trị trả hàng	Lý do
HOHA3	Thú Kho Minh	17/04/2023 07:34	240.000 đ	---
HOHA2	Thú Kho Minh	17/04/2023 07:33	600.000 đ	hàng hỏng

Figure 3.11.14 - Manage Return Product Screen Layout - View customer return order list

- Function details: The owner/seller/storekeeper can view all the customer return orders with the newest creation date first.
- Normal Flow:
 1. Log into the system.
 2. The user clicks on “Trả hàng” from the navbar.
 3. The user clicks on “Khách trả” button.
 4. The system will show the customer return order list
- Alternative Flow: N/A
- Exception:
 1. The system has no customer return order.
 - 1.1. (After normal flow from step 4)
 - 1.2. The table will show the message “không dữ liệu”.

3.11.8 View customer return order details

- Function trigger: A(n) owner/seller/storekeeper wants to view details of a customer return orders.
- Pre-condition:
 1. The user must be authenticated and logged in.
 2. The user must be inside the customer return order screen.
- Post-condition: The website displays the customer return order list screen.
- Function description: As a(n) owner/seller/storekeeper, I want to view details of a customer return orders.

Screen Layout:

Figure 3.11.15 - Manage Return Product Screen Layout - View customer return order details

- Function details: The owner/seller/storekeeper views the details of the customer return order about the supplier, who creates, date, note, details of return products. The user can click the "Trả hàng" button to add a return to supplier order.
- Normal Flow:
 1. Log into the system.
 2. The user clicks on "Trả hàng" from the navbar.
 3. The user clicks on "Khách trả" button.
 4. The user clicks on the eye icon to view details of a customer's return orders.
- Alternative Flow: N/A
- Exception: N/A
- Business Rules: BR-05, BR-06, BR-14

3.11.9 Add customer return order

- Function trigger: A(n) owner/seller/storekeeper wants to add a new return customer order.
- Pre-condition:
 1. The user must be authenticated and logged in.
 2. The user must be inside the customer return order screen.
- Post-condition: A new return customer is added to the system. The system then redirects to the customer return order list.
- Function description: As a(n) owner/seller/storekeeper, I want to add a new return customer order.

Screen Layout:

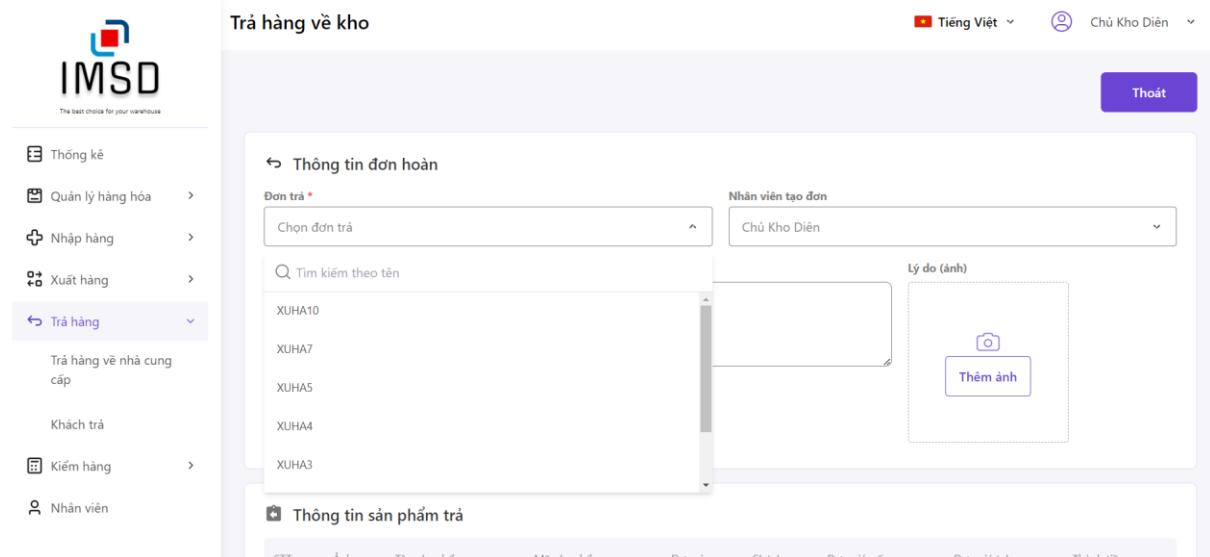


Figure 3.11.15 - Manage Return Product Screen Layout - Add customer return order

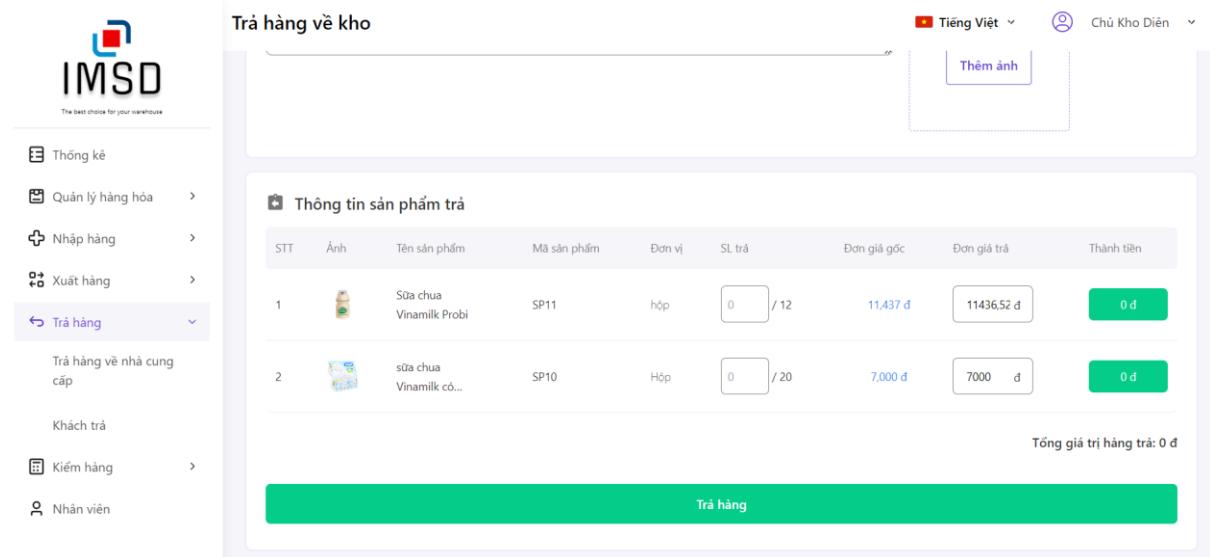


Figure 3.11.16 - Manage Return Product Screen Layout - Choose products

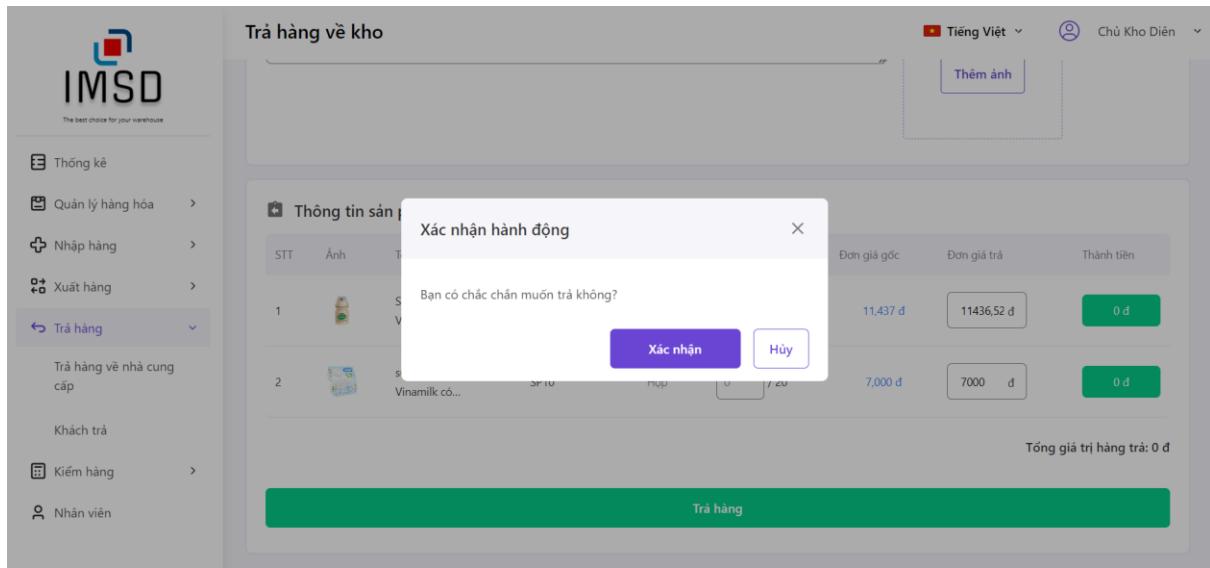


Figure 3.11.17 - Manage Return Product Screen Layout - Return confirmation

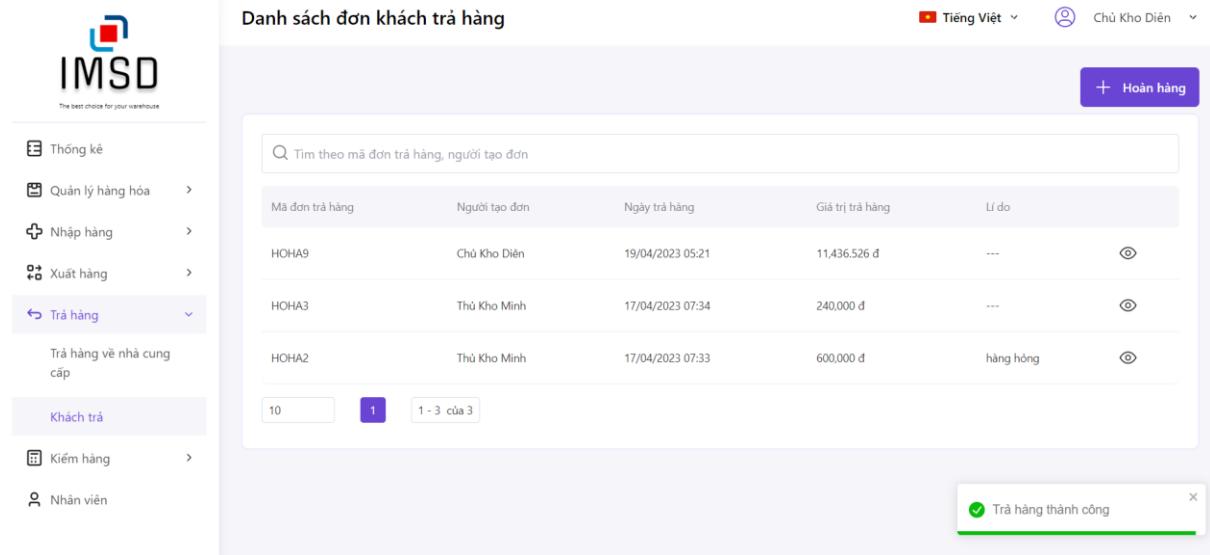


Figure 3.11.18 - Manage Return Product Screen Layout - Return successfully

Figure 3.11.19 - Manage Return Product Screen Layout - Add customer return order

Figure 3.11.20 - Manage Return Product Screen Layout - Add customer return order

- Function details: The owner/seller/storekeeper chooses the supplier and chooses the export order to be returned. The user can choose the order creator's name, return reason and image if necessary. The order creator name will be the current user by default. After choosing the export order, the user can input the number of products returned. Then the user clicks on the "Trả hàng" button and confirms the action to finish creating the customer return order of the system.
- Normal Flow:
 1. Log into the system.
 2. The user clicks on "Trả hàng" from the navbar.
 3. The user clicks on "Khách trả" button.
 4. The user clicks on "Hoàn hàng" button.
 5. The user chooses the export order to return (This is required).

6. The user can choose the order creator's name, return reason and image if necessary.
 7. The user input the number of products returned. The total number of products that returned have to be more than 1.
 8. The user inputs details of the return order then clicks "Trả hàng" and confirms action by clicking the "Xác nhận" button of the pop up to submit.
 9. The website will save the order and redirect to the Return Order List. The newest order will display with status "Đang xử lý".
- Alternative Flow:
 1. Log into the system.
 2. User click on "Xuất hàng". Then click on "Danh sách xuất hàng".
 3. Click on the eye icon of an export order with status complete.
 4. In the export order detail screen, click on the "Refund product" button.
 5. (Continue normal flow from step 6)
 - Exception:
 1. User does not enter return any product in the return order product list (Total product returned equal 0).
 - 1.1. (After normal flow from step 7)
 - 1.2. The user clicks the "Thêm nhanh sản phẩm" button
 - 1.3. User click "Trả hàng" button, then click the "Xác nhận" button.
 - 1.4. The website pops a message "Phải trả sản phẩm hoặc trả tiền" to inform user return product.
 - Business Rules: BR-06, BR-22

3.12 Dashboard

3.12.1 View Dashboard

- Function trigger: The owner/storekeeper visits the dashboard of the website.
- Pre-condition: The user logged in the system.
- Post-condition: The website displays the Dashboard.
- Function description: As the owner/storekeeper, I want to view inventory information, number of employees, total revenue, by date, orders

Screen Layout:

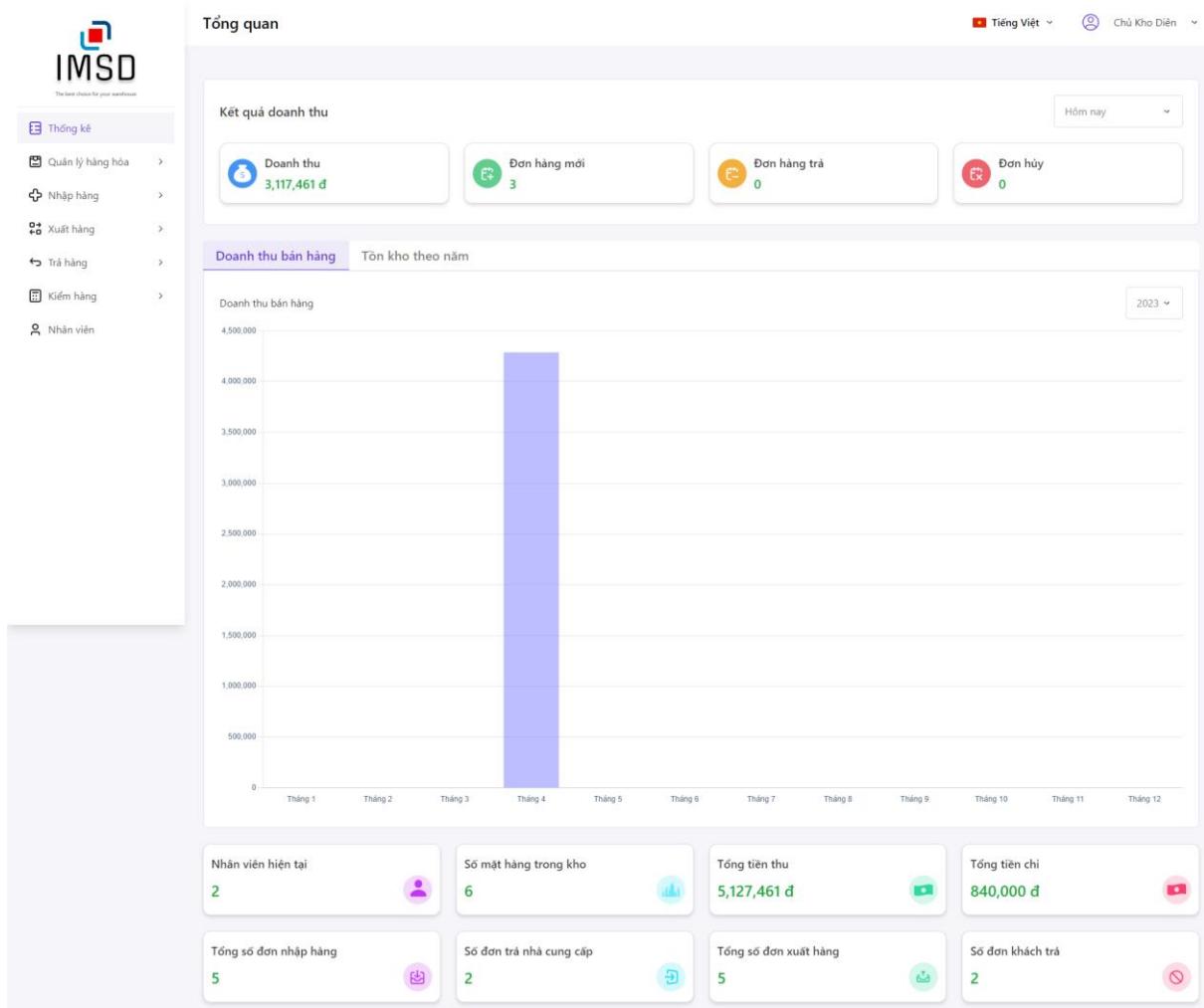


Figure 3.12.1 - Dashboard Screen Layout - View dashboard

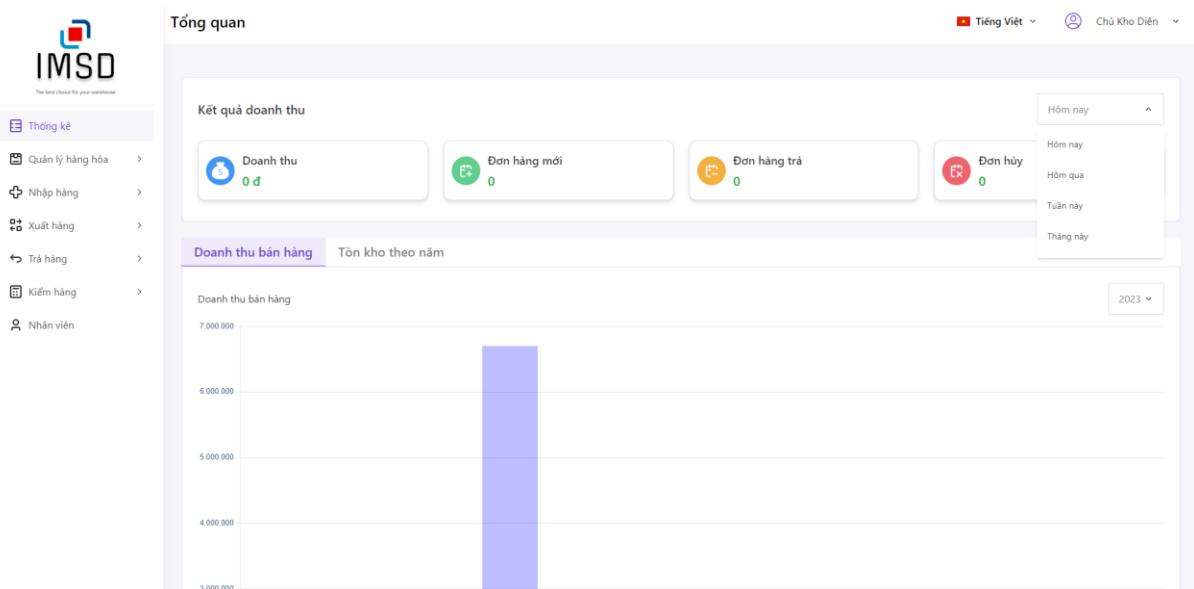


Figure 3.12.1 - Dashboard Screen Layout - View dashboard



Figure 3.12.1 - Dashboard Screen Layout - View dashboard

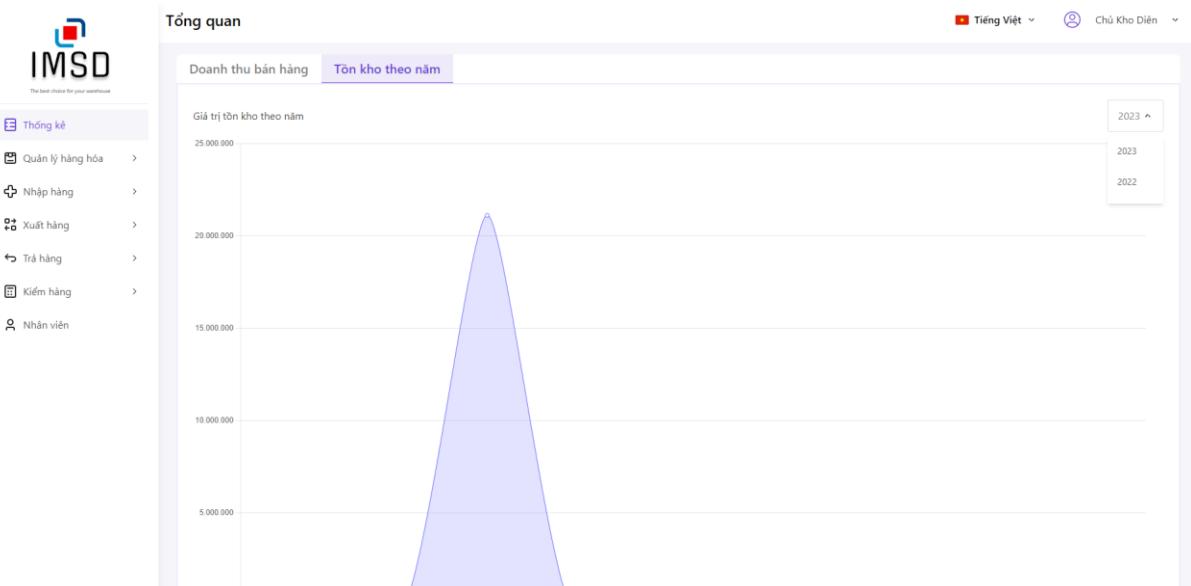


Figure 3.12.1 - Dashboard Screen Layout - View dashboard

- Function details: The owner/storekeeper can view the information of the complete order, a chart of the total inventory. The owner/storekeeper can see total staff members in the system. The owner/storekeeper can see the total product in the system. The total inventory amount data in the dashboard captures each year. The user can view the revenue result via period by choosing period from drop down list. Sales revenue and inventory by year chart can be filtered by current year and the previous year. The calculation method of the fields is as follows:

Total amount of money spent = Total amount of money of import order + Total amount of money of customer return

Total receipt = Total receipts of export order

Total revenue = Total receipt - Total amount of money spent

Number of import/ export/ return order = Number of success import/ export/ return order

Inventory by year chart = $\Sigma(\text{product price} * \text{product instock})$

- Normal Flow:
 1. The user login with the owner/ storekeeper role.
 2. Click “Thống kê” then the website displays the dashboard.
 3. The user can choose a period from the drop down list to see data via period.
- Alternative Flow: N/A
- Exception: N/A

4. Non-Functional Requirements

4.1 External Interfaces

4.1.1 User Interfaces

- UI-1: The user interface is designed to be simple and provide a friendly interface. The menu bar contains the main features of the system.
- UI-2: The web application will support responsive mobile screens and desktop.
- UI-3: If the user catches any error then the webpage shall display a toast error message.
- UI-4: The web application will be simple and all pages have the same layout and interfaces.

4.1.2 Software Interfaces

- SI-1: API Server
- SI-1.1: The server will be deployed on Azure SQL database
- SI-2: The web application
- SI-2.1: The web application should be able to do HTTPs requests and receive HTTPs responses

4.1.3 Hardware Interfaces

- No hardware interfaces have been identified

4.1.4 Communications Interfaces

- CI-1: Request from Front-end server to Back-end server shall be in Https protocol.
- CI-2: Request from Back-end server to SQLServer Database shall be in TCP, Named Pipes protocol.
- CI-3: The system sends an email with a confirmation link when signing up for a new account.
- CI-4: The system send an email with link to set new password

4.2 Quality Attributes

4.2.1 Usability

- The website now supports Vietnamese and English.
- User interface should be clear and easy to use.
- Menu sidebar will have main functions for easier access.
- Buttons and checkboxes are easily clickable.
- Links are easily recognizable and clickable.

4.2.2 Security & Safety

- The system must use token-based authentication. The authentication server returns an access token after the user logged in with username and password.
- The system uses role permission to limit some staff rights.
- User password shall be stored in the database encrypted with the MD5 algorithm.
- User authentication and authorization will use JSON Web Token (JWT).

5. Requirement Appendix

5.1 Business Rules

ID	Rule Definition
BR-01	Phone number must be a Vietnamese phone number.
BR-02	Must have the correct email format, max size 62 characters.
BR-03	The number cannot be negative, if it is negative, the number is 0.
BR-04	Fields marked with * are required.
BR-05	Username, product name fields max 100 characters.
BR-06	Note,address, reason fields max 250 characters.
BR-07	Product code, barcode fields must be unique and max 24 characters.
BR-08	UserCode does not contain special characters, must be unique and max 24 characters.
BR-09	Identity card field 12 characters.
BR-10	Passwords must be at least 8 characters at most 32 characters with at least 1 Upper Case, 1 lower case, 1 special character and 1 numeric character.
BR-11	Date field must be valid.
BR-12	Full name of the staff contains letters only.
BR-13	The name of the conversion unit must be different from the default unit name when creating.
BR-14	The currency used will be VND.
BR-15	Login token is only available for 12h.
BR-16	When checking products, a notice will be given to suspend import/export/returning.
BR-17	Unable to export the number of products larger than the current quantity in stock, if the quantity is exceeded, a warning will be displayed.
BR-18	When the export price is less than the import price, a warning will be displayed.
BR-19	When creating a product, if the user enters the product code, the product code will be what the user enters, if the user does not enter it, the system will automatically generate the product code with the prefix "SP".

BR-20	When creating a product, if the user enters the barcode, it will be the product's barcode, if the user does not enter the barcode, the barcode is the product code.
BR-21	When entering inventory threshold, the maximum inventory threshold must be greater than the minimum inventory threshold.
BR-22	Image file must be less than or equal to 5 mb.
BR-23	When entering a discount , the discount percentage must be greater than zero and less than 100.
BR-24	Staff username cannot be in the format of mail

5.2 Common Requirements

- The confirmation popup is used for the confirm and cancel actions.

5.3 Application Messages List

#	Message code	Message Type	Context	Content
1	MSG01	Toast message	Thao tác đang được xử lý	<i>Executing the current action</i>
2	MSG02	Toast message	Đăng nhập thành công	<i>Login successful</i>
3	MSG03	Toast message	Sai tên đăng nhập hoặc mật khẩu	<i>Wrong username or password</i>
4	MSG04	Toast message	Cài lại mật khẩu thành công	<i>Reset password successfully</i>
5	MSG05	Toast message	Cài lại mật khẩu thất bại	<i>Reset password failed</i>
6	MSG06	Tooltip	* Mật khẩu phải bao gồm ít nhất 1 chữ in hoa, 1 chữ thường, một kí tự đặc biệt và 1 số	<i>Validate password format with at least 8 characters with at least 1 Upper Case, 1 lower case, 1 special character and 1 numeric character</i>
7	MSG07	In red, under the text box	Mật khẩu phải khớp với nhau	<i>Password must be match</i>
8	MSG08	Toast message	Đăng ký thành công	<i>Register action successful</i>
9	MSG09	In line	Tên đăng nhập hoặc mật khẩu sai. Xin kiểm tra lại	<i>Username or password is not correct when clicking sign-in</i>
10	MSG10	Toast message	Đã có lỗi xảy ra, Vui lòng kiểm tra lại	<i>Execution failed</i>

11	MSG11	Tooltip	Mật khẩu phải chứa ít nhất 8 ký tự và không quá 32 ký tự	<i>Password must contain at least 8 and no more than 32 characters</i>
12	MSG12	Tooltip	Mật khẩu phải bao gồm chữ cái in hoa, chữ in thường, số và ký tự đặc biệt	<i>Must include uppercase, lowercase letters, numbers, special characters</i>
13	MSG13	In line	Tên đăng nhập không phù hợp	<i>Email format invalid</i>
14	MSG14	Toast message	Tạo đơn thành công	<i>Add order successfully</i>
15	MSG15	Toast message	Duyệt đơn kiểm hàng thành công!	<i>Approve inventory checking order successfully</i>
16	MSG16	Toast message	Hủy đơn kiểm hàng thành công!	<i>Deny inventory checking order successfully</i>
17	MSG17	In red, under the text box	Mã sản phẩm không được trùng nhau	<i>Code does not duplicate between products, must choose another product code</i>
18	MSG18	Tooltip	Nếu để trống, mã sản phẩm sẽ có tiền tố là SP	<i>If left blank, the product code will be prefixed with SP</i>
19	MSG19	Tooltip	Tạo thêm các đơn vị để quản lý sản phẩm	<i>Create more units to manage products</i>
20	MSG20	Toast message	Thêm mới sản phẩm thành công	<i>New product added successfully</i>
21	MSG21	Toast message	Cập nhật sản phẩm thành công	<i>Update product successfully</i>
22	MSG22	Toast message	Thêm mới nhà cung cấp thành công	<i>Add supplier successfully</i>
23	MSG23	Tooltip	Mật khẩu mặc định khi tạo nhân viên là 123456aA@	<i>The default password when creating an employee is 123456aA@</i>
24	MSG24	Popup message	Bạn có chắc chắn muốn hủy tạo nhân viên không?	<i>Verify to cancel the employee creation</i>
25	MSG25	Popup message	Bạn có chắc chắn muốn tạo nhân viên không	<i>Verify to create an employee</i>
26	MSG26	Popup message	Bạn có chắc chắn muốn hủy thêm nhà cung cấp không?	<i>Verify to cancel more providers</i>
27	MSG27	Popup message	Bạn có chắc chắn muốn thêm nhà cung cấp không?	<i>Verify to add a provider</i>
28	MSG28	Toast message	Cập nhật nhà cung cấp thành công!	<i>Update supplier successfully</i>

29	MSG29	Popup message	Bạn có chắc chắn muốn hủy chỉnh sửa nhà cung cấp không?	<i>Verify to cancel editing providers</i>
30	MSG30	Popup message	Bạn có chắc chắn muốn chỉnh sửa nhà cung cấp không?	<i>Verify to edit the provider</i>
31	MSG31	Toast message	Duyệt đơn nhập hàng thành công	<i>Approve import order successfully</i>
32	MSG32	Toast message	Hủy đơn nhập hàng thành công	<i>Deny import order successfully</i>
33	MSG33	Popup message	Bạn chắc chắn muốn hủy đơn hàng này?	<i>Verify if user want to cancel this order</i>
34	MSG34	Popup message	Bạn chắc chắn muốn duyệt đơn?	<i>Verify if user want to confirm the application</i>
35	MSG35	Toast message	Cập nhật đơn nhập hàng thành công	<i>Update order successfully</i>
36	MSG36	Popup message	Bạn chắc chắn muốn cập nhật?	<i>Verify if user want to update</i>
37	MSG37	Tooltip	Chọn nhà cung cấp để hiển thị mặt hàng tương ứng	<i>Select a supplier to display the corresponding item</i>
38	MSG38	Toast message	Nhập hàng thành công	<i>Import successful</i>
39	MSG39	Popup message	Toàn bộ số hàng đã được nhập vào kho?	<i>Confirm receive instock</i>
40	MSG40	Popup message	Bạn có chắc chắn muốn hủy chỉnh sửa nhân viên không?	<i>Verify user action to cancel update staff's profile</i>
41	MSG41	Popup message	Bạn có chắc chắn muốn chỉnh sửa nhân viên không?	<i>Verify user action to update staff's profile</i>
42	MSG42	Toast message	Thêm đơn xuất hàng thành công!	<i>Add export order successfully</i>
43	MSG43	Popup message	Dữ liệu bạn vừa nhập sẽ không được lưu, bạn muốn thoát không?	<i>Ask the user whether they want to cancel the action. Furthermore, the data entered won't be saved.</i>
44	MSG44	Popup message	Bạn có chắc chắn muốn tạo phiếu nhập hàng không?	<i>Verify if user want to create a export report</i>
45	MSG45	Toast message	Duyệt đơn xuất hàng thành công!	<i>Action approve export order Successfully</i>
46	MSG46	Toast message	Hủy đơn xuất hàng thành công!	<i>Action deny export order Successfully</i>

47	MSG47	Toast message	Chỉnh sửa đơn xuất hàng thành công!	Action edit export order Successfully
48	MSG48	Tooltip	Chọn nhà cung cấp để hiển thị mặt hàng tương ứng	Select a supplier to display the corresponding item
49	MSG49	Popup message	Bạn có chắc chắn muốn xác nhận phiếu nhập hàng không?	Verify if user want to approve export report
50	MSG50	Toast message	Đơn hàng đã được xuất khỏi kho thành công!	Inform that all product in the export order has been successfully exported from the storage
51	MSG51	Toast message	Thêm đơn kiểm hàng thành công!	Add order successfully
52	MSG52	Toast message	Duyệt đơn kiểm hàng thành công!	Approve inventory checking order successfully
53	MSG53	Toast message	Hủy đơn kiểm hàng thành công!	Deny inventory checking order successfully
54	MSG54	Popup message	Bạn chắc chắn muốn hủy đơn kiểm hàng này?	Verify if user want to deny this inventory checking order
55	MSG55	Popup message	Bạn chắc chắn muốn duyệt đơn kiểm hàng này?	Verify if user want to approve this inventory checking order
56	MSG56	Toast message	Chỉnh sửa phiếu kiểm hàng thành công!	Edit stocktake report successfully
57	MSG57	Popup message	Bạn chắc chắn muốn lưu?	Verify if user want to save report
58	MSG58	Tooltip	Sản phẩm có số lượng xuất là 0. Vui lòng xóa sản phẩm đó để tiếp tục	Contain a product in export order with quantity of 0.
59	MSG59	Tooltip	Số lượng xuất lớn hơn số lượng tồn	Export quantity is greater than stock quantity
60	MSG60	Tooltip	Giá xuất nhỏ hơn giá nhập	The export price is less than the import price

IV. Software Design Description

1. System Design

1.1 System Architecture

1.1.1 Overall Architecture Design