

CAN THO UNIVERSITY SOFTWARE CENTER MEKONG DELTA - APTECH



Aptech Certified Computer Professional (ACCP) SEMESTER II

FEKER Store

Instructor: Class: CP2396G01

Mr: Nguyễn Võ Thông Thái **Team:05**

Students:

1. A21157- Bùi Trung Nguyên

PROBLEM DEFINITION OF PROJECT

Feker Store specializes in providing mechanical keyboard products. With a passion for mechanical keyboards such as custom keyboards, metal keyboards, plastic keyboards, keyboards with LEDs, keyboards without LEDs,... a variety of keyboards, we create Feker products to serve everyone, all ages, all professions with a common passion for keyboards.

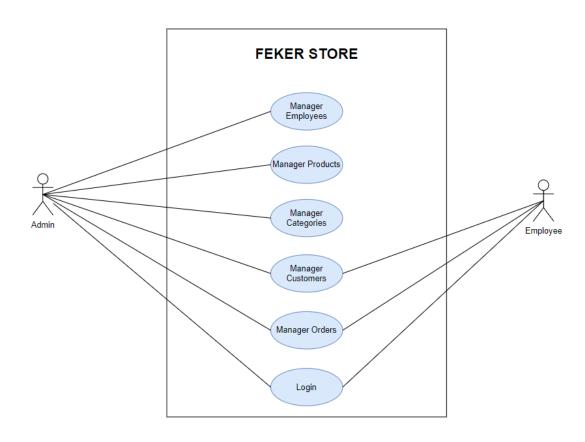
Feker stores are growing and are being trusted and chosen by more and more people to shop, more work must be done on paper such as product quantity management, invoice management, customer management, ... this causes many difficulties for the management of the store, paper management makes it difficult to find products, invoices when needed, documents are easily lost and procedures are quick when having to make invoices by hand. Therefore, the store needs to change to a newer technology management system and change the management work on paper to management on the management system software and create a management application for the store, helping the store's operations become easier to manage, clearer and more transparent.

The appearance of the Feker Store application is the answer to the difficulties that the store is facing. With simple features such as Logging into the system, having a customer management page, product management, product type management, invoice management, store staff management, changing the way of operating and creating a store app is inevitable to help store management become easier and help customers' shopping procedures become faster, helping to increase productivity when selling store products.

CUSTOMER REQUIREMENTS SPECIFICATION (CRS)

Name of Project:

Modeling requirements of customer (Use case Diagram)



Actor Description

NT	A 4	TI C	D 14		
No.	Actor	Use Case	Description		
		Manage Customer	This subsystem allows the administration of adding and		
		Withing Customer	editing customers of the store		
			This subsystem allows Administrators to manage product		
		Manage Product	information including adding new products, updating		
			product information and deleting products.		
			If you want to access the store's management system, you		
		Login	need to be granted an account to be able to log into the		
1	Admin		system and continue working.		
1.		Manager Employees	Managers can add, edit and delete at will with the		
			employee management function		
		Manager Orders	When customers come to buy products, they can add, edit,		
			and delete customer orders in the order management		
			section of the software		
			For product categories, product classification is required		
		Manager Categories	in the product type management function. Managers can		
			add, edit, and delete product classifications.		
		View Products	For employees in the product management function, they		
	Employees	view Floducts	can only see the product table.		
2.	Employees		Store employees can register to add customers to the		
		Manager Customers	customer list in the customer management function and		
			have the right to edit customer information as required.		

Prepared By: Bùi Trung Nguyên Date: 05/06/2024

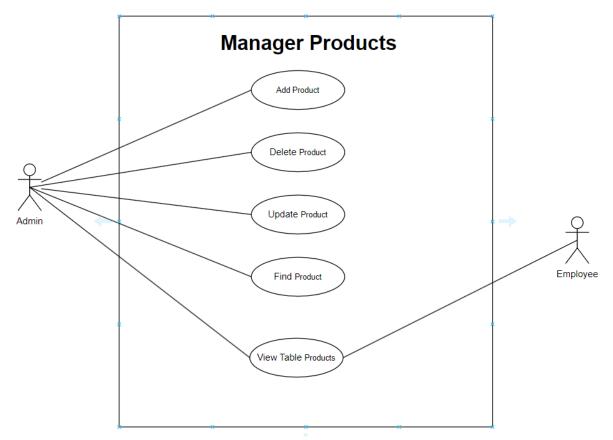
Approved By: Mr. Nguyễn Võ Thông Thái

Form No. 2A: Customer Requirements Specification (CRS)

 -	•
Login	For employees, they also need an account administrator to be able to log in to the system and work.
Manager Orders	After the employee registers a customer for membership, each customer will make a purchase and the employee will add an invoice and select which customer belongs to that order and can edit the customer's order as required.

Use case Description

Manage Products: This subsystem allows administrators to manage product information including adding new products, updating product information and deleting products.



■ Add New Product

Purpose: this function allows Adminto add new information about the product.

➤ Inputs:

- Select the product's Name
- Select the product's CategoryName
- Select the product's Img
- o Select the product's price
- o Select the product's Description

Outputs: New information about the product is added to the table of the database.

■ Update Product

- Purpose:Purpose: This function allows Admin to edit existing product information.
- ➤ Inputs:

Edit Product Name

Edit Product CategoryName

Edit Product Img

Edit Product Price

Edit Product Description

Outputs: New information about the product is added to the table of the database.

■ Delete Product

- Purpose: Allows managers to select and delete a product from the product table
- ➤ Inputs:
- ➤ Outputs:Successfully deleted a product from the database

3.1.4. FInd Product

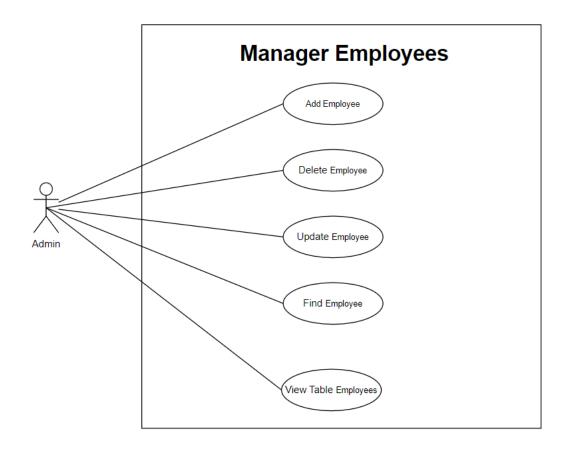
Purpose: Allows users to enter product names in the search bar and the data will be searched and filtered based on the name entered in the search bar.

Inputs: Enter the name in the search bar

Outputs: Filter the search list by name and display if there is no name, the table will be blank.

3.2. Manage Employees : This subsystem allows administrators to manage Employee information including adding new Employees, updating Employee Information, and deleting

Employees.



> Add Employees

- Purpose:this function allows Adminto add new information about the Employees.
- Inputs:
 - EmployeeID
 - Name
 - Phone
 - Address
 - Img
 - Password
- Outputs: New information of employees is added to the table of the database.

➤ Update Employees

- Purpose: This function allows Admin to edit existing Employees information.
- o Inputs:
 - EmployeeID
 - Name

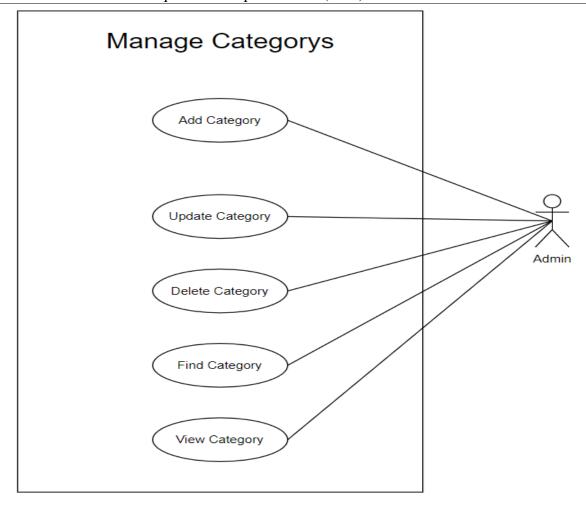
- Phone
- Address
- Img
- Password
- Outputs::New information of employees is added to the table of the database.

> Delete Employees

- Purpose: Allows managers to select and delete a employees from the employees table
- o Inputs:
- Outputs:Successfully deleted a employees from the database

> Find Employees

- Purpose: Allows users to enter employees names in the search bar and the data
 will be searched and filtered based on the name entered in the search bar.
- o Inputs: Enter the name in the search bar.
- Outputs:Filter the search list by name and display if there is no name, the table will be blank.
- **3.3. Manage Category:** This subsystem allows administrators to manage product type information including adding new product types, updating Product Type Information, and deleting product types.



> Add Categories:

- Purpose:this function allows Adminto add new information about the Categories
- o Input:
 - Name
 - Description
- Outputs: New information of Category added to the table of the database.

➤ Update Categories:

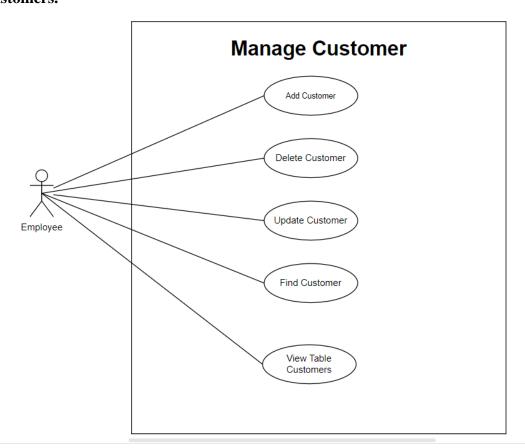
- Purpose: This function allows Admin to edit existing Category information.
- O Input:
 - Name
 - Description
- Outputs: New information of Category added to the table of the database.

> Delete Categories:

- Purpose:Allows managers to select and delete a Category From the Category table
- o Input:
- Outputs:Successfully deleted a employees from the database

> Find Categories:

- Purpose: Allows administrators to easily search product categories
- o Input: input Name Category in JtextFIeld Search Name
- Outputs: show rows with the name of the category or without and not showing
- 3.4 Manager Customer: This subsystem allows administrators to manage customers including adding new customers, updating Customer Information and deleting Customers.



> Add Customer

- Purpose: This function allows Admin to add new customers
- o Input
 - Name
 - Phone
 - Address
 - MSKH (Random)

Output: New information of Customer added to the table of the database.

➤ Edit Customer

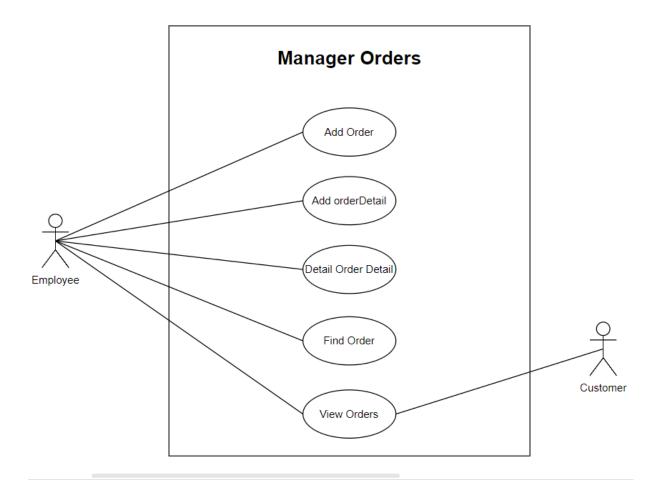
- Purpose: Allows editing customer information if there are errors
- Input
 - Name
 - Phone
 - Address
 - MSKH (Random)
- o Output: New information of Customer added to the table of the database.

➤ Delete Customer

- o Purpose: Allows deleting customers if needed
- o Input
- o Output:Successfully deleted from database

> Find Customer

- Purpose: Allows searching for customers
- o Input
 - Name
- Output: Successful search format displays the customer column
- 3.5 Manager Order: Allows users to add products to order or delete products if they choose incorrectly. and saved to the Order and OrderDetail tables.



> Add Order

- o PurposeP:allows users to add products to orders and progress orders for users
- o Input
 - Order ID
 - Product ID
 - Price
 - Quantity
- Output: After placing an order, the order will be saved in the database with 2 tables: orders and detailed orders for better management.

> Delete Order

- Purpose: While selecting a product into the shopping cart temporarily, the product in the cart can be deleted if the customer needs to change his mind.
- Input
- Output: will be saved in the order with the correct product quantity and product in the database

Hardware and Software required for implementing the project

	Server	Client
Hardware		Processor: Intel Core i3 or equivalent. RAM: 4GB or more. Hard drive: 128GB or more.
Software	Glassfish 4.1.2 SQL server 2016	Browser
Additional		
Technology		

CUSTOMER ACCEPTANCE CRITERIA

No.	Customer's Acceptance Criteria
1.	Function: Add, edit, delete and view employee list.
2.	Add, edit, delete and view product lists.
3.	Add, edit, delete and view product categories list.
4.	Add, edit, delete and view customer lists.
5.	: Create and manage orders for each customer.
6.	
7.	
8.	
9.	
10.	

PROJECT PLAN

I. Project Details

- 1. Name of the Client: CUSC APTECH Can Tho
- 2. Date of the Project Plan: 2/5/2024
- 3. Project Vision/Objectives: (Define the project vision/objectives as stated by the client)

Project Vision:

Build a keyboard store management application, providing effective employee, product, product type, customer and order management functions.

Objectives:

Create a system to help manage and track employee information.

Manage product information.

Manage product categories.

Customer Information Management.

Create and manage orders for customers.

4. Scope: (Mention the scope of the project giving the location that will be covered, processed, range of services, and so on)

Location: The application will be deployed and used at all branches of the keyboard store.

Handled: All processes related to employee, product, product type, customer and order management.

Service range:

Staff manager

Product Management

Manage product types

Customer management

Create and manage orders

5. Our understanding of the client organization: (Give the range of services, functions, overview of processes, and so on)

Services: Supply and retail of keyboards and related accessories.

Function: Manage employees, products, product categories, customers and orders.

Procedure:

Manage and track employee information.

Prepared By: Date: Approved By: Bùi Trung Nguyên 05/06/2024 Mr. Nguyễn Võ Thông Thái

Manage product information.

Manage product catalog.

Customer Information Management.

Create and manage orders for customers.

6. Project Organization with Responsibilities and Authorities: (Give the name of Project team members their roles and responsibilities)

No	Member	Roles	Responsibilities
1	Bui Trung Nguyen	Project Manager	Project management, planning and monitoring project progress
2	Bui Trung Nguyen	Business Analyst	Collect and analyze requirements from customers
3	Bui Trung Nguyen	Developer	Application development and testing
4	Bui Trung Nguyen	UI/UX Designer	User interface and user experience design
6	Bui Trung Nguyen	QA Tester	Testing and ensuring product quality
	Bui Trung Nguyen	Database Admin	Database management and data security

II. Project Initiation/Requirement Documents

(Information required from the client as inputs regarding his/her system; could be the information about the services, processes, and so on)

- Information required from the client:
 - o Detailed information about current management processes.
 - Ask in detail about the application's functions.
 - List of available products, product categories and customers.

III. D

eliverables

(The documents to be handed over to the client - such as CRS, Design Document, Installation Manual, User Manual, Maintenance Manual, and Code of documents)

- Documents that need to be handed over to customers:
 - Customer Requirement Specification (CRS)
 - Design Document
 - Installation Manual
 - User Manual
 - Maintenance Manual
 - Code Documentation

IV. Project Dependencies

(Any event or task outside the scope of the project which will affect the success of the project)

- Dependencies
 - Ability to provide information and feedback from customers.
 - Customer's technology infrastructure (hardware, network, etc.).
 - Cooperation of project stakeholders.

V. Major Project Milestones

(Generating CRS, Building a Prototype, Gartt - describe the main milestones of the project)

Form No. 3: Project Plan

Week Task	1					2					3					4				
	M	Т	W	Т	F	M	T	W	T	F	M	Т	W	T	F	M	T	W	T	F
Analyze customer requirements																				
Design system																				
Coding																				
Testing												·								

VI.Quality Plan

- 1. Review Activities (Review meeting participants, frequency, and so on)
 - Participants
 - O Bùi Trung Nguyên
 - Frequency
 - o every day.
- 2. Testing Activities (Final Test)

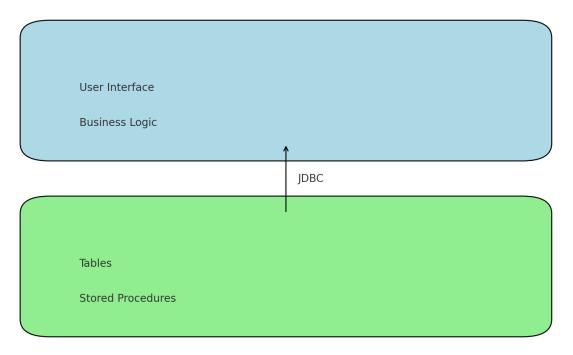
Take the final test 5 days before completing the project.

3. Backup and Recovery Strategies (In case of disk crash, network failures, and so on)
Use Github to save: https://github.com/trungnguyen1812/ProjectSem2

ARCHITECTURE & GUI STANDARD OF APPLICATION

1. Architecture of Application

Architecture of Java Swing Application with SQL Server



2. GUI Standard Application

Property	Value
Document Theme and Color Scheme	The main colors are blue and white, with a darker blue for the left navigation bar and function buttons.
Form - Background Color	White (#FFFFF).
Title - Font Size	Title - Font Size: Large font size, estimated about 24pt.
Title - Font Color	Title - Font Color: Black (#000000).
Title - Font Style	Title - Font Style: Bold font style.
Title - Alignment	Title - Alignment: Center alignment.
Background color of Controls on the form	Add button: Light green. Edit button: Light blue. Delete button: Light red. Search box and search function buttons: White.
Foreground color of Controls on the form	Add button: White (plus icon). Edit button: White (pencil icon).

Prepared By: Bùi Trung Nguyên Date: 05/06/2024

Approved By: Mr. Nguyễn Võ Thông Thái Form No. 4: Architecture & GUI Standard of Application

1	11
	Delete button: White (trash can icon).
	Search box and search function buttons:
	Black for text.
Control Caption - Font Size	Control Caption - Font Size: About 12pt.
Control Caption - Font Color	Control Caption - Font Color: Black
	(#00000).
Control Caption - Font Style	Control Caption - Font Style: Regular font
	style.
Control caption and controls - Alignment	Left alignment for table items.
	Center the function buttons.
Command button - Alignment	Command Button Alignment: Function
	buttons (Add, Edit, Delete) are centered
	horizontally above the customer data table.

INTERFACE DESIGN DOCUMENT

5.1. Document Name: Manager Employees

5.1.1. Description:

The employee management function is an important part of any organization's management system. It helps manage employee information effectively and conveniently. Below is a detailed description of the main functions including adding, editing, deleting and searching employees.

5.1.2. Controls on the Document

Button: click to display an employee creation form.

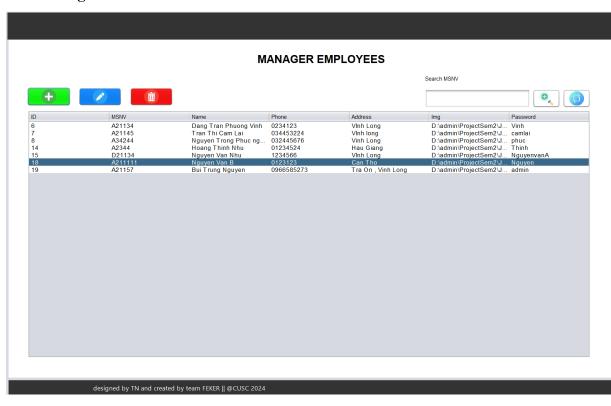
Button: click to display an employee edition form.

Button: click to delete employee information.

Button: Click to search employee information.

Button: click to reset the employee table.

5.1.3. UI design



5.2. Document Name: Manager Category

5.2.1. Description

The product category management function in a sales management or warehouse management system is an important part that helps administrators easily organize and operate product categories. Below are the main functions including adding, editing, deleting and searching for product types.

5.2.2. Controls on the Document

Button: click to display a Category creation form.

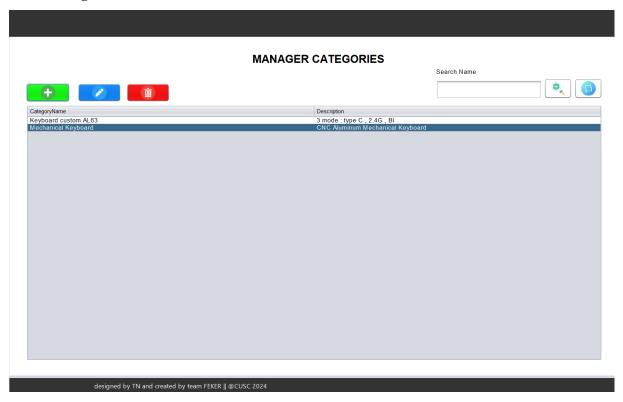
Button: click to display a Category edition form.

Button: click to delete Category information.

Button: click to search Category information.

Button: click to reset the Category table.

5.2.3. UI design



5.2.4.

5.3.Document Name: Manager Product

5.3.1. Description

Product Management functionality is an important feature of our keyboard sales application. With this feature, users can easily add, edit, delete and search keyboard products quickly and effectively.

5.3.2. Controls on the Document

Button: click to display a Product creation form.

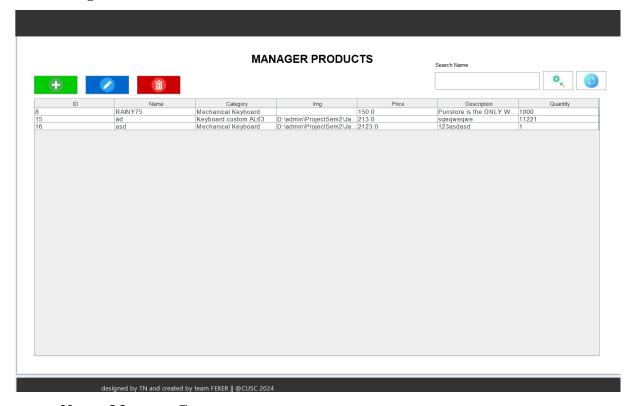
Button: click to display a Product edition form.

Button: click to delete Product information.

Button: Click to search Product information.

Button: Click to reset the Product table.

5.3.3. UI design



5.4.Document Name: Manager Customer

5.4.1. Description

Customer Management function is an important feature in our keyboard sales application. With this feature, users can easily add, edit, delete and search customer information, and manage their orders.

5.4.2. Controls on the Document

Button: click to display a Customer creation form.

Button: click to display a Customer edition form.

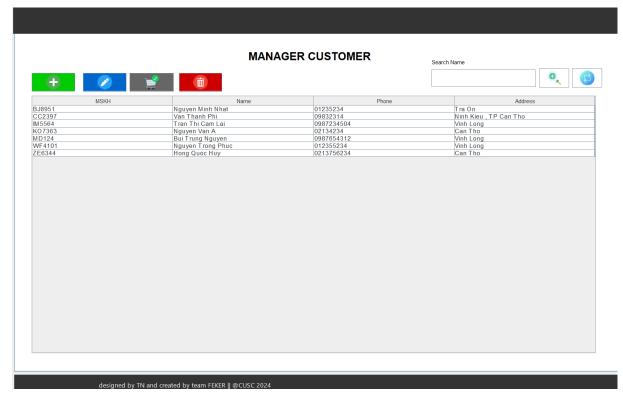
Button: click to delete Customer information.

Button: Click to search Customer information.

Button: Click to reset the Customer table.

Button: Click to display the product order form.

5.4.3. UI design



5.5.Document Name: Manager Order

5.5.1. Description

The Order function in the keyboard store manager application provides a simple and intuitive interface for creating and managing orders. With a few clicks, employees can easily select keyboard models, quantities and shipping information to create a new order. The application will automatically update order status and notify staff when there are any changes.

5.5.2. Controls on the Document

Button: Click to select the chosen product table.

Button: Click to create orders for customers

Button: Click to remove the product from the choose

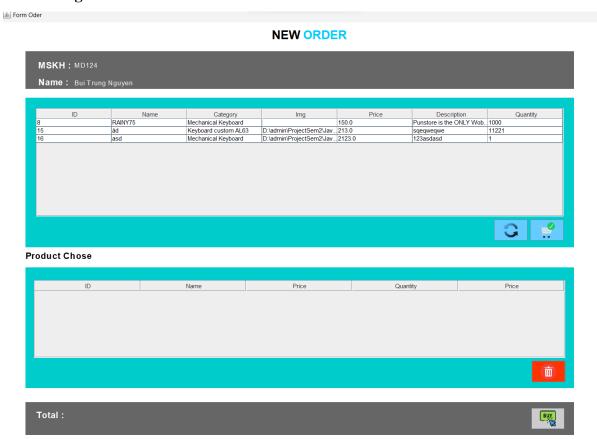
product table.

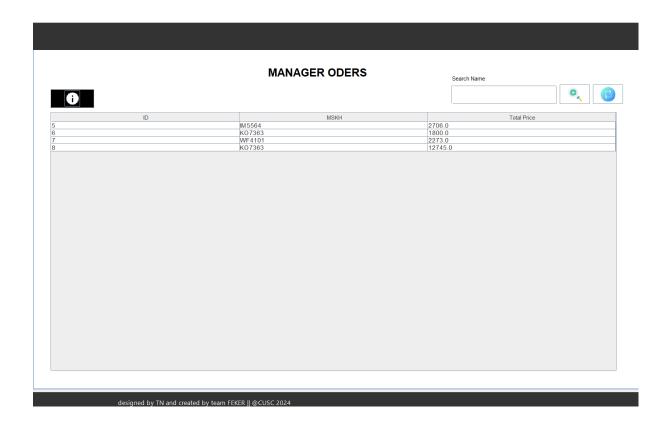
Prepared By: Bùi Trung Nguyên Date: 05/06/2024

Approved By: Mr. Nguyễn Võ Thông Thái Button: click to reset the Product table in form new

5.5.3. UI design

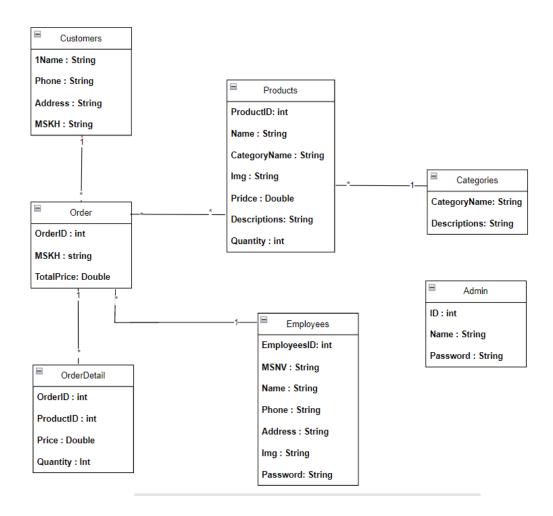
order.





DATABASE DESIGN DOCUMENT

I. ER/Class Diagram



II. Table Description

Employees							
Field Name	Data Type	Constraint (Primary Key, Foreign Key, Identity, Not Null,)	Description				
EmployeesID	int	Primary Key, Identity	Employee code				
MSNV	nchar(10)	Not null	customer code				
Name	nvarchar(100)	Not null	Employee Name				
Phone	nchar(10)	Not null	Employee Phone				
Address	nvarchar(500)	Not null	Employee Address				
Img	nvarchar(500)	Not null	image of staff				
Password	nvarchar(50)	Not null	employee password				

Products								
Field Name	Data Type	Constraint (Primary Key, Foreign Key, Identity, Not Null,)	Description					
ProductID	Int	Primary Key, Identity	Product code					
CategoryName	nvarchar(50)	Foreign Key, Not Null	Category name					
Name	nvarchar(50)	Not Null	Product name					
Img	nvarchar(500)	Not Null	image product					
Price	float	Not Null	price of the product					
Quantity	Int	Not Null	product quantity					

Form No. 6: Database Design Document

Description	text	Not null	Product
			introduction

Categories								
Field Name	Data Type	Constraint (Primary Key, Foreign Key, Identity, Not Null,)	Description					
CategoryName	nvarchar(50)	Primary Key	Category name					
Description	nvarchar(500)	Not Null	Category description					

Admin				
Field Name	Name Data Type Fo		Description	
ID	int	Primary Key, Identity	Admin code	
Name	nvarchar(50)	Not Null	Admin Name	
Password	nvarchar(50)	Not null	Admin Password	

Customers				
Field Name	Data Type	Constraint (Primary Key, Foreign Key, Identity, Not Null,)	Description	
Name	nvarchar(50)	Primary Key	Customer Name	
Phone	nchar(10)	Not null	Customer Phone	

Prepared By: Bùi Trung Nguyên

Date: 05/06/2024

Approved By: Mr. Nguyễn Võ Thông Thái

Form No. 6: Database Design Document

Address	nvarchar(50)	Not null	Customer Address
MSKH	nvarchar(50)	Not null	customer code

Order				
Field Name Data Type Foreign Key, Identity, Not Null,)			Description	
OderID	int	Primary Key, Identity	Order code	
MSKH	nvarchar(50)	Foreign Key, Not Null	Customer code	
TotalPrice	float	Not null	push out the bill	

Order Detail				
Field Name	Field Name Data Type Constraint (Primary Key, Foreign Key, Identity, Not Null,)		Description	
OderID	int	Primary Key,Foreign Key, Identity	Order code	
ProductID	int	Primary Key,Foreign Key, Identity	Product code	
Price	float	Not null	price of the product	
Quantity	int	Not null	the number of products	

Prepared By: Bùi Trung Nguyên

Date: 05/06/2024

Approved By: Mr. Nguyễn Võ Thông Thái

PROCESS DESIGN DOCUMENT

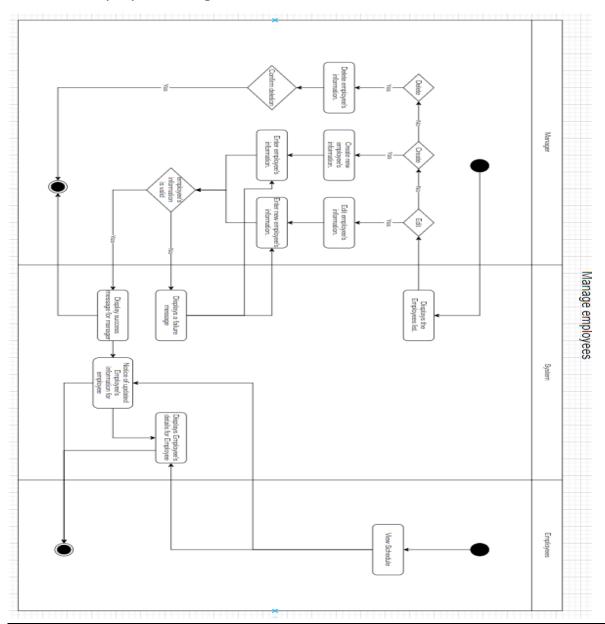
(Activity diagram, sequence diagram)

1. Process Name

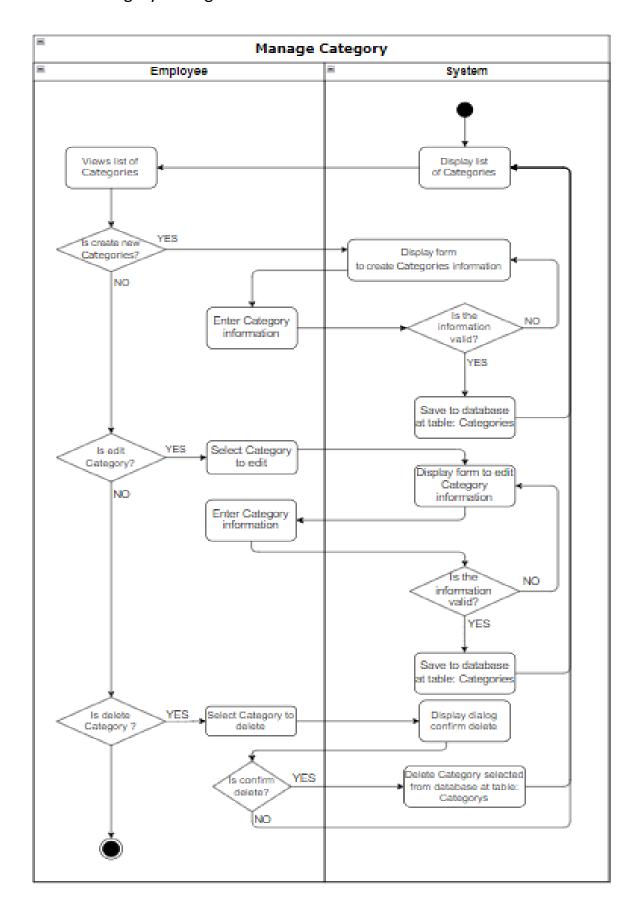
- a. Employee manager.
- b. Category manager.
- c. Product manager.
- d. Customer manager.
- e. Manage import orders

2. Process Description and Details

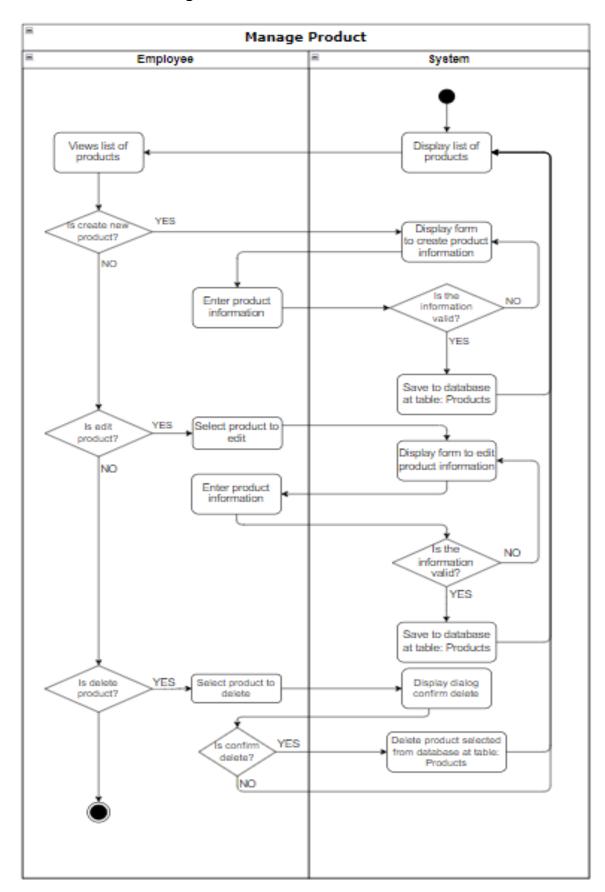
a. Employee manager.



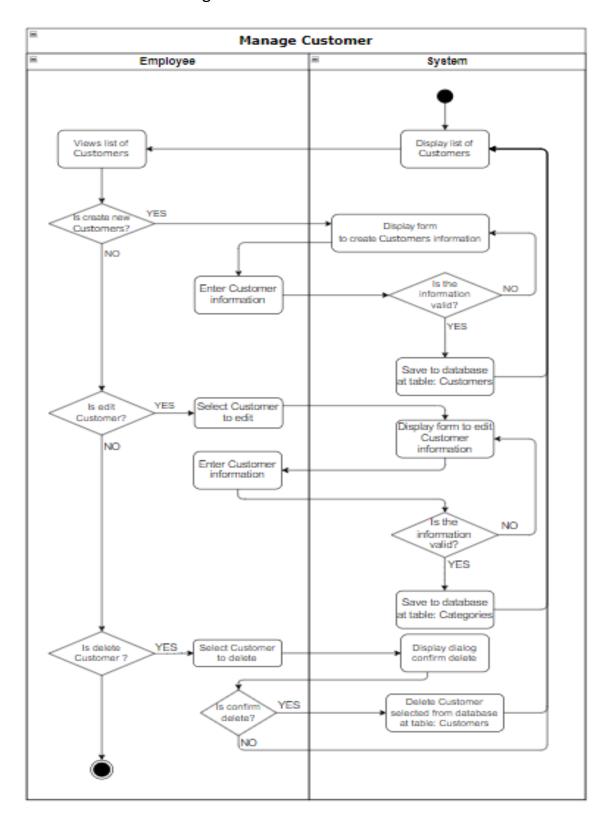
b. Category manager.



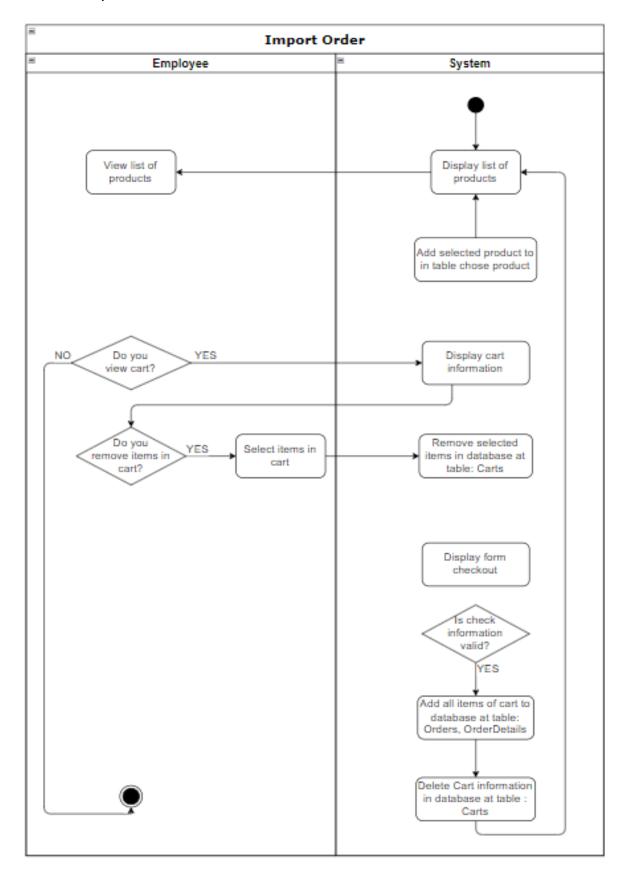
c. Product manager.



d. Customer manager.



e. import orders



CODING STANDARDS DOCUMENT

I. Programming Standards

1. General convention:

File Names: Do not use spaces in file names. Use only alphabetical characters (no numbers). File names should not exceed 40 characters.

2. File Suffixes:

File Type, Suffix, Java source, Java byte code, java, .class

3. Naming Java source files (.java)

General conventions: Combine the management function, main content of the file, and the programming function in the name.

<Management function> + <Main content of the file> + <Programming function>

II. Standards for code writing style

A file consists of multiple sections, which should be separated by blank lines and optional comments to identify each section.

Avoid writing files longer than 2000 lines.

III. Standards for declaring Variables

1. Line length:

Avoid writing lines longer than 80 characters.

Note: Code snippets used in reference materials should have shorter lengths, typically less than 70 characters.

2. Curly braces:

The opening curly brace "{" should be placed at the end of the line., the closing curly brace "}" should be placed on a new line.

3. Indentation:

Lines at the same "level" should have consistent indentation, indentation levels should be evenly spaced.

4. Line breaks:

when a single expression exceeds a single line, break it according to the following rules: break after a comma, break before an operator., higher-priority break conventions take precedence., the new line should be indented by 2 tabs.

5. General Rules

• Case Sensitivity: Java variable names are case-sensitive.

Form No. 8: Coding Standards Document

- Start with a Letter: Variable names should start with a letter, a currency character (\$), or an underscore (_). They should not start with a number.
- No Special Characters: Avoid special characters such as @, #, -, etc., except for \$ and
- Keywords: Do not use Java reserved keywords (e.g., class, int, public) as variable names.

IV.Standards for Function Declarations

Annotations should be used to provide general information about code and provide additional information that may not be apparent just by reading the code. Annotations should only contain information relevant to understanding the program. For example, information about how a package is created and which directory it is located in should not be included in annotations.

TASK SHEET

1. Project Title:

No.	Task	Actual Start Date	Actual Days	Teammate Name	Status
	Manager employees	22/4/2024	7	Bui Trung Nguyen	Finished
Manager pr	Manager categories	29/4/2024	7	Bui Trung Nguyen	Finished
	Manager products	6/5/2024	14	Bui Trung Nguyen	Finished
1.	1. Manager customer	20/5/2024	3	Bui Trung Nguyen	Finished
	New order	24/5/2024	3	Bui Trung Nguyen	Finished
	Manager orders	27/5/2024	13	Bui Trung Nguyen	Finished

Note: You can use list or Gartt

TESTING DOCUMENT

			Re	Result		
ID	Test Case Name	Task	Expected	Actual Result Pass/Fail- Comments		
1.	Add employee details	Enter employee details MSNV:A21176 Fullname: Nam Viet Phone:0234234534 Address: Vinh Long IMG: icon.png Password: admin@123	Record is added to the database	Pass		
	Add New Category	Enter category detail: Name: Mechanical Keyboard Descriptions:CNC Aluminum Mechanical Keyboard	Record is added to the database	Pass		
2.	Add Product	Enter Product detail Name: Feker ik 75 pro Price: 29,51 Quantity:100 Select Category: Mechanical Keyboard Img:product1.png Description:test	Record is added to the database	Pass		
4	Add Customer	Enter Customer detail Name:Bui Trung Nguyen Phone 0366599761 MSkH:MK2134 Address:Can Tho	Record is added to the database	Pass		
5	Add Order	Enter order detail Select customer to place order:MD124 Select the product to order:RAINY75 Select the buy button to complete the order	Record is added to the database	Pass		

PROJECT REVIEW

Date	Project Plan Activity/Mi lestone	Work Specificatio n	Status of the Activity	Remarks	Responsibilit y
22/4/2024	Analyze requirement s and assign work	All Form	Done	Good	All Teammate
2/5/2024	Discuss and resolve the app's functionalit y	App functionality	Done	Good	All Teammate
9/6/2024	Complete the work	Code	Done	Good	All Teammate

FINAL CHECK LIST

S.No.	Aspect tested	Suggestion/Remarks
1.	Have all the modules been property integrated and are they completely functional?	Yes
2.	Are all the validations happening as specified in Process Design?	Yes
3.	Have all Design and Coding standards been followed and implemented?	Yes
4.	Have all the modules been property integrated and are they completely functional?	Yes
5.	Are all the validations happening as specified in Process Design?	Yes
6.	Have all Design and Coding standards been followed and implemented?	Yes
7.	Have all the modules been property integrated and are they completely functional?	Yes
8.	Are all the validations happening as specified in Process Design?	Yes