

<<FUSWAP SYSTEM>>

Software Requirement Specification

– Hochiminh, June 2024 –

RECORD OF CHANGES

Date	A* M, D	In charge	Change Description

*A - Added M - Modified D - Deleted

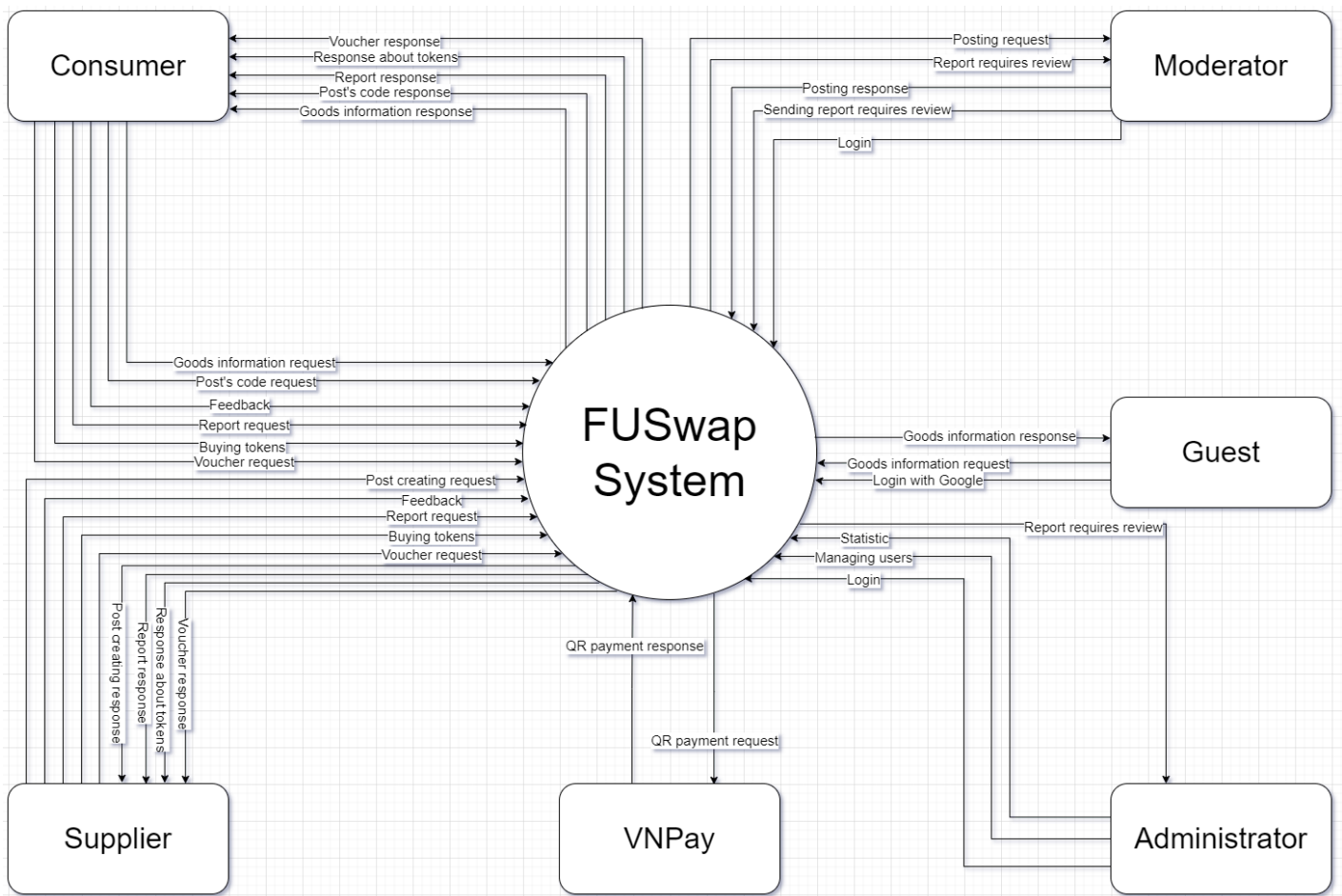
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I. Overview

1. Introduction

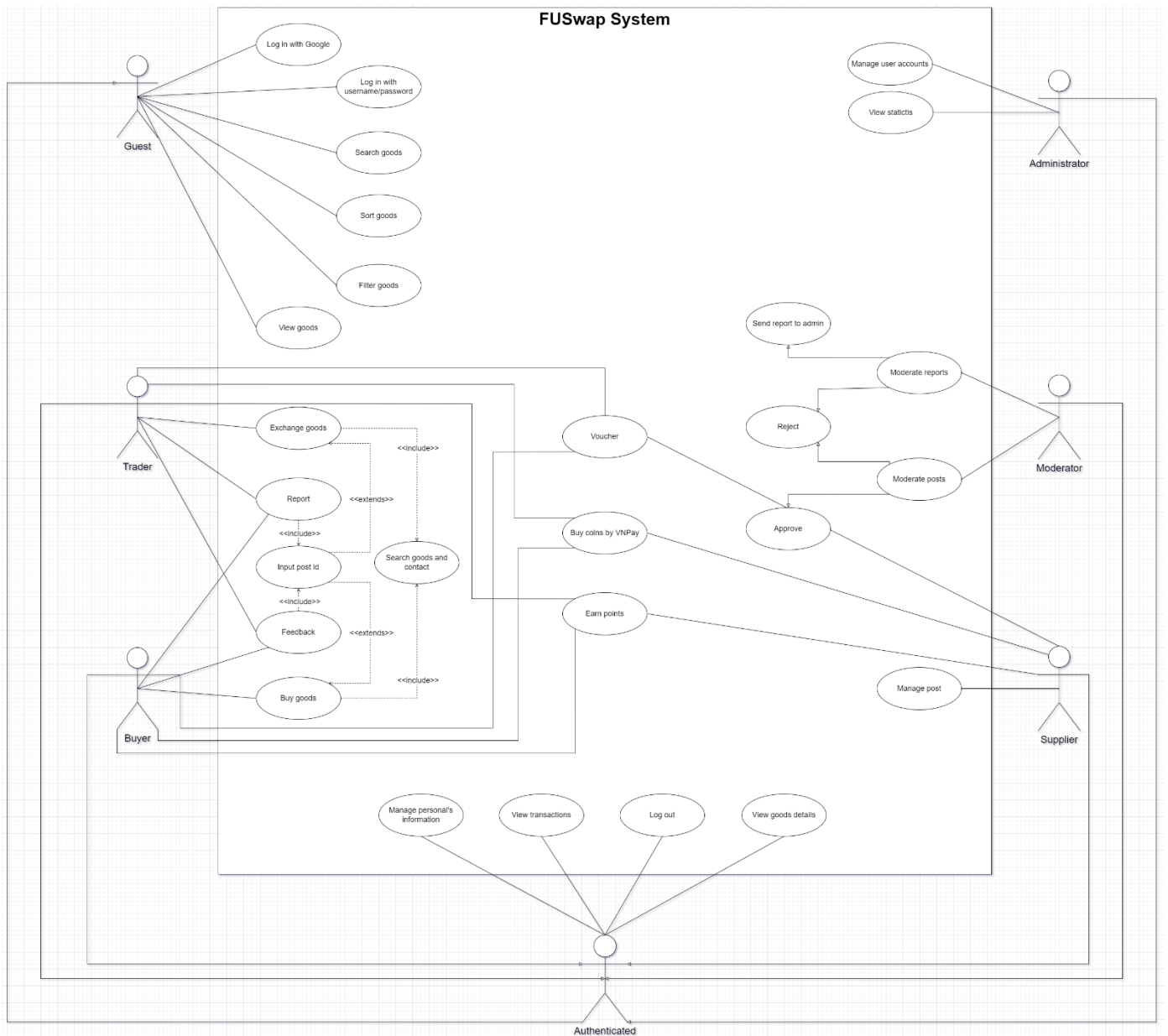
Currently, students have to purchase many new study materials each year. This creates a significant financial burden for students, especially those with limited economic means. However, many of these materials remain in good condition after just one semester but are not reused. This situation not only increases the cost of education but also leads to unnecessary waste of resources. Students often lack convenient methods to exchange or resell these materials to other students, resulting in the need to buy completely new items at the start of each semester. Moreover, the continuous production and consumption of new materials contribute to the depletion of natural resources. Therefore, there is a need for a solution that maximizes the use of used study materials, reduces costs for students, and contributes to environmental protection.



2. Use case

Our system offers a wide range of features that help users interact easily and effectively. Below is a use case of the system

a. Use case diagram



b. Use case list

UC01	Log in with Google
UC02	Log in with username/password
UC03	Log out
UC04	Search goods
UC05	View goods
UC06	View contact information
UC07	Manage posts
UC08	Make transactions
UC09	View transactios
UC10	Input post id

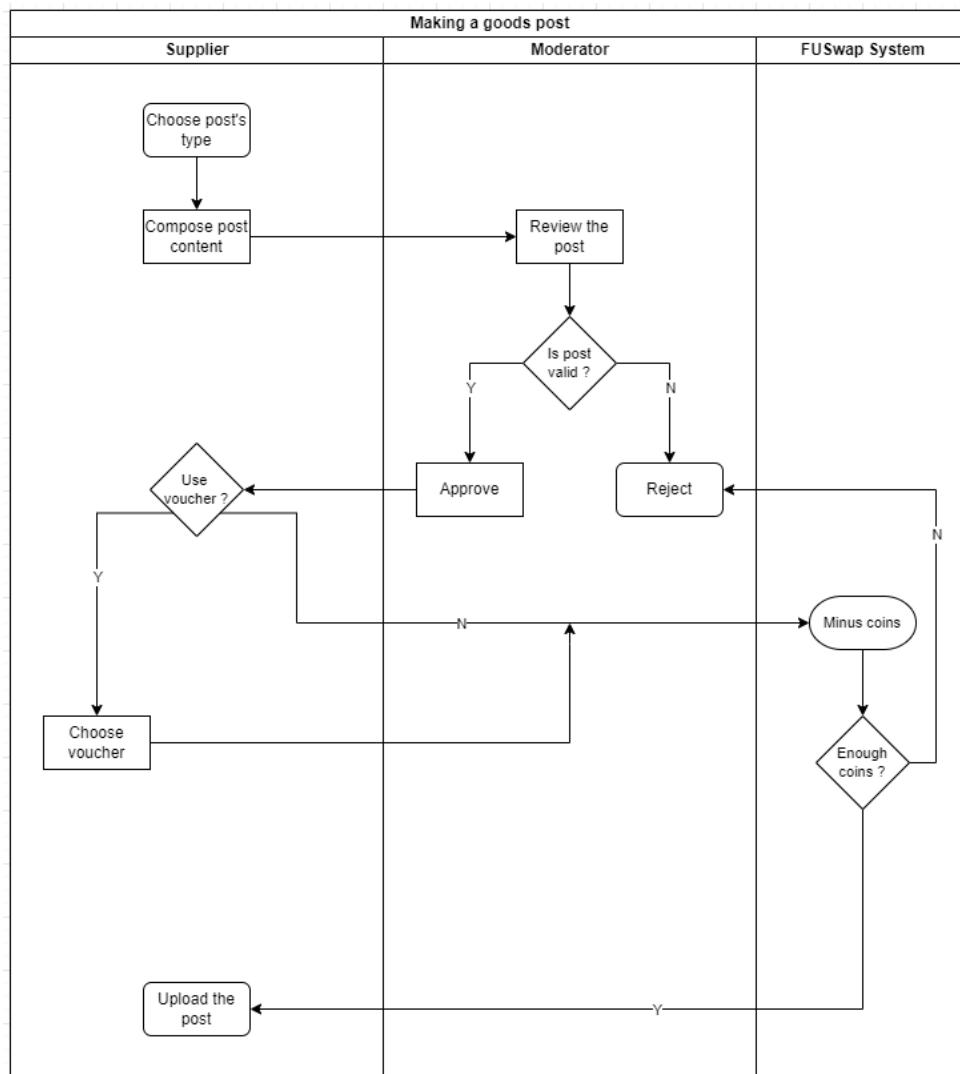
UC11	Feedback
UC12	Report
UC13	Sort goods
UC14	Filter goods
UC15	Buy coins by VNPay
UC16	Authorization
UC17	Manage personal's information
UC18	Moderate posts
UC19	Moderate reports
UC20	Manage user accounts
UC21	View statistics
UC22	Get vouchers

3. System Functions

a. Swimlane diagram

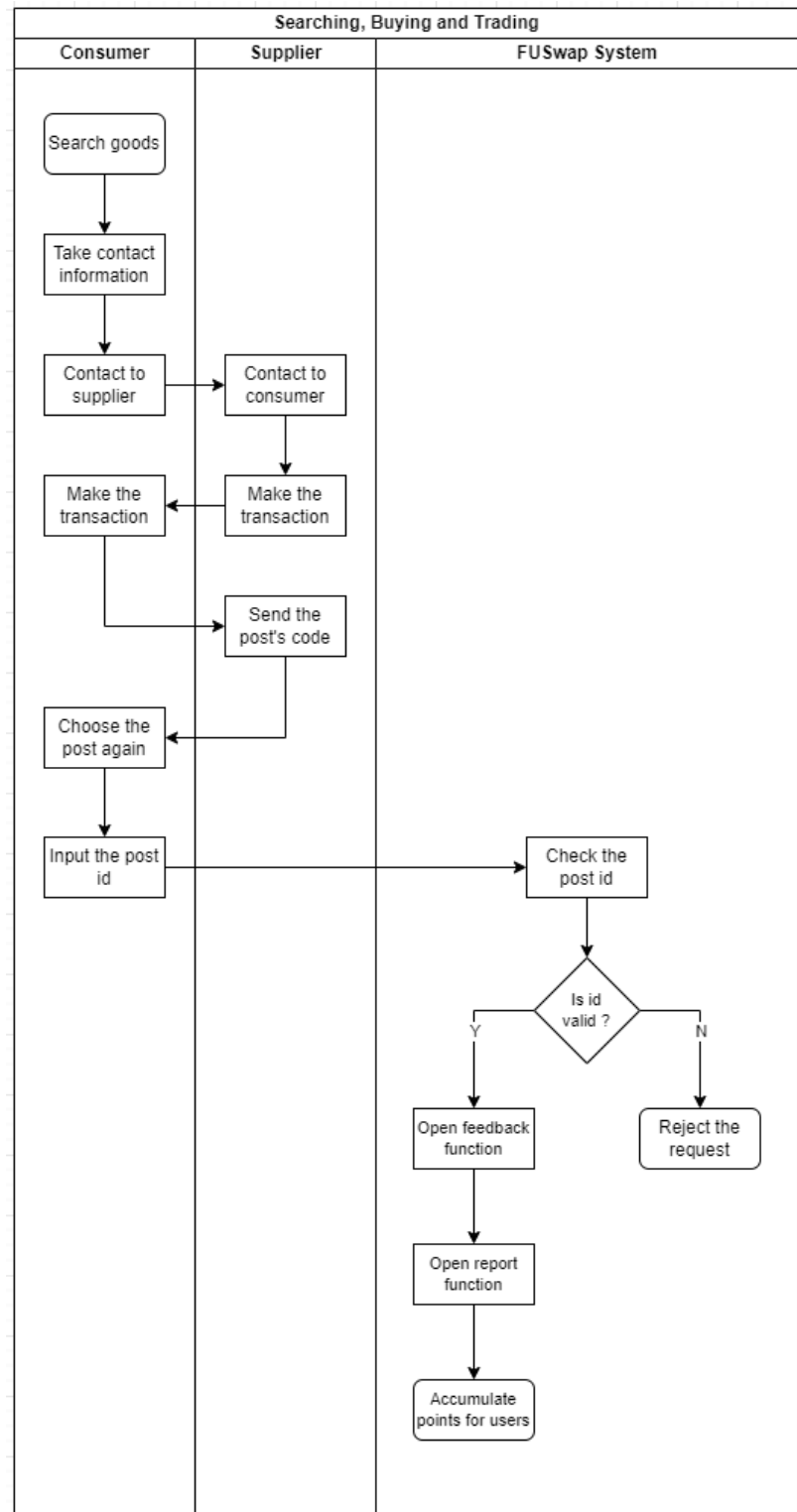
i. Making a goods post

Users create posts about goods they want to sell or exchange. They enter product details, upload image and set a price if it's for sale. Once completed, the post will be moderated, then deduct coins and appear on the platform for other users to view, buy or exchange goods.



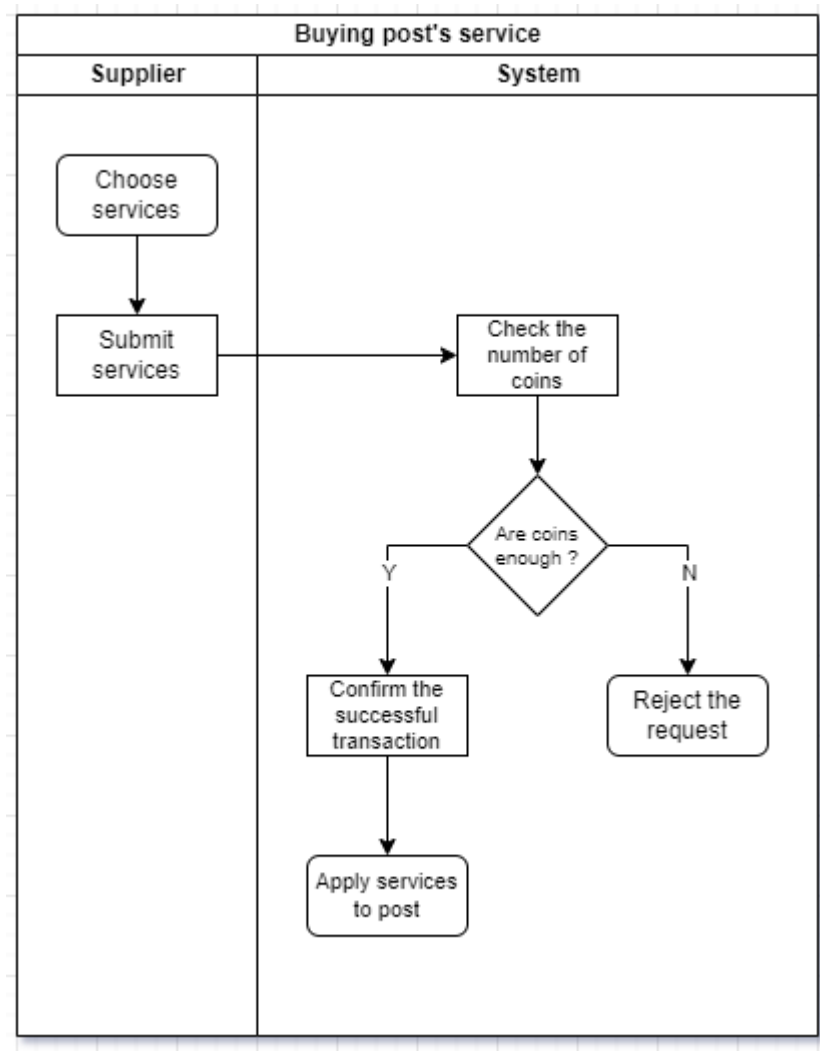
ii. Searching, Buying and Trading

Users search for goods. After finding the desired product, they contact the goods supplier and conduct the transaction without going through the system. After the transaction is completed, the supplier will provide the consumer with the post id to open feedback, reporting functions and receive accumulated points.



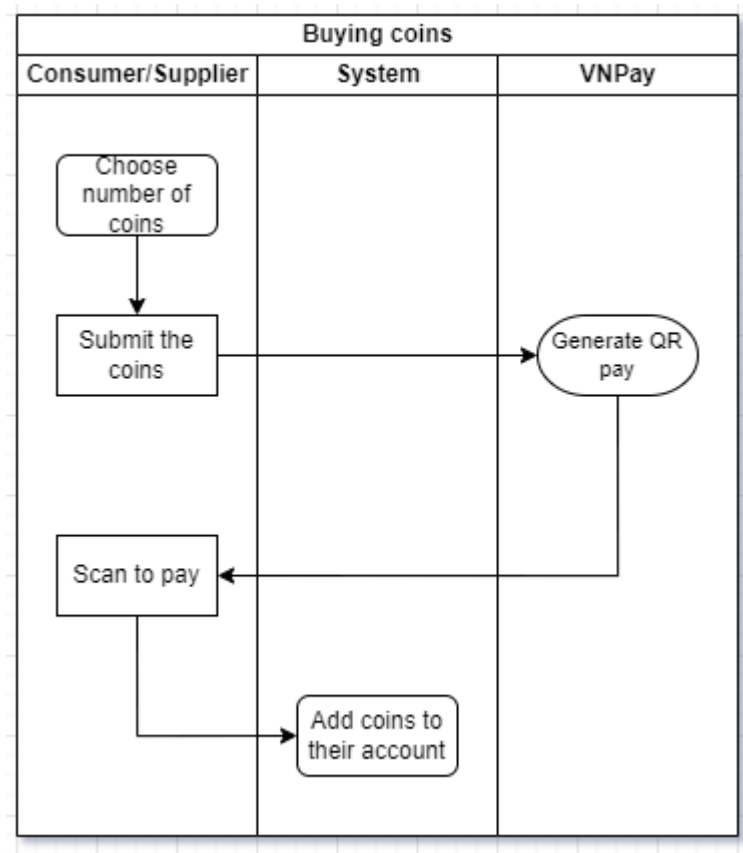
iii. Buying post's service

Users purchase advertising services for their posts to enhance visibility. They select the type of service (e.g., boosting the post, highlighting it), pay the service fee, and their post will be given priority display on the platform.



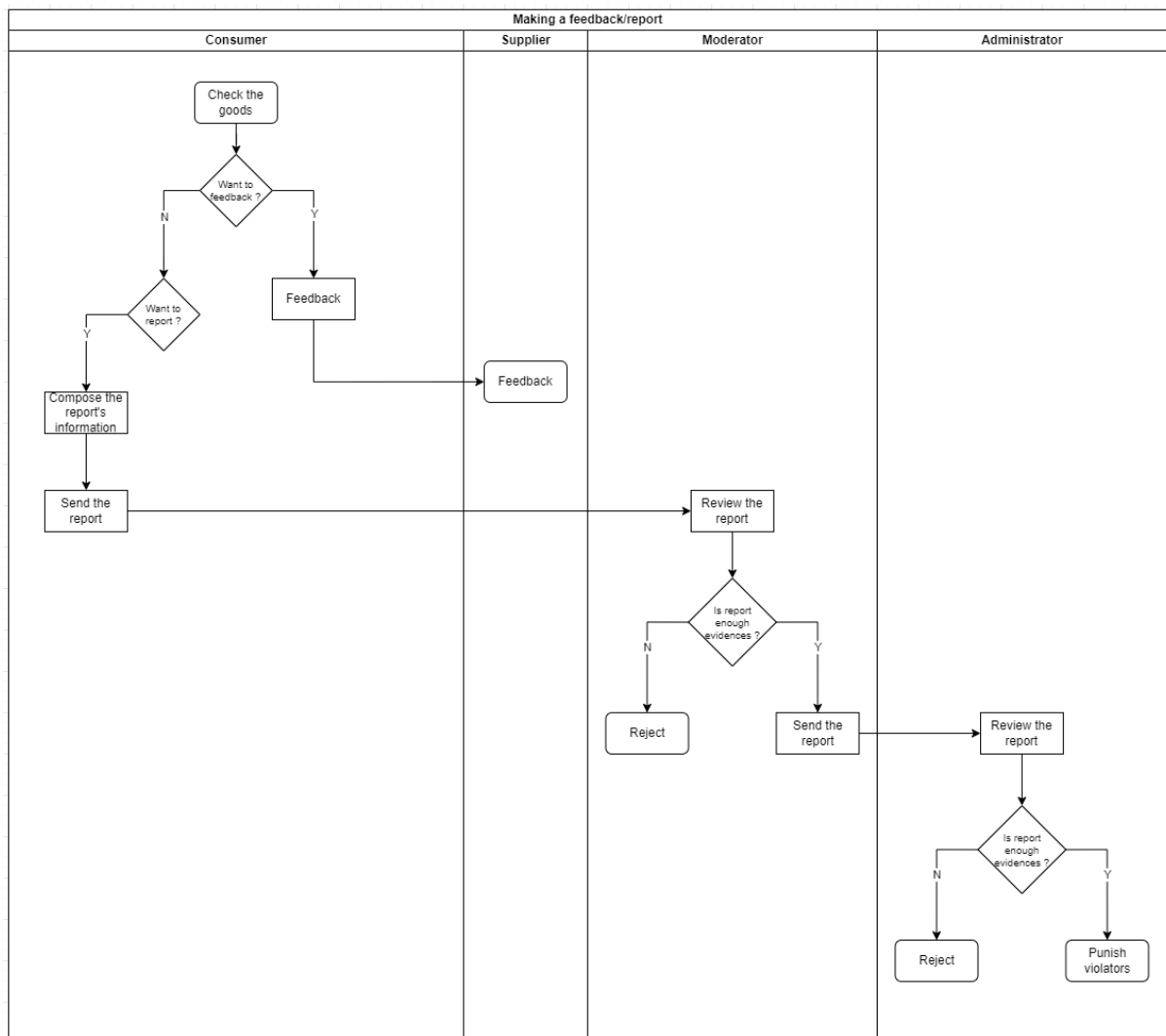
iv. Buying coins

Users buy virtual coins on the platform using VNPay. They select the number of coins they want to purchase, proceed to the VNPay payment gateway, complete the transaction, and the corresponding number of coins will be added to their account.



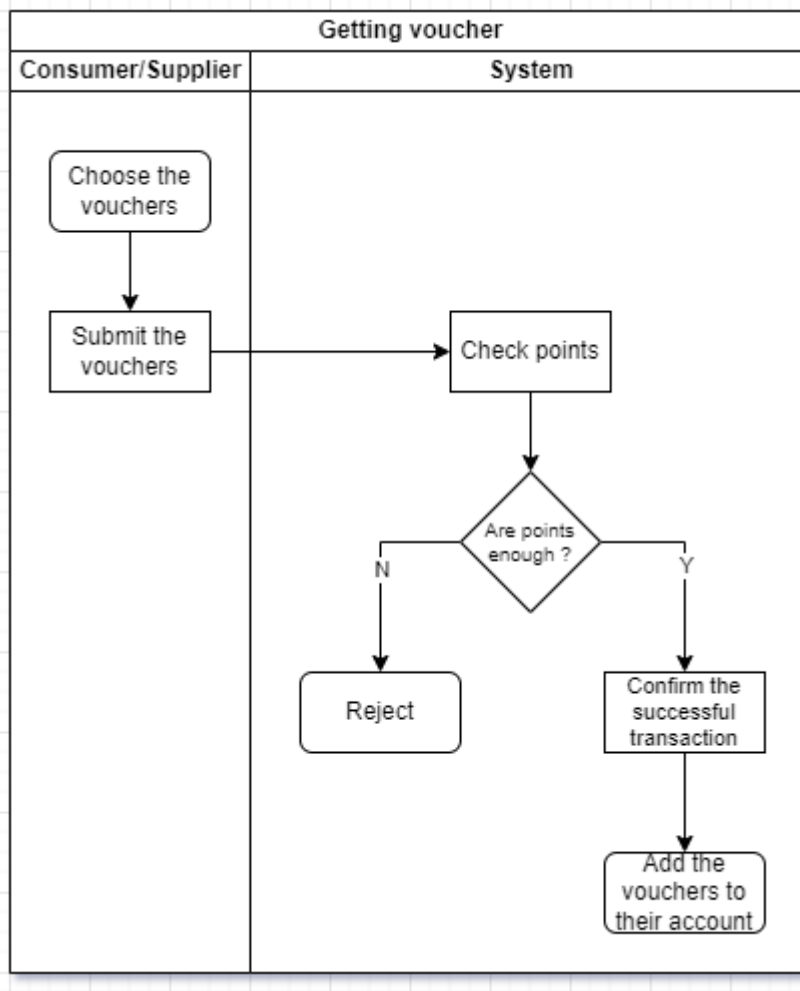
v. Making a feedback or report

Users provide feedback or report issues related to products or services. They fill out a feedback form, including detailed information about their experience or the issues encountered, and submit this report to the customer support system.



vi. Getting voucher

Users can use the accumulated points received after each transaction to redeem vouchers from the system.



b. User Authorization

Screen	Guest	Admin	Mod	Consumer	Supplier
Log in page	X	X	X	X	X
Home page	X	X	X	X	X
Create an account		X			
Statistics		X			
Create a post					X
Feedback				X	
Report				X	X
Goods details page				X	X
Profile page		X	X	X	X
Goods management page					X
Getting voucher page				X	X

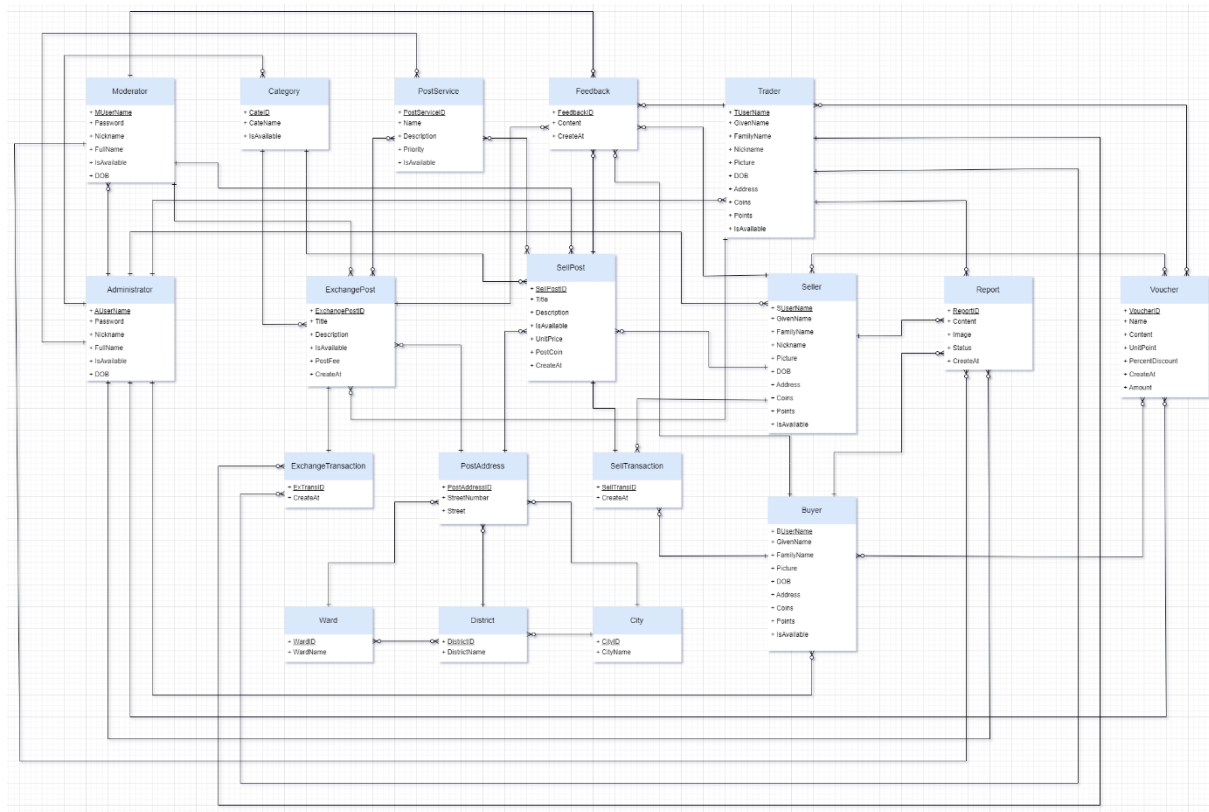
In which:

- **Guest:** a user who is browsing the platform without being logged in. They can view content and search for goods but have limited access to features such as purchasing or posting items.
- **Admin:** a user with the highest level of access, responsible for managing the entire platform. They can oversee user activities, manage content, handle complaints.
- **Mod:** a user with special privileges to monitor and manage community interactions. Moderators can review and moderate content, handle user reports, enforce platform rules, and support the admin in maintaining a safe and orderly environment.
- **Consumer:** a registered user who buys goods or services on the platform. They can create accounts, search for products, make transactions, leave feedback or report.
- **Supplier:** a registered user who sells goods or services on the platform. They can create posts for their products, manage their listings.

d. Non-Screen Functions

#	Feature	System Function	Description
1	VNPay	VNPay allows users to pay quickly and conveniently by scanning the automatically generated QR code when the customer clicks submit coins order	This function helps users save time when paying without having to use cash
2	Login with Google	The application allows users to log in with their Google account instead of creating a new account or logging in with a separate email and password	This function helps users save time and remember passwords by allowing them to use login information stored on their Google account. This also increases security by using protections and verification from Google
3	Earning points	The application automatically accumulates points for users every time they make a transaction	This function motivates users to continue using the application. Accumulated points can be redeemed for vouchers

4. Entity Relationship Diagram



Entities Description

#	Entity	Description
1	Administrator	An individual with full access to the platform's backend, responsible for managing users, content
2	Moderator	A user with permissions to oversee and regulate platform interactions. Moderators review content, address user reports, enforce rules, and maintain a respectful community environment
3	Category	A classification used to organize goods and services on the platform. Categories help users easily navigate and find specific types of products or services
4	PostService	Services offered to enhance the visibility of user posts, such as boosting, highlighting, or featuring the post. Users can purchase these services to increase their post's exposure
5	Feedback	Comments or reviews provided by users regarding their experience with products, services, or the platform. Feedback helps improve quality and customer satisfaction
6	Report	A formal notification submitted by users to highlight issues or violations on the platform. Reports are reviewed by moderators or administrators for appropriate action
7	Trader	A user who engages in both trading and posting a trading post
8	Seller	A user who lists and sells goods on the platform. Sellers create posts, manage goods posts
9	Buyer	A user who purchases goods on the platform. Buyers search for products, make transactions, and can leave feedback on their purchases

10	Voucher	A promotional tool that offers discounts or special offers to users. Coupons can be earned through points accumulated with each transaction
11	City	A major geographic division within the platform's address system. Cities contain multiple districts and wards
12	District	A subdivision of a city, containing multiple wards. Districts help further pinpoint locations within the broader city area
13	Ward	The smallest administrative unit within a district, representing specific neighborhoods or communities. Wards provide detailed address information
14	SellTransaction	The process and record of a buyer purchasing goods or services from a seller. This includes information of transaction makers and transaction status
15	ExchangeTransaction	The process and record of trading goods or services between users. This includes information of transaction makers and transaction status
16	PostAddress	The location details provided in a user's post, including city, district, and ward, to specify where the goods or services are available
17	ExchangePost	A user-generated post listing items available for trade. Exchange posts specify what items are being offered and what the user is seeking in return
18	SellPost	A user-generated post listing goods or services for sale. Sell posts include product details, pricing, and availability for buyers to consider

II. Functional Requirements

1. Feature list and authorization

#	Guest	Admin	Mod	Consumer	Supplier	System
Log in with Google	X					
Log in with username/password	X					
Log out		X	X	X	X	
Search goods	X	X	X	X	X	
View goods	X	X	X	X	X	
View contact information		X	X	X	X	
Manage posts					X	
Make transactions				X	X	
View transactions				X	X	
Input post id				X		
Feedback				X		
Report				X	X	
Sort goods	X	X	X	X	X	
Filter goods	X	X	X	X	X	
Buy coins by VNPay				X	X	
Authorization						X
Manage personal's information		X	X	X	X	
Moderate posts			X			
Moderate reports		X	X			
Manage user account		X				

View statistics		X				
Get vouchers				X	X	

2. Functional Requirement Table

a. Log in with Google

ID and Name:	UC01 - Log in with Google		
Created By:	Gia Bao	Date Created:	30/06/2024
Primary Actor:	Guest	Secondary Actors:	FUSwap System
Description:	This use case describes the process of logging in to the FUSwap platform using a Google account		
Trigger:	A user selects the "Log in with Google" option		
Preconditions:	The user must have a Google account		
Postconditions:	The user is logged in and redirected to their dashboard		
Normal Flow:	1. The user clicks on the "Log in with Google" button 2. The system redirects the user to the Google login page 3. The user enters their Google credentials and consents to data sharing 4. Google authenticates the user and redirects them back to the FUSwap platform 5. The system logs the user in and displays their dashboard		
Priority:	High		
Business Rules:	The user's Google account must be FPT Student email (@fpt.edu.vn)		

b. Log in with username/password

ID and Name:	UC02 - Log in with username/password		
Created By:	Gia Bao	Date Created:	30/06/2024
Primary Actor:	Guest	Secondary Actors:	FUSwap System
Description:	This use case describes the process of logging in to the FUSwap platform using a username and password		
Trigger:	A user attempts to log in with their username and password		
Preconditions:	The user must have an existing account on the platform		
Postconditions:	The user is successfully logged in and redirected to their dashboard		
Normal Flow:	1. The user navigates to the login page 2. The user enters their username and password		

	3. The system verifies the credentials 4. If the credentials are valid, the user is logged in and redirected to the dashboard 5. If the credentials are invalid, the system displays an error message
Priority:	High
Business Rules:	Username/password must meet requirements (e.g., minimum length, complexity)

c. Log out

ID and Name:	UC03 – Log out		
Created By:	Gia Bao	Date Created:	30/06/2024
Primary Actor:	Users (Admin, Mod, Consumer, Supplier)	Secondary Actors:	FUSwap System
Description:	This use case describes the process of logging out of the FUSwap platform		
Trigger:	A user selects the log out option		
Preconditions:	The user must be logged in		
Postconditions:	The user is logged out and redirected to the homepage		
Normal Flow:	1. The user clicks the "Log out" button 2. The system terminates the user's session 3. The system redirects the user to the homepage		
Priority:	High		
Business Rules:	User sessions must be securely terminated to prevent unauthorized access		

d. Search goods

ID and Name:	UC04 – Search goods		
Created By:	Gia Bao	Date Created:	30/06/2024
Primary Actor:	All users	Secondary Actors:	FUSwap System
Description:	This use case describes the process of searching for goods on the FUSwap platform		
Trigger:	A user initiates a search for goods		
Preconditions:	The user must be on the FUSwap platform		
Postconditions:	The user is presented with a list of goods that match the search criteria		
Normal Flow:	1. The user navigates to the search bar 2. The user enters search criteria (keywords, categories, etc.)		

	3. The user submits the search query 4. The system retrieves and displays a list of goods matching the search criteria
Priority:	Medium
Business Rules:	Search results should be relevant and sorted by relevance Users can filter and sort search results

e. View goods

ID and Name:	UC05 – View goods		
Created By:	Gia Bao	Date Created:	30/06/2024
Primary Actor:	All users	Secondary Actors:	FUSwap System
Description:	This use case describes the process of viewing goods on the FUSwap platform		
Trigger:	A user go to the homepage or search a goods list		
Preconditions:	The user must be on the FUSwap platform		
Postconditions:	The user views general information about each goods		
Normal Flow:	1. The user search and view a goods list 2. The system displays general information about goods (title, price, images, etc.) 3. The user submits the search query 4. The system retrieves and displays a list of goods matching the search criteria		
Priority:	Medium		
Business Rules:	General information must be accurate and up-to-date		

f. View contact information

ID and Name:	UC06 – View contact information		
Created By:	Gia Bao	Date Created:	30/06/2024
Primary Actor:	Users (Admin, Mod, Consumer, Supplier)	Secondary Actors:	FUSwap System
Description:	This use case describes the process of viewing contact information on the FUSwap platform		
Trigger:	A user selects to view the contact information of another users		
Preconditions:	The user must have permission to view contact information		
Postconditions:	The user views the contact information of the selected user		

Normal Flow:	1. The user selects to view contact information 2. The system retrieves and displays the contact information
Priority:	Medium
Business Rules:	Contact information must be kept secure and only displayed to authorized users

g. Manage posts

ID and Name:	UC07 – Manage posts		
Created By:	Gia Bao	Date Created:	30/06/2024
Primary Actor:	Supplier	Secondary Actors:	FUSwap System and Moderator
Description:	This use case describes the process of managing posts for goods on the FUSwap platform		
Trigger:	A supplier creates, updates, or deletes a post for a good		
Preconditions:	The user must be logged in as a supplier		
Postconditions:	The post is successfully created, updated, or deleted		
Normal Flow:	1. The supplier navigates to the manage posts section 2. The supplier chooses to create, update, or delete a post <i>For creating a post:</i> 3. The supplier enters details about the good (title, description, price, images, etc.) 4. The supplier submits the post and waiting for moderate 5. The system saves the post and displays it in the listings <i>For updating a post:</i> 6. The supplier selects an existing post to update 7. The supplier modifies the details of the post 8. The supplier submits the changes 9. The system updates the post and displays the changes <i>For deleting a post:</i> 10. The supplier selects an existing post to delete 11. The supplier confirms the deletion 12. The system deletes the post from the listings		
Priority:	High		
Business Rules:	Posts must meet content guidelines and not contain prohibited goods		

h. Make transactions

ID and Name:	UC08 – Make transactions		
Created By:	Hai Anh	Date Created:	30/06/2024
Primary Actor:	Consumer	Secondary Actors:	Supplier
Description:	This use case describes the process of making transactions on the FUSwap platform		
Trigger:	A user decides to purchase a good		
Preconditions:	1. The user must be logged in as a Consumer 2. The user must have selected a good to purchase		
Postconditions:	The transaction is successfully completed, and the good or service is marked as sold		
Normal Flow:	1. The user find the contact of supplier 2. The user conducts transaction		
Priority:	High		
Business Rules:	Transaction records must be accurate and up-to-date		

i. View transactions

ID and Name:	UC09 – View transactions		
Created By:	Hai Anh	Date Created:	30/06/2024
Primary Actor:	Users (Consumer, Supplier)	Secondary Actors:	FUSwap System
Description:	This use case describes the process of viewing transaction history on the FUSwap platform		
Trigger:	A user chooses to view their past transactions		
Preconditions:	The user must be logged in		
Postconditions:	The user views a list of past transactions with details		
Normal Flow:	1. The user navigates to the transaction history section 2. The system retrieves and displays a list of past transactions		
Priority:	Medium		
Business Rules:	Transaction data must be kept secure and accessible only to authorized users		

j. Input post id

ID and Name:	UC10 – Input post id		
Created By:	Hai Anh	Date Created:	30/06/2024
Primary Actor:	Consumer	Secondary Actors:	FUSwap System
Description:	This use case describes the process of inputting a post ID for opening feedback, report function and earn points		
Trigger:	A user needs to input a post ID		
Preconditions:	The user must have the necessary permissions		
Postconditions:	The specified action is completed based on the input post ID		
Normal Flow:	1. The user navigates to the post ID input section 2. The user enters the post ID 3. The system retrieves the post associated with the ID		
Priority:	High		
Business Rules:	The post id must be 5 characters long		

k. Feedback

ID and Name:	UC11 – Feedback		
Created By:	Hai Anh	Date Created:	30/06/2024
Primary Actor:	Consumer	Secondary Actors:	FUSwap System
Description:	This use case describes the process of providing feedback on the FUSwap platform		
Trigger:	A user decides to provide feedback		
Preconditions:	The user must be logged in		
Postconditions:	The feedback is successfully submitted and recorded		
Normal Flow:	1. The user navigates to the feedback section 2. The user enters their feedback in the provided form 3. The user submits the feedback 4. The system records the feedback and notifies the relevant parties		
Priority:	High		
Business Rules:	Feedback must be constructive and adhere to community guidelines		

I. Report

ID and Name:	UC12 – Report		
Created By:	Hai Anh	Date Created:	30/06/2024
Primary Actor:	Consumer, Supplier	Secondary Actors:	FUSwap System, Admin and Mod
Description:	This use case describes the process of reporting an issue on the FUSwap platform or issue about an user, post		
Trigger:	A user encounters an issue or violation and decides to report it		
Preconditions:	The user must be logged in		
Postconditions:	The report is successfully submitted and investigated		
Normal Flow:	1. The user navigates to the report section 2. The user fills out the report form with details of the issue 3. The user submits the report 4. The system records the report and notifies the moderators for investigation		
Priority:	High		
Business Rules:	Reports must be genuine and include sufficient details for investigation		

m. Sort goods

ID and Name:	UC13 – Sort goods		
Created By:	Nguyen Anh	Date Created:	30/06/2024
Primary Actor:	All users	Secondary Actors:	FUSwap System
Description:	This use case describes the process of sorting goods on the FUSwap platform		
Trigger:	A user wants to organize the search results or listings by specific criteria		
Preconditions:	The user must be on the FUSwap platform		
Postconditions:	The goods are sorted according to the selected criteria		
Normal Flow:	1. The user selects the sort option from the search results or listings 2. The user chooses the criteria for sorting (e.g., price, date) 3. The system sorts the goods based on the selected criteria and displays the updated list		
Priority:	Medium		
Business Rules:	Sorting options must be relevant and useful to the user		

n. Filter goods

ID and Name:	UC14 – Filter goods		
Created By:	Nguyen Anh	Date Created:	30/06/2024
Primary Actor:	All users	Secondary Actors:	FUSwap System
Description:	This use case describes the process of filtering goods on the FUSwap platform		
Trigger:	A user wants to narrow down the search results or listings based on specific criteria		
Preconditions:	The user must be on the FUSwap platform		
Postconditions:	The goods are filtered according to the selected criteria		
Normal Flow:	1. The user selects the filter option from the search results or listings 2. The user chooses the criteria for filtering (e.g., category, price range, location) 3. The system filters the goods based on the selected criteria and displays the updated list		
Priority:	Medium		
Business Rules:	Filtering options must be relevant and useful to the user		

o. Buy coins by VNPay

ID and Name:	UC15 – Buy coins by VNPay		
Created By:	Nguyen Anh	Date Created:	30/06/2024
Primary Actor:	Consumer and Supplier	Secondary Actors:	FUSwap System
Description:	This use case describes the process of buying virtual coins on the FUSwap platform using VNPay		
Trigger:	A user decides to purchase virtual coins		
Preconditions:	1. The user must be logged in 2. The user must have a VNPay account		
Postconditions:	The coins are successfully purchased and added to the user's account		
Normal Flow:	1. The user navigates to the buy coins section 2. The user selects the amount of coins to purchase 3. The user chooses VNPay as the payment method 4. The system redirects the user to the VNPay payment gateway 5. The user completes the payment on VNPay 6. The system verifies the payment and credits the coins to the user's account		

Priority:	High
Business Rules:	Payments must be secure and verified by VNPay

p. Authorization

ID and Name:	UC16 – Authorization		
Created By:	Nguyen Anh	Date Created:	30/06/2024
Primary Actor:		Secondary Actors:	FUSwap System
Description:	This use case describes the process of managing user permissions and roles on the FUSwap platform		
Trigger:	System decides to update user permissions or roles		
Preconditions:	The user must be logged in		
Postconditions:	The user permissions or roles are successfully updated		
Normal Flow:	1. The user logged in 2. The system updates the user's permissions or roles		
Priority:	High		
Business Rules:	No one can modify user permissions or roles		

q. Manage personal's information

ID and Name:	UC17 – Manage personal's information		
Created By:	Nguyen Anh	Date Created:	30/06/2024
Primary Actor:	Users (Admin, Mod, Consumer, Supplier)	Secondary Actors:	FUSwap System
Description:	This use case describes the process of managing personal information on the FUSwap platform		
Trigger:	A user decides to update their personal information		
Preconditions:	The user must be logged in		
Postconditions:	The personal information is successfully updated		
Normal Flow:	1. The user navigates to the personal information section 2. The user updates their personal information (e.g., name, address) 3. The user saves the changes 4. The system updates the personal information		
Priority:	Medium		

Business Rules:	Personal information must be kept secure and accurate
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r. Moderate posts

ID and Name:	UC18 – Moderate posts		
Created By:	Nhat Phi	Date Created:	30/06/2024
Primary Actor:	Mod	Secondary Actors:	FUSwap System
Description:	This use case describes the process of moderating posts on the FUSwap platform		
Trigger:	A moderator reviews posts for compliance with platform guidelines		
Preconditions:	The user must be logged in as a moderator		
Postconditions:	The post is either approved or rejected		
Normal Flow:	1. The moderator navigates to the post moderation section 2. The moderator reviews the post content 3. The moderator approves or rejects the post 4. The system updates the post status		
Priority:	High		
Business Rules:	Posts must comply with platform guidelines		

s. Moderatore reports

ID and Name:	UC19 – Moderate reports		
Created By:	Nhat Phi	Date Created:	30/06/2024
Primary Actor:	Mod	Secondary Actors:	FUSwap System
Description:	This use case describes the process of moderating reports on the FUSwap platform		
Trigger:	A moderator reviews user reports for compliance with platform guidelines		
Preconditions:	The user must be logged in as a moderator		
Postconditions:	The report is either resolved or escalated for further action		
Normal Flow:	1. The moderator navigates to the report moderation section 2. The moderator reviews the report details 3. The moderator resolves the report or escalates it for further action 4. The system updates the report status		
Priority:	High		

Business Rules:	Reports must be handled promptly and fairly
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t. Manage user accounts

ID and Name:	UC20 – Manage user accounts		
Created By:	Nhat Phi	Date Created:	30/06/2024
Primary Actor:	Admin	Secondary Actors:	FUSwap System
Description:	This use case describes the process of managing user accounts on the FUSwap platform		
Trigger:	An admin decides to create an account or update user account details		
Preconditions:	The user must be logged in as an admin		
Postconditions:	The user account details are successfully updated or created		
Normal Flow:	1. The admin navigates to the user account management section <i>For update an account:</i> 2. The admin selects a user to update 3. The admin modifies the user account details 4. The admin saves the changes 5. The system updates the user account details <i>For create an account:</i> 6. The admin input information of the mod account 7. The admin click submit 8. The system save the account		
Priority:	High		
Business Rules:	Only admins can modify user account details and create accounts		

u. View statistics

ID and Name:	UC21 – View statistics		
Created By:	Nhat Phi	Date Created:	30/06/2024
Primary Actor:	Admin	Secondary Actors:	FUSwap System
Description:	This use case describes the process of viewing platform statistics on the FUSwap platform		
Trigger:	An admin decides to view platform statistics		
Preconditions:	The user must be logged in as an admin		

Postconditions:	The platform statistics are successfully displayed
Normal Flow:	1. The admin navigates to the statistics section 2. The system retrieves and displays the platform statistics
Priority:	Medium
Business Rules:	Statistics must be accurate and up-to-date

v. Get vouchers

ID and Name:	UC21 – View statistics		
Created By:	Nhat Phi	Date Created:	30/06/2024
Primary Actor:	Consumer, Supplier	Secondary Actors:	FUSwap System
Description:	This use case describes the process of obtaining vouchers on the FUSwap platform		
Trigger:	A user decides to get a voucher		
Preconditions:	1. The user must be logged in 2. The user has enough points		
Postconditions:	The voucher is successfully obtained and added to the user's account		
Normal Flow:	1. The user navigates to the voucher section 2. The user selects a voucher to obtain 3. The system adds the voucher to the user's account		
Priority:	Medium		
Business Rules:	The users must have enough points		