



# **Real Estate Auction System Software Requirement Specification**

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Effective Date	Changed Items	A* M, D	Change Description	New Version
15/01/2024	Use Case list	a	Add use case list	
15/01/2024	Use Case diagram	a	Add use case diagram	1.0
16/01/2024	Use Case detail	a	Add use case detail	
23/01/2024	Introduction	a	Add introduction section	

## **SIGNATURE PAGE**

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## 1 INTRODUCTION

### 1.1 Purpose

This document represents the Software Requirements Specification (SRS) of **REAS** or known as **Real Estate Auction System**. Its purpose is to describe the scope, both the functional and non-functional software requirements, as well as the design constraints of the whole logic sub-component. Furthermore, this document shows how the system's interfaces are designed in detail.

### 1.2 Scope

**REAS** is a website that helps customers looking for real estate with many good choices and auctioneers who want to sell their real estate quickly. **REAS** also creates connections between members and auctioneers, stores auctions information and creates a reliable transaction intermediary agent.

More specifically, Members can look for the kind of real estate they want by providing some keywords, or categories. After that, they can join in the auction process, and if they win the auction, they can contact the host for payment. Auctioneers can also push their real estate to the website, to approach more and more customers. We have a use-case model that states the correlation relationship between the user and the system, functional and non-functional requirements, an ERD and a relational schema.

### 1.3 Definitions, Acronyms, and Abbreviations

Acronym	Definition	Vietnamese
Guest	A person using the application without signing in.	Khách
Member	A person who signed in as a Member, the purpose is to buy real estate by participating in auctions and Members can also be an auctioneer to post real estate and host an auction to sell them.	Khách hàng
Staff	A person who signed in as a Staff, the purpose is to manage the website, the members, the auctions, and gather	Nhân viên

	information to make the dashboard.	
Admin	A person who signed in as an Admin, the purpose is to manage Staffs and Members, Admin can also view the dashboard, create tasks, and assign them to the Staff to ensure the smooth operation of the website.	Quản trị viên

## 1.4 References

Refer Template

VPA

<https://dgbs.vpa.com.vn/>

## 1.5 Overview

*The next chapter, the Overall Description, of this document provides an overview of the product's functionality. It describes the informal requirements and is used to establish the context for the specification in the next chapter.*

*The third chapter, the Functional Requirements section, of this document is written to describe the functionality of the product in technical terms including its use-cases and details.*

*The fourth chapter, the Non-functional Requirements section, of this document is written to describe in detail the non-functionality of the product, defining how a system should look like.*

*The fifth chapter, the Database section, of this document is written to describe in detail the database (specifically, ERD and Relation Schema) of the product, defining how data are stored and organised.*

*The last chapter, is the Supporting Information section, of this document provides the supporting information that makes the SRS easier to use. It includes:*

- *Table of contents*
- *Index*
- *Appendices and be considered part of the requirements or not.*

## **2 OVERALL DESCRIPTION**

### **2.1 Product Overview**

#### **2.1.1 Product Function**

- Post Real Estate Auction: Sellers can create and manage auction listings for their properties, including details such as property description, images, starting bid prices, and auction duration.
- Participate in Auctions: Buyers can browse through available auctions, register to participate, place bids, and make payments for successful purchases.
- Manage Staff Accounts: Administrators can create, modify, and deactivate staff accounts, assigning appropriate roles and permissions for system management.
- Monitor Auction Activities: Staff members can monitor auction activities, manage deposits, enforce auction rules, and provide support to users as needed.

#### **2.1.2 User Characteristics**

- Sellers: Typically real estate agents or property owners looking to sell their properties through the auction platform. They require tools to effectively market their properties and manage auction listings.
- Buyers: Individuals or organizations interested in purchasing real estate properties through auctions. They seek access to a wide range of property listings and a smooth bidding process.
- Staff Members: System administrators and support staff responsible for managing the auction platform, ensuring compliance with rules and regulations, and providing assistance to users.

#### **2.1.3 Constraints**

- Legal and Regulatory Compliance: The system must comply with relevant laws and regulations governing real estate transactions, online auctions, and data protection.
- Scalability: The system should be designed to handle a large number of concurrent users and a growing database of properties and auctions.



- Security: Robust security measures must be implemented to protect user data, prevent unauthorized access, and secure financial transactions.

#### **2.1.4 Assumptions and Dependencies**

- Internet Connectivity: Users must have access to a stable internet connection to interact with the system effectively.
- Payment Gateway Integration: The system relies on third-party payment gateways to process financial transactions securely.
- User Training: Users may require training and guidance to understand how to use the system effectively, especially for staff members responsible for system administration.

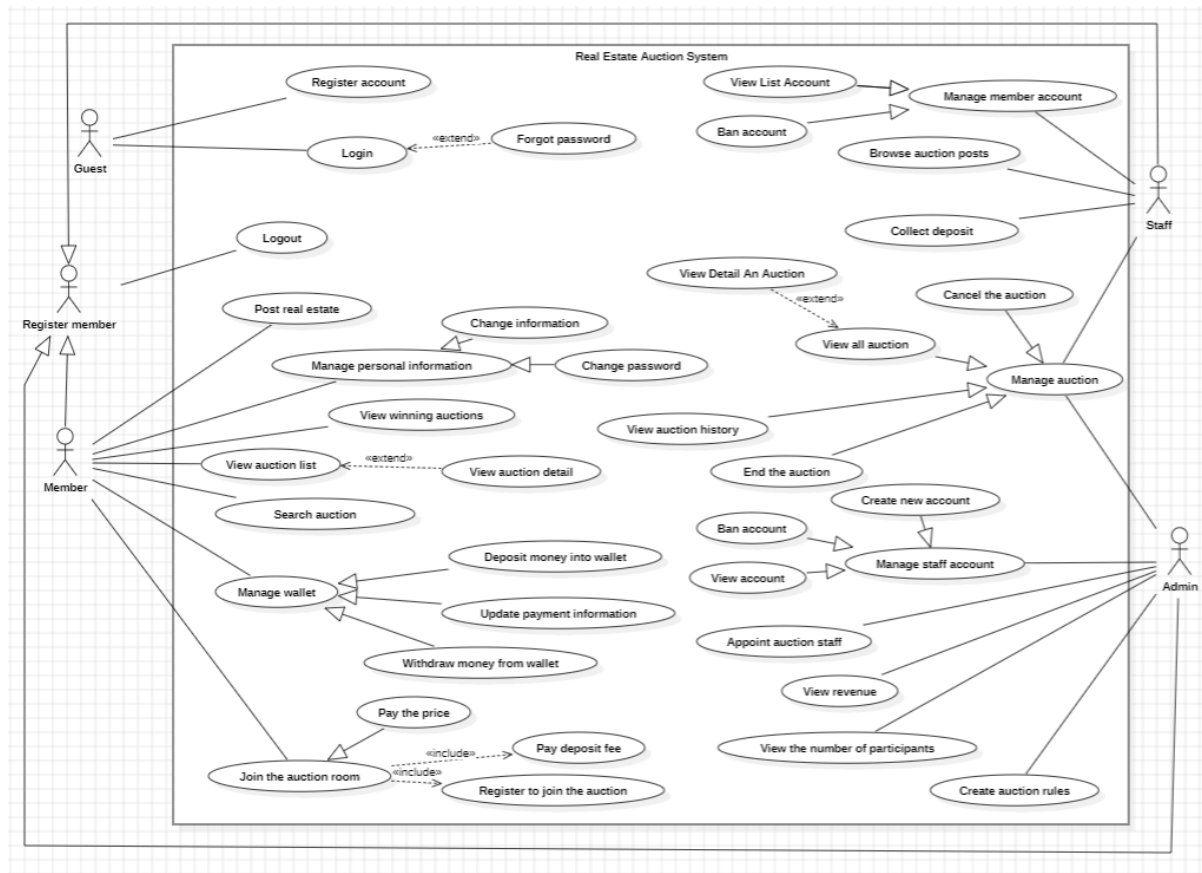
## **2.2 Business Rules**

**The Real Estate Auction System operates based on the following business rules:**

- Fair Competition: All auctions must be conducted fairly and transparently, with equal opportunities for all participants to bid on properties.
- Data Privacy: User data, including personal information and transaction details, must be handled with strict confidentiality and in compliance with applicable privacy laws.
- Customer Support: The system must provide responsive customer support to address user inquiries, resolve disputes, and ensure a positive user experience.
- System Integrity: Measures should be in place to prevent fraud, manipulation, or unauthorized access to the system, ensuring its integrity and reliability.
- Continuous Improvement: The system should undergo regular updates and enhancements to improve functionality, security, and user experience based on feedback and industry best practices.

### 3 FUNCTIONAL REQUIREMENTS

#### 3.1 Use Cases Diagram



#### 3.2 Use Cases List

ID	UseCase	Primary Actor	Secondary Actor
UC-01	Register account	Guest	
UC-02	Login	Member	Admin/Staff
UC-03	Change password	Member	
UC-04	Forgot password	Member	

UC-05	Post real estate auction	Member	
UC-06	Change information	Member	
UC-07	View auction history	Member	
UC-08	View auction list	Member	
UC-09	View auction	Member	
UC-10	Search auction filter by name	Member	
UC-11	Deposit money into wallet	Member	
UC-12	Update payment information	Member	
UC-13	Withdraw money from wallet	Member	
UC-14	Register to join the auction	Member	
UC-15	Pay the price	Member	
UC-16	Pay deposit fee	Member	
UC-17	View list account	Staff	
UC-18	Ban account	Staff	
UC-19	Browse auction posts	Staff	
UC-20	Manage deposit collection	Staff	
UC-21	Cancel the auction	Admin	Staff
UC-22	View overall an auction	Admin	Staff
UC-23	View bidder details	Admin	Staff
UC-24	View auction history	Admin	Staff
UC-25	End the auction	Admin	Staff

UC-26	Create new staff account	Admin	
UC-27	Ban staff account	Admin	
UC-28	View staff account	Admin	
UC-29	Appoint auction staff	Admin	
UC-30	View revenue	Admin	
UC-31	View the number of participants	Admin	
UC-32	Create auction rules	Admin	
UC-33	Logout	Member	Admin/Staff
UC-34	Join the auction room	Member	

### 3.3 Register Account

<b>USE CASE 01 SPECIFICATION</b>			
<b>Use-case No.</b>	UC-01	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	Register account		
<b>Author</b>	Le Dai Quyen		
<b>Date</b>	16/01/2024	<b>Priority</b>	High
<b>Actor:</b> <i>Guest</i> <b>Summary:</b> <i>This feature allows actor to create new account to use all feature in the system</i> <b>Goal:</b>			

*To successfully register a new user account with valid information*

### **Triggers**

*The actors indicate that they want to have an account to do something in the website*

### **Preconditions:**

- User does not have an existing account
- User has access to the registration page

### **Post Conditions:**

- Success: Redirect to home page
- Fail: System shows error message corresponding to error code

### **Main Success Scenario:**

Step	Actor Action	System Response
1	Actor visits the homepage and clicks the "Register" button	System displays the registration form: <ul style="list-style-type: none"> <li>- Full name : text input</li> <li>- Username : text input <b>[Ex1]</b></li> <li>- Phone : number text input, required, length 10 <b>[Ex1]</b></li> <li>- Email : text input <b>[Ex1,2]</b></li> <li>- Citizen identification ID : number text input, required, length 12 <b>[Ex1]</b></li> <li>- Password: text input, min length 8</li> <li>- Re-enter password: text input, min length 8</li> </ul>
2	Actor enters all the information and press the "register" button	If all information is valid, the system creates the new account, and shows the actor a notification that the account has been successfully created, with a "Homepage" button.
3	Actor press the "Homepage" button	System redirect to homepage.

### **Alternative Scenario:**

### **Exceptions:**

No	Cause	System Response
1	The entries already exist in the	System shows error message: "already

	<i>system</i>	<i>exists in the system"</i>
2	<i>Incorrect email format entered</i>	<i>System shows error message:"There must be an @ character in the email"</i>

**Relationships:**  
This use case is related to UC-02

**Business Rules:**

- *Password is not empty and at least 8 characters*
- *Citizen identification cards, email, phone numbers cannot be duplicated*

### 3.4 Login

<b>USE CASE 2 SPECIFICATION</b>			
<b>Use-case No.</b>	UC002	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	Login		
<b>Author</b>	Le Dai Quyen		
<b>Date</b>	18/01/2024	<b>Priority</b>	High
<p><b>Actor:</b> <i>Member, Admin, Staff</i></p> <p><b>Summary:</b> <i>The feature allows user to use the website's functions, but they need authentication</i></p> <p><b>Goal:</b> <i>The purpose is to log in to become a member to use the website</i></p> <p><b>Triggers</b> <i>The actor wants to sign in into the website, can use features according to their role</i></p> <p><b>Preconditions:</b> <i>Guest already have system account or Google account</i></p> <p><b>Post Conditions:</b></p> <ul style="list-style-type: none"> <li>- <i>Success: Redirect to home page</i></li> </ul>			

- *Fail: The system shows error message corresponding to error code*

**Main Success Scenario:**

Step	Actor Action	System Response
1	In main page, actor clicks on "Login" button	System displays the login form -Username : text input -Password : text input with 2 buttons : "Login" and "Login with Google" <b>[Ex 1,2]</b>
2	In sign in page, actor inputs username and passwords and press the "login" button	The system confirms the actor's account and password, the system redirect to home page

**Alternative Scenario:**

Step	Actor Action	System Response
1	In main page, Actor clicks on "Login" button	System displays the login form -Username : text input -Password : text input with 2 buttons : "Login" and "Login with Google"
2	Actor clicks on "Login with Google"	System will pop up the Google login window <b>[Ex 3]</b>
3	The Actor inputs a valid Google account to be verified by Google system	System returns the login successful status and redirect to home page

**Exceptions:**

No	Cause	System Response
1	<i>Actor inputs wrong username or password</i>	<i>System informs error message to remind user inputs correct username or password</i>
2	<i>Actor doesn't have system account</i>	<i>System inform that there are no account, remind user to register new account</i>
3	<i>Actor doesn't have Google account</i>	<i>System inform that "can not login with Google", remind to try again</i>

**Relationships:****N/A****Business Rules:**

- Password is not empty and at least 8 characters
- If a user provides incorrect username & password 5 times, they will have to wait at least 5 mins until their next try.

**3.5 Change password**

USE CASE 3 SPECIFICATION			
<b>Use-case No.</b>	UC-03	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	Change password		
<b>Author</b>	Le Dai Quyen		
<b>Date</b>	20/01/2024	<b>Priorit y</b>	Normal
<p><b>Actor:</b> Member</p> <p><b>Summary:</b> This feature allows actor to change the password if actor needs change</p> <p><b>Goal:</b> After change, new password will be created and user will login to the system with new password</p> <p><b>Triggers</b> The actor wants to change new password</p> <p><b>Preconditions:</b></p> <ul style="list-style-type: none"> <li>- The actor must login into the website</li> <li>- The actor clicks "change password" button</li> </ul> <p><b>Post Conditions:</b></p> <ul style="list-style-type: none"> <li>- Success: the system redirect to login page</li> </ul>			



- *Fail: System shows error message "can not change the password"*

**Main Success Scenario:**

Step	Actor Action	System Response
1	Actor click "Change password" button	The system displays the change password form: <ul style="list-style-type: none"> <li>- Old password: text input, required <b>[EX 1]</b></li> <li>- New password: text input min length 8, required <b>[EX 1]</b></li> <li>- Re-new password: text input, required <b>[EX 1]</b></li> </ul>
2	Actor must inputs all the informations and click "Change password"	The system will check all the informations, if valid the system redirect to home page

**Alternative Scenario:****N/A****Exceptions:**

No	Cause	System Response
1	- The input parameter does not match the required pattern. <b>[EX 1]</b>	System inform an notification for actor to fill in the information again

**Relationships:****N/A****Business Rules:**

- *Password need to contain at least one upper case character and one special character.*

**3.6 Forgot password**

<b>Use-case No.</b>	UC- 04	<b>Use-case Version</b>	1.0
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Use-case Name	Forgot password														
Author	Le Dai Quyen														
Date	22/01/2024	Priority	Normal												
<p><b>Actor:</b></p> <p><i>Guest</i></p> <p><b>Summary:</b></p> <p><i>This feature allows actor to create a new password to login</i></p> <p><b>Goal:</b></p> <p><i>Actor will create a new password to login into the system</i></p> <p><b>Triggers</b></p> <p><i>The actor wants to get new password when they forgot it</i></p> <p><b>Preconditions:</b></p> <ul style="list-style-type: none"><li>- Actor must inputs the gmail they have already sign up with the system</li><li>- The OTP will be send to the gmail</li><li>- Actor inputs correct OTP to get new password</li></ul> <p><b>Post Conditions:</b></p> <ul style="list-style-type: none"><li>- Success: system redirect to login page</li><li>- Fail: system redirect to login page</li></ul> <p><b>Main Success Scenario:</b></p> <table><tr><th>Step</th><th>Actor Action</th><th>System Response</th></tr><tr><td>1</td><td><i>In the login form, actor click the "Forgot password"</i></td><td><i>System will display a form:</i><ul style="list-style-type: none"><li>- Email : text input, required</li></ul><b>[EX 1]</b></td></tr><tr><td>2</td><td><i>Actor enters gmail that has registered with the system and click "Get otp" button</i></td><td><i>System will check the gmail, if correct, system will send a new OTP for user, system will display a form :</i><ul style="list-style-type: none"><li>- OTP: text number input</li></ul></td></tr><tr><td>3</td><td><i>Actor get OTP in gmail and inputs OTP and click "submit" button</i></td><td><i>System check the otp [EX 2] and display a form for user create a new password:</i><ul style="list-style-type: none"><li>- New password: text input</li><li>- Re- new password:</li></ul></td></tr></table>				Step	Actor Action	System Response	1	<i>In the login form, actor click the "Forgot password"</i>	<i>System will display a form:</i> <ul style="list-style-type: none"><li>- Email : text input, required</li></ul> <b>[EX 1]</b>	2	<i>Actor enters gmail that has registered with the system and click "Get otp" button</i>	<i>System will check the gmail, if correct, system will send a new OTP for user, system will display a form :</i> <ul style="list-style-type: none"><li>- OTP: text number input</li></ul>	3	<i>Actor get OTP in gmail and inputs OTP and click "submit" button</i>	<i>System check the otp [EX 2] and display a form for user create a new password:</i> <ul style="list-style-type: none"><li>- New password: text input</li><li>- Re- new password:</li></ul>
Step	Actor Action	System Response													
1	<i>In the login form, actor click the "Forgot password"</i>	<i>System will display a form:</i> <ul style="list-style-type: none"><li>- Email : text input, required</li></ul> <b>[EX 1]</b>													
2	<i>Actor enters gmail that has registered with the system and click "Get otp" button</i>	<i>System will check the gmail, if correct, system will send a new OTP for user, system will display a form :</i> <ul style="list-style-type: none"><li>- OTP: text number input</li></ul>													
3	<i>Actor get OTP in gmail and inputs OTP and click "submit" button</i>	<i>System check the otp [EX 2] and display a form for user create a new password:</i> <ul style="list-style-type: none"><li>- New password: text input</li><li>- Re- new password:</li></ul>													

		<i>text input</i>
4	<i>Actor enters new password and re-enters new password and click "Create new password" button</i>	<i>System will check [EX 3] and redirect actor to login page</i>

**Alternative Scenario:**  
**N/A**

**Exceptions:**

No	Cause	System Response
1	<b>[Ex 1]</b> <i>Actor enters gmail which does not match in the system</i>	<i>System inform an notification for user to fill in the information again</i>
2	<b>[Ex 2]</b> <i>Actor enters wrong OTP</i>	<i>System inform incorrect OTP, requiring re-entering or changing a new OTP</i>
3	<b>[Ex 3]</b> <i>Actor enters re-new password that does not match the new password</i>	<i>System inform an notification for user to fill in the re-new password again</i>

**Relationships:**  
*Related to use case <Login>*

**Business Rules:**

- *The system provides OTP to users*
- *The actor enters the correct gmail and OTP to create a new password*
- *The actor must enter a new password in the correct format*

### 3.7 Post real estate auction

#### USE CASE 5 SPECIFICATION

Use-case No.	UC-05	Use-case Version	<1.0>
Use-case Name	Post real estate auction		
Author	Le Dai Quyen		
Date	28/01/2024	Priority	High
<b>Actor:</b> <i>Member</i>			
<b>Summary:</b> <i>This feature allows actor to post their real estate</i>			
<b>Goal:</b> <i>Actor posts auction information and and everyone can participate in property auctions</i>			
<b>Triggers</b> <i>The actor wants to post a real estate to be auctioned</i>			
<b>Preconditions:</b> <i>N/A</i>			
<b>Post Conditions:</b> <ul style="list-style-type: none"><li>- <i>Success:The post will be forwarded to staff for approval</i></li><li>- <i>Fail : the system redirect to home page</i></li></ul>			
<b>Main Success Scenario:</b>			
Step	Actor Action	System Response	
1	Actor clicks on the "post news" button	System will display a form for user to post real estate: <ul style="list-style-type: none"><li>- Name :text input</li><li>- Address :text input</li><li>- Area: text number input <b>[Ex 1]</b></li><li>- Pictures <b>[Ex 2]</b></li><li>- Start time (Auction start time ) <b>[Ex 3]</b></li><li>- Starting price</li><li>- Description :text input</li></ul>	
2	Actor inputs all the informations and click "submit" button	The system will check all the informations, if all information is valid, a notification will be displayed "waiting for staff approval" with button "Home page"	

3	Actor clicks button "home page"	System redirect user to home page
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**Alternative Scenario:**  
N/A

**Exceptions:**

No	Cause	System Response
1	<b>[Ex 1]</b> If the user enters the wrong area information, it is not a number but a letter	The system informs you that you need to enter appropriate data (just numbers).
2	<b>[Ex 2]</b> If the user uploads a file that is not an image format, it can be text or video	The system notifies you that you need to upload a suitable image file
3	<b>[Ex 3]</b> The user chooses a date that is too far away from the present time (6 months or more away)	The system informs you that you need to choose a closer auction date

**Relationships:**  
N/A

**Business Rules:**

- Area is calculated as length x width
- Image files must be in the correct format

### 3.8 Change Information

#### USE CASE 6 SPECIFICATION

Use-case No.	UC - 06	Use-case Version	<1.0>
Use-case Name	Change Information		
Author	Le Dai Quyen		
Date	30/01/2024	Priority	Normal
<b>Actor:</b> <i>User</i>			
<b>Summary:</b> <i>This feature allows actor to change new information and, if valid, will update the information</i>			
<b>Goal:</b> <i>After change, users will be able to use the new personal information</i>			
<b>Triggers</b> <i>The actor wants to change some personal information</i>			
<b>Preconditions:</b> <i>The user needs to be logged into the system</i>			
<b>Post Conditions:</b> <ul style="list-style-type: none"><li>- <i>Success: the system will update new information and redirect to home page</i></li><li>- <i>Fails: the system will ask if the user wants to update the information again, if not redirect to home page</i></li></ul>			
<b>Main Success Scenario:</b>			
Step	Actor Action	System Response	
1	<i>The user clicks the "change info" button in the user menu bar</i>	<i>The system will display a form for the user to change include:</i> <ul style="list-style-type: none"><li>- <i>Phone: text number input [Ex 1]</i></li><li>- <i>Email: text input [Ex 2]</i></li></ul>	
2	<i>The user sees which cell needs to be changed enters new information and click the "change" button.</i>	<i>The system will check the validity of the new information. If valid, it will print a "successful change" message and redirect to home page</i>	

**Alternative Scenario:****N/A****Exceptions:**

No	Cause	System Response
1	<b>[Ex 1]</b> <i>User changed wrong phone information: not all numbers</i>	<i>The system reports that the phone is in the wrong format, requiring the user to enter all digits</i>
2	<b>[Ex 2]</b> <i>User changed incorrect email information: invalid email</i>	<i>The system reports an incorrect email format, requiring the user to enter the correct email format</i>

**Relationships:****N/A****Business Rules:**

- The name must be all letters, not including special characters
- Phone must be all digits, only 10 digits
- Email must be in @gmail.com format

**3.9 View winning auctions**

USE CASE-7 SPECIFICATION			
<b>Use-case No.</b>	UC-07	<b>Use-case Version</b>	<1.0>
<b>Use-case Name</b>	View winning auctions		
<b>Author</b>	Le Dai Quyen		
<b>Date</b>	10/02/2024	<b>Priorit y</b>	Normal

**Actor:***User***Summary:***This feature allows actor to view a list of successful auctions***Goal:***This function allows users to review the auctions they have won***Triggers***The actor wants to view their own list of winning auctions***Preconditions:**

- *The user can log in to the system*
- *The user participates in the auction and is recorded as the winner*

**Post Conditions:**

- *Success: display a list*
- *Fail: give the message "you have not won any auctions" and redirect to home page*

**Main Success Scenario:**

Step	Actor Action	System Response
1	<i>Actor clicks on the "auction history" button</i>	<i>The system will check if actor have ever won an auction, <b>[Ex 1]</b> the system will put it on the list and display it for you 1 list includes the following properties: - property name - winning price - winning date</i>
2	<i>Actor click the "see more" button to see detailed auction information</i>	<i>The system will print detailed information including: - Name - Address - Date and time of winning auction - Winning auction price - Deposit amount</i>
3	<i>The actor clicks the "close" button to return to the list</i>	<i>The system returns the list page</i>

**Alternative Scenario:**



**N/A****Exceptions:**

No	Cause	System Response
1	<b>[Ex 1]</b> <i>If the actor has not participated in any auction, click on the button to view auction history</i>	<i>The system will display that "you have not won any auctions, please come back later"</i>

**Relationships:****N/A****Business Rules:**

- The function requires users who win a new auction to be added to the list

### 3.10 View Auction List

<b>USE CASE-8 SPECIFICATION</b>			
<b>Use-case No.8</b>	UC008	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	View Auction List		
<b>Author</b>	Nguyen Thanh Thach		
<b>Date</b>	15/01/2024	<b>Priorit y</b>	Normal
<b>Actor:</b> Member  <b>Summary:</b> This feature allows the actor to Quickly Access and Review All Current Auction Listings to Decide Which ones to Participate in.  <b>Goal:</b>			

The member accesses a comprehensive list of auctions to explore available options.

### **Triggers**

The members want to log in to their account, navigate to the auction list, and view the list of available auctions.

### **Preconditions:**

- The member must be logged into their account.
- The system has active auctions to display.

### **Post Conditions:**

Success: The member successfully views the list of auctions.

Fails: The system prompts the user to retry or redirects them to the home page if they do not wish to retry.

### **Main Success Scenario:**

Step	Actor Action	System Response
1	The member navigates to the "View Auctions" section within the application.	The system presents the list of current auctions. [Ex 1]
2	The member browses through the auction list.	The system displays auction details such as title, date, items, current bids.[Ex 2]
3	The member selects an auction to view more details.	The system provides detailed information about the selected auction. [Ex 3]

### **Alternative Scenario:**

**N/A**

### **Exceptions:**

No	Cause	System Response
1	[Ex1] System fails to load the auction list due to technical issues	The system displays an error message and suggests the member to try again later.
2	[]EX2 If the member selects a filter that results in no matching auctions	The system displays a message indicating no auctions fit the criteria
3	[Ex2] If the system encounters a server error while	The system reports an error and may suggest the member to try again or contact support.

	attempting to display detailed auction information	
<p><b>Relationships:</b></p> <p>N/A</p> <p><b>Business Rules:</b></p> <ul style="list-style-type: none"> <li>- Auction lists must be updated in real-time to reflect the current status of auctions.</li> <li>- Members should have the ability to filter and sort the auction list based on their preferences</li> </ul>		

### 3.11 View Auction Detail

<b>USE CASE-9 SPECIFICATION</b>			
<b>Use-case No.9</b>	UC009	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	View Auction Detail		
<b>Author</b>	Nguyen Thanh Thach		
<b>Date</b>	15/01/2024	<b>Priorit y</b>	Normal
<p><b>Actor:</b></p> <p>Member</p> <p><b>Summary:</b></p> <p>This feature allows Actors to View Ongoing Auctions Within The System.</p> <p><b>Goal:</b></p> <p>Allow members to browse and view details of auctions in progress.</p> <p><b>Triggers</b></p> <p>The Members Wants to Initiate Auction Viewing, Log in and Access Auction Section, or have a new Auction Listing Added.</p> <p><b>Preconditions:</b></p> <ul style="list-style-type: none"> <li>- The member is logged into their account.</li> <li>- The auction section of the system is accessible and operational.</li> </ul>			

**Post Conditions:**

Success: The member can view the details of ongoing auctions.

Fails: The system will prompt the user to retry updating the information. If the user declines, they will be redirected to the home page.

**Main Success Scenario:**

Step	Actor Action	System Response
1	The member navigates to the "Auction" or "Browse Auctions" section within the system.	The system displays a list of ongoing auctions with basic details <b>[Ex1]</b> such as : <ul style="list-style-type: none"> <li>+ auction title</li> <li>+ item description</li> <li>+ current bid</li> <li>+ time remaining.</li> </ul>
2	The member selects a specific auction to view more details.	The system presents detailed information about the : <ul style="list-style-type: none"> <li>+ selected auction</li> <li>+ including item images</li> <li>+ auction end time</li> <li>+ current highest bid</li> <li>+ bidding history</li> <li>+ additional terms or conditions.<b>[Ex 2]</b></li> </ul>
3	The member reviews the auction details.	The system allows the member to scroll through the auction details and images, providing a comprehensive view of the auctioned item and relevant information. <b>[Ex 3]</b>

**Alternative Scenario:**

**N/A**

**Exceptions:**

No	Cause	System Response
1	There is a new auction listing added while the member is browsing auctions. <b>[Ex1]</b>	The system dynamically updates the list of ongoing auctions to include the newly added listing, ensuring that the member has access to the latest auction information.
2	System encounters a problem loading auction images due to network issues. <b>[Ex2]</b>	The system indicates there is a problem loading images and suggests the member try reloading the page.

3	System fails to load detailed auction information due to a server error. <b>[Ex3]</b>	The system notifies the member of the error and may offer options to retry or contact support for assistance
<p><b>Relationships:</b></p> <p>N/A</p> <p><b>Business Rules:</b></p> <ul style="list-style-type: none"> <li>- The system enforces rules to ensure fair access to auction information and prevent unauthorized access to closed or inactive auctions.</li> <li>- Real-time updates are implemented to provide members with accurate and timely information about ongoing auctions</li> </ul>		

### 3.12 Search auction

USE CASE-10 SPECIFICATION			
<b>Use-case No.13</b>	UC010	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	Search auction		
<b>Author</b>	Nguyen Thanh Thach		
<b>Date</b>	15/01/2024	<b>Priority</b>	Normal
<p><b>Actor:</b></p> <p>Member</p> <p><b>Summary:</b></p> <p><i>This feature allows the actor to search for auctions using a filter by name, facilitating easier navigation and selection of specific auctions within the system.</i></p> <p><b>Goal:</b></p> <p><i>The user efficiently locates auctions by applying a name filter, streamlining the browsing process within the system.</i></p> <p><b>Triggers</b></p>			

*The members want to search for auctions by name using specific keywords and filter and view relevant auctions based on the provided search criteria.*

**Preconditions:**

- The user is logged into their account.
- The auction system is accessible and operational.

**Post Conditions:**

- *Success: The system displays relevant auctions matching the search criteria.*
- *Fails: The system notifies the user that no auctions match the provided search criteria, and prompts if the user wants to refine the search criteria. If not, it redirects the user to the main auction interface.*

**Main Success Scenario:**

Step	Actor Action	System Response
1	The member chooses the filter category on the "Search" or "Filter" select box within the auction page.	The system presents the search filter interface, including an option to search by auction name.
2	The member enters the desired keywords or name of the auction they are searching for.	The system dynamically updates the displayed auctions to match the entered keywords or name. <b>[Ex1]</b>

**Alternative Scenario:**

**N/A**

**Exceptions:**

No	Cause	System Response
1	Invalid characters or excessive length in the search query. <b>[Ex 1]</b>	The system prompts the user to enter a valid search query within the specified limits.

**Relationships:**

N/A

**Business Rules:**

- The search function ensures that only relevant auctions matching the specified name filter are displayed to the member.
- Exceptions are handled to provide a smooth and user-friendly experience, even in case of technical difficulties.

**3.13 Deposit money into wallet**

USE CASE-11 SPECIFICATION			
<b>Use-case No.15</b>	UC-11	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	Deposit money into wallet		
<b>Author</b>	Nguyen Thanh Thach		
<b>Date</b>	15/01/2024	<b>Priorit y</b>	Normal
<p><b>Actor:</b> Member</p> <p><b>Summary:</b> This feature allows the actor to add to their digital wallet, enabling them to make transactions within the system.</p> <p><b>Goal:</b> The user deposits money into their wallet, enabling them to make transactions within the system.</p> <p><b>Triggers</b> The members want to manage deposits, logins, balance notifications, and purchases smoothly.</p>			

**Preconditions:**

- The user is logged into their account.
- The digital wallet system is accessible and operational.

**Post Conditions:**

Success: The user's wallet balance is updated to reflect the deposited amount, and the system redirects to the wallet interface or transaction history page.

Fails: The system prompts the user to retry the deposit process or provides an option to update the information again. If the user chooses not to update, the system redirects to the wallet interface or transaction history page.

**Main Success Scenario:**

Step	Actor Action	System Response
1	The member selects the option to "Deposit Money" within their account settings or the wallet section.	The system prompts the member to enter the amount they wish to deposit and select a payment method. <b>[Ex 1]</b>
2	The member enters the desired deposit amount and chooses their preferred payment method (e.g., credit card, bank transfer).	The system processes the deposit transaction using the selected payment method and validates the transaction. <b>[Ex 2]</b>
3	Upon successful validation, the member confirms the deposit transaction.	The system updates the member's wallet balance to include the deposited amount and displays a confirmation message indicating that the deposit was successful. <b>[Ex 3]</b>

**Alternative Scenario:**

**N/A**

**Exceptions:**

No	Cause	System Response
1	Members enter an invalid amount (e.g., negative value or exceeding maximum deposit limit). <b>[Ex 1]</b>	The system notifies the member and requests a valid amount.
2	Payment method selection fails due to system error or unavailability of the	The system informs the member of the issue and suggests selecting an



	chosen. method. <b>[Ex 2]</b>	alternative method.
3	System encounters an error during transaction processing, preventing the deposit from completing. <b>[Ex 3]</b>	The system displays an error message and may offer the option to retry the transaction or contact customer support.

**Relationships:**  
N/A

**Business Rules:**

- Help define the conditions and constraints associated with the "Deposit Money into Wallet" use case, ensuring that the process adheres to regulatory requirements and provides a secure and user-friendly experience. Adjustments can be made based on specific business needs and industry standards.

### 3.14 Update payment information

<b>USE CASE-12 SPECIFICATION</b>			
<b>Use-case No.</b>	UC-12	<b>Use-case Version</b>	<1.0>
<b>Use-case Name</b>	Update payment information		
<b>Author</b>	Nguyen Thanh Thach		
<b>Date</b>	15/01/2024	<b>Priorit y</b>	Normal
<p><b>Actor:</b> Member</p> <p><b>Summary:</b> This feature allows the actor to update their payment information, enabling them to proceed with transactions within the system.</p> <p><b>Goal:</b> The user updates their payment information to ensure accurate and secure transactions within the system.</p> <p><b>Triggers</b></p>			

The members want to update or add payment methods in their account settings quickly and easily by navigating to the "Payment Information" section, entering new details, and confirming the update.

**Preconditions:**

- The user is logged into the system.
- The user has selected a product or service that requires payment.

**Post Conditions:**

Success: The user's payment information is successfully updated, and the system redirects to the wallet interface or transaction history page.

Fails: The system prompts the user to retry the update process or provides an option to cancel. If the user chooses not to update, the system redirects to the wallet interface or transaction history page.

**Main Success Scenario:**

Step	Actor Action	System Response
1	The member navigates to the "Payment Information" section within their account settings.	The system displays the current payment methods and provides options to update existing information or add a new payment method. <b>[Ex 1]</b>
2	The member selects to update an existing payment method or adds a new one.	The system presents a form requesting necessary payment details such as: + card number + expiration date + CVV + billing address for a credit card + login credentials for e-wallets. <b>[Ex 2]</b>
3	The member enters the new or updated payment details and confirms the update.	+ The system validates the entered payment details + The system updates the member's payment information + The system displays a confirmation message indicating the successful update. <b>[Ex 3]</b>

**Alternative Scenario:**

**N/A**

**Exceptions:**

No	Cause	System Response
1	Members try to add a payment method that is not supported by the system. <b>[Ex 1]</b>	The system informs the member about the supported payment methods.
2	System encounters an error validating the new payment information (e.g., due to external payment service downtime). <b>[Ex 2]</b>	The system notifies the member of the error and suggests trying again later.
3	Members update payment information but the system fails to save changes due to an internal error. <b>[Ex 3]</b>	The system displays an error message and may offer the member the option to retry or contact support for assistance.

**Relationships:**

**N/A**

**Business Rules:**

Ensure that valid and complete payment information is clicked to update the payment details.

Payment information needs to be transmitted and stored securely and in compliance with security standards.

### 3.15 Withdraw money from wallet

<b>USE CASE 13 SPECIFICATION</b>			
<b>Use-case No.</b>	UC 13	<b>Use-case Version</b>	<1.0>
<b>Use-case Name</b>	Withdraw money from wallet		
<b>Author</b>	Le Dai Quyen		
<b>Date</b>	20/02/2024	<b>Priority</b>	Normal
<b>Actor:</b> Member			

**Summary:**

*The feature allows user to withdraw money from their wallet to their bank account*

**Goal:**

Actor will be able to withdraw the amount they desire

**Triggers**

The actor wants to access the payment to withdraw money from wallet

**Preconditions:**

- The digital wallet system is accessible and functional.
- The user's account has enough balance to withdraw money

**Post Conditions:**

- success: money is deducted from wallet and redirect to home page
- fail: System inform "Cannot withdraw money from wallet"

**Main Success Scenario:**

Step	Actor Action	System Response
1	User clicks "withdraw" button	The system display a form: <ul style="list-style-type: none"><li>- amount of money in wallet : long</li><li>- Bank name : string</li><li>- Bank account number : string, digit only</li><li>- enter the amount to withdraw : long</li></ul> <b>[Ex 1]</b>
2	The user confirms the bank name and bank account number, and enters the amount to withdraw and presses the "withdraw" button.	The system checks information, confirms withdrawal for users and redirect to home page

**Alternative Scenario:**

**N/A**

**Exceptions:**

No	Cause	System Response
1	The amount the user enters is greater than the amount in the wallet. <b>[Ex 1]</b>	The system informs you "the account does not have enough money" and asks you to enter another amount

**Relationships:**

**N/A****Business Rules:**

- Bank name and bank account number must be correct
- The amount withdrawn is not greater than the amount in the wallet

**3.16 Register to join the auction**

USE CASE 14 SPECIFICATION			
<b>Use-case No.</b>	UC-14	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	Register to join the auction		
<b>Author</b>	Le Dai Quyen		
<b>Date</b>	09/02/2024	<b>Priority</b>	High
<p><b>Actor:</b> Member</p> <p><b>Summary:</b> The feature allows actor to register to participate in an auction that the user desires</p> <p><b>Goal:</b> After registering, actor can participate in that auction. If they have not registered, they cannot participate</p> <p><b>Triggers</b> The actor wants to register for the auction to participate</p> <p><b>Preconditions:</b> Users have access to the auction platform and login. The user has enough available balance to participate in the auction</p> <p><b>Post Conditions:</b></p> <ul style="list-style-type: none"> <li>- Success: The system notifies that the registration has been successful</li> <li>- Fail: The system notifies that registration has failed</li> </ul> <p><b>Main Success Scenario:</b></p>			

Step	Actor Action	System Response
1	Actors select the real estate they want to auction	The system confirms and returns a form including real estate information: <ul style="list-style-type: none"> <li>- Name : string</li> <li>- Address : string</li> <li>- Start price : long</li> <li>- Start date and time : date</li> <li>- Description : string</li> </ul> and button "register"
2	The actor clicks the "Register" button.	The system confirms the registrant's information. If successful, it will notify you "you have successfully registered" and the "Homepage" button will appear.
3	The actor clicks on "Home page"	The system redirect to home page

**Alternative Scenario:**  
N/A

**Exceptions:**  
N/A

**Relationships:**  
N/A

**Business Rules:**  
N/A

### 3.17 Pay The Price

<b>USE CASE-15 SPECIFICATION</b>			
<b>Use-case No.</b>	UC-15	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	Pay the price		

Author	Vu Huy Hoang		
Date	15/02/2024	Priorit y	Normal

**Actor:**  
Member

**Summary:**  
This feature allows actors to pay for their winning auction.

**Goal:**  
Allows users to pay for won auctions.

**Triggers**  
The actor wants to pay the price of the winning auction.

**Preconditions:**  
The user has selected the goods or services they wish to purchase.  
The user has the necessary payment method available.

**Post Conditions:**  
The user has successfully paid for the goods or services.  
The merchant has received payment confirmation and proceeds with the order fulfillment process.  
If applicable, the user receives a receipt or confirmation of the transaction.

**Main Success Scenario:**

Step	Actor Action	System Response
1	Actors who won the auction choose the " Auction History " and choose the "Pay" method.	The system shows the total price to the user, including taxes, fees.
2	Actors choose their preferred payment method.	System shows the option for the actors to choose (e.g., credit card, debit card, mobile payment, cash).
3	Actor clicks the " Confirm " button.	The system shows the confirmation msg of the transaction to the user.And the system would save the payment detail to the transaction history in the database: - WalletD : string - Quantity : long - AccID : string - TransactionDate : date

		- Status : int ( 1 for success, 2 for fail, 3 for being double check, 4 for pending ) <b>[EX 1, 2]</b>
--	--	--

**Alternative Scenario:**  
**N/A**

**Exceptions:**

No	Cause	System Response
1	The payment fails due to lack of balance. <b>[EX 1]</b>	The system notifies the user about the failed transaction.
2	The user cancels the transaction. <b>[EX 2]</b>	The system cancels the payment process and returns the user to the previous step or their shopping cart.

**Relationships:**  
**N/A**

**Business Rules:**

- The bank account that used to pay the price needed to use the bank account has been filled in the wallet information.

### **3.18 Pay Deposit Fee**

#### **USE CASE-16 SPECIFICATION**



Use-case No.	UC-16	Use-case Version	1.0
Use-case Name	Pay Deposit Fee		
Author	Nguyen Quoc Kiet		
Date	02/02/2024	Priority	High
<b>Actor:</b> Member			
<b>Summary:</b> The feature allows the actors to pay the deposit fee to participate in a real estate auction.			
<b>Goal:</b> The actors will pay the deposit fee to participate in a real estate auction success.			
<b>Triggers</b> The actors want to participate in a real estate auction and pay the deposit fee.			
<b>Preconditions:</b> <ul style="list-style-type: none"><li>The actors must be registered and logged into the system.</li><li>The actors must have selected a real estate auction to participate in.</li><li>The real estate auction must require a deposit fee.</li><li>The actors must have a valid payment method saved in their profile.</li></ul>			
<b>Post Conditions:</b> <ul style="list-style-type: none"><li>Success:<ul style="list-style-type: none"><li>The deposit fee payment transaction is successful.</li><li>The actors are registered to participate in the real estate auction.</li></ul></li><li>Fail:<ul style="list-style-type: none"><li>If the payment fails for any reason, the actors cannot participate in the real estate auction.</li></ul></li></ul>			
<b>Main Success Scenario:</b>			
Step	Actor Action	System Response	

1	The actors select a real estate auction and proceed to registration	The system prompts the actors to pay the deposit fee for the selected auction.
2	The actors confirm the registration and proceed to pay the deposit fee: + Credit card + PayPal	The system displays the payment form with details such as the deposit amount and available payment methods: + Bank name : string + Bank code number : string, digit only + Member full name : string + Bank released date : date + OTP code : int
3	The actors select a payment method, enter necessary details, and confirm the payment. <b>[Ex1]</b>	The system processes the payment, verifies the transaction, registers the actors for the auction, and displays a confirmation message.

**Alternative Scenario:****N/A****Exceptions:**

No	Cause	System Response
1	<i>If the payment fails.</i> <b>[Ex1]</b>	<i>The system informs the actors that the payment failed and prompts them to try again or use a different payment method.</i>

**Relationships:**

*This use case is related to the "Account Management" and ", "functionalities within the system".*

- This use case relates to the "Account Management" use case, as it involves accessing and updating actor profile information.
- This use case relates to the "Payment Processing" use case, as it involves managing actor registration and payments for auctions.

**Business Rules:**

- *The system must securely process payment transactions using saved payment methods.*
- *The actors must have a valid payment method saved in their profile to pay the deposit fee.*

### 3.19 View List Account

USE CASE-17 SPECIFICATION			
Use-case No.	UC17	Use-case Version	1.0
Use-case Name	View List Account		
Author	Nguyễn Quốc Kiệt		
Date	02/02/2024	Priorit y	High
<p><b>Actor:</b></p> <p><i>Staff</i></p> <p><b>Summary:</b></p> <p><i>The feature allows staff members to view a list of accounts associated with the real estate auction system.</i></p> <p><b>Goal:</b></p> <p><i>The actors will view a list of accounts associated with the real estate auction system.</i></p> <p><b>Triggers</b></p> <p><i>The actors want to access information about accounts within the real estate auction system.</i></p> <p><b>Preconditions:</b></p> <ul style="list-style-type: none"><li>- <i>The actors must be logged into the system.</i></li><li>- <i>The actors must have appropriate permissions to view account information.</i></li></ul> <p><b>Post Conditions:</b></p> <p><i>Success:</i></p> <ul style="list-style-type: none"><li>- <i>The actors successfully view the list of accounts.</i></li></ul> <p><i>Fail:</i></p> <ul style="list-style-type: none"><li>- <i>If the actors do not have the necessary permissions or encounter a technical issue, they cannot view the list of accounts.</i></li></ul>			

**Main Success Scenario:**

Step	Actor Action	System Response
1	The actors navigate to the "View List Account" section[Ex1]	The system retrieves and displays a list of accounts associated with the real estate auction system: <ul style="list-style-type: none"><li>- Account ID : string</li><li>- Type : string</li><li>- Status : int</li></ul>

**Alternative Scenario:****N/A****Exceptions:**

No	Cause	System Response
1	<i>If the actors do not have the necessary permissions[Ex1]</i>	<i>The system informs the actors that they do not have permission to view account information.</i>

**Relationships:**

*This use case may relate to other use cases such as "Manage User Accounts" or "Generate Reports."*

**Business Rules:**

- *Only actors with appropriate permissions can view account information.*
- *Account information should be displayed in a clear and organized manner to facilitate understanding for the actors.*

**3.20 Ban Account****USE CASE-18 SPECIFICATION**

Use-case No.	UC 18	Use-case Version	1.0									
Use-case Name	Ban Account											
Author	Nguyen Quoc Kiet											
Date	02/02/2024	Priority	High									
<p><b>Actor:</b></p> <p><i>Staff</i></p> <p><b>Summary:</b></p> <p><i>The feature allows the actors to ban an account associated with the real estate auction system.</i></p> <p><b>Goal:</b></p> <p><i>The actors will ban an account associated with the real estate auction system.</i></p> <p><b>Triggers</b></p> <p><i>The actors want to identify a need to suspend or prohibit access to a particular account.</i></p> <p><b>Preconditions:</b></p> <ul style="list-style-type: none"><li>- <i>The actors must be logged into the system.</i></li><li>- <i>The actors must have appropriate permissions to ban accounts.</i></li><li>- <i>There must be a valid reason for banning the account (e.g., violation of terms of service, fraudulent activity).</i></li></ul> <p><b>Post Conditions:</b></p> <p><i>Success:</i></p> <ul style="list-style-type: none"><li>- <i>The account is successfully banned, and the user is unable to access the system.</i><p><i>Fail:</i></p><ul style="list-style-type: none"><li>- <i>If the actors do not have the necessary permissions or encounter a technical issue, they cannot ban the account.</i></li></ul><p><b>Main Success Scenario:</b></p><table><tr><th>Step</th><th>Actor Action</th><th>System Response</th></tr><tr><td>1</td><td>The actors navigate to the account management section[Ex1]</td><td>The system provides a list of user accounts.</td></tr><tr><td>2</td><td>The actors select the account to be</td><td>The system prompts the actors to confirm</td></tr></table></li></ul>				Step	Actor Action	System Response	1	The actors navigate to the account management section[Ex1]	The system provides a list of user accounts.	2	The actors select the account to be	The system prompts the actors to confirm
Step	Actor Action	System Response										
1	The actors navigate to the account management section[Ex1]	The system provides a list of user accounts.										
2	The actors select the account to be	The system prompts the actors to confirm										

	banned and initiate the ban process	the action and provide a reason for the ban: + Violation of platform policies + Sharing false information + Spam or abuse
3	The actors confirm the ban and specify the reason[Ex2]	The system suspends the account and notifies the user about the ban, if necessary.
6	The actors decided to unlock member accounts that were previously banned.	The system displays a list of banned member accounts.
7	Actors select a banned member account to unban.	The system confirms the action and updates the ban status.

**Alternative Scenario:**

**N/A**

**Exceptions:**

No	Cause	System Response
1	If the actors do not have the necessary permissions[Ex1]	The system informs the actors that they do not have permission to ban accounts.
2	If the account is already banned[Ex2]	The system notifies the actors that the account is already banned.

**Relationships:**

*This use case is related to the "View Account" use case.*

**Business Rules:**

- Only actors with appropriate permissions can ban accounts.
- Banning an account should be done in accordance with the system's terms of service and guidelines.
- The system should provide clear communication to the banned user about the reason for the ban and any steps required for resolution, if applicable.

### 3.21 Browse Auction Posts

USE CASE-19 SPECIFICATION			
Use-case No.	UC 19	Use-case Version	1.0
Use-case Name	Browse Auction Posts		
Author	Nguyen Quoc Kiet		
Date	02/02/2024	Priority	Normal
<b>Actor:</b> <i>Staff</i>			
<b>Summary:</b> <i>The feature allows the actors to browse auction posts in the real estate auction system.</i>			
<b>Goal:</b> <i>The actors will browse auction posts to manage and oversee the auction process.</i>			
<b>Triggers</b> <i>The actors want to view auction posts to monitor the status of auctions and ensure compliance with system guidelines.</i>			
<b>Preconditions:</b> <ul style="list-style-type: none"><li>- <i>The actors must be logged into the system.</i></li><li>- <i>The actors must have appropriate permissions to browse auction posts.</i></li></ul>			
<b>Post Conditions:</b> <i>Success:</i> <ul style="list-style-type: none"><li>- <i>The actors successfully view auction posts.</i></li></ul> <i>Fail:</i> <ul style="list-style-type: none"><li>- <i>If the actors do not have the necessary permissions or encounter a technical issue, they cannot browse auction posts.</i></li></ul>			
<b>Main Success Scenario:</b>			
Step	Actor Action	System Response	
1	The actors navigate to the "Browse	The system displays a list of auction posts	

	Auction Posts" section[Ex1]	with relevant: <ul style="list-style-type: none"> <li>- Auction name : string</li> <li>- Status : int</li> <li>- Start/end dates : date</li> <li>- Current bids : long</li> </ul>
2	The actors review the auction posts	The system allows the actors to filter, sort, and search for specific auction posts based on criteria such as auction status or location.
3	The actors select an auction post to view more details	The system shows detailed information about the auction post: <ul style="list-style-type: none"> <li>+ Asset name : string</li> <li>+ Date and time posted : date</li> <li>+ Auction duration : datetime</li> <li>+ Price : long</li> </ul>
4	The actors may take action based on the auction post	Depending on the situation, the actors: <ul style="list-style-type: none"> <li>- Approve : UC23</li> <li>- Close the auction post : UC29</li> </ul>
5	The actors can go back to the list of auction posts or continue browsing other auction posts	The system provides navigation options for the staff member.

**Alternative Scenario:****N/A****Exceptions:**

No	Cause	System Response
1	If the actors do not have the necessary permissions[Ex1]	The system informs the actors that they do not have permission to browse auction posts.

**Relationships:**

- *Related to the "Post real estate auction" use case.*
- *Related to the "View auction list" use case.*

**Business Rules:**

- Only actors with appropriate permissions can browse auction posts.
- Auction post information should be presented in a clear and organized manner to facilitate review and decision-making by the actors.
- The actors should adhere to system guidelines and procedures when managing auction posts.



### 3.22 Collect deposit

USE CASE-20 SPECIFICATION			
Use-case No.	UC 20	Use-case Version	1.0
Use-case Name	Collect deposit		
Author	Nguyen Quoc Kiet		
Date	02/02/2024	Priority	High
<p><b>Actor:</b> <i>Staff</i></p> <p><b>Summary:</b> <i>The feature allows the actors to manage deposit collection for real estate auctions.</i></p> <p><b>Goal:</b> <i>The actors will manage deposit collection for real estate auctions.</i></p> <p><b>Triggers</b> <i>The actors want to collect deposits from participants for auction participation.</i></p> <p><b>Preconditions:</b></p> <ul style="list-style-type: none"><li>- <i>The actors must be logged into the system with staff-level permissions.</i></li><li>- <i>There must be ongoing real estate auctions that require deposit collection.</i></li></ul> <p><b>Post Conditions:</b></p> <p><i>Success:</i></p> <ul style="list-style-type: none"><li>- <i>Deposits from participants are successfully collected and recorded.</i></li></ul> <p><i>Fail:</i></p> <ul style="list-style-type: none"><li>- <i>If there are issues with the deposit collection process or technical issues, the actors may encounter difficulties in managing deposit collection.</i></li></ul>			

**Main Success Scenario:**

Step	Actor Action	System Response
1	The actors navigate to the deposit collection management section	The system provides a list of ongoing real estate auctions that require deposit collection.
2	The actors select the auction for which they want to manage deposit collection	The system displays the details of the selected auction: <ul style="list-style-type: none"><li>- the amount of deposit required : long</li><li>- the list of participants : int</li></ul>
3	The actors initiate the deposit collection process for each participant	The system prompts the actors to confirm the deposit collection for each participant and record the collected deposits. <b>[Ex1]</b>
4	The actors confirm the deposit collection for each participant	The system updates the deposit collection status for each participant and records the collected deposits.

**Alternative Scenario:****N/A****Exceptions:**

No	Cause	System Response
1	If there are technical issues or errors during the deposit collection process <b>[Ex1]</b>	The system notifies the actors about the issue and prompts them to retry the deposit collection process.

**Relationships:***Related to the "Deposit money into wallet" use case.***Business Rules:**

- *The actors should have clear instructions and guidelines for managing deposit collection to ensure consistency and accuracy.*
- *The system should provide the actors with real-time updates on deposit collection status and any issues encountered during the process.*
- *Deposits should be securely processed and recorded in accordance with the system's policies and regulations.*

### 3.23 Cancel the Auction

<b>USE CASE-21 SPECIFICATION</b>			
<b>Use-case No.</b>	UC 21	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	Cancel the Auction		
<b>Author</b>	Nguyen Quoc Kiet		
<b>Date</b>	02/02/2024	<b>Priorit y</b>	High
<p><b>Actor:</b></p> <p><i>Admin</i></p> <p><i>Staff</i></p> <p><b>Summary:</b></p> <p><i>The feature allows staff members to cancel an ongoing auction in the real estate auction system.</i></p> <p><b>Goal:</b></p> <p><i>The actors will cancel an ongoing auction in the real estate auction system.</i></p> <p><b>Triggers</b></p> <p><i>The actors identify a need to cancel a specific auction, such as due to unforeseen circumstances or policy changes.</i></p> <p><b>Preconditions:</b></p> <ul style="list-style-type: none"> <li>- <i>The actors must be logged into the system.</i></li> <li>- <i>The actors must have appropriate permissions to cancel auctions.</i></li> <li>- <i>There must be a valid reason for canceling the auction.</i></li> </ul> <p><b>Post Conditions:</b></p> <p><i>Success:</i></p> <ul style="list-style-type: none"> <li>- <i>The auction is successfully canceled, and all associated activities are ceased.</i></li> </ul> <p><i>Fail:</i></p> <ul style="list-style-type: none"> <li>- <i>If the actors do not have the necessary permissions or encounter a technical issue, they cannot cancel the auction.</i></li> </ul>			

**Main Success Scenario:**

Step	Actor Action	System Response
1	The actors navigate to the auction management section[Ex1]	The system provides a list of ongoing auctions.
2	The actors select the auction to be canceled and initiate the cancellation process[Ex2]	The system prompts the actors to confirm the action and provide a reason for the cancellation.
3	The actors confirm the cancellation and specify the reason	The system cancels the auction, notifies all involved parties about the cancellation, and updates the auction status accordingly.

**Alternative Scenario:****N/A****Exceptions:**

No	Cause	System Response
1	If the actors do not have the necessary permissions[Ex1]	The system informs the actors that they do not have permission to cancel auctions.
2	If the auction has already ended or been canceled[Ex2]	The system notifies the actors that the auction cannot be canceled as it is already concluded or canceled.

**Relationships:***Related to the "Create Auction" use case.**Related to the "View Auction Details" use case.***Business Rules:**

- *Only actors with appropriate permissions can cancel auctions.*
- *Auction cancellation should be done in accordance with the system's policies and guidelines.*
- *The system should provide clear communication to all involved parties about the cancellation reason and any necessary follow-up actions.*

**3.24 View All Auctions**

<b>USE CASE-22 SPECIFICATION</b>			
<b>Use-case No.</b>	UC 22	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	View All Auctions		
<b>Author</b>	Nguyen Quoc Kiet		
<b>Date</b>	02/02/2024	<b>Priorit y</b>	Normal
<p><b>Actor:</b></p> <p><i>Admin</i></p> <p><i>Staff</i></p> <p><b>Summary:</b></p> <p><i>The feature allows staff members or administrators to view a list of all auctions in the real estate auction system.</i></p> <p><b>Goal:</b></p> <p><i>The actors will view a comprehensive list of all auctions in the real estate auction system.</i></p> <p><b>Triggers</b></p> <p><i>The actors want to access information about all auctions for management or oversight purposes.</i></p> <p><b>Preconditions:</b></p> <ul style="list-style-type: none"> <li><i>The actors must be logged into the system.</i></li> <li><i>The actors must have appropriate permissions to view auction information.</i></li> </ul> <p><b>Post Conditions:</b></p> <p><i>Success:</i></p> <ul style="list-style-type: none"> <li><i>The actors successfully view the list of all auctions along with relevant details.</i></li> </ul> <p><i>Fail:</i></p>			

- *If the actors do not have the necessary permissions or encounter a technical issue, they cannot view the list of all auctions.*

**Main Success Scenario:**

Step	Actor Action	System Response
1	<i>The actors navigate to the auction management section[Ex1]</i>	<i>The system provides options to view all auctions.</i>
2	<i>The actors select the option to view all auctions</i>	<i>The system retrieves and displays a comprehensive list of all auctions:</i> <ul style="list-style-type: none"><li>- <i>auction title</i></li><li>- <i>status</i></li><li>- <i>start date</i></li><li>- <i>end date</i></li><li>- <i>current bid amount.</i></li></ul>

**Alternative Scenario:****N/A****Exceptions:**

No	Cause	System Response
1	If the actors do not have the necessary permissions[Ex1]	The system informs the actors that they do not have permission to view all auctions.

**Relationships:***Related to the "Create Auction" use case.**Related to the "Cancel the Auction" use case.***Business Rules:**

- *Only actors with appropriate permissions can view all auctions.*
- *Auction information should be displayed in a clear and organized manner to facilitate management and oversight by the actors.*
- *The system should provide filtering and sorting options to help actors efficiently navigate and manage the list of all auctions.*

### 3.25 View Detail An Auction

<b>USE CASE-23 SPECIFICATION</b>			
<b>Use-case No.</b>	UC 23	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	View Detail An Auction		
<b>Author</b>	Nguyen Quoc Kiet		
<b>Date</b>	02/02/2024	<b>Priorit y</b>	High
<b>Actor:</b> <i>Admin</i> <i>Staff</i>			
<b>Summary:</b> <i>The feature allows staff members or administrators to view detailed information about a specific auction in the real estate auction system.</i>			
<b>Goal:</b> <i>The actors will view overall details of a specific auction in the real estate auction system.</i>			
<b>Triggers</b> <i>The actors need to access specific details of an auction for management or oversight purposes.</i>			
<b>Preconditions:</b> <ul style="list-style-type: none"><li>- <i>The actors must be logged into the system.</i></li><li>- <i>The actors must have appropriate permissions to view auction information.</i></li><li>- <i>The specific auction must exist in the system.</i></li></ul>			
<b>Post Conditions:</b> <i>Success:</i> <ul style="list-style-type: none"><li>- <i>The actors successfully view detailed information about the selected auction.</i></li></ul> <i>Fail:</i> <ul style="list-style-type: none"><li>- <i>If the actors do not have the necessary permissions, the specific auction does not exist, or there is a technical issue, they cannot view the detailed information.</i></li></ul>			

**Main Success Scenario:**

Step	Actor Action	System Response
1	The actors navigate to the auction management section[Ex1]	The system provides options to search for or select a specific auction.
2	The actors select the option to view details of a specific auction[Ex2]	The system retrieves and displays detailed information about the selected auction: <ul style="list-style-type: none"><li>- Auction name : string</li><li>- description : string</li><li>- start date : date</li><li>- end date : date</li><li>- current bid amount : long</li><li>- bidder information :<ul style="list-style-type: none"><li>+ account id ( member )</li><li>+ bid amount : long</li><li>+ bid date : date</li></ul></li><li>- associated documents or images</li></ul>

**Alternative Scenario:****N/A****Exceptions:**

No	Cause	System Response
1	If the actors do not have the necessary permissions[Ex1]	The system informs the actors that they do not have permission to view detailed auction information.
2	If the specific auction does not exist or cannot be found[Ex2]	The system notifies the actors that the requested auction does not exist or cannot be found.

**Relationships:**

- Related to the "Create Auction" use case.
- Related to the "Cancel the Auction" use case.
- Related to the "View Auction Details" use case.

**Business Rules:**

- Only actors with appropriate permissions can view detailed information about specific auctions.



- *The system should provide comprehensive and accurate information about the selected auction to assist actors in making informed decisions.*
- *Access to detailed auction information should be restricted to authorized staff members and administrators to maintain data confidentiality and integrity.*

### 3.26 View Auction History

USE CASE-24 SPECIFICATION			
<b>Use-case No.</b>	UC 24	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	View Auction History		
<b>Author</b>	Nguyễn Quốc Kiệt		
<b>Date</b>	02/02/2024	<b>Priorit y</b>	Normal
<p><b>Actor:</b></p> <p><i>Admin</i></p> <p><i>Staff</i></p> <p><b>Summary:</b></p> <p><i>The feature allows staff members or administrators to view the history of auctions in the real estate auction system.</i></p> <p><b>Goal:</b></p> <p><i>The actors will view the historical records of past auctions in the real estate auction system.</i></p> <p><b>Triggers</b></p> <p><i>The actors want to access information about the past performance and outcomes of auctions for management or analysis purposes.</i></p> <p><b>Preconditions:</b></p> <ul style="list-style-type: none"> <li>- <i>The actors must be logged into the system.</i></li> <li>- <i>The actors must have appropriate permissions to view auction information.</i></li> <li>- <i>There must be past auctions with historical data available in the system.</i></li> </ul> <p><b>Post Conditions:</b></p>			

*Success:*

- The actors successfully view the history of past auctions, including details such as auction title, start date, end date, winning bidder, final bid amount, and status.

*Fail:*

- If the actors do not have the necessary permissions or there are no past auctions available, they cannot view the auction history.

**Main Success Scenario:**

Step	Actor Action	System Response
1	The actors navigate to the auction management section[Ex1]	The system provides options to view the auction history.
2	The actors select the option to view auction history[Ex2]	The system retrieves and displays a list of past auctions: <ul style="list-style-type: none"> <li>- Auction name : string</li> <li>- start date : date</li> <li>- end date : date</li> <li>- final bid amount : long</li> <li>- winning bidder :               <ul style="list-style-type: none"> <li>+ account id ( member )</li> <li>+ bid amount : long</li> <li>+ bid date : date</li> </ul> </li> <li>- status : int ( done : 1 , fail : 0 )</li> </ul>

**Alternative Scenario:****N/A****Exceptions:**

No	Cause	System Response
1	If the actors do not have the necessary permissions[Ex1]	<i>The system informs the actors that they do not have permission to view auction history.</i>
2	If there are no past auctions available[Ex2]	<i>The system notifies the actors that there are no past auctions available to view.</i>

**Relationships:**

*This use case is related to the functionalities of the auction management system.*

**Business Rules:**

- *Only actors with appropriate permissions can view the auction history.*
- *The system should provide comprehensive and accurate information about past auctions to assist actors in analyzing performance and making informed decisions.*
- *Access to auction history should be restricted to authorized staff members and administrators to maintain data confidentiality and integrity.*

**3.27 End The Auction**

<b>USE CASE-25 SPECIFICATION</b>			
<b>Use-case No.</b>	UC-25	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	End the auction		
<b>Author</b>	Vu Huy Hoang		
<b>Date</b>	15/01/2024	<b>Priorit y</b>	High
<p><b>Actor:</b> <i>Admin-Staff.</i></p> <p><b>Summary:</b> <i>This feature allows actors to end the auction while it is ongoing.</i></p> <p><b>Goal:</b> <i>End the auction.</i></p> <p><b>Triggers</b> <i>The actors want to end an auction due to system maintenance or rule breaking.</i></p> <p><b>Preconditions:</b> <i>The auction has to be started.</i></p> <p><b>Post Conditions:</b> <i>Success: The auction ends, and the placed deposit is returned to the members.</i> <i>Fail: The system shows an error message corresponding to the error code.</i></p> <p><b>Main Success Scenario:</b></p>			

Step	Actor Action	System Response
1	Actor clicks "Auction list" on the navigation bar.	System redirects to the Auction list page.
2	Actors choose the Auction that Actors want to end. <b>[Ex1]</b>	System redirects to the Auction detail page.
3	Actors click the "End Auction" button.	System will end the Auction and change its status on the database to end(0).

**Alternative Scenario:**  
**N/A**

**Exceptions:**  
**N/A**

No	Cause	System Response
1	The Auction is in postponed state. <b>[Ex1]</b>	System informs "the auction can not be ended".

**Relationships:**  
**N/A**

**Business Rules:**

- The staff and admin need to provide full reason and ask for permission from the owner(member that hold the auction) to end their auction.

### 3.28 Create New Staff Account

<b>USE CASE-26 SPECIFICATION</b>			
<b>Use-case No.</b>	UC-26	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	Create New Staff Account		

Author	Vu Huy Hoang											
Date	16/01/2024	Priority	Normal									
<p><b>Actor:</b> <i>Admin.</i></p> <p><b>Summary:</b> <i>This feature allows actors to create new staff accounts.</i></p> <p><b>Goal:</b> <i>New staff account created.</i></p> <p><b>Triggers</b> <i>Admin wants to create new staff accounts and assign them to employees.</i></p> <p><b>Preconditions:</b> <i>The ID has to follow the staff ID format.</i></p> <p><b>Post Conditions:</b> <i>Success: Account created success.</i> <i>Fail: The system shows an error message corresponding to the error code.</i></p> <p><b>Main Success Scenario:</b></p> <table><tr><th>Step</th><th>Actor Action</th><th>System Response</th></tr><tr><td>1</td><td>Actor clicks on the "Manage staff" button on the navigation bar.</td><td>System redirects to the staff account list page.</td></tr><tr><td>2</td><td>Actor clicks the "Create staff" button on the staff account list page.</td><td>System redirects to the staff information input page that have:<ul style="list-style-type: none"><li>- username string ( only character ) <b>(EX.1)</b></li><li>- fullname ( only character )</li><li>- phone ( length 10 - only digit ) <b>(EX.2)</b></li><li>- email ( need to contain "@" in it ) <b>(EX.5)</b></li><li>- CCCD ( length 12 - only digit ) <b>(EX.3)</b></li><li>- password ( length min 8, can have digits, characters and special characters. <b>(EX.4)</b></li><li>- repassword ( length min 8, can have digits, characters and special</li></ul></td></tr></table>				Step	Actor Action	System Response	1	Actor clicks on the "Manage staff" button on the navigation bar.	System redirects to the staff account list page.	2	Actor clicks the "Create staff" button on the staff account list page.	System redirects to the staff information input page that have: <ul style="list-style-type: none"><li>- username string ( only character ) <b>(EX.1)</b></li><li>- fullname ( only character )</li><li>- phone ( length 10 - only digit ) <b>(EX.2)</b></li><li>- email ( need to contain "@" in it ) <b>(EX.5)</b></li><li>- CCCD ( length 12 - only digit ) <b>(EX.3)</b></li><li>- password ( length min 8, can have digits, characters and special characters. <b>(EX.4)</b></li><li>- repassword ( length min 8, can have digits, characters and special</li></ul>
Step	Actor Action	System Response										
1	Actor clicks on the "Manage staff" button on the navigation bar.	System redirects to the staff account list page.										
2	Actor clicks the "Create staff" button on the staff account list page.	System redirects to the staff information input page that have: <ul style="list-style-type: none"><li>- username string ( only character ) <b>(EX.1)</b></li><li>- fullname ( only character )</li><li>- phone ( length 10 - only digit ) <b>(EX.2)</b></li><li>- email ( need to contain "@" in it ) <b>(EX.5)</b></li><li>- CCCD ( length 12 - only digit ) <b>(EX.3)</b></li><li>- password ( length min 8, can have digits, characters and special characters. <b>(EX.4)</b></li><li>- repassword ( length min 8, can have digits, characters and special</li></ul>										

		characters. <b>(EX.4)</b>
3	Actors input the required information.	
4	Actor clicks the "Create" button.	System will inform that the account has been created, the staff information will be saved to the database.

**Alternative Scenario:****N/A****Exceptions:**

No	Cause	System Response
1	The username is duplicated. <b>(EX.1)</b>	System informs "Invalid username"
2	The Phone is duplicated. <b>(EX.2)</b>	System informs "Invalid phone"
3	The CCCD is duplicated. <b>(EX.3)</b>	System informs "Invalid CCCD"
4	The password is not in the range of 8 to 12 characters. <b>(EX.4)</b>	System informs "Invalid password"
5	The email is duplicated. <b>(EX.5)</b>	System informs "Invalid email"

**Relationships:****N/A****Business Rules:**

- Admin have to enter the correct information about the staff in order to assign it to the right employee.
- The email needs to follow the pattern that has "@gmail.com".

**3.29 Ban Staff Account**

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USE CASE-27 SPECIFICATION															
<b>Use-case No.</b>	UC-27	<b>Use-case Version</b>	1.0												
<b>Use-case Name</b>	Ban staff account														
<b>Author</b>	Vu Huy Hoang														
<b>Date</b>	30/01/2024	<b>Priority</b>	Normal												
<p><b>Actor:</b> <i>Admin.</i></p> <p><b>Summary:</b> <i>This feature allows actors to ban staff accounts.</i></p> <p><b>Goal:</b> <i>Staff account banned.</i></p> <p><b>Triggers</b> <i>The Actors want to ban staff accounts because of some reason.</i></p> <p><b>Preconditions:</b> <i>The ID has to follow the staff ID format.</i></p> <p><b>Post Conditions:</b> <i>Success: Account ban success.</i> <i>Fail: The system shows an error message corresponding to the error code.</i></p> <p><b>Main Success Scenario:</b></p> <table border="1"> <thead> <tr> <th>Step</th> <th>Actor Action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Actor clicks on the "Manage staff" button on the navigation bar.</td> <td>System redirects to the staff account list page.</td> </tr> <tr> <td>2</td> <td>Actors choose the staff account on the staff account list page.</td> <td>System redirects to the staff account information page.</td> </tr> <tr> <td>3</td> <td>Actor clicks on the "Ban staff" button.</td> <td>System will inform the actors that the account has been banned, and the status of the account on the database will be changed to(0). <b>[EX 1]</b></td> </tr> </tbody> </table>				Step	Actor Action	System Response	1	Actor clicks on the "Manage staff" button on the navigation bar.	System redirects to the staff account list page.	2	Actors choose the staff account on the staff account list page.	System redirects to the staff account information page.	3	Actor clicks on the "Ban staff" button.	System will inform the actors that the account has been banned, and the status of the account on the database will be changed to(0). <b>[EX 1]</b>
Step	Actor Action	System Response													
1	Actor clicks on the "Manage staff" button on the navigation bar.	System redirects to the staff account list page.													
2	Actors choose the staff account on the staff account list page.	System redirects to the staff account information page.													
3	Actor clicks on the "Ban staff" button.	System will inform the actors that the account has been banned, and the status of the account on the database will be changed to(0). <b>[EX 1]</b>													

**Alternative Scenario:****N/A****Exceptions:**

No	Cause	System Response
1	The staff account is being assigned to run an auction. <b>[EX 1]</b>	System informs "Staff is on duty can not be ban"

**Relationships:****N/A****Business Rules:**

- The staff account needs to exist in order to be banned.

**3.30 View staff account**

<b>USE CASE-28 SPECIFICATION</b>			
<b>Use-case No.</b>	UC-28	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	View staff accounts		
<b>Author</b>	Vu Huy Hoang		
<b>Date</b>	30/01/2024	<b>Priorit y</b>	Normal
<b>Actor:</b> <i>Admin.</i>			
<b>Summary:</b> <i>This feature allows actors to view staff accounts.</i>			
<b>Goal:</b> <i>Staff accounts will be listed in selected sort order.</i>			
<b><u>Triggers</u></b>			



*Admin wants to view staff accounts.*

**Preconditions:**

*The ID has to follow the staff ID format.*

**Post Conditions:**

*Success: Account listed success.*

*Fail: The system shows an error message corresponding to the error code.*

**Main Success Scenario:**

Step	Actor Action	System Response
1	Actor clicks on the "Manage staff" button on the navigation bar.	System redirects to the staff account list page.
2	Actors choose the sort type in the sort selecting box to view the staff order.	System will display staffs in the order that actor has selected: <ul style="list-style-type: none"> <li>- sort by ascending, descending</li> <li>- sort by fullname length</li> <li>- sort by id ( " S " + digit )</li> </ul>

**Alternative Scenario:**

**N/A**

**Exceptions:**

**N/A**

**Relationships:**

**N/A**

**Business Rules:**

- If no staff account exists, the admin has to create at least one account in order to view the list.

### 3.31 Appoint auction staff

USE CASE-29 SPECIFICATION			
<b>Use-case No.</b>	UC-29	<b>Use-case Version</b>	<1.0>

Use-case Name	Appoint auction staff		
Author	Vu Huy Hoang		
Date	31/01/2024	Priority	High
<b>Actor:</b> <i>Admin</i>			
<b>Summary:</b> <i>This feature allows actors to appoint staff to run and manage an auction.</i>			
<b>Goal:</b> <i>Staff being appointed successfully</i>			
<b>Triggers</b> <i>An auction has to have one staff being appointed to begin.</i>			
<b>Preconditions:</b> <i>Staff accounts exist and have not been banned.</i>			
<b>Post Conditions:</b> <i>Success: Staff appointed success.</i> <i>Fail: The system shows an error message corresponding to the error code.</i>			
<b>Main Success Scenario:</b>			
Step	Actor Action	System Response	
3	Actor clicks on the "Manage staff" button on the navigation bar.	System redirects to the staff account list page.	
4	Actors choose the staff who are not on duty.	System redirects to the staff information detail page.	
5	Actors choose the auction that needs to be assigned to a staff from the auction unassigned list select box.		
7	Actor clicks the "Appoint" button.	System redirects to the staff account list, the status of the staff will change to on duty(3) and in the auction table in the database, the staffId ( accId with the role staff ) will be filled in the auction second accId column. <b>[EX 1], [EX 2]</b>	

**Alternative Scenario:****N/A****Exceptions:**

No	Cause	System Response
1	The auction is not verified. <b>[EX 1]</b>	System informs "Auction is not verified"
2	The staff is being banned or suspended. <b>[EX 2]</b>	System informs "Staff unavailable"

**Relationships:****N/A****Business Rules:**

- The staff have to be in the correct department in order to be appointed and start an auction.

**3.32 View revenue**

USE CASE-30 SPECIFICATION			
<b>Use-case No.</b>	UC-30	<b>Use-case Version</b>	<1.0>
<b>Use-case Name</b>	View revenue		
<b>Author</b>	Vu Huy Hoang		
<b>Date</b>	01/02/2024	<b>Priorit y</b>	High
<b>Actor:</b> <i>Admin</i>			
<b>Summary:</b> <i>This feature allows actors to view revenue that the system has gathered into a chart.</i>			
<b>Goal:</b>			

*Admin can view revenue charts.*

**Triggers**

*Admin wants to see how much the system gains for a period of time.*

**Preconditions:**

*Revenue chart has to be gathered in order to be viewed.*

**Post Conditions:**

*Success: Admin view success.*

*Fail: The system shows an error message corresponding to the error code.*

**Main Success Scenario:**

Step	Actor Action	System Response
1	Actor clicks on the "View Revenue" button on the navigation bar.	System redirects to the revenue page.
2	Actors choose the timeline of the revenue dashboard.	System shows the revenue dashboard in the timeline with this parameter: Date : date (from) <b>[EX.1]</b> Date : date (To) <b>[EX.1]</b> Revenue : long This will be display in dashboard table

**Alternative Scenario:**

**N/A**

**Exceptions:**

No	Cause	System Response
1	The timeline is not match with the pattern (dd/mm/yyyy - dd/mm/yyyy) <b>(EX.1)</b>	System informs "Invalid timeline"

**Relationships:**

**N/A**

**Business Rules:**

- The revenue can be gathered by both staff at the correct department and the system itself.

**3.33 View the number of participants**

USE CASE-31 SPECIFICATION			
Use-case No.	UC-31	Use-case Version	<1.0>
Use-case Name	View the number of participants		
Author	Vu Huy Hoang		
Date	01/02/2024	Priority	Normal
<b>Actor:</b> <i>Admin</i>			
<b>Summary:</b> <i>This feature allows actors to view the number of participants in the system.</i>			
<b>Goal:</b> <i>Admin can view the numbers in the chart.</i>			
<b>Triggers</b> <i>Admin wants to see how many participants in the period of time.</i>			
<b>Preconditions:</b> <i>The Participant's chart has to be gathered in order to be viewed.</i>			
<b>Post Conditions:</b> <i>Success: Admin view success.</i> <i>Fail: The system shows an error message corresponding to the error code.</i>			
<b>Main Success Scenario:</b>			
Step	Actor Action	System Response	
1	Actor clicks on the "View Revenue" button on the navigation bar.	System redirects to the revenue page.	
2	Actor chooses the timeline and clicks the "Show participants" button on the page.	System shows the dashboard of participants.	

**Alternative Scenario:**

N/A

**Exceptions:**

N/A

**Relationships:**

N/A

**Business Rules:**

- The participants can be guests, staffs, admins and members.

**3.34 Create auction rules**

<b>USE CASE-32 SPECIFICATION</b>			
<b>Use-case No.</b>	UC-32	<b>Use-case Version</b>	<1.0>
<b>Use-case Name</b>	Create auction rules		
<b>Author</b>	Vu Huy Hoang		
<b>Date</b>	01/02/2024	<b>Priorit y</b>	Normal
<p><b>Actor:</b> <i>Admin</i></p> <p><b>Summary:</b> <i>This feature allows actors to create or update rules.</i></p> <p><b>Goal:</b> <i>Admin update or create rules success.</i></p> <p><b>Triggers</b> <i>Admin wants to create new, add or remove some articles, terms in the rules.</i></p> <p><b>Preconditions:</b> <i>The account logged in needs to have an admin role.</i></p> <p><b>Post Conditions:</b></p>			

*Success: Admin action success.*

*Fail: The system shows an error message corresponding to the error code.*

**Main Success Scenario:**

Step	Actor Action	System Response
1	Actor clicks on the "Rule" button on the navigation bar.	System redirects to the rule page.
2	Actor clicks the "Edit" button on the rule page.	System redirects to the rule edit page.
3	Actors choose the rule that they want to edit and enter its changes.	
4	Actor clicks the "Finish edit" button.	System will send the edit detail to the editing rule page and rule will be saved to the database : RuleID : string, RuleDetail: string, AccId: string (account id of the admin editing the rule), Date : date <b>[EX 1]</b>

**Alternative Scenario:**

**N/A**

**Exceptions:**

1	Other staff do not agree with the changes. <b>[EX 1]</b>	System informs "Edit unsuccessfully because of disagreement"
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**Relationships:**

**N/A**

**Business Rules:**

- The rules need to be in accordance with ethical standards and standards of other auction systems.

### 3.35 Logout

USE CASE 33 SPECIFICATION			
Use-case No.	UC33	Use-case Version	1.0
Use-case Name	Logout		
Author	Vu Huy Hoang		
Date	12/03/2024	Priority	High
<b>Actor:</b> <i>Member, Admin, Staff</i>			
<b>Summary:</b> <i>The feature allows actors to logout of the website.</i>			
<b>Goal:</b> <i>The purpose is to logout of the website</i>			
<b>Triggers</b> <i>The actor wants to logout the website.</i>			
<b>Preconditions:</b> <i>Actor already logged in the system account or Google account</i>			
<b>Post Conditions:</b> <ul style="list-style-type: none"><li>- <i>Success: Redirect to guest home page</i></li><li>- <i>Fail: The system shows error message corresponding to error code</i></li></ul>			
<b>Main Success Scenario:</b>			
Step	Actor Action	System Response	
1	In main page, actor clicks on "Logout" button	System asks if the actor truly wants to logout.	
2	Actor clicks "YES" button	The system redirects to the guest home page.	
<b>Alternative Scenario:</b>			



**N/A****Exceptions:****N/A****Relationships:****N/A****Business Rules:****N/A****3.36 Join The Auction Room****USE CASE 34 SPECIFICATION**

<b>Use-case No.</b>	UC34	<b>Use-case Version</b>	1.0
<b>Use-case Name</b>	Join The Auction		
<b>Author</b>	Nguyen Thanh Thach		
<b>Date</b>	12/03/2024	<b>Priority</b>	High
<p><b>Actor:</b></p> <p><i>Member</i></p> <p><b>Summary:</b></p> <p><i>The feature allows members to join an auction in the real estate auction system.</i></p> <p><b>Goal:</b></p> <p><i>The actor will successfully join an auction in the real estate auction system.</i></p> <p><b>Triggers</b></p> <p><i>The actor wants to participate in a specific auction.</i></p> <p><b>Preconditions:</b></p> <p><i>The actor must be logged, registered and pay the participation fee to the system.</i></p> <p><i>The desired auction must be active and open for participation.</i></p> <p><b>Post Conditions:</b></p> <p><i>Success:</i></p>			

- *The actor successfully joins the auction and becomes a participant.*

*Fail:*

- *If the actor is unable to join the auction due to technical issues or other constraints and redirect to the home page.*

**Main Success Scenario:**

Step	Actor Action	System Response
1	The actor navigates to the list of available auctions	The system displays a list of active auctions.
2	The actor selects the desired auction to join[Ex1]	The system display a form for actors to register to join: - Participations fee ( decimal )
3	The actor confirmed to pay the fee to participate in the auction.	The system processes the request and add the actor as a participant to the auction and redirect the actor to auction page.

**Alternative Scenario:**

**N/A**

**Exceptions:**

No	Cause	System Response
1	<i>The desired auction is not active or closed for participation[Ex1]</i>	<i>The system informs the actor that the auction is not available for joining.</i>

**Relationships:**

- Related to Pay Deposit Fee and Register to join the auction

**Business Rules:**

- *Only logged-in members can join auctions.*
- *The system should provide clear instructions and options for members to join auctions easily.*
- *Participation in auctions should be restricted to registered members to maintain system integrity and security.*

## 4 NON-FUNCTIONAL REQUIREMENTS

*Performance: Defines how quickly the system must respond to user interactions or process data. For example, the system should load web page within 3 seconds.*

*Reliability: Specifies the system's ability to perform consistently and accurately under varying conditions, including its uptime and error-handling capabilities. For instance, the system should maintain 99.99% uptime.*

*Scalability: Describes the system's capacity to handle increasing amounts of workload or users by adding resources or components. Example: The system should support a 20% increase in users within a month without significant degradation in performance.*

*Security: Outlines the measures the system must implement to protect data and resources from unauthorized access, breaches, or data loss. Example: The system should encrypt sensitive user data using AES-256 encryption.*

### 4.1 Usability

*User Interface: The system shall have an intuitive and user-friendly interface to facilitate easy navigation and interaction for both bidders and administrators.*

*Accessibility: The system shall adhere to accessibility standards (e.g., WCAG) to ensure that users with disabilities can access and use the system effectively.*

*Guidance: The system shall provide clear instructions and guidance throughout the auction process, including bidding procedures and payment methods.*

*Feedback: The system shall provide timely feedback to users, including confirmation messages for successful bids, error notifications, and status updates on ongoing auctions.*

### 4.2 Reliability

*Uptime: The system shall maintain a high level of availability, with a target uptime of 99.9%.*

*Error Handling: The system shall implement robust error handling mechanisms to gracefully handle exceptions and prevent data loss or corruption.*

*Data Integrity: The system shall ensure the integrity of auction data, including bids, property information, and user profiles, through appropriate validation and encryption techniques.*

*Backup and Recovery: The system shall regularly backup data and implement procedures for data recovery in case of system failures or disasters*

### 4.3 Performance

*Response Time: The system shall respond to user interactions (e.g., placing bids, loading pages) within 2 seconds under normal load conditions.*

*Scalability: The system shall be designed to handle a large number of concurrent users and*

*auctions, with the ability to scale resources horizontally as needed.*

*Optimization: The system shall optimize database queries, network requests, and resource utilization to minimize latency and maximize performance.*

*Load Testing: The system shall undergo load testing to validate its performance under peak load conditions and identify potential bottlenecks.*

#### **4.4 Supportability**

*Documentation: The system shall be accompanied by comprehensive documentation, including user manuals, administrator guides, and API documentation.*

*Training: The system shall offer training materials and resources to educate users and administrators on its functionalities and best practices.*

*Maintenance: The system shall be designed with modular architecture and well-defined interfaces to facilitate maintenance, updates, and enhancements.*

*Technical Support: The system shall provide technical support channels (e.g., email, chat, ticketing system) for users and administrators to seek assistance and report issues.*

#### **4.5 Design Constraints**

*Technology Stack: The system shall be developed using modern web technologies, such as HTML5, CSS3, JavaScript, and a backend framework like Django or Node.js.*

*Security: The system shall implement industry-standard security practices, including encryption, authentication, and authorization mechanisms, to protect sensitive data and prevent unauthorized access.*

*Compliance: The system shall comply with relevant regulations and standards for real estate transactions, including GDPR, PCI-DSS, and any local regulatory requirements.*

*Integration: The system shall integrate with external services and APIs, such as payment gateways and property databases, to provide seamless functionality and data exchange.*

#### **4.6 On-line User Documentation and Help System Requirements**

##### **1. User Documentation:**

*Content: The online user documentation shall cover all aspects of using the Real Estate Auction System, including registration, bidding process, property search, payment procedures, and account management.*

*Accessibility: The documentation shall be accessible to users with disabilities, adhering to WCAG guidelines for content accessibility.*

*Search Functionality: The documentation shall include a search feature allowing users to quickly find relevant information by entering keywords or phrases.*

*Multi-language Support: The documentation shall support multiple languages to accommodate users from diverse linguistic backgrounds.*

*Versioning: The documentation shall be versioned to reflect updates and changes in the system, with clear indications of revision history and release notes.*

## 2. Help System:

*Context-Sensitive Help:* The help system shall provide context-sensitive assistance, offering relevant guidance and instructions based on the user's current location or task within the system.

*Interactive Tutorials:* The help system shall include interactive tutorials or walkthroughs to guide users through complex processes or features, such as placing bids or setting up notifications.

*Visual Aids:* The help system shall incorporate visual aids, such as screenshots, diagrams, and videos, to enhance understanding and clarity of instructions.

*Feedback Mechanism:* The help system shall allow users to provide feedback on the usefulness and effectiveness of the provided assistance, enabling continuous improvement.

## 4.7 Purchased Components

*Description:* The Real Estate Auction System shall utilize a licensed auction platform software to facilitate the auction process, including bid management, auction item listings, and transaction handling.

*Licensing:* The auction platform software shall be purchased under a commercial license agreement, granting the necessary usage rights and permissions for deployment within the system.

*Usage Restrictions:* The license agreement shall stipulate any usage restrictions, such as the number of concurrent auctions allowed, user access limits, or geographical restrictions.

*Compatibility:* The auction platform software shall be compatible with the system's technology stack, including the underlying database management system, web server, and programming languages.

## 4.8 Interfaces

### User Interfaces

- The application will provide a web-based interface for users to interact with the Real Estate Auction System (REAS). This will include intuitive navigation for auction browsing, detailed auction views, bidding functionalities, user profile management, and administrative panels for system oversight.
- Accessibility standards will be followed to ensure the system is usable for all users, including those with disabilities. The interface will be responsive, ensuring compatibility across devices and screen sizes.
- The administrative user interface will allow system administrators to manage auctions, users, system settings, and view transaction reports.

### Hardware Interfaces

- As the REAS is predominantly a software solution with no direct hardware interaction, standard computing devices (PCs, laptops, tablets, and

*smartphones) are the primary hardware interfaces. These devices require standard web browsers (e.g., Chrome, Firefox, Safari) for accessing the REAS.*

- *Integration with hardware for payment processing (e.g., card readers) will be managed via third-party payment gateway APIs, without requiring direct hardware interface development by the REAS.*

## **Software Interfaces**

- *Database System: The REAS will interface with a SQL-based database system for storing and retrieving auction data, user profiles, transaction records, and other relevant information.*
- *Payment Gateway API: Integration with services such as PayPal, Stripe for handling financial transactions securely within the REAS.*
- *Email Service API: For sending transactional emails, notifications, and marketing communications, the REAS will integrate with email delivery services like SendGrid or Amazon SES.*
- *Authentication Service: Integration with OAuth 2.0 providers for secure user authentication, supporting social media logins (e.g., Google, Facebook).*

The system will implement RESTful APIs for server-client communication, supporting secure HTTP (HTTPS) protocols for data transmission.

WebSocket technology will be used for real-time bidding and auction updates to ensure timely information delivery to users.

Integration with SMS gateways for sending notifications and alerts to users' mobile devices, enhancing user engagement and system usability.

## **4.9 Licensing Requirements**

*This section outlines the licensing enforcement and usage restriction requirements that the Real Estate Auction System (REAS) must adhere to, ensuring legal compliance and protecting intellectual property.*

*Software Licensing Compliance:*

- *The REAS shall comply with all software licenses of third-party components used within the system. This includes open-source libraries (under licenses such as MIT, GPL, Apache) and commercial software components. Documentation of compliance shall be maintained and regularly reviewed.*

*User Licensing:*

- *The REAS will implement a user licensing model to control access and use of the software. This includes:*

- *Single-User Licenses for individual users with restrictions on concurrent usage.*
- *Enterprise Licenses for organizations, allowing multiple users access based on the license tier purchased.*
- *Details on license activation, renewal, and verification processes shall be clearly documented and communicated to end-users.*

*Digital Rights Management (DRM):*

- *To protect digital content and intellectual property, the REAS may incorporate DRM technologies. This will ensure that auction listings, images, and other digital assets are only accessible by authorized users and under the terms defined by the content owners.*

*Audit and Compliance:*

- *The system shall include mechanisms for auditing software and user license usage to ensure compliance with the licensing terms. Regular audits will be conducted, and reports generated for internal review and compliance verification.*

*Usage Restrictions:*

- *The REAS will enforce usage restrictions based on the licensing terms. This includes limitations on the number of auctions a user can list or bid on, based on their subscription level, and restrictions on data usage and API calls.*

*Third-Party Licensing Notifications:*

- *The system shall provide notifications or acknowledgments for third-party licenses as required by those licenses. This may include attribution notices within the software's documentation or user interface.*

*License Agreements and Terms of Use:*

- *End-users will be required to accept a License Agreement and Terms of Use before accessing the REAS. These documents will outline the rights and responsibilities of the user, usage restrictions, and legal protections for the software.*

*Intellectual Property Rights:*

- *The software will respect and protect intellectual property rights, ensuring that all content and components used within the REAS are properly licensed or owned by the software developers. Infringement of intellectual property rights will be strictly prohibited.*

*Compliance with Export Restrictions:*

- *The REAS will comply with all applicable export control laws and regulations. This includes restrictions on software distribution to certain countries or entities and compliance with international sanctions.*

*By implementing these licensing requirements, the REAS will ensure legal compliance, protect intellectual property, and provide a clear framework for the use*

*and distribution of the software and its components.*

#### **4.10 Legal, Copyright, and Other Notices**

##### *Copyright Notice:*

- *© [Year of First Publication], [Legal Name of Company or Developer]. All rights reserved.*
- *The software, documentation, and associated materials are protected by copyright laws and international treaties. Unauthorized reproduction or distribution may result in severe civil and criminal penalties.*

##### *Trademark Information:*

- *[List any trademarks referenced in the software or documentation].  
Trademarks and trade names used in this software are the property of their respective owners and are used for identification purposes only.*

##### *Patent Notices:*

- *This software may be covered by one or more patents or pending patent applications. [List patent numbers, if applicable].*

##### *End User License Agreement (EULA):*

- *The use of this software is subject to the terms and conditions outlined in the End User License Agreement (EULA). By installing, copying, or otherwise using the software, you agree to be bound by the terms of the EULA. A copy of the EULA is included with the software and is also available upon request.*

##### *Disclaimer of Warranty:*

- *The software is provided "as is," without warranty of any kind, express or implied, including but not limited to the warranties of merchantability, fitness for a particular purpose, and non-infringement. In no event shall the authors or copyright holders be liable for any claim, damages, or other liability, whether in an action of contract, tort, or otherwise, arising from, out of, or in connection with the software or the use or other dealings in the software.*

##### *Limitation of Liability:*

- *In no event will [Company or Developer's Name] be liable for any indirect, special, incidental, or consequential damages arising out of the use or*



*inability to use the software, even if advised of the possibility of such damages.*

*Export Compliance:*

- *The software and its related documentation are subject to the export control laws of the United States and other countries. You agree to comply with all applicable international and national laws that apply to the software, including the U.S. Export Administration Regulations, as well as end-user, end-use, and destination restrictions issued by U.S. and other governments.*

*Government Use:*

- *If the software is being acquired by or on behalf of the United States Government, then the following provision applies: The software is "commercial computer software" developed exclusively at private expense, and (b) in the event the user is an agency within the Department of Defense, the software is "commercial computer software" and its use, duplication, and disclosure are subject to the restrictions set forth by the developer.*

*Compliance with Applicable Laws:*

- *Users of the software must comply with all applicable laws, regulations, and ordinances relating to the use, reproduction, and distribution of the software.*

*Modification of Terms:*

- 5 *[Company or Developer's Name] reserves the right to modify these notices at any time without notice, and such modifications shall be deemed effective immediately upon posting of the modified notices.*

## **5.1 Applicable Standards**

### **1. Legal and Regulatory Compliance:**

- *GDPR (General Data Protection Regulation): Ensures the system complies with data protection and privacy for all individuals within the European Union and the European Economic Area.*
- *CCPA (California Consumer Privacy Act): Adheres to privacy rights and consumer protection for residents of California, United States.*
- *Anti-Money Laundering (AML) Standards: Complies with AML regulations to prevent fraudulent activities through auction transactions.*

## 2. Quality Standards:

- *ISO 9001: Adherence to the international standard for a quality management system (QMS), ensuring the system consistently meets customer and regulatory requirements.*
- *ISO/IEC 25010: Compliance with the standard for system and software quality requirements and evaluation (SQuaRE), focusing on software product quality.*

## 3. Usability Standards:

- *WCAG 2.1 (Web Content Accessibility Guidelines): Ensures the system's user interfaces are accessible to people with a wide range of disabilities.*
- *ISO/IEC 9241: Compliance with the multi-part standard covering ergonomics of human-computer interaction, ensuring usability.*

## 4. Interoperability Standards:

- *RESTful API Standards: Adheres to the principles of REST for API design, ensuring seamless integration and communication with other systems and services.*
- *OpenAPI Specification (OAS): Ensures that the system's APIs are described in a standard, language-agnostic interface for easy integration.*

## 5. Internationalization and Localization:

- *ISO/IEC 15897: Adherence to the standard for the registration of cultural elements, ensuring the system supports multiple languages and cultural settings.*
- *Unicode Standard: Ensures the system uses the Unicode standard for representing text, supporting global languages and scripts.*

## 6. Operating System Compliance:

- *Windows, macOS, Linux Compliance: Ensures the system is tested and optimized for performance and compatibility across major operating systems.*
- *Mobile Operating Systems: Compliance with Android and iOS standards for mobile applications, ensuring usability and performance on mobile devices.*

## 7. Security Standards:

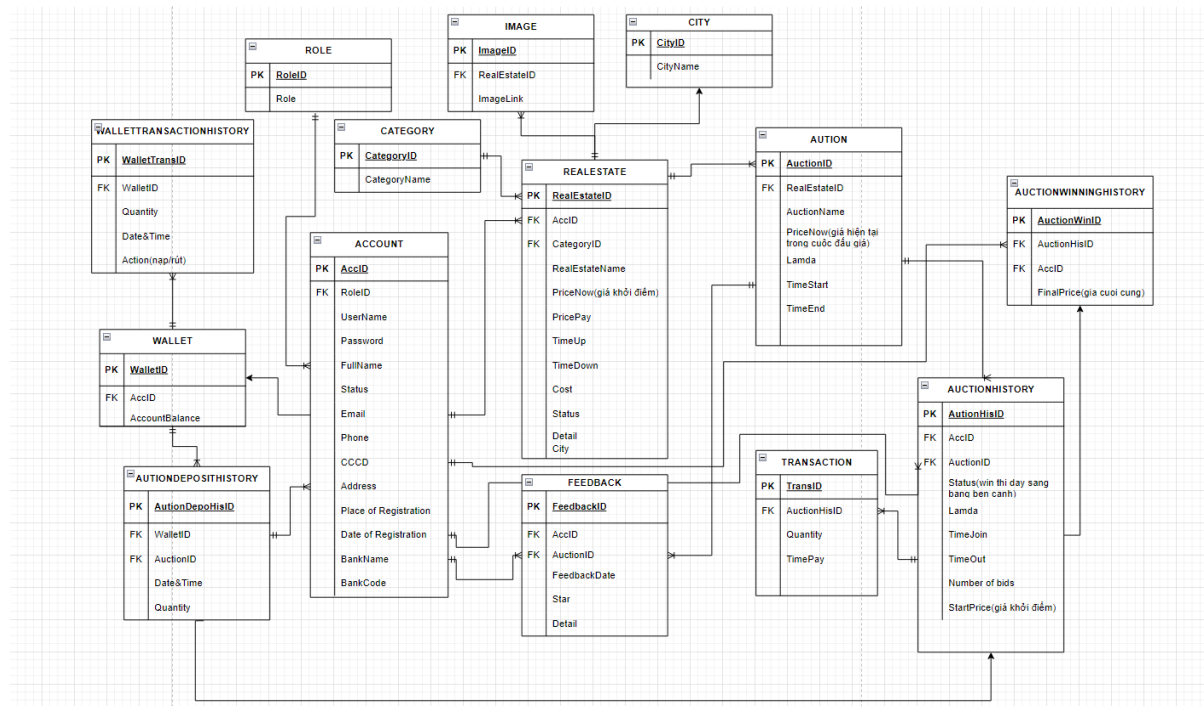
- *ISO/IEC 27001: Adherence to the international standard for managing information security.*
- *OWASP Top 10: Compliance with the most critical web application security*

*risks identified by the Open Web Application Security Project.*

*8. Environmental Standards:*

- 6 *ISO 14001: Ensures the system's development and operation comply with environmental management standards, minimizing its environmental footprint.*

## 7 DATABASE



## **8 SUPPORTING INFORMATION**

*[The supporting information makes the SRS easier to use. It includes:*

*Table of contents*

*Index*

*Appendices*

*These may include use-case storyboards or user-interface prototypes. When appendices are included, the SRS should explicitly state whether or not the appendices are to be considered part of the requirements.]*

*Thieu chi tiet, can phai co them cac thuoc tin cu the trong chuc nang*