



# **QUIZ PRACTICE SYSTEM**

## Software Requirements Specifications

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# I. Project Report

## 1. Status Report

#	Work Item	Status	Notes (Work Item in Details)
1	Overall Description	Completed	
2	User Requirements	Completed	
3	Functional requirements	Completed	
4	Non-functional requirements	Completed	
5	Other requirements	Completed	

## 2. Team Involvements

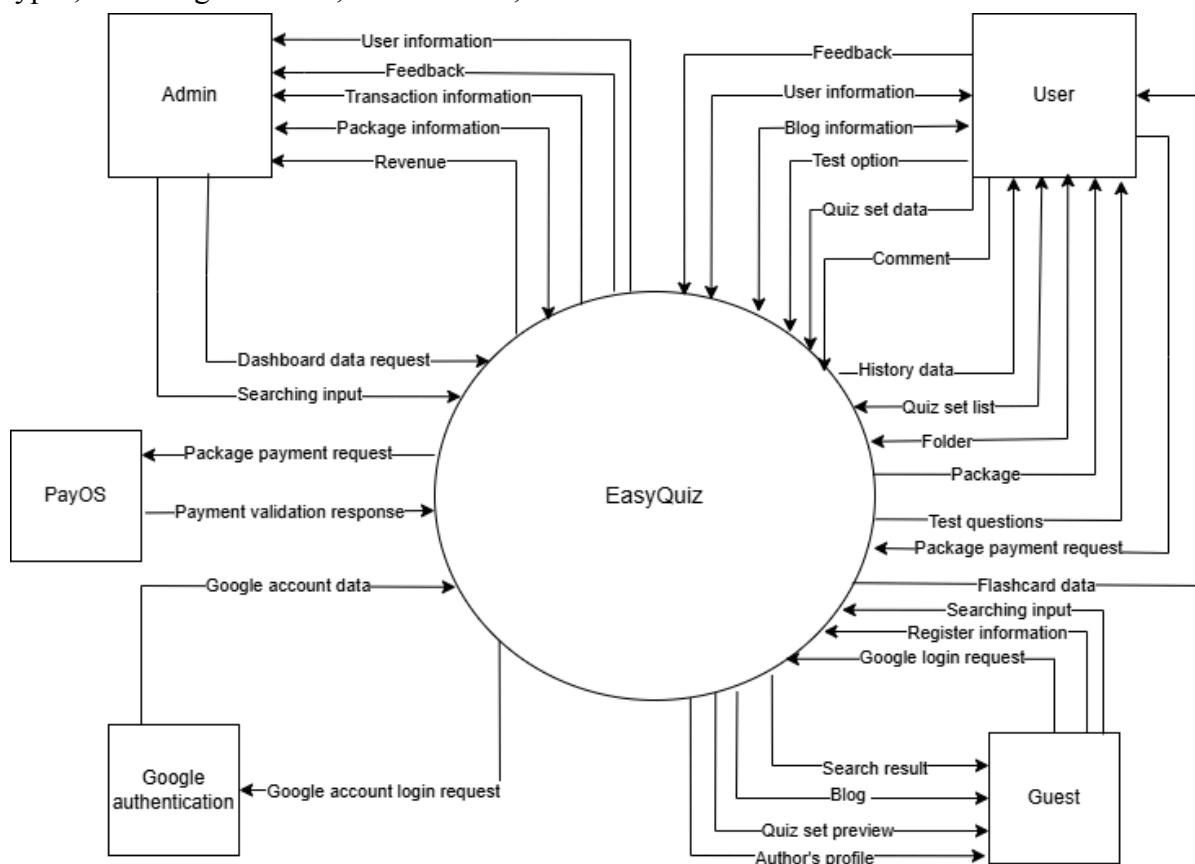
#	Task	Member	Notes (Task Details, etc.)
1	Overall Description	AnhDD, CuongNM, PhuPG	
2	User Requirements	All team	
3	Functional requirements	PhuPG, AnhDD, CuongNM	
4	Non-functional requirements	All team	
5	Other requirements	All team	

## II. Software Requirement Specification

### 1. Overall Description

#### 1.1 Product Overview

The Easy Quiz System is a software system designed to replace the current paper-based system used for creating, managing, and learning quizzes. It aims to provide a centralized platform for users to manage quizzes, offer users a more engaging learning experience, and provide administrators with comprehensive performance data. The system is expected to evolve over several releases, it will also be designed to support various learning types, including flashcard, short answer, and test.



#### 1.2 Business Rules

ID	Description
B01	The email of users must be valid with the right format.
B02	Password must be encrypted.
B03	Password must be more than 8 characters.

B04	When registering or changing a password, a user must confirm the new password.
B05	When registering an account with email, a user must enter an OTP code to verify email.
B06	Administrators shall have full access to all system features, including user management, quiz management, revenue management, reporting, and system configuration.
B07	Every user must have a unique email address associated with their account. A guest cannot register with an email that has already been registered.
B08	User must provide their email and password when logging into the system.
B09	When changing a password, a new password must not be the same as the current password.
B10	When setting up a test, the minimum question is 1 and the maximum question is the number of questions of that quiz set.
B11	Guests can not view details of the quiz set and blog.
B12	An user must belong to one of the two roles: User and Admin.
B13	When an account is registered, the initial role of the account is User.
B14	User-generated content (quizzes) must adhere to community guidelines (no hate speech, plagiarism, etc.).
B15	Users should maintain a safe and respectful learning environment.
B16	A quiz set must contain at least one question and one answer.
B17	Premium package subscriptions have a defined billing cycle (monthly or annual).
B18	Access to premium features is contingent on an active subscription.
B19	Provides customer support service and addresses potential issues.
B20	Users can join a maximum of 5 times to learn and test quiz sets a day. To join more, users need to upgrade to Premium.
B21	Users can create a maximum of 10 free quiz sets. To create more, they need to upgrade to a Premium package.
B22	Users can share their quizzes with others via links or social media.
B23	Users can track the quizzes they have created or have joined recently.
B24	The system will provide quiz suggestions based on users' learning history and

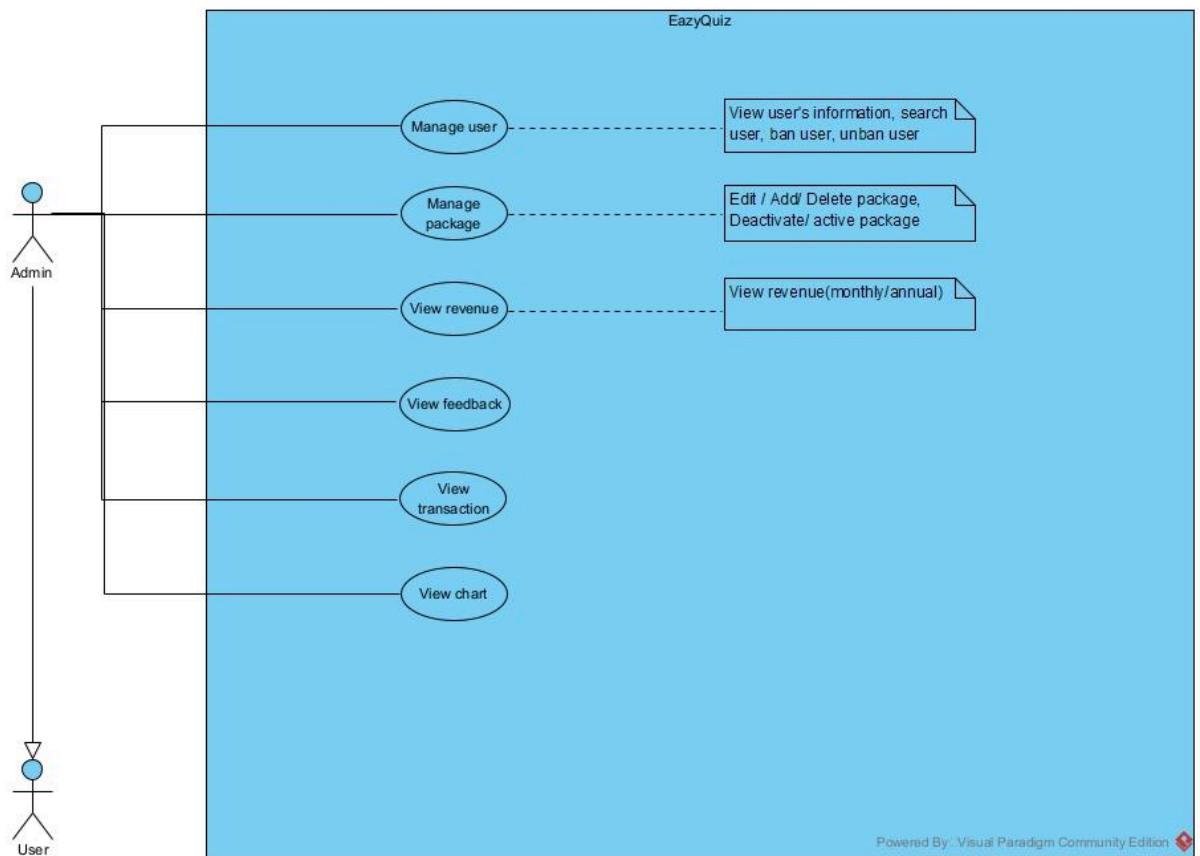
	interests.
B25	Users can delete their quizzes which were created at any time, but they cannot recover them once deleted.

## 2. User Requirements

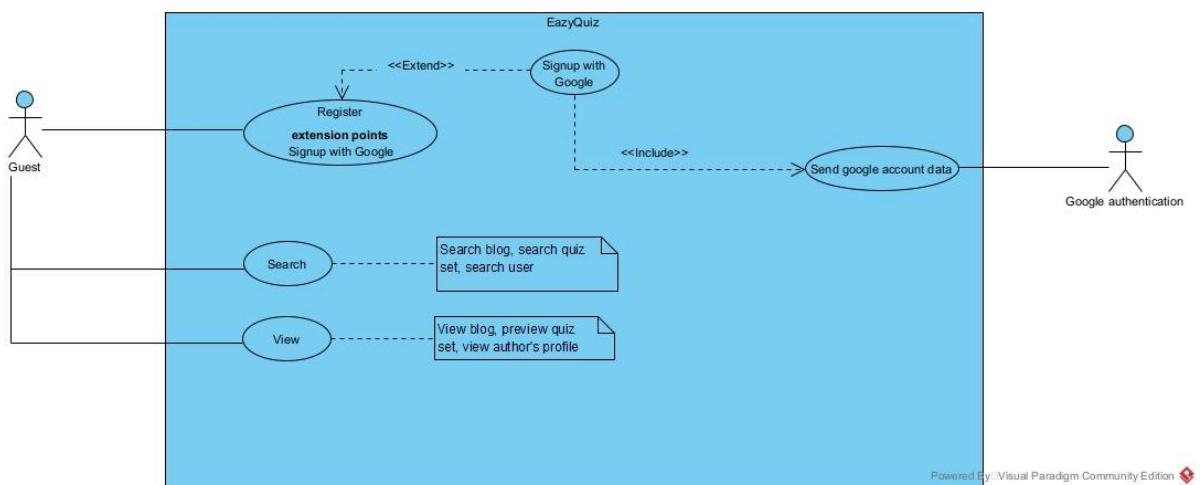
### 2.1 Overview

#### 2.1.1 Use case diagram

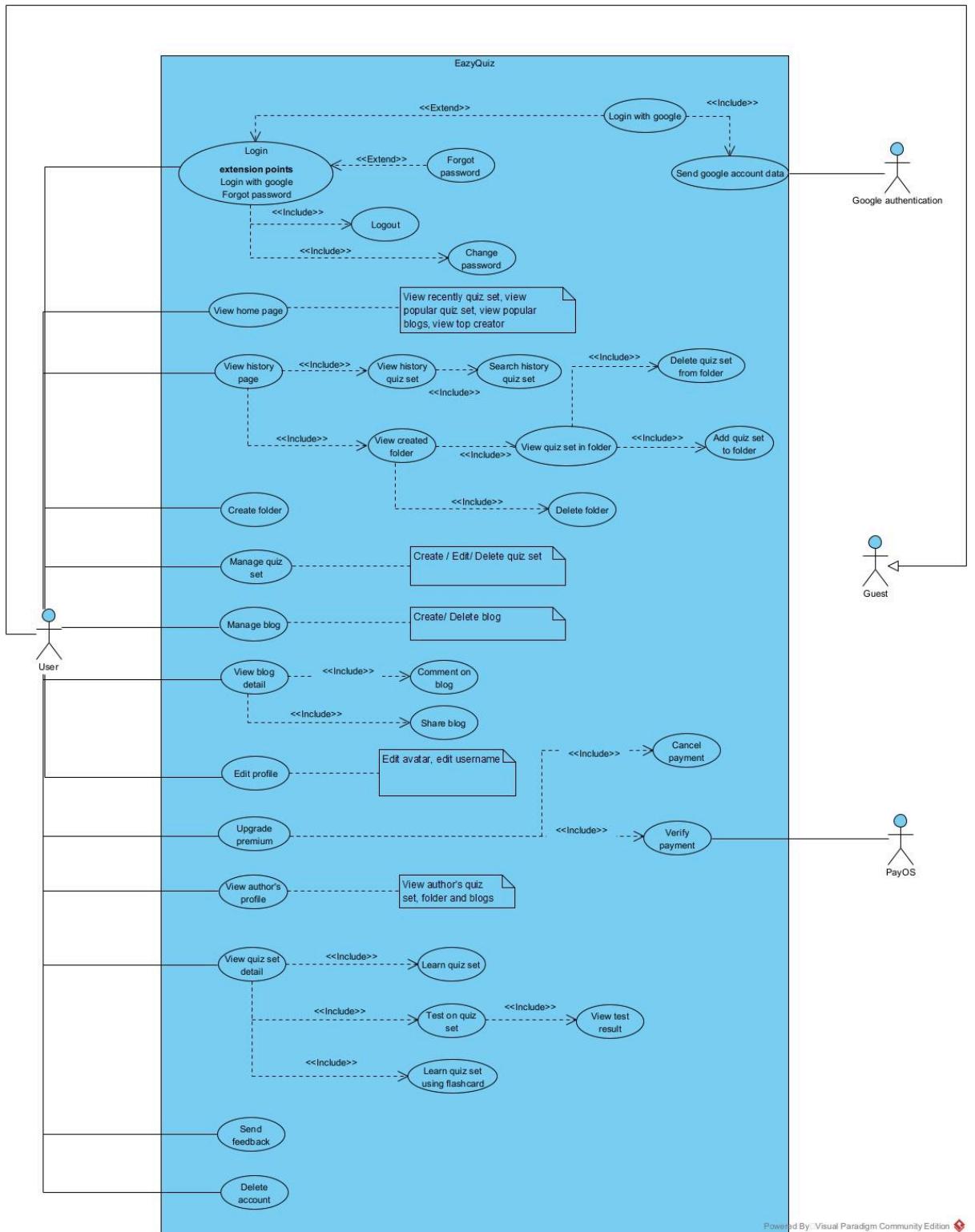
Admin:



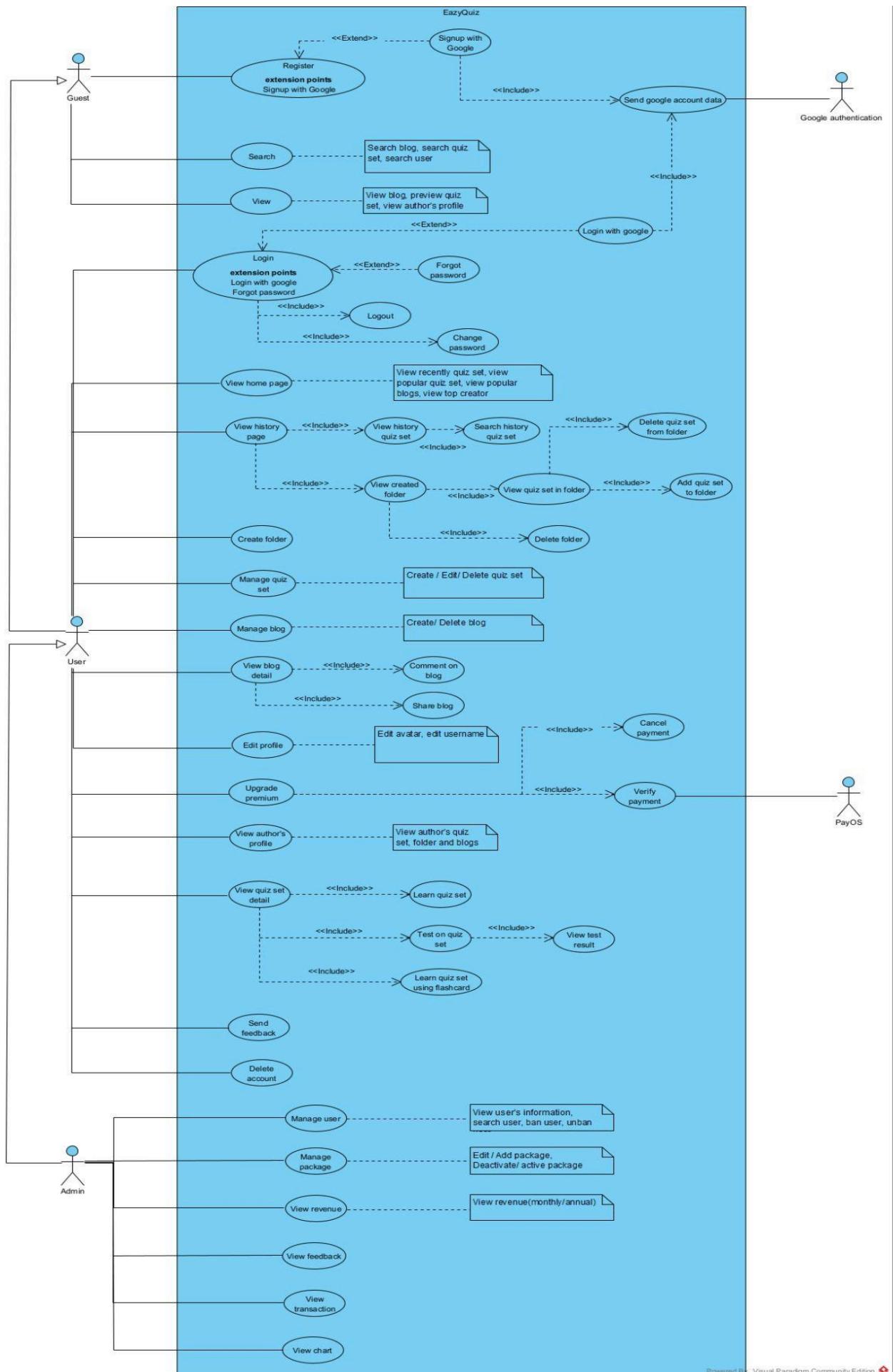
Guest:



## User:



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## 2.1.2 System Actors

#	Actors	Description
1	Admin	People who manage the EasyQuiz System
2	User	The registered user
3	Guest	The user that has not yet registered account
4	PayOS service	The service that validated the request of the user
5	Google authentication	The service that verifies Google accounts for users to login

## 2.1.3 Use cases list

ID	Use Case	Primary Actor	Secondary Actor
UC-01	Register user	Guest	N/A
UC-02	View quiz set preview	Guest	N/A
UC-03	View author's profile	Guest	User, Admin
UC-04	Search for all	Guest	User, Admin
UC-05	Search user	Admin	N/A
UC-06	Search transaction	Admin	N/A
UC-07	Login	Admin	N/A
UC-08	Login with Google	Admin	N/A
UC-09	Forgot password	Admin	N/A
UC-10	Change password	Admin	N/A
UC-11	Logout	Admin	N/A
UC-12	View feedback	Admin	N/A
UC-13	View transaction	Admin	N/A
UC-14	View report chart	Admin	N/A
UC-15	View user information	Admin	N/A
UC-16	Ban an user	Admin	N/A

UC-17	Unban an user	Admin	N/A
UC-18	Edit package	Admin	N/A
UC-19	Add package	Admin	N/A
UC-20	Deactivate package	Admin	N/A
UC-21	Activate package	Admin	N/A
UC-22	Upgrade premium	User	N/A
UC-23	Cancel payment	User	N/A
UC-24	Verify payment	PayOS service	N/A
UC-25	Add quiz set to folder	User	N/A
UC-26	Delete quiz set from folder	User	N/A
UC-27	Create new folder	User	N/A
UC-28	Delete folder	User	N/A
UC-29	Edit account information	User	N/A
UC-30	Delete account	User	N/A
UC-31	Create quiz set	User	N/A
UC-32	Edit quiz set	User	N/A
UC-33	Delete quiz set	User	N/A
UC-34	Test on quiz set	User	N/A
UC-35	Learn quiz set	User	N/A
UC-36	Learn quiz set using flashcard	User	N/A
UC-37	View quiz history	User	N/A
UC-38	View quiz's detail	User	N/A
UC-39	Send feedback	User	N/A
UC-40	Login	User	N/A
UC-41	Login with Google	User	N/A
UC-42	Forgot password	User	N/A
UC-43	Change password	User	N/A

UC-44	Logout	User	N/A
UC-45	Create blog	User	N/A
UC-46	Delete blog	User	N/A
UC-47	View blog	User	N/A
UC-48	Comment on blog	User	N/A
UC-49	Delete comment	User	N/A
UC-50	Edit blog	User	N/A

## 2.2 Use Case Specification

### 2.2.1. Guest

#### 2.2.1.1. Register user

<b>Use Case ID</b>	UC - 01	<b>Use Case Name</b>	Register user
<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Guest	<b>Secondary Actor</b>	N/A
<b>Description</b>	Register for an account on the system.		
<b>Pre-conditions</b>	Guests did not have an account before.		
<b>Post-conditions</b>	<ol style="list-style-type: none"> <li>When the normal flow completes successfully, a new account will be created with the role of the user and saved into a database.</li> <li>The system redirects to the Login page.</li> </ol>		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>Go to the Sign up screen.</li> <li>Input your email.</li> <li>Input your username.</li> <li>Input your password.</li> <li>Confirm your password.</li> <li>Click “Sign up” button.</li> <li>System sends an OTP code to your email.</li> <li>Input OTP code.</li> <li>Click “Verify” button.</li> <li>Redirect to the Login screen.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		

	E2 - Email does not exist. E3 - Email existed in the database. E4 - Username existed in the database. E5 - OTP Code is incorrect. E6 - Password is incorrect.
<b>Priority</b>	High
<b>Frequency of Use</b>	High
<b>Business Rules</b>	B01, B02, B03, B04, B07, B13
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.1.2. View quiz set preview

<b>Use Case ID</b>	UC - 02	<b>Use Case Name</b>	View quiz set preview
<b>Created By</b>	PhuPG	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Guest	<b>Secondary Actor</b>	N/A
<b>Description</b>	Guest can view the quiz set preview without login.		
<b>Pre-conditions</b>	N/A		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Go to the Home page.</li> <li>2. Click any quiz set to view the quiz set preview.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	B11		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

### 2.2.1.3. View author's profile

<b>Use Case ID</b>	UC - 03	<b>Use Case Name</b>	View author's profile
<b>Created By</b>	PhuPG	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Guest	<b>Secondary Actor</b>	User, Admin
<b>Description</b>	Guest can view the author's profile without login.		
<b>Pre-conditions</b>	N/A		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	1. Go to the Home page. 2. Click an account to view the author's profile.		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	B11		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

### 2.2.1.4. Search for all

<b>Use Case ID</b>	UC - 04	<b>Use Case Name</b>	Search for all
<b>Created By</b>	PhuPG	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Guest	<b>Secondary Actor</b>	User, Admin
<b>Description</b>	Guest can search information involved in the user, quiz set, blog.		
<b>Pre-conditions</b>	N/A		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	1. Go to the Home page. 2. Click the Search bar on the header and input to search.		
<b>Alternative Flow</b>	N/A		

<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - Inputting nothing on a search bar.
<b>Priority</b>	High
<b>Frequency of Use</b>	High
<b>Business Rules</b>	B11
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

## 2.2.2. Admin

### 2.2.2.1. Search user

<b>Use Case ID</b>	UC - 05	<b>Use Case Name</b>	Search user
<b>Created By</b>	PhuPG	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin wants to search a user based on name.		
<b>Pre-conditions</b>	Admin has signed into the Admin page.		
<b>Post-conditions</b>	The system displays a list of users which matches with the search content.		
<b>Normal Flow</b>	1. Go to the Dashboard screen. 2. Click on the “User” button on the sidebar. 3. In the search bar, input the user that you want to search. 4. The system will search following after your input. 5. The system displays information of users.		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - The user does not exist. E3 - Inputting nothing in a search bar.		
<b>Priority</b>	Medium		
<b>Frequency of Use</b>	Medium		
<b>Business Rules</b>	B06, B07, B08, B12		
<b>Other Information</b>	N/A		

<b>Assumptions</b>	N/A
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### 2.2.2.2. Search transaction

<b>Use Case ID</b>	UC - 06	<b>Use Case Name</b>	Search transaction
<b>Created By</b>	PhuPG	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin wants to search for a transaction.		
<b>Pre-conditions</b>	Admin has signed into the Admin page.		
<b>Post-conditions</b>	The system displays a list of transactions which matches with the search content.		
<b>Normal Flow</b>	1. Go to the Dashboard screen. 2. Click on the “Transaction” button on the sidebar. 2. In the search bar, input the user that you want to search. 4. The system will search following after your input. 5. The system displays information of users.		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - Inputting nothing in a search bar.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	B06,B07, B08, B12		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

### 2.2.2.3. Login

<b>Use Case ID</b>	UC - 07	<b>Use Case Name</b>	Login
<b>Created By</b>	PhuPG	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin login to the system using email and password.		
<b>Pre-conditions</b>	Admin logged to the system successfully.		

<b>Post-conditions</b>	Admin will be redirected to the dashboard.
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Go to the Home screen.</li> <li>2. Click the “Login” button.</li> <li>3. Enter registered email and password then click on the “Login” button.</li> </ol>
<b>Alternative Flow</b>	N/A
<b>Exceptions</b>	<p>E1 - The system cannot communicate with the server.  E2 - Email does not exist.  The system will display an error message: “Your email does not match any accounts.”  E3 - Password is incorrect.  The system will display an error message: “Incorrect password. Please re-enter your password.”</p>
<b>Priority</b>	High
<b>Frequency of Use</b>	High
<b>Business Rules</b>	B01, B02, B08, B12
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.2.4. Login with Google

<b>Use Case ID</b>	UC - 08	<b>Use Case Name</b>	Login with Google
<b>Created By</b>	PhuPG	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin login to the system using a Google account.		
<b>Pre-conditions</b>	Admin logged to the system successfully.		
<b>Post-conditions</b>	Admin will be redirected to the dashboard.		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Go to the Home screen.</li> <li>2. Click the “Login with Google” button.</li> <li>3. Then click on the account you want to login with.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	<p>E1 - The system cannot communicate with the server.  E2 - Email does not exist.  The system will display an error message: “Your email does not match any accounts.”</p>		

	E3 - Password is incorrect. The system will display an error message: “Incorrect password. Please re-enter your password.”
<b>Priority</b>	High
<b>Frequency of Use</b>	High
<b>Business Rules</b>	B01, B02, B05, B08, B12
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.2.5. Forgot password

<b>Use Case ID</b>	UC - 09	<b>Use Case Name</b>	Forgot password
<b>Created By</b>	PhuPG	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin wants to reset the password when they forgot their password.		
<b>Pre-conditions</b>	N/A		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>On the login page, click “Forgot password”.</li> <li>The system redirects to another page and sends an OTP code to email.</li> <li>Verify the email by inputting received OTP.</li> <li>Create a new password, re-enter it and use it to login.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - OTP Code is incorrect. E3 - Confirm the new password is incorrect.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	B02, B03		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

### 2.2.2.6. Change password

<b>Use Case ID</b>	UC - 10	<b>Use Case Name</b>	Change password
<b>Created By</b>	PhuPG	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin wants to change the password.		
<b>Pre-conditions</b>	1. Admin access to the system. 2. Admin is currently logged in.		
<b>Post-conditions</b>	The password changed successfully.		
<b>Normal Flow</b>	1. Click on the “Setting” icon on the left in the top navigation bar. 2. Click the “Change password” button. 3. The system will display a form to change password. 4. Input the old password. 5. Enter the new password 6. Confirm the new password 7. Click the “Change” button. 8. The system will display a successful message.		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - The current password is incorrect. E3 - Confirm the new password is incorrect.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	B02, B03, B04		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

### 2.2.2.7. Logout

<b>Use Case ID</b>	UC - 11	<b>Use Case Name</b>	Logout
<b>Created By</b>	PhuPG	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin log out the system.		
<b>Pre-conditions</b>	1. Admin or user access to the system.		

	2. Admin or user is currently logged in.
<b>Post-conditions</b>	Logged out successfully.
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. On the screen, click the avatar icon on the header.</li> <li>2. Click “Log out”.</li> <li>3. The system will redirect to the Home page.</li> </ol>
<b>Alternative Flow</b>	N/A
<b>Exceptions</b>	E1 - The system cannot communicate with the server.
<b>Priority</b>	High
<b>Frequency of Use</b>	High
<b>Business Rules</b>	N/A
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.2.8. View feedback

<b>Use Case ID</b>	UC - 12	<b>Use Case Name</b>	View feedback
<b>Created By</b>	PhuPG	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin wants to view feedback from users.		
<b>Pre-conditions</b>	<ol style="list-style-type: none"> <li>1. Admin access to the system.</li> <li>2. Admin is currently logged in.</li> </ol>		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Go to the dashboard, click the “Feedback” button on the sidebar.</li> <li>2. Here admin can view feedback.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	Low		
<b>Frequency of Use</b>	Low		
<b>Business Rules</b>	B06		

<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.2.9. View transaction

<b>Use Case ID</b>	UC - 13	<b>Use Case Name</b>	View transaction
<b>Created By</b>	PhuPG	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin wants to view transactions of the users.		
<b>Pre-conditions</b>	Admin has to log into the system.		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Go to the dashboard, click the “Transaction” button on the sidebar.</li> <li>2. Here the admin can view transactions.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	Medium		
<b>Frequency of Use</b>	Low		
<b>Business Rules</b>	B06		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

#### 2.2.2.10. View report chart

<b>Use Case ID</b>	UC - 14	<b>Use Case Name</b>	View report chart
<b>Created By</b>	PhuPG	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin wants to view a report chart.		
<b>Pre-conditions</b>	Admin has to log into the system.		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Go to the Dashboard page.</li> </ol>		

	2. Here admin can view the report chart.
<b>Alternative Flow</b>	N/A
<b>Exceptions</b>	E1 - The system cannot communicate with the server.
<b>Priority</b>	Low
<b>Frequency of Use</b>	Low
<b>Business Rules</b>	B06
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.2.11. View user information

<b>Use Case ID</b>	UC - 15	<b>Use Case Name</b>	View user information
<b>Created By</b>	PhuPG	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin wants to view user information.		
<b>Pre-conditions</b>	Admin has to log into the system.		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	1. Go to the Dashboard page, click the “User” button on the sidebar. 2. Here admin can view user information.		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	Low		
<b>Frequency of Use</b>	Low		
<b>Business Rules</b>	B06		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

### 2.2.2.12. Ban an user

<b>Use Case ID</b>	UC - 16	<b>Use Case Name</b>	Ban an user
<b>Created By</b>	PhuPG	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin wants to ban an account.		
<b>Pre-conditions</b>	Admin has to log into the system.		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Go to the dashboard, click the “User” button on the sidebar.</li> <li>2. In the “Note” column, the admin can set a ban status for an user through the “Ban” button.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - Inputting nothing in the search bar.		
<b>Priority</b>	Low		
<b>Frequency of Use</b>	Low		
<b>Business Rules</b>	B06		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

### 2.2.2.13. Unban an user

<b>Use Case ID</b>	UC - 17	<b>Use Case Name</b>	Unban an user
<b>Created By</b>	PhuPG	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin wants to unban an account.		
<b>Pre-conditions</b>	Admin has to log into the system.		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Go to the dashboard, click the “User” button on the sidebar.</li> <li>2. In the “Note” column, the admin can set a unban status for an user through the “Unban” button.</li> </ol>		
<b>Alternative Flow</b>	N/A		

<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - Inputting nothing in the search bar.
<b>Priority</b>	Low
<b>Frequency of Use</b>	Low
<b>Business Rules</b>	B06
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.2.14. Edit package

<b>Use Case ID</b>	UC - 18	<b>Use Case Name</b>	Edit package
<b>Created By</b>	CuongNM	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin wants to edit packages.		
<b>Pre-conditions</b>	Admin has accessed the Admin page.		
<b>Post-conditions</b>	The package has been changed		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Go to the dashboard, click the “Package” button on the sidebar.</li> <li>2. In the “Action” column, the admin can edit the package through the “Edit” button.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - The new price is empty. E3 - The new price is not numeric.		
<b>Priority</b>	Low		
<b>Frequency of Use</b>	Low		
<b>Business Rules</b>	B17		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

### 2.2.2.15. Add package

<b>Use Case ID</b>	UC - 19	<b>Use Case Name</b>	Add package
<b>Created By</b>	CuongNM	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin wants to add a new package for users.		
<b>Pre-conditions</b>	Admin has accessed the Admin page.		
<b>Post-conditions</b>	When the normal flow completes successfully, a new package will be added to the database.		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Go to the dashboard, click the “Package” button on the sidebar.</li> <li>2. Click on the “New package” button to add a new package.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	Low		
<b>Frequency of Use</b>	Low		
<b>Business Rules</b>	B17		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

### 2.2.2.16. Deactivate package

<b>Use Case ID</b>	UC - 20	<b>Use Case Name</b>	Deactivate package
<b>Created By</b>	CuongNM	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin wants to deactivate a package.		
<b>Pre-conditions</b>	Admin has accessed the Admin page.		
<b>Post-conditions</b>	When the normal flow completes successfully, the deleted package's status will be changed to inactive.		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Go to the dashboard, click the “Package” button on the sidebar.</li> <li>2. Click to choose the status of the package to “Deactivated”.</li> </ol>		

<b>Alternative Flow</b>	N/A
<b>Exceptions</b>	E1 - The system cannot communicate with the server.
<b>Priority</b>	Low
<b>Frequency of Use</b>	Low
<b>Business Rules</b>	N/A
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.2.17. Activate package

<b>Use Case ID</b>	UC - 21	<b>Use Case Name</b>	Activate package
<b>Created By</b>	CuongNM	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	Admin	<b>Secondary Actor</b>	N/A
<b>Description</b>	Admin wants to activate a package.		
<b>Pre-conditions</b>	Admin has accessed the Admin page.		
<b>Post-conditions</b>	When the normal flow completes successfully, the deleted package's status will be changed to inactive.		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Go to the dashboard, click the “Package” button on the sidebar.</li> <li>2. Click to choose the status of the package to “Active”.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	Low		
<b>Frequency of Use</b>	Low		
<b>Business Rules</b>	N/A		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

### 2.2.3. User

#### 2.2.3.1. Upgrade premium

<b>Use Case ID</b>	UC - 22	<b>Use Case Name</b>	Update premium
<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	Users want to update premium to have a better experience.		
<b>Pre-conditions</b>	The user is currently logged in.		
<b>Post-conditions</b>	When the normal flow complete successfully, the changed type property of the account will be saved into the database.		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. On the Home screen, click the “Upgrade” button on the header near the avatar icon.</li> <li>2. Choose the package.</li> <li>3. The system will move to the payment system.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - Payment failed.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	B17, B18, B20, B21		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

#### 2.2.3.2. Cancel payment

<b>Use Case ID</b>	UC - 23	<b>Use Case Name</b>	Cancel payment
<b>Created By</b>	CuongNM	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	Users cancel a payment.		
<b>Pre-conditions</b>	Users choose a package.		
<b>Post-conditions</b>	The payment has been cancelled.		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. On the Home page, click on the “Upgrade” button.</li> </ol>		

	<p>2. Then choose the package the user wants to purchase.</p> <p>3. The system will redirect to the QR code page.</p> <p>4. Here the user clicks on the “Cancel” button.</p>
<b>Alternative Flow</b>	N/A
<b>Exceptions</b>	E1 - The system cannot communicate with the server.
<b>Priority</b>	High
<b>Frequency of Use</b>	High
<b>Business Rules</b>	B17
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.3.3. Verify payment

<b>Use Case ID</b>	UC - 24	<b>Use Case Name</b>	Verify payment
<b>Created By</b>	CuongNM	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	PayOS service	<b>Secondary Actor</b>	N/A
<b>Description</b>	Payment service responds to the user's payment request.		
<b>Pre-conditions</b>	N/A		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<p>1. Payment system gets the request from the user.</p> <p>2. Payment system response user's request.</p>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	N/A		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

#### 2.2.3.4. Add quiz set to folder

<b>Use Case ID</b>	UC - 25	<b>Use Case Name</b>	Add quiz set to folder
<b>Created By</b>	CuongNM	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	User wants to add a quiz to the folder.		
<b>Pre-conditions</b>	User created a folder.		
<b>Post-conditions</b>	When the normal flow completes successfully, a quiz set will be added to the database link with userId and folderId.		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Choose a folder.</li> <li>2. Add a quiz set to the folder.</li> <li>3. Click the “Done” button.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	N/A		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

#### 2.2.3.5. Delete quiz set from folder

<b>Use Case ID</b>	UC - 26	<b>Use Case Name</b>	Delete quiz set from folder
<b>Created By</b>	CuongNM	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	User wants to delete the quiz set from a folder.		
<b>Pre-conditions</b>	User had a folder.		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. User chooses a folder.</li> <li>2. Click a quiz set which the user wants to delete.</li> <li>3. Delete quiz set and confirm deletion.</li> </ol>		

<b>Alternative Flow</b>	N/A
<b>Exceptions</b>	E1 - The system cannot communicate with the server.
<b>Priority</b>	High
<b>Frequency of Use</b>	High
<b>Business Rules</b>	B25
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.3.6. Create new folder

<b>Use Case ID</b>	UC - 27	<b>Use Case Name</b>	Create new folder
<b>Created By</b>	CuongNM	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	User wants to create a new folder to learn.		
<b>Pre-conditions</b>	N/A		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. User clicks the “Create” button.</li> <li>2. Choose quizzes to add to the folder.</li> <li>3. Click the “Done” button.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	N/A		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

#### 2.2.3.7. Delete folder

<b>Use Case ID</b>	UC - 28	<b>Use Case Name</b>	Delete folder
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<b>Created By</b>	AnhNLH	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	A user wants to delete a folder from the system.		
<b>Pre-conditions</b>	1. The user is currently logged in. 2. The folder exists and is accessible to the user.		
<b>Post-conditions</b>	The folder and its contents are permanently deleted from the system.		
<b>Normal Flow</b>	1. On the Home screen, click “History”. 2. Select the folder to be deleted. 3. Click the “Delete” button. 4. The system displays a confirmation dialog. 5. Confirm the deletion by clicking “Yes” in the dialog. 6. The system deletes the folder and its contents.		
<b>Alternative Flow</b>	1. In step 5 of the Normal Flow, the user clicks “No” in the confirmation dialog. 2. The system cancels the deletion process and returns to the folder view.		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	Medium		
<b>Business Rules</b>	B25		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	1. The user understands the consequences of deleting a folder (e.g., permanent loss of data). 2. The system has a backup mechanism in place for critical data.		

#### 2.2.3.8. Edit account information

<b>Use Case ID</b>	UC - 29	<b>Use Case Name</b>	Edit account information
<b>Created By</b>	CuongNM	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	Users want to edit their information.		
<b>Pre-conditions</b>	N/A		

<b>Post-conditions</b>	N/A
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Click the icon avatar.</li> <li>2. Click the “Profile” button.</li> <li>3. Click the “Edit” button.</li> <li>4. Save the change.</li> </ol>
<b>Alternative Flow</b>	N/A
<b>Exceptions</b>	E1 - The system cannot communicate with the server.
<b>Priority</b>	Low
<b>Frequency of Use</b>	Low
<b>Business Rules</b>	N/A
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.3.9. Delete account

<b>Use Case ID</b>	UC - 30	<b>Use Case Name</b>	Delete account
<b>Created By</b>	CuongNM	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	Users want to delete their accounts.		
<b>Pre-conditions</b>	N/A		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Click the icon avatar.</li> <li>2. Click the “Delete account” button.</li> <li>3. Confirm delete.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	Low		
<b>Frequency of Use</b>	Low		
<b>Business Rules</b>	N/A		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

### 2.2.3.10. Create quiz set

<b>Use Case ID</b>	UC - 31	<b>Use Case Name</b>	Create quiz set
<b>Created By</b>	CuongNM	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	User wants to create a quiz.		
<b>Pre-conditions</b>	N/A		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Click the “+” button.</li> <li>2. Add quiz information.</li> <li>3. Click the “Done” button.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - The quiz has no question.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	B21, B23,		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

### 2.2.3.11. Edit quiz set

<b>Use Case ID</b>	UC - 32	<b>Use Case Name</b>	Edit quiz set
<b>Created By</b>	CuongNM	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	User wants to edit the quiz.		
<b>Pre-conditions</b>	N/A		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Choose a quiz.</li> <li>2. Edit questions or answers in the quiz.</li> <li>3. Save change.</li> </ol>		

<b>Alternative Flow</b>	N/A
<b>Exceptions</b>	E1 - The system cannot communicate with the server.
<b>Priority</b>	High
<b>Frequency of Use</b>	High
<b>Business Rules</b>	N/A
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.3.12. Delete quiz set

<b>Use Case ID</b>	UC - 33	<b>Use Case Name</b>	Delete quiz set
<b>Created By</b>	CuongNM	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	User wants to delete the quiz.		
<b>Pre-conditions</b>	N/A		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Choose a quiz.</li> <li>2. Click the “Delete” button.</li> <li>3. Confirm delete.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	Low		
<b>Frequency of Use</b>	Low		
<b>Business Rules</b>	B25		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

#### 2.2.3.13. Test on quiz set

<b>Use Case ID</b>	UC - 34	<b>Use Case Name</b>	Test on quiz set
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<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	Users want to test the quiz set that they learned.		
<b>Pre-conditions</b>	The user is currently logged in.		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Click on any quiz.</li> <li>2. Click the “Test” button.</li> <li>3. Answer the questions on the screen and submit.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	B20		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

#### 2.2.3.14. Learn quiz set

<b>Use Case ID</b>	UC - 35	<b>Use Case Name</b>	Learn quiz set
<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	Users want to learn a quiz set.		
<b>Pre-conditions</b>	The user is currently logged in.		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Click on any quiz.</li> <li>2. Click the “Learn” button.</li> <li>3. Answer the questions on the screen and submit.</li> <li>4. Click “Next” to learn the next quiz.</li> </ol>		
<b>Alternative Flow</b>	Step 3: If you click “Don’t know?”, the system will show the correct answer.		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		

<b>Priority</b>	High
<b>Frequency of Use</b>	High
<b>Business Rules</b>	B20
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.3.15. Learn quiz set using flashcard

<b>Use Case ID</b>	UC - 36	<b>Use Case Name</b>	Learn quiz set using flashcard
<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	Users want to learn the quiz set by using flashcards.		
<b>Pre-conditions</b>	The user is currently logged in.		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Click on any quiz.</li> <li>2. Click the “Flashcard” button.</li> <li>3. Click to swap between questions and answers, you can swap order of quiz, too.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	B20		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

#### 2.2.3.16. View quiz history

<b>Use Case ID</b>	UC - 37	<b>Use Case Name</b>	View quiz history
<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025

<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	Users want to see their quiz history.		
<b>Pre-conditions</b>	The user is currently logged in.		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. On the Home screen, click “History” on the tab left.</li> <li>2. The system will display quizzes you have taken recently.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	Medium		
<b>Frequency of Use</b>	Medium		
<b>Business Rules</b>	N/A		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

#### 2.2.3.17. View quiz's detail

<b>Use Case ID</b>	UC - 38	<b>Use Case Name</b>	View quiz's detail
<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	Users want to see the content of a quiz (questions and answers).		
<b>Pre-conditions</b>	The user is currently logged in.		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Click on any quiz.</li> <li>2. The system will redirect to the quiz's detail page. Here you can see the questions and answers of that quiz to learn.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	N/A		

<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.3.18. Send feedback

<b>Use Case ID</b>	UC - 39	<b>Use Case Name</b>	Send feedback
<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	Users want to report problems encountered when using the system or give feedback about the system to the admin.		
<b>Pre-conditions</b>	The user is currently logged in.		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. On the Home screen, click on the avatar icon.</li> <li>2. Choose the “Help and feedback” button.</li> <li>3. The system will redirect to the Help and feedback page.</li> <li>4. Scroll down to the bottom of the page, fill in the feedback section and submit.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - Feedback not filled in sent.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	B15, B19		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

#### 2.2.3.19. Login

<b>Use Case ID</b>	UC - 40	<b>Use Case Name</b>	Login
<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	An user log in to the system using email and password.		

<b>Pre-conditions</b>	1. The user has already registered an account. 2. The user can access the system.
<b>Post-conditions</b>	1. The user is logged in to the system. 2. The user is redirected to the Home screen.
<b>Normal Flow</b>	1. Go to the Login screen. 2. Input email and password. 3. Click the “Login” button. 4. The system redirects the user to the Home page.
<b>Alternative Flow</b>	N/A
<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - Email does not exist. E3 - Password is incorrect.
<b>Priority</b>	High
<b>Frequency of Use</b>	High
<b>Business Rules</b>	B05, B08, B12
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.3.20. Login with Google

<b>Use Case ID</b>	UC - 41	<b>Use Case Name</b>	Login with Google
<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	An user log in to the system using a Google account.		
<b>Pre-conditions</b>	The user has already registered an account.		
<b>Post-conditions</b>	1. The user is logged in to the system. 2. The user is redirected to the Home screen.		
<b>Normal Flow</b>	1. Go to the Login screen. 2. Click the “Login with Google” button. 3. The system redirects the user to the Home page.		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	High		

<b>Frequency of Use</b>	High
<b>Business Rules</b>	B05, B08, B12
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.3.21. Forgot password

<b>Use Case ID</b>	UC - 42	<b>Use Case Name</b>	Forgot password
<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	A user forgot her/his password and wants to reset it.		
<b>Pre-conditions</b>	The email has already been registered.		
<b>Post-conditions</b>	The system will send a new password to the user's email.		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Go to the Login screen.</li> <li>2. Click "Forgot password".</li> <li>3. Input your email.</li> <li>4. The system will send to the email a code to verify.</li> <li>5. Input the code.</li> <li>6. The system will display a successful message and send to the email a new password.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - Email does not exist. E3 - OTP Code is incorrect.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	B02, B03, B05		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

#### 2.2.3.22. Change password

<b>Use Case ID</b>	UC - 43	<b>Use Case Name</b>	Change password
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<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	An user wants to change their password.		
<b>Pre-conditions</b>	The user is currently logged in.		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. On the Home screen, click the avatar icon on the header.</li> <li>2. Click the “Settings” button.</li> <li>3. On the Settings page, search for “Change password”.</li> <li>4. The system will display a form to change password.</li> <li>5. Input the old password.</li> <li>6. Input the new password and confirm it.</li> <li>7. Click the “Change password” button.</li> <li>8. The system will display a successful message.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - The current password is incorrect. E3 - Confirm the new password is incorrect.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	B02, B03, B04, B09		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

### 2.2.3.23. Logout

<b>Use Case ID</b>	UC - 44	<b>Use Case Name</b>	Logout
<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	An user logs out of the system.		
<b>Pre-conditions</b>	<ol style="list-style-type: none"> <li>1. User access to the system.</li> <li>2. User is currently logged in.</li> </ol>		
<b>Post-conditions</b>	The user is logged out of the system.		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. On the Home screen, click the avatar icon on the header or</li> </ol>		

	click the “Logout” icon on the tableft. 2. Click the “Logout” button. 3. The system will redirect the user to the Login screen.
<b>Alternative Flow</b>	N/A
<b>Exceptions</b>	N/A
<b>Priority</b>	High
<b>Frequency of Use</b>	High
<b>Business Rules</b>	N/A
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.3.24. Create blog

<b>Use Case ID</b>	UC - 45	<b>Use Case Name</b>	Create blog
<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	A user wants to create a blog.		
<b>Pre-conditions</b>	The user is currently logged in.		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	1. On the Home screen, go to the “Blogs” page on the tab left. 2. Click on the “Create” button. 3. Input your blog in the type section. 4. Click the “Create” button.		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - Inputting nothing in a blog.		
<b>Priority</b>	High		
<b>Frequency of Use</b>	High		
<b>Business Rules</b>	B11, B15		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

### 2.2.3.25. Delete blog

<b>Use Case ID</b>	UC - 46	<b>Use Case Name</b>	Delete blog
<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	User wants to delete the blog they created.		
<b>Pre-conditions</b>	User has accessed the Blog page.		
<b>Post-conditions</b>	When the normal flow completes successfully, the deleted blog will have its status changed to <b>isDeleted</b> .		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. User accesses the Blog page.</li> <li>2. Users click to the blog that he/she wants to delete.</li> <li>3. Click the “Delete” button.</li> <li>4. Confirms delete.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server.		
<b>Priority</b>	Low		
<b>Frequency of Use</b>	Low		
<b>Business Rules</b>	N/A		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

### 2.2.3.26. View blog

<b>Use Case ID</b>	UC - 47	<b>Use Case Name</b>	View blog
<b>Created By</b>	HuanNH	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	Users want to view a blog.		
<b>Pre-conditions</b>	Users access the Blog page.		
<b>Post-conditions</b>	When the normal flow completes successfully, all blogs will be read from the database.		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. On the Home screen, click “Blogs” on the tab left.</li> <li>2. Click on a blog to see details.</li> </ol>		

<b>Alternative Flow</b>	N/A
<b>Exceptions</b>	E1 - The system cannot communicate with the server.
<b>Priority</b>	Normal
<b>Frequency of Use</b>	Normal
<b>Business Rules</b>	N/A
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

#### 2.2.3.27. Comment on blog

<b>Use Case ID</b>	UC - 48	<b>Use Case Name</b>	Comment on blog
<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	Users want to comment on a blog.		
<b>Pre-conditions</b>	Users have accessed the Blog Detail page.		
<b>Post-conditions</b>	When the normal flow completes successfully, the new comment will be added on the database link with blog_id.		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. User has accessed the Blog Detail page.</li> <li>2. User comments on a blog.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - The comment is empty.		
<b>Priority</b>	Low		
<b>Frequency of Use</b>	Low		
<b>Business Rules</b>	B15		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

#### 2.2.3.28. Delete comment

<b>Use Case ID</b>	UC - 49	<b>Use Case Name</b>	Delete comment
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<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	Users want to delete a comment.		
<b>Pre-conditions</b>	Users have accessed the Blog Detail page.		
<b>Post-conditions</b>	When the normal flow completes successfully, the comment will be deleted from the database link with comment_id.		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Users have accessed the Blog Detail page.</li> <li>2. Users choose a comment that they want to delete and click on the “Delete” button.</li> </ol>		
<b>Alternative Flow</b>	N/A		
<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - The comment is not created by user.		
<b>Priority</b>	Low		
<b>Frequency of Use</b>	Low		
<b>Business Rules</b>	B15		
<b>Other Information</b>	N/A		
<b>Assumptions</b>	N/A		

#### 2.2.3.29. Edit blog

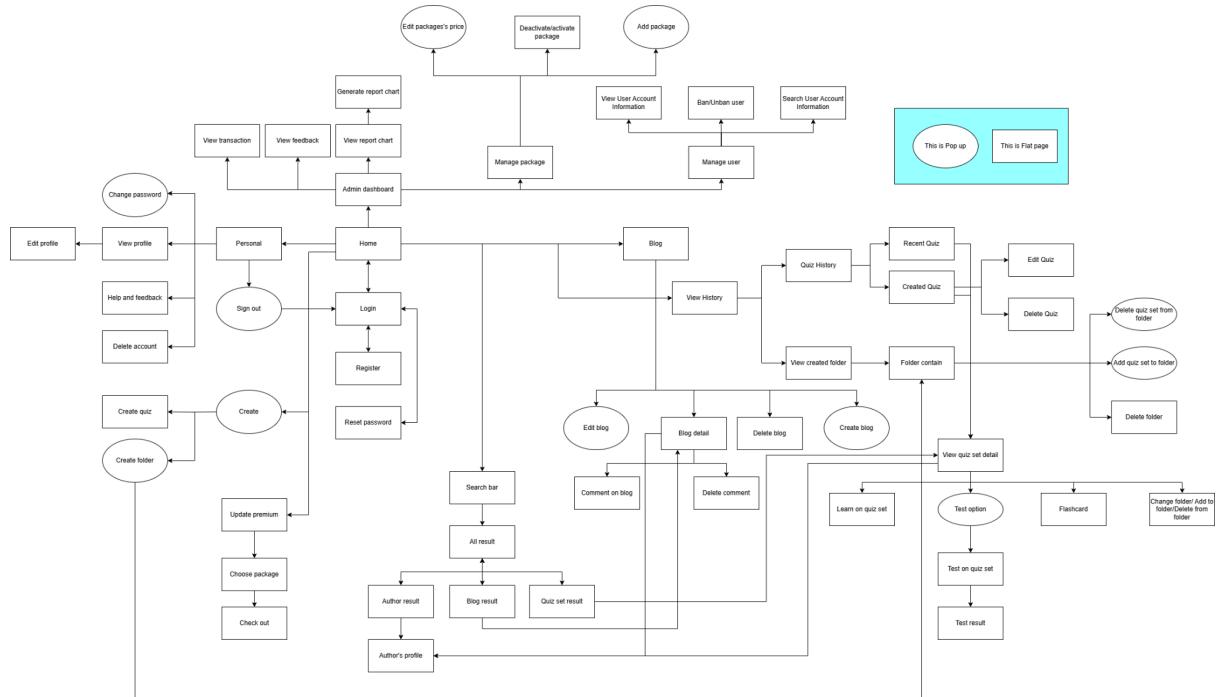
<b>Use Case ID</b>	UC - 50	<b>Use Case Name</b>	Edit blog
<b>Created By</b>	AnhDD	<b>Created Date</b>	20/01/2025
<b>Primary Actor</b>	User	<b>Secondary Actor</b>	N/A
<b>Description</b>	Users want to edit a blog.		
<b>Pre-conditions</b>	Users have accessed the Blog page.		
<b>Post-conditions</b>	N/A		
<b>Normal Flow</b>	<ol style="list-style-type: none"> <li>1. Users have accessed the Blog page.</li> <li>2. Users choose a blog that they want to edit and click on the “Edit” button.</li> <li>3. Input all fields that they want to edit and submit.</li> </ol>		
<b>Alternative Flow</b>	N/A		

<b>Exceptions</b>	E1 - The system cannot communicate with the server. E2 - The comment is not created by user.
<b>Priority</b>	Low
<b>Frequency of Use</b>	Low
<b>Business Rules</b>	B15
<b>Other Information</b>	N/A
<b>Assumptions</b>	N/A

## III. Functional Requirements

### 1. System Functional Overview

#### 1.1 Screen flow



#### 1.2 Screen details

#	Feature	Screen	Description
1	Home	Login	Screen for the user to sign in into the

			system.
2	Home	Register	Screen for guests to create an account.
3	Home	Reset password	Screen for the user to reset the password.
4	Personal	Sign out	The popup for the users to sign out the system.
5	Personal	Change password	The screen for the user to change the password.
6	Personal	View profile	The screen shows the user's information.
7	Personal	Edit profile	The screen where users edit their profile.
8	Personal	Help and feedback	The screen for the users to send feedback.
9	Personal	Delete account	The screen for the users to delete their account.
10	Create	Create quiz	The screen for the users to create a quiz set.
11	Quiz detail	Test option	The popup for the users to choose an option to test.
12	Quiz detail	Learn on quiz set	The screen for users to learn on quiz sets.
13	Create	Create new folder	The screen for the users to create new folder.
14	Update premium	Choose package	The screen for the users to choose the package to update.
15	Quiz detail	Flashcard	The screen for the users to learn by using flashcards.
16	Update premium	Check out	The screen shows the user's checkout.
17	Admin dashboard	View report chart	The screen shows the report chart.
18	Admin dashboard	Generate report chart	The screen for the admin to generate report chart.
19	Admin dashboard	View feedback	The screen shows the feedback.
20	Admin dashboard	View transaction	The screen shows the transaction.

21	Manage package	Edit package's price	The screen for the admin to edit package's price
22	Manage package	Deactivate/activate package	The screen for the admin to delete package.
23	Manage package	Add package	The screen for the admin to add package.
24	Manage user	View user account information	The screen shows the account information.
25	Manage user	Search user account	The screen for the users to search user accounts.
26	Blog	Delete blog	The screen for the users to delete blogs.
27	Blog	Create blog	The screen for the users to create blogs.
28	Blog	Comment on blog	The screen for the users to comment on blogs.
29	Blog	Edit blog	The screen for the users to edit blogs.
30	Blog	View blog	The screen shows the blogs.
31	Blog	Search blog	The screen for the users to search blogs.
32	View history	Quiz history	The screen shows the history of the quiz set.
33	View history	Created quiz	The screen shows the created quiz.
34	View history	Edit quiz	The screen for the users to edit the quiz set.
35	View history	Folder contain	The screen shows all the quiz sets in the folder.
36	Search	All result	The screen shows all results for search input.
37	Search	Author result	The screen shows author results for search input.
38	Search	Quiz set result	The screen shows quiz set results for search input.
39	View history	Recent quiz	The screen shows the recent quiz.
40	View history	View quiz detail	The screen shows the quiz details.
41	View history	Test on quiz	The screen for the users to test on quiz.

42	View history	View created folder	The screen shows the folder.
43	View history	Delete folder	The screen for the users to delete folders.
44	View history	Add quiz to folder	The popup for the users to add quiz to the folder.
45	View history	Delete quiz from folder	The popup for the users to delete quiz from the folder.
46	Search	Blog result	The screen shows blog results for search input.
47	Blog detail	Delete comment	The screen for the users to delete blog's comment.
48	Quiz detail	View quiz detail	The screen shows the quiz details.
49	Quiz detail	Test on quiz	The screen for the users to test on quiz.
50	Author's profile	Author's profile	The screen shows all the author's quiz set, blog and folder.
51	History	Delete quiz set	The screen for users to delete quiz set.

### 1.3 Screen authorization

Screen	Role 1	Role 2	Role 3
<b><i>Home</i></b>			
Login	X	X	X
Register	X		
Reset password		X	X
<b><i>Personal</i></b>			
Sign out		X	X
Change password		X	X
View profile		X	X
Edit profile		X	X
Help and feedback		X	
Delete account		X	
<b><i>Create</i></b>			

Create quiz		X	
Add questions		X	
Delete questions		X	
Create folder		X	
<b><i>Update premium</i></b>			
Choose package		X	
Get QR		X	
Check out		X	
<b><i>Admin dashboard</i></b>			
View report chart			X
Generate report chart			X
View feedback			X
View transaction			X
<b><i>Manage package</i></b>			
Edit package			X
Deactivate package			X
Activate package			X
Add package			X
<b><i>Manage user</i></b>			
View user account information			X
Ban/Unban uswe			X
Search user account information			X
<b><i>Blog</i></b>			
Delete blog		X	X
Create blog		X	X
Edit blog		X	X
Blog detail		X	X

Comment on blog		X	X
Delete blog		X	X
Search on blog		X	X
<b><i>View history</i></b>			
Quiz history			
Created quiz			
Edit quiz		X	
Add questions		X	
Delete questions		X	
Edit questions		X	
Delete quiz		X	
Recent quiz			
View quiz set detail		X	
Test on quiz		X	
<b><i>View folder</i></b>			
Delete folder		X	
Add quiz set to folder		X	
Delete quiz set from folder		X	
<b><i>Search bar</i></b>			
All result	X	X	
Blog result	X	X	
Blog detail		X	
Quiz set result	X	X	
Quiz set detail		X	
Author result	X	X	
Author's profile	X	X	
<b><i>View quiz set detail</i></b>			

Learn on quiz set		X	
Flashcard		X	
Change folder/ Add to folder/ Delete from folder		X	

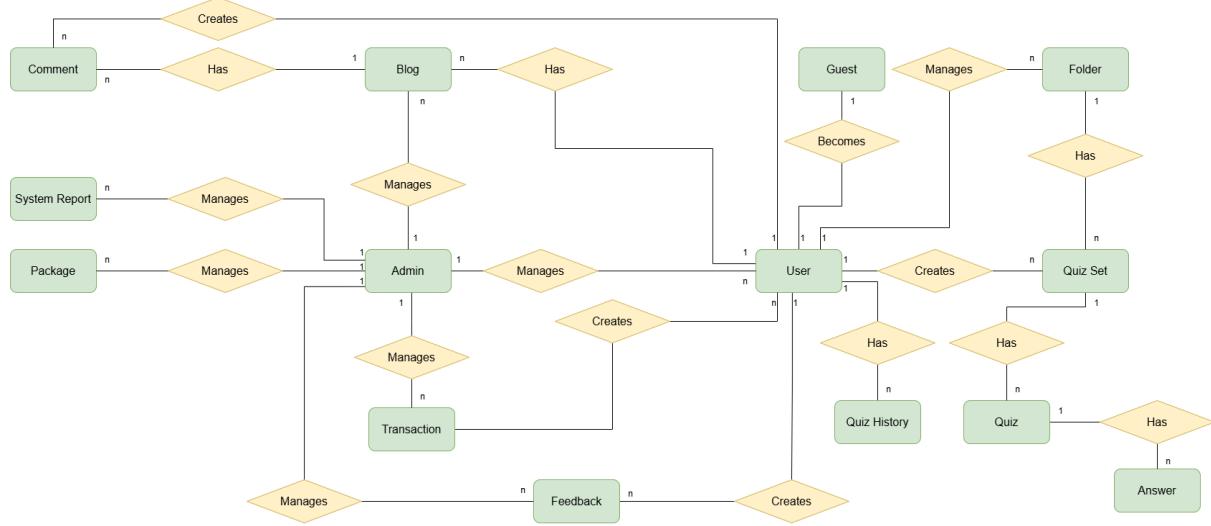
In which:

- Role 1: Guest
- Role 2: User
- Role 3: Admin

#### 1.4 Non-screen functions

#	Feature	System Function	Description
1	Quiz Test Scoring	Calculate user scores	Computes the total correct answers and assigns a score based on user responses.
2	Learn Answer Checking	Verify user responses	Compares user answers with correct ones and provides correct answers.
3	Session Timeout	End inactive sessions	Automatically logs users out after a period of inactivity to enhance security and free up system resources for active users.
4	Encryption	Secure data transmission	Encrypts sensitive user data (e.g., login details) during storage and transfer to protect privacy and comply with regulations.
5	API Authentication	Validate third-party access	Ensures secure integration with external apps or services by verifying API keys and tokens, protecting user data from unauthorized access.
6	Test Time Tracking	Track remaining time	Calculates and displays the remaining time for an active quiz test session.
7	Report Chart	Generate revenue report chart	Provides statistics on revenue by period of time.

## 1.5 Entity relationship diagram



#	Entity	Description
1	Accounts	Stores user account details.
2	Accounts Limit	Tracks account limitations.
3	Blog	Stores blog posts created by users.
4	Comment	Stores comments on blog posts.
5	TokenForgotPassword	Manages tokens to reset password.
6	Transaction Type	Defines different types of transactions and stores transaction details.
7	Transaction	Stores package prices and price update history.
8	Transaction History	Logs user transaction history.
9	Folder	Represents folders created by users.
10	Folder Contain	Links folders to quiz sets.
11	Quiz Set	Stores collections of quizzes.
12	Quiz Set History	Logging quiz set attempts by users.
13	Quiz	Represents individual quiz questions.
14	Answer	Stores possible answers for quizzes.
15	Feedback	Collects user feedback.

## 2. Website for Guest and User

- **Home Page:** the starting page of the system.

Related Use case: UC - 02, UC - 03, UC - 04, UC - 22, UC - 27, UC - 31, UC - 40, UC - 44.

Field name	Field type	Description
Search bar	Text box	User input to search for a quiz or an user.
+/Create	Button	Users click to create a new folder or a new quiz.
Extend your package	Button	Users click to redirect to the Upgrade Premium page.
Avatar icon	Button	Users click to choose another action about

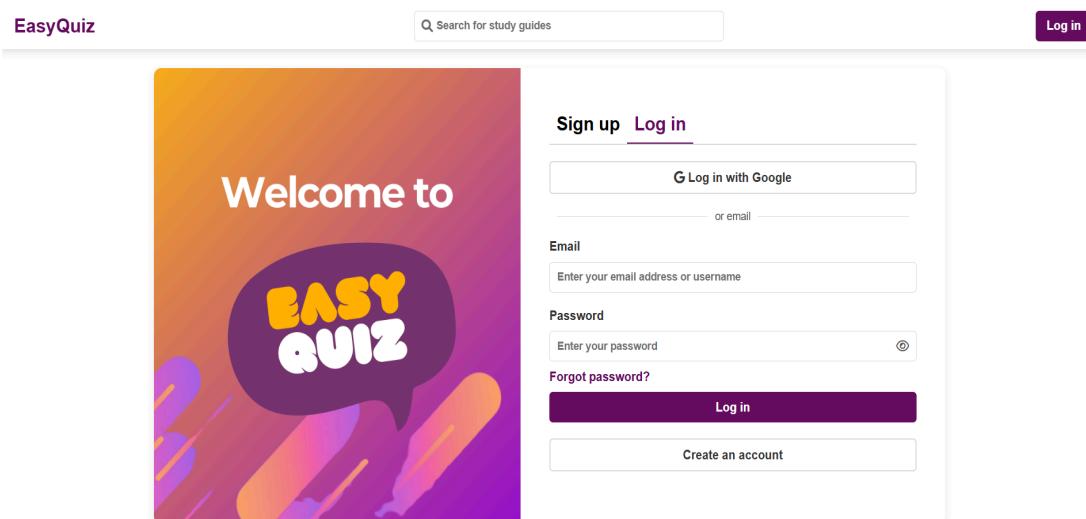
		profile, help and feedback, sign out, etc.
Login	Hyperlink	Users click to go to the Login page.
Home, History, Blog	Hyperlink	Users click to go to/return to the Home page, History page, Blog page.
Popular flashcard set	Hyperlink	Users click to view this quiz.
Popular blogs post	Hyperlink	Users click to view this blog.
Top creator	Hyperlink	Users click to view the creator.

Database access:

Table	CRUD	Description
Quiz_Set	R	Show list quiz.
Accounts	R	Show list user.
Folder	C	Create a new folder.
Quiz_Set	C	Create a new quiz.

- **Login:** authenticate the user to give him/her access to authorized features later on.

Related Use case: UC - 40, UC - 41, UC - 42.



Field name	Field type	Description
Email	Text box	This is for the user to input a valid email address for logging in.

Password	Text box	This is for the user to input a password for logging in.
Login	Button	Users click to authenticate him/herself into the system with provided email and password.
Login with Google	Hyperlink	Users click to redirect to another page that login by Google.
Sign up	Hyperlink	Users click to go to the Register page.
Forgot password	Hyperlink	Users click to go to the Forgot password page.

Database access:

Table	CRUD	Description
Accounts	R	Verify username/email and password information.

- **Signup/Register:**

Related Use case: UC - 01.

Field name	Field type	Description
Email	Text box	The place where the user input a valid email address to sign up.
Username	Text box	The place where the user input a valid username to sign up.
Password	Text box	The place where the user input a valid

		password to sign up.
Confirm Password	Text box	The place where the user input a valid confirming password to sign up.
Sign up with Google	Hyperlink	Users click to redirect to another page that is signed up by Google.
Sign up	Button	Users click to create a new account with the information they provided.
Already have an account? Login	Hyperlink	Users click to go to the Login page.

Database access:

Table	CRUD	Description
Accounts	C	Add a new user to the database.

### - Logout:

Related Use case: UC - 44.

The screenshot shows the main dashboard of the EasyQuiz application. At the top, there's a navigation bar with icons for search, add, and package extension. On the left, there are three circular icons: a pink one with a person, a blue one with a document, and a green one with a gear. Below these are sections for 'Recents' and 'Popular Flashcard sets'. The 'Recents' section lists 'Geography Quiz Set' (by EasyQuiz343293), 'flashcard set test' (by giaphu1201), 'General Knowledge Quiz Set' (by EasyQuiz343293), and 'asdasdas' (by giaphu1201). The 'Popular Flashcard sets' section shows three items: 'General Knowledge Quiz Se...' (by EasyQuiz343293, 0 terms), 'flashcard set test' (by giaphu1201, 1 term), and 'Geography Quiz Set' (by EasyQuiz343293, 0 terms). On the right, a sidebar displays the user profile for 'giaphu1201' (with a yellow verified badge) and includes links for 'Profile', 'Help and feedback', 'Upgrades', and 'Logout'. At the bottom, there's a 'Popular Blog posts' section and a footer with the URL 'localhost:8015/QuizzApp/logout'.

Field name	Field type	Description
Avatar icon	Button	Users click to choose another action about profile, help and feedback, upgrades, sign out, etc.
Logout	Button	Users click to log out and go to the Home page.

- **Settings:**

Related Use case: UC - 29, UC - 30, UC - 43.

The screenshot shows the 'Settings' section of the EasyQuiz application. On the left, there are three navigation icons: a gear (Settings), a person (Profile), and a feed (News). The main content area is titled 'Personal information'. It includes a 'Profile picture' section with a large circular preview of a pink rabbit wearing a mask, and a grid of smaller circular icons representing various animal profiles. Below this are fields for 'Username' (giaphu1201) with an 'Edit' link, 'Email' (phupghe181025@fpt.edu.vn), and 'Upgrade package time' (which shows an expiration date of 2026-03-09 and a link to 'Add extension'). A small info icon is visible on the left side of the page.

This screenshot shows the same 'Personal information' section as the previous one, but with a different profile picture preview (a blue and white cat face). Below it, the 'Account' section is visible, containing a 'Change password' button and a 'Delete your account' button with a warning message: 'This will delete all your data and cannot be undone.' A small info icon is also present on the left.

Field name	Field type	Description
Change password	Hyperlink	Users click to redirect to the Change password page.
Delete account	Button	Users click to delete his/her account permanently.

Avatar icon	Button	Users click to choose available avatar.
Edit	Button	Users click to change their username.
Add extension	Button	Users click to add extension on package premium.

Database access:

Table	CRUD	Description
Accounts	R	Display user information on the screen.
Accounts	U	Change the user's information like avatar, email, name, password.
Accounts	D	Delete user's account.

- **History quiz:**

Related Use case: UC - 25, UC - 26, UC - 27, UC - 28, UC - 37.

The screenshot shows the 'EasyQuiz' application interface. At the top, there is a navigation bar with icons for user profile, search, and package management. Below the navigation bar, the main area is titled 'History'. It features a sidebar with icons for recent activity, folders, and notifications. The main content area displays a list of quizzes and folder sets under the heading 'TODAY'. Each item in the list includes the number of terms, the quiz set name, and a brief description. The first item is '0 terms | EasyQuiz343293 Geography Quiz Set'. The second is '1 terms | giaphu1201 flashcard set test'. The third is '0 terms | EasyQuiz343293 General Knowledge Quiz Set'. The fourth is '2 terms | giaphu1201 asdasdas'.

Field name	Field type	Description
Quiz	Button	Users click to view quiz history.
Folders	Button	Users click to view folders which they created.
Search bar	Text box	User input valid text to search quiz or folder.
Recent	Selection	Users choose an option to choose quizzes they

		learned or they created.
Quiz set	Hyperlink	Users click to go to the quiz detail page.

Database access:

Table	CRUD	Description
Quiz_Set	R	Display recent/created quiz set to screen.
Quiz_Set	U	Edit a Quiz's title.
Folder	R	Display created folder to screen.
Folder	D	Delete folder from database.
Folder	U	Edit folder's name.

- **History folder:**

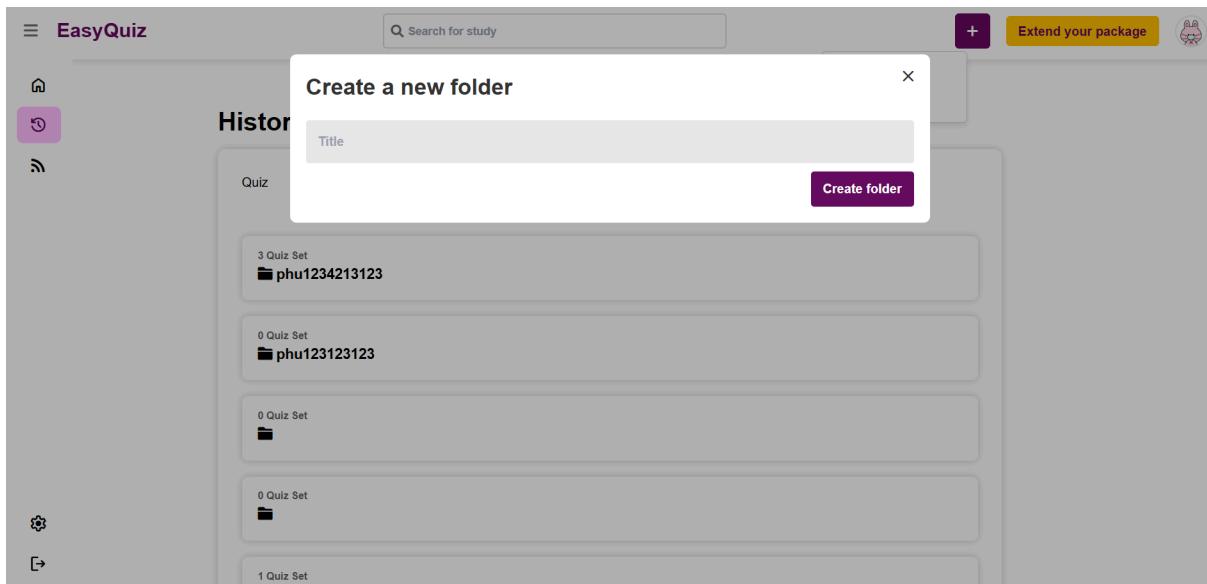
Related Use case: UC - 25, UC - 26, UC - 27, UC - 28.

Field name	Field type	Description
Folder 1, Folder 2	Hyperlink	Users click to go to the Folder page to see quizzes in this folder.
Quiz 1, Quiz 2	Hyperlink	Users click to view this quiz.
+	Button	Users click to add a quiz to the folder.

Database access:

Table	CRUD	Description
Quiz_Set	R	Display recent/created quiz set to screen.
Folder	R	Display created folder to screen.
Folder	D	Delete folder from database.
Folder	U	Delete/Add a quiz from the folder.

- **Create folder:**



Field name	Field type	Description
Title	Text	Users input the title of the folder.
Create folder	Button	Users click to create a new folder.

Database access:

Table	CRUD	Description
Folder	C	Create a folder to the database.

- **Folder detail:**

The screenshot shows the EasyQuiz application interface. At the top, there's a navigation bar with the logo 'EasyQuiz', a search bar labeled 'Search for study', a purple '+' button, a yellow 'Extend your package' button, and a user icon. Below the navigation is a folder titled 'phu1234213123'. Inside the folder, there are three items: 'General Knowledge Quiz Set' (0 terms), 'flashcard set test' (1 term), and 'Geography Quiz Set' (0 terms). To the left of the folder, there are icons for a folder, a trash bin, and a refresh. Below the folder, there are icons for a magnifying glass and a right-pointing arrow.

Field name	Field type	Description
+	Button	Users click to add a quiz set to the folder.
Trash Bin icon	Button	Users click to delete a folder.

Database access:

Table	CRUD	Description
Folder	D	Delete a folder from the database.

- **Help and feedback:**

Related Use case: UC - 39.

**How can we help?**



Account



Billing



Studying

**Feedback**

Write your feedback here...

**Send**

Field name	Field type	Description
Account, Billing, Studying	Hyperlink	Users click to view guidance and support about account, billing and studying.
Write your feedback here	Text box	Users can type his/her feedback here.
Send	Button	When inputting feedback, users can send this feedback to the system.

Database access:

Table	CRUD	Description
Feedback	C	Add new feedback to the database.

- **Blog:**

Related Use case: UC - 45, UC - 46, UC - 47, UC - 50.

Field name	Field type	Description
Search bar	Text box	Users type a blog that he/she wants to search.
Create	Button	Users click to create a new blog.

Database access:

Table	CRUD	Description
Blog	C/R	Create a new blog and view other people's blogs.
Blog	U	Edit blog information.

- **Blog detail:**

Related Use case: UC - 47, UC - 48, UC - 49.

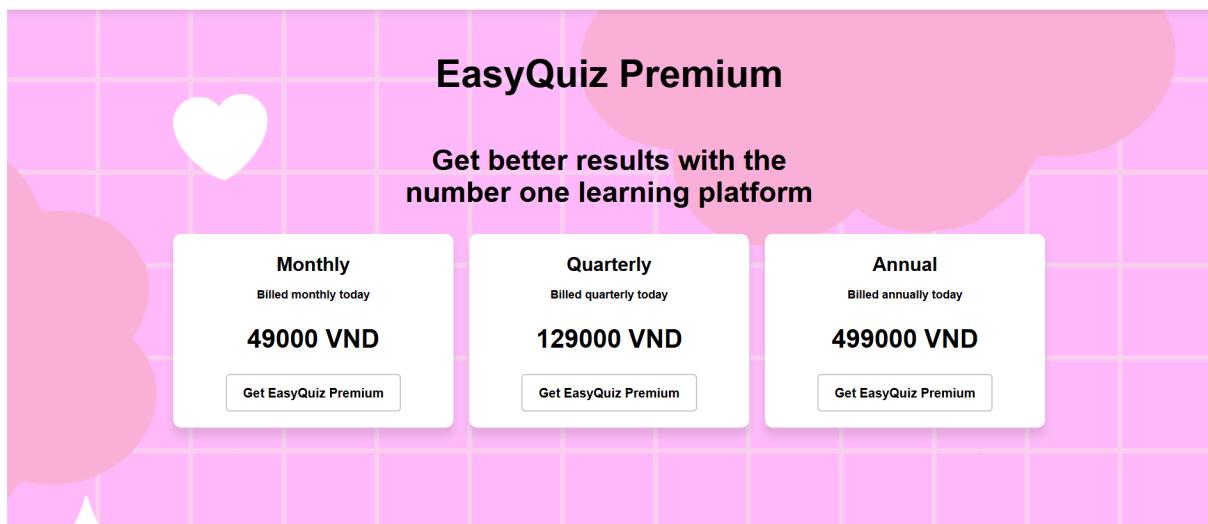
The screenshot shows a user interface for a study platform. At the top, there's a navigation bar with icons for search, user profile, and package extension. Below the header, a sidebar on the left contains icons for back, forward, and refresh. The main content area features a blog post titled "The Benefits of Reading for Learning" by "EasyQuiz343293" (Created 2024-03-05). The post content reads: "Reading books expands vocabulary, enhances critical thinking, and improves problem-solving skills. Choose books relevant to your field of study and aim to read at least 30 minutes daily." Below the post, there's a "Comments" section with a text input field and a scrollable list of comments from users "giaphu1201", "EasyQuiz343293", "EasyQuiz124733", and "EasyQuiz343293". Each comment includes a timestamp and a reply arrow. To the right of the comments is a "Share" button. Below the comments, there's a "Related Blogs" section with three cards: "Effective Memory Techniques", "The Benefits of Reading for Learning", and "Maintaining Motivation While Studying".

Field name	Field type	Description
Comment	Text box	Users input a valid comment to comment.
Share	Button	Users click to get a link to a blog to share.
Plane icon	Button	Users click to send comments.
Search bar	Text box	Users type a blog that he/she wants to search.

Database access:

Table	CRUD	Description
Blog	C/R	Create a new blog and view other people's blogs.
Comment	C	Create a new comment on a blog.
Comment	D	Delete a comment from a blog.

- **Upgrade:**  
Related Use case: UC - 22, UC - 23, UC - 24.



Field name	Field type	Description
Get EasyQuiz Premium	Button	User selects this button under the package that the user wants to buy.

Database access:

Table	CRUD	Description
Transaction_History	C	Save user purchase history.

- **Create new quiz:**

Related Use case: UC - 31.

The image shows the 'Create a new quiz' interface. At the top, there's a navigation bar with icons for home, search, and extend package. On the left, there are sidebar icons for file, edit, and others. The main area has a title 'Create a new quiz' and a 'Create' button. It includes fields for 'Enter a title', 'Add a description...', 'Enter question here', and a section for 'Answer' with four options: 'Option 1', 'Option 2', 'Option 3', and 'Option 4'. A 'Delete' icon is next to the question input field. At the bottom right, there's a '+ Add a Quiz' button.

Field name	Field type	Description
Enter a title, Add a description	Text box	Users type title and description of his/her quiz.
Create	Button	When finished, users click to create a new quiz.
Edit	Button	Users click to edit the quiz's content.
Delete icon	Button	Users click to delete a quiz.
+Add a quiz	Button	Users click to add a quiz.
6dot icon	Button	Users click to sort the quizzes.

Database access:

Table	CRUD	Description
Quiz	C/U/D	Create, edit or delete a question of a quiz.
Answer	C/U/D	Create, edit or delete an answer of a quiz.
Quiz_Set	C	Create a new quiz.

- **Edit quiz:**

Related Use case: UC - 32.

The screenshot shows the 'Create a new quiz' page of the EasyQuiz application. At the top, there is a navigation bar with icons for user profile, search, and package extension. The main form has a title 'Math base' and a description input field. Below these are two question sections. Each section contains an equation input field ('1 + 1' and '2 + 2'), an 'Answer' section with radio buttons for 2, 3, 4, and 5, and a trash bin icon. The '2 + 2' section has '4' selected as the correct answer. A button '+ Add a Quiz' is at the bottom right of the form area.

Field name	Field type	Description
Enter a title, Add a	Text box	Users type title and description of his/her quiz.

description		
Create	Button	When finished, users click to create a new quiz.
Edit	Button	Users click to edit the quiz's content.
Delete icon	Button	Users click to delete a quiz.
+Add a quiz	Button	Users click to add a quiz.
6dot icon	Button	Users click to sort the quizzes.

Database access:

Table	CRUD	Description
Quiz	C/U/D	Create, edit or delete a question of a quiz.
Answer	C/U/D	Create, edit or delete an answer of a quiz.
Quiz_Set	C	Create a new quiz.

- **Test on quiz:**

Related Use case: UC - 34.

The screenshot shows a user interface for a quiz application. At the top, there is a navigation bar with a 'Test' dropdown menu containing 'Flashcards' and 'Learn' options, and a 'Home' link. The main title is 'Geography Quiz Set' with '0 / 7' questions completed. A timer indicates 'Time remaining: 09:53'. Below the title, the first question is displayed: 'What continent is Egypt in?' with four multiple-choice options: A. Europe, B. Asia, C. Africa, and D. Australia. The question is labeled 'Definition' and is '1 of 7'. The bottom part of the interface shows the start of the second question, which is also labeled 'Definition' and '2 of 7'.

The screenshot shows a quiz interface titled "Geography Quiz Set" with 0 / 7 questions completed. The current question asks "What is 2+2?" with options 1 through 7 listed on the left. The correct answer, option 4, is selected. A message at the bottom says "All done! Ready to submit your test?" with a "Submit test" button.

Field name	Field type	Description
x icon	Button	Users click to exit the quiz.
Options	Button	Users click to adjust test settings.
Submit test	Button	Users click to submit the test.
4 answer in a quiz	Button	Users click to choose his/her answer for each question.

Database access:

Table	CRUD	Description
Quiz	R	Display questions on a test.
Answer	R	Display answers on a test.

- **Test result:**

Congratulations! You have completed your test.

Your time: 10:00

Time remaining: 09:04

0%  
Correct  
Incorrect

0  
7

Next steps

Practise terms in Learn  
Learn these terms in a different way to build knowledge.

Take a new test  
Take another test to boost your confidence.

Your answers

Definition  
What continent is Egypt in?  
A. Europe  
B. Asia  
C. Africa  
D. Australia

- Quiz preview:

Related Use case: UC - 02.

EasyQuiz

History Quiz Set

Who was the first President of the United States?  
A. Abraham Lincoln  
B. Thomas Jefferson  
C. George Washington  
D. John Adams

1 / 10

Created by  
EasyQuiz343293

A quiz about important historical events.

Term in this set (0)

The screenshot shows a quiz titled "Mayflower" with the following questions:

- Which empire was ruled by Julius Caesar?  
A. Greek Empire  
B. Roman Empire  
C. Ottoman Empire  
D. British Empire
- What year did the Berlin Wall fall?  
A. 1987  
B. 1988  
C. 1989  
D. 1990
- Who was the British Prime Minister during World War II?  
A. Winston Churchill  
B. Neville Chamberlain  
C. Margaret Thatcher  
D. Tony Blair
- What ancient civilization built the pyramids?  
A. Greeks  
B. Romans  
C. Egyptians  
D. Aztecs
- The Renaissance began in which country?  
A. France  
B. Italy  
C. Spain  
D. Germany

Below the questions are three study mode buttons: "Flashcards" (selected), "Learn", and "Test". At the bottom are "Hide definitions" and "Choose a study mode" buttons.

Field name	Field type	Description
Flash card	Hyperlink	Users click to learn a quiz by flash cards.
Test	Hyperlink	Users click to go to the Test page.
Learn	Hyperlink	Users click to go to the Learn page.
Share icon	Button	Users click to get a link to this quiz to share it.
Add to folder	Button	Users click to add a quiz to a folder.
<- 1/10 ->	Button	Users click to move to the next flash cards.
Hide definitions	Button	Users click to hide the definition part.
Choose a study mode	Selection	Users click to choose the study mode.

Database access:

Table	CRUD	Description
Quiz_Set	R	View quiz's title and content.
Quiz	R	View question of each quiz.
Answer	R	View answer of each quiz.

#### - Learn quiz:

Related Use case: UC - 35.

The screenshot shows a mobile application interface for a quiz. At the top, there's a navigation bar with a 'Learn' button and a progress bar indicating the user is at question 1 of 11. The main content area has a title 'Title'. Below the title is a 'Definition' section containing the question: 'What is the largest ocean on Earth? \nA. Indian\nB. Pacific\nC. Atlantic\nD. Arctic'. A 'Select the correct term' section follows, featuring four options in boxes: 'A. Indian' (radio button), 'B. Pacific' (radio button with a green checkmark), 'C. Atlantic' (radio button), and 'D. Arctic' (radio button). A 'Don't know?' link is present. At the bottom, there's a note 'Press continue button to next question' and a purple 'Continue' button.

This is a second screenshot from the same quiz application. It shows a similar layout with a 'Learn' button, progress bar, and title 'Title'. The 'Definition' section asks 'What continent is Egypt in? \nA. Europe\nB. Asia\nC. Africa\nD. Australia'. The 'Select the correct term' section shows the results: 'A. Europe' (radio button), 'B. Asia' (radio button with a red X), 'C. Africa' (radio button with a green checkmark), and 'D. Australia' (radio button). A 'Don't know?' link is available. The bottom includes a 'Press continue button to next question' message and a purple 'Continue' button.

Field name	Field type	Description
Continue	Button	Users click to move to another question.
4 terms option	Button	Users click to choose an answer.
Don't know?	Button	Users click to view the answer to a question.

Database access:

Table	CRUD	Description
Quiz_Set	R	View quiz's title and content.
Quiz	R	View question of each quiz.

Answer	R	View answer of each quiz.
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- **Flashcard:**

Related Use case: UC - 36.

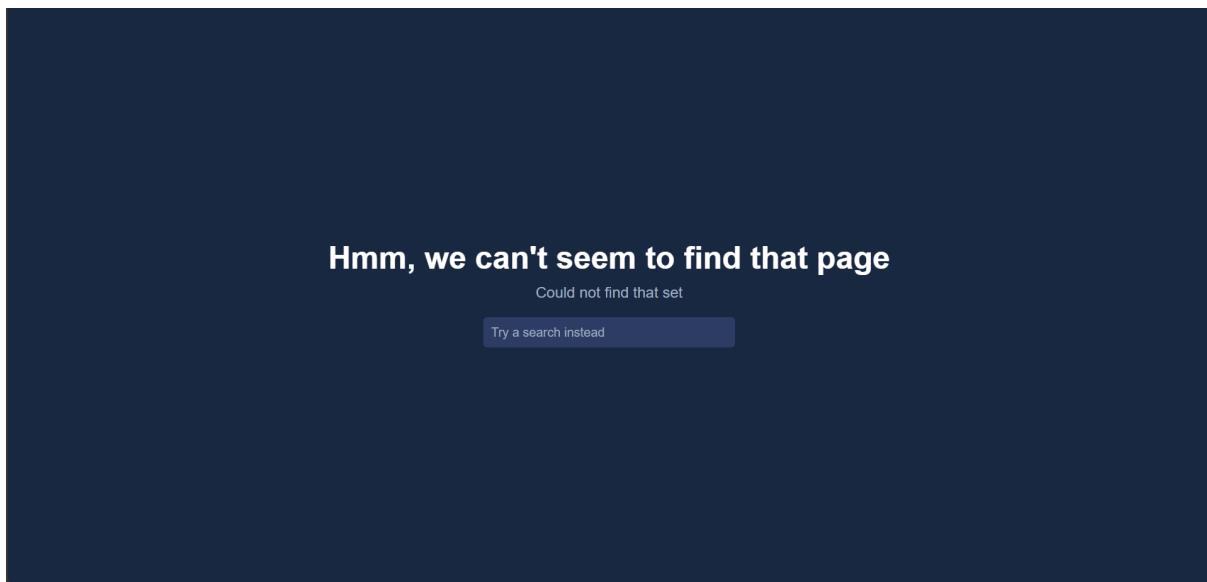
The screenshot shows a digital flashcard interface. At the top left is a purple 'Flashcards' button with a dropdown arrow. In the center, it says '2 / 11 Geography Quiz Set'. On the right are icons for settings and exiting. The main area contains a question: 'Which country is known as the Land of the Rising Sun?' followed by four options: A. China, B. South Korea, C. Japan, and D. Thailand. Below the question are navigation arrows and a close button.

Field name	Field type	Description
<- ->	Button	Users click to move to another flashcard.
Swap icon	Button	Users click to change the order of flashcards.
Setting icon	Button	Users click to set the mode.
X icon	Button	Users click to exit the current mode.
Flashcard	Hyperlink	Users click to change between questions/answers.

Database access:

Table	CRUD	Description
Quiz_Set	R	View quiz's title and content.
Quiz	R	View question of each quiz.
Answer	R	View answer of each quiz.

- **Error:**



### 3. Website for Admin

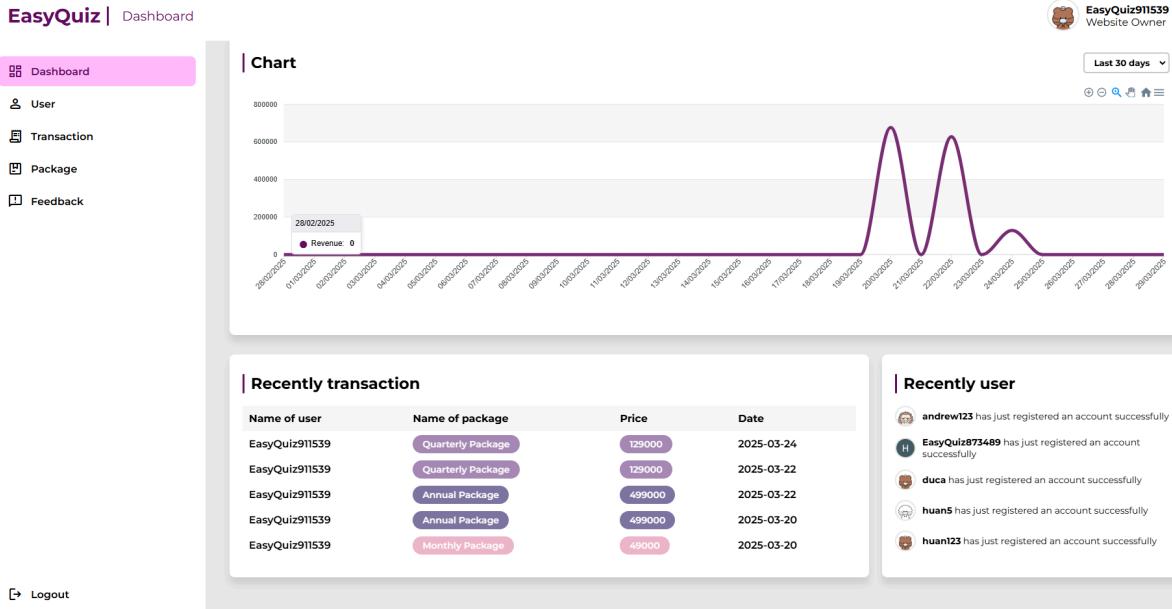
- Admin dashboard:

Related Use case: UC - 14.

The Admin Dashboard interface includes the following sections:

- Summary:** Displays key metrics: Total Revenue (1434000), Total User (11), Total Feedback (8), and Total Transaction (11).
- Chart:** A line chart showing transaction volume over the last 30 days. The Y-axis ranges from 0 to 800,000. The X-axis shows dates from 26/02/2025 to 29/03/2025. The chart shows two major peaks around March 1st and March 2nd, reaching approximately 650,000 and 600,000 respectively.
- Recently transaction:** Shows a single transaction record for "EasyQuiz911539" who purchased a "Quarterly Package" for 129000 on 2025-03-24.
- Recently user:** Shows two recent account registrations: "andrew123" and "EasyQuiz873489".

Navigation and user information are also present on the left and right sides of the dashboard.



[Logout](#)

Field name	Field type	Description
Dashboard	Hyperlink	Admin clicks to go to the dashboard page.
User	Hyperlink	Admin clicks to go to the User manage page.
Transaction	Hyperlink	Admin clicks to go to the Transaction manage page.
Blog	Hyperlink	Admin clicks to go to the Blog manage page.
Package	Hyperlink	Admin clicks to go to the Package manage page.
Feedback	Hyperlink	Admin clicks to go to the Feedback page.
Logout	Hyperlink	Admin clicks to logout and go to the home page.
1 week/ 1 month/ 1 year	Selection	Admin chooses an option to generate a report chart.

Database access:

Table	CRUD	Description
Accounts	R	Display list of new users.
Transaction_History	R	Display list of recent transactions.

#### - Package:

Related Use case: UC - 18, UC - 19, UC - 20, UC - 21.

Field name	Field type	Description
Edit	Button	Admin clicks to edit the name or price of a package.
Active/Disable	Button	Admin clicks to deactivate/activate a package.
+New package	Button	Admin clicks to add a new package.
Previous 1 Next	Button	Admin clicks to go to the next page if the package list is too long, pagination is needed.

Database access:

Table	CRUD	Description
Transaction_Type	C/D	Add a new package or delete a package.
Transaction	U	Edit a package's price.

#### - Feedback:

Related Use case: UC - 12.

EasyQuiz | Dashboard | Feedback

Logout

Field name	Field type	Description
Previous 1 2 Next	Button	Admin clicks to go to the next page if the feedback list is too long, pagination is needed.

Database access:

Table	CRUD	Description
Feedback	R	View feedback of users.

#### - Transaction:

Related Use case: UC - 13.

EasyQuiz | Dashboard | Transaction

Logout

Field name	Field type	Description
Search bar	Text box	Admin types a transaction he/she wants to search.
Previous 1 2 Next	Button	Admin clicks to go to the next page if the transaction list is too long, pagination is needed.

Database access:

Table	CRUD	Description
Transaction	R	View and search for a transaction's information (date and price).
Transaction_History	R	View and search for a transaction's information (name of user).
Transaction_Type	R	View and search for a transaction's information (name of package).

#### - Manage user:

Related Use case: UC - 15, UC - 16, UC - 17.

Field name	Field type	Description
Search bar	Text box	Admin types a user he/she wants to search.
Previous 1 2 Next	Button	Admin clicks to go to the next page if the user list is too long, pagination is needed.

Field name	Field type	Description
Search bar	Text box	Admin types a user he/she wants to search.
Previous 1 2 Next	Button	Admin clicks to go to the next page if the user list is too long, pagination is needed.

Database access:

Table	CRUD	Description
Accounts	R	View and search users' information.

## IV. Non-functional requirement

### 1. Quality Attributes

#### 1.1 Performance

- PER-1. The system must respond to user actions (e.g., login, search, view quiz set) within 2 seconds under normal load conditions.
- PER-2. The system should support at least 1,000 concurrent users without degradation in performance.
- PER-3. Loading a quiz set for learning or testing should take no longer than 3 seconds.
- PER-4. Search operations (e.g., search blog, quiz set, user) must return results within 1 second.
- PER-5. At least 98 percent of the time, the trading system shall update the transaction status display within 1 second after the completion of each trade.

#### 1.2 Availability

- AVL-1. The system shall be at least 95 percent available on weekdays between 6:00 A.M. and midnight Eastern Time, and at least 99 percent available on weekdays between 3:00 P.M. and 5:00 P.M. Eastern Time.
- AVL-2. Down time that is excluded from the calculation of availability consists of maintenance scheduled during the hours from 6:00 P.M. Sunday Pacific Time, through 3:00 A.M. Monday Pacific Time.

#### 1.3 Reliability

- REL-1. No more than 5 experimental runs out of 1,000 can be lost because of software failures.
- REL-2. The system should gracefully handle errors (e.g., failed login, payment cancellation) and provide clear, user-friendly error messages.

## **1.4 Usability**

USA-1. The system must provide an intuitive and responsive UI, ensuring users can navigate between features (e.g., view home page, create quiz set) with no more than 3 clicks.

USA-2. The system must support at least two languages (e.g., English and Vietnamese) for all user-facing interfaces.

## **1.5 Security**

SEC-1. The system must ensure that only authorized users (e.g., Admins) can access sensitive functions like "Manage user" or "View revenue."

SEC-2. The system shall log all attempts to access secure data by users having insufficient privilege levels.

SEC-3. Payment transactions via PayOS must use secure protocols (e.g., HTTPS, TLS 1.3) to protect user financial information.

## **1.6 Installability**

INS-1. An untrained user shall be able to successfully perform an initial installation of the application in an average of 10 minutes.

INS-2. When installing an upgraded version of the application, all customizations in the user's profile shall be retained and converted to the new version's data format if needed.

INS-3. The installation program shall verify the correctness of the download before beginning the installation process.

## **1.7 Integrity**

INT-1. The system shall protect against the unauthorized addition, deletion, or modification of data.

# **2. External Interfaces**

## **2.1 User Interfaces**

UI-1: The websites will have a user-friendly interface and are easy to use.

UI-2: The layout of the screen is streamlined, easy to operate, and implement for the user.

UI-3: Buttons have distinctive features and colors but are in sync with the interface.

UI-4: When the user is on a screen or function, the position of that function displayed on the sidebar will be bright and synchronized with the interface.

UI-5: Notifications displayed on the screen have a friendly banner outlining the content for the user.

UI-6: Web pages will allow users to copy and paste using a mouse, in addition to using a mouse and keyboard combination.

## 2.2 Software Interfaces

SI-1: Login System

SI-1.1: EasyQuiz will pass the phone number and password of the user to the sign-in system through a programming interface.

SI-1.2: The sign-in system will notify EasyQuiz that the user exists or not.

SI-2: Manage System

The EasyQuiz shall communicate with the Manage System through a programmatic interface for the following operations:

SI-2.1: To allow an Admin to view all Users.

SI-2.2: To allow an Admin to view all Feedbacks.

SI-2.3: To allow an Admin to view all Packages.

SI-2.4: To allow an Admin to view all Finances.

SI-2.5: To allow an Admin to view all Transactions.

SI-2.6: To inquire whether an Admin creates, updates, server or deactivates packages.

SI-2.7: To inquire whether an Admin ban or unban an user.

SI-3: Payment System

SI-3.1: EasyQuiz allows users to take a payment by scanning QR.

## 2.3 Hardware Interfaces

No hardware interfaces have been identified.

## IV. Appendix

### Error message

ID	Error Message	Function
EMG01	"Please fill out this field."	Edit username
EMG02	"Username already taken. Please choose another."	Edit username

EMG03	"Failed to update username. Please try again."	Edit username
EMG04	"Login successfully."	Login
EMG05	"Invalid username or password."	Login
EMG06	"This account is deleted!"	Login
EMG07	"Confirm password must be the same password."	Reset password
EMG08	"Username already exists."	Sign up
EMG09	"Email already exists."	Sign up
EMG10	"Password and Repeat Password do not match."	Sign up
EMG11	"Change password failed(Old password is incorrect)."	Change password