
GROUP 01 - CHÚ HỀ LÀM PHẦN MỀM

LOGBLOCK SOCIAL MEDIA SERVICE
Use-Case Specification

Version 1.3

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

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LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

Table of Contents

1. UC01: Landing Page for Guests User	6
1.1 Brief Description	6
1.2 Flow of Events	6
1.3 Special Requirements	6
1.4 Preconditions	7
1.5 Postconditions	7
1.6 Extension Points	7
2. UC02: Registered User Profile Interaction	8
2.1 Brief Description	9
2.2 Flow of Events	9
2.3 Special Requirements	10
2.4 Preconditions	10
2.5 Postconditions	10
2.6 Extension Points	10
3. UC03: Registered User Profile Management	11
3.1 Brief Description	11
3.2 Flow of Events	11
3.3 Special Requirements	12
3.4 Preconditions	12
3.5 Postconditions	12
3.6 Extension Points	12
4. UC04: Authentication System	12
4.1 Brief Description	13
4.2 Flow of Events	13
4.3 Special Requirements	13
4.4 Preconditions	14
4.5 Postconditions	14
4.6 Extension Points	14
5. UC05: News Feed Navigation	14
5.1 Brief Description	14
5.2 Flow of Events	15
5.3 Special Requirements	15
5.4 Preconditions	15
5.5 Postconditions	15
5.6 Extension Points	15
6. UC06: Registered User Posting Block	16

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

6.1 Brief Description	16
6.2 Flow of Events	16
6.3 Special Requirements	17
6.4 Preconditions	17
6.5 Postconditions	17
6.6 Extension Points	17
7. UC07: Registered User Editing Block	18
7.1 Brief Description	18
7.2 Flow of Events	18
7.3 Special Requirements	18
7.4 Preconditions	19
7.5 Postconditions	19
8. UC08: Exploration Feed Navigation	19
8.1 Brief Description	19
8.2 Flow of Events	19
8.3 Special Requirements	20
8.4 Preconditions	21
8.5 Postconditions	21
8.6 Extension Points	21
9. UC09: Registered User Block Post Interaction	22
9.1 Brief Description	22
9.2 Flow of Events	23
9.3 Special Requirements	23
9.4 Preconditions	23
9.5 Postconditions	23
9.6 Extension Points	23
10. UC10: Direct Messaging	24
10.1 Brief Description	24
10.2 Flow of Events	24
10.3 Special Requirements	25
10.4 Preconditions	25
10.5 Postconditions	25
10.6 Extension Points	25
11. UC11: Expert User - Specialized Functionality	25
11.1 Brief Description	25
11.2 Flow of Events	25
11.3 Special Requirements	27
11.4 Preconditions	27

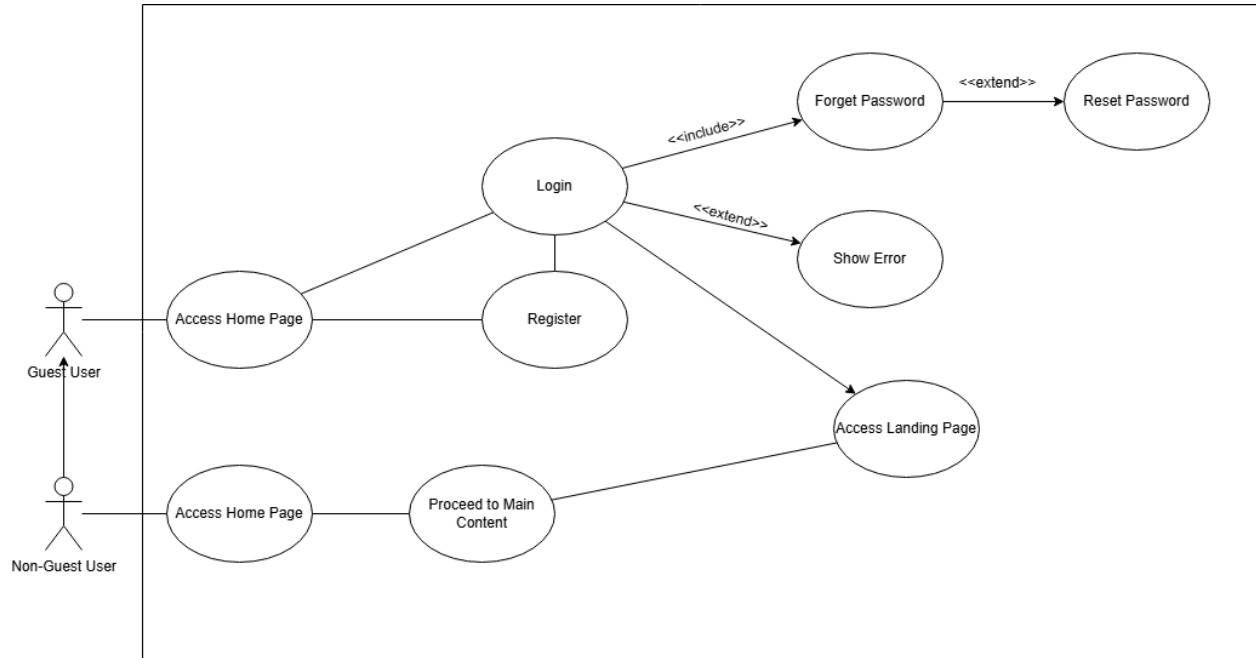
LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

11.5 Postconditions	27
11.6 Extension Points	27
12. UC12: Administration User - Specialized Functionality	27
12.1 Brief Description	27
12.2 Flow of Events	27
12.3 Special Requirements	27
12.4 Preconditions	29
12.5 Postconditions	29
12.6 Extension Points	29

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

Use-Case Specification: LogBlock

1. UC01: Landing Page for Guests User



1.1 Brief Description

This use case illustrates how guests, when entering the site without a direct URL to a post or profile, will be prompted a landing (home) page. The page should have a mechanism to transition the guest users to the login/register page. Non-Guests will skip this page.

1.2 Flow of Events

■ Basic Flow

- **Guest User Accesses the Site:** The guest user visits the main page without a specific URL.
- **Display Landing Page:** The landing page appears with information and options to log in or register.
- **Navigate to Login/Register:** The guest user selects either the login or register option and is directed to the respective page.
- **Complete Login/Register:** Once the user logs in or registers successfully, they are directed to the main content.

■ Alternative Flows

First Alternative Flow - Authenticated User

- **Condition:** the user is already logged in.
- The user will skip the landing page and go directly to the main content.

Second Alternative Flow - Return to Landing Page

- A user can navigate back to the landing page from the login or register pages if desired.

1.3 Special Requirements

- The landing page should only appear if the user is not logged in.
- The System should have a mechanism to detect the user's login status to determine if the landing page is

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

needed.

- The landing page should include prominent "Login" and "Register" buttons for easy access.

1.4 Preconditions

- The user accesses the main site URL without a specific post or profile link.
- The System can identify the login status of the user.

1.5 Postconditions

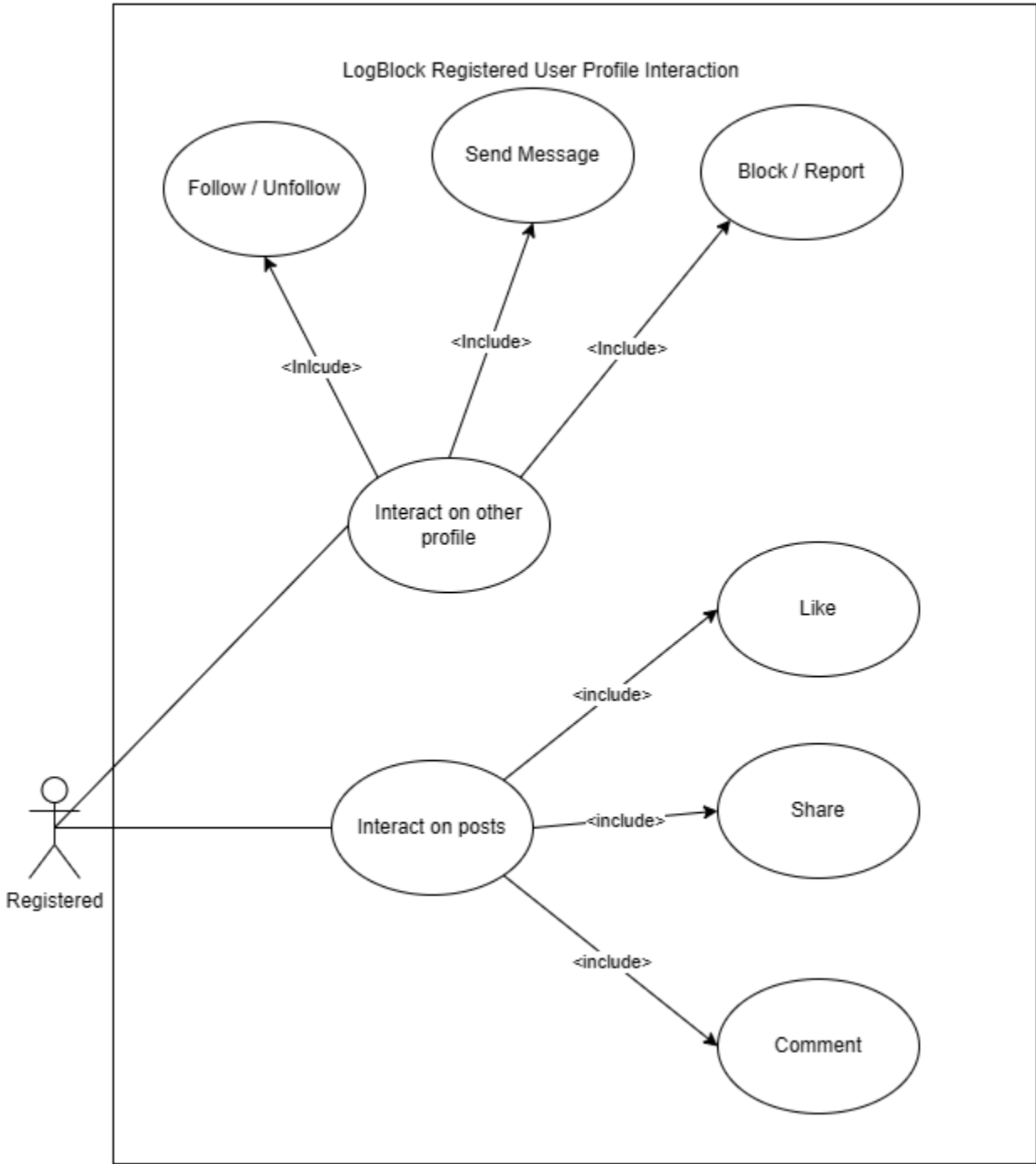
- After successful login or registration, the user is directed to the main content.
- If the user does not log in or register, they can stay on the landing page or leave the site.

1.6 Extension Points

- **Error Messages:** If there are issues during login (e.g., incorrect credentials), error messages should appear.
- **Password Reset:** If the user forgets their password, they can initiate a password reset from the login page.

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

2. UC02: Registered User Profile Interaction



LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

2.1 Brief Description

This use case describes how a Registered User interacts with other user profiles on the LogBlock Social Media Service. It covers actions such as following/unfollowing users, sending direct messages, and blocking or reporting inappropriate content. These interactions aim to foster community engagement and maintain a safe, constructive environment on the platform.

2.2 Flow of Events

■ Basic Flow

- **User Views a Profile:**
 - The Registered User selects a profile from these posts.
 - The System displays the target profile, including profile picture, biography, follower/following count, and pinned posts.
- **User Follows/Unfollows the Profile:**
 - The Registered User clicks the “Follow” or “Unfollow” button on the target profile.
 - If following, the System adds the target profile to the user’s following list and sends a notification to the profile owner.
 - If unfollowing, the System removes the target profile from the following list and notifies the profile owner.
- **User Sends a Direct Message:**
 - The Registered User clicks the “Message” button to initiate a direct message to the target profile.
 - The System opens a messaging window where the Registered User can type and send a message.
 - The message is limited to 500 characters and supports markdown-compatible text formatting.
 - The target user receives the message in real-time if online, or as a notification if offline.
- **User Blocks or Reports the Profile:**
 - The Registered User clicks the “Block/Report” button for the target profile if the content is deemed inappropriate or unwanted.
 - If blocking, the System prevents future interaction between the Registered User and the blocked profile.
 - If reporting, the System prompts the Registered User to provide a reason for reporting, logs the report, and sends it to the moderation team for review.

■ Alternative Flows

First Alternative Flow - Private Profile Access Restriction:

- **Condition:** The target profile is private and has restricted visibility.
- The Registered User attempts to follow a private profile. The System sends a follow request to the profile owner.
- If the following request is accepted, the System grants access to view the profile. Otherwise, the profile remains inaccessible.

Second Alternative Flow - Blocked User Attempts Interaction:

- **Condition:** The Registered User has previously blocked the target profile.
- The Registered User attempts to message or follow the blocked profile. The System prevents the action and displays an error message, reminding the user that they have blocked this profile.

Third Alternative Flow - Follow Limit Reached:

- **Condition:** The Registered User has reached the platform’s follow limit.

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

- The Registered User attempts to follow a new profile. The System displays an error message indicating the follow limit has been reached, preventing the action until the Registered User unfollows other profiles.

2.3 Special Requirements

- Notification System: The platform should provide notifications for profile interactions (e.g., follow requests, new followers, messages).
- Privacy and Security: Ensure that all profile interactions comply with platform privacy policies and protect user data.

2.4 Preconditions

- The Registered User must be logged in to the platform.
- The target profile exists on the platform and is accessible to the Registered User, depending on privacy settings.

2.5 Postconditions

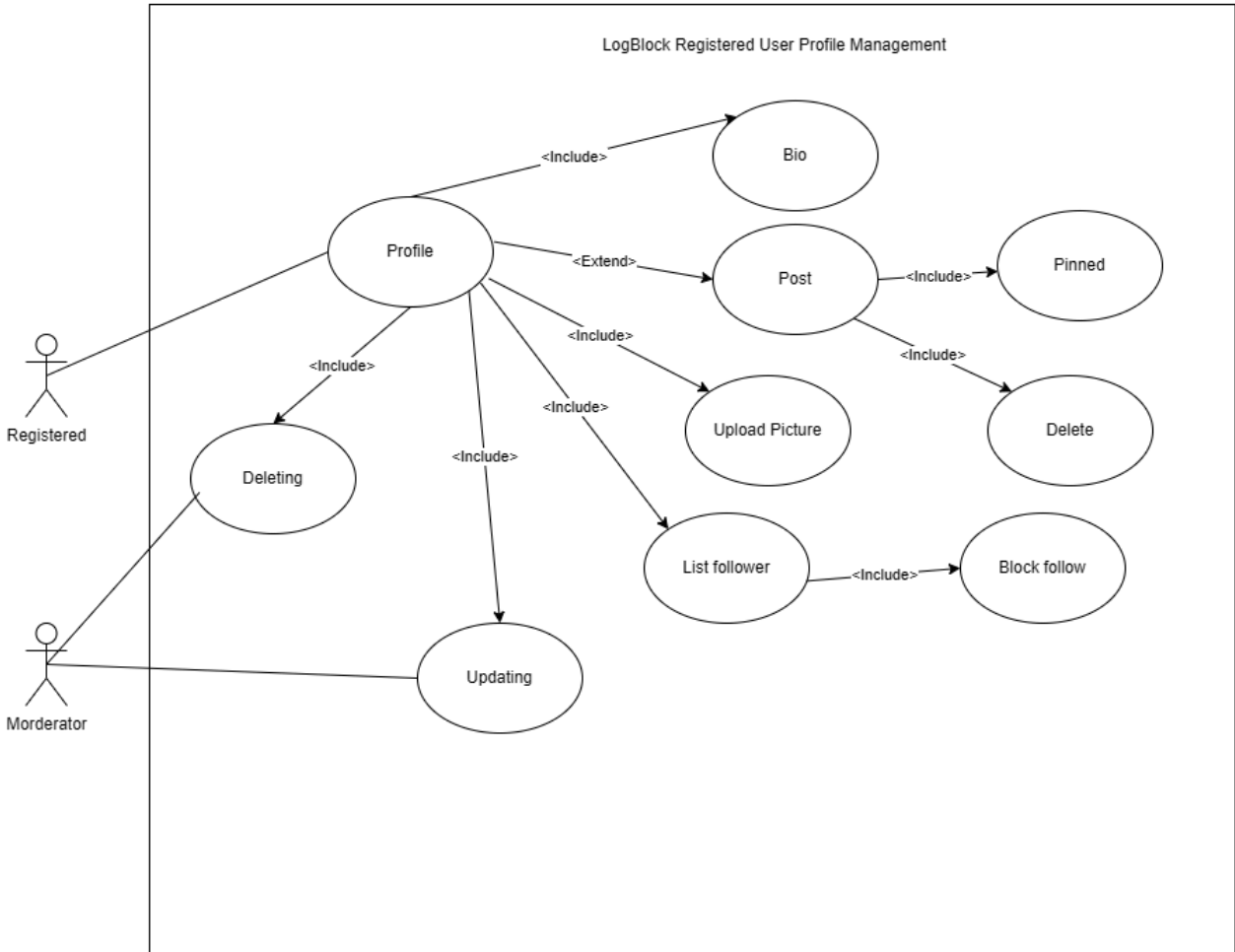
- If the Registered User follows the profile, the target profile is added to the following list, and a notification is sent to the profile owner.
- If the Registered User sends a message, the message is stored in the chat history for both profiles.
- If the Registered User blocks or reports the profile, future interactions with that profile are restricted or flagged for review.

2.6 Extension Points

- Follow Request Notification: Located in the “User Follows/Unfollows the Profile” step, the System sends a follow request notification for private profiles.
- Report Review Process: Located in the “User Blocks or Reports the Profile” step, flagged reports are forwarded to the moderation team for further investigation.

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

3. UC03: Registered User Profile Management



3.1 Brief Description

This use case describes how a Registered User manages their profile, including creating, updating, and deleting their profile, which contains features like a profile picture, biography, follower/following count, pinned posts, and activity log. The goal is to provide users with a platform to manage and customize their personal profiles, view their engagement metrics, and interact with other users by managing their posts.

3.2 Flow of Events

- Basic Flow
 - User accesses the personal profile.
 - The System displays the user's personal profile information.
 - User has branched choices:
 - **Editing (update information):**
 - If the user chooses "edit":
 - Users select the "edit" button.
 - Users update their information, such as profile picture or biography.

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

- Users select the “save” button.
- The System saves the updated information.
- **Deleting (delete information from the System):**
 - If the user chooses "delete":
 - The System prompts the user to confirm the deletion.
 - The user confirms the deletion.
 - The System deletes the profile and user account.
- Alternative Flows

First Alternative Flow - Error Editing:

- **Condition:** there is an error in the input information (e.g., invalid format, blank biography, or unsupported file type for profile picture).
- The System displays an error message and prompts the user to correct it.

Second Alternative Flow - Error Deleting:

- **Condition:** the user declines to confirm the deletion.
- The System returns to the profile page without deleting the user's profile.

3.3 Special Requirements

- **Profile Picture and Biography Limitations:** Profile pictures must meet specified dimensions and file formats (JPEG, PNG). Biography character limit must be enforced by the System.
- **Activity Log Privacy:** Only the Registered User can view their activity log, which should remain private and secure.

3.4 Preconditions

- The user must be a Registered User with a unique Handle before accessing profile management features.

3.5 Postconditions

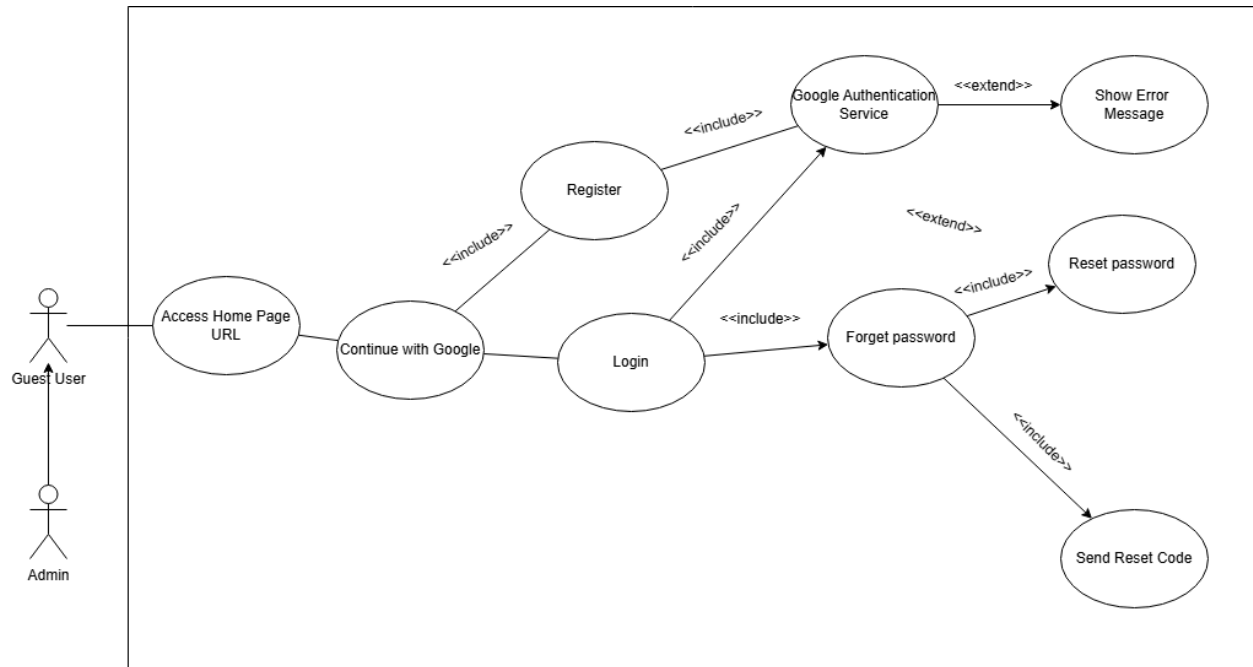
- Upon successful profile update, the System displays the updated profile with new biography, picture, follower/following counts, and pinned posts.
- If the user deletes their profile, the profile information is removed from the System permanently.

3.6 Extension Points

- **Profile Customization Options** Further customization options, such as profile themes or additional privacy settings, may be added at specified points within the profile management flow.

4. UC04: Authentication System

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	



4.1 Brief Description

This use case illustrates how the public users (Guests) can register and login using Google's Authentication, also there are some functions like : forget password, reset password.

4.2 Flow of Events

- Basic Flow
 - Registered User access home page .
 - The user presses the button “Continue with Google” to login or create an account with a Google account.
 - Google Authentication Service that manages user authentication.
 - If authentication fails, the Show Error Message use case is triggered.
 - Register: New users can register an account.
 - Login: Existing users can log in to access additional functionalities.
 - View Detail and Search: Users who are logged in can view details and search within the application.
 - Forget Password: If a user forgets their password, they can initiate a password reset, which includes:
 - Send Reset Code: A reset code is sent to the user.
 - Reset Password: The user can reset their password using the code.
- Alternative Flows

First Alternative Flow - Error in Google Authentication

- **Condition:** the Google Authentication Service fails.
- Google Authentication Service triggers Show Error Message.

Second Alternative Flow - Forget Password Flow

- **Condition:** the user encounters an issue with the reset code.
- The user may need to restart the password reset process.

4.3 Special Requirements

- **Google Authentication Integration:** The application must support Google's authentication service.

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

- **Secure Password Management:** Passwords and reset codes must be securely managed.
- **User Roles:** The System should recognize and differentiate between Admin and Guest User roles.

4.4 Preconditions

- Users must provide a valid email for account registration or password reset.

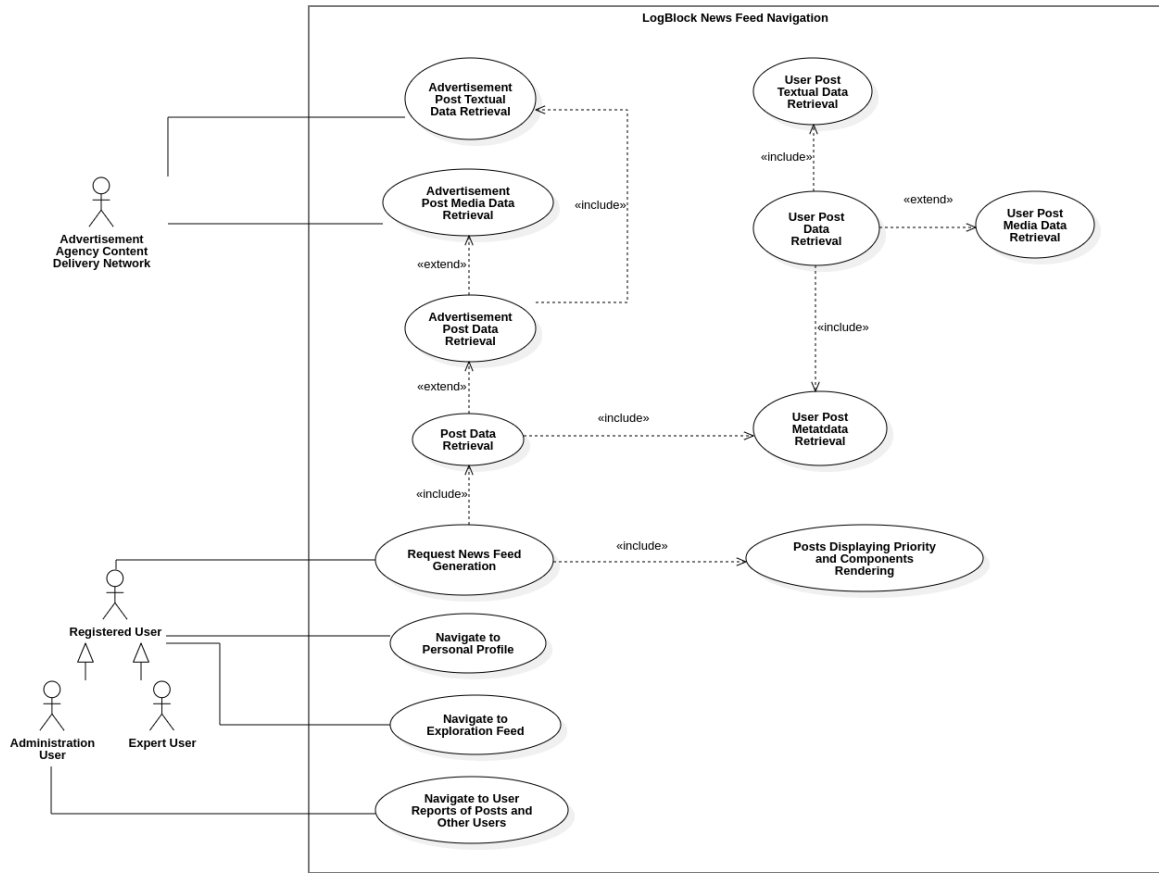
4.5 Postconditions

- Successful authentication or registration allows users to access the System features.
- If a password reset is completed, the user's password is updated securely in the System.

4.6 Extension Points

- **Error Handling** in Google Authentication: The System displays error messages if authentication fails.
- **Password Reset Code:** This use case extends **Forget Password** to allow secure password resetting.

5. UC05: News Feed Navigation



5.1 Brief Description

This use case describes how Registered Users, Expert Users and Administration Users navigate the News Feed, which is also the landing page for which the System has validated the Registered User's credentials. The use case describes News Feed Generating procedures, as well as navigating options to move to other

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

views of the System.

5.2 Flow of Events

- Basic Flow
 - The System assumes credential validation of the Registered User. The User then accesses the top level (homepage) News Feed.
 - The User reaches the News Feed bottom because no Posts have been rendered.
 - The User sends a News Feed Generation Request to the System upon reaching bottom.
 - The News Feed Generation Component requests User Post data retrieval from the System's content storage database, including mandatory textual data, metadata and optional media.
 - The News Feed Generation Component requests additional Advertisement Partners' Post data, including mandatory textual data and optional media.
 - The News Feed Generation Component then aggregates the combined request results based on the User's connection priority, while also ensuring the visibility of newer block posts.
 - The News Feed Generation Component then renders the component to necessary languages for the User's browser to display.
 - Upon further scrolling, the User will automatically request more News Feed Generation Requests to the System.
- Alternative Flows

First Alternative Flow - Personal Profile Navigation:

- **Condition:** The User prompts to be navigated to the User's personal profile.
- The System redirects the User to the designated personal profile and starts Registered User Profile Interaction use case.

Second Alternative Flow - Exploration Feed Navigation:

- **Condition:** The User prompts to be navigated to the Exploration Feed.
- The System redirects the User to the public Exploration Feed and starts the Exploration Feed use case.

Third Alternative Flow - User Reports of Posts and Other Users Navigation:

- **Condition:** The User prompts to be navigated to the Administrator centralized User Reports backlog..
- The System redirects the Administrator User to the private User Reports backlog.

5.3 Special Requirements

- News Feed Generation is per User and Generation will be performed lazily upon requests.
- Post Generation Requests will automatically be sent upon User's scrolling to the end of the current feed.
- User without Administrator privileges will not be able to navigate to the User Reports backlog.

5.4 Preconditions

- The User must be a Registered User with a unique Handle before accessing profile management features.
- The User must be authenticated and the System
- The User must access the site using the top-level URL.
- For User Reports of Posts and Other Users Navigation to be enabled, the User must have Administration privileges.

5.5 Postconditions

- Upon successful, the browser will display other connected Users newest posts, with additional advertisement interleave between posts.

5.6 Extension Points

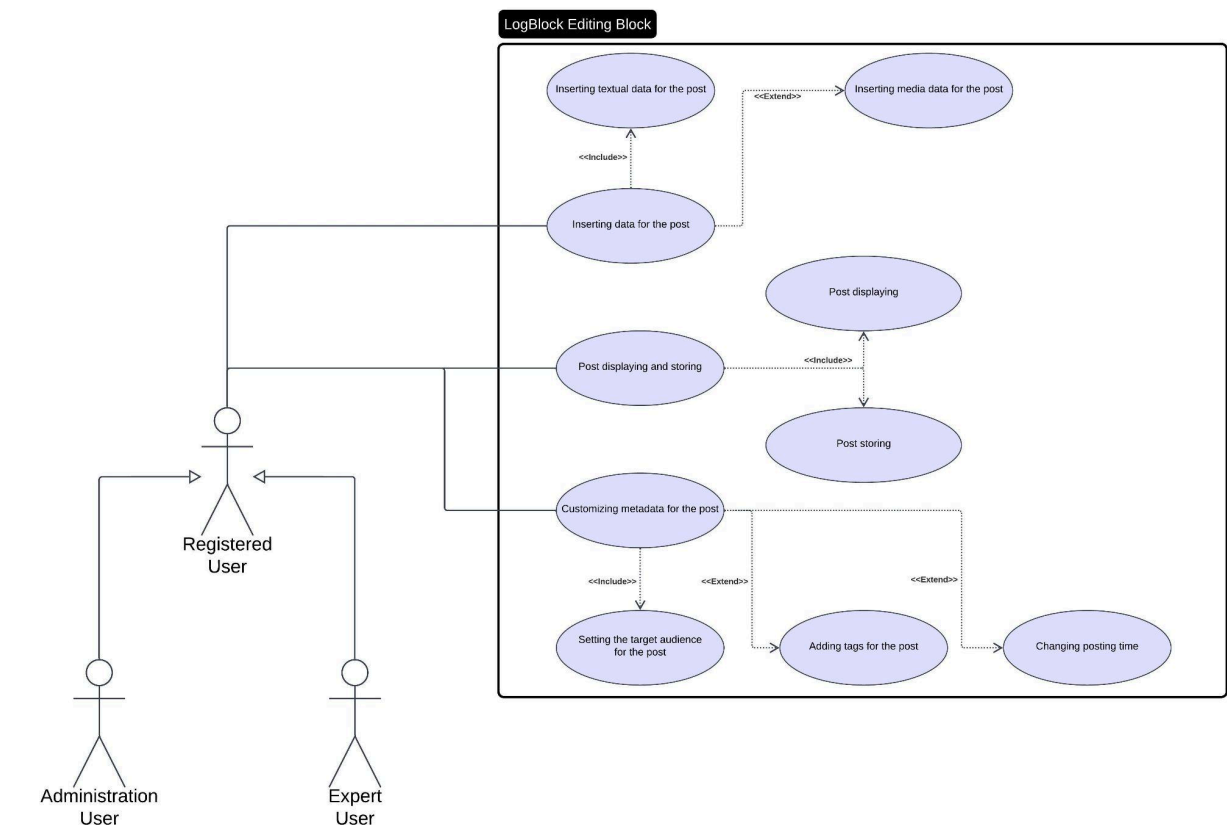
- **Navigation Bar Extension:** Exploration's searching mechanism can be fused with the navigation sections,

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

allowing Users to quickly utilize the features without having to switch view.

- Cached Feed:** News Feed can be cached on User’s devices, allowing reduced data, computation consumption, while also enabling half-baked offline usage.

6. UC06: Registered User Posting Block



6.1 Brief Description

This use case describes how Registered Users, Expert Users and Administration Users post code blocks onto the platform, which is the main way of generating content for the platform.

6.2 Flow of Events

- Basic Flow**
 - The System assumes credential validation of the Registered User. The User then navigates to their home page.
 - The User sends a Code Block Posting Request to the System.
 - The Code Block Posting Component prompts the User for necessary information about the post, including inputting textual content (code, caption), and setting target audience for the post. The User can also provide more content like images, attachments, or add tags for the post, as well as select the publish time for the post.
 - The Code Block Posting Component displays the newly created post and saves its data into the database.
- Alternative Flows**

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

First Alternative Flow - Connection Issues:

- **Condition:** The User gets disconnected/unstable network connection to the platform, resulting in failures in creating the post.
- A *Retry* button is provided for the User. When pressed, the server will try to create the post again (the last step in the *Basic Flow*).

6.3 Special Requirements

- **Markdown Rendering:** The content block must support Markdown to display descriptions, code snippets, and attachments seamlessly.
- **Characters Limitation:** The description for a content block must not exceed 1,000 characters.
- **Scheduled Post:** Users can select the time for content to be posted, and the selected time must be a valid time in the future.
- **Performant:** The performance for creating a post should not cause any annoyances to the User, as well as the System should be able to handle multiple post creation from multiple users simultaneously.

6.4 Preconditions

- The User must be a Registered User with a unique Handle and have already logged in to the website.
- The User must be at the Profile Management page.

6.5 Postconditions

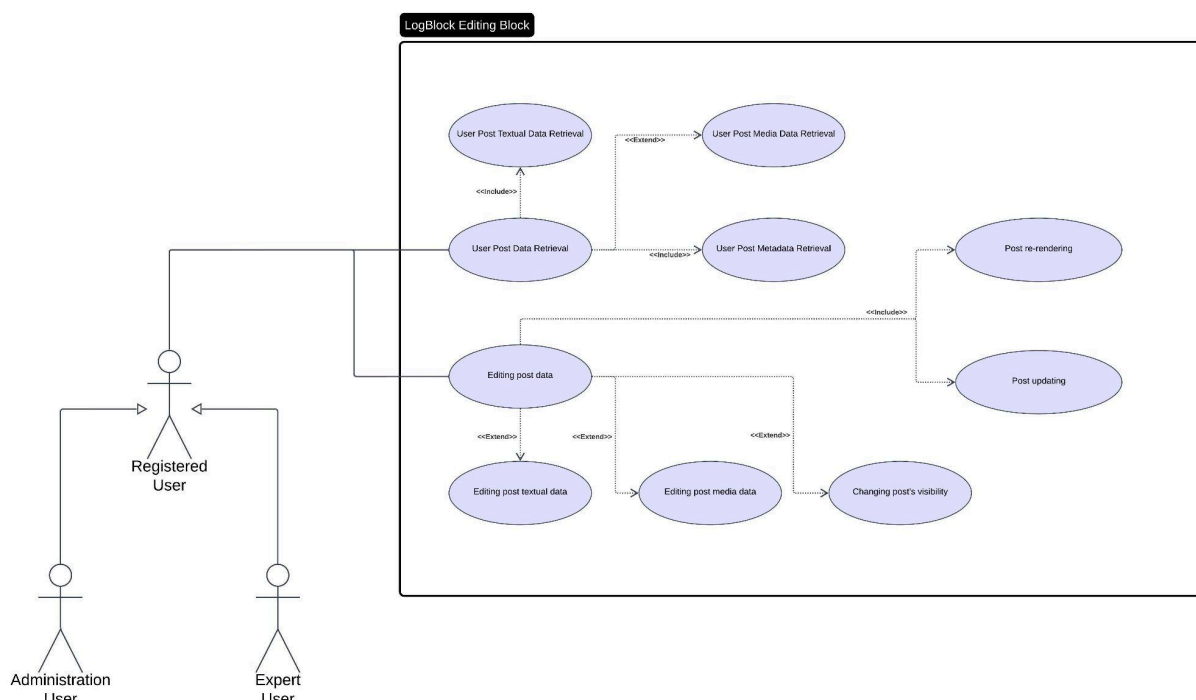
- Upon success, the post will be displayed on the User's profile, and visible to the post's target audiences.
- The post's data (textual content, media content, metadata) must be saved to the database.

6.6 Extension Points

- **Editing Content Block:** The registered user can edit the content block after publishing, with changes immediately reflected for other users.
- **Removing Content Block:** The registered user can remove the content block, which removes all of the data regarding the block from the website.

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

7. UC07: Registered User Editing Block



7.1 Brief Description

This use case describes how Registered Users, Expert Users and Administration Users can edit and update their code blocks, and the effect is visible to other users.

7.2 Flow of Events

■ Basic Flow

- The System assumes credential validation of the Registered User. The User then navigates to their home page.
- The System retrieves the user's post data and displays for the user to select which post to edit.
- The User selects a post to edit its content (textual data, attachments, tags, target audiences,...).
- The System displays the recently changed content and updates the post to the database.

■ Alternative Flows

First Alternative Flow - Connection Issues:

- **Condition:** The User gets disconnected/unstable network connection to the platform, resulting in failures in creating the post.
- A *Retry* button is provided for the User. When pressed, the server will try to update the post again (the last step in the *Basic Flow*).

7.3 Special Requirements

- **Formatting Consistency:** The edited block must have the same properties as a normal post (support **Markdown**, and maximum number of characters of 1,000).
- **Lazy Update:** Only the edited parts of the post should be updated.
- **Performant:** The performance for editing a post should not cause any annoyances to the User, as well as the System should be able to handle multiple post editions from multiple users simultaneously.

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

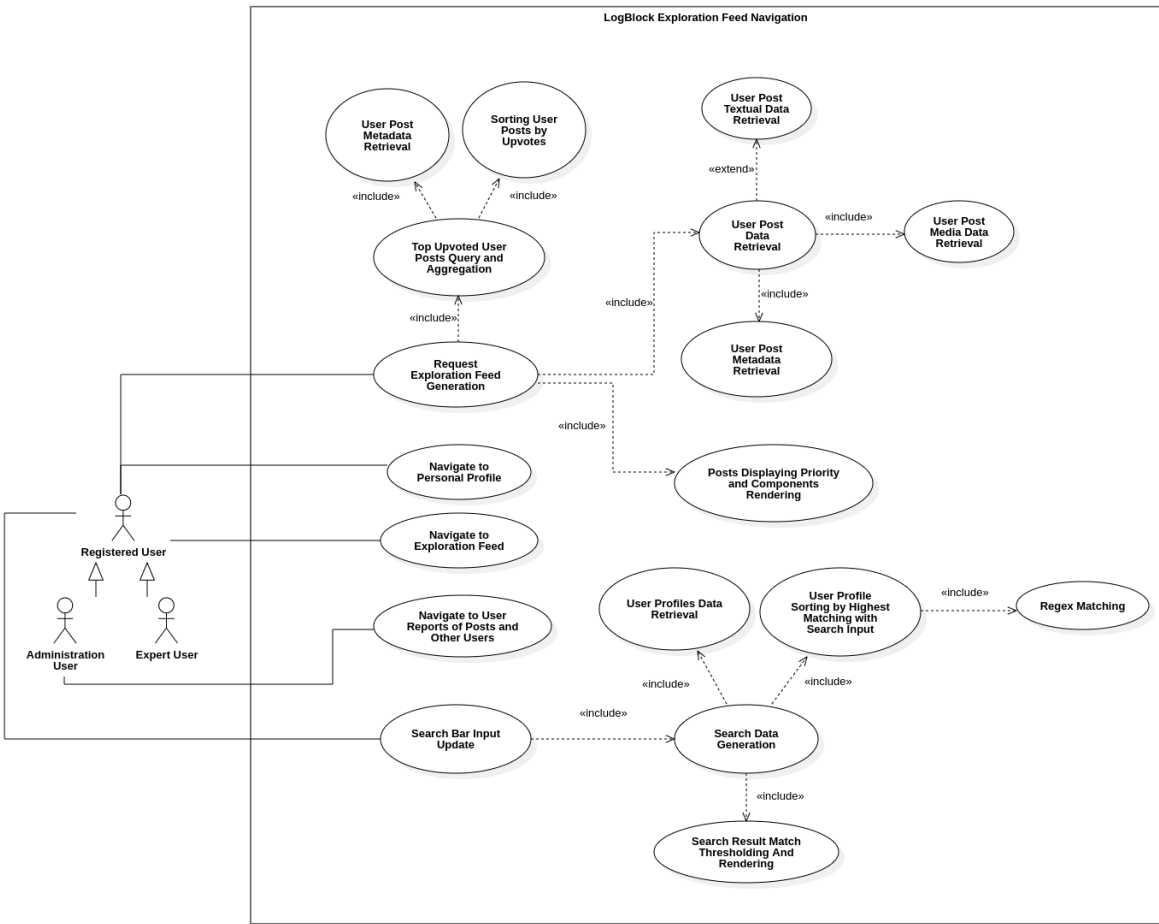
7.4 Preconditions

- The User must be a Registered User with a unique Handle and have already logged in to the website.
- The User must be at the Profile Management page and have already posted on the website.

7.5 Postconditions

- Upon success, the changes must take effect immediately, and are visible to the post's target audiences.
- The post's edited data (textual content, media content, metadata) must be updated to the database.

8. UC08: Exploration Feed Navigation



8.1 Brief Description

This use case describes how Registered Users, Expert Users and Administration Users navigate the Exploration Feed. The use case describes Exploration Feed Generating procedures, as well as navigating options to move to other views of the System. The use case also describes the Search Bar functionality, which allows Users to find the profile of other users in case of prior Handle or Display Name knowledge.

8.2 Flow of Events

■ Basic Flow

- The System assumes credential validation of the Registered User. The User then accesses the Exploration

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

Feed through navigation from other pages.

- The User reaches the Exploration Feed bottom because no Posts have been rendered.
- The User sends a Exploration Feed Generation Request to the System upon reaching bottom.
- The Exploration Feed Generation Component requests User Post metadata, which contains Post Unique Identifier and Social Interaction statistics for aggregation.
- The Exploration Feed Generation Component sorts the results by most Upvoted statistics.
- The Exploration Feed Generation Component selects the top 10 most upvoted posts that have not been selected before.
- The Exploration Feed Generation Component requests User Post data retrieval from the System's content storage database, including mandatory textual data, metadata and optional media, based on the previous results..
- The Exploration Feed Generation Component then aggregates the combined results based on the User's connection priority, while also ensuring the visibility of newer block posts.
- The Exploration Feed Generation Component then renders the component to necessary languages for the User's browser to display.
- Upon further scrolling, the User will automatically request more Exploration Feed Generation Requests to the System.

■ Alternative Flow

First Alternative Flow - Personal Profile Navigation:

- **Condition:** The User prompts to be navigated to the User's personal profile.
- The System redirects the User to the designated personal profile and starts Registered User Profile Interaction use case.

Second Alternative Flow - News Feed Navigation:

- **Condition:** The User prompts to be navigated to the News Feed .
- The System redirects the User to the public News Feed and starts the News Feed use case.

Third Alternative Flow - User Reports of Posts and Other Users Navigation:

- **Condition:** The User prompts to be navigated to the Administrator centralized User Reports backlog..
- The System redirects the Administrator User to the private User Reports backlog.

Fourth Alternative Flow - Search Bar Input Update:

- **Condition:** The User changes the content of the Search Bar.
- Upon changes of the Search Bar, one of the following 2 scenarios follows:
 - If the Search Bar is empty: the Search Results list will be hidden if already displayed.
 - If the Search Bar has more than one character: A list of Search Data results will be generated by the following steps:
 - The Search Data Generation Component requests for User Profiles Data, with primary included attributes are: User Handle Identifier and User Display Name.
 - The Search Data Generation Component matches the Search Input with the resulting Identifiers and Display Names from the previous step by regex matching.
 - The Search Data Generation Component then threshold the matching results by highest matching percentage and renders a tag containing the targeted User Handle Identifier and Display name.

8.3 Special Requirements

- Exploration Feed Generation is global for all Users and Generation will be performed lazily upon requests.
- Post Generation Requests will automatically be sent upon User's scrolling to the end of the current feed.

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

- User without Administrator privileges will not be able to navigate to the User Reports backlog.

8.4 Preconditions

- The User must be a Registered User with a unique Handle before accessing profile management features.
- The User must be authenticated and the System.
- For User Reports of Posts and Other Users Navigation to be enabled, the User must have Administrative privileges.

8.5 Postconditions

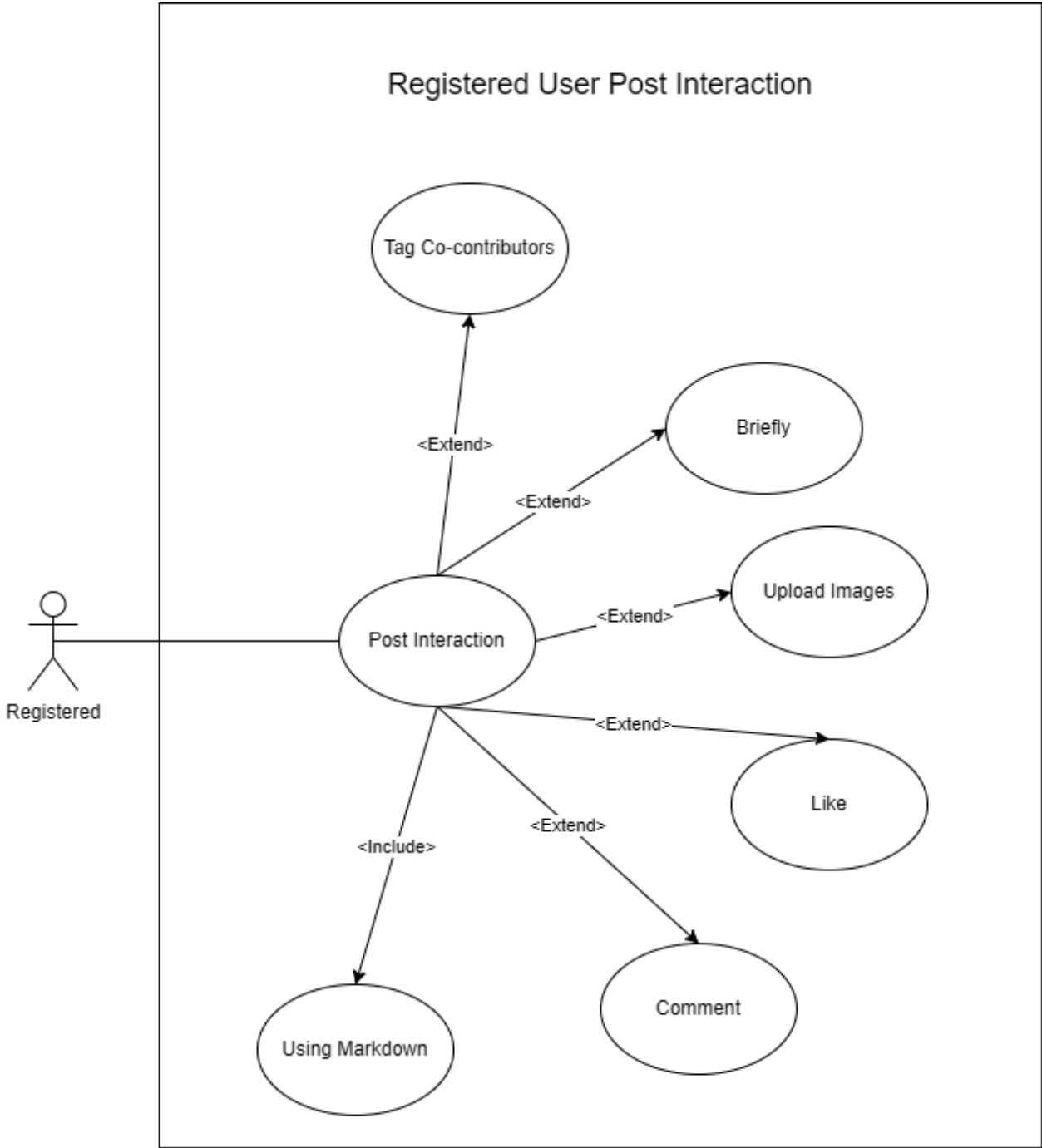
- Upon successful, the browser will display the globally most upvoted and newest posts.

8.6 Extension Points

- **Search Bar Extension:** Exploration's searching mechanism can be **extended to filter out results based on user's filtering choices**, allowing reduced computational cost for searches and increase hit chance.
- **Cached Feed:** Exploration Feed can be cached on User's devices, allowing reduced data, computation consumption, while also enabling half-baked offline usage.

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

9. UC09: Registered User Block Post Interaction



9.1 Brief Description

This use case details how a registered user can create and interact with a content block, including features for uploading images, tagging co-contributors, and allowing other registered users to like, share, save, and

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

comment.

9.2 Flow of Events

- Basic Flow
 - Registered User creates a content block by entering a description (up to 1,000 characters).
 - The user formats the description using Markdown, adds code snippets, and uploads images.
 - The user may tag other registered users as co-contributors.
 - Once published, the content block is available for interaction by external registered users, who can:
 - Like, share, and save the content block.
 - Comment on the content block, initiating sub-threads.
 - Like or add comments to any existing sub-thread comments (up to a 3-level depth).
- Alternative Flows

First Alternative Flow - Uploading Images

- **Condition:** the user is unable to upload images due to file size limits, a warning is displayed.
- The user can either compress the image or select a different image.

Second Alternative Flow - Tagging Co-Contributors

- **Condition:** the tagged user does not exist in the platform's user database, a message alerts the user to check the username or omit tagging.
- If the tagging limit is exceeded, the user is prompted to remove tags before proceeding.

9.3 Special Requirements

- **Markdown Rendering:** The content block must support Markdown to display descriptions, code snippets, and attachments seamlessly.
- **Sub-Thread Depth:** Sub-thread comments can be nested, but the depth is capped at 3 levels to prevent excessive nesting.

9.4 Preconditions

- The user must be registered.
- The registered user must have appropriate permissions to upload images, tag users, and add code snippets.

9.5 Postconditions

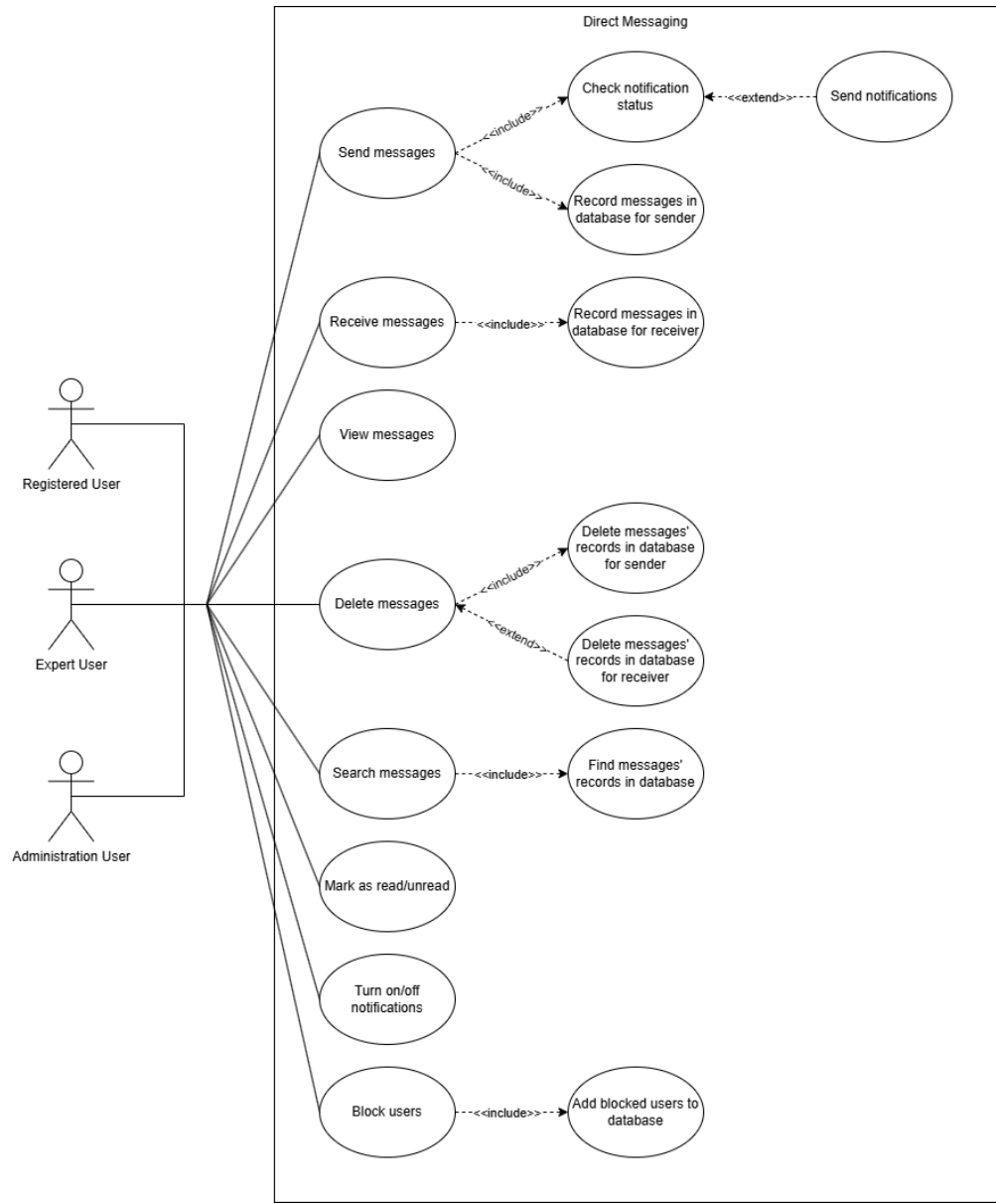
- **Content Block Creation:** Upon successful completion, the content block displays formatted content, images, and code blocks, available for interaction by external registered users.
- All likes, shares, comments, and sub-threads are accurately logged and displayed.

9.6 Extension Points

- **Editing Content Block:** The registered user can edit the content block after publishing, with changes immediately reflected for other users.
- **Reporting Content Block:** External registered users can report the content block for review, initiating a moderation workflow

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

10. UC10: Direct Messaging



10.1 Brief Description

This use case illustrates how Registered/Expert/Administration Users can message each other in private box chat.

10.2 Flow of Events

- Basic Flow
 - **Log in:** The user logs in to get access to the Messages page.
 - **Navigate to the Messages page:** The user navigates to the Messages page.

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

- **Display recent box chats:** The system retrieves chat history and displays recent box chats.
- **Display recent messages:** The user chooses a particular box chat. The system retrieves message history and displays recent messages in that box chat.
- **Manipulate with box chat elements:**
 - **Send messages:** The user can now send messages.
 - **Edit messages:** The user can edit their messages within 10 minutes.
 - **Delete messages:** The user can delete
 - their messages from the sender's view and the receiver's view (within 10 minutes).
 - the opposite messages from the sender's view.

■ Alternative Flow

First Alternative Flow - Connection Issue

- **Condition:** The user's network connection is interrupted, failing to send or delete messages.
- A disconnected connection warning is displayed until the network is reconnected.

Second Alternative Flow - No history chat

- **Condition:** The user hasn't sent or received any messages before.
- The user needs to search for the targeted user and choose he/she to create a box chat.

10.3 Special Requirements

- **Transparency:** The edited message will have a small notification above it.
- **Lazy loading:** Only recent box chats and messages are loaded first.
- **Performance:** The system should be able to handle multiple messages sent and received at a time in the day.

10.4 Preconditions

- The user must be a Registered/Expert/Administration User.
- The targeted user does not block the user.

10.5 Postconditions

- After sending, deleting, or editing messages, messages must be displayed on the screen in real time and then updated in the database.

10.6 Extension Points

- **Delete messages:** The user can delete messages within 10 minutes after sending, which removes all the corresponding data in the database.
- **Edit messages:** The user can edit messages within 10 minutes after sending, which changes all the corresponding data in the database.

11. UC11: Expert User - Specialized Functionality

11.1 Brief Description

This use case illustrates what actions Expert users can take. However, in this use-case specification, we will focus on the exclusive function that Expert users have: Solution Suggestion.

11.2 Flow of Events

■ Basic Flow

- **Log in:** The user logs in to get access to the Expert user's functions.
- **Navigate to the Home page:** After the user logs in, they will be navigated to the Home page.
- **Display blogs:** The system displayed top blogs.
- **Open the "More Actions" menu:** The user clicks the ellipsis lying on the top right of the blog.

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	



LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

- **Choose the “Suggest Solution” option:** After choosing this option, the user will be navigated to the Code-editor page to write the solution.
- **Press “Submit”:** Finally, the user presses the “Submit” button to send the solution to the user who posted the blog.

■ Alternative Flows

First Alternative Flow - Connection Issue

- **Condition:** The user’s network connection is interrupted, and the solution is not submitted.
- A disconnected connection warning is displayed until the network is reconnected.

11.3 Special Requirements

- **Transparency:** The solution will be posted to the “Expert Solution” with the information of the Expert user.
- **Lazy loading:** Only recent blogs are loaded first.
- **Performance:** The system should be able to handle multiple solutions sent and received at a time in the day.

11.4 Preconditions

- The user must be an Expert User.
- The targeted user does not block the user.

11.5 Postconditions

- After submitting a solution, the solution must be added to the “Expert Solution” list and the database.

11.6 Extension Points

- **Inappropriate Content Deletion:** If the solution suggested by the Expert user violates the regulations, the solution will be deleted.

12. UC12: Administration User - Specialized Functionality

12.1 Brief Description

This use case illustrates what actions Administration users can take. However, in this use-case specification, we will focus on the exclusive function that Administration users have: Handling Expert and report requests.

12.2 Flow of Events

■ Basic Flow

- **Log in:** The user logs in to get access to the Administration user’s functions.
- **Navigate to the Requests page:** After the user logs in, they will be navigated to the Requests page.
- **Display recent requests:** The system retrieves and displays pending requests in chronological order from the latest to the newest.
- **Handle requests:** The user can now press buttons to approve or reject the requests.
- **Send notifications:** Notifications are then sent to the users who made requests.

■ Alternative Flows

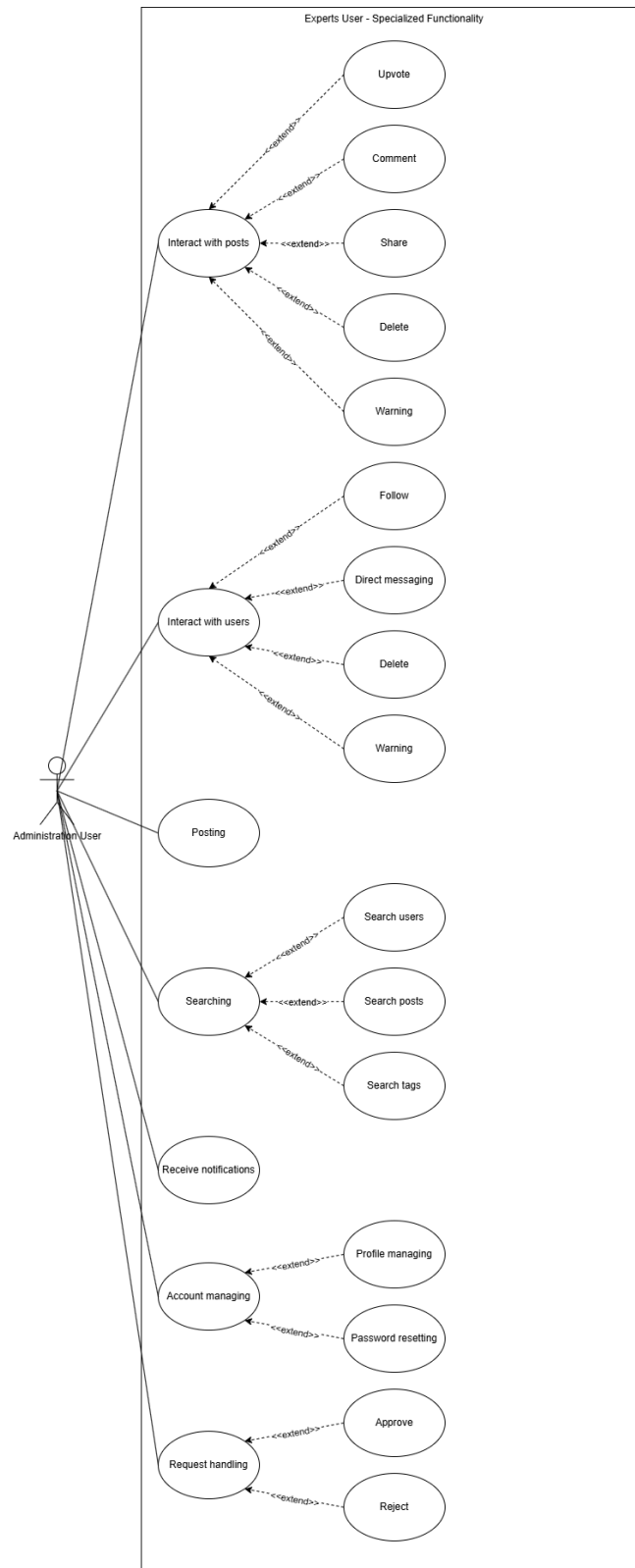
First Alternative Flow - Connection Issue

- **Condition:** The user’s network connection is interrupted, failing to approve or reject requests.
- A disconnected connection warning is displayed until the network is reconnected.

12.3 Special Requirements

- **Transparency:** The Expert user needs to provide the necessary information to send the request.
- **Lazy loading:** Only the latest requests are loaded first.

LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	



LogBlock Social Media Service	Version: 1.3
Use-Case Specification	Date: 14/11/2024
<document identifier>	

- **Performance:** The system should be able to handle multiple requests sent at a time in the day.

12.4 Preconditions

- The user must be an Administration user.

12.5 Postconditions

- After approving, or rejecting requests, notifications must be sent in real-time and then updated in the database.
- After approving the report request, the Administration user has to consider whether that blog or account should be permanently removed.

12.6 Extension Points