Personalised video recommendation system

Group 7

Group Members

23895642 Yi Ren
23957505 Zongqi Wu
24121014 Rui Qin
24125299 Yu Xia
24146595 Yechang Wu
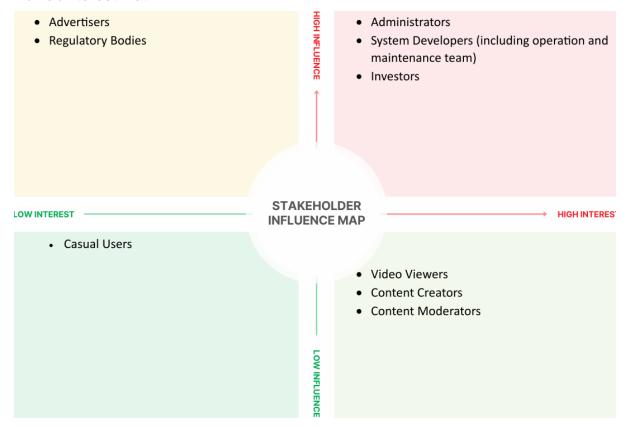
Table of Contents:

Task 1

Stakeholders Analysis

List of Stakeholders

1. Video Viewers
2. Administrators
3. Content Moderators
4. Content Creator
5. System Developers (including the operation and maintenance team)
6. Advertisers
7. Investors
8. Casual Users
9. Regulatory Department

Power/interest Matrix

- Advertisers
- Regulatory Bodies

HIGH INFLUENCE

- Administrators
- System Developers (including operation and maintenance team)
- Investors

STAKEHOLDER INFLUENCE MAP

LOW INTEREST

HIGH INTEREST

- Casual Users

- Video Viewers
- Content Creators
- Content Moderators

LOW INFLUENCE

Reason

High Power, High Interest

Administrators (including Management)

Administrators have significant authority and responsibility within the platform's ecosystem, overseeing its overall operations, strategic direction, and compliance with legal standards. They influence all aspects of the platform, from user engagement strategies to financial oversight and policy development. As an integral part of the platform's success, they are firmly committed to its continuous improvement and market performance. Their involvement is important in aligning the platform's functionality with business goals and user expectations.

System Developers (including the operation and maintenance team)
System developers and operations teams play an important role in the creation, deployment and maintenance of the systems. Their technical capabilities and actions directly impact system functionality, performance and user satisfaction. At the same time, the team is motivated to ensure the success of the platform, as their professional reputation is affected by how well the system is developed, and the technical advancement of the system depends on the project. Therefore, their deep involvement is critical, and management needs to engage this group thoroughly.

Investors
Investors have a great interest in the platform's financial performance and growth. Their funding decisions can significantly influence strategic direction and resource allocation. They seek strong returns and closely monitor the platform's performance such as user engagement and satisfaction, as well as revenue. So, they have a high interest in financial and operational success, and they can have a significant impact on funding and strategic decisions. Management needs to update investors regularly and address their feedback. This is important to maintain their support.

Low Power, High Interest

Video Viewers
Video viewers are the main users of personalised video recommendation platforms. While viewers have little influence on the strategic direction or technical features of a platform, their collective usage patterns, preferences and feedback are critical to the platform's success. They are very interested in the functionality of the system because it directly affects their content experience and indirectly affects their platform usage and time spent on it. Their satisfaction and loyalty are key to measuring the success of the platform. Therefore, it is important to collect and analyse their feedback and adapt the system to meet their changing or growing needs.

Content Creators
Content creators have little influence over the strategic direction or technical features of the platform but they play an important role in the platform ecosystem by providing content that engages viewers. However, they are very interested in the features of the platform, especially the features that affect the visibility, engagement and money-

making potential of their content. Their success and the platform's success are linked. That is because if creators see value in the platform and they can still make money from it, they will continue to produce content that attracts viewers.

Content Moderators

Content moderators play an important role in maintaining a platform's content quality and community standards, which directly impact user experience and trust. Although their impact on the project was limited, their dedication to the operational integrity of the platform was immense. They are the content policy of the application platform and contribute to a safe and respectful user environment. Their feedback helps identify and resolve urgent issues, optimise content guidelines, and enhance moderation tools. Engaging content moderators in discussions about policy effectiveness and user experience can provide valuable insights to ensure that the platform is alive and trusted by users.

High Power, Low Interest

Advertisers

In situations where advertisers are considered to have high power because of their financial impact, they have low day-to-day interest in the operational or development details of the platform. Advertisers can have a significant impact on platforms through their advertisement spend and choices, which in turn affects platform revenue. However, their interest is primarily in the results they get (ROI, reach, engagement) rather than the operational or development aspects of the platform. Platforms should ensure that they provide advertisers with sufficient data and tools to measure the effectiveness of their campaigns, allowing them to be passively satisfied without having to be deeply involved in the development of the platform.

Regulatory Department

Regulators have the power to enforce compliance with legal standards and industry regulations and have high power over platforms. However, unless there are compliance issues, they usually have little interest in the daily operations of the platform. Platforms must comply with regulations and standards to avoid penalties or operational disruptions. Ensuring compliance with platform content and being prepared for any audits is enough to maintain appropriate relationships with these departments.

Low Power, Low Interest

Casual Users

Casual users rarely visit the platform and do not engage heavily with its content or features. Their power is low because their actions have no impact on the platform, and

their interest is low. They are not the focus of strategic decisions or feature development, but ensuring a baseline of user-friendliness and accessibility helps maintain a good reputation and potentially turn them into active users over time.

Video Viewers

- **Discover New Content:** As a video viewer, I want the system to recommend new content based on my viewing habits so that I can discover videos with my interests.
- **Save for Later:** As a video viewer, I want to save videos to a 'Watch Later' list so that I can easily find and watch them when I have time.
- **Content Notification:** As a video viewer, I want to receive notifications when new content from my favourite creators is uploaded so that I do not miss out on any updates.
- **Adjust Video Quality:** As a video viewer, I want to adjust video quality settings based on my internet speed so that I can ensure smooth playback.
- **Video Speed Control:** As a video viewer, I want to control the playback speed of videos so that I can watch content faster or more slowly based on my preference.
- **Interactive Feedback:** As a video viewer, I want to like, comment, like other people's comments, or share videos so that I can interact with the content and community.
- **Custom Playlists:** As a video viewer, I want to create custom playlists so that I can organise my favourite content and watch them sequentially.
- **Search Functionality:** As a video viewer, I want an efficient search function so that I can find specific videos quickly.
- **Viewing History:** As a video viewer, I want to access my viewing history so that I can revisit previously watched content.
- **Filter Content:** As a video viewer, I want to filter search results by genre, length, or popularity so that I can find content that suits my preferences quickly.
- **Channel or Creator Following:** As a video viewer, I want to follow channels or creators so that I can receive updates and quickly access their new and past content.
- **Download for Offline Viewing:** As a video viewer, I want to download videos for offline viewing so that I can enjoy content without an internet connection.
- **History Management:** As a video viewer, I want the ability to manage my viewing history, including deleting or hiding certain activities so that I can have better privacy control.
- **Login Function:** As a video viewer, I want to log in to the platform so that I can access my personalised recommendations, watch history, and save playlists.

- Registration Function: As a video viewer, I want to register my account into the platform so that I can have my personalised recommendations, watch history, and save playlists.

Content Creators

- Analytics Access: As a video creator, I want to access detailed analytics about my videos' viewership, so I can understand my audience better.
- Upload Ease: As a video creator, I want to upload videos easily, so that I can share my content promptly without technical difficulties.
- Content Protection: As a video creator, I want my content to be protected against unauthorised use so that I can safeguard my intellectual property.
- Series Management: As a video creator, I want to organise my videos into series or playlists so that I can let viewers easily follow along.
- Subscriber Insights: As a video creator, I want to know who my subscribers are and their preferences so that I can tailor my content to their interests.
- Content Scheduling: As a video creator, I want to schedule my videos for release so that I can manage my content calendar efficiently.
- Resolution Choices: As a video creator, I want to upload videos in various resolutions so that I can cater to viewers with different internet speeds.
- Bulk Actions: As a video creator, I want to perform bulk actions on my videos so that I can do something like delete videos.
- Content Recovery: As a video creator, I want to recover accidentally deleted content so that I can ensure my work is not lost permanently.
- Revenue Tracking: As a video creator, I want to track my earnings from videos so that I can understand my financial performance.
- Login Function: As a content creator, I want to log in to manage my channel, view analytics, and interact with my viewers to enhance my content.

Administrators (including Management)

- Performance Benchmarking: As an administrator, I want to benchmark platform performance so that I can identify strengths and areas for improvement.

Content Moderators

- Automated Flagging: As a content moderator, I want the system to automatically flag content that potentially violates guidelines so that I can review it quickly.
- Bulk Action: As a content moderator, I want to perform bulk actions on similar reports or content types so that I can improve my workflow efficiency.
- Moderation Feedback: As a content moderator, I want to provide feedback on the moderation tools and processes so that the platform can enhance its effectiveness and usability.

- Policy Update Notifications: As a content moderator, I want to receive immediate updates when moderation policies change so that I can apply the latest guidelines accurately.
- Sensitive Content Warnings: As a content moderator, I want to be forewarned about sensitive or potentially disturbing content so that I can be mentally prepared before reviewing it.
- Content Restoration: As a content moderator, I want the ability to restore mistakenly removed content so that I can rectify errors promptly.
- Moderation History Log: As a content moderator, I want a log of all my moderation activities so that I can reference past decisions and learn.

System Developers (including the operation and maintenance team)

- Performance Monitoring: As a system developer, I want to monitor system performance so that we can address any issues.
- User Feedback Integration: As a system developer, I want to integrate user feedback mechanisms so that we can continually improve the platform based on user input.
- As a system developer, I want to log in to access development tools, deployment features, and system monitoring capabilities to ensure the platform's efficiency.

Requirements Analysis

Functional Requirements

1. User Registration: Users should be able to register for an account using their email addresses or social media profiles.
2. Account Verification: Users could receive a verification email or message to ensure the authenticity of their registration.
3. Profile Customisation: Users should be able to customise their profiles, including preferences, display pictures, and bio.
4. Password Recovery: Users should have options to recover or reset their passwords securely.
5. Video Rating: Users should be able to rate videos that could influence the recommendation engine.
6. View Later Option: Users can save videos to a 'Watch Later' list.
7. Subscription to Channels: Users should be able to subscribe to their favourite channels or content creators.
8. Get notifications: Users should be able to get notifications about new videos of their subscribed creators, trending videos, comments, interactions or some activities they might be interested in.
9. Notification Settings: Users can customise notifications for new content, comments, or likes.

10. Video Sharing: Users should be able to share videos on various social media platforms.
11. Comment System: The platform should include a system for users to comment on videos.
12. Reply to Comments: Users should be able to reply to comments on videos.
13. Video Reporting: Users should be able to report videos that violate platform guidelines.
14. Historical Data Analysis: The system should analyse historical viewing data for better recommendations.
15. Search Functionality: Users should be able to search for videos using keywords, tags, or categories.
16. Filtering Options: Users should have options to filter search results by various criteria like date, popularity, etc.
17. Channel Discovery: Users should discover channels based on their interests and viewing habits.
18. Interactive Video Player: The video player should offer interactive features like pause, rewind, forward, and volume control.
19. Quality Selection: Users should select the desired video quality based on their internet speed.
20. Playback Speed Control: Users should be able to adjust the playback speed of videos.
21. Fullscreen Mode: The video player should support full-screen viewing.
22. Content Upload: Content creators should be able to upload videos along with relevant metadata by a user-friendly interface. While uploading, they should be able to adjust their uploads' formats, qualities and sizes which helps them to upload more efficiently.
23. Editing uploaded videos: Creators should have tools to edit their uploaded videos, including video and their data like titles, descriptions and tags.
24. Schedule uploading: Creators should be able to schedule their upload. When the scheduled time is up, the video will be uploaded automatically.
25. Unpublish videos: Creators should be able to unpublish some uploaded videos when they need to. Once unpublished, those videos cannot be seen or searched by other users.
26. Analytics for Creators: Content creators should access analytics on their videos' performance, including details like views, user engagements, view trends and revenue generated.
27. Channel customisation: Creators should be able to customise their channel profile, setting their profile picture, cover photo and channel description.
28. Moderation Queue: Content moderators should have a moderation queue to review reported content. They can review the details of these reported contents such as the time of report and status.

29. User Management: Content moderators should be able to manage user accounts and enforce platform policies. For example, they can prevent some unauthorised users from accessing, and suspend some accounts that violate platform rules.
30. Subscription: The platform should include a payment gateway for transactions like donations or paid subscriptions.
31. Follow the creator: Users should be able to follow specific creators and get updated on new content produced by the creators that they are following.
32. Like and Dislike function: The platform should allow users to express their preferences by liking or disliking videos.
33. Keyword Search Capability: The system must allow users to input text-based queries and return relevant video results based on keyword matches in the video titles, descriptions, and tags.
34. Category-Based Filtering: Users should be able to filter search results by predefined categories (e.g., Education, Entertainment, Technology) to refine the list of videos displayed.
35. Search Autocomplete and Suggestions: Implement an autocomplete feature that suggests search terms as the user types, based on popular searches, and provide related search suggestions to help users refine their queries.
36. Search History and Saved Searches: Enable users to view their search history and save search queries or filters for quick access in future sessions
37. Age-based content filtering: The platform shall offer a youth mode feature that filters content based on age appropriateness, ensuring that young users are only exposed to content suitable for their age group.
38. Draft saving with cross-device synchronisation: Users should be able to save their drafts on multiple devices and different internet connection conditions. Sometimes when they do not have an internet connection, they should be able to save their drafts offline, and it can be uploaded automatically when the internet connection is back. Additionally, the drafts should be cross-device synchronisation.
39. Personalised recommendation: The platform should employ recommendation algorithms to provide personalised video recommendations to users based on their interests, viewing/searching history, interactions, and preferences. Users should be able to give feedback to the recommendations and adjust it.
40. User support: Provide user support through the platform, including FAQs, forums, and customer service. Users shall have access to searchable documentation and instructional materials to find answers to common questions and resolve issues independently while getting support from administrators.
41. Adaptive Video Quality: The system should dynamically adjust video quality based on the user's internet bandwidth.

42. Strong authentication: Implement a strong authentication mechanism, including multi-factor authentication options.
43. Accessibility: The platform must comply with Web Content Accessibility Guidelines to ensure features like closed captions, audio descriptions, and keyboard navigation are available, and guarantee an inclusive user experience for the disabled.

Non-Functional Requirements

- Security: Implement strong security measures to protect against unauthorised access and data breaches.
    - Security measures will be integrated across multiple layers of the platform, including the application, network, and data layers
    - Use encryption to protect sensitive data, such as passwords and personal information.
    - Apply regular security audits and tests to identify and correct potential security vulnerabilities.
    - Effect:
        - Enhanced user trust in the use of the platform
        - Protect user information on the platform by preventing data breaches and unauthorised access.
- Scalability: The platform should efficiently scale resources to handle varying loads, ensuring consistent performance.
    - With a cloud-based infrastructure, resources can be dynamically allocated based on real-time demand
    - Efficient database management and optimisation to smoothly handle
    - increasing data volumes and user requests
    - Effect:
        - The platform remains stable even as the number of users, the volume of data, or the complexity of the service increases.
        - Ensure a consistent user experience during peak usage times or periods of rapid platform growth.
- Reliability: Ensure high availability and minimal downtime through robust infrastructure and failover strategies.
    - Take regular system backups and develop a disaster recovery process.
    - Implement robust error handling and recovery mechanisms to restore services in the event of a failure quickly.
    - Effect:
        - Minimise the risk of downtime.
- Performance: Optimise the platform for quick loading times and responsive interactions, even under high traffic.
    - Optimise the front end for fast loading.

- ○ Back-end optimisation, including efficient algorithms and database queries, ensures fast data retrieval and processing.
- ○ Perform regular performance tests under various conditions to identify and resolve bottlenecks.
- ○ Implement caching policies to reduce load times for frequently accessed content.
- ○ Effect:
  - ■ Users experience minimal latency and smooth interactions, resulting in increased user satisfaction.
  - ■ Avoid the frustration associated with slow load times or delayed response.
- ● Usability: Design an intuitive and user-friendly interface that accommodates diverse user groups.
  - ○ Design a clear and concise interface for ease of use.
  - ○ Follow accessibility guidelines to ensure that the platform is accessible to people with various disabilities.
  - ○ Provides comprehensive documentation and user support to help users navigate the platform.
  - ○ Effect:
    - ■ Increase user engagement by making the platform easier to access and navigate.
- ● Compliance: Adhere to legal and regulatory requirements, especially concerning data protection and copyright.
  - ○ The platform is regularly reviewed and updated to ensure compliance with legal and industry standards.
  - ○ Ensure proper use of copyrighted materials and ensure that user content complies with copyright laws.
  - ○ Effect:
    - ■ Protect the platform and its users from legal and financial implications.
    - ■ Enhance reputation and user trust.
- ● Maintainability: Ensure the system is easy to update, modify, and maintain.
  - ○ Thoroughly document the architecture and codebase for easy maintenance and future enhancements.
  - ○ Plan regular updates and maintenance periods to keep your system up-to-date and secure.
  - ○ Using coding standards to ensure the code base is clean and easy to understand.
  - ○ Effect:
    - ■ Ensure that the platform can be updated or fixed quickly and efficiently, thereby reducing the risk of long-term issues or outages.

- ■ Promote the introduction of new features and improvements to keep the platform competitive.
- ● Monitoring: Implement monitoring tools to track the system's health, user activity, and performance metrics.
  - ○ Use monitoring tools to observe system performance and health.
  - ○ Set up alerts to notify teams of potential problems or performance degradation.
  - ○ Collect and analyse logs to identify trends and potential issues.
  - ○ Effect:
    - ■ Ability to proactively identify and solve problems.
    - ■ Provides information on platform usage and performance to facilitate optimisation and enhancement efforts.
- ● Data Privacy: Implement measures to protect user privacy and comply with data protection regulations. This includes encryption for safeguarding user information during storage and transmission, a strong authentication mechanism, and minimal data collection to ensure only necessary information is gathered.
  - ○ Implement encryption in transit to protect user data.
  - ○ Minimise data collection to what is necessary and obtain user consent when required.
  - ○ Provides users with data management options, including data access and deletion rights.
  - ○ Conduct a privacy impact assessment to ensure that the platform's data complies with regulations.
  - ○ Effect:
    - ■ Strengthen the trust of users by respect for their personal information and commitment to privacy.
    - ■ Reduce the risk of data breaches and the associated financial and reputational damage.
- ● Intuitiveness: The interface should be intuitive and easy to navigate for new users, with clear labelling and logical organisation of features and content.
  - ○ Design the user interface to be logical to minimise the learning curve for new users.
  - ○ Make sure navigation is straightforward and important features are easily accessible.
  - ○ Provide contextual help and guidance to help users understand how to use the platform.
  - ○ Effect:
    - ■ Reduce the learning curve for new users and enhance their ability to quickly master the platform.

- Compatibility: The platform must be responsive, providing a seamless experience across various devices (desktops, tablets, smartphones) and screen sizes, with minimal load times.
    - Design different interfaces to accommodate different screen sizes and orientations.
    - Test the platform on a variety of devices, operating systems, and browsers to ensure consistent functionality and appearance.
    - Ensure that the backend system can interact seamlessly with a variety of clients.
    - Effect:
        - Ensure a consistent and fully functional user experience across devices and browsers.
        - Prevent alienating users due to incompatibilities, support a diverse user base and maximise coverage of the majority of users

Task 2

Interview Agenda

See Appendix 1

Interview record

See Appendix 2

Task 3

Traceability table

Req ID	Requirement Description	Subsystem	Dependency
R1	User registration with email or social media and login	User Management System	-
R2	Account verification through email or message	User Authentication System	R1
R3	Profile customisation (preferences, display pictures, bio)	User Management System	R1
R4	Password recovery options	User Authentication System	R1
R5	Video rating system	Content Management System	R1
R6	Saving videos for later viewing	Content Management System	R1
R7	Subscription to channels or content creators	Content Management System	R1
R8	Notifications for new videos and subscriber activities	Notification System	R7
R9	Video sharing on other social media platforms	Social Media Integration	R1

R10	Comment and like the videos	Content Interaction System	R1
R11	Replying to comments	Content Interaction System	R10
R12	Reporting inappropriate videos	Content Moderation System	R1
R13	Historical data analysis for personalised recommendations	Recommendation Engine	R1
R14	Search functionality using keywords, tags, or categories	Search System	R1
R15	Content upload with metadata	Content Management System	R1
R16	Analytics access for content creators	Analytics System	R15
R17	User account and content management by content moderators	Content Moderation System	R12, R11
R18	Encryption for protecting sensitive data	Security System	R1, R4, R15
R19	Compliance with data protection laws	Compliance and Legal System	R18

R20	User support including FAQs, forums, and customer service	Support System	R1
R21	Adaptive video quality based on internet bandwidth	Content Delivery Network	R1
R22	Strong authentication mechanisms	Security System	R1
R23	Data privacy measures including minimal data collection and encryption in transit	Privacy Management System	R1, R18
R24	Regular security audits and vulnerability testing	Security System	R18
R25	User ability to manage search history and save searches	Search System	R14
R26	Admins login to the admin panel through a secure and internal entry point	Administrator System	-
R27	Retrieve the users list on the platform and further manage users, e.g. create, edit, remove, and ban user accounts	Administrator System	R26
R28	Review videos and users' reports on the platform and tag the video for further moderation operations, e.g. ban the video/uploader/channel	Administrator System	R26
R29	Trigger a database backup or restore on the admin panel.	Administrator System	R26

R30	Install packages or patches on the platform	Administrator System	R26
R31	Retrieve and respond to users' questions Through the admin panel.	Administrator System	R26
R32	Create channels, or edit the channels' profiles (name, picture, description, etc.)	User Management System	R1
R33	Schedule a publish or unpublish videos uploaded by them	Content Management System	R1
R34	Built-in video editing tools	Content Management System	-
R35	Earning withdrawn setting	User Management System	R1
R36	Personalised video recommendation	Recommendation Engine	R1, R9, R10, R13, R14
R37	Video play control	Video Playing System	-
R38	Modify uploaded videos' metadata	Content Management System	R1

UML use case diagram

See Appendix 3

Task 4

Use Case 1: User Registration and Personalised Recommendations

Actors: Video Viewer, Content creator

Typical Flow:

1. The user navigates to the registration page or clicks on a "Join now" or "Register" button.
2. The user fills out the registration form, including details like username, email address, password, etc.
3. The system validates the provided information, ensuring it meets the schema (e.g. valid email format, username length, password complexity)
4. If the information is valid, the system creates a new user account stores the provided details and then sends a confirmation email to the provided email address to verify their identity.
5. The user checks their email and clicks on the confirmation link or button to confirm their registration and redirects to the system.
6. Upon confirmation, the system activates the user account, allowing them to log in and access the system.

Alternative Flow:

1. Invalid Information: If the user provides invalid information (e.g. invalid email format, too short username or password), the system rejects the form submission and prompts the user to correct the errors and resubmit the form.
2. Existing User: If the provided email or username already exists in the system, the system notifies the conflict and prompts the user to use another username or email address.
3. Confirmation Failure: If the user does not receive the confirmation email, they can request a resend.
4. Confirmation Expired: If the user clicks on the confirmation link after a predefined period, the system prompts them that the link has expired and provides information for requesting a new one.

Use Case 2: Content Upload and Management

Actors: content creator

Typical Flow:

1. Content creator logs in to their account.

2. Content creator navigates to the "upload" section and clicks the "upload" button

3. The creator selects a video file and uploads it; the platform begins to process the video

4. The Creator fills some metadata such as title, description, tags and category, and selects a suitable thumbnail from the options generated by the platform or uploads their own

5. Creator selects the video's format, quality and size, and some other additional settings like privacy settings, age restrictions and monetization options. After the setting is completed, the creator confirms the settings and all the information and then publishes it.

6. Creators use dashboard tools to manage the uploaded videos as they need, including editing, unpublishing and scheduling.

Alternative Flow:
1. Video format or size not supported: If the uploaded video's format or size is not supported by the platform, the creator receives an error message.
2. Rejected by administrators: If the video is rejected by administrators for breaching platform guidelines, the platform will send a notification to the content creator, informing them that their videos did not pass the review process, along with the reasons and may include guidance for rectifying the issues. The creator can edit and re-upload the content.
3. Quit: The uploading and managing system allows the creator to quit at any time during the use case. Their operations will be saved to draft automatically, allowing
creators to resume. The use case ends.
4. Bad internet connection: If the creators' internet connection is not good during the uploading, the platform will recommend a suitable quality of the video, or the creator can save the video as a draft and it will be uploaded automatically when the internet is back to normal.

Use Case 3: Content Sharing Across Social Media Platforms

Actors: Video viewer
Typical Flow:
1. The Video Viewer watches a video they find particularly interesting and wishes to share it with their social network.
2. The Viewer clicks the "Share" button and selects their preferred social media platform from the list provided by the System (e.g., Facebook, Twitter, Instagram).
3. The system auto-generates a post with a link to the video and a pre-written message.
4. Friends and followers on social media can see the shared content and potentially visit the video platform to view the video.

Alternative Flow:
1. The Viewer tries to share a video, but the social media platform returns an error due to privacy settings or other issues.
2. The System informs the Viewer of the sharing error and provides options to retry or to copy the video link manually.
3. The Viewer chooses to copy the link and manually creates a post on their social media page.

Use Case 4: Search for videos

Actors: Video viewer

Typical Flow:
1. The viewer types a keyword or phrase into the search bar
2. The system processes the query and displays a list of videos that are related to the entered keyword. These results include video thumbnails, titles and brief descriptions.
3. The viewer browses through the search results and selects a video they wish to watch.
4. The system loads the selected video and the viewer can watch it on the platform

Alternative Flow:
1. If the search query returns no results, the system notifies the viewer that no videos match the keyword entered.
2. If a common typo or spelling mistake is detected, the system suggests the correct spelling or offers search results for the corrected term with a note indicating the change.
3. If a viewer requires more specific results, the system provides options to filter by date, video length, or relevance through an advanced search interface.
4. Suppose the viewer's search results include content unavailable due to geographic or age restrictions. In that case, the system automatically filters out restricted content and notifies the viewer that some content has been hidden due to restrictions.
5. If there's a technical issue with the search function, such as slow response time or failure to load results, the system displays an error message and suggests the viewer try again later.

Use Case 5: Community Interaction and Content Reporting

Actors: Video Viewer, Content Creator, Content Moderator

Typical Flow:

1. Video viewers or creators interact by participating in the comments section of the video
2. The viewer or creator comes across a comment that violates the platform's community guidelines.
3. The viewer or creator uses the "Report" feature to flag the comment for review.
4. The System logs the report and alerts a Content Moderator.
5. The Content Moderator reviews the report, evaluates the comment, and takes appropriate action (delete, ignore)

Alternative Flow:

1. The Video viewer or creator tries to report a comment but encounters a system error or the report feature is unresponsive.
2. The System presents an error message with an option to try again or contact support.
3. The viewer or creator chooses to contact support and provides details of the issue via a support form.
4. A Content Moderator receives the support ticket, reviews the comment manually, and follows the typical flow from step 5.

Appendix

Group 7 Requirements Interview

Discussion and Agenda

Interview Details

Objective	Determine the requirements of the system
Date/Time	Tuesday 14:00
Location	CSSE [G14]
Client Participants	End user representative
Project Team Participants	Rui Qin (Allen) Yi Ren Zongqi Wu Yechang Wu Yu Xia

Interview Agenda

Topic	Duration	Potential Questions	Comments
Introduction	*Allen* *0.5*	● Thank the client ● Introduce the team ● Tell them the purpose of the interview ● Ask could record the interview	The purpose of this is to make the client more comfortable
Requirements Overview	*Allen* *0.5*	● Overview of processes for the system ○ you are a viewer and creator?	The purpose of this is to identify the goals of the system
Viewing Habits	*Allen* *3*	● How do you typically react when a recommended video does not align with your interests? Do you ignore, report, or customise your preferences? ● (Backup) Can you provide specific examples of when the video recommendation system met or failed to meet your expectations? **Potential answer:** 1. Users might prefer customising their preferences or ignoring recommendations.	Identify user habits of watching videos, for a better recommendation algorithm

		2. Examples could be users receiving too many recommendations for themes they've recently explored or being frustrated by off-target recommendations based on a one-off view **Usage:** These responses may lead to the development of more detailed preference settings like allowing users to temporarily specify interests. It may also suggest adjusting the weights in recommendations resulting from a single video.	
Interaction	*Zongqi 3*	● Beyond basic interactions (like, share, comment), what other engagement actions do you think could enhance your viewing experience? ● What mechanisms would you prefer to use to inform the system about your video preferences effectively? **Potential answer:** 1. Viewers may enjoy features like engaging with video content, such as interactive videos. 2. "Not interested" buttons, preference quizzes, or "Watch later" features may be mentioned.	Seek new engagement methods and feedback tools to improve content personalisation.

		Usage: This feedback can drive the design of more interactive features to engage users and provide clearer data to improve recommendation algorithms.	
Expectation	*Yechang 3*	● How would you like a video platform to differentiate itself from YouTube or TikTok? ● Do you want your videos to be featured in categories? (Put a category of Learning resource, click in, and the related video will be pushed) **Potential answer:** 1. Viewers may look for unique content categories, such as dedicated learning resource partitions, to select higher video quality standards. **Usage:** These responses may lead to the development of specialised content areas within the platform to attract and retain viewers who focus on specific categories.	Explore unique recommendati on features and categories or other specific preferences

Content Creator Features	*Yi*	● As a content creator, could you tell me what specific functions are essential for you to effectively create videos?	Gather insights from content creators regarding the functions they require to effectively create videos.
	3	● What level of analytics and reporting tools do you think are necessary to track the Performance of your videos and viewer engagement?	
		● Which design of the uploading system can make you feel more willing to upload videos?	
		Potential answer:	
		1. Basic features may include in-platform editing tools, as well as viewer statistics.	
		2. Creators may look for complex and user-friendly analytics tools that provide data beyond views and likes, such as viewer retention rates, hot spots, and comparative metrics.	
		3. Creators may look for the adaptability and convenience uploading system. If creators can upload anywhere at any time conveniently, they may be more willing to upload more videos.	
		Usage:	

		Understanding the needs of creators can help develop a content management suite, as well as understanding ease of use, detailed performance tracking and features that encourage content optimisation and viewer growth.	
Innovation and Future Features	*Yu 2*	● Beyond recommendations based on viewing history, are there any creative methods you would like to explore for discovering new content? **Potential answer:** 1. Users may be interested in discovering content through games or based on the integration of other interests. 2. Creative content discovery methods may include mood-based recommendations and interactive content recommendations. **Usage:** These go beyond traditional algorithmic recommendations to incorporate social and interactive elements into content discovery and may connect users with content in a more engaging way.	Innovative content discovery ideas are better than historical preferences

Conclusion	*Allen* *0.5*	● Thank the client, how do you feel about this interview? ● Any final comments or questions you would like to ask before we end the interview?	

Follow-Up

Items Resolved	See interview record
Items Pending	See interview record
Next Session	TBA

Appendix 2

Interview Record

Meeting Time: Tuesday 09/04/2024 14:00

Meeting Place: CSSE G14

Participants: End user representative, Group 7

Attendance:

End user representative
Rui Qin
Yu Xia
Yi Ren
Zongqi Wu
Yechang Wu

Topic	Item
Viewing Habits	- Ignore unwanted recommendations. - Provide a mix of content, not just based on historical preferences but also introducing new and diverse topics. - The balanced mix of content tailored to their interests (around 80%) and fresh, varied content (around 20%) - Highlighted concerns about platforms possibly recommending extreme or inappropriate content based on isolated searches. - Platforms have to identify what users searching for and do not recommend harmful content
Interaction	- Preference for intuitive and user-friendly mechanisms without the need to constantly provide explicit feedback. - Privacy in user interactions and preferences is also an important issue. - Easily share content across different platforms. Respondents mentioned the value of being able to share funny videos with friends on other social media platforms. - For different video types (short videos, long videos, horizontal videos, mobile videos), the platform can adapt by providing different video players to facilitate a more convenient video browsing experience.

	● Easily share content inside the platform (platform friends function may be considered)
Expectation	● Prefer a variety of content, not just one genre, and recommend a mix of different types of fresh content ● Categories are beneficial and users can choose topics of interest to enhance their viewing experience ● The platform needs to list the number of videos trending list, such as the most plays of the day, the most plays of the month, the most comments etc.
Content Creator Features	● The need for a user-friendly interface and simple content creation is emphasised, while the system needs to be configured with simplified editing tools (web video clips, phone video clips) to meet the needs of ordinary creators. ● Online analysis and reporting tools are needed to understand the value of video performance. ● Provide video creators with an option to generate reports with a single click or directly use a dynamic dashboard to feedback on follower count and play count, and use some monetisation features or revenue analysis tools to encourage users to upload more content.
Innovation and Future Features	● Using verified creators to introduce users to new content and diversify referral sources beyond just user history.
Addition	● A strong tendency to not let others see user actions (such as videos they like or watch, even videos they upload) can affect their willingness to use the platform. ● Platforms must actively filter out inappropriate or harmful content, which includes mixing harmful content with normal content.

	- Platforms can use user data or conduct targeted advertising on platforms. - The platform needs to offer different solutions for various devices, such as smartphones, tablets, and computers, each requiring a corresponding app. - The platform can use hashtags to enable users have better browse content related to specific themes.

Appendix 3
(Next Page)

Video Platform

Video Viewers
- Watch videos
- Search for videos <<extends>> Filter content
- Follow channel/creator
- Manage profiles
- Donate to creator
- Comment, Report <<includes>> Login/Register
- Like, share, subscribe <<includes>> Login/Register
- Manage viewing history
- View history <<extends>>, <<includes>> Login/Register

Content Creator
- Track video performance and income <<extends>> Provide withdrawal methods
- Upload new videos
- Set / Unset video publish time <<extends>>
- Edit uploaded videos (metadata
- Remove uploaded videos

Administrators

Administrators
- Edit accounts <<includes>> Search User with ID
- Ban account <<includes>>
- Secure admin panel login
- Delete video <<extends>> Provide reason
- Edit videos or metadata <<extends>>
- Maintain hardware and software
- Update system <<extends>> Schedule update
- Backup data <<extends>> Restore data

2