Software Requirements Specification

for

POV - POINT OF VIEW

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1. INTRODUCTION

1.1 Purpose

This document details the Software Requirements Specifications for “POV - Point of View”. POV aims to bridge the gap between traditional news broadcasting and the modern digital era, empowering news channels to connect with viewers worldwide through a user-friendly web application. The primary aim of the document is to describe the whole system and clearly list all its functionalities.

1.2 Document Conventions

The font that is followed in this document is Calibri and its size is 12. Special highlighting is done by making the text bold so that important keywords can easily be differentiated. Every requirement stated in this document has its own unique priority and every functionality is equally important.

1.3 Product Scope

The Point of View (POV) News Streaming Platform facilitates news channels in submitting their content for public viewing. Users can explore news-related videos across diverse genres, including entertainment, worldwide news, sports, politics, and more, based on their browsing history, providing a personalized streaming experience. Beyond being a video-sharing platform, it aspires to be a hub for information exchange, fostering dialogue, awareness, and global perspectives. Overall, it aims to deliver a dynamic and tailored news consumption experience for users while offering news channels a centralized platform for content distribution.

1.4 Intended Audience and Reading Suggestions

The Software Requirements Specification (SRS) for the Point of View (POV) News Streaming Platform caters to a diverse audience. Developers rely on it for technical guidance, project managers use it to establish milestones, and QA teams leverage it for testing. UX designers shape the user interface, system administrators deploy and maintain the platform, and business analysts bridge business needs with technical specifics. Decision-makers gain strategic insights from the executive summary, and end users indirectly benefit from a seamless news consumption experience. This comprehensive document unifies stakeholders, providing a central reference point for collaboration and understanding across the entire development lifecycle.

1.5 Scope of the Document

The document outlines the Software Requirements Specification (SRS) for the POV News Streaming Platform, providing a comprehensive overview of the system's features, intended behaviour, and associated business processes. It defines the intended functionality required by users, explicitly outlining simplifying assumptions, design limitations, and constraints. Additionally, the document delves into System Features, Functional Requirements, Non-functional Requirements, and essential business rules, ensuring a thorough understanding for development teams and stakeholders throughout the project lifecycle.

2. OVERALL DESCRIPTION

2.1 Product Perspective

The "POV-News Streaming Platform" is based on the concept of the digital era of social networking. Within this news-centric ecosystem, stakeholders primarily consist of News Channels and Viewers. The platform dynamically intertwines these entities, facilitating seamless content submission and fostering personalized content consumption. News channels engage in a paid subscription model to submit their content, establishing an interactive relationship. Users explore a diverse range of news genres and personalize their content preferences. Leveraging machine learning algorithms, the system generates tailored recommendations based on user history, delivering a unique and engaging news consumption experience. POV enables users to view, like, discuss among and search for videos of interest while providing a feedback channel to creators. It prioritizes content creators' confidentiality while enabling direct content distribution to a global audience. The platform ensures security through email facilities and robust login checks. Its user-friendly interface encourages exploration of news content across various channels and genres, contributing to global awareness and fostering diverse perspectives.

2.2 User Needs

The POV News Streaming Platform caters to diverse users. They include both primary and secondary users. Primary users are news channels that utilize the platform as a centralized hub to submit and distribute their news content to the general public. Their needs involve an efficient and user-friendly content submission process. Secondary users encompass the general public seeking diverse and personalized news consumption experiences. For them, the platform fulfills the need for easy access to a variety of news genres, personalized recommendations, and seamless video streaming. Understanding these varied needs ensures comprehensive user experience, fostering engagement, security, and accessibility across the platform.

2.3 Assumptions

- News channels are assumed to actively participate in the platform through a subscription model, utilizing this framework for their content submission process.
- It is expected that administrators will exclusively undertake the responsibility of uploading news content, serving as the only contributors to the platform's content pool.
- Platform assumes user engagement primarily occurs through features provided, without a direct upload option for news channels on the website.
- To ensure the integrity and secure operation of the platform, there is an underlying assumption that robust security measures have been implemented, safeguarding user data from potential threats.
- Success of the project is assumed to rely on viewer engagement with content uploaded by administrators.

3. SYSTEM FEATURES AND REQUIREMENTS

3.1 Functional Requirements

The following section describes the Functional Requirements - Each Requirement has been tagged by a Requirement Number (Convention Used is Req-x)

Requirement #	**Functional Feature**	**Remarks**
Req-1	User Authentication	Implement user login/signup for secure account creation and login.
Req-2	Navbar	The navbar, featuring a clean design, provides easy access to critical sections such as home, liked videos , search, account ensuring seamless navigation.
Req-3	Search Functionality	Implement a robust search feature allowing users to find specific videos, genres efficiently.
Req-4	Liked Videos Page	Create a dedicated page displaying a list of videos that the user has previously liked for quick and easy access.
Req-5	Hamburger Menu	The Hamburger menu provides a dropdown, containing options for home, channels, explore sections, feedback, about ensuring easy access to key features with a clean and organized design.

Req-6	Channel Page	Users can visit the channel page to access a curated list of videos by a particular channel, facilitating easy exploration.
Req-7	Explore Page with Genres	Develop an explore page with different genres; clicking on a genre displays a list of videos under that category.
Req-8	About Section	Include an about section providing information about the platform and its purpose.
Req-9	Continuous Improvement	Establish mechanisms for gathering user feedback, conducting usability testing, and implementing iterative improvements to enhance the platform's functionality and user experience.
Req-10	Home Page Display	The home page displays a selection of videos tailored to the user's preferences and watch history, giving personalized content recommendations.
Req-11	Video Thumbnails	Display video thumbnails on the home page and explore page, enticing users to click and watch.
Req-12	Video Watch Page	Create a watch page allowing users to view videos with video player, like button, and video description.
Req-13	Like Button	Implement a like button on the video page allowing users to express their liking for the video.
Req-14	Comments	A Comments section below the video player on the watch page allows users to engage and share their opinions.
Req-15	Additional Video Recommendations (Watch Page)	A sidebar on the watch page features "More Videos" recommended based on user preferences, encouraging extended content consumption.
Req-16	Subscription Payment	Integrated payment functionality with Stripe, enabling channels to subscribe with three payment options: basic, standard, and premium
Req-17	Logout	Implement logout functionality allowing users to securely log out from their accounts.

3.2 Interfaces

3.2.1 User Interfaces

Front-end Software: React.js
Back-end Software: Flask (Python)

3.2.2 Hardware Interfaces

Platform: Cross-platform (Windows, MacOS, Linux)
Browser: Compatible with modern browsers supporting React.js, CSS, HTML, and JavaScript.

3.2.3 Software Interfaces

Software Used	Description
Operating System	Windows, MacOS, Linux - The application is compatible with multiple operating systems for user flexibility.
Database	MySQL - Utilizing MySQL for efficient storage and retrieval of data related to news channels, videos, and user interactions.
React.js	For the development of an interactive and dynamic user interface.
Flask (Python)	Serving as the backend framework to handle server-side logic and communication with the database.

3.2.4 Communication Interfaces

The project supports all standard web browsers, ensuring compatibility with Chrome, Firefox, Safari, and Edge. It utilizes straightforward electronic forms for various user interactions, including video submission, feedback, and subscription management. The communication interfaces are designed to be user-friendly and easily accessible across diverse devices and browsers.

3.3 Constraints

- The design constrains content submission to be solely managed by platform administrators. News channels lack the autonomy to independently upload content.
- The success of the platform is dependent on user adoption and engagement. If users do not find the content compelling, it may impact the platform's effectiveness.
- Users require a stable internet connection for seamless video streaming and interaction with the platform features. Limited or unreliable internet access may result in reduced functionality, affecting video loading and real-time updates.
- The implementation enforces a standardized subscription model for news channels. This constraint guarantees consistency in revenue generation and operational processes.
- Compatibility issues may arise when accessed on platforms that do not support React.js or Flask (Python) frameworks.
- The platform's content must adhere to legal and content regulations, and any violations may lead to content removal or legal consequences.

4. OTHER NON-FUNCTIONAL REQUIREMENTS

4.1 Performance Requirements

The POV News Streaming Platform aims to make watching videos enjoyable for users. Video streaming quality is the main concern, and the platform will be made to deliver high-quality video content with minimal buffering. The response time for critical processes, such as video loading and search functionalities, should be optimized to enhance user experience. With a focus on accommodating a growing number of users, the system will be designed to handle increased concurrent users during peak times without compromising performance.

4.2 Security Requirements

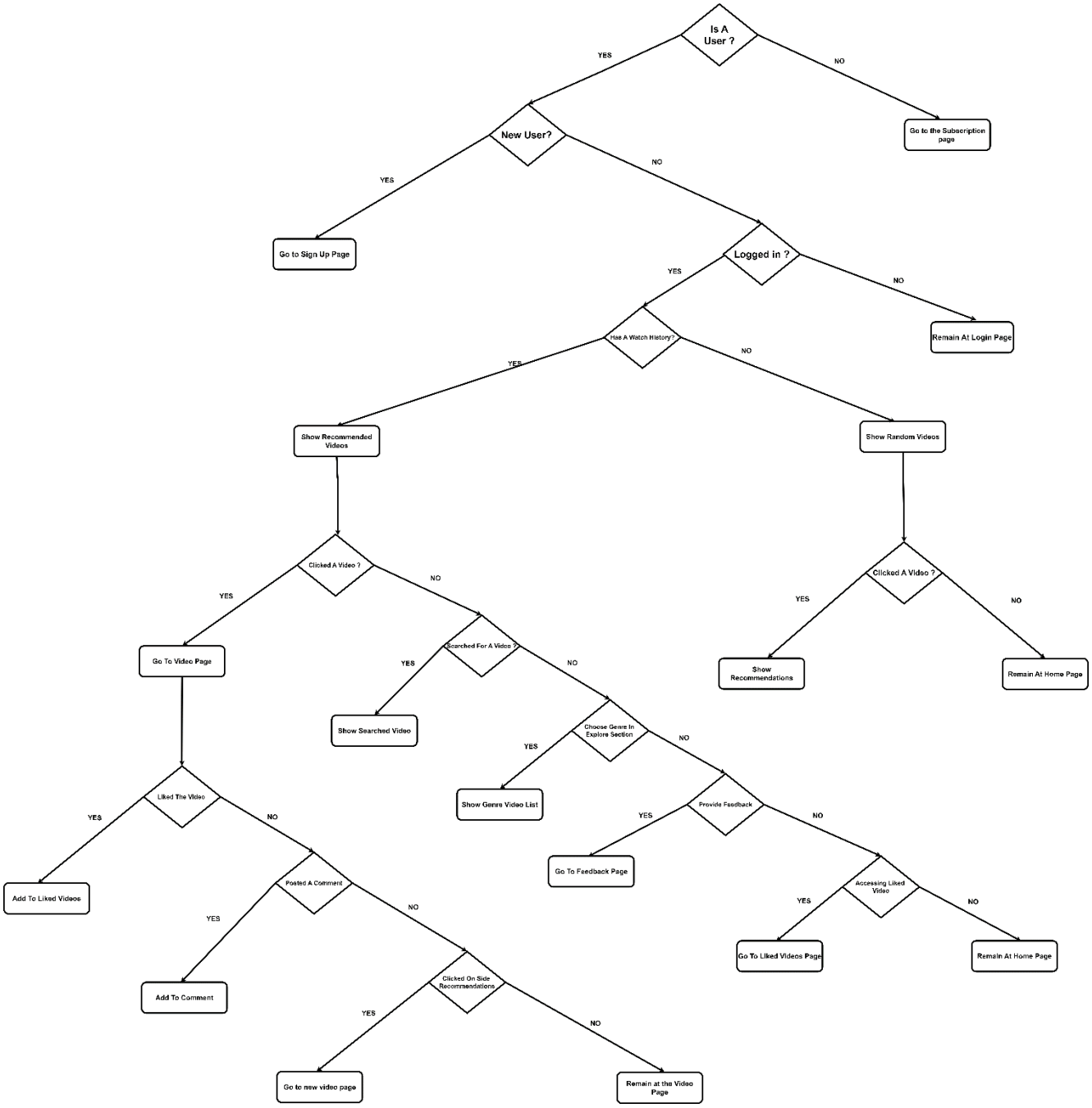
The platform prioritizes user data protection by securely storing and safeguarding personal information, adhering to industry standards for user privacy. Additionally, measures are implemented to prevent unauthorized content uploads or alterations, ensuring the integrity of the news content.

4.3 Software Quality Attributes

The paramount software quality attributes for the POV News Streaming Platform are Availability, Reliability, and Usability. Given the expectation of continuous operation, with the platform accessible 24/7, achieving high availability is of utmost importance. Considering the sensitivity of major transactions, especially in content submission and user interactions, ensuring the system's reliability is a critical aspect. To reinforce the reliability of the system, regular and robust backups of the database will be consistently maintained. This ensures the preservation of critical data, enhancing the platform's ability to recover swiftly in the face of potential data loss or system disruptions, reinforcing the overall reliability of the news streaming platform.

5. DECISION TREE AND TABLE

5.1 Decision Tree



5.2 Decision Table

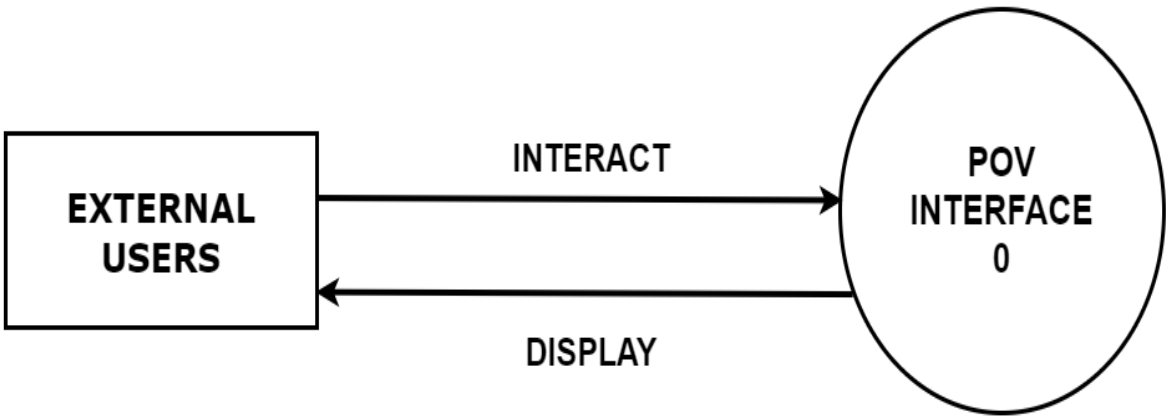
CONDITIONS	RULES													
Is A User	F	T	T	T	T	T	T	T	T	T	T	T	T	T
New User	F	T	F	F	F	F	F	F	F	F	F	F	F	F
Logged In	F	F	F	T	T	T	T	T	T	T	T	T	T	T
Has A Watch History	F	F	F	F	F	T	T	T	T	T	T	T	T	T
Clicked A Video	F	F	F	F	T	F	T	T	T	T	F	F	F	F
Liked A Video	F	F	F	F	F	F	F	T	F	F	F	F	F	F
Posted A Comment	F	F	F	F	F	F	F	F	T	F	F	F	F	F
Clicked On A Side Recommendation	F	F	F	F	F	F	F	F	F	T	F	F	F	F
Searched For A Video	F	F	F	F	F	F	F	F	F	F	T	F	F	F
Choose Genre in Explore Section	F	F	F	F	F	F	F	F	F	F	F	T	F	F
Providing Feedback	F	F	F	F	F	F	F	F	F	F	F	F	T	F
Accessing Liked Videos	F	F	F	F	F	F	F	F	F	F	F	F	F	T
ACTIONS														
Go To Subscription Page	T	F	F	F	F	F	F	F	F	F	F	F	F	F
Go To Signup Page	F	T	F	F	F	F	F	F	F	F	F	F	F	F
Remain At Login Page	F	F	T	F	F	F	F	F	F	F	F	F	F	F
Show Recommended Videos	F	F	F	F	T	T	F	F	F	F	F	F	F	F
Show Random Videos	F	F	F	T	F	F	F	F	F	F	F	F	F	F
Remain At Home Page	F	F	F	T	F	T	F	F	F	F	F	F	F	F
Go To Video Page	F	F	F	F	F	F	T	F	F	T	F	F	F	F
Add To Liked Videos	F	F	F	F	F	F	F	T	F	F	F	F	F	F
Add To Comments	F	F	F	F	F	F	F	F	T	F	F	F	F	F
Remain At Video Page	F	F	F	F	F	F	T	F	F	F	F	F	F	F
Show Searched Videos	F	F	F	F	F	F	F	F	F	F	T	F	F	F
Show Genre Video List	F	F	F	F	F	F	F	F	F	F	F	T	F	F
Go To Feedback Page	F	F	F	F	F	F	F	F	F	F	F	F	T	F
Go to Liked Video Page	F	F	F	F	F	F	F	F	F	F	F	F	F	T

6. SOFTWARE DEVELOPMENT MODEL

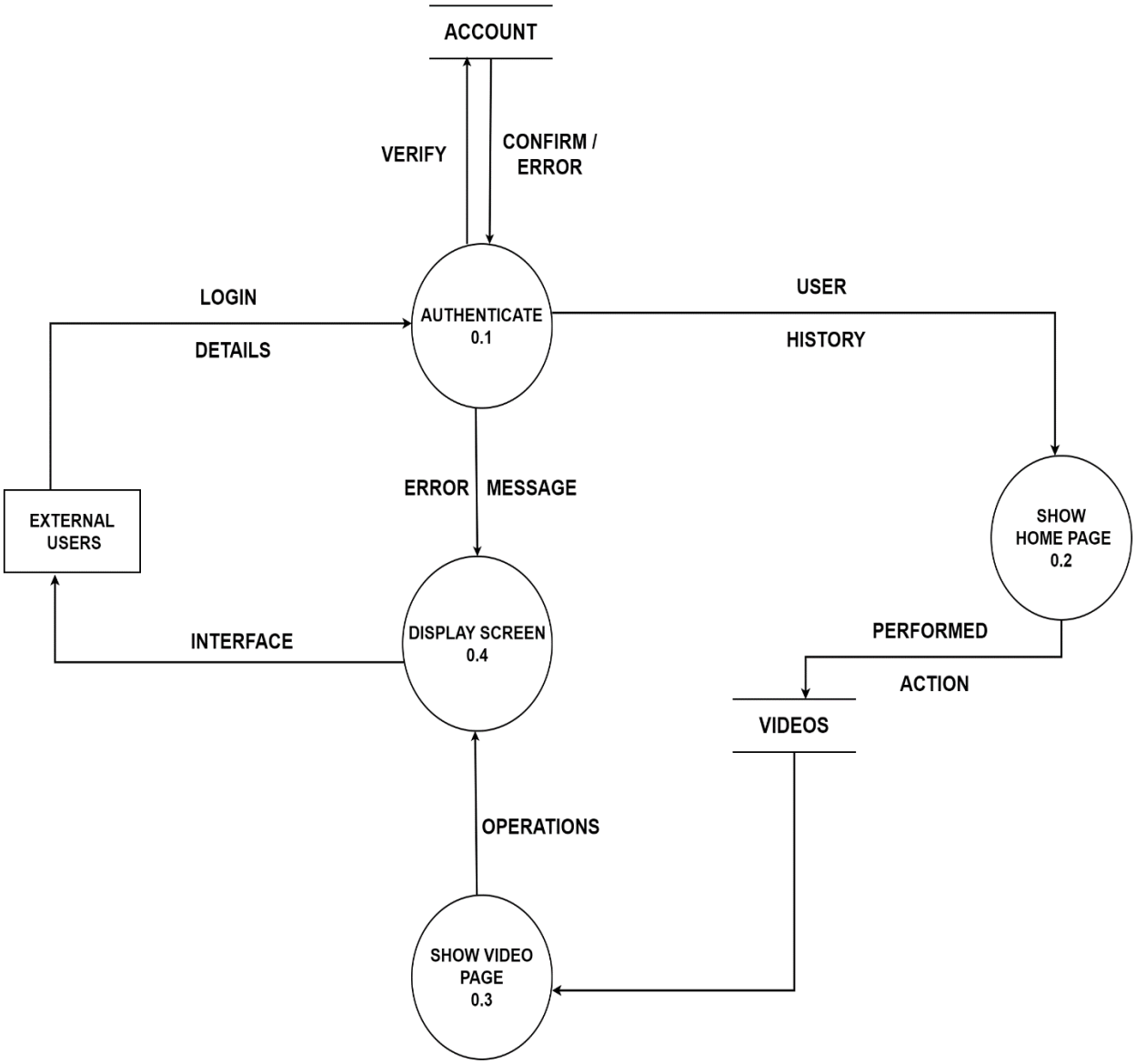
The POV News Streaming Platform will adopt the Agile Model for software development. This model is a dynamic approach to software development, characterized by its iterative and incremental nature. It prioritizes flexibility, collaboration, and responsiveness to change, allowing teams to adapt to evolving requirements and market conditions. Agile promotes adaptive planning, continuous improvement, and the early delivery of valuable software increments. It's an ideal fit for projects like the POV News Streaming Platform, which involve diverse stakeholders and constantly evolving user preferences.

7. DATA FLOW DIAGRAM

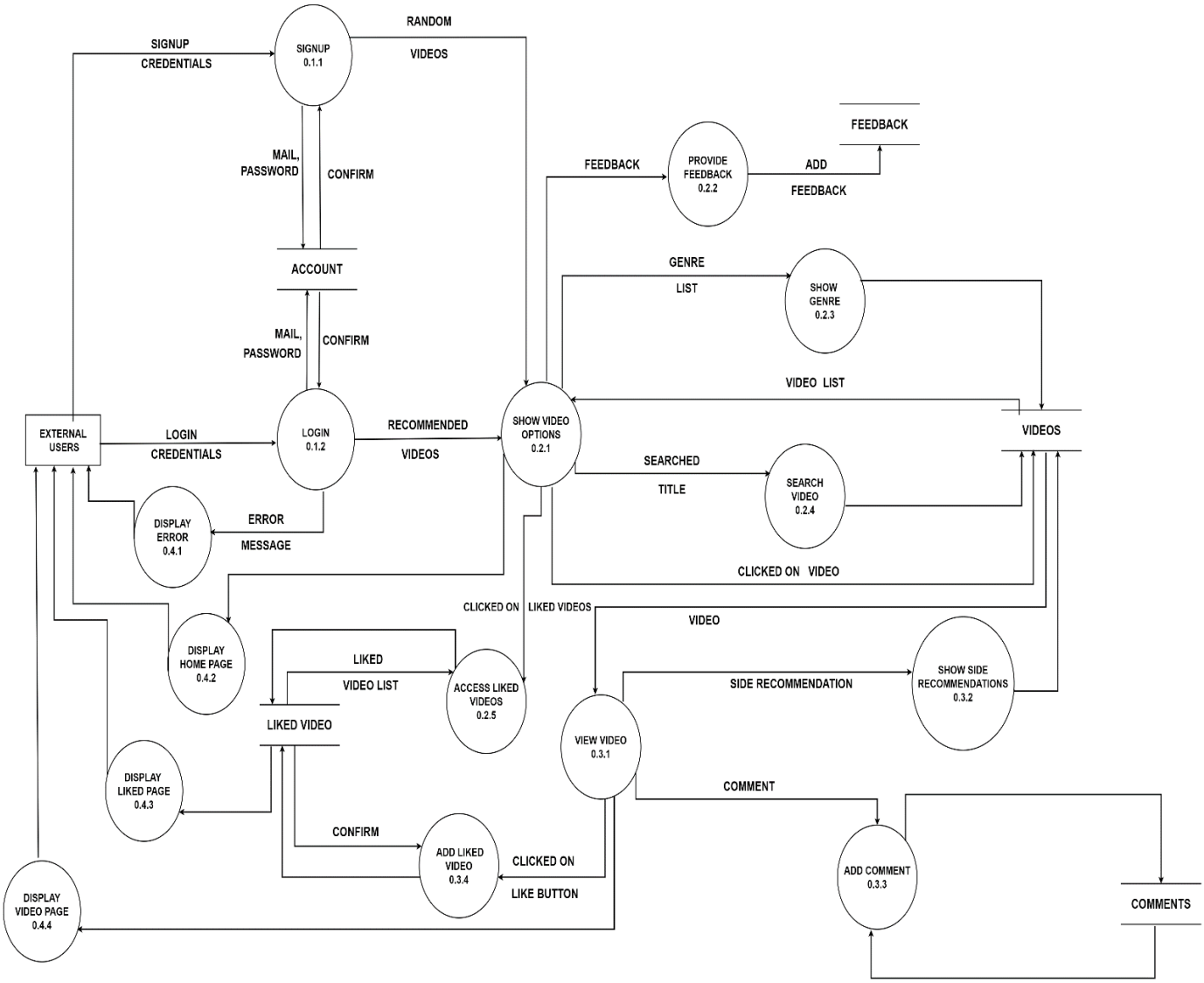
7.1 Context Diagram (Level 0 DFD)



7.2 Level 1 DFD



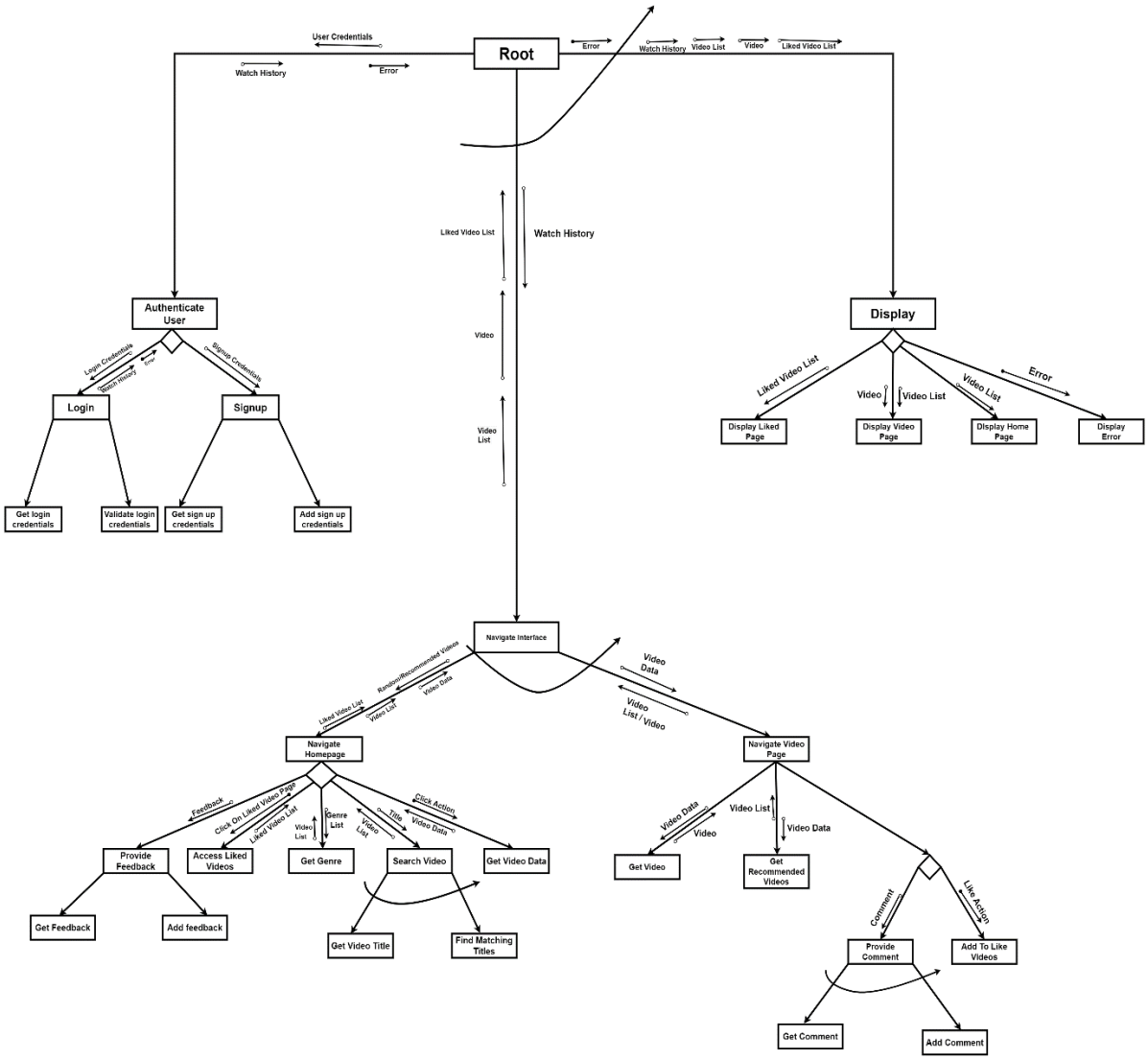
7.3 Level 2 DFD



7.4 Data Dictionary

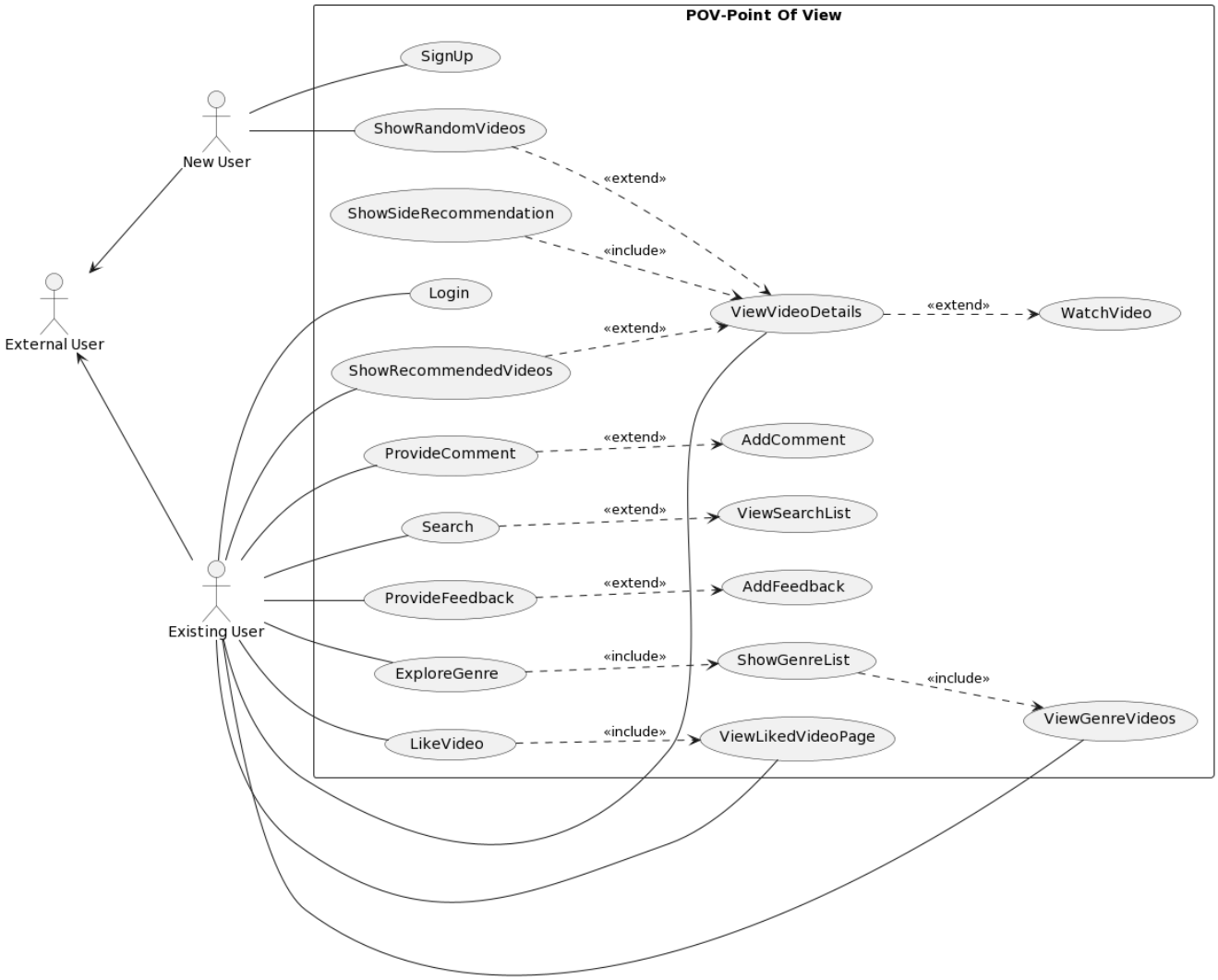
1. Login Details = [Login Credentials, Signup Credentials]
2. User History = [Recommended Videos, Random Videos]
3. Performed Action = [Feedback, Genre list, Searched Title, Clicked on Video, Clicked on Liked Videos]
4. Operations = [Clicked on Like Button, Comment, Side Recommendation]
5. Login Credentials = Mail + Password
6. Signup Credentials = Mail + Password
7. Mail: string
8. Password: string
9. Recommended Videos: set of videos
10. Random Videos: set of videos
11. Feedback: string
12. Searched Title: string
13. Clicked on Video: cursor position
14. Clicked on Liked Videos: cursor position
15. Comment: string
16. Side Recommendation: set of videos
17. Clicked on Like Button: cursor position
18. Confirm: int
19. Error Message: string
20. Video List: set of videos
21. Liked Video List: set of videos

8. STRUCTURE CHART



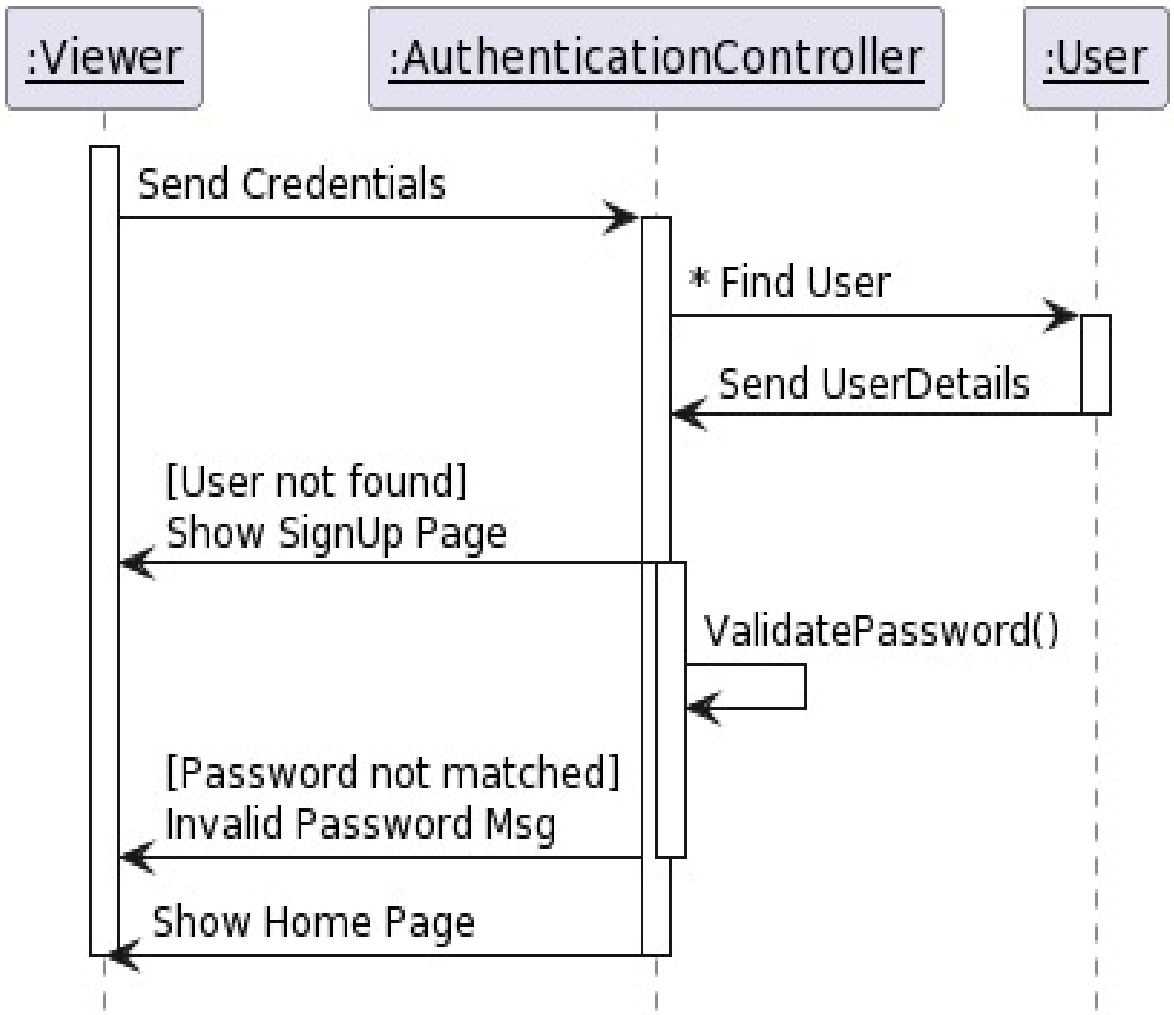
9. UML DIAGRAM

9.1 USE CASE UML DIAGRAM

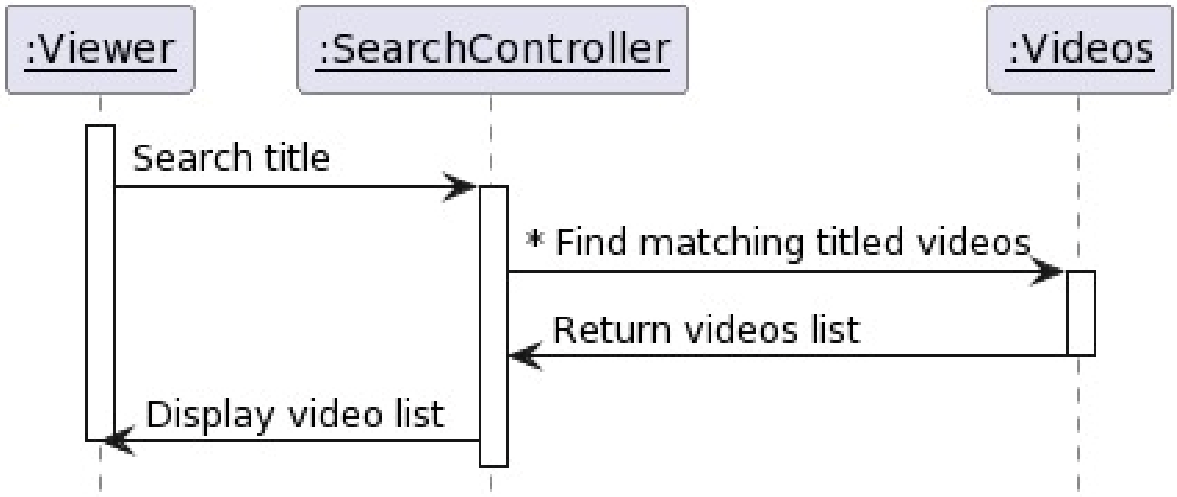


9.2 UML SEQUENCE DIAGRAM

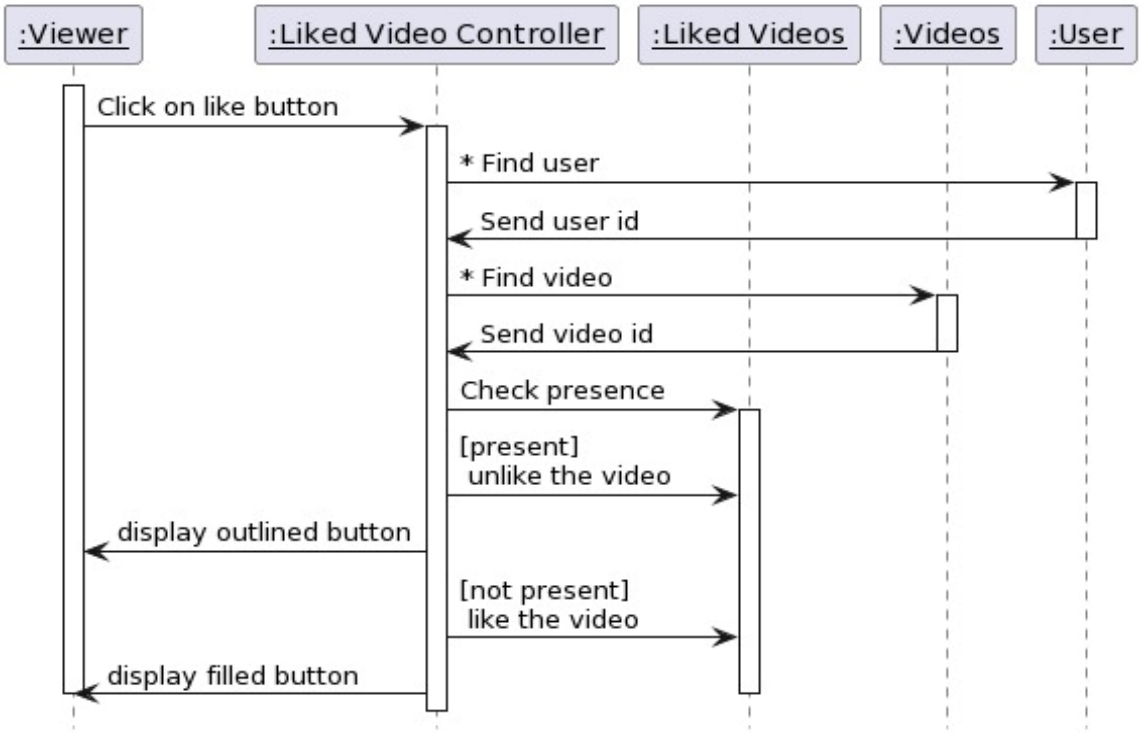
9.2.1 Authentication



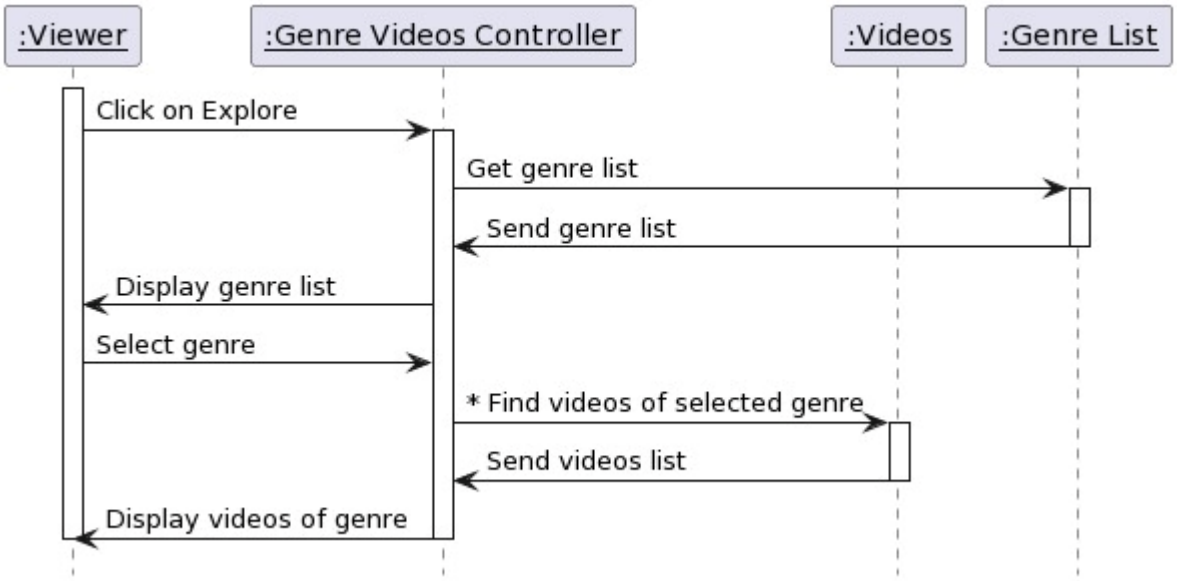
9.2.2 Search



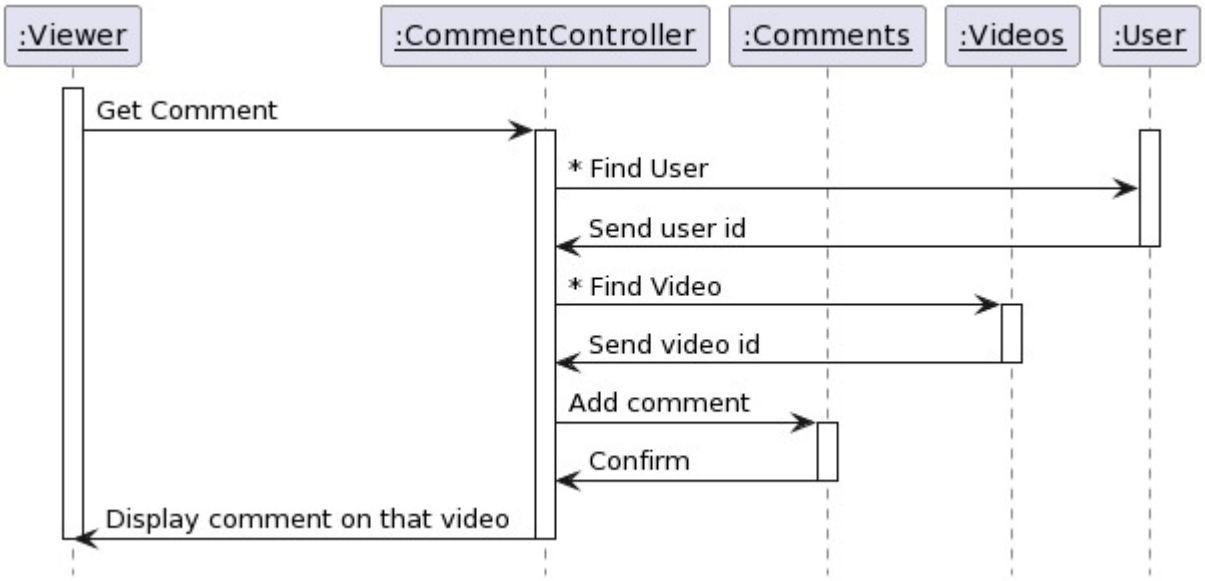
9.2.3 Liked Videos



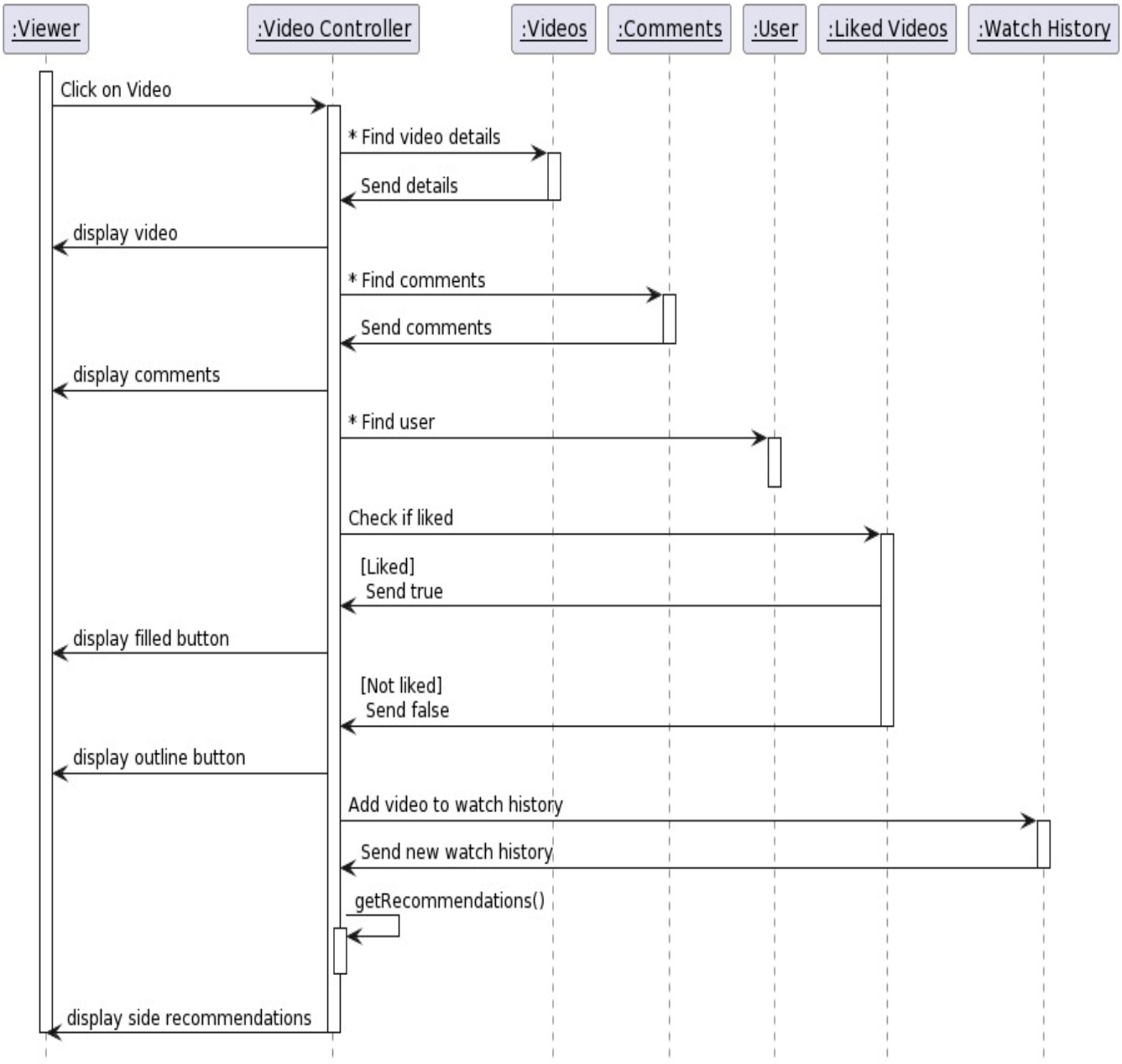
9.2.4 Explore Genre



9.2.5 Provide Comment

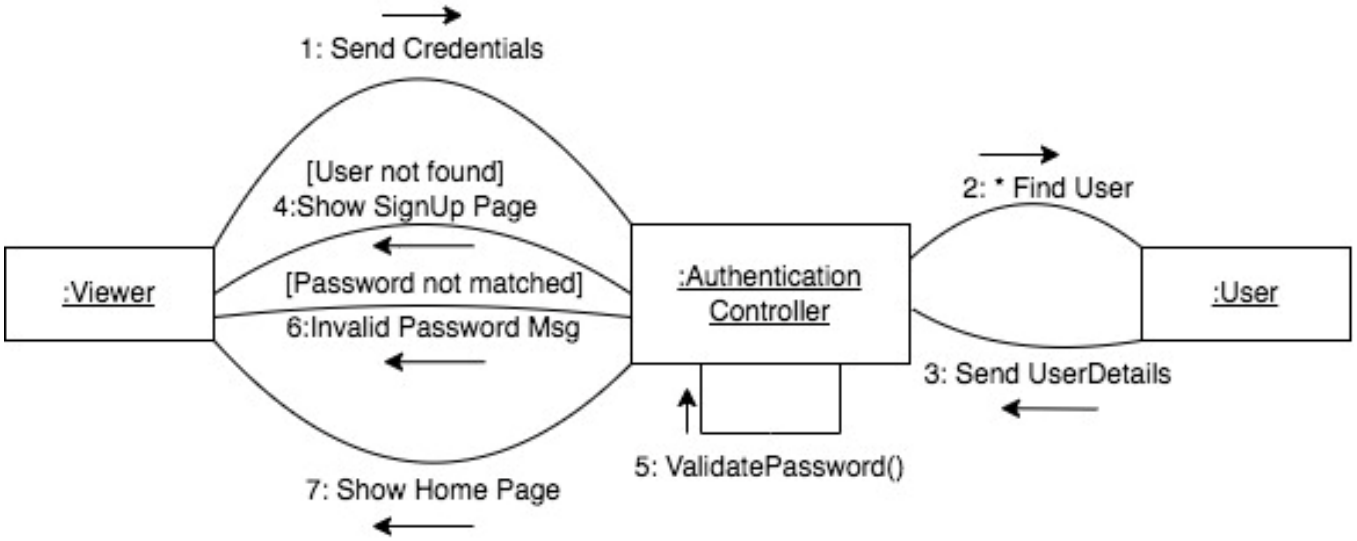


9.2.6 View Video Details

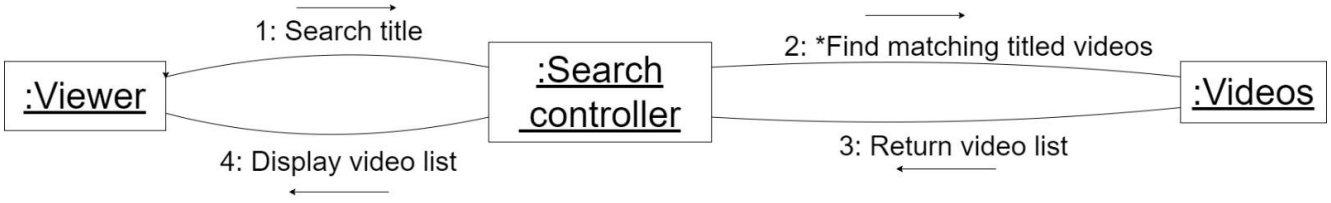


9.2 UML COLLABORATION DIAGRAM

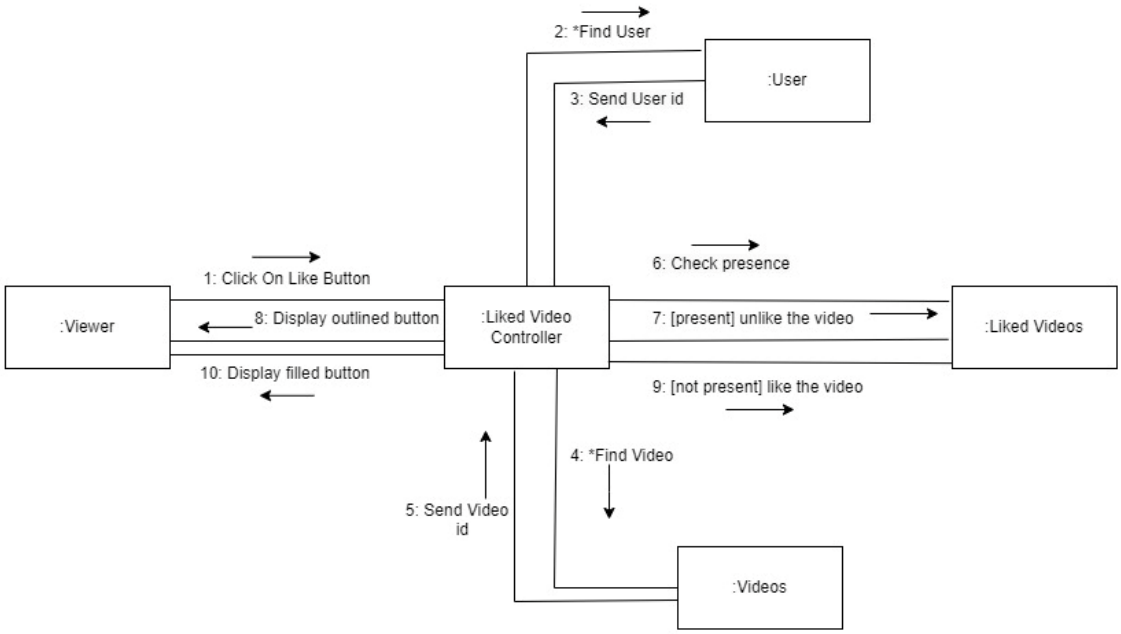
9.2.1 Authentication



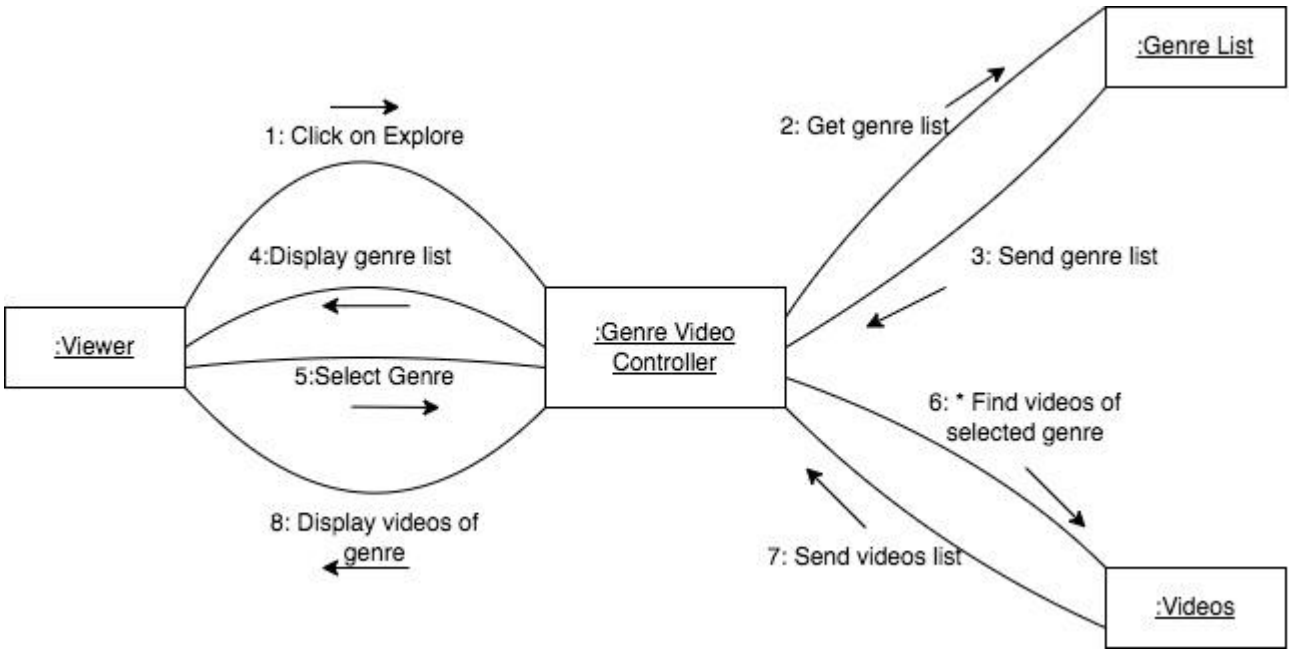
9.2.2 Search



9.2.3 Liked Videos



9.2.4 Explore Genre



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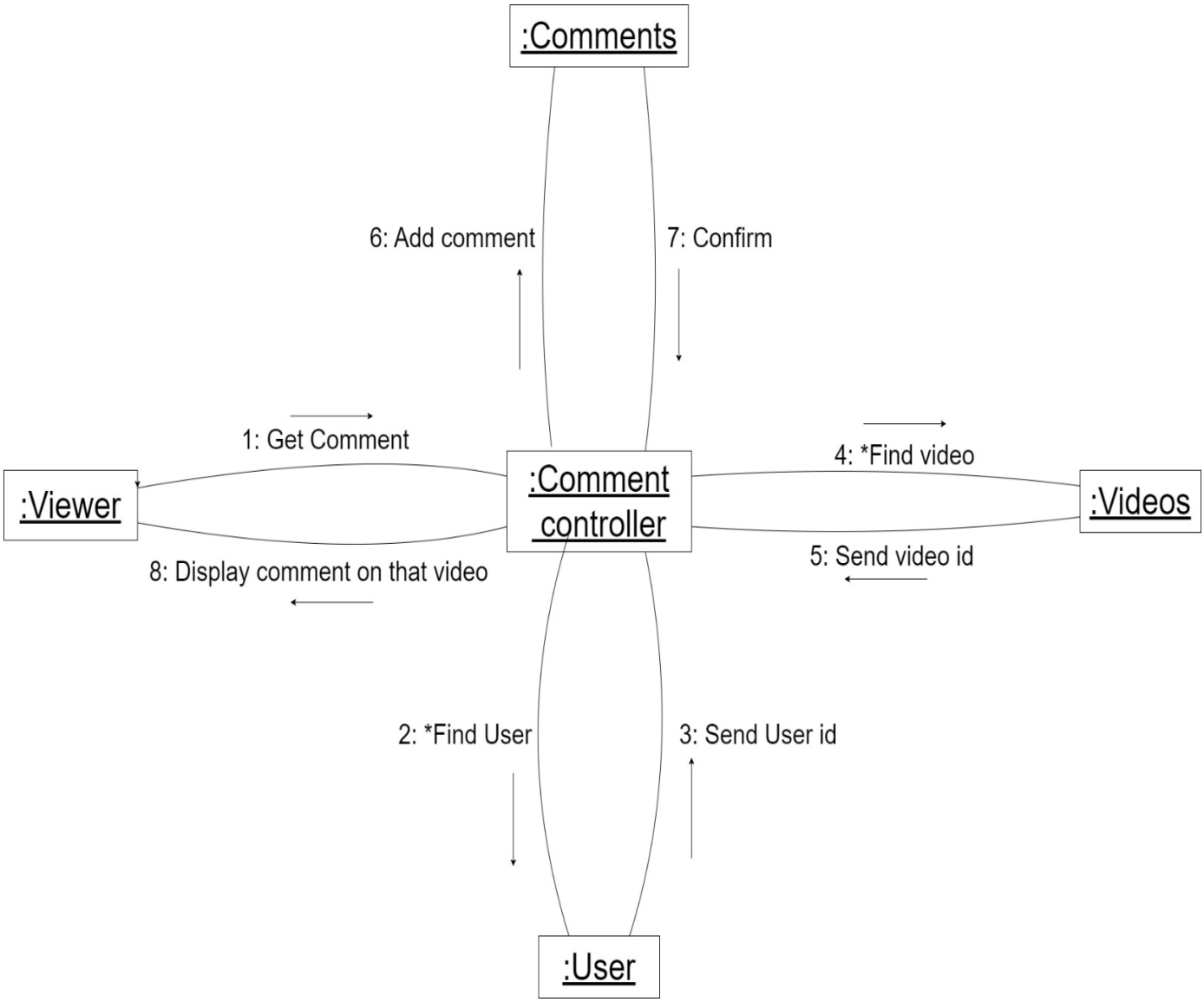
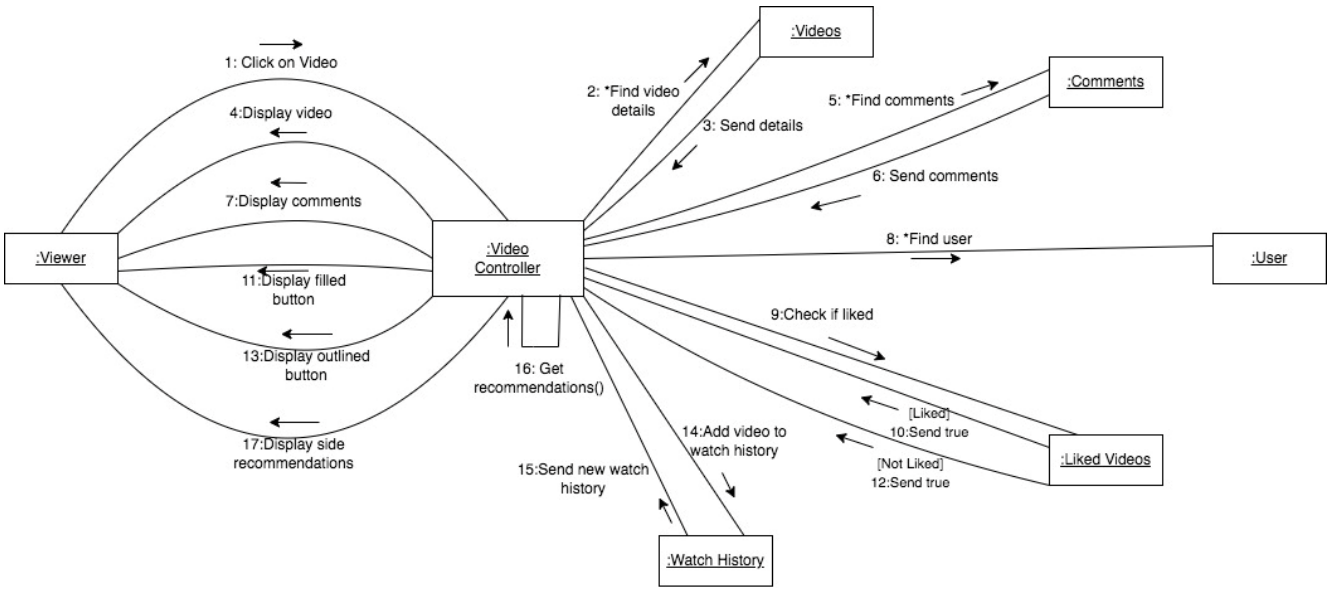


9.2.6 View Video Details



10. SUMMARY

The Software Requirements Specification (SRS) for the Point of View (POV) News Streaming Platform outlines the purpose, scope, and functionalities of the system. It serves as a comprehensive guide for developers, testers, project managers, and stakeholders involved in the platform's development. The document covers critical aspects such as the product scope, user needs, and the intended audience. It emphasizes the platform's features, including content submission by news channels, personalized user experiences, and recommendations based on user history. Security measures are detailed, ensuring the protection of user data and the integrity of news content. The document also highlights performance requirements, scalability considerations, and backup strategies. The nonfunctional requirements focus on usability, security, reliability, and compatibility, aiming to deliver a seamless and secure news streaming experience. Overall, the SRS provides a clear and detailed roadmap for the development and implementation of the POV News Streaming Platform, aligning the team's understanding and expectations throughout the software development life cycle.

UPDATE SECTION

Update No.	Date	Section Updated	Remarks
1	27-01-2024	Software Development Model	Updated to Agile methodology.
2	20-03-2024	Functional Requirements	Added Like Button
3	20-03-2024	Functional Requirements	Added Channel Page
4	24-03-2024	Functional Requirements	Added Logout
5	24-03-2024	Functional Requirements	Added Subscription Payment