

SURVEY PAPER ON TO BUILD VIDEOSHARING WEB APPLICATION

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Abstract- We develop web applications for video sharing using a variety of technical frameworks, including React.js, Node.js, MongoDB, and Google Firebase. We created a single platform for sharing videos that makes the uploading procedure simple. Different video formats are supported. Users can publish their works online. Users can communicate with a worldwide audience. It is practical, assisting students in organising and reflecting on their learning processes. such system is supported by organisations like Google, yet the current system is not without flaws. All of that is overcome by our system. Because YouTube lacks a dislike count, users are unable to evaluate videos in advance. There is no user distribution based on membership kind. All features are available to all users. No intrusive advertisements. Video downloads are possible. These online tools allowing access to the same programme version by numerous users. Installing proposed Web apps is not necessary. Access to proposed Web apps is possible on a number of devices, including desktop, laptop, and mobile. Our online application can be visited using a variety of browsers, including Chrome, Firefox, Microsoft Edge, and others.

Keywords: Intro ,Architecture & Methodology, Literature review, Existing System, Proposed System, Implementation.

1. INTRODUCTION

A sort of web service called "video sharing" enables users to post, share, distribute, or save video content on the Internet. A brief video clip or an entire movie can be used as video content. The service often creates an embed code for the submitted video files, enabling users to distribute their videos via email, blogs, and social media. The video sharing service has become one of the most popular web services in the past ten years. As bandwidth usage by ISPs rises, online video quality will improve for Internet consumers. Websites called "video sharing platforms" let individuals and businesses post or stream their videos live. Then, users can look for videos by keyword or topic. The content on these sites can be available to the public or to private or invited audiences .To get knowledge about how sophisticated web applications like Dailymotion and Youtube function. Utilize a minimal tech stack to create powerful web applications. By putting our project into practise, we offer users one of the most user-

friendly web applications for sharing videos. Free to use entails no favouritism for users, as opposed to premium. establish the largest community for the video sharing website. YouTube inspired us to create this kind of web application. Users can post video-based media content to YouTube, a service that hosts videos with advertisements. Users can post comments to videos as well as upload, watch, search, like, and dislike them. Users can only search for and watch videos when logged out, but they can add and delete videos at any time. However, there are several issues with YouTube that we want to fix: Users cannot evaluate a video before seeing it since YouTube lacks a dislike count. There is no membership type-based distribution of users. All functionalities are open to all users. There are no intrusive advertisements. Customers can download videos. Internet people prefer to watch content instantaneously on video sharing websites rather than downloading it, for this reason. At the same time, the video sharing service can give users access to a lot of free storage space for their video recordings.

2. Architecture & Methodology

Processing Queue: Each video that is uploaded is placed in a processing queue, where it will wait until it is subsequently dequeued for encoding, creating thumbnails, and storing. **Encoder:** To convert each video uploaded into a variety of formats. Create a few thumbnails for each video using the thumbnails generator. **Storage of videos and thumbnails:** To store videos and thumbnail files in a distributed file system. **User Database:** Used to store user data such as name, email, and address. **Storage of video metadata:** A metadata database to keep track of all the data about videos, including title, file path in the system, uploader, total views, likes, and dislikes. Additionally, all of the video comments will be stored there.

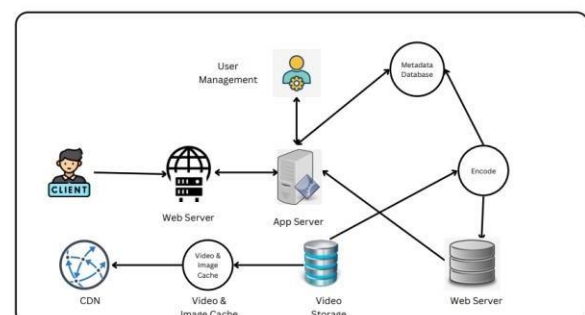


Fig 2.1: System Architecture

1. Business modelling: By addressing issues such as what data drives the business process, what data is generated, who generates it, where does the information go, who processes it, and other related issues, the information flow among business operations is defined. 2. Data Modeling: A set of data objects (entities) that are required to support the business are created from the data gathered during business modelling. The relationship between these data objects (entities) is specified, and the attributes (character of each entity) are identified. 3. Process modelling: The data flow required to accomplish a business function is achieved by transforming the information objects described in the data modelling phase. For updating, removing, retrieving, or creating a data object, processing descriptions are made. 4. Application Generation: To make the software development process easier, automated tools are used, some of which even make use of 4th GL approaches. 5. Testing & Turnover: Because RAD emphasises reuse, many of the programming components have previously undergone testing. Thus, the length of the test is shortened. However, all interfaces must be completely utilised and the new component must be evaluated.

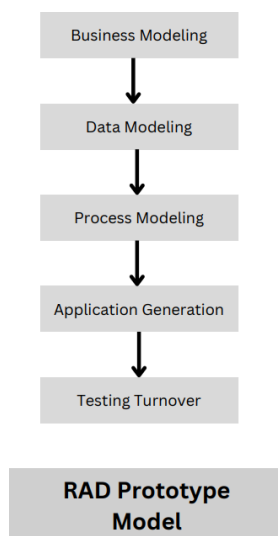


Fig : 2.2: Methodology RAD Model

3. Literature Review

1. Online video sharing: Offerings, audiences, economic aspects – Authorized by Gilles Fontaine, Christian Grece & Marta Jimenez Pumares, was published survey in 2020. Methodology- Paper study the expansion of video-sharing services like video sharing with streaming, transaction on demand & distribution of channels. platform having UGC to professional content. Audience impact as well as Economic on video platform. Conclusion- Paper study of important work culture of Online video sharing clears Expansion of video-sharing Services, The audience impact of video platform & The economic aspects. 2. A study of YouTube as an effective educational tool – Authorized by Dr. Trishu Sharma & Shruti Sharma was published survey in

2021. Methodology- The qualitative research method will be used by dividing the participants in 4 categories i.e. Elementary, High School, Graduation and Academician and educators. In their survey of teaching culture we make an impact on categories of video tutorials. Conclusion - YouTube has a great impact on the education and learning experience of the students. It helps add a new innovative and interesting dimension in the traditional education system. 3. A Video Platform to Produce, Support, and Share Educational Arabic Content - Authorized by Athra Sultan Alawaniz & Alain Senteni. was published paper in 2020. Methodology - These Video platforms have implementations of Upload videos, Content Evaluation, Share Comment & rate, Search and View, Discussion Board, tutorials, student creativity etc. all of these performed by Teacher, Student & Expert. Conclusion - A video-sharing user-friendly platform would provide a forum to answer this need, and would empower teachers to create the videos. 4. YouTube and Science: Models for Research Impact

– Authorized by Abdul Rahman Shaikh & Hamed Alhoori was published paper in 2022. Methodology - Impact can follow data collection & their preprocessing with respect to their dataset in research articles & videos. also be consider the study of random extracted articles with their available content link of YouTube on research by building classification models to predict video citations, scholarly citations, and video views. 5. A Distributed Blockchain-based Video Sharing System with Copyright, Integrity, and Immutability – Authorized by Molud Esmaili & Reza Javidan was published paper in 2020. Methodology - The architecture of the proposed distributed video sharing system - A. Blockchain B. Distributed Storage. C. Decentralized Application D. Access Control E. Integrity and Immutability. Conclusion - A distributed video sharing system is introduced and implemented that works on a Blockchain network. to reduce mining costs and save time, video storage was transferred from the Blockchain to a distributed storage compatible with the Ethereum network. 6. In-Network YouTube Performance Estimation in Light of End User Playback-Related Interactions – Authorized by Ivan Bartolec, Irena Orsolic & Lea Skorin-Kapov was published paper in 2020. Methodology - Firstly, we are getting User Interaction Scenarios. then collect data of video pause, seek & video abandonment after collection of data, we perform different datasets using their streaming and playlists activities. Conclusion - Given that the traffic characteristics interactions (e.g., seeking, pausing, abandonment). Given that limited studies to date have reported the performance of such models, this paper contributes with findings in this area showing promising results in terms of model accuracy.

4. Existing Systems

1. YouTube - YouTube is an ad-supported video-sharing platform that enables users to post media files that are video-based. Users can post comments to videos as well as upload, watch, search, like, and dislike them. Users can search for and watch videos while logged out, but they cannot upload or remove videos. Users will view advertising while watching the video because this service is free and ad-based. Additionally, users can subscribe to other users' or channels' accounts. In

addition, users can only comment on videos after logging into the system. 2. DailyMotion - One of the biggest video hosting and sharing websites in the world is DailyMotion. We offer a platform where fans of video can find live and on-demand content from all over the world in a variety of genres, including sports, music, comedy, politics, news, fashion, gaming, and live streaming. 3. Vimeo - Vimeo is a website where users may watch, upload, and share videos. Members have a choice between using Vimeo's free service or a variety of premium options designed to provide organisations more control over how their movies are shown online. 4. LOCO: A free platform for live streaming, esports, and online gaming. 5. Facebook watch - Facebook is the most popular social media site and also has one of the most varied collections of video material produced by users, brand pages, and producers. Additionally, Facebook Watch has a number of noteworthy features, such as the capacity to share any video with friends, in order to compete with YouTube's offers. Here, you may scroll through a highly tailored stream of the most recent videos released by creators and your favourite Facebook pages. 6. Twitch - Twitch is a fantastic platform for gamers who want to stream their gaming footage online. The website Twitch offers video game streaming. Users can broadcast their video games over this network at a maximum bitrate of 3500. It is one of the best networks for streaming games for experienced gamers who want to benefit from Twitch's revenue-sharing approach. Twitch has around 11,000 associated content providers on the network, even though it hasn't made any specifics about the percentage those partners would be receiving public.

5. Proposed System

A sort of web service called "video sharing" enables users to post, share, distribute, or save video content on the Internet. A brief video clip or an entire movie can be used as video content. The service often creates an embed code for the submitted video files, enabling users to distribute their videos via email, blogs, and social media. Using our system Uploading is simple when sharing. Different video formats are supported. Users can publish their works online. Users can communicate with a worldwide audience, which is practical and arrange and reflect on learning processes for students. We are aware that our web application is the leading player in the market and offers the best features. But we overcame the following issues in our app: Since YouTube doesn't have a dislike count, users can't evaluate a video before watching it. No user distribution based on membership kind. All functions are accessible to all users. There are no intrusive adverts. Video can be downloaded by the user. We need certain hardware and software prerequisites in order to put all of the aforementioned into practise.

	Windows requirements	Mac requirements	Linux requirement:
Operating system	Windows 8 or later	macOS Sierra 10.12 or later	64-bit Ubuntu 14.04+, Debian 8+, openSUSE 13.3+, or Fedora Linux 24+
Processor	Intel Pentium 4 or later	Intel	Intel Pentium 4 or later
Memory	2 GB minimum, 4 GB recommended		
Screen resolution	1280x1024 or larger		
Application window size	1024x680 or larger		
Internet connection	Required		

Table 5.1 Hardware Requirements

The tech stack below was used to build this web application. Front-end: Redux and ReactJS. NodeJS is the back end. MongoDB is a database. Google Firebase provides streaming and video storage. On the basis of UML diagrams such use case diagrams, class diagrams, activity diagrams, component diagrams, ER diagrams, and deployment diagrams, we build our system. Consider the use case diagram as an example. The dynamic behaviour of a system is represented by a use case diagram. Use Case Diagram - It incorporates use cases, actors, and their relationships to encapsulate the functionality of the system. It simulates the duties, services, and operations needed by a system or application subsystem. It shows a system's high-level functionality and also describes how a user interacts with a system.

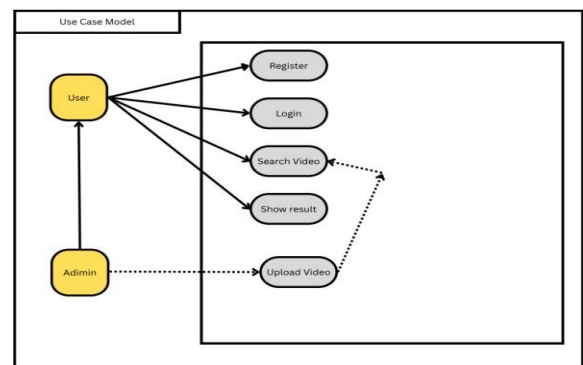


Fig 5.1: Use case Diagram

A use-case is an example of how a system would be used in a certain circumstance. The analyst must determine the various device or user categories that use the system or product in order to construct a use-case. These actors truly depict roles that humans (or devices) perform as the system runs. Anything that interacts with the system or product through communication and is not a part of the system itself is an actor. A use case is equivalent to a series of transactions, where each transaction engages internal objects to interact with one another and the environment of the system while being called from outside the system (by actors). Use cases are a set of use cases surrounded by a system's boundaries that describe specific flows of events in the system. They also function as a graph of actors and a conduit for communication between actors and use cases. It is depicted in figure 5.1 below. 1. The user signs up for the system. 2. The user can log in after registering. 3. The user must be able to search the video after logging in. 4. Admin has the power to post the video following successful system registration.

6. Implementation

UI Design Part: 1. Creating Styled Components. 2. React Menu Design. 3. Dark Mode with React Styled Components. 4.React Navbar Design. 5. React Router Dom. 6. React Video Card Component. 7. How to use React Router Dom Link. 8. React Video Page Design. 9. React Comments Component. 10.

Styled Components Using Props. 11. Styled Components Hover Effect. 12. React Login Page design. Node.js, MongoDB/ MernStack Part: 1. Create a Node.js App.

2. Node.js How to Connect to MongoDB. 3. Create a Rest API using Node.js and MongoDB. 4. Node.js MongoDB JWT Cookie Authentication. 5. Node.js MongoDB JWT User Verification (Authorization). 6. Node.js MongoDB CRUD Tutorial. 7. Node.js MongoDB Search by Query and Search by Tags. 8. Add, Delete and Get a Comment in an API. 9. Node.js MongoDB Like and Dislike Functionality. 10. React Node.js Connection. 11. React Fetch Data from Node.js API using MongoDB. 12. React Node.js MongoDB Auth (Login/Register). 13. React Redux Auth Tutorial (User Login) 14. React Login with a Google Account. 15. React Google Auth with MongoDB. 16. React Fetch Data with Redux Toolkit.

React.js is one of the most widely used JavaScript front-end libraries at the moment. It has a solid community and a substantial foundation. For creating reusable UI components, ReactJS is a declarative, effective, and adaptable JavaScript toolkit. It is a front end component library that is open-source and only in charge of the application's view layer. Initially created and maintained by Facebook, it was eventually incorporated into services like WhatsApp and Instagram. All of the concepts that aid in learning ReactJS are covered in our ReactJS tutorial. The following topics are covered in more detail: ReactJS Introduction, ReactJS Features, ReactJS Installation, ReactJS Pros and Cons, ReactJS JSX, ReactJS Components, ReactJS State, ReactJS Props, ReactJS Forms, ReactJS Events, ReactJS Animation, and many others. A predictable state container for JavaScript applications is Redux. (Redux Framework, a WordPress framework, is not to be confused with this.) It enables you to create apps that operate consistently across client, server, and native platforms and are simple to test. Additionally, it offers a fantastic developer experience with features like live code editing and a time-traveling debugger. Redux is compatible with React as well as any other view library. Node.js is a cross-platform runtime environment and library for JavaScript applications that may be run outside of a browser. The development of server-side and networking web applications uses it. Our Node.js tutorial covers all Node.js-related topics, such as installing Node.js on Windows and Linux, using the REPL and package manager, callbacks, event loops, operating systems, paths, query strings, cryptography, debuggers, URLs, DNS, Net, UDP, processes, child processes, buffers, streams, file systems, global objects, and web modules, among others. To further aid in your understanding of the Node.js technology, there are also provided Node.js interview questions.. In plain English, MongoDB is a document-oriented database. It is an open-source document database that offers high performance, high availability, and autonomous scaling. It was created and is sponsored by a business called 10gen and is an open source product. Free General Public License and Commercial License versions of MongoDB are both provided by the developer.

7. Conclusion

The video sharing industry is one that is booming and offers many chances to dedicated individuals and business owners. Apart from producing quality video content, the key to

success in this field is understanding your target audience and knowing how to connect with them, both of which require a strong grasp of social media. The Video Sharing Web Application has a significant impact on the users' educational and learning experiences. It assists in giving the conventional educational system a fresh, creative, and engaging dimension. Conceptual and visual learning have taken the role of the previous rote learning method. This pedagogical approach engages pupils and aids in their memorization by allowing them to understand how things actually occur.

8. References

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[2] https://www.youtube.com/watch?v=CCF-xV3RSSs&list=RDCMUCoxWrX5MIdXIeRNAXC3sqIg&index=1&ab_channel=LamaDev - To Implementation Part 2

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