EGCI427 Web Programming

Trimester 2, 2022-2023

Video Streaming - Streamer

Instructed by

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Submitted by

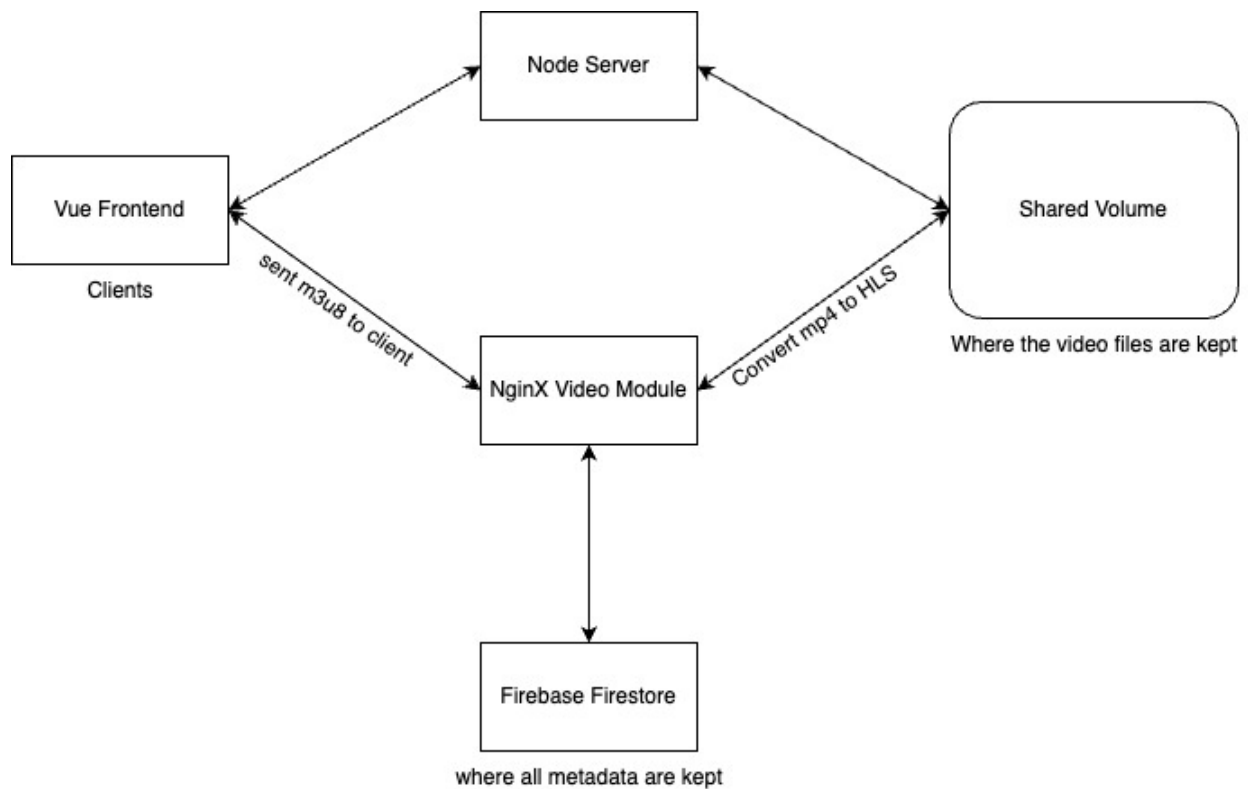Sujinna Phutatham 6181279

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Description

Video streaming, named Streamer, refers to the delivery of video content over the internet in real-time or near-real-time, without the need to download the entire file before watching it. Video streaming involves compressing video files into small data packets that are sent over the internet and decoded by the user's device in real time. The process of video streaming requires a stable internet connection and a device capable of processing the video content, such as a computer, smartphone, or smart TV. Video streaming services have become increasingly popular in recent years, with platforms like YouTube, Netflix, Amazon Prime Video, and Disney+ offering a wide range of video content to subscribers.
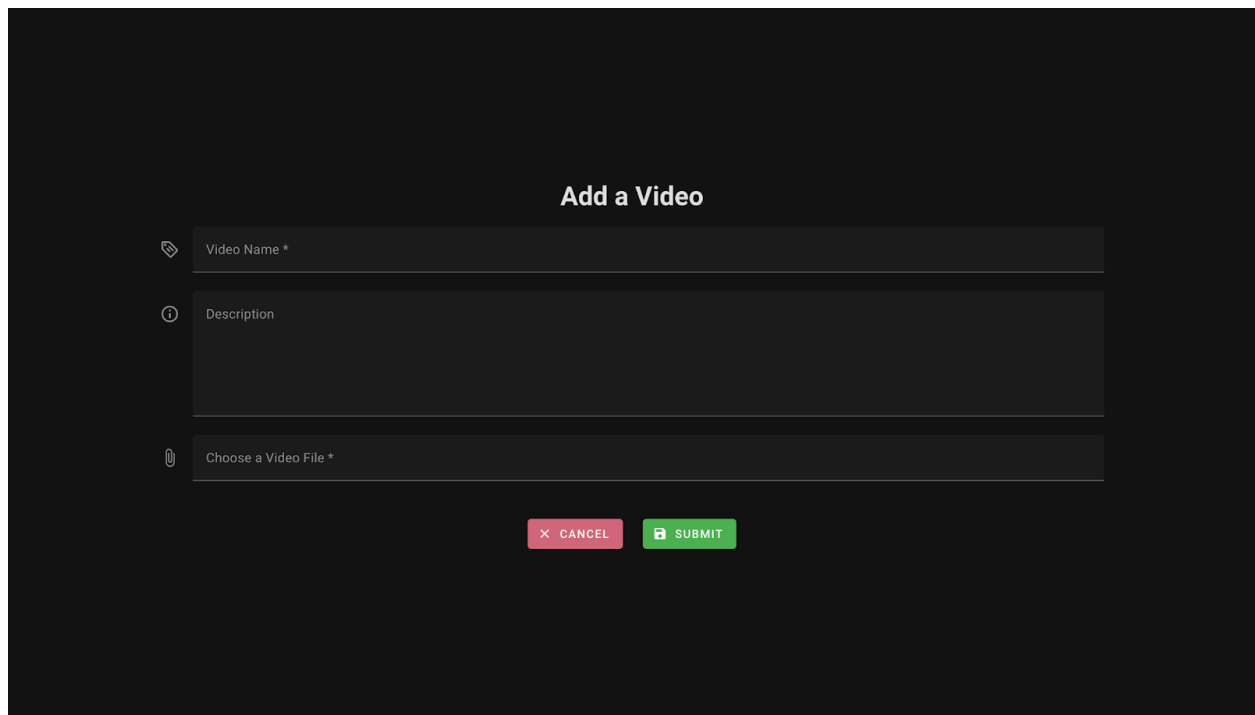
This application includes Vue.js with Vuetify plugin for styling served as a frontend to users, Node Server as a backend server to serve tasks, such as uploading the video, via an HTTP protocol, Firebase/Firestore as a database for collecting all the metadata of the videos, Nginx VOD module to enable video-on-demand streaming capabilities, the shared volume as video storage, and also we use Docker as a containerization technology for scalability in the future.

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                        Node Server


Vue Frontend                                           Shared Volume


Clients
                                                  Where the video files are kept
         sent m3u8 to client      Convert mp4 to HLS

                      NginX Video Module



                      Firebase Firestore

                    where all metadata are kept
```

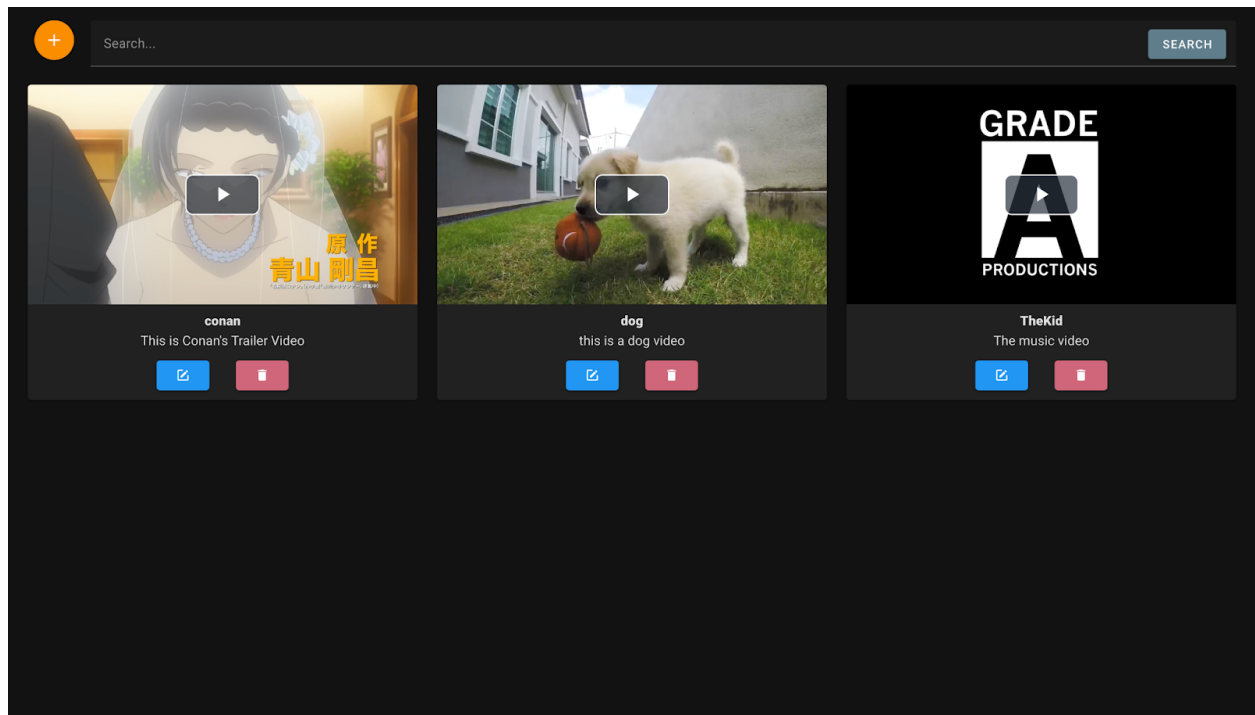# Features

1. Add a Video

   The users are allowed to add a video. While Video Name and Video File are required fields, Description is optional. The Video Name must not contain any space. The users can only upload a video file. If they click the Submit button with an empty required field, there will be a warning, and not be able to continue. After the video is successfully added, the page will be redirected to the video list page.
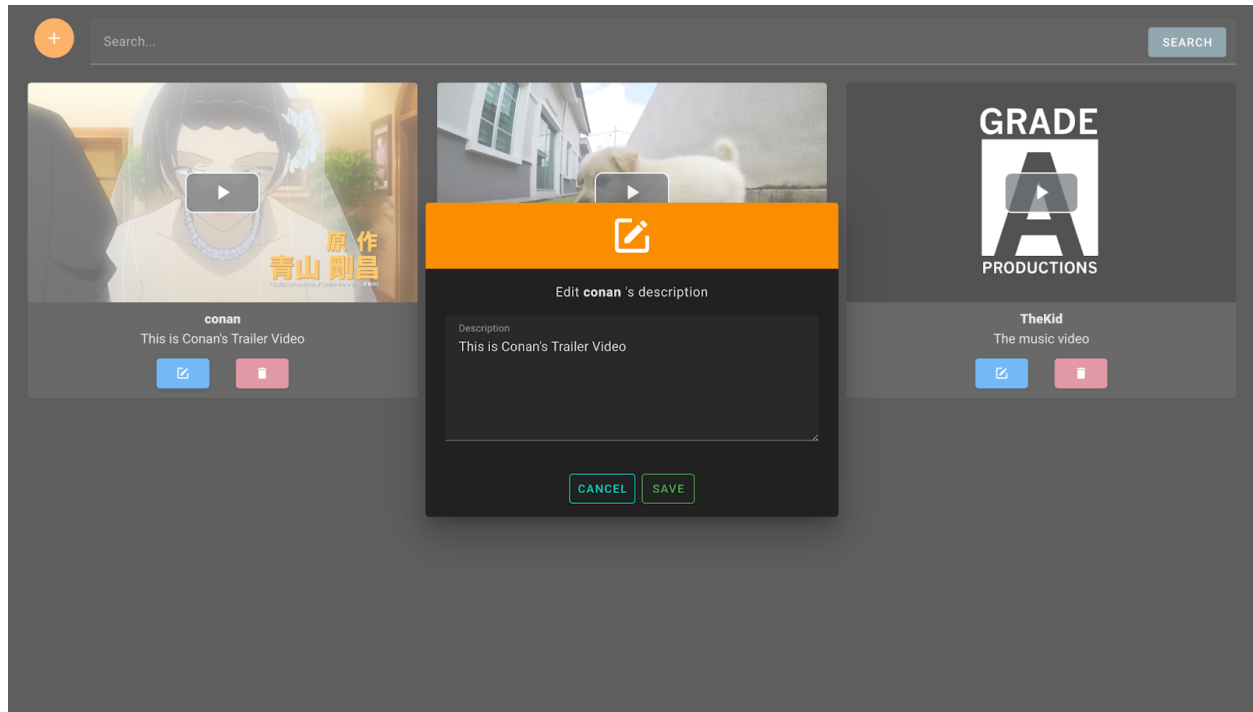
2. List and Search Videos

On this List Videos page, the users will be able to see all the uploaded videos, along with the video's name and description. They can also watch each video in either grid, picture-in-picture, or fullscreen mode. Moreover, the Search function is provided for the users to search for videos by their name.
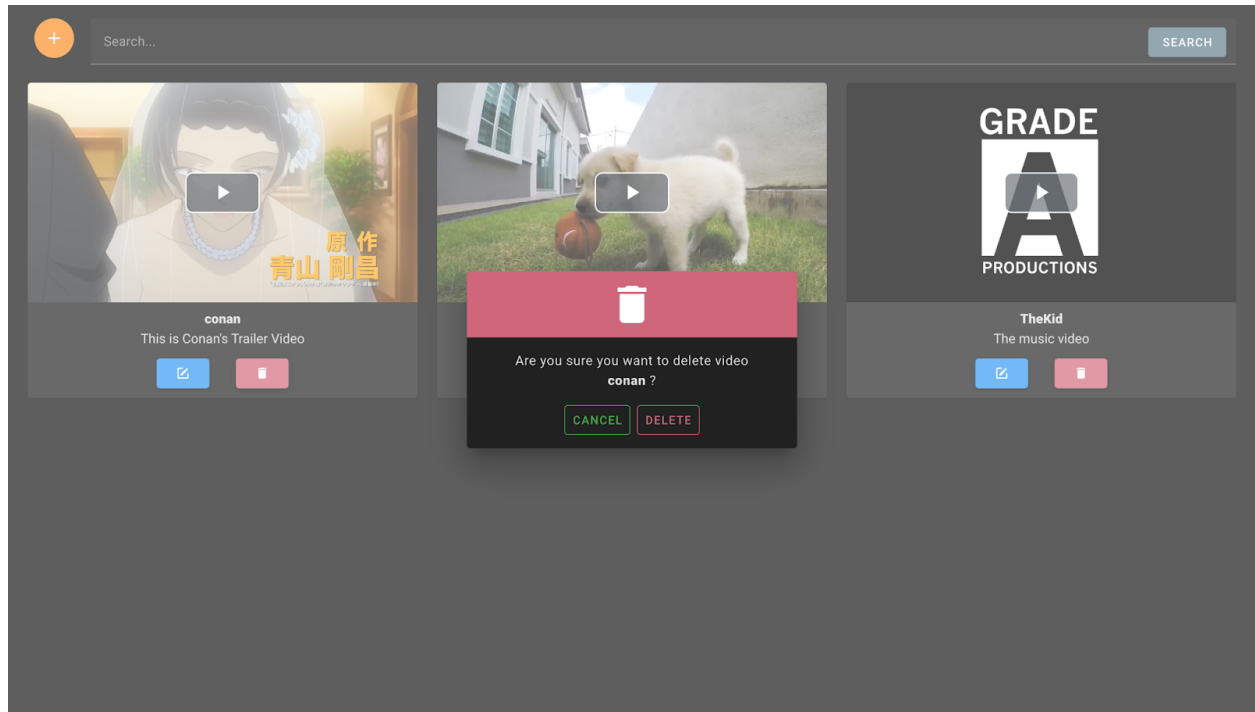
3. Update a Video

The users are not allowed to edit the video's name and file. The description is the only allow field. Once they finish editing and saving it, the page will be reloaded. The field will be updated according to the users' input.

4. Delete a Video

Once the users click on the delete button of a particular video, the confirm delete
dialog will be shown. If they decided to delete it, they can click on the Delete button. The
page will then be reloaded. The deleted video will be disappeared from the list page.

References

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