


# System Design

 Fire | Online Video Editor

The Nerds

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# Project Details

## Assumptions

We assume our users will use a modern version of google chrome to access our website.

## Breakdown

The project can be broken down into the media pool, preview window, timeline and property inspector windows. It also has an export, projects, login and about us pages.

- The media pool is where users are able to select files from their computer to be manipulated. It provides a list view to all selected media.
- The preview window is where users are able to view the edited video along with all of the playback controls.
- The timeline is where users are able to manipulate the location, duration, and keyframes of media segments. It provides a chronological view of the events of the edited video.
- The property inspector is where users are able to manipulate the properties of video segments such as position and size.
- The export page is where users are able to view and queue projects to be rendered to an output file.
- The login page is where users are able to login with google to gain access to cloud save functionality.
- The about us page is where users are able to view contact information and other important information such as version numbers.

For cloud saves our project will use a backend consisting of an Express server running on Node.js with MongoDB as our database.

# Exceptional cases

Unexpected Error: We will not require a user to be logged in unless they try to access the cloud saves feature. All video processing will be done locally on the user's machine. However, if the user experiences any errors that arise from using the video editor we will try and alert the user that something went wrong

Anticipated Error: Warnings will be sent out for the user's convenience. For example when exporting the final product, if the user tabs out the page then the exporting will pause. The user will be prompted warnings/heads up that the export cannot work in the background.

# CRC Cards

Class Name	
Collaborators	Responsibilities
....	....

React Components	
Ui components to display model data	ProjectManager PlaybackController MediaManager

ProjectManager	
Load projects from Indexeddb/cloud	PlaybackController
Create/Modify/Delete projects	MediaManager
Manage active project	

PlaybackController	
Play/Pause/Seek timeline	Project
Record rendered video	
Manage update loop	
Choose segments for rendering	Segment
Update Properties for chosen segments	

MediaManager	
Select/Load/Delete Media	Project
Modify media metadata	Media
Create/Delete/ Split/Trim segments	

Segment	
Holds metadata for subdividing & rendering media	Media
Create/Delete/ Modify keyframes	
Generate interpolated keyframes for given time	Keyframe

Media	
Holds media files & thumbnails	None

WebGLRenderer	
Render video frame for given segments	Project

Keyframe	
Holds rendering properties for displaying segments at given time	None

Project	
Holds media, segments & project metadata	Media Segment

# System Architecture Diagram

