

# **Project Proposal: MyTube**

## **Project Title: MyTube**

### **Summary/Description**

MyTube is a platform designed for content creators and marketers. It has the potential to be a powerful tool designed to offer features that help users make informed decisions of their video content or marketing strategy. After secure user authentication, users can tap into a dynamic feed of real-time trending videos, segmented by categories, tags, or even specific creators. What sets this app apart is its focus on actionable insights.

Our web application is designed to be user-friendly, offering an intuitive interface that even first-time users would find it easy to navigate. The utility of this app offers analytics dashboards that provide an in-depth look at how videos and categories are trending over time, providing valuable insights for content creation and marketing strategies. By examining this data, creators can pinpoint the best time to release new content, or which topics are gaining traction. Marketers, too, can identify high-potential topics or creators to partner with.

### **Usefulness**

There are several similar platforms that offer YouTube video analytics. For example, in recent years SocialBlade has proven to be especially useful in displaying live subscriber counts and the growth of influencers overtime. However, MyTube differentiates itself in several key ways.

- Real-time trending feed: Users may see updated trending
- Segmentation: Users can segment videos by different categories, tags, or creators. This allows for creators to conduct an analysis on a single category associated with their video and observe the performance of the video(s) with respect to that variable.
- Actionable Insights: The analytics offered by our model will help users make concrete decisions, such as the best time to post videos.

These capabilities appear in the following features:

- Dashboard
- User Created Reports
- Machine Model Suggested Solutions
- Search and Filter
- Settings and Customization

### **Realness**

For our data set, we chose the Youtube dataset given by the TAs. The link for the dataset is as follows:

[https://www.kaggle.com/datasets/rsrishav/youtube-trending-video-dataset?select=US\\_youtube\\_trending\\_data.csv](https://www.kaggle.com/datasets/rsrishav/youtube-trending-video-dataset?select=US_youtube_trending_data.csv)

This data details recent months of trending content across dozens of countries with up to 200 listed trending videos per day. Some of the attributes collected include the video title, channel title, tags, views, comment count and many other variables. These attributes appear in a JSON, which enables serialization/deserialization in the application and lends itself to be used with a REST Controller. The format is a CSV(Comma-Separated-Values) and the size of the dataset is dependent on the region from which the data is extracted from.

Here is a breakdown of the dataset from Kaggle and the data types we think it might use.

Columns	Data Type
video_id	VARCHAR
title	CHAR
publishedAt	DATE/TIME
channel_id	VARCHAR
channelTitle	VARCHAR
category_id	VARCHAR
trendingdate	DATE
tags	VARCHAR
view_count	INT
likes	INT

## Basic Functionality

The basic functionality of the application can be described by the following features:

### Dashboard

- Real-time display of trending videos and categories
- User friendly UX

### Analytics Reports

- In-depth metrics on views, likes, comments, and shares
- Real data from database

### Predictive Analytics

- Machine learning forecasts of upcoming trends
- Presents actionable recommendations based on past data

### Search

- Functionality for videos, creators, and categories

### Filter

- Multiple filter options for more targeted data(tags, comment count, views)

### History Page

- Save and access past trends, reports, and analyses

### Settings and Customization

- Personalize how data can be displayed
- Integrate additional APIs for specialized metrics

A typical experience with the application goes as follows. The user logs into the application through a secure login interface. They will be greeted on the main page, which will host a variety of visualizations and links to separate pages. For example, they will see an analytics dashboard which will consist of the top 5 trends for the previous week. Under the Recommendations page, they will be able to apply the insights given by the home page when analyzing how to change their content moving forward. This will allow creators to use filters to search trends regarding genre, time spent watching, view counts, etc. The analytics dashboard would operate in similar ways, allowing users to create filters to gain more insights into their videos.

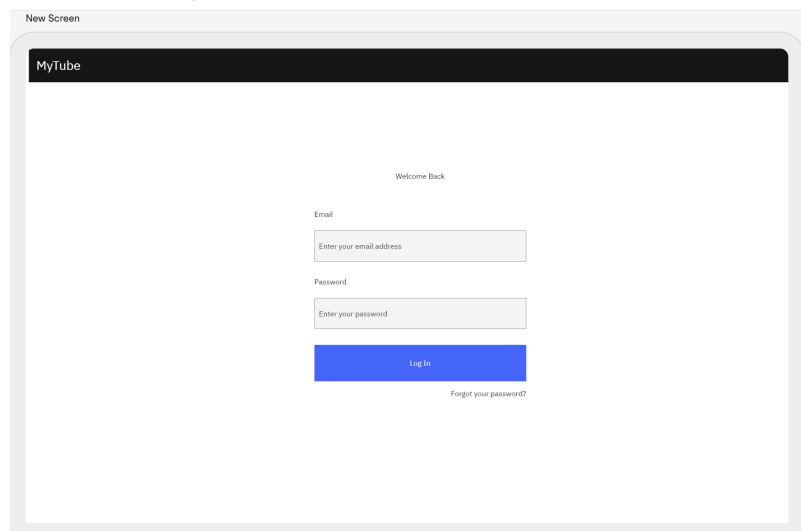
## **Creative Component**

While many platforms might provide a look back at what has happened or what's currently happening, MyTube aims to give users a glimpse into the future, allowing them to be proactive rather than reactive. This will be done through a specifically designed predictive analytics model within the platform.

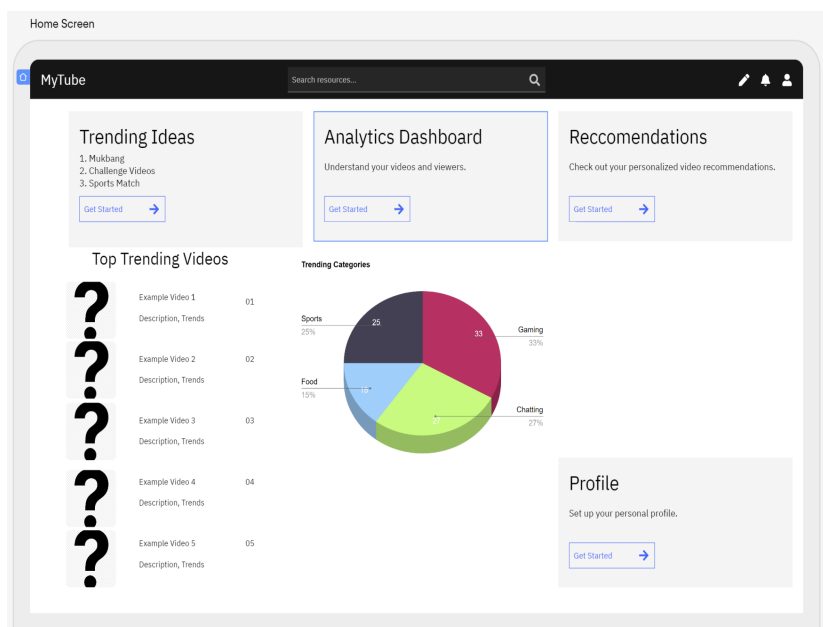
- Data Collection: MyTube continuously gathers and updates data on video engagement metrics such as view counts, like ratios, comments, and shares. This data will serve as the input for our machine learning model.

- **Model Training:** Our machine learning algorithms will be trained on this historical data to understand the patterns and factors that contribute to a video or topic trending. We are currently thinking about models like Decision Trees, Random Forest, or even Neural Networks could be employed depending on the complexity.
- **User Interface:** The predictive analytics feature will be integrated into the existing dashboard. Users will have the option to switch between real-time analytics and predictive analytics views.

## Low Fidelity UI MockUP



This page represents our basic authentication page. It will be a simple email and password combination where we can store users in a SQL database table.



This will be our main homepage, with tabs to different pages. These include a trending ideas tab, personalized analytics dashboard, as well as recommendations for the user. It will also have certain statistics regarding the user, and top trending videos.

## **Project Work distribution**

Scrum Master/Data Scientist: Ricky

Responsibilities

- Build and train machine learning models for trend prediction and other analytics
- Implement sentiment analysis on comments and likes

Front End Developer: Keshav

Responsibilities

- Design user interface with main focus on usability and experience
- Implement front end logic to interact with backend
- Ensure web app is responsive and accessible

Backend Developer: Arin

Responsibilities:

- Set up and manage databases to store users and analytics data
- Implement server-side logic for user authentication, data storage, and retrieval

Backend Developer: Dhruv

Responsibilities:

- Ensure data security and optimize for performance
- Collaborate with ML side to integrate ML models into application
- Connect with front end