Writeup for Architecture

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**Project Overview:**

Using the data provided, design and develop a tool that forecasts how popular a YouTube video will be. A YouTuber will use this feature to plan the topic of their next or first video.

We design the tool to be a web application. We basically have 2 parts: user management and prediction result managements. We can describe it in 3 aspect: The Frontend, the Backend, the Database.

**Frontend**

**User management - Frontend**

The user should have pages for them to register and login. All the input data should be validated if it is valid. Also, the web security issue should be considered here (CSRF, XSS etc.). If we have enough time, we should also develop functions that can give the user better experience. For example, remember the password, find the password using user’s email etc.

**Prediction management – Frontend**

The user can input his interest, location, preference for comments, preference for ratings, and our application will call the data scientist’s algorithm to get the prediction result and send it back to the user. If we have time, we will also show the user the details about how we generate the result for them, and we can show them the result using charts and tables.

**Backend**

**User management - Backend**

The user can register into our application. Do form validation of the input from users, if the user doesn’t exist, save it to the database. For the login and register, we should have interceptor, if the user didn’t login, they need to login first. When user is registering, we can send them the email informing them that they are registering. We should also need to manage the user, so we can get all their data in the database and using cache to make it perform better.

**Prediction management – Backend**

The user can input his interest, location, preference for comments, preference for ratings, and our application will call the data scientist’s algorithm to get the prediction result and send it back to the user. If the same request has already in the database, we can extract it from the database. If we have time, we should take care of the web security issue such as SQL injection etc. We should also have the filter, interceptor, listener to control the whole application.

**Database**

We use MySQL database. There are mainly 3 tables. The table for storing user information, the table for storing the prediction request and results, the table for storing the training data.