**1. Data Science**

Given the linked dataset, where a single record represents a Video View.

Please prepare the following:

* The data team has an initiative to update the existing content recommendation model (Matrix Factorisation). Explain and provide information on what other models or designs should we consider, what are the pros and cons?
* Create a content recommendation model based on the suggested above, you may use any Python package to build the model, where given the last N historical Video View data for a particular device or user, you are able to recommend 5 series for the user to watch.
* From the model performance metrics Accuracy, Precision and RMSE what are the benefits of each metric and based on the model which metric will you optimise for?
* At a high level, explain how you would iteratively improve the model overtime in a Production environment

You may use third party data sources to enrich the data, for example IMDB, MyDramaList, TheTVDB etc.

Please send in a zip file, scripts or any supporting material used.

You can download the data [here](https://drive.google.com/file/d/1Bhwh6A6OBWBaPPNJfj6hNPLjbQ5vFAZq/view?usp=sharing)

| Field | Description |
| --- | --- |
| country | Country |
| video\_start\_timestamp\_hkt | Video start time (HKT) |
| video\_end\_timestamp\_hkt | Video end time (HKT) |
| device\_id | Device ID |
| user\_id | Registered user ID |
| user\_create\_date | Create date of user ID |
| user\_type | User demarcation, Anonymous (dummy user\_id), Free (identified user), Premium (paying user), Premium+ (paying user) |
| device\_first\_visit\_date | Device’s first visit date |
| subscription\_source | Subscription type |
| plan\_platform | Plan code |
| subtitle | Subtitle selected for video |
| product\_group\_series\_name | Name of the series |
| product\_series\_cms\_id | Series ID |
| episode\_number | Episode number |
| episode\_duration | Episode duration (seconds) |
| resolution | Resolution selected for video |
| screen\_mode | Screen orientation |
| device\_network\_mode | Network setting for the activity, e.g. mobile denotes video is streamed via mobile carrier network |
| video\_streaming\_mode | Streaming mode for the activity, i.e. remote denotes streaming and local denotes downloaded |
| eps\_des | Description of the episode |
| sri\_des | Description of the series |