

# ALGORITHM

- ▶ Collaborative Filtering:
  - ▶ Matrix decomposition: ALS (Alternating Least Square)
  - ▶ Association rules: FPGrowth (Frequent Pattern)
  - ▶ Neighbourhood based: K-NN
- ▶ *Content Based:*
  - ▶ *Item attribute: Description Vectorization(word2vec)/Topic Model*

# EVALUATION METRIC

MAP@K

$$AveP = \frac{\sum_{k=1}^K (Precision@k \times rel(k))}{\text{number of relevant items}} \longrightarrow MAP@K = \frac{\sum AveP(K)}{\text{number of users}}$$

PRECISION@K

$$precision@k = \frac{|\{\text{relevant items}\} \cap \{\text{recommended items}\}|}{|\{\text{recommended items}\}|}$$

RECALL@K

$$recall@k = \frac{|\{\text{relevant items}\} \cap \{\text{recommended items}\}|}{|\{\text{relevant items}\}|}$$

F-SCORE

$$F = \frac{2 \cdot precision \cdot recall}{(precision + recall)}$$