Week 5

Saturday, January 1, 2022 6:03 PM

CONTENT-BASED RECOMMENDATION ENGINES

Intro to Recommender Systems

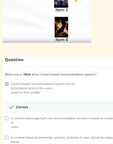
- What are recommender systems?
  - Recommender systems capture the pattern of people's behavior and use it to predict and use it to predict what else they might want or like.
- Applications

- Advantages of recommender systems
  - Broader exposure
  - Possibility of continual usage or purchase of products
  - Provides better experience
- Two types of recommender systems

- Implementing recommender systems
  - Memory-based
    - Uses the entire user-item dataset to generate a recommendation
    - Uses statistical techniques to approximate users or items e.g., Pearson Correlation, Cosine Similarity, Euclidean Distance, etc.
  - Model-based
    - Develops a model of users in an attempt to learn their preferences
    - Models can be created using ML techniques like regression, clustering, classification, etc.

Content-based Recommender Systems

- Content-based recommender systems



- Weighing the genres

- Candidate movies for recommendation

- Finding the recommendation

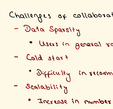
Collaborative Filtering

- User-based collaborative filtering
  - Based on users neighbourhood
- Item-based collaborative filtering
  - Based on items similarity

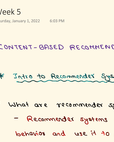
- User ratings matrix

- Learning the similarity weights

- Creating the weighted ratings matrix



- Collaborative filtering



- Challenges of collaborative filtering
  - Data Sparsity
    - Users in general rate only a limited number of items
  - Cold start
    - Difficulty in recommendation to new users or new items
  - Scalability
    - Increase in number of users or items