SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

An Autonomous Institution

Accredited by NAAC – UGC with 'A' Grade

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE NAME : 19CS508 - BIG DATA ANALYTICS

III YEAR / V SEMESTER

Unit 3- ASSOCIATION AND RECOMMENDATION SYSTEM

Topic 6 : Hybrid Recommendation

Hybrid Recommendation

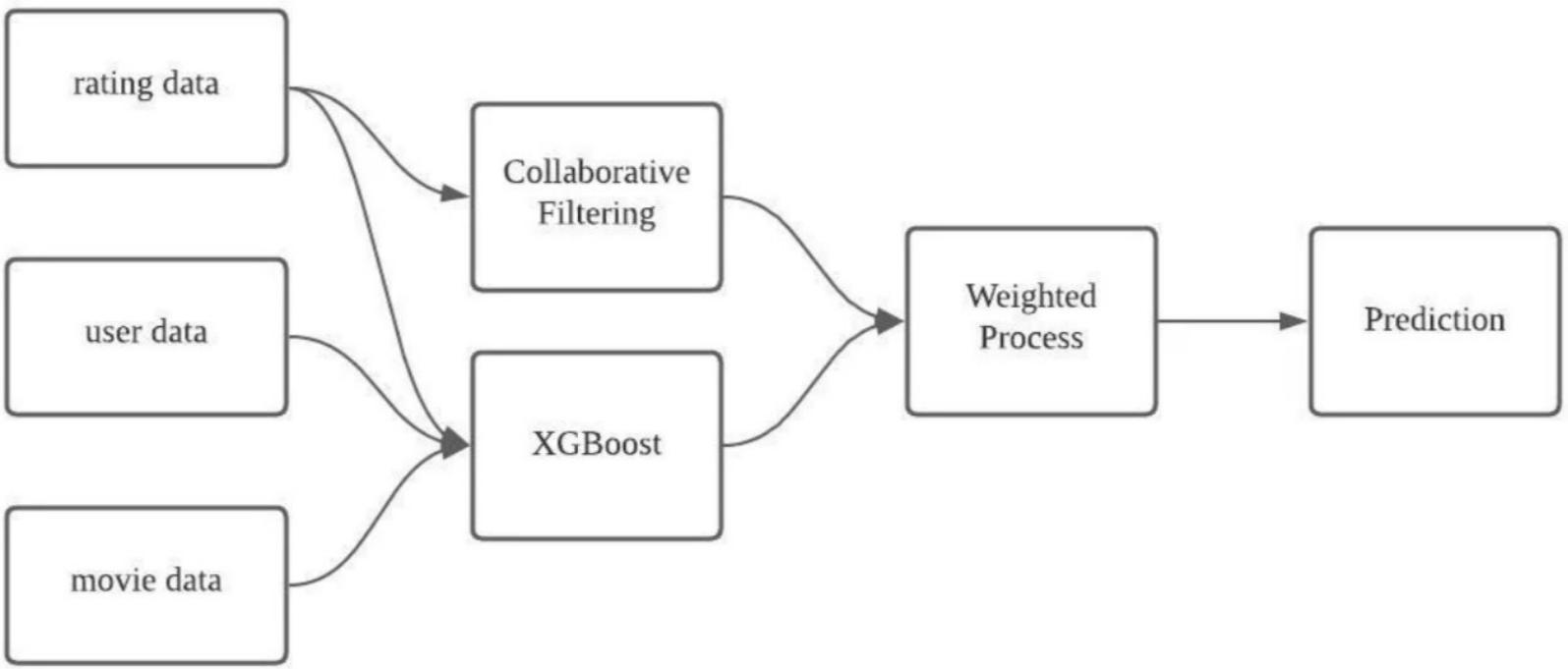
A hybrid recommendation the framework uses a combination of content-based recommendation system(CBRS) and collaborative filtering recommendation systems (CFRS) to achieve precisely performance by reducing the drawbacks of the conventional recommendation techniques (Adomavicius and Tuzhilin, 2005). User's side-information, comments, scores, connections, attributes and reviews are used along with the rating matrix in the hybrid recommendation system to enhance performance and precision

Cont..

Hybrid Recommender Systems: Survey and Experiments, Burke classified the hybrid recommender system into 7 approaches in building the hybrid recommender system

1. **Weighted**
2. **Switching**
3. **Mixed**
4. **Feature Combination**
5. **Feature Augmentation**
6. **Cascade**
7. **Meta-Level**

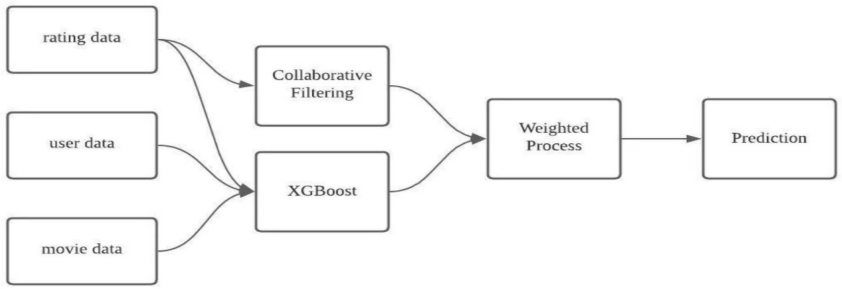
Cont..


rating data
user data
movie data
Collaborative Filtering
XGBoost
Weighted Process
Prediction

Cont..

What do Hybrid Recommender Systems do?

- Hybrid Recommender Systems are used for providing recommendations to users based on their preferences and behaviors. They can be used for a variety of applications, including:
- Product recommendations: Hybrid Recommender Systems can be used to recommend products to users based on their purchase history, browsing behavior, and other factors.
- Music recommendations: Hybrid Recommender Systems can be used to recommend music to users based on their listening history, likes and dislikes, and other factors.
- Movie recommendations: Hybrid Recommender Systems can be used to recommend movies to users based on their viewing history, ratings, and other factors.


rating data
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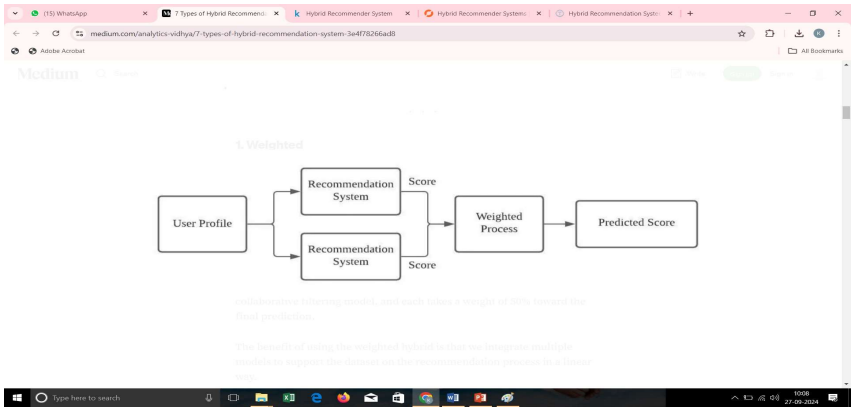
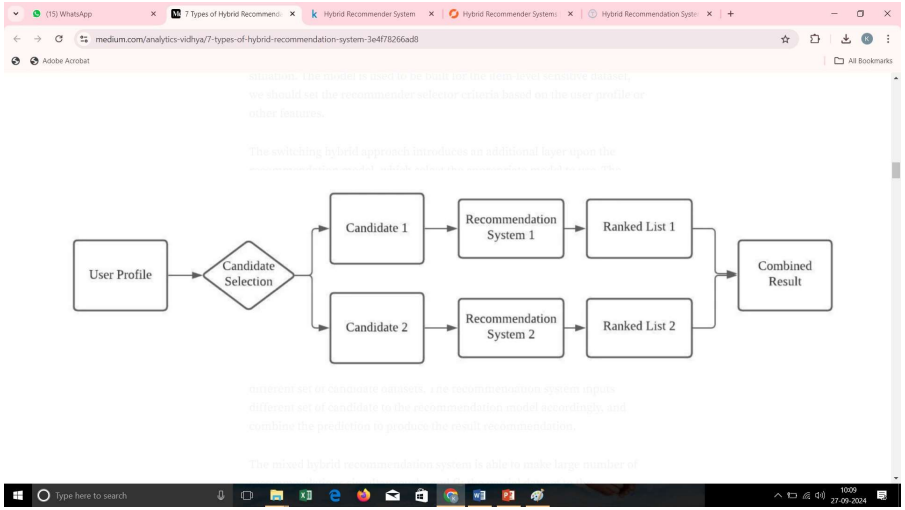
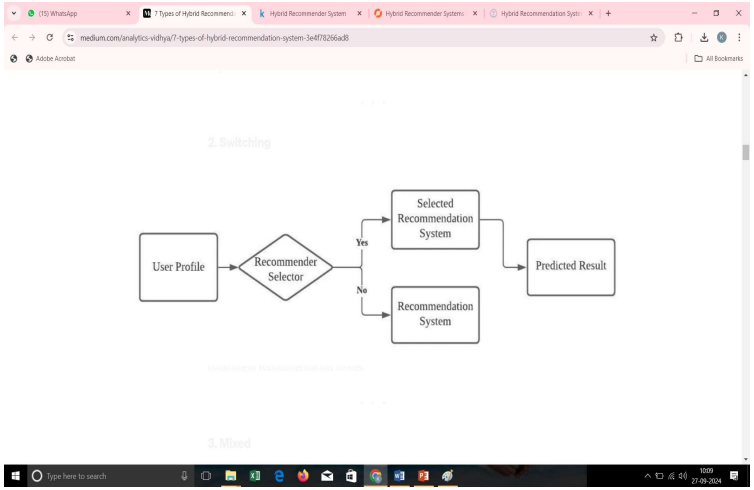
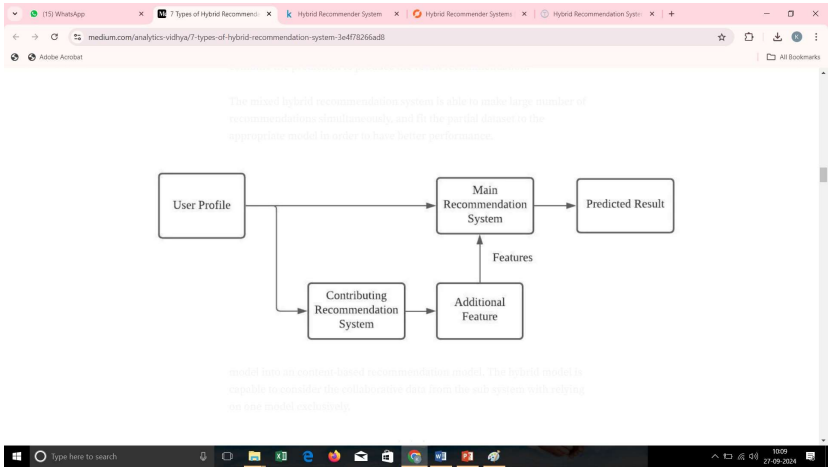
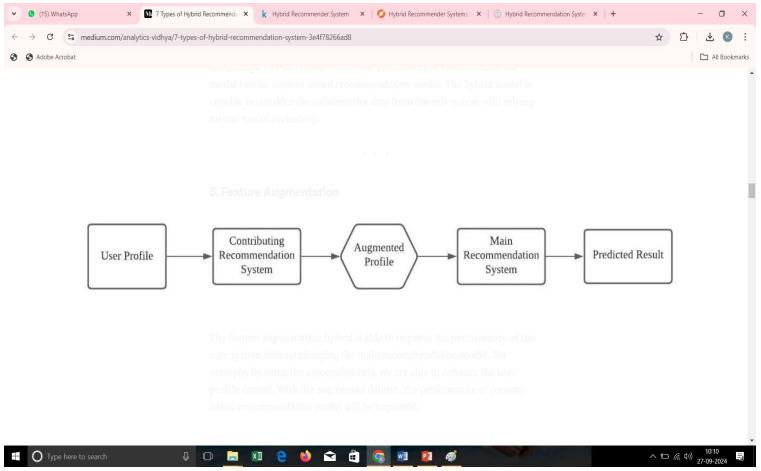
Collaborative Filtering
XGBoost
Weighted Process
Prediction

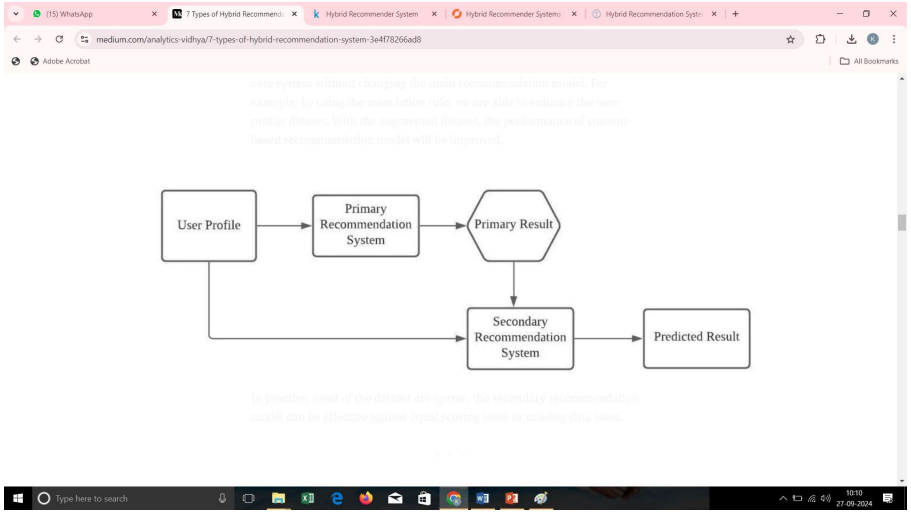

User Profile
Recommendation System
Recommendation System
Score
Score
Weighted Process
Predicted Score


User Profile
Candidate Selection
Candidate 1
Candidate 2
Recommendation System 1
Recommendation System 2
Ranked List 1
Ranked List 2
Combined Result


User Profile
Recommender Selector
Yes
No
Selected Recommendation System
Recommendation System
Predicted Result


User Profile
Main Recommendation System
Predicted Result
Features
Contributing Recommendation System
Additional Feature


User Profile
Contributing Recommendation System
Augmented Profile
Main Recommendation System
Predicted Result

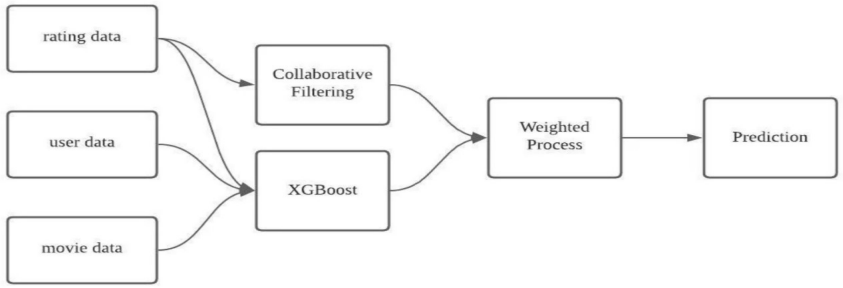

User Profile
Primary Recommendation System
Primary Result
Secondary Recommendation System
Predicted Result

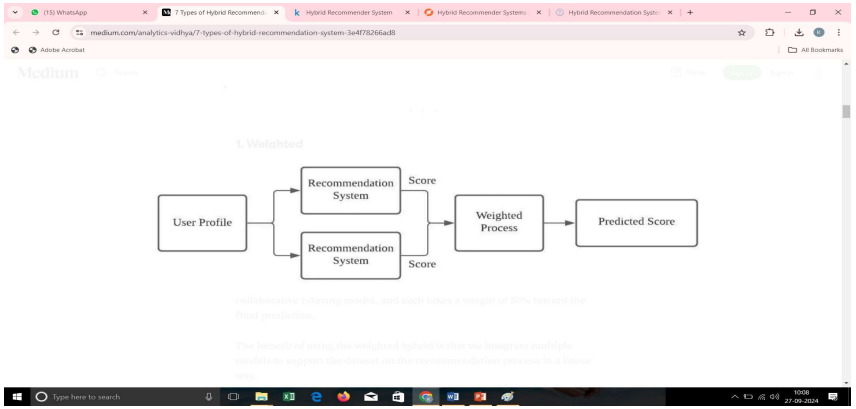
Activity

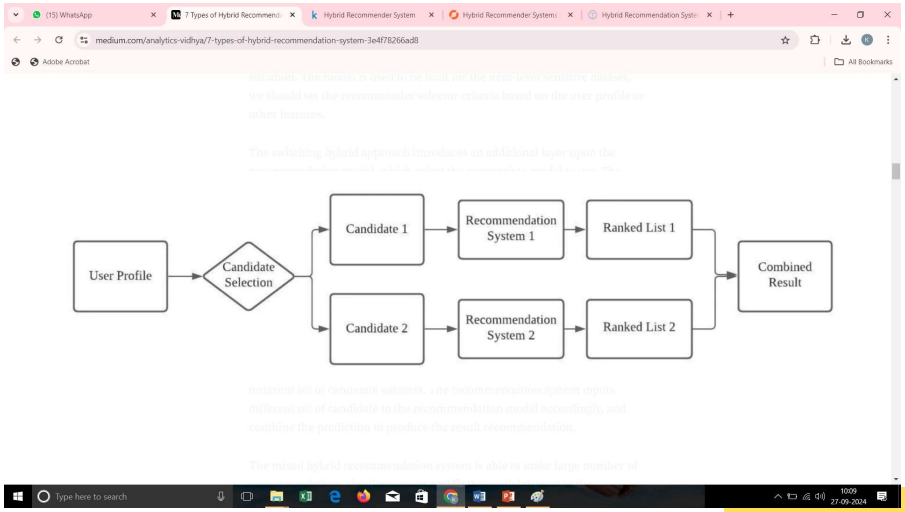
- Advantages of hybrid Recommendation
- increased accuracy: Hybrid Recommender Systems can provide more accurate recommendations by combining the strengths of different recommender systems.
- Increased diversity: Hybrid Recommender Systems can provide more diverse recommendations by combining recommendations from different systems.
- Robustness: Hybrid Recommender Systems can be more robust to cold-start problems, where there is not enough data on new users or new items.

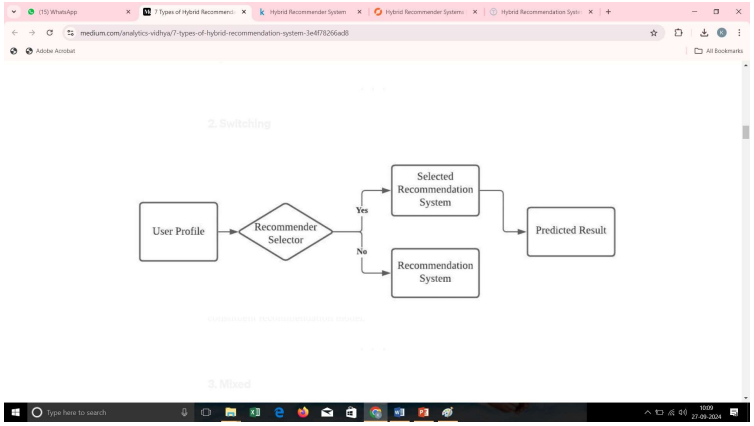
Disadvantages of hybrid Recommendation

- High computational complexity and large database of ratings.









Assessment 1

1. List out the advantages of hybrid Recommendation

a)_____

b)_____

c)_____

d)_____

•Identify the disadvantages of hybrid Recommendation

a)_____

b)_____

c)_____

d)_____

REFERENCES

1. Anand Rajaraman and Jeffrey David Ullman, "Mining of Massive Datasets", Cambridge University Press, 2012.
2. David Loshin, "Big Data Analytics: From Strategic Planning to Enterprise Integration with Tools, Techniques, NoSQL, and Graph", Morgan Kaufmann/Elsevier Publishers, 2013
3. Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data", Wiley publishers, 2015.

THANK YOU