



SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE NAME : 19CS508 - BIG DATA ANALYTICS

III YEAR / V SEMESTER

Unit 3- ASSOCIATION AND RECOMMENDATION SYSTEM

Topic 5 : Knowledge Based Recommendation



Knowledge Based Recommendation



what is a knowledge-based recommender system?

A recommender system is knowledge-based when it makes recommendations based not on a user's rating history, but on specific queries made by the user. It might prompt the user to give a series of rules or guidelines on what the results should look like, or an example of an item.

The system then searches through its database of items and returns similar results.



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There are two types of KB RS:

Constraint-Based: Given user requirements, this approach uses predefined recommender knowledge bases that contain *explicit rules* about how to relate customer requirements with item features. This is pretty much an *expert system in knowledge base systems* and is a constraint satisfaction problem.

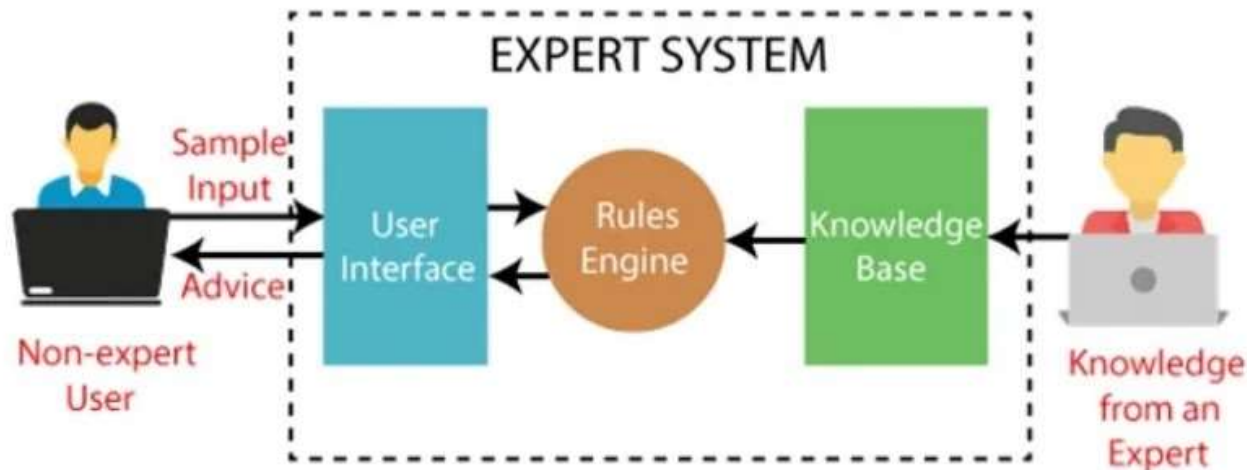
Case-Based: A user picks a specific item (case) as a target or anchor point and the algorithm finds a **similar item to recommend**. Results are usually used as new target cases with some interactive modifications. You'll notice that this sounds similar to *Content-Based recommenders* where items similar to ones the user previously liked are suggested. The main difference is that most KB RS depend on the description of the items in the form of **relational attributes in knowledge bases** rather than as text keywords like in CB RS.



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Constraint-Based

The following section will go into the theory and logic underlying this method but it is not necessary to understand to know what the constraint-based KB algorithm does. Read if you want to know its base level ties to knowledge bases and finite state machines.





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- **Case-Based**
- Similarity metrics are used to retrieve examples similar to the specified item. For this to work effectively, there are two crucial components: **similarity metrics** and **critiquing methods**.



Activity



Advantages of Knowledge Based Recommendation

- It works well even if the data is small.
- This model helps the users to discover a new interest in a given item but the model might still recommend it because similar users are interested in that item.
- No need for Domain Knowledge



Disadvantages of Knowledge Based Recommendation

- It cannot handle new items because the model doesn't get trained on the newly added items in the database. This problem is known as Cold Start Problem.
- Side Feature Doesn't have much importance. Here Side features can be actor name or releasing year in the context of movie recommendation



Assessment 1



1. List out the advantages of Knowledge Based Recommendation

- a) _____
- b) _____
- c) _____
- d) _____



2. Identify the disadvantages of Knowledge Based Recommendation

- a) _____
- b) _____
- c) _____
- d) _____



REFERENCES



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THANK YOU