

Recommendation based on Difficulty Ratings

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Our main goal is to design and create a recommendation method that will make recommendations based on the actual user knowledge and his/her rating of learning objects difficulty. We try to recommend those examples, solving which would present a challenge to the student and he/she would rate the example with our predicted rating. This kind of example has the greatest value for the student, because it is adequate to his/her knowledge and he/she can learn a lot of from it. The example should not be too easy, otherwise the student might start getting bored and he/she would acquire no knowledge from it. Then again, the example should not be too difficult, because it could discourage the student from continuing with the learning process [1].

Our method is designed for application in systems, which have same domain model as ALEF [2]. ALEF has a domain model split into two parts [1], learning objects and metadata about them. In metadata are individual concepts matched with the learning objects by relations including their weight. The weight shows the concept significance for the learning objects. On the other hand, user model [3] contains the level of mastering individual concepts by the given user. Thanks to these data we can use our method in ALEF system.

Our method will use the level of the user's knowledge, in other words the level of mastering the individual concepts. Then, it looks up exercises with similar weight value of the selected concepts and selects the most suitable exercises. For these exercises, a group of users who are able to master the selected concepts and are similar to the current user is subsequently looked up. These users have already evaluated the selected exercise. Next, it is identified, whether the users rated the example as too difficult or too easy, neither of which is desired in order for the example to be recommended. Of the examples that met the requirements we will select the most appropriate.

The method will be incorporated in RECO [4] recommendation system, where it will be interconnected with the ALEF educational system and will provide recommendations to ALEF users. RECO system offers many additional services through which we can further improve our method later on.

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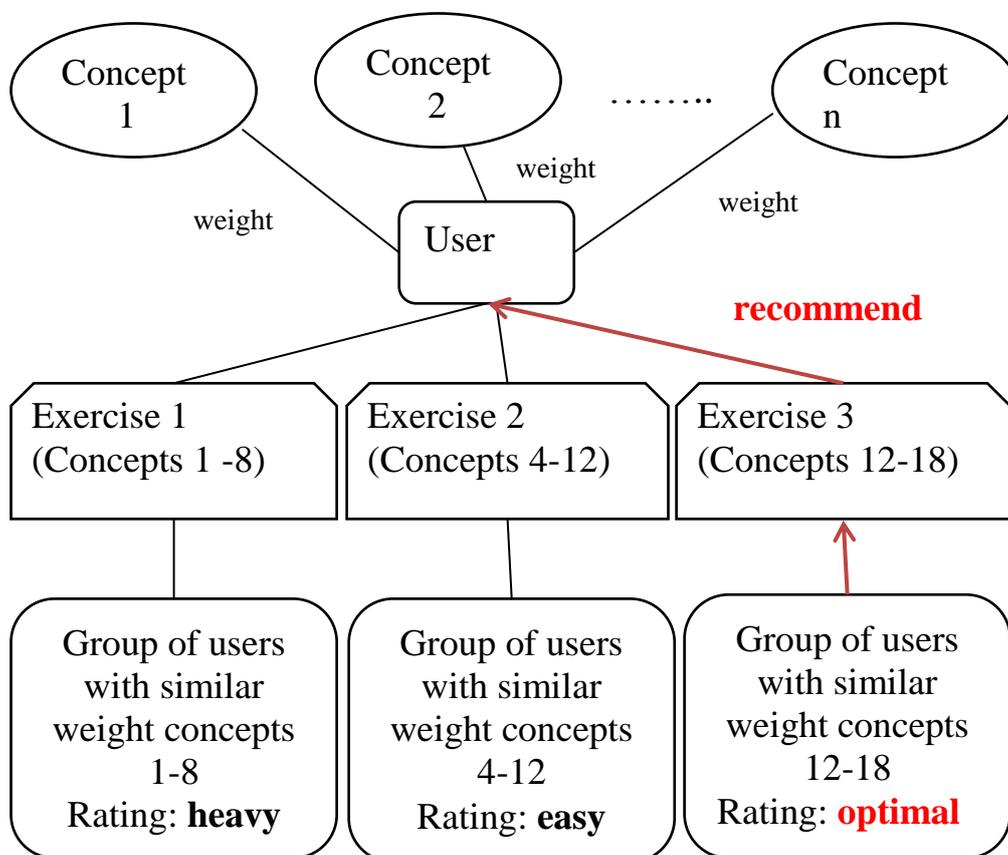


Figure 1. Overview of the proposed method.

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References

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