Assignment 2: Group Recommendations

The goal of the second assignment is to implement existing approaches for producing group recommendations and propose your own ideas and implement them for the same topic.

The assignment may be completed in pairs. Both students are expected to understand, be able to explain, and be able to modify the implementation.

(a) For producing group recommendation, we will use the user-based collaborative filtering approach as this implemented in Assignment 1. Specifically, for producing group recommendations, we will first compute the movies recommendations for each user in the group, and then we will aggregate the lists of the individual users, so as to produce a single list of movies for the group.

You will implement two well established aggregation methods for producing the group recommendations.

The first aggregation approach is the *average* method. The main idea behind this approach is that all members are considered equals. So, the rating of an item for a group of users will be given be averaging the scores of an item across all group members.

The second aggregation method is the *least misery* method, where one member can act as a veto for the rest of the group. In this case, the rating of an item for a group of users is computed as the minimum score assigned to that item in all group members recommendations.

Produce a group of 3 users, and for this group, show the top-10 recommendations, i.e., the 10 movies with the highest prediction scores that (i) the *average method* suggests, and (ii) the *least misery method* suggest. Use the **MovieLens 100K** rating dataset.

(b) The methods employed in part (a) of Assignment 2, do not consider any disagreements between the users in the group.

In part (b) of Assignment 2, define a way for counting the disagreements between the users in a group, and propose a method that takes disagreements into account when computing suggestions for the group.

Implement your method and explain why it is useful when producing group recommendations.

Use again the group of 3 users, and for this group, show the top-10 recommendations, i.e., the 10 movies with the highest prediction scores that your method suggests. Use the **MovieLens 100K** rating dataset.

Any programming language for your assignment is acceptable. Please explain any assumptions you made.