ABSTRACT

Recommender system, which is part of the information filtering science, has a function to recommend some content to its audience. There are many kinds of method used to give recommendations to users such as collaborative filtering, content-based filtering, knowledge-based filtering, and hybrid. From all of these methods, there are two methods which is common use in building a recommender system, those are content-based filtering and collaborative filtering. However these methods have its own advantages and weaknes.

Content-based filtering is a method which used content and its characteristics to produce the recommendations. This method have a weakness where its recommendations are not diverse because it only refers to content and characteristics of an item.

Collaborative filtering is a recommendation method which used users' common interest. It looks for a common pattern from the ratings that user gave. Weakness of this method is its inability in giving recommendations for a new item which still has no rating of any kind. This kind of problem is called cold start case.

Both of these methods have advantages which can complement each other weakness. This research will focus on the hybrid method called Item-based Clustering Hybrid Method (ICHM) to overcome the weakness from both previous methods, which is cold start and diversification.

To measure the ability of ICHM in coping with the cold start case, MAE will be used as a metric to indicate its error degree. While Intra-List Similarity metric will be used to measure the degress of diversity of this method. The result of this research concludes that ICHM has a better performance in handling cold start problem compared to content-based filtering with MAE of 1,2439 compared with 1,25286. Diversity evaluation concludes that ICHM has a more diverse recommendation compared to content-based filtering with ILS of -3,7187 compared with 34,5709.

Keyword : *recommender system, item-based clustering hybrid method, diversification*, *cold start*