Eco-design Based on Collaborative Filtering Recommender System

Hael Al-bashiri[1,*], Awanis Romli[1,2], Mansoor Abdullateef Abdulgabber[1], Mohammad Adam Ibrahim Fakhreldin[3] and Mazlina Abdul Majid[1]

[1]Faculty of Computer Systems & Software Engineering; Universiti Malaysia Pahang Lebuhraya Tun Razak; 26300 Gambang; Kuantan, Pahang; Malaysia.

[1,2]Information System Research Group, Faculty of Computer Systems & Software Engineering; Universiti Malaysia Pahang; Lebuhraya Tun Razak; 26300 Gambang; Kuantan, Pahang; Malaysia.

[3]Faculty of Computer Science and Information Systems,Jazan University, P.O Box 114, Saudi Arabia.

Eco-design Collaborative Filtering Recommender System is an approach to assist designers in producing a green product. Collaborative Filtering (CF) approach is the most commonly used and most successful approaches for the systems of recommendation. In eco-design (Ecological Design), several studies focused on the implementation of eco strategies to reduce the products' environmental impact. While the raw materials of the product are even more important in order to design a product to preserve the environment. Therefore, in this paper, the researcher employ the CF to develop a new eco-design method to provide a set of raw materials to assist the designers at early stage to preserve the environment. CF system is able to overcome the information overload issue by analyzing the past behavior of its users. It's very simple and effective way to assist eco-designer to identify the best options from alternatives. CF system introduce a set of recommendations to the product designers through comparing the new product with the existing products in data base based on products' information. Next, determine the most similar products and rank them based on its environmental impact. Then, the components of products which have low environment impact will be provided to the eco-designers as a recommendations. An assumed example of eco-design will be used to explanation the proposed method. Further research can be conducted on this proposed method by implementing it with real dataset to generalize its performance.

Keywords: Recommendation System; Collaborative Filtering, Eco-design.

1. INTRODUCTION

Nowadays, people living in an overloaded information age and they have access to a lot of information. Therefore, they tend to use some ways that may help them to alleviate this problem and make their decisions more easily in most cases. These ways can be friends, newspapers, advertising,

*Email Address: hailealbashiri1@gmail.com

and so forth, Nevertheless, the information flood is still a problem faced by people and progressively become a big challenge in people's daily life. This encouraged more researchers to develop new techniques that can help users to