

## ABSTRACT

*The explosive growth in the amount of digital information available and the number of visitors to the Internet has created a potential challenge of information overload which hinders timely access to interesting items on the Internet. The recommendation system is beneficial for service providers and users. Recommendation system is an information filtering system that deals with the problem of information overload by filtering out fragments of important information from a large amount of information that is generated dynamically according to preferences, interests, or behavior possessed by users.*

*Artcart is an online art market, created solely to overcome the problem of finding a product that users want. But a simple online art market is not enough. A recommendation and personalization system is needed on the Artcart application to provide a unique experience and provide recommendations for each user who uses the application according to their tastes. Products that fit the user's wishes will be very helpful in the Artcart business.*

*The user-based collaborative filtering recommendation system is the system that is most appropriate for Artcart to recommend works of art, based on the pattern of like-minded users, where computing similarities with nearest neighbors is an important component. The method of developing a system of recommendations and personalization on Artcart in this study is SDLC which consists of identifying needs, analysis, design, implementation, and maintenance. The design of this system uses a dataset stored in Artcart and the method of taking data uses explicit feedback in the application. This recommendation system will be integrated into the Arcart web application using a simple API. The recommendation system created has a Root Mean Square Error score of 0.6995 which can be translated to an accuracy of 86.01%.*

**Keywords:** *E-Commerce, Recommender System, Personalization, ArtCart, Marketplace.*