

## Abstract

Nowadays, development of web data on the internet is getting bigger and growing user also increase. Websites with similar content can be easily found on the internet by many user. User behavior patterns in e-commerce is likely to unpredictable will require more effort to attract the attention of every user with services that correspond to the preferences of each user. Personalization, one thing that is very important in improving the user experience while doing the activity on a website, including the websites of e-commerce, that have an impact on the satisfaction and comfort of the user in a website.

Web page prediction is a classification problem that is able to predict the next page to be visited by the user based on the knowledge of page-page visited previously. Page prediction can be used as a web personalization, input for reduction of response time server with prefetching and caching strategies accordingly. Page prediction can also be used as a guide to add recommendation system<sup>[2]</sup>, improve the design of a web application, and one input for e-commerce to handle business issues such as customer attraction, customer retention, cross sales and customer departure.

During this time, Markov model includes variations therein as K-th order Markov model, has been known for its efficiency and its performance in generating predictions. In this study, a modification done in order to improve the accuracy of prediction page which uses a combination of Markov models and Association rule mining (ARM). Occurrences zero probability on training models cause inability Markov models issued a prediction it to cope with the possible failure of the prediction of Markov models, is used technique Association rule mining (ARM) which reads history access page user and session state inspected more to produce a more general rule. Rule derived from ARM that will be used to generate predictions when the Markov model does not yield optimal prediction, so the accuracy of prediction models result of a merger of two of these techniques can be further increased.

**Keyword :** *Web Page Prediction, E-commerce, K-th order Markov model, Association rule mining*