ABSTRACT

Indonesian capital market in recent years ago has been the concern of many parties. This is caused by the activities of the growing capital market and the increasing desire to find alternative sources of financing other than banks. One of factor that determines the level of ability of investors choose an optimal portfolio. Optimal portfolio is the portfolio with the maximum increase *return*s and reduce the risk to a minimum.

Various methods have been applied in an attempt to determine the optimal portfolio of one of them using *data mining* techniques, is *Association Rule Mining*. *Association Rule Mining* is used to identify the relationships among transactions contained in a database. This relationship is represented in the form of rules associations in which some rules are used to predict how much the appearance of an item in a transaction based on the appearance of other items. One of example of the algorithm that a priori algorithm. Priori algorithm is used to find high frequency pattern to construct associative rules. Priori algorithm remains the most widely implemented algorithm in *data mining* because it is considered the most well-established algorithms.

In this final project, portfolio return is almost the same for each scenario because the final project is focused on minimizing risk. The results of the risk portfolio for each scenario is different. If we use the mean-variance principle, the form of portfolio risk that we produce portfolio risk by 0.000738. Whereas if we form a portfolio by using association rule mining, the risk of the portfolio increased by 0.000782 for the scenario with 85% minimum confidence. But for the scenario with minimum 81% confidence, the risk of the portfolio amounted to 0.000743. Portfolio risk in this scenario is almost the same as the risk of the portfolio if we use mean-variance principle in forming portfolios.