

ABSTRACT

Thalasemia is a hereditary disease that is quite dangerous because this disease has no cure and sufferers can only survive for 20-30 years after contracting the disease. With an expert system, the work of doctors to convey information about thalasemia or diagnose other diseases becomes easier, the expert system also acts as a medium for conveying information about diseases so that the general public can find out several things about diseases without having to see a doctor, but patients are still advised to check the disease directly to the nearest doctor or hospital. In this study using the certainty factor method as an expert system method then for application design using the waterfall method. As a comparison of the certainty factor method, the decision tree, random forest and XG Boost methods are added. The researcher chose this method because it was in accordance with the data on symptoms and diseases obtained. After doing the research, the results of the expert system web diagnosis were obtained with a percentage of 100% for the highest value, whereas when compared with the machine learning method, the highest accuracy, precision, and recall results were obtained on the certainty factor method and the decision tree for the lowest results was obtained on the XG Boost method with the results 33% accuracy, 40% precision and 67% recall. So, it can be concluded that the certainty factor method is still an appropriate and accurate method for use in expert systems.

Keywords: *Expert system, Thalasemia, Certainty Factor, Machine Learning*