

Abstract

Health is the most important thing in our lives. Without a great body, our work will be distracted. Sometimes we forget to keep our bodies healthy, especially at the smallest part of the body such as oral and dental things. Indonesian people usually going to the dentist to check their teeth and mouth when their illness are severe and disrupt their activity. Of course, that habit is not good for the body and we have to do some action before the disease gets worse. For that experience, there are an expert system that can detect oral and dental disease and detect the causes why the disease appeared. Expert System is a system that works just like an expert in the field so they can help solving the problems. With the inference engine and knowledge base in the expert system, the user is expected to get the same solution when dealing with experts. The system uses Hybrid Rule Based–Case Based Reasoning method where this method has better accuracy than the method that runs itself. When a user enters the symptoms of patients, the Rule Based-Case Based Reasoning process these symptoms so the patient's illness can be detected. The symptoms are also processed with Case-Based Reasoning in order to get the cause of the disease.

The solution obtained from Rule Based-Case Based Reasoning will be filtered to limit Similarity Value so the appeared solution are the solution with great value of similarity. The Similarity Value which is applied here are Jaccard Similarity, Hamming similarity, and Cosine Similarity. From the results obtained, by applying the method of Hybrid Rule Based-Case Based Reasoning, we obtained higher accuracy compared to methods that runs itself. From the results too, we obtained that the Cosine Similarity also have better results than the two other methods.

Keywords: *Expert System, Hybrid Rule Based-Case Based Reasoning, Jaccard Similarity, Hamming Similarity, Cosine Similarity.*