ABSTRACT

Lack of knowledge about the signs of anemia results in a high prevalence of anemia sufferers so that early detection is needed to diagnose anemia. Anemia is caused by a low hemoglobin condition in the human body. Low hemoglobin conditions can cause various symptoms, including fatigue, weakness, dizziness and others. The impact on anemia can reduce concentration, physical endurance and get sick easily. So it is necessary to detect early to diagnose anemia based on the symptoms experienced with maximum accuracy. Users only need to enter the value of symptoms experienced, namely the value of hb, bleeding and weakness, the system will calculate the symptom values using the Tsukamoto fuzzy algorithm. In calculations using the Tsukamoto fuzzy algorithm using the Python programming language, there are 4 stages, namely fuzzification, rule formation, inference engine and defuzzification. At the fuzzification stage, the input symptom value becomes a fuzzy value (0-1), then at the rule formation stage there are 18 rules of 3 symptoms and 3 diagnosis results. After obtaining a rule, it is followed by an inference engine that looks for the α-predicate value in each rule using the min function. After getting the α-predicate value, defuzzification is carried out to get the crisp value or the output value. With the multiple confusion matrix method, the accuracy value of the resulting data from the Tsukamoto fuzzy algorithm and prediction data is 85%. This can be used by the community to easily detect anemia early through the website.

Keywords: Accuracy, Anemia, Diagnosis, Fuzzy Tsukamoto, Python