

ABSTRACT

Diabetes is extremely dangerous for human health, a side effect of diabetes is blindness that can be experienced by patients who rarely check their health condition. This symptom is called Non-Proliferative Diabetic Retinopathy (NPDR). This symptom has caused a lot of death, this is because at this stage, people rarely check their eyes health due to long-time process and it also cost a lot of money. This causes the condition of the patient's eyes to get worse. Therefore we need a diabetes detection system that would facilitate these patients. Therefore a diabetes detection system was proposed by integrating Matlab and1 Arduino to identify symptoms of type-3 diabetic retinopathy. With the LCD that has been integrated with Arduino, the system built can display the condition of diabetes experienced by patients. The level of accuracy of the identification results of the final image processing for the retina shows the value of 87% images successfully identified as NPDR type 3.

Keywords: *Diabetes, Matlab, NDPR type 3, Arduino, LCD*