

ABSTRACT

Color blindness tests carried out by doctors generally use ishihara books consisting of plates or sheets in which there are dots of various colors and sizes. The points form a circle with color in such a way that the color blind will not see the color difference as seen by the normal eyes. The color blind test with an Isihara book must be accompanied by a doctor to make sure correct the answers from the patient and the doctor will conclude whether the patient's eyes are normal or having color blind. Based on this circumstance, the author tries to have different approach by making an independent colorblind test which not involving the presence of doctors as accompany. On this research, ishihara plate color blindness test is designed using arduino, that can be used independently, so it does not need a companion in carrying out color blindness tests. This tool works by push the keypad to display the ishihara plate and answer the questions of the numbers that appear on the screen and then the test results displayed on the LCD. The test results are divided into three categories, they are total color blindness, partial color blindness and normal eyes. The Ishihara sheet is driven by a DC motor with a control system designed using Arduino. On one test, 10 variations of ishihara sheets will be displayed. The Qos test (throughput and delay) obtained an average result of 6.72 kbps with an index of 1 and 288,917 ms with an index of 3 between 08.30-10.15. There is a difference in the output produced by the system when sensor data is sent to the database, this happens because the sensor reading process is very fast not optimal due to the addition of a fairly complicated process for sending each sensor data reading to the database.

Keywords : *Color Blindness, Ishihara Sheet, Arduino, LCD, Keypad*