ABSTRACT

Technological developments along with the passage of time are currently many innovations and developments, one of which is an object detection system to help humans recognize and understand electronic components. Electronic components have two main classifications, namely active components and passive components, types of active electronic components such as diode, LED, IC and types of passive electronic components such as resistors, capacitors and inductors. This causes some students to find it difficult to recognize the classification of these types of components.

In this final project, a system has been designed to detect and recognize electronic components based on image processing. With this system, it is hoped that it will help users to identify components according to their type and function. This design system will be carried out using a Google Colab executable document platform. Testing this final project using a bounding box indicator.

The results of this plan indicate that the system can detect electronic components based on image processing using the bounding box method. From the test results in 11 scenarios, obtained an accuracy rate of 100% and an average processing time of 6.83 seconds for each image in scenarios 1-6, and an accuracy rate of 89% with an average processing time of 37 seconds in scenarios 7-11.

***Keywords**: Electronic Components, Image Processing, Active Components, Passive Components, Bounding Box.*

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