

## ABSTRACT

Many small and large companies still use manual labor, for example the calculation of the number of products that are still counted manually and this method can sometimes be detrimental at the time of fabrication where errors can occur during production and loss of time.

The application of this system was developed with image processing techniques, where in the preprocessing stage the RGB image changes to grayscale and threshold images to make it easier for each stage of the process, and objects are taken through a webcam camera and then segmented, to separate objects from the background in order to detect and count objects contained in the image.

And the results of the tests obtained the best accuracy value at a distance of 25cm with a percentage of 100% success with an average delay of 1.31 seconds for 5 times the test. And testing on a white background obtained a percentage of 100% with an average delay of 1.22 seconds for 5 times the test. Then the test results at the best angle are 90o with a 100% success rate for 2 trials and the average delay obtained is 1.31 seconds. And the test results on the best light intensity values are found in Lux 92 with a presentation of 100% for 4 trials and the average delay obtained is 1.36 seconds.

*keyword: digital image, segmentation, background subtraction*