

## **ABSTRACT**

Barcode is a group's white and black line which is compiled vertically with different width level. Barcode width level and count give meaning for each barcode component, and differ among barcode types. White lines on barcode mean space white black line means bar. Barcode provides simple, cheap text information coding method. Barcode is also as fast information storage and accurate. The objective of barcode is for identifying barcode-labeled object.

This final project describes the making of barcode reader system based on digital image processing using morphology method. Barcode image used in this final project was taken with digital camera. Cropping process is needed to get desired image until barcode image only which is generated. Before that, there are several pre processing to do: RGB to gray mage conversion, noise reduction with median filter, kontras enhancement with histogram equalization, gray scale to binary image conversion. Next pre processing is using morphology method: labeling, filling, dilatasi and erosi.

System is tested with normal, -60, -40, -20, +20, +40 and +60 brightness conditions. Accuracy level of implementation result which are differed into 3 types: right, left and total accuracy. Through implementation and testing, system is able to serve accuracy level more than 70% for left accuracy and more than 75% for right and total accuracy.