

## ***Abstract***

*QR code (Quick Response Code) is a marker symbol of an object that has a type of matrix barcode or 2D (two-dimensional) barcode that can be recognized and read by the computer. The most common used of QR code is as a physical link that connects directly to a text, email, websites, phone numbers, and more. QR code can be read by a barcode reader devices in general if the image is pure QR code (properly framed QR code) and may have damage to the image of the QR code is not more than 30%.*

*At the time of this final project, the qr code detection method built using the Viola-Jones framework which is often known as a method for face detection. In the Viola-Jones framework it is assumed that the pattern to be detected must have a rigid structure. Overall structure of QR code does not have a rigid structure, but there is a part of a QR code that has the rigid nature which three symbols that are in the corners of the QR code that is called FIP (Finder Patterns).*

*The results of the detection system is built using the Viola Jones method by applying Haar-Like Features can run fairly optimal reaches 90% accuracy by using a total of 1400 samples for the detection of an object in the image of the QR code. For multi-object QR code detection , by modifying OpenCV object detection algorithm using the Closest Pair of Points Algorithm.*

**Keyword:** *qr code, barcode, framework viola-jones, finder patterns, closest pair of points*