DESIGN AND SIMULATION OF ERROR CORRECTION ALGORITHM CONVOLUTIONAL CODE FOR SYSTEM ENCODE AND DECODE ON QR CODE

ABSTRACT

QR Code or Quick Response Code is a barcode shape evolution of 1D to 2D images. With the QR code, a person does not have a bothersome if he wants to save information as a code matrix, can hold information in the form of data, URL / Link a website or even a paragraph of the text on the page in question. Owned capacity of QR code is big enough, where one symbol QR code can store a maximum of 4296 alphanumeric characters.

This final project make a Design And Simulation Of Error Correction Algorithm Convolutional Code For System Encode And Decode On QR Code. QR code be printed on Student Identity Card (known as KTM). QR code for captured image is acquired by using a webcam with a certain distance. QR code image that has been acquired will be processed. The system works by processing images which is taken its QR code. Three large boxes in three corners are established in order to make the symbol can be read in the same result, when the picture was taken from any angle. In this position detection patterns, it can guarantee that the stability of the readings is done quickly, preventing the negative effects of background interference. So that, this system is designed and would be tested its levels of performance in parameter range QR code with a webcam, the slope angle of the webcam QR code, QR code and damaged due to friction and dirty because of the ink.

The accuracy system is achieved with parameter card readings if reviewed by taking a variety of angles 0^0. The lowest accuracy when the card without noise is 85% whereas given the noise red's ink reaches 80%. If the image acquisition achieved based on distance, it has an accuracy up to 100% in 15 cm distances. Likewise the system accuracy with character readout parameter has 100% accuracy with 15 cm distance if viewed by taking a variety of angles, but if the review is based on making a variety of distances, it has 100% accuracy at 0^0 angles. The best computing time when viewed from across the experiment based on the card and character readout parameters when blue noise occurs in card condition when taking 0^0 angle in 20 cm distances is 7.44 seconds.

Keywords: QR code, distance readings, webcam.