

## **Automated Attendance System Using Webcam Based Barcode Reader**

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Maintaining attendance of the employee's and hours worked require an accurate means for the effective operation of any business or government agency. So they necessitate the use of simpler and effective systems as a replacement to the existing ones according to the ongoing growth of technology. Automated attendance system using webcam based barcode reader is one of the relevant solution for existing system, which can extract and decode the sequence of the barcode on a cluttered background and store the decode value with time and date. It is composed of four functions: barcode localization from the raw image, transformation of the localized barcode, decoding the sequence and storing the decoding data with other relevant data of employer attendance. The localization method is based on detecting the areas with the maximum density difference in two normal directions. The transformation method, capable of identifying any orientation, is based on the Hough line detection method. Using a variation of the Hough transformation noise is removed and distortions are reduced. This results in a more robust barcode scanning system. The decoding method is based on mathematical modelling of the EAN-13 barcode type and the database handling method is based on the [ADO.NET](#) technology in Visual Basic for interacts with the Microsoft Access database. The algorithms used in the barcode reader have been tested on number of images with an accuracy of more than eighty percent. The system finds quite an important application in Payroll calculation and also viability in commercial applications. Primary application that has focused on is to maintain attendance of employees in an office.

Key words: Barcode Localization, Barcode Reorganization, Webcam, Hough Transformation, EAN-13 barcode