ABSTRACT

Human with poor vision ability can cause mistakes in counting the human population or visitors in certain places. Nowadays, the development of digital image processing is used for various purposes based on the sense of sight which means if a case is visible to the eyes, then the digital image processing is also can be acknowledged. So that, digital image processing can be utilized for counting the number of people.

The method used in calculating number of people automatically is Background Substraction method using the OpenCV library, where this method take foreground from background for further processing. In general, the desired foreground is in the form of human objects, cars, text, etc. The purpose of Background Substraction is to separate object and background, so the movement of the object can be detected. The simulation is conducted by placing webcam in top of entry door, then this software implementation with the method of Background Substraction will automatically count the number of people who pass through that webcam. Where input in simulation is in the form of direct information both from camera and the recorded video. Meanwhile, output of the simulation is in the form of number of people in the rooms which displayed in screen and shown in seven segment.

From the test results that has been done, it shows that the test gets the accuracy of detecting people coming in and out of the room based on room light 99 lux and a distance of 215 cm to get the best results of 93.3% for people who walk alone, 76.6% for two people who walk in the same direction and 73.3% for two people walk in opposite directions. Average processing time obtained by the system for each person's calculation is 0.04 seconds, which means the calculation process has gone well.

Keywords: *Image Processing, Background Substraction, OpenCV, Seven Segment*