

ABSTRACT

Measurement of human height and weight still use measuring instruments and are done separately and manually so it is less effective if done by many users and repeatedly such as for medical purposes or in the process of recruitment in the Police or TNI, so needed a fast and efficient way To get the measurement results. Therefore, in this final project, the measurement of human height and weight will do simultaneously into one system using morphology operation method on digital image.

In this final project designed calculation system and weight based image processing. The process begins with an input image in the form of a full body digital image with a white background attached to a black box object after that used preprocessing process to make it easier to distinguish object pixels sought with background after it performed morphological operations consisting of dilation, filling and labeling. The results of morphological operations will result in a high number of pixels of the object of the person and the reference object on the photo being processed to obtain the height. To calculate body weight is done by searching the body surface area of a person's object (BSA) by modeling it to an elliptical tube shape.

Based on the results of tests that have been done can be concluded the system can perform height measurements with a maximum accuracy of 92.5% and weight calculation with an accuracy of 92.28% at a distance of 306cm. The average computational time generated for the measurement of a 2.82 seconds bodyweight and for weight calculation is 6.12 seconds.

Keywords: height and weight measurement, morphology operation, dilated, filling, labeling, BSA, pixel