ABSTRACT

The ideality of someone's body can be reviewed from body height, body weight and comparison of waist size and hip size. To know body height, body weight, waist size and hip size, we can measure them manually. In manual measurement, the measurement is using different tools and needing help from others. Therefore, in this thesis, conducted a research that can measure the ideality of body by using image processing besides this research also gives the information of body classification based on BMI (Body Massa Index) calculation, gives advices containing ideal body weight based on Borcha formula, and gives information WHR (Waist to Hip Ratio).

Introduction of gender can be done by face detection and characteristic extraction with geometry feature and Gray Level Co-occurance Matrix (GLCM) where to differentiate man and woman, the method of Support Vector Machine (SVM) is used. The measurement of body height and body weight is BSA done by (Body Surface Area) Formula Approach. This research is also using library Haar Cascade from Open CV.

The result of this research are system can identify gender and can measure the ideal body weight in real-time. The training data used in this final Task is 50 citra and test data is 30 citra, the value of maximum accuracy in the test of body height and body width is 95,97% *with the scale of* 22,7. *For the test of body weight, the maximum accuracy is* 95,39% *with the multiplier factor* (K) *of* 0,98. *based on the test calculation formulas borcha men obtained average value accuracy is 91.07% while in women the average value of the accuracy is 88.70%, based on Body Mass Index test indicates the accuracy of the classification is 83.34%, and the last test that is based on the WHR in men is 26.67% classification accuracy and accuracy of classification is 66.67% women.*

Keywords : **BMI, Borcha, BSA,** ***Gray Level Co-occurance Matrix (*****GLCM*****), Support Vector Machine (*****SVM*****), WHR.**