

## **ABSTRACT**

*According to KBBI eggs about shelled objects which contain chicken's life thing produced by poultry (chickens, ducks, birds, etc.), usually eaten by human (boiled, fried, scrambled, and so on). Eggs are one of food that is easy and commonly found in Indonesia society. Besides of it's low cost, eggs are important source of nutrients for health.*

*However, egg have different quality and freshness that varies depending on the storage environment and the condition of their parent. The freshness of the egg yolk could be seen from the thickness and viscosity of the white egg. The thicker and more viscous of white egg, more freshness we can get from that egg. While the yellow egg or yolk color is used to satisfy the tastes. To determine the color of egg yolks are used Yolk color Fan with the range color about 1-15. But the results from matching the yolk color with the fan is subjective because of human eye limitations that is affected by various factors, such as the ability to view and light.*

*In this final project, were discussed about how to detect the quality and frehness of the eggs by using transparent object detection with GLCM (Grey Level Co-occurence Matrix) and KNN classification (K-Nearest Neighbor), and used domestic chicken eggs. Transparent Object Detection is based on the egg albumen which is a transparent object. The height of the albumen measured by looking at its shade on egg yolk. With this system, a sample of the eggs that will be sold by supermarket or other can be checked for quality and freshness in advance, in order to know whether eggs can be used or should be discarded. The target of this system is distributor, which need an objectivity and time efficiency.*

*The results of this project is a system that is capable of detecting the quality and freshness of the egg. From other research with same methode obtained an accuracy of 80% for detection of quality and egg freshness. In this research, obtained an accuracy of 82.35% for detection of quality and egg freshness with GLCM (Grey Level Co-occurrence Matrix) with second orde parameter contrast, energy, correlation, homogeneity and angle = 45 with  $d = 1$  and quantization = 8, which used clasification K-NN (K-Neirest Neighbor) using distance cosine with  $K = 1$ .*

**Keywords : Egg, Transparent Object Detection, GLCM, KNN**