

## **ABSTRACT**

*Beef cattle is a livestock which reared to produce animal protein such as meats. The product of beef cattle is carcass. The carcass weight of cattle need to be known to determine the precisely cuts time based on the standars that have been set. Knowing the cattle carcass weight can be done by multiplying the live weight of cattle against a predetermined percentage of carcass that is 47-57%. The live weight of cattle can be known by weighing conventionally, visually estimate by humans, and calculations using a predetermined formulas. But these ways are judged difficult to do.*

*The concept of digital image processing can be implemented to design a system that is able to cope with problems in cattle carcass weight estimation. The system that will be designed in the application program of beef carcass weight estimation will need an input in the form of image or picture of beef cattle and generate output in the form of beef carcass weights along with classification based on carcass weight were obtained. In this final project, the system design of the application program of beef carcass weight estimation is done using fractals method and K-Nearest Neighbor (KNN) classification. The calculation of beef carcass weight is done using the Schoorl formula.*

*Application program that will be implemented to estimate the beef cattle carcass weight design based on Matlab. Collaboration of fractal method and K-Nearest Neighbor classification can produce an application program system that has estimation accuracy of 90.73 % and classification accuracy of 64% with computing time in 9.83 s.*

**Keywords :** *Beef cattle, Carcass, Schoorl ,Fractal, K-Nearest Neighbor*