ABSTRACT

In this day and age, there are many people who experience bone loss both young and elderly people. Bone loss can occur in anyone without knowing the age limit and cannot be known by the sufferer because it does not cause specific symptoms. If the bone is porous, even a very light impact can cause fractures. Therefore, human bone density is very important because bones have a function to support the body and protect human organs. Detection needs to be done so that bone loss can be handled immediately before the occurrence of unwanted things.

Roentgen or X-rays are images that result from the act of using radiation by x-rays through the body to take pictures of the inside of the body. Generally, X-rays are used to analyze health problems, and anything related to them to monitor health conditions. A grayscale image is a digital image that only has a gray level or one channel value in each pixel, which means the color value has the same intensity (Red = Green = Blue).

This system is designed to measure the level of bone density of the tibia and knee. The level of bone density in the X-ray image is processed to obtain its characteristics using the statistical method of order 1 to represent the characteristics, and features are selected using the Wilcoxon method. The resulting range from data processing on the normal knee bone is the mean parameter range from 153.1809 to 182.3937, the knee bone is not normal 80.7181 to 102.1955, the tibia bone is abnormal, the mean parameter range is 104.4473 to 108.6860, the normal tibia 144.7785 to 176.1084.

Keywords: Bone Density, Roentgen Imagery, Order Statistics 1, Feature Selection