ABSTRACT

An earthquake is an event of the shaking of the earth due to the movement or shift of the rock layers on the earth's crust. The location and position of Indonesia, which is on the path where tectonic plates meet with a line of volcanoes, known as the Ring of Fire, causes Indonesia's territory to be prone to the danger of damage to building infrastructure or threats to human life. The impact caused by earthquakes can be reduced by providing earthquake early warnings to the public during an earthquake.

The purpose of this final project research is to design and implement an earthquake early warning system on the Android application and to design a system that can determine earthquake activity or acts of vandalism using the C4.5 algorithm. The system works by taking data from sensors which are then processed for classification based on the BMKG Earthquake Intensity Scale.

The implementation of the earthquake early warning system on the Android application went well with alpha testing results of 100% with the C4.5 algorithm model which had an accuracy rate of 97%. The average time it takes from the time the sensor sends the notification to the notification is 6 seconds.

Keywords: *Earthquake, Vandalism, Android, C4.5 Algorithm*