

Abstract: Banjarmasin is a city of a thousand rivers, floods often occur due to high tides and high rainfall. An early warning system is needed for monitoring and predicting river tides, especially in rivers that are prone to disasters. This study aims to develop an early warning system for river water levels using IoT and predictions with linear regression analysis. The research method in the early stages is the manufacture of an early warning system device with NodeMCU V3, Microcontroller, and ultrasonic sensors A02YYUW. Monitoring to collect water level data at high tide through the LCD based on ultrasonic sensors on the banks of the river and sent to the Mysql database, predictions using simple linear regression analysis. The results showed that the early warning system was affected by rising river water levels. Simple regression analysis showed significant results on the t-test and simple linear regression equation $\hat{Y} = 29.472 - 0.061 X + e$. This means that the river water level at high tide approaches an early warning tool, namely an ultrasonic sensor. The conclusion of this study is that the results of an IoT-based early warning system analyzed by simple linear regression can be used to monitor and predict river water level rise.

Keywords: early warning, simple linear regression, IoT, Banjarmasin City