ABSTRACT

The incident of bridge collapse in Indonesia is one of the most alarming events. Bridges that often take lives and cause enormous losses can be used as material for joint study so that bridge performance is not neglected and always monitored. One way to overcome this is with a system to monitor the condition of the bridge in real time. The purpose of monitoring the condition of the bridge building by utilizing the MPU-6050 sensor that detects bridge vibrations. The MPU-6050 sensor is combined with other components to form a transmitter and receiver. The transmitter will generate data from bridge vibrations and is installed at the bottom of the bridge prototype. The receiver performs the function of processing the data received from the transmitter. After passing the data processing, the value will be displayed to the web. The data that has been generated and processed into a graph can be concluded that the bridge can be said to collapse when the total value of the Accelerometer and Gyroscope are both greater than the first and second trials with the resulting line going up and down high and not close together. The total sensor value shows 13,52 m Accelerometer and 0,6 rad Gyroscope. The bridge was said not to collapse when in the second and first experiments because the total value was smaller than in the third experiment.

Keywords: *Internet of Things, Bridge Vibration, MPU6050 Sensor, Nodemcu ESP32, Accelerometer, Gyroscope*, vektor.