ABSTRACT

Waves are a natural phenomenon that we can meet on the beach. The waves themselves can occur due to several factors such as wind gusts, sea tides that occur due to the gravitational pull of the moon and sun, and earthquakes. Lots of tourists ignore this, moreover the appearance of big waves can occur unexpectedly and cause great danger and can even take lives. In this study a monitoring tool for sea waves and wind speed based on the Internet of things will be designed, using the Gyro mpu6050 sensor to measure the slope angle and the Anemometer sensor to measure wind speed, using the Wemos D1 R2 microcontroller. Where this tool can measure these parameters through the Thingspeak website. From the results of testing the performance of the Gyro mpu6050 sensor to detect slope has an accuracy rate of 88.06%, while the Anemometer sensor to detect wind speed has an accuracy of 98.44%. In the Qos test, the average delay is 0.23 seconds, throughput is 299 bits/s, and packet loss is 0.00%.

Keywords :Microcontroller Wemos D1 R2, MPU6050 Gyro Sensor, Anemometer Sensor, Internet of Things