

ABSTRACT

Air pollution is a problem that has a negative impact to human life. Polluted air has an impact on health. Therefore, we need a monitoring system to monitor the air quality, temperature, and humidity in an urban area. In this study, using the NodeMCU ESP8266 microcontroller as the control center. NodeMCU ESP8266 is connected to various sensors such as DHT11 sensor as a temperature/humidity detector and MQ-135 sensor as an air quality detector. The sensor will send an input signal to be processed by the microcontroller. The data read by sensor will be sent to Antares cloud. Data in the cloud is processed and then displayed on Android Smartphone. The result of this research is accuracy value of each sensor 95,85% for DHT11 sensor (Temperature), 96,08% for DHT11 sensor (Humidity), 94,3% for MQ-135 sensor (CO₂) and average error value for Temperature (0,735 °C), Humidity (0,95 %), and CO₂ (16,2 ppm).

Keywords: *Monitoring System, Temperature, Humidity, CO₂, Microcontroller, Sensor*