DESIGN AND BUILD AN IOT-BASED FOREST FIRE MONITORING SYSTEM USING NODEMCU

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ABSTRACT

Forest and land fires are a potential threat to sustainable development because of their impact on ecosystems, their contribution to carbon emissions and biodiversity. Technology regarding forest fire monitoring systems plays an important role in minimizing the threat of these fires, namely research with an Internet of Things (IoT) based forest fire monitoring system using NodeMCU. The forest fire monitoring system aims to transmit data generated from sensors to the firebase. The results of the research show that the accuracy and precision of the DHT-11 sensor with an average accuracy rate of 97.970% while the average level of precision is 97.045%. In the blackbox test, the DHT-11 and MQ-2 sensor reading test, the nodeMCU interface with LoRa Sx1278, the test sending packets to the gateway, the test receiving data from one node and the test sending data from the gateway to the firebase showed a 100% success rate, which means it's running well

Keywords*: Forest fire, Internet of Things (IoT), LoRa, Blackbox, Fire monitoring system*