DEVELOPMENT OF PROTOTYPE FOR DISTANCE DETECTION SYSTEM BASED ON THE INTERNET OF THINGS USING ESP 8266 WIFI NODEMCU MODULE

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ABSTRACT

This article discusses a prototype of a distance detection tool. The system is built based on the development of the previous tool. Initial products include a distance detector that has a motion sensor and a data transmission module in the form of Lora 400 MHz as well as a GSM module. Product development includes the addition of the NodeMCU WIFI module into existing devices.
The specific objectives of the research are: (1) To develop a prototype of a distance detection system equipped with a WIFI module; and (2) Getting better performance from the results of the prototype distance detection system equipped with the WIFI NodeMCU module.
The implementation method uses a development technique (Research and Development) which refers to Pressman (2006: 409). This activity was carried out for 5 months, broadly speaking the steps were: system analysis, designing tools, developing designs, and testing tools. The instruments used include checklists and the transmission time of data transmission. Quantitatively the data is analyzed to test whether the results meet the predetermined indicators or not.
The tool developed has special specifications, namely having a transmitter and receiver module, a location coordinate module, a SIM 900A module assembled as an IOT using an Arduino board, and a Nodemcu ESP8266 module. From the test results of the tool, all parts of the tool work well at a distance of 125 meters (previously less than 100 meters). Meanwhile, the Lora module can detect the arrival of objects at a distance of 300 meters. Data transmission that previously used the GSM module took 10-13 seconds. After using the WIFI module, data transmission takes only 1-3 seconds

Kata Kunci: *prototype, distance detection, wifi module*