

Development and Testing of Microcontroller-Based Learning Media for the "Internet of Things" Practices

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ABSTRACT

Abstract. These days, the Internet of things (commonly abbreviated as IoT) has been applied in various industrial sectors such as manufacturing, health, restaurant, electricity generation, transmission, and distribution, etc. Therefore, IoT learning materials need to be included in the learning process both at the college and high school level. The most common obstacle is the lack of learning media about IoT. This paper reports on the process of developing an IoT practice learning media based on the Arduino UNO and NodeMCU microcontroller. Furthermore, this paper also discusses the results of the feasibility test on learning media. The stages of the research are need assessment, planning, development and implementation, and also evaluation. Outcomes of this development process are the Arduino and NodeMCU-based IoT practice modules, short manuals and lab sheets. Product testing with student respondents shows that the Arduino and NodeMCU-based IoT practice modules, manuals and lab sheets are considered to be very feasible for use in learning. The test results show students considered this module can increase learning interest and make it easier for them to understand IoT learning materials.

Kata Kunci: *IoT, Arduino, NodeMCU*