

DESIGN AND CONSTRUCTION OF AN AUTOMATIC SCHOOL BELL SYSTEM BASED ON THE INTERNET OF THINGS (IOT)

Name of Student : M. Syukri Mahendra
Reg. Number : 3103211296
Supervisor : Syaiful Amri, S.ST., M.T.

ABSTRACT

The bell is a marker for starting or stopping activities at school. Manual scheduling systems in schools are often prone to errors and lack flexibility. This IoT-based automatic school bell is designed with a display on a website page, where schedule control is displayed and stored in a database that is received by the NodeMCU ESP8266. If the data sent is to ring the bell once, the NodeMCU ESP8266 sends data to the DFPlayer mini to play the bell's MP3 sound once, the program data can be modified on the website page. Based on tests conducted at SMAN 1 Bukit Batu, following the time data entered for Monday, Tuesday, and Friday, the automatic school bell system was able to function according to the schedule set by the school with a 100% success rate, significantly reducing the risk of manual errors. From the flexibility tests, the system helps save time with an average time savings of 94 seconds. Overall, this tool has achieved its goal of creating a practical solution for efficient, easy-to-operate, and reliable school bell schedule management.

Keywords: *School bell, Internet of Things (IoT), NodeMCU ESP8266, RTC DS3231, DFPlayer Mini.*