

SMART BELL DESIGN USING ANDROID STUDIO APPLICATION BASED ON INTERNET OF THINGS

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ABSTRACT

Smart bell is an innovative and intelligent system designed to revolutionize the traditional school bell system. This system utilizes the latest technology, such as using the Internet of Things (IoT) to improve scheduling and communication processes in schools. This smart bell summarizes the main features and benefits of the Smart bell system. Internet of things (IoT) functions as a technology that connects objects connected to schools. In this research, several tools were used to operate the smart bell. In the design, the buzzer functions as a school alarm notification. in the smart bell design using a buzzer there are two options for ringing the bell on the application that is connected to the design, the first option uses the manual method which has three buttons that can be used to press the button in the application, the second option is by setting an alarm schedule according to school starting time. For example, set the schedule at 07.30 then the bell will ring automatically according to the schedule that has been set on the smartphone. Smart bell uses the Android Studio application to manage dynamic school schedules. The smoke sensor functions as a tool to detect fires and the buzzer is also useful for the output of the smoke sensor. In testing the smoke sensor, where the sensor does not detect smoke, the output value is 1, the bell does not sound and vice versa, if the sensor detects smoke, the output will be 0 and the alarm sounds, then the smartphone will inform the user that smoke has been detected in the room. The ultrasonic sensor functions as a tool to count the number of students entering and leaving the class. For example, if the sensor detects an object it will count 1 as it enters the room and vice versa if the sensor detects an object that wants to leave the room it will decrease by 1. Smart bells are a transformational solution that utilizes advanced technology to revolutionize the traditional school bell system, starting from adjusting bell schedules, detecting smoke in the event of a fire and counting the number of students entering and leaving the classroom. This system is a tool for modern educational institutions that aims to increase productivity and the overall learning experience.

Keywords: *smart bell, ultrasonic sensor, smoke sensor, smartphone, internet of things.*