

## **ABSTRACT**

In the world of education, the library is one of the important means to support the creation of quality education. A good library location and comfort during activities are a big influence on concentration when carrying out activities in the library. One of the disturbances that can cause users to lose comfort and lose concentration is the noise produced by library visitors in the room. Decree of the Minister of State for the Environment No. KEP48/MENLH/11/1996 regarding the maximum sound frequency in the library room is 50 to 55 dB(A). The design of a noise detection system based on an ESP32 microcontroller in the library, where the purpose of this tool is to control the level of noise generated by visitors in the library room. The way this tool works is that the sensor detects noise >55 dB and reads the signal in the form of an analog voltage and sends the signal to the ESP32 Microcontroller. Then the ESP32 microcontroller will convert the analog voltage into decibels by calibrating the analog voltage. Furthermore, the output in the form of a warning issued by the speaker and the display of the noise value by the LCD will be displayed. ESP32 that is connected to Wi-Fi can send notifications via the WhatsApp application which contains a sensor alert and detects continuous noise. So that the noise level that occurs in the library room can be investigated so that the noise level in the library room can be controlled.

**Keywords:** Noise, ESP32 Microcontroller, Sound Sensor, LCD, Speaker