DESIGN AND CONSTRUCTION OF A FALL DETECTION SYSTEM FOR WORKERS BASED ON THE INTERNET OF THINGS

Dony Fauzan
Electrical Engineering Study Program, Faculty of Science & Technology
University of Technology Yogyakarta
Jl. Ringroad Utara Jombor Sleman Yogyakarta
E-mail : donyfauzan00@gmail.com

ABSTRACT

Accidents that happen to workers, especially in the form of falls in industrial areas, often have a negative impact on workers, both physically and mentally. Apart from that, the company must also provide health insurance for workers affected by the accident. In order to reduce the impact of falls in the work area, the condition of workers who fall must be known and given help as soon as possible. Therefore, it is necessary to have a system that makes it easier for fellow workers to find out whether the worker's condition is safe or whether they have fallen. This research developed a prototype of an Internet of Things-based fall detection system using the MPU-6050 sensor module to detect changes in acceleration and angle whether the user falls or is in a safe condition, a buzzer as a marker if the user falls and is sent to an application created using MIT App Inventor so that it can be identified. by other workers. The results of testing this fall detection system showed that the fall detection accuracy was 95%, the accuracy of not detecting falls in daily activities was 93.75%, the accuracy of updating data on the application was 98.25%, and the accuracy was 100% for the system reset button if not. fell but was detected as falling by the system.

Keywords*: Fall, Internet of Things, MPU-6050 sensor, MIT App Inventor*