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REPORT

SAFETY VENTILATION AUTOMATED SYSTEM

HAFIZ FAIZ BIN FAZRI

2021216298

J4CEEE1125B

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SUPERVISOR :

DR RIJALUL FAHMI BIN MUSTAPA

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ABSTRACT

Proper ventilation plays a crucial role in creating a safe workplace environment, especially in the event of unexpected hazardous gas leaks. Besides, there are significant safety concerns related to hazardous and harmful gases in the workplace for human health. Insufficient ventilation systems in these buildings during emergencies, such as gas leaks, can lead to potentially dangerous incidents. Additionally, the lack of warning indications in available safety ventilation systems is critical, as it fails to alert occupants to take necessary actions in the event of a gas leakage. This study proposed safety ventilation fan automated system. The aim of this study is divided into 2 parts. The first part is the hardware development that consists of 4 sensors which are temperature, humidity, flame, and gas sensors. These 4 sensors are used to detect hazardous gas and potential fire inside an indoor workspace. Arduino UNO is used as the controller to control all the signals and data. The second part is to display the information and gives notification about the hazardous gas using a display. This system will improve the safety features in an indoor workspace to ensure a better work environment and reduce any possible accidents relating to hazardous gases.

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INTRODUCTION

1.1   PROJECT OVERVIEW

Good ventilation in maintaining a healthy and optimal indoor workspace environment, as it effectively circulates the airflow and ensures a continuous supply of fresh air [1]. It plays a crucial role in minimizing the risk of hazardous gas leaks. Industries such as factories, laboratories, and hospitals particularly rely on good ventilation to maintain optimal conditions. Insufficient ventilation not only affects the well-being of occupants but also increases the likelihood of significant accidents that can have dangerous consequences for both the building and its inhabitants. Hence, the implementation of an improved ventilation system utilizing numerous accurate sensors and triggers can effectively address this issue.

With the progress of technology, it becomes possible to tackle this problem effectively. By employing the best equipment, a system can be developed to measure and transmit relevant information to users. In the context of this project, an automated system will be implemented to ensure safety in indoor workspaces by monitoring and alerting occupants about potential hazardous gas leaks, thereby mitigating the risk of major accidents. Therefore, in this project, the proposed safety ventilation fan automated system can help alert hazardous gas leakage efficiently and at the same time reduce the risk of major gas leaks accidents.