PROJECT REPORT

MONITORING OF AIR QUALITY USING A FUZZY ALGORITHM

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2021

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ACKNOWLEDGMENT

First and foremost, I give thanks to God Jesus Christ for all of His blessing. So i can finish my final project succesfully. Then I thank my parents, who constantly pray for me, and I thank my supervisor, Y.b. Dwi Setianto, for always encouraging me and offering me advise so that I could finish on time.

I'd want to express my gratitude to my family, girlfriend, and friends for their support, wisdom, and affection during my time at Soegijapranata Catholic University. You are all critical to the project's success.

ABSTRACT

Air pollution is not a problem that can be underestimated, air pollution has many negative impacts on human life including health. The causes of air pollution are motor vehicle exhaust, industrial waste, and forest fire fumes. The gases contained in air pollution include carbon dioxide, nitrogenoxide, sulfuroxide, chlorofluorocarbons, hydrocarbons. The gas is very dangerous for human health, especially for respiration, humans can be poisoned if they inhale the gas. So this journal was created to detect the quality of the surrounding air whether it is good or dangerous for human health.

To solve this problem, a tool is needed to detect the presence of these dangerous gases. By using gas sensors MQ-135, MQ-2, MQ-7, Arduino ATMega 2560 microcontroller and Fuzzy Logic algorithm to determine the output of the 3 gas sensors.

The author uses 3 sensors as input (MQ-135, MQ-2, MQ-7) to detect pollutant gases in the surrounding air then the data is processed with fuzzy logic algorithms, as the output is 16x2 LCD, buzzer active, 3 LEDs (red, yellow , green). Tabel Indeks Standard Pencemaran Udara (ISPU) is used as a reference for the air quality threshold in ppm.

Keyword: Arduino ATMega 2560, MQ-135, MQ-7, MQ-2, LED, LCD, Buzzer active, Fuzzy Logic Algorithm

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