



PROJECT REPORT

DETECTING CLEAN WATER AND CLOUDY WATER BASED ON IOT USING FUZZY LOGIC SUGENO AND MAMDANI METHOD

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BASED ON IOT USING FUZZY LOGIC SUGENO AND
MAMDANI METHOD

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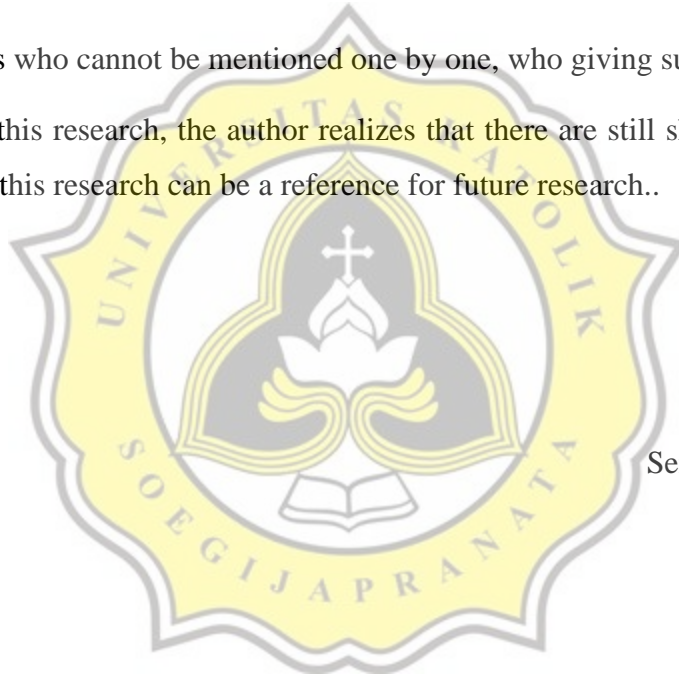
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In compiling this research, the author realizes that there are still shortcomings, therefore the author hopes that this research can be a reference for future research..



Semarang, July, 12, 2021

A handwritten signature in black ink, appearing to read 'Stef' or similar, located to the right of the date.

STEVANI DHEA LESTARI PURBA

ABSTRACT

Water is a very important need for humans on a daily basis, so humans need good water quality, poor water quality occurs because of pollution and contamination. To determine the quality of a water, there are several parameters determined by the Regulation of the Minister of Health Number 416/MENKES/PER/IX/1990 concerning water quality requirements, including turbidity parameters and dissolved solids (TDS) parameters used in this study, and by using the Sugeno method fuzzy logic and then comparing it with the Mamdani method to produce water quality output in accordance with the reference in the World Health Organization on drinking water quality guidelines.

In solving this problem, a tool is designed to help calculate water quality, with the turbidity parameter the author uses an LDR sensor that works to calculate the scattering of light that penetrates the water and hits the sensor, then on the TDS parameter the author uses a TDS sensor that works to calculate the amount of dissolved substances in the water. The Sugeno method and the Mamdani method used in this study are tasked with determining whether the water quality includes water of decent, medium, or unfeasible quality. This method has stages such as fuzzification, inference, and defuzzification, where in this defuzzification produces the output of the fuzzification and inference process.

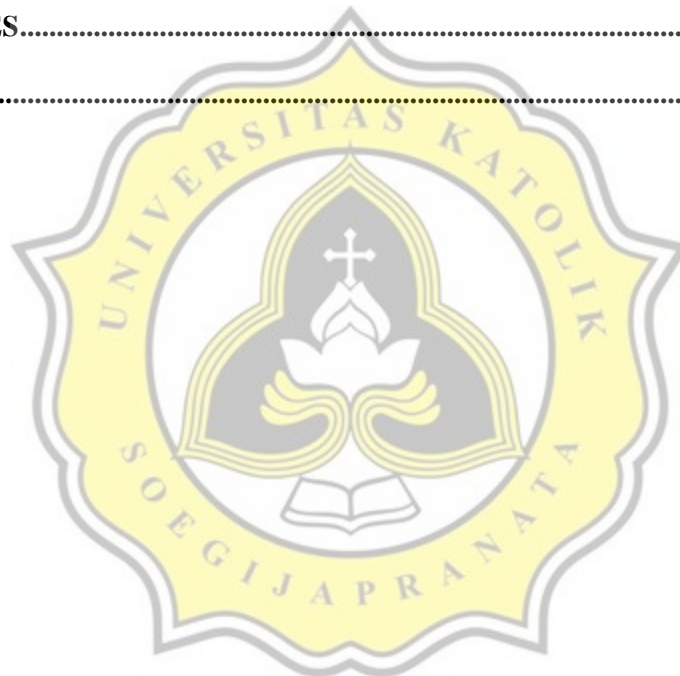
The final result in this study, it was found that these two sensors can be used as a tool to calculate the quality of a water, and these two methods can also determine the quality of a water with the same accuracy of 80%. From 10 samples of water, it was found that the output of 2 samples of water in the Sugeno and Mamdani methods was not in accordance with the WHO reference and using a tool other than a sensor that calculates water quality, namely the TDS EC Meter. Then the results from the sensors and fuzzy calculations are sent to the database, and from the database it will be sent to the website.

Keyword: LDR Sensor, TDS Sensor, Fuzzy logic, Sugeno Method, Mamdani Method

TABLE OF CONTENTS

COVER	i
HALAMAN PENGESAHAN	ii
HALAMAN PERNYATAAN PUBLIKASI KARYA ILMIAH UNTUK KEPENTIGAN AKADEMIS	iii
DECLARATION OF AUTHORSHIP	iv
ACKNOWLEDGMENT	v
ABSTRACT	vi
TABLE OF CONTENTS	vii
LIST OF ILUSTRATION	ix
LIST OF TABLE	x
CHAPTER 1 INTRODUCTION	1
1.1. Background.....	1
1.2. Problem Formulation.....	1
1.3. Scope.....	1
1.4. Objective.....	2
CHAPTER 2 LITERATURE STUDY	3
CHAPTER 3 RESEARCH METHODOLOGY	6
3.1. Preparing the device.....	6
3.2. Create Database.....	6
3.3. Data Source.....	6
3.4. Fuzzy Logic Sugeno Methods.....	7
3.5. Building Project	7
CHAPTER 4 ANALYSIS AND DESIGN	8
4.1. Analysis.....	8
4.2. Design	13

4.2.1 Flowchart System.....	13
4.2.1 Flowchart Fuzzy Sugeno.....	13
CHAPTER 5 IMPLEMENTATION AND TESTING	a
5.1. Implementation	a
5.2. Testing.....	h
5.2.1 Fuzzy Logic Testing Sugeno.....	j
5.2.1 Fuzzy Logic Testing Mamdani	m
CHAPTER 6 CONCLUSION	p
REFERENCES.....	q
APPENDIX.....	r



LIST OF ILUSTRATION

Ilustration 4.1.1 Arduino Uno	8
Ilustration 4.1.2 LDR Sensor Module	9
Ilustration 4.1.3 TDS Sensor	10
Ilustration 4.1.4 LED	11
Ilustration 4.1.5 Ethernet Shield	12
Ilustration 4.2.1 Flowchart System	13
Ilustration 4.2.2 Flowchart Fuzzy Sugeno Process	13
Ilustration 4.2.3 Turbidity Membership Degree Graph	14
Ilustration 4.2.4 TDS Membership Degree Graph	16
Ilustration 4.2.5 Graph of the Singleton Membership Function	17
Ilustration 5.2.1 LDR Sensor	h
Ilustration 5.2.2 TDS and LDR Sensor	i
Ilustration 5.2.3 Serial Monitor Arduino IDE	i
Ilustration 5.2.4 Database	j
Ilustration 5.2.5 Water Sensor Data Web View	j
Ilustration 5.2.6 Output Membership Degree Graph	m
Ilustration 5.2.7 Water Quality Guidelines According to WHO	o
Ilustration 5.2.8 TDS & EC Meter	o

LIST OF TABLE

Table 4.1. Tabel Fuzzy Rule 17

Table 5.1. Tabel Fuzzy Rulea

