

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

Water Quality Monitoring System With IOT

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08DEP19F1023

JABATAN KEJURUTERAAN ELEKTRIK

SESI 2 2021/2022

POLITEKNIK

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This report submitted to the Electrical Engineering Department in fulfillment of the requirement for a Diploma in Electrical Engineering

JABATAN KEJURUTERAAN ELEKTRIK

SESI 2 2021/2022

CONFIRMATION OF THE PROJECT

The project report titled "Design a Fingers Exergame to Improve Fine Motor Skill for Autistic Children Using Arduino" has been submitted, reviewed and verified as a fulfills the conditions and requirements of the Project Writing as stipulated

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“I acknowledge this work is my own work except the excerpts I have already explained to our source”

1. Signature : 

Name : **Joshua Wong Jian Jun**

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Date : **23 May 2022**

DECLARATION OF ORIGINALITY AND OWNERSHIP

TITLE : DESIGN FINGERS EXERGAME TO IMPROVE FINE MOTOR SKILL FOR AUTISTIC CHILDREN USING ARDUINO

SESSION: DECEMBER 2017


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2. I acknowledge that 'The Project above' and the intellectual property therein is the result of our original creation /creations without taking or impersonating any intellectual property from the other parties.
3. I agree to release the 'Project' intellectual property to 'The Polytechnics' to meet the requirements for awarding the **Diploma in Electrical Engineering** to me.

Made and in truth that is recognized by;

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) 
.....
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As a project supervisor, on the date:

ACKNOWLEDGEMENTS

I have taken efforts in this Project. However, it would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them. I am highly indebted to Puan Akmarya Sykhairilnisah Bt Mohd Akhir for their guidance and constant supervision as well as for providing necessary information regarding the Project & also for their support in completing the Project.

I would like to express my gratitude towards my parents & member of Polytechnic Sultan Salahuddin Abdul Aziz Shah for their kind co-operation and encouragement which help me in completion of this Project. I would like to express my special gratitude and thanks to industry persons for giving me such attention and time.

My thanks and appreciations also go to my colleague in developing the Project and people who have willingly helped me out with their abilities.

ABSTRACT

Water pollution is one of the biggest fears for the green globalization. To ensure the safe supply of the drinking water the quality needs to be monitor in real time. In this paper we present a design and development of a low-cost system for real time monitoring of the water quality in IOT (internet of things). The system consist of several sensors is used to measuring physical and chemical parameters of the water. The parameters such as temperature, PH, turbidity, flow sensor of the water can be measured. The measured values from the sensors can be processed by the core controller. The Arduino model can be used as a core controller. Finally, the sensor data can be viewed on internet using WI-FI system.

ABSTRAK

Pencemaran air adalah salah satu ketakutan terbesar untuk globalisasi hijau. Untuk memastikan bekalan air minuman selamat, kualiti perlu dipantau dalam masa nyata. Dalam kertas kerja ini kami membentangkan reka bentuk dan pembangunan sistem kos rendah untuk pemantauan masa nyata kualiti air dalam IOT (internet of things). Sistem ini terdiri daripada beberapa penderia yang digunakan untuk mengukur parameter fizikal dan kimia air. Parameter seperti suhu, PH, kekeruhan, sensor aliran air boleh diukur. Nilai yang diukur daripada penderia boleh diproses oleh pengawal teras. Model Arduino boleh digunakan sebagai pengawal teras. Akhirnya, data sensor boleh dilihat di internet menggunakan sistem WI-FI.

TABLE OF CONTENTS

CONFIRMATION OF THE PROJECT	i
DECLARATION OF ORIGINALITY AND OWNERSHIP	iii
ACKNOWLEDGEMENTS	iv
ABSTRACT	v
ABSTRAK	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF SYMBOLS	Error! Bookmark not defined.
LIST OF ABBREVIATIONS	Error! Bookmark not defined.
CHAPTER 1	1
1 INTRODUCTION	1
1.1 Introduction	1
1.2 Background Research	1
1.3 Problem Statement	1
1.4 Research Objectives	2
1.5 Scope of Research	2
1.6 Project Significance	2
1.7 Chapter Summary	2
CHAPTER 2	3
2 LITERATURE REVIEW	3
2.1 Introduction	3
2.2 Motor Skill Challenges in Autistic Children (Literature Review Topic 1)	Error!
Bookmark not defined.	
2.2.1 Previous Research (Subtopic Literature Review Topic 1)	Error!
	Book
	mark
	not
	define
	d.
2.3 Control System (Literature Review Topic 2)	Error! Bookmark not defined.
2.3.1 Microcontroller	Error!
	Book
	mark
	not
	define
	d.
2.3.2 Programmable Logic Control (PLC)	Error!
	Book
	mark
	not

2.3.3	Arduino	define d. Error! Book mark not define d.
2.4	Chapter Summary	5
CHAPTER 3		6
3	RESEARCH METHODOLOGY	6
3.1	Introduction	6
3.2	Project Design and Overview.	6
3.2.1	Block Diagram of the Project	6
3.2.2	Flowchart of the Project 2	7
3.2.3	Project Description	8
3.3	Project Hardware	8
3.3.1	Schematic Circuit	8
3.3.2	Description of Main Component	9
3.3.2.1	Component 1	Error!
	Bookmark not defined.	
3.3.2.2	Component 2	Error!
	Bookmark not defined.	
3.3.2.3	Component 3	Error!
	Bookmark not defined.	
3.3.3	Circuit Operation	11
3.4	Project Software	11
3.4.1	Flowchart of the System	12
3.4.2	Description of Flowchart	12
3.5	Prototype Development	13
3.5.1	Mechanical Design/Product Layout	13
3.6	Sustainability Element in The Design Concept	Error! Bookmark not defined.
3.7	Chapter Summary	13
CHAPTER 4		14
4	RESULTS AND DISCUSSION	14
4.1	Introduction	14
4.2	Results and Analysis	14
4.3	Discussion	Error! Bookmark not defined.
4.4	Chapter Summary	16
CHAPTER 5		17
5	CONCLUSION AND RECOMMENDATIONS	17
5.1	Introduction	17
5.2	Conclusion	17
5.3	Suggestion for Future Work	Error! Bookmark not defined.
5.4	Chapter Summary	17
CHAPTER 6		18
6	PROJECT MANAGEMENT AND COSTING	18

6.1	Introduction	18
6.2	Gant Chart and Activities of the Project	18
6.3	Milestone	Error! Bookmark not defined.
6.4	Cost and Budgeting	18
6.5	Chapter Summary	19
REFERENCES		26
7	APPENDICES	Error! Bookmark not defined.
	APPENDIX A- DATA SHEET	Error! Bookmark not defined.
	APPENDIX B- PROGRAMMING	Error! Bookmark not defined.
	APPENDIX C- PROJECT MANUAL/PRODUCT CATALOGUE	Error! Bookmark not defined.
	defined.	

LIST OF TABLES

TABLE	TITLE	PAGE
	Table 2.1: Treatments to Improve Motor Skills in the Market . Error! Bookmark not defined.	
	Table 3.1:Sequence of Finger Model Blinking..... Error! Bookmark not defined.	
	Table 3.2: Means and Standard Deviations (In Brackets) Of Strength Scores (In Pounds Force) For Each Hand Of Males. Right Hand. Error! Bookmark not defined.	

LIST OF FIGURES

FIGURE	TITLE	PAGE
Figure 2.1:	Block diagram of open loop and closed loop system	Error! Bookmark not defined.
Figure 3.1:	Flow chart of operation of the system	7
Figure 3.2:	Circuit Diagram	8
Figure 3.3:	Front view of the project	Error! Bookmark not defined.

CHAPTER 1

1 INTRODUCTION

1.1 Introduction

Water Quality Monitoring (WQM) is a cost-effective and efficient system designed to monitor drinking water quality which makes use of Internet of Things (IoT) technology. ... The obtained data is sent to the cloud by using IoT based Think Speak application to monitor the quality of the water. Monitoring provides the objective evidence necessary to make sound decisions on managing water quality today and in the future. Water-quality monitoring is used to alert us to current, ongoing, and emerging problems; to determine compliance with drinking water standards, and to protect other uses of water.

1.2 Background Research

In the 21st century, there were lots of inventions, but at the same time there were pollutions, global warming and so on are being formed, because of this there is no safe drinking water for the world's population. Nowadays, water quality monitoring in real time faces challenges because of global warming limited water resources, growing population, etc. Hence there is need of developing better methodologies to monitor the water quality parameters in real time [1]. The water quality parameter pH measures the concentration of hydrogen ions. It shows the water is acidic or alkaline. Pure water has 7pH value, less than 7pH has acidic, more than 7pH has alkaline. The range of pH is 0-14 pH. For drinking purpose, it should be 6.5-8.5pH. Turbidity measures the large number of suspended particles in water that is invisible. Higher the turbidity higher the risk of diarrhea, cholera. Lower the turbidity then the water is clean. Temperature sensor measures how the water is, hot or cold. Flow sensor measures the flow of water through flow sensor. The traditional methods of water quality monitor involve the manual collection of water samples from different locations.

1.3 Problem Statement

Aquatic living things sometimes don't know the water is good or bad but they just telling you from their way they act in the water and if serious, aquatic living things might die due to the bad quality of water. At the same time, human also need to drink clean water. If the water is polluted, even human got water purifier in their house, the water purifier still cannot 100% clean all the bacteria in the polluted water.

1.4 Research Objectives

- This project will let the water become clean so that the living things in the water will have a good living environment.
- This system will detect any dirty things such as bacteria in the water apps that install in smartphone.

1.5 Scope of Research

Water Quality Monitoring System use IOT concept in this project. It is detecting the more parameters for most secure purpose. Increase the parameters by addition of multiple sensors. By interfacing relay, we controls the supply of water.

1.6 Project Significance

As the result, the system that has generated is expected to continue to expand with concomitant change in time with the developed and equipped with a great technology. It is envisaged that the system can overcome the water quality problem and can help us to check the water quality easier. With the creation of this system, hopefully the relevant department can be more responsible for ensuring the water quality because water is very important for human in life. However, the system is capable of being treated to better ensure of the resulting system will become more efficiently.

1.7 Chapter Summary

This chapter contains contents such as introduction, background research, problem statement, research objective, scope of research and project significance related to the creation of this project.