

**DEVELOPING NODE-RED TRAINING MODULE FOR INDUSTRIAL
AUTOMATION**

By

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

DEVELOP NODERED TRAINING MODULE FOR INDUSTRIAL AUTOMATION

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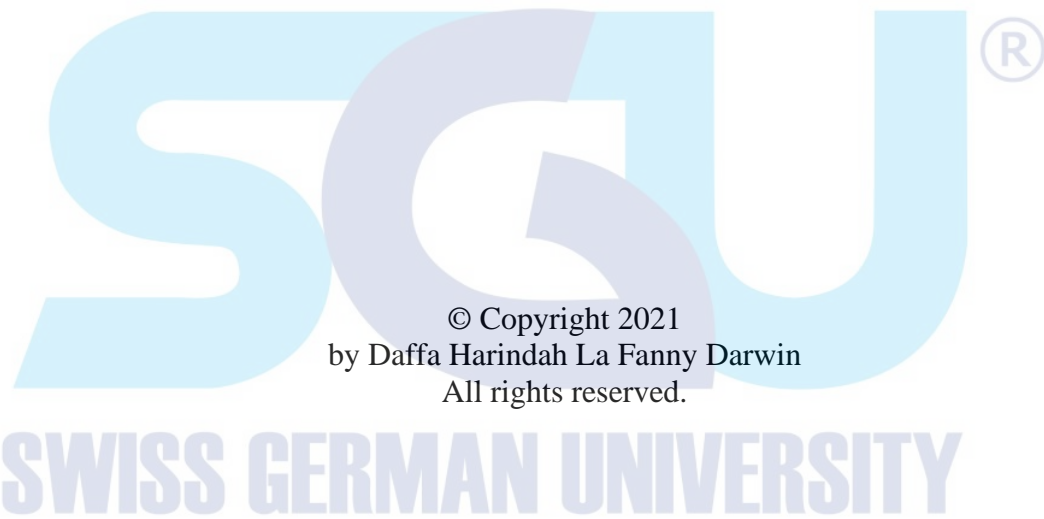
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Node-RED is a programming tool that can be operated inside a browser that uses nodes to create graphical flows. The problem in this thesis is the rise of e-learning in education institutions especially in industrial automation and to show the chance of learning IoT with Node-RED. The purpose of this research is to develop a training module towards industrial automations by using a Node-RED. By that means, to know how the digitization process called Node-RED works is by developing a training module regarding the practicality of IoT by using Node-RED.

Thus, to create the training module regarding the practical works of IoT in the platform of Node-RED, this thesis project uses one of the models in lean tools called ADDIE framework methodology to develop the training module followed by Flip Classroom method to deliver the learning content from the developed training module. After defining the training module to the Node-RED, the design of the training module will be created following development through ADDIE. Therefore, the proper materials that will fit the training will be provided. While the proper material has been provided, then the implementation of the training will begin followed by 9 participants for the User Acceptance Test. The four out of nine (44,4%) consider good, another four (44,4%) consider great, and one out of nine (11,1%) consider excellent.

Keywords: ADDIE, IoT, Industrial Automation, Node-RED, Training Module



DEDICATION

I dedicate this work to my parents and myself, who always support me in any situation that I have been through, including to my Industrial Engineering Lecturers and my supportive friends that have helped me so far that gave me valuable lessons, experience, and determination in my life.



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Then, I also not forgetting everyone that always cheer me on this thesis work beginning from the preparation to the final work, I am very thankful to them for those who always supporting me with any kind of actions so that I can finish my thesis work with various of emotions such as cheerful, gloomy, exhausted, all those distorted feelings—either positive feelings or negative feelings.

I also try my best to fight with myself to become a better person as best as I can be than myself back before I come to the present as now. With that being said, I keep myself grateful and humble to my family that supports and encourages me without any intentions, beginning from the scratch of an idea. I really love my family, my advisor and co-advisor that they supported me all the time and always keep me in track that makes me realized that I have everyone that believe and support me through my thesis work which that makes me always feel motivated to work on my thesis project, because if I am being lazy and not putting my dedication to this thesis, that means I disrespect their believes and supports to me.

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TABLE OF CONTENTS

	Page
STATEMENT BY THE AUTHOR.....	2
ABSTRACT.....	3
DEDICATION.....	5
ACKNOWLEDGEMENTS.....	6
TABLE OF CONTENTS.....	7
LIST OF FIGURES.....	9
LIST OF TABLES.....	10
CHAPTER 1 - INTRODUCTION.....	11
1.1 Background.....	11
1.2 Research Problem.....	12
1.3 Research Objective.....	12
1.4 Significance of Study.....	12
1.5 Research Scope and Limitation.....	12
1.6 Research Question.....	13
1.7 Thesis Structure.....	13
CHAPTER 2 – LITERATURE REVIEW.....	14
2.1 Internet of Things.....	15
2.2 Industrial Automation.....	16
2.3 Cloud.....	17
2.4 MQTT.....	18
2.5 Node-RED.....	18
2.6 Modbus.....	20
2.7 ADDIE Approach.....	21
2.8 Flip Classroom.....	22
2.9 Electronic Learning Management System.....	23
CHAPTER 3 – RESEARCH METHODOLOGY.....	25
3.1 Analysis.....	26
3.2 Design.....	26
3.3 Development.....	27

3.3.1 Training Module Development.....	27
3.4 Implementation	28
3.4.1 Implement the Developed Training Module.....	28
3.5 Evaluation	29
3.2.2.1 Before Class	31
3.2.2.2 During Class.....	31
3.2.2.3 After Class.....	31
CHAPTER 4 – TRAINING MODULE DESIGN AND COURSE DEVELOPMENT	32
4.1 Design Course for the Training Module	32
4.1.1 Node-RED Beginner Course’s Syllabus	34
4.1.2 Node-RED Intermediate Course’s Syllabus	38
4.1.3 Node-RED Advanced Course’s Syllabus	39
4.2 Training Module Development.....	41
4.2.1 Module	41
4.2.2 Training Presentation	42
4.2.3 Training Equipment	43
4.2.4 Theory and Practice Assessment.....	43
CHAPTER 5 – DEVELOPED COURSE’S IMPLEMENTATION AND E- LEARNING TEST ANALYSIS	45
5.1 Implement the Developed Training Module.....	45
5.1.1 System Requirement	45
5.1.2 E-Learning Content Development	45
5.2 Visual of the ELMS	47
5.3 Visual of the Module	50
5.4 Visual of the Quiz	51
5.5 E-Learning Test (User Acceptance Test).....	52
5.5.1 User Acceptance Test (Node-RED Beginner Course).....	52
CHAPTER 6 – CONCLUSION AND RECOMMENDATIONS	58
6.1 Conclusion	58
6.2 Recommendation	59
GLOSSARY	60
REFERENCES	61
CURRICULUM VITAE	63

LIST OF FIGURES

Figures	Page
2.1. Literature Review Mind-map.....	14
2.2. Common Control Packet Format Based on the MQTT Version 3.1.1. Oasis Standard	17
2.3. Node-RED Editor.....	19
2.4. Action fields of Modbus based on the ISA 95 model and related standards	21
2.5. The ADDIE Concept Based on the Instructional Design by Branch, 2010.....	22
3.1. ADDIE Model FLOWchart	25
3.2. Analysis Phase	26
3.3. Design Phase	26
3.4. Development Phase.....	27
3.5. Implementation Phase	28
3.6. Evaluation Phase	29
3.7. Flip Classroom Flowchart.....	30
5.1. Visual of the ELMS	47
5.2. Visual of the ELMS	48
5.3. Visual of the ELMS	49
5.4. Visual of the Provided Module in the E-learning	50
5.5. Visual of the Provided Quiz in the E-learning.....	51
5.6. Result of the Responses	52
5.7. Result of the First Student Section.....	53
5.8. Result of the Second Student Section	54
5.9. Result of the Well-being Design of the E-learning Platform.....	54
5.10. Visual of the E-learning Platform's Design Attractiveness	55
5.11. Visual of the E-learning Platform Simplicity	56
5.12. Visual of the E-learning Platform's Overall Quality	57

LIST OF TABLES

Table	Page
Table 4.1. Course Divisions for the Node-RED E-learning	32
Table 4.2. Node-RED Beginner Course's Syllabus	34
Table 4.3. Node-RED Intermediate Course's Syllabus	38
Table 4.4. Node-RED Advanced Course's Syllabus	39

