

**DESIGNING AND IMPLEMENTATION OF A SIMPLE ROBOTIC ARM
LOADING AND UNLOADING PRODUCTS ON A PRESS MACHINE**

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 Master's degree at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

DESIGNING AND IMPLEMENTATION OF A SIMPLE ROBOTIC ARM FOR LOADING AND UNLOADING PRODUCTS ON A PRESS MACHINE

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This thesis focuses on design, implementation and control of three degree of freedom (DoF) robotic arm using servo motor with an Arduino Uno microcontroller to improve the effectiveness of the loading and unloading product on a press machine at Atmi Cikarang. The input of this robot is the initial coordinates and final coordinates that are computed by the method of inverse kinematics. The output of the form of large angle of each joint is required in order for the robot arm reaches the desire point coordinates. In ensuring the system analysis of the movement of the robotic arm, we communicate the Arduino with GUI Visual Basic 6.0 to get accurate data. An error value movement of the servo motor on each joint is a problem to be researched, so that the error value of the reached coordinate from inverse kinematic can be analyzed. Based on this case, the author will try to make a Mini Robotic Arm Based Arduino and Visual Basic 6.0. This project started with literature review of relevant journal, mechanical and electrical design. Design three Revolute Joint manipulator arm is chosen as the mechanical hardware, arduino uno board as the electrical hardware, Arduino IDE and Visual Basic 6.0 as the software, and support material about inverse kinematic. This project has successfully create Mini Robotic Arm Hardware and Software which can move from initial point to desired position. The results is that, the robot is able to move the object from one point coordinate to another within an average period of 5° - 6° error value at servo motor rotation and 5mm - 10mm error value coordinate as well as the level error that occurred in the achievement of the desired target. Based on the results of the implementation system of the arm robot assessed transporter.

Keywords: Automate, Visual Basic 6.0, Microcontroller, Robotic Arm, Kinematic.



DEDICATION

I dedicate this research for the future of ATMI Solo and ATMI Cikarang as my place
of study and work



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TABLE OF CONTENTS

	Page
STATEMENT BY THE AUTHOR	2
ABSTRACT.....	3
DEDICATION	5
ACKNOWLEDGEMENTS	6
CHAPTER 1 - INTRODUCTION	13
1.1 Background	13
1.2 Research Problem	14
1.3 Scope of Problem	17
1.4 Research Objectives	17
1.5 Significance of Study	18
1.6 Research Question	18
1.7 Research Hypothesis	18
1.8 Overview	19
CHAPTER 2 - LITERATURE REVIEW	18
2.1 Previous Study	20
2.2 Case Study 1	23
2.2.1 Block System Diagram	24
2.2.2 Mechanical Hardware of SCARA	25
2.2.3 Software Design of SCARA	26
2.2.4 Conclusion	28
2.3 Case Study 2	28
2.1.2.2 Block System Diagram	29
2.1.2.3 Mechanical Hardware Design	30
2.1.2.4 Software Design	30
2.1.2.5 Conclusion	31
2.4 Comparison of Case Study	32
2.5 Kinematics Robot Arm	33
2.6 Kinematics Control Robot	33
2.7 Control System.....	35

CHAPTER 3 – RESEARCH METHOD	36
3.1 Research Method	37
3.2 Design Justification.....	38
3.3 Material and Equipment.....	38
3.3.1 Chip.....	38
3.3.2 Arduino Uno.....	40
3.3.3 Arduino IDE.....	42
3.3.4 Motor Servo	43
3.3.5 Mococontroller	44
3.3.6 Computer Communication with Microcontroller	45
3.3.7 Visual Basic 6.0	45
3.3.8 Robotic Manipulator Arm	47
3.4 Mechanical Hardware Design.....	51
3.5 Kinematics Modeling.....	53
3.5.1 Kinematics of 1 joint arm	53
3.5.2 Kinematics of 2 joint arms	54
3.5.3 Kinematics of 3 joint arms	56
3.5.4 Inverse Kinematic of RRR Articulated Arm Modeling	56
3.6 Software Design.....	58
3.6.1 Guide User Interface (GUI) with Visual Basic 6.0.....	58
3.6.1.1 Flow Diagram of GUI Visual Basic 6.0	60
3.6.2 Diagram Arduino Program.....	62
3.7 Experimental Research	63
3.7.1 Venue and Time.....	63
3.7.2 Material and Equipment.....	63
3.7.3 Preliminary of Research.....	63
3.7.4 Design of Experiment	64
3.7.5 Experiment Procedure.....	64
3.7.6 Obsevation	65
3.7.7 Analytical Procedure.....	65
3.7.8 Time Frame of Work Process.....	66
3.7.9 Frame Work of Research.....	67
3.7.10 Research Strategy Refer to Below Research Flow	68
3.7.11 Motor Servo Verification.....	69

CHAPTER 4 – RESULTS AND DISCUSSIONS	74
4.1 Mechanical Hardware	74
4.2 Electrical Hardware	75
4.3 Software	78
4.3.1 GUI (Guide User Interface) by Visual Basic 6.0	78
4.3.2 Arduino Programming	83
4.4 Analytical Observation.....	86
4.4.1 Movement of The Arm.....	86
4.4.2 Angle of Servo Analysis.....	87
4.4.3 Accuracy of X, Y, and Z Coordinate Analysis	90
CHAPTER 5 – CONCLUSIONS AND RECOMMENDATIONS.....	94
5.1 Conclusion	94
5.2 Suggestion.....	94
REFERENCES	95
CURRICULUM VITAE	98
APPENDIX 1 – Arduino Coding.....	99
APPENDIX 2 – Visual Basic 6.0 Coding For Single Movement.....	102
APPENDIX 3 – Visual Basic 6.0 Coding For Cycle Movement.....	106



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