

**SIMULATION OF PICK AND PLACE ROBOTICS SYSTEM
USING SOLIDWORKS SOFTMOTION**

This thesis is presented in partial fulfilment for the award of the
Bachelor of Engineering (Honours) in Electronic Engineering (Instrumentation)
UNIVERSITI TEKNOLOGI MARA (UiTM)
SHAH ALAM, MALAYSIA



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JULY 2012

ACKNOWLEDGEMENT

All praise and glory be to Allah S.W.T whose infinite generosity has given me the strength to complete this final year project in time. My highest gratitude to Him, for without His consent, this project could not have been completed.

First and foremost, I would like to thank to my supervisor of this project, Dr Rosidah binti Sam for the valuable guidance and advice. She inspired me greatly to work in this project. Her willingness to motivate me contributed tremendously to my project. I also would like to thank her for showing me a lot of method that related to my project.

Besides, I would like to thank the authority of Universiti Teknologi MARA (UiTM) for providing me with a good environment and facilities to complete this project.

Finally, an honourable mention goes to my families especially my beloved father, Ismail bin Menhad and beloved my mother, lecturers, supporting staffs and friends especially Nasrul Zaimun Fadly bin Muhamad Najib, Abdul Malik bin Mohd Noor and Nuzul Izuan bin Mohd for their understanding and supports on me in completing this subject. Without help of the particular that mentioned above, me would face many difficulties while completing this project.

To each everyone, your assistance has been much appreciated. Please accept my deepest appreciation and thanks. May God bless you all always.

ABSTRACT

This thesis present the design of pick and place robotics system using Solidworks software. It involved design a Cartesian and articulated arm with different gripper and being analyze by using simulation xpress study and motion study. Three dimension computer aided design (3D CAD) software enhance skills and knowledge of designing automation and robotic in industry. The robot design need to be accomplished in 3D CAD to shorten the robot development time, increase the productivity of the designer and improve the speed and quality of robot design. The Solidworks 3D CAD software consist of four sections which is manual drawing, part module, assembly module and drawing module. The robotics system has simulated using Solidworks softmotion simulation software. The results of simulation xpress study and motion study of the articulated robot arm part and assembly are presented to demonstrate the pick and place robotics system.

TABLE OF CONTENTS

CERTIFICATE OF APPROVAL	i
DECLARATION BY CANDIDATE	ii
ACKNOWLEDGEMENT	iii
ABSTRACT	iv
LIST OF FIGURES	vii
LIST OF SYMBOLS AND ABBREVIATIONS	x
CHAPTER 1	1
INTRODUCTION	1
1.0 BACKGROUND OF STUDY	1
1.1 PROBLEM STATEMENT	2
1.2 OBJECTIVE	2
1.3 SCOPE OF WORK	3
1.4 PRINCIPLE OPERATION	3
1.5 THESIS ORGANIZATION	4
CHAPTER 2	5
LITERATURE REVIEW	5
2.0 INTRODUCTION	5
2.1 AUTOMATION AND ROBOTICS	5
2.2 ROBOT MECHANISM	7
2.3 ROBOTIC COMPONENT	11
2.4 ROBOT GEOMETRICAL STRUCTURE	14
2.5 RELATED PREVIOUS STUDY	18
CHAPTER 3	19
METHODOLOGY	19
3.0 INTRODUCTION	19
3.1 PROJECT METHODOLOGY	19
3.1.1 MANUAL DRAWING	20

CHAPTER 1

INTRODUCTION

1.0 BACKGROUND OF STUDY

In recent years, the automation and robotics in industry has been changed a lot by the power of design technology. The combination of the design and robotics technology introduced the easiest process of making a robot for industry uses. For present and future, the industrial robots are the most important components used at all types of factory. The industrial robots are increasing demand day by day. The industrial robots have potential for flexibility and intelligent in performing tasks, acceptable cost and high level of quality [1].

The robot and automation specialty is the system that virtually designs to model a real world object into three dimension (3D) model design. A virtual design in the computer can be defined as Computer Aided Design (CAD). It is due to appropriate and economical aspect and also the 3D design can be done on the computer before can be applied into a real world. This project was use 3D CAD robot and automation design based on Solidworks software [2]. A pick and place robotics system was assembled after all parts have been created by considering all the parameters for combination the whole system. The pick and place robotics system was developed for grasp, pick and assemble the base, cylinder and cover of the product to become one complete product by using movement combination of Cartesian robot, articulated robot arms and conveyors.