AUTOMATIC MODERN GARBAGE SYSTEM COLLECTION

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BEKC

2009/2010

"I hereby declared that I have read through this report entitle "AUTOMATIC MODERN GARBAGE SYSTEM COLLECTION" and found that is no comply the partial fulfillment for awarding the degree of Bachelor in Electrical Engineering (Control, Instrument and Automation)

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Date : 10/5/2010

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A Report Is Partial Fulfillment Of Requirements for the Degree of Bachelor In Electrical Engineering (Control, Instrument and Automation)

Faculty of Electrical Engineering
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2009/2010

"I declared that this report entitle "AUTOMATIC MODERN GARBAGE SYSTEM COLLECTION" is the result of my own research as cited in reference. This report has not been accepted for any degree and is not concurrently submitted in candidature of any other degree."

Signature : .....

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Date : 10/05/2010

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Not to forget my friends out there for their support and help since the day we started to do our Final Year Project. It involved many individuals whose comments and ideas made it possible for us to complete my project. I can never forget your kindness. Thanks to all and may God bless you.

ABSTRACT

This project is about designing and developing a prototype of an automatic modern garbage system collection to make the process of collection garbage is convenience to use, less maintenance and less smell. The project proposed is fully automatic system which can reduce the time and power consumption. The automatic modern garbage system collection is fully automatic using Programmable Logic Controller as the controller for this project .The program is design is by using the CX-programmer and can be simulated based on the design. The automatically process starts from the inserting the garbage bag, then sealing and finally arranges the bag automatically. The development of the hardware for this project is the most important part. The researching, designing and developing for the mechanism for the process need to be done properly so that the process can run as plans.

ABSTRAK

Projek ini adalah tentang mereka dan membangunkan sebuah prototaip sistem pengumpulan sampah moden secara automatic untuk membuat proses pengumpulan sampah mudah untuk digunakan, mudah diselenggara dan pengurangan bau. Projek yang dicadangkan adalah sebuah sistem automatik sepenuhnya yang dapat menjimatkan masa dan mengurangkan penggunaan tenaga kerja. Pengumpulan sampah automatik sistem moden adalah sepenuhnya automatik dengan menggunakan Programmable Logic Controller sebagai sistem yang mengawal untuk projek ini. Program untuk kawalan ini direka dengan menggunakan perisian CX-programmer dan boleh disimulasikan berdasarkan rekaan process. Proses secara automatik bermula dari memasukkan beg sampah, kemudian menutup dan akhirnya menyusun secara automatik.Pembangunan perkakas untuk projek ini adalah bahagian paling penting.Penyelidikkan,rekaan dan membangunkan mekanisme untuk proses perlu dilakukan dengan betul agar proses dapat dijalankan seperti yang dirancang

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The automatic modern garbage system collection is designed to make the process of collection to be made so it convenience to use, less maintenance, less smell, and less power consumption.

Nowadays the process and system for garbage are done normally. This may cost a lot of waste from every aspect such as time and man power. From the problem, came an idea to design this project that can be useful to people. The project proposed is fully automatic system which can reduce the time and power consumption.

The system collection is fully automatic using PLC .The program is design is by using the CX-programmer and can be simulated based on the design. The automatically process starts from the inserting the garbage bag, then sealing and finally arranges the bag automatically.

1.2 Project Objectives

The objective is too designed and developed an automatic modern garbage system collection and make all the process of the system is fully automatic by using PLC.

1.3 Scope of the Project

The scope of this project will cover on:

i. The development the programs using CX-programmer

ii. The automatic system is controlled by PLC

iii. Proper interfacing between hardware and PLC

1.4 Problem Statement

Now day the process of collection garbage is operated manually. This process is normally needs to be done daily such as changing the plastic, transferring to larger container and tie up the bag normally. This process consumes more energy to be completed. This project proposed is designed to processes, which operate automatically. This includes the process of transferring and collecting the garbage once per week and could reduce the smell of the garbage.

CHAPTER 2

LITERATURE REVIEW

2.1 SWOT Analysis

SWOT Analysis is a strategic planning method used to evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in a project. It involves specifying the objective of the project and identifying the internal and external factors that are favorable and unfavorable to achieving that objective.

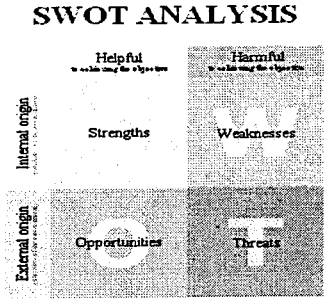
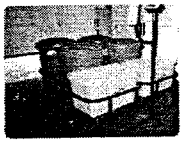


Figure 2.1 : Swot analysis method

Before starting do this project. Some researching about related programs and information need to be done. This analysis is to comparing other project with this project that want to be build using this method of SWOT analysis as shown in Figure 2.1. By using this method it easy to determine the value of this project (Automatic Modern Garbage).Table 1 show the SWOT analysis for this project.

Table 1: SWOT analysis for this project

SWOT / Product	**Automatic Modern Garbage System Collection**	**Automatic dustbin, electric sensor** 	**The Trash Robot Series 4000** 	**Heavy-Duty Garbage Disposer** 
Strength	-The project is design to make the life easier. -Fully operates automatically by using PLC - Design to make the process of collection to be made so it convenience to use, more convenience to maintain, less smell, and less using main power. -Can store a certain amount of garbage bag	- The cover will automatically open and close. -This trashcan creates a germ free, odor free, automated environment. It keeps your hands clean while you are cooking or playing with your children. -It also helps prevent contamination, which reduces the threat of certain illnesses and infections.	-The 4-Can Trash Robot cart, which holds up to four 32-gallon trash containers and up to 4 recycling bins. -Features: 4-Wheel Drive (All-Terrain) -Battery-Powered -Motor Intelligent Guidance Module Collision Detector Solar Panel or AC Battery Charging -Optional Strobe Light or Lighted Fiber Ring Audible Alarm	-Ultra-practical recycling container, helps user to easily sort out garbage without taking too much space -Color-coded in order to divide all recyclable and non-recyclable materials conveniently -Made of polypropylene -Eco-friendly •Available in three sizes

Weaknesses	- Suitable in office user - the designing of the product is complicated -The material that it use basically heavy. -Required a big area to place it	-The system collection is still manually. -Need a daily routine to change the garbage bag and throwing it.	-The system collection is still manually. -Need a daily routine to change the garbage bag and throwing it. -Required a large are to place it.	-same with the normal rubbish container such as dustbin or garbage can
Opportunities	- This project is having a large opportunity in office user.	-Because the trashcan turns an ordinary chore into something fun, your kids will have fun throwing the trash away for you	-suitable for small industrial user	-suitable for houses and office user
Threat	-The price may be large because it using PLC compare to the other system.	-There is a lot similar design such as this product	- Still need to be control by a remote	-There is a lot similar design such as this product

This is the SWOT analysis which had been done after several researches on the information related with FYP project. This analysis still could determine and show the value of this project. It also can show the weakness and the threat of this project. From this analysis this project can be improve and re-adjusted to make it the best product and different from another product. From this analysis also make the project seem valuable to create.