



**MAGIC CLEANER**

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**JABATAN KEJURUTERAAN MEKANIKAL  
POLITEKNIK SEBERANG PERAI**

**SESI JUN 2017**

**DECLARATION FINAL REPORT SUBMISSION**

**DECLARATION FROM STUDENTS (GROUP LEADER)**

PLEASES TICK ( / )

We have made all the necessary amendments based on comments and suggestions given by the supervisor and panel.

Format for report writing is in accordance with the format guidelines.

We have the approval of the report from the supervisor.

This report is the property of Politeknik Seberang Perai.

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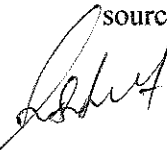

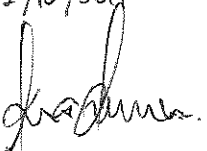
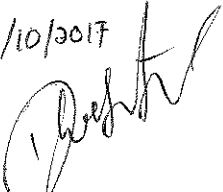

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## ABSTRACT

This paper focuses on cleaning machine design and development. It is a modern tool that is used to process of cleaning place without any deflection. Furthermore, the objective of this project is to save a person's energy and time comparing to the tradition cleaning method. This tool is very useful to assist the process of cleaning the place. This machine can help to clean the surrounding with a feet calculation of 6.5 x 3.5 width in 8 minutes. This machine is very helpful to improve productivity. The special of this machine, it is a multiple usage machine because once we clean the surface we can use blower to dry the surface. The process of cleaning the surrounding is to remove hard strains and dirt can't be clean by bare hands. In conclusion the cost of our machine is RM 1008.90 only and this expense is because of the materials which is Aluminum, Perspex, Air blower and other tools to create this cleaning machine we used is more quality rather than using local materials which is not save.

## ACKNOWLEDGEMENT

Thankful to God for his bounty and we could complete our review of this perfectly.

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## **Abstrak**

Mesin pembersihan Magik cleaner yang kami bina memberi tumpuan kepada keselesaan dan kepuasan kepada pengguna dengan memberikan pengalaman yang tidak pernah dilihat.

Mengapa kita mereka magik cleaner yang unik untuk Jabatan Mekanikal, Politeknik Seberang Prai? Ia adalah kerana pada masa kini, malangnya, membersihkan sebuah tempat secara manual telah memberi beberapa perkara negatif ataupun sering disalahgunakan, di mana beberapa orang boleh membersihkan sebuah tempat pada masa yang sama. Kami mereka dan mencipta mesin magik cleaner yang memberi tumpuan ke atas kemudahan orang dewasa terutamanya warga emas. Mesin yang kami reka mengalakkan ramai orang untuk tidak baring.

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# Chapter 1

## INTRODUCTION

### 1.0 Introduction

The final semester project aims to train student to become more creative and innovative in producing a product according to current demands in carrying, earing and gaining knowledge of mechanical engineering at the polytechnic. To meet the requirement of the final project, our group has decided to produce a project to help in everyday life, called MAGIC CLEANER, a type of the product to clean the all types of material except rough surface.

The idea to create this project steams from the thinking members of our group as well as help from our supervisor, Puan Zailinda Binti Yasaf. With a project like this, it makes users to understand the use of MAGIC CLEANER. In addition, indirect users can ease the daily load.

MAGIC CLEANER is a cleaning product to help residents and senior citizens. This project can be used very easily. With its use, nowadays, we have taken the initiative to produce our products namely MAGIC CLEANER as our final project. Many of the problems that arise in completing our project proposal, which is looking good arrangement concept, specifications for material costs, as well as the use of mechanical equipment operates a creation machine.

The problem that we face has been done some solution with a bit of knowledge learned at polytechnic, and from help of supervisors and lecturers as well as experience while working. For example, in the 2nd semester we must learn how to design a project is created, and from that judge or conclude in preparing our proposal.

## **1.1 Background of Problem**

Magic cleaner is a term used to describe any type of labour or work that is managed using a work rather than with the use of heavy machinery in a plant setting or in a larger area. The term is also sometimes used to refer to the structures that support finished projects such as model train sets that are set up on a more or less permanent basis. With all applications, the idea is that the job is completed at a stationary setting rather than relying on machinery to do the job.

Magic cleaner construction is often thought of as being more time-consuming than using machinery to mass produce different types of products. While the process is somewhat slower, proponents of the approach tend to claim that the construction is of a higher quality than can be produced with the use of machines. Others find there is no real difference in the quality of the two approaches, or that the modern use of computer technology as part of the manufacturing process makes it possible to mass produce our project creation.

As it relates to creating permanent displays for working train model sets, magic cleaner often involves the task of what is known as track planning. This simply means that the top area of the machine or frame that will support the train set is laid out in terms of where the tracks will be placed and what the surrounding landscape for the presentation will be. In this scenario, the goal is to make sure the cleaning machine is strong enough to support the presentation for an extended period of time, and that the underside of the supporting structure is accessible, making it possible to install and repair any type of electrical wiring or circuitry that is necessary to the operation of the model trains. This is true whether the train is set up at home as part of a hobby, or if the train is on permanent display at a museum or some other public venue.

## **1.2 Problem Statement**

Why are we creating magic cleaner? It is because nowadays in daily lives household organizer in need of this kind of product to solve their experiencing problem. For example, it's because now days in housing area and restaurants, hand definition is getting more due to the working circumstance.

Cleaner, housewife need a new device to clean a wide surface for example dine or coffee table, window glasses and sliding door to help them to save their energy other than that clear, housewife need to clean in a short period time. So, by creating magic cleaner, we wish this magic cleaner will help the household organizer to reduce this kind of problems.

### **1.3 Objectives**

The objective of this project is to produce magic cleaner that capable for material handling task which meet the criteria below:

- a) To clean flat surface of wooden and glass object
- b) To Less time to do cleaning work comparing the traditional method
- c) To Save a person energy

### **1.4 Scope of Project**

Scope project is an important element to make sure the project can be finish like how the schedule runs. So, scope project must be followed to prevent the project out from the objective.

Scopes of the project are:

- a) The product can be used for limited height only.
- b) Can use in smooth surfaces only.
- c) Can use on wooden objects Can wipe glasses without any scratches.

## 1.5 Definition of Terms

The terms that can describe our project in this study are:

### **Magic**

The term magic has a variety of meanings, and there is no widely agreed upon definition of what it is or how it can be used. Magic is a word that cleans all type of hard strain without any trouble the cleaning process in our machine just vanishes all type of strains instantly.

### **Household**

A household consists of one or more people who live in the same dwelling and also share at meals or living accommodation, and may consist of a single family or some other grouping of people.[2] A single dwelling will be considered to contain multiple households if either meals or living space are not shared

### **Detergent**

A detergent is a surfactant or a mixture of surfactants with cleaning properties in dilute solutions.[3] A family of compounds that are similar to soap but are more soluble in hard water, because the polar sulfonate (of detergents) is less likely than the polar carboxylate (of soap) to bind to calcium and other ions found in hard water.

### **Blower**

A centrifugal fan is a mechanical device for moving **air** or other gases. The terms "**blower**" and "squirrel cage fan", (because it looks like a hamster wheel), are frequently used as synonyms. These fans increase the speed and volume of an **air**stream with the rotating impellers<sup>[4]</sup>



## **1.6 Conclusion**

In conclusion, the production of the magic cleaner is mainly to solve a problem and also to help mentally challenged people, senior citizens and workers who barely can't work without a support. Moreover, the magic cleaner is also mainly created to make a person lifestyle easier comparing to manual cleaning. On the second the second thought the magic cleaner is also beneficial in cleaning fragile things. Lastly, we think our product will be a success and will be helpful for others.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.0 Introduction

In this

chapter, we would like to share about the Analyze the Existing Project, Study, and Design. Additionally, we have also explained about the Materials and Components that we have planned to use for our project. Most importantly we will be stating some Theory Related to our project.

#### 2.1 Analyze the Existing Project, Study, and Design

**Vacuum Cleaner**, also known as a sweeper, is a device that uses an air pump (a centrifugal fan in all but some of the very oldest models), to create a partial vacuum to suck up dust and dirt, usually from floors, and from other surfaces such as upholstery and draperies. The dirt is collected by either a dust bag or a cyclone for later disposal. [5]



Figure 2.1

**Automatic Hand Dryers** are electric devices found in public washrooms. They may either operate with a button or automatically using an infrared sensor. Hand\_washing is an important part of hygiene, and so an effective method of drying the hands is necessary. <sup>16]</sup>



**Figure 2.2**

**Polishing** is the process of creating a smooth and shiny surface by rubbing it or using a chemical action, leaving a surface with a significant specular\_reflection. In some materials (such as metals, glasses, black or transparent stones) polishing is also able to reduce diffuse\_reflection to minimal values. When an unpolished surface is magnified thousands of times, it usually looks like mountains and valleys. By repeated abrasion, those "mountains" are worn down until they are flat or just small "hills." The process of polishing with abrasives starts with coarse ones and graduates to fine ones. <sup>17]</sup>



**Figure 2.3**

Our group has selected two types of design after making a number of studies and references on the internet and finding books that can help us in selecting our project design. Two designs were selected by our team which is a Magical Cleaner, which a hose connected to our Magical Cleaner which give heat air blower and also 360° cleaning rotator.

