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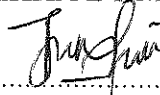
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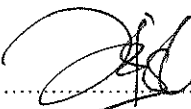
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PUAN ZAINAB BINTI YUSOF

Dedicated to,

Thanks to Allah,

For give us a good health and strength while making this report.

The person who has been very understanding and helpful,

Puan Zainab Bt Yusof

For the support and guidance that we always be remembered.

Unforgettable friends and our beloved friends,

All DTK students intake June 2013,

Our struggle not yet ends.

Finally, friends that always together with us during this third years study,

Hopefully achieved what we aspired

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ABSTRAK

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ABSTRACT

Robot Vacuum Cleaner is a simple, easy-to-manage vacuum robot for cleaning work. As we can see, today it is difficult for people to work at home because of lack of time, and they find it difficult to clean the house from time to time . Therefore it will have a devastating impact on the interior and exterior of the house. This robot is an efficient and safe cleaning robot. It will easily suck the dust and the small trash is controlled by the user in distance or near.

With the help of this robot, it will help the user get a fresh and comfortable atmosphere. Therefore it is recommended that these robots help people to take care

of the interior and exterior of the house with ease. With the help of inhalation it will provide cleaner air space. This robot will indirectly engage in inspiration and support the public to keep clean and air in or out of the house.

ABSTRAK

Robot Vacuum Cleaner adalah robot vacuum yang mudah dan mudah dikawal oleh pengguna untuk membuat kerja pembersihan .Seperti yang dapat kita lihat, pada masa kini orang ramai sukar membuat kerja pembersihan di rumah kerana kekurangan masa, dan mereka merasa sukar untuk membersihkan rumah dari semasa ke semasa.Oleh itu ia akan meninggalkan kesan buruk terhadap persekitaran dalaman dan luaran rumah . Robot ini adalah robot pembersihan yang cekap dan selamat. Ia akan mudah menyedut habuk dan sampah kecil dikawal oleh pengguna berada dalam jarak jauh atau dekat .

Dengan bantuan robot ini ,ia akan membantu pengguna mendapat suasana rumah yang segar dan selesa. Oleh itu dicadangkan robot ini untuk membantu orang ramai menjaga dalaman dan luaran rumah dengan mudah. Dengan bantuan penyedutan ia akan memberi ruang udara yang lebih bersih . Robot ini akan memberi inspirasi secara tidak langsung melibatkan diri dan menyokong orang ramai untuk menjaga kebersihan dan ruang udara di dalam ataupun luar rumah

CHAPTER 1

INTRODUCTION

Cleanliness is the most important aspect of home and outdoors. Even if your home is clean, it's really dirty! This is because most of the dust and dirt in your home are too small to be seen. The boils and waste boils invade your own health. Studies have shown that dust and environmental conditions are not good for bole air to provide tiredness and asthma and lung and heart disease. Therefore, keep a clean cleaning job. Hopefully, with the tools created by the vacuum cleaner vacuum cleaner, it is easy to absorb dust in the room, saving time, energy, and money.

Well-maintained homes will provide fresh and clean air healthy and good for themselves and reduce the risk of illness. Requirements of inhalation, design and components of the system, and control factors should be considered when creating a controlled system robot.

1.0 Research Background

In the indoor and outdoor environment today, many of us feel tired and lazy to clean the house when we get home from work. You may not be able to experience time-consuming and feel tired and tired to clean the house but you can control the tool to make homework easier without the use of energy. You can choose to be in a comfortable or uncomfortable situation as you feel today, taking steps to improve your situation. To deal with all situations, humans need to be given new ideas and

surround ourselves in harmony. There are ways that can help improve ourselves and relieve our minds. It only has a maid which is a tool that can lighten the load. When you get a safe and fresh air space with the maid, you not only add comfort but cleanliness can give you a sense of energies and the home will be fresh and improve the quality of life.

1.1 Motivation

My motivation to carry out this project is because of my observations that people in today's times are too busy with their own occupation so that they do not have enough time to clean the floor at home. This problem can cause illness to the child or anyone who lives in the home. Moreover, I believe that in the present people take light things just about hygiene. Cleanliness is important for one's health. Additionally, I also need to raise awareness in the technology field of today's or future generations of people including children, teens, parents and adults. This is because; they lack knowledge and information about technology.

1.2 Problem statement

Today's vacuum machine usually requires a high capital to buy and it uses a large size it requires a large amount of capital to get it. it is difficult to clean everywhere, under the bed, as well as kitchen baseboard. At present, some systems use technology to reduce workforce and time.

With such a robot, it becomes one of the advantages of man to clean the floor in a small and more effective period. Robot Vacuum Cleaner is a utility used to clean dust and dirt inside the home. Cleanliness is very important for all interior floor areas, especially places of worship and rest area. However, to ensure that hygiene is maintained with a clean and consistent machine that is consistent and efficient is required to carry out the cleaning process easily and effectively.

1.3 System objectives

The objective of this project is to design and implement robotics vacuum to clean the house which will use the application (Bluetooth RC Controller) on the phone in a more effective way, to reduce the long time to clean.

The following aspects have been considered in the design solution options:

- Energy saving.
- Time saving
- Reduce capital.
- Facilitate cleaning work in any spacious space

Energy and time saving are also an important aspect, as some people have no strong energy to do cleaning work and plenty of time as today many people in the city suffer from inadequate time. Finally, cleaning work needs to be done neatly and clean for comfort and personal health as well as save time for cleaning work.

1.4 System Scope

The project has several aspects that need to be taken care of and also the operating costs of the project. This project shows the cleaning operation can be controlled by humans. In order to ensure that the project is achieving the correct observation and inspection to be carried out correctly and completely. This would make users more aware of the importance of keeping the house clean even though busy at work.

This robot will work as a suction and dust suppression control device. The controls will be controlled by the user. This machine uses the application (Bluetooth RC controller). This robot can save manpower and save time.

We create these Vacuum Cleaner Smart is because we realize that people today are using the manual method that uses energy that will make people become tired and going to waste people's time. Smart Robot Vacuum Cleaner can resolve the problem. The use of human power can also be reduced.

1.5 System Limitation

The proposed system causes a lot of vague conditions. For example without using the application (Bluetooth RC Controller) on the mobile, this system will not work because it depends entirely on the application.

1.6 Proposed solution

To solve the problem now, we decided to create Smart Vacuum Cleaner as a home and home cleaning tool. Smart Vacuum Cleaner is a robot and easy-to-use robot, Smart Vacuum Cleaner works to help some families work and busy to clean the house. Instead of using humanitarian aid to clean their homes, we suggest by making these robots to make it easier to clean up work and some ideas that inject a few smart ones to make them smarter with the help of the internet. With Smart Vacuum Cleaner, it can save time and save manpower. We will ensure that users will be comfortable using this robot as we will provide a very user-friendly system for use

CHAPTER 2

LITERATURE REVIEW

INTRODUCTION

This chapter is a collection of information related to the project to assist Smart Vacuum Cleaner Robot. This study is important to avoid mistakes during the project and understand the configuration of the Arduino and ensure the best decisions are made to implement the project.

A literature review is a body of text that aims to review the critical points of current knowledge and or methodological approaches on a particular topic. Literature reviews are secondary sources, and as such, do not report any new or original experimental work.

Most often associated with academic-oriented literature, such as these, a literature review usually precedes a research proposal and results section. Its ultimate goal is to bring the reader up to date with current literature on a topic and forms the basis for another goal, such as future research that may be needed in the area. A well-structured literature review is characterized by a logical flow of ideas; current and relevant references with consistent, appropriate referencing style; proper use of terminology and an unbiased and comprehensive view of the previous research on the topic.

There are many different mobile robot sold in the market, but they all have some kind of lack of shortage in certain places. In contrast to other products already available on the market, We believe that our mobile robot which is "Smart Vacuum Cleaner Robot" is unique because it is able to interact and assist humans.

2.0 Concept and theories of existing models

A vacuum cleaner, also known as a sweeper or Hoover, 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. Vacuum cleaners, which are used in homes as well as in industry, exist in a variety of sizes and models—small battery-powered hand-held devices, wheeled canister models for home use, domestic central vacuum cleaners, huge stationary industrial appliances that can handle several hundred liters of dust before being emptied, and self-propelled vacuum trucks for recovery of large spills or removal of contaminated soil. Specialized shop vacuums can be used to suck up both dust and liquids. Vacuums by their nature cause dust to become airborne, by exhausting air that is not completely filtered. This can cause health problems since the operator ends up inhaling respirable dust, which is also deposited into the area being cleaned. There are several methods manufacturers use to control this problem, some of which may be combined together in a single appliance. Typically a filter is positioned so that the incoming air passes through it before it

reaches the motor, and then the filtered air passes through the motor for cooling purposes. Some other designs use a completely separate air intake for cooling.

2.1 General description of the existing system (problems, weaknesses, opportunities)

Robotic Vacuum Cleaner is a machine or a small disc to be precise, which moves through the length and breadth of your floors carrying out its cleaning assignment. Due to technological advancement in this new age, robotic vacuum cleaner cleans floors automatically without human intervention. This wonderful device maneuvers around table legs and corners of wherever it is vacuuming. In a nutshell, robotic vacuum cleaner is simply an autonomous motorized vacuum cleaner that doesn't require the intervention of the user with the cleaning job. It works with the aid of a computer system that lets the cleaner be conscious of its own special surroundings, in order not to hit furniture and other important household items.

With the advanced feature that will let you set robotic vacuum cleaner to vacuum the whole floor of your home while you are not at home, you are sure of meeting a pretty neat floor by the time you get back home. Robotic vacuum cleaner is also an excellent cleaning device for people who undergo mobility problems.

Moreover, as we know, every single thing must have advantage and disadvantage. This is some of them which is robotic vacuum cleaner cleans without human interference but the bad is vacuum robot cannot clean the stairs. Second, robotic vacuum cleaner save the time but it can make long time cleanings as it is automated. Third, it can perform best on hard floors but perform average on soft floor and carpets. There are those of us

who clean once a week, and there are those of us who clean when the in-laws come to visit. The appeal of the robotic vacuum reaches both camps: Either way, the house is a bit more spotless with minimal human input.

Today's robotic vacuums are a far cry from the first models that you had to track down, stranded somewhere in your house, by their melancholy, "I'm out of power" beeping. The latest products clean your house, remember the layout to increase efficiency, dump their own dirt in a receptacle and find their way back to the charging station so they can rejuice.

2.2 Brief introduction of the proposed work/solution

The best robot vacuum cleaner does exactly what a conventional vacuum cleaner does, but with a slight difference, it has 'intelligence', or rather, it vacuums without any control or input from the user, apart from programming it and it's smart enough to adapt to its surroundings. All robot vacuum cleaners do the same task but some can perform better than others and some have more features than others. Many robot cleaners can actually find and settle in their docking stations when they have finished the set task, there are also robot cleaners that can inform you by 'speaking' to you when the cleaning is done.

The robot vacuum is a hands free, battery charged unit that has been engineered to find and pick up dirt and debris efficiently and independently. However, it tends to work better on hard floors. There are some on the market now that have no problem

working on carpets, especially thicker carpets and they are capable of making the transition from hard flooring to low level carpeting without any problems, though they are not be able to move well between floor and plush or thick carpet.

The latest robot cleaners not only clean the house without any help but they can remember the layout of the area that needs cleaning, empty the collected dirt and then find their way back for recharging or docking. Different robot cleaners can vary in the charging time, or in how long they are able to clean when fully charged. There are also models around today that have de-tangling abilities which can save on run time.

2.3 Full system block diagram

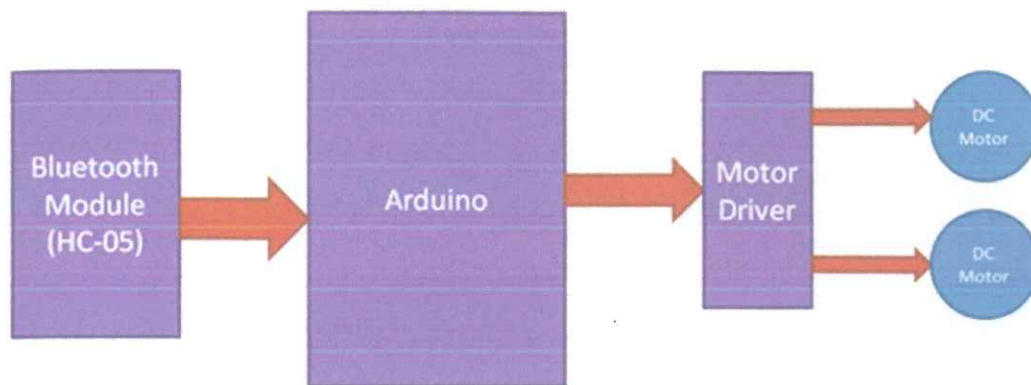


Figure 2.3 : Full system block diagram

In this project we have used recycled goods for demonstrations. This vacuum has two dc motors in the left and right sides. The front side motor is used to give direction to the car moving left or right (such as a real car steering wheel feature). And the motor on the back is used to drive the vacuum forward and rearward direction. The rear motor also provides left and right directions. The Bluetooth module is used to receive instructions from android phones and Arduino UNO is used to control the entire system. We also use the relay to act as a switch

2.4 CIRCUIT DESCRIPTION

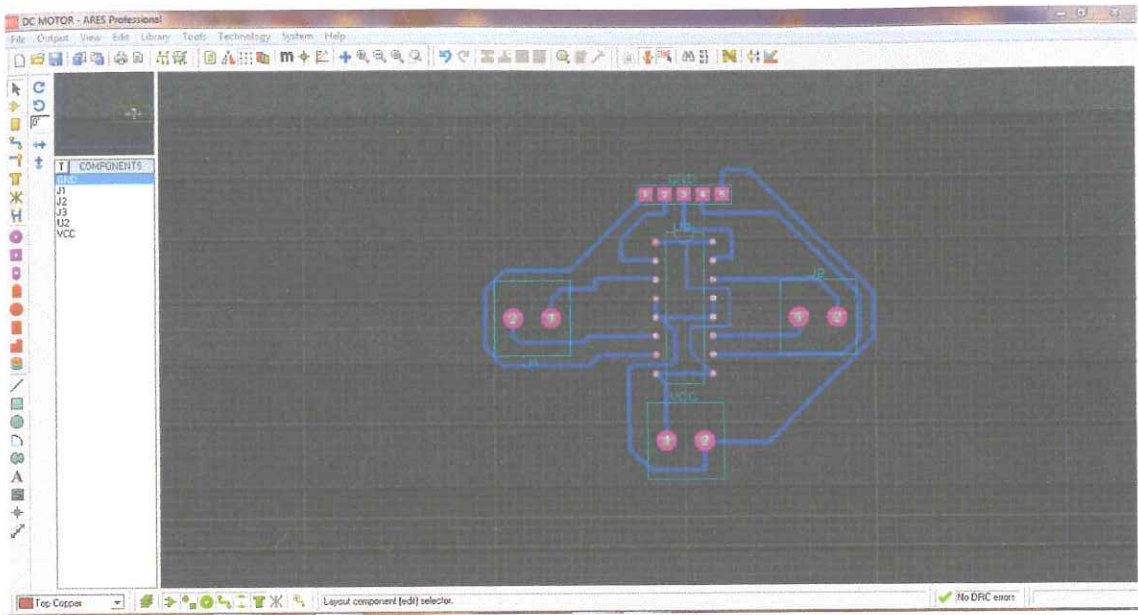


Figure 2.4a : Circuit DC Motor

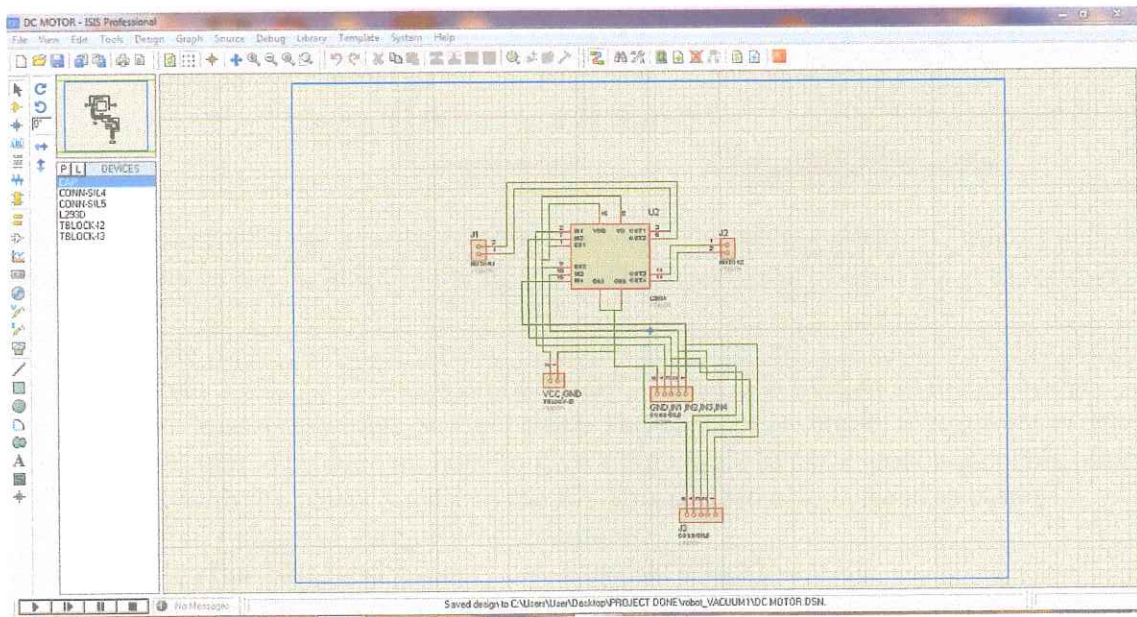


Figure 2.4b : Circuit in Proteus