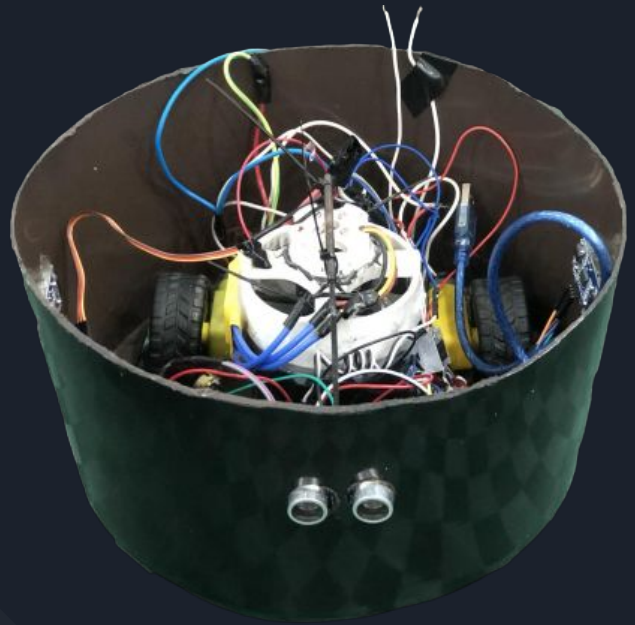
Smart Cleaning Robot

Cleaner Core



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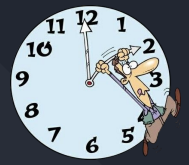
The Outline

- Introduction
- What is Cleaner Core?
- Tools
- Construction Stages
- Constraints
- Future work
- Conclusion

Introduction



These days, due to the increase and large size of buildings, many people suffer from the cleaning process, whether in large halls or in their homes, and due to the great development in technology and the emergence of new technologies, people are looking for alternatives to save time and effort.

Introduction

Most cleaning robots on the market are expensive and may be large and manual in use, like a manual vacuum cleaner. This is where the idea for Cleaner Core began.

What is Cleaner Core?

Cleaner Core is a robot whose job is to clean floors and high areas without falling. It consists of two sides. The first side, which is the front side, contains a vacuum cleaner for cleaning dirt, and the back side contains mops for mopping and collecting dirt .

What is Cleaner Core?

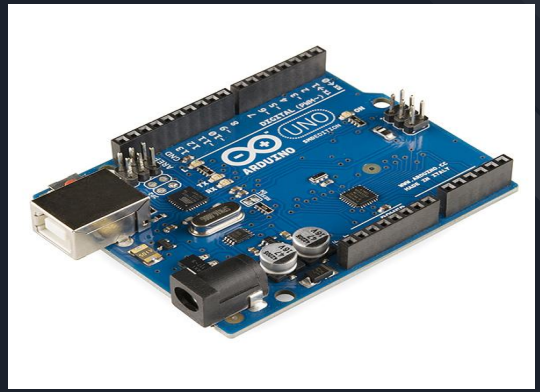
The robot works automatically, all the user needs is to place it in one of the corners of the room and then turn it on and then it will start cleaning and wiping, and because it works automatically, we made it avoid colliding with objects in the room during the cleaning process.

What is Cleaner Core?

It can also be controlled remotely via a mobile phone. For example, if the user wants to reach the dirt in a certain corner of the room and then stop the robot, the robot can be turned on and connected via Bluetooth with the mobile application.

Tools

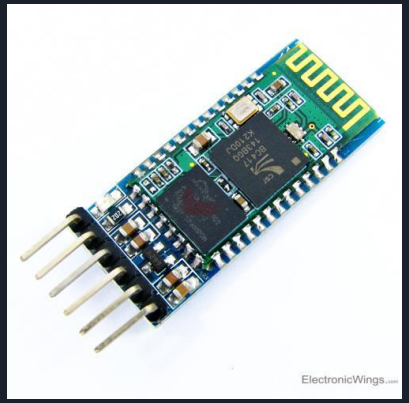
- Arduino Uno



- Brushless DC Motor

- 3s2p Battery

- HC-05 Bluetooth



- LM2596 Buck Converter

- Fan Suction

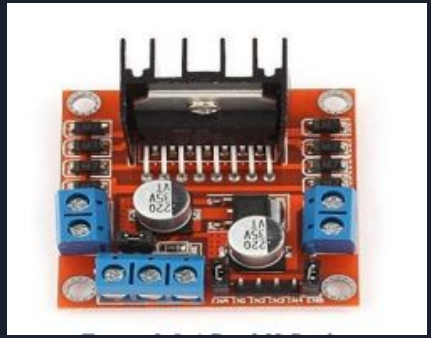
- Bo Motor

- wheel

- Castor Wheel

- DC Motor

- H-Bridge



- IR Sensor

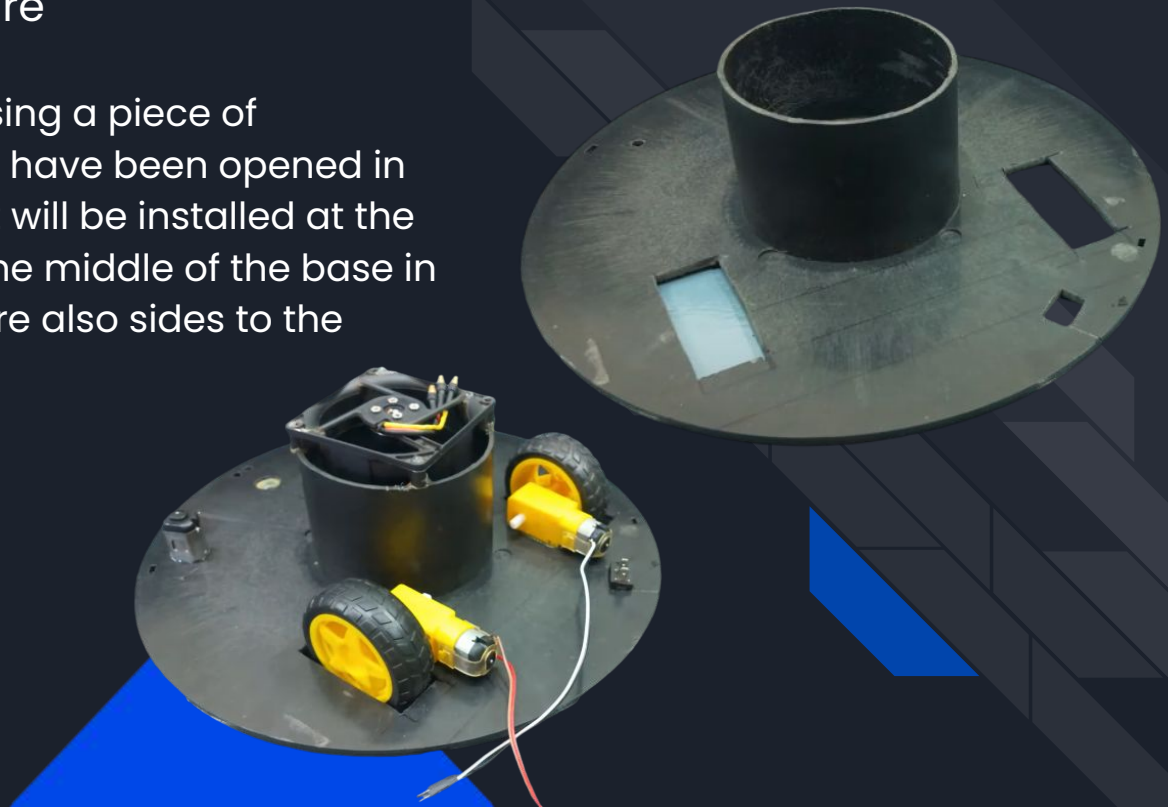
- Ultrasonic Sensor

- Potentiometer

Construction Stages

- Building the base structure

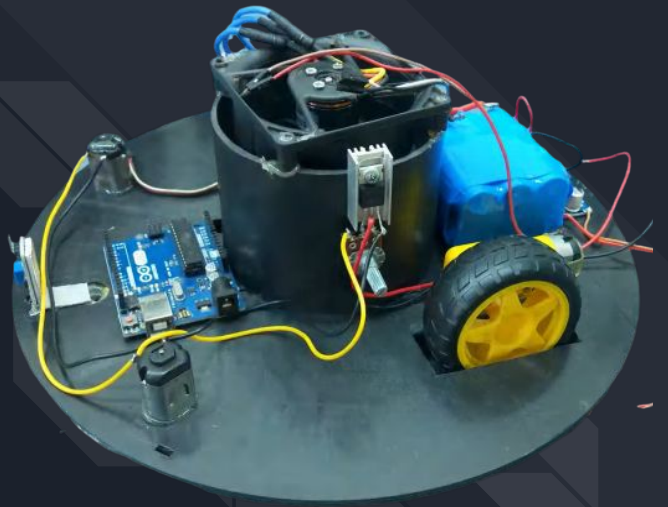
  The base structure is built using a piece of reinforced plastic, and holes have been opened in the base for each piece that will be installed at the base. There is a cylinder in the middle of the base in which to collect dirt. There are also sides to the model and a roof on top.



Construction Stages

- Connecting of basic components

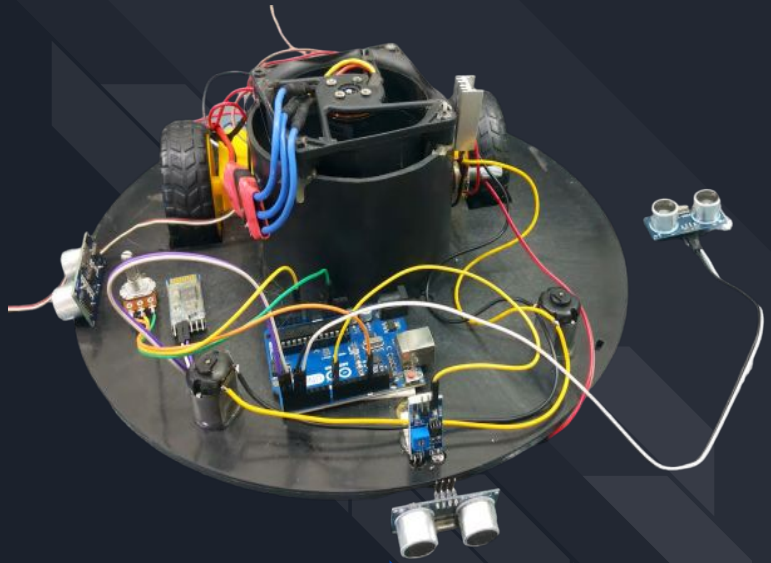
  In this stage, basic components such as arduino, battery, wheel, motors and control button were connected.



Construction Stages

- Connecting of sensors

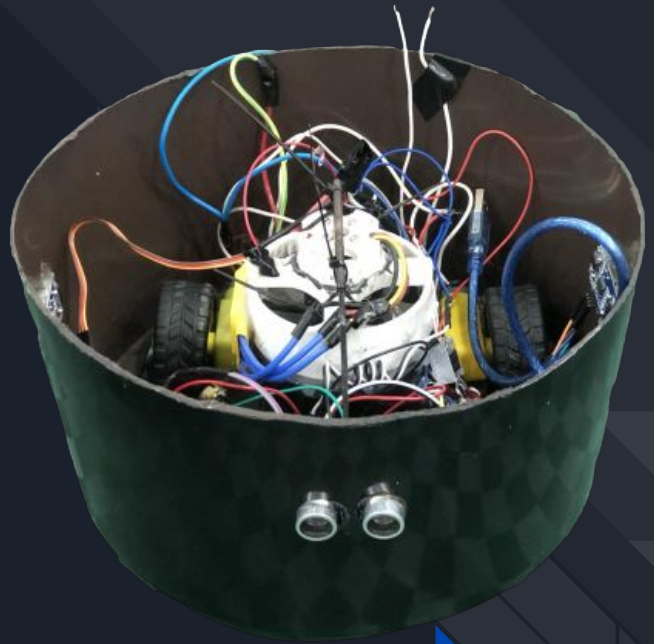
  In this stage, the robot’s sensors were connected, such as IR sensors, ultrasonic sensors, and bluetooth module.



Construction Stages

- Final structure

  This stage is the final stage of building the structure



Conclusion

In the end, we have created this robot that has aspects that distinguish it from other robots, which helps the user with ease of control and obtaining satisfactory results without the hassle of cleaning also by saving time and effort.

Constrains

1- High Cost ,The bad economic situation that we are all going through and our inability to expand the project due to economic conditions.

2- Imposing a ban on some parts, such as Brushless DC Motor because they are used in drone components, and delaying their arrival.

3- The political situation, closing the checkpoints, and the war on Gaza .

Future Works

1- It is possible to add a feature so that he does not return to the places he passed through and saves a map of the area he passes through.

2- It is possible to add a water spraying and mopping feature using the brooms in the project.

Thank you all