

MedBuddy - The Medicine Delivery Robot

Synopsis

Under the Supervision of:

Mr. Kumar Gaurav

**Assistant Professor
(Senior Scale)**

Submitted by:

Akshet Bharat Patel

(189403031)

**Mechatronics Department
MANIPAL UNIVERSITY
JAIPUR JAIPUR-303007
RAJASTHAN, INDIA**

September/2020

1. Objective of work:

The objective of this project MedBuddy is to minimize corona virus cases among the medical staff and doctors when they have to deliver medicines to the patients who are isolated in the general ward. This objective is attained by devising a Bluetooth controlled robot car which is controlled by a smart phone or a tablet and is equipped with a smart phone acts as an eye for the robot. A camera module can also be used for the same purpose.

2. Motivation:

With the ever increasing rise in the amount of daily covid-19 positive cases in India, which is almost equal to 1 lakh as of 12-09-2020, there is a need to control the spreading of the virus especially to the doctors and medical staff because they are our life saviors. This bot will prevent the virus from spreading from the infected patients to the nurses or doctors when they have to visit the patient just for delivering medicines as it is a fully contactless system.

3. Target specifications if any:

The main aim of this project MedBuddy is to create a Bluetooth controlled robot car which can be controlled from at least 50 feet away with the help of an application running on a smart phone.

4. Functional partitioning of project:

The entire workflow of the project can be divided in to various components such as:

1. Designing circuit diagram.
2. Selection of the right components.
3. The assembly of the robot.
4. The writing of Arduino Uno code in Arduino IDE.
5. Installation of the robot under a plastic trolley.
6. Testing and Troubleshooting.

5. Methodology:

The first step in making this project is to design the circuit diagram of the robot car. The components used in the making of this project are:

1. Arduino Uno.
2. HC-05 Bluetooth Module.
3. L298N Motor Driver.
4. 2 or 4 BO2 Motors.
5. Metal Chassis.
6. Wheels.
7. 9V Battery.
8. Ultrasonic Sensor Module. (For additional functionality)-
9. A Smart Phone/ Tablet.
10. Jumper Wires and Breadboard.

6. Background Study:

As the global pandemic affects people of ages more than 50 years, it puts the most experienced doctors and nurses and hospital staff at risk of catching the virus. With almost a lakh positive cases in India as of 12-09-2020, the frontline corona warriors need protection from the virus. This is done by minimizing their contact with the infected patients by providing them with food and medicine with the help of a robot car. The car is installed on a plastic cart and it is equipped with a smart phone which will act as the eye of the robot. The car can be controlled from an approximate distance of 50 feet which will eradicate any unnecessary contact with the patient thus minimizing the risk of contamination. The operation of the robot is very simple and it is similar to driving a radio-controlled car.

7. Circuit Diagram:

This circuit diagram is just for reference.

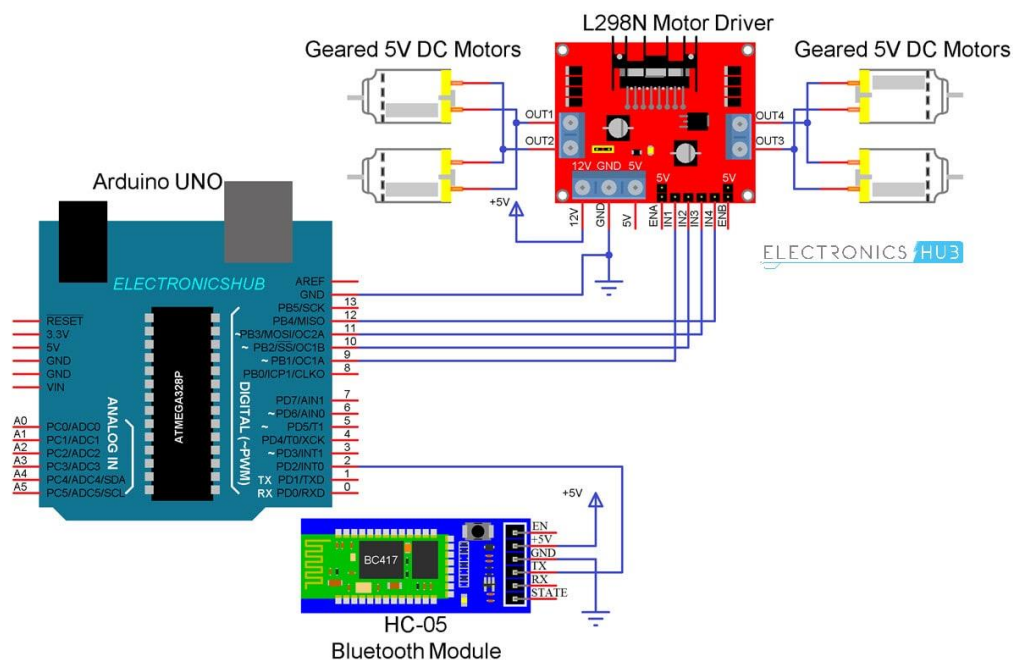


Figure 1.

¹ The circuit diagram is downloaded from:
https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.electronicshub.org%2Fbluetooth-controlled-robot-using-arduino%2F&psig=AOvVawIds_m3ydSMq0w5Qsh0p26c&ust=1599999215335000&source=images&cd=vfe&ved=0CAIQjRxqFwoTCLjZ1dnL4-sCFQAAAAAdAAAAABAN

8. Tools required:

The tools required to make this project are as follows:

1. Arduino Uno.
2. Various Modules which are Arduino Uno compatible like Bluetooth, Ultrasonic, Motor Driver, etc.
3. A breadboard and jumper wires.
4. Metal chassis.
5. A smartphone or a Tablet.

The application which is used to drive the car is created using MIT App Inventor. MIT App inventor is an online platform designed to teach computational thinking concepts through development of mobile applications. Students create applications by dragging and dropping components into a design view and using a visual blocks language to program application behavior.

9. Work schedule: (*month wise*)

- a. September, 2020.
 1. Documenting the purpose and methodology of the project.
 2. Collecting all the required hardware and learn about MIT App Inventor.
 3. Start building the circuit.
- b. October, 2020.
 1. Testing the circuit.
 2. Building the metal chassis.
 3. Finding the appropriate plastic cart to install the robot.
- c. November, 2020.
 1. Installing the robot on the plastic cart.
 2. Test drive.
 3. Troubleshooting.

10. References:

Books:

- [1] Name 1, “Arduino Project Handbook, Volume 1, by Mark Geddes.”, No Starch Press, Inc.

Web:

- [1] For the Application, MIT App Inventor.
[2] Circuit Diagram, Fritzing.com