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Review Article

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Smart Tech Dustbin – from Scratch to Smart

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Abstract

The main aim of this article was to create a project for the masses which would make life easier and helpful to the mankind. The idea was to create a Smart Tech Dustbin which will have multipurpose functions in it and will be helpful to the really needy people. The whole concept of our smart tech dustbin is that it moves with a wireless remote control in addition to this, it has a vacuum cleaner, mop attached to it and can reach you with ease wherever and whenever you want it to come in fraction of seconds, the whole design runs on a dustbin which is moving on wheels which is further moved by remote control. The beauty of this whole project was it was rather simple and highly cost effective involving very minimum expenditure. The idea is to utilise the already done materials into useful and handy tools by smart technology with multipurpose usage which is rather user friendly and can be operated by non-technical personnel. The project was tested and the results were deduced about its working and the benefits it can cause to the world. The project was studied in detail considering all factors and worked accordingly.

Keywords: Smart tech dustbin; Cost effective; Multipurpose

Methodology

At first the foundation of the project was laid out and then jotted down for the better understanding of the project and the idea was simplified which could be given the shape of reality, Then came the idea of collecting all the parts and start working to assemble each and every part accordingly to its use. The initial start was to collect the main parts from each and every corner to make it to its completion. The project consists of a dustbin, a wireless remote control car, a vacuum cleaner, a moveable mop and a switch operated lid. The whole working principle of our project was that we attached a dustbin to a remote control car which was operated by a wireless remote control and the remote control car could move

in all directions with ease. Furthermore the extension of dustbin was by the vacuum cleaner which works on 7.2 volt battery. It ended on the switch which switched off and on to your desires. The moveable mop is connected with a 9 volt battery. Lastly the lid of dustbin moves on the function of an actuator which is the central locking of the car and that also runs on the battery which can open the lid with hydraulic action and the lid springs open and close with the switch. The target was to integrate all of this and the project should be a working model. The main factors which were kept in the mind were the availability and the cheapness of the material. Another main factor was use the discarded waste material to its best use.





Figure 1: The RC car attached at the bottom of the dustbin.



Figure 2: The Mop Design attached to the front of the dustbin.



Figure 3: The remote of the RC car.



Figure 4: Vacuum Cleaner attached to the dustbin.

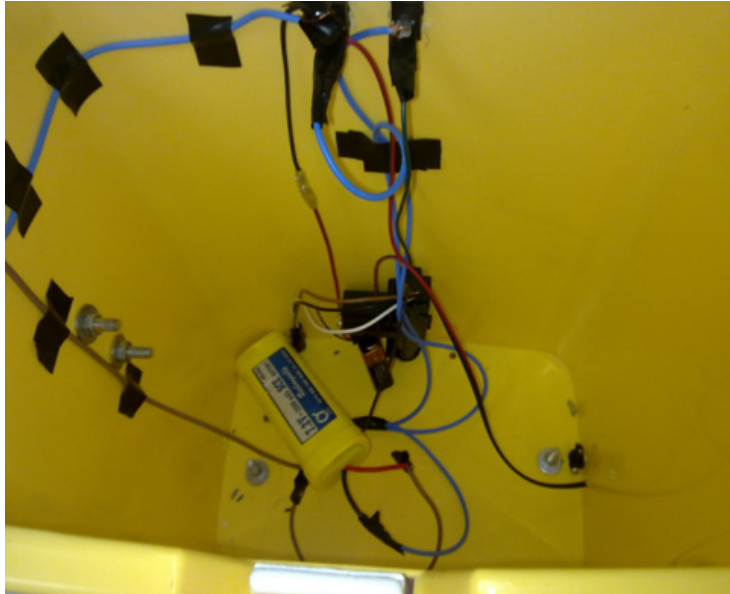


Figure 5: The actuator system for opening the lid of the dustbin.

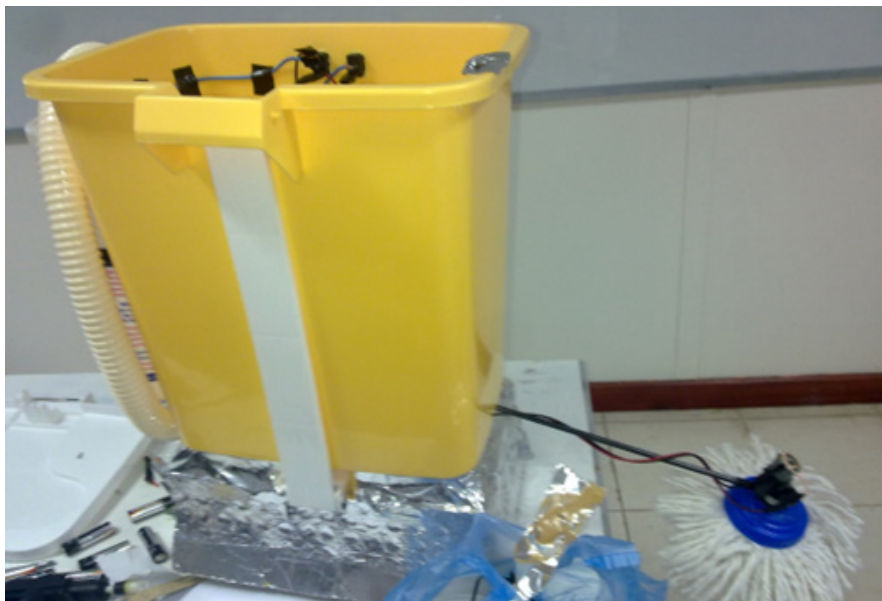


Figure 6: Overall Design for the dustbin.

Fabrication Details of Individual parts and Assembly Details:

The components assembly are as follows:

- **The Moveable Mop:**

The mop was designed by taking a used mop and cutting small pieces of it which was then attached to a helicopter motor; this was functional by a battery which operated the motor and moved the mop. This was attached at the front part of the dustbin

- **Vacuum Cleaner**

On the rear part of the dustbin the second most important part

of the dustbin was attached i.e. the vacuum cleaner. Vacuum was created by used and discarded plastic bottle. The vacuum cleaner design was kept simple and the function was to clear the small pieces of dust, paper etc. The assembly of vacuum cleaner was operated by a battery and it consisted of a small pipe and a motor, a fan which can suck the air and a small inlet which collects the dirt from the ground on its way

- **Moveable Dustbin with Wireless Remote**

The whole dustbin was attached to a remote control car which can be attained at a store for a minimum amount. Here the crucial factor was to select a remote control car which could bear all the

weight of the dustbin and its parts attached with it. The movement of the dustbin was another challenge which as kept in the mind. The dustbin was attached at the top of the car so when the car moves the dustbin moves along

- **Control and Automatic Lid Opener**

The automatic lid worked on the principle of an actuator in simple words the lid was controlled by the central locking of car device. Here the discarded locking system was made to a better use. The dustbin and connected with this switch so when you hit the switch open the lid opens automatically and when you close the switch the lid closes. The remote control was also disassembled for the further understanding of the circuit.

Conclusions

To conclude our article in the fast moving world everything is coming to a standstill with full of technologies bouncing to hit chaos

our invention will be a great asset to humanity and mankind and the further generation to come. The smart dustbin can be benefitted by hospitals for patients with special needs. It can also be used in cribs and hotels to make lifestyle more luxurious. The test which were run had room for improvements with tweaks in the design. The future modifications would include more of advancement has it was a small scale experiment done, if resources and our mind still ponders human mind can do real wonders.

Acknowledgement

None.

Conflict of Interest

No Conflict of interest.