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AUTOMATIC GARBAGE ISOLATOR

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ABSTRACT--*Rapid population growth has also made to an increase with the quantity of garbage which is produced in our daily days. This leads to increases in the creation of waste due to repeated development in the industrialization and urbanization have become a critical issue for local and national governments. It also poses a critical challenge for local authorities to handle the waste which is being collected as landfill in every field. Meticulous measures need to be taken when segregating and transporting waste to make sure that the minimal risk to the surrounding and human health. The correct division of waste takes the actual economic value of the garbage to the limelight. The traditional method which is used in Indian waste segregation is through time-consuming rag pickers that can adversely affect the health of human who are exposed to such wastes. Here we suggest the use of an affordable Auto waste isolator (AWI) which is also an easy to use a solution for household waste separation. It is planned to seperate the waste into three groups' metallic wastes, dry waste, and wet waste. The system uses a moisture sensor will segregate wet and dry waste, and an inductive proximity sensor to detect metallic waste, and a GSM is used to transmit user information about the separated garbage data. From experimental reports it is evident that waste segregation using Automated Garbage Isolator was successful.*

Keywords--*Automatic Garbage Isolator/AGI, Waste segregation, Wet and dry wastes.*

I. INTRODUCTION

The waste is separated beginning at the basic level before moving through care on a large scale. Rather large wastes are manually segregated and other domestic waste is extracted into different categories with the aid of Automated Garbage Isolator. Various sensors such as a proximity sensor, a moisture sensor, an ultrasonic sensor, an IR sensor and a gas sensor are used to check the waste conditions and separate into various containers. If the container is complete or has harmful content, the user will be sent a warning message. There are two cabins in the public garbage collector for collecting degradable and non-degradable waste after the baskets have been filled, which will be discarded in the collector's respective cabins. Every basket has different RF-id stickers on it, which are used to dump wastes in their respective cabins in the public garbage collector. From this we can also find the reason for a type of waste which is produced from a domestic place and also we can reduce and manage the waste.

II. METHODOLOGY

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Whenever the garbage enters the conveyor belt, the motor turns ON and the conveyor belt starts to move. It turns ON the Arduino microcontroller, all the motors and all the sensors. The inductive proximity sensor senses the garbage to detect whether it is a metal waste or not. If the waste is detected as metal then M2(motor_2) is turned OFF and M1(motor_1) is turned ON and the waste is dumped in the metal waste cabin. If the waste is not a metal, M1 is kept ON when it comes in contact with the moisture detecting sensor, here this sensor determines whether the waste is dry or wet waste by testing the moisture content of the waste. If the waste has some moisture it is identified as a wet waste and M1 is switched off and M2 is turned on and the waste is put into the wet waste bin. Finally the waste is dumped into the respective waste collecting cabins, and the process of segregation is done. The gas sensor is used to figure out if any harmful elements are in the waste. There are separate cabins for degradable and non-degradable waste collection on disposal of segragated waste to the public garbage collector. Each cabin has a reader to read the respective RF-id dustbin information. The corresponding cabin will be opened after reading the RF-id and the waste will be deposited inside it.

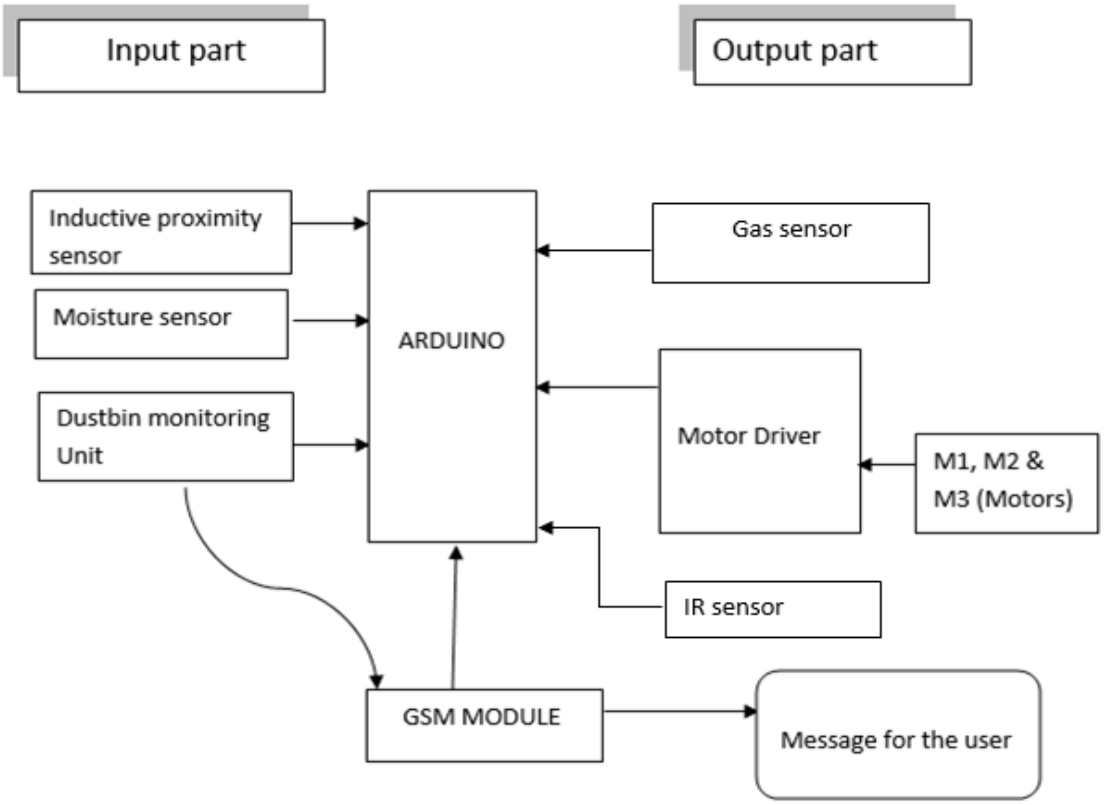

Figure 1.1:block diagram arduino

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Figure1.2: Conveyor

We proposed a working model to be implemented but to power up the system's efficiency and accuracy to make the system cost-effective, we have planned to createa proposed model using a conveyor belt and install various sensors on the conveyor's sides and it's belt to separate the waste. This project generates awareness among the people to keep the environment clean and lets the authorities efficiently track and segregate the wastes. All data relating to the waste is obtained through this initiative. Such data are further categorized to gain a deeper understanding of waste management, and necessary precautions can be taken to reduce waste in both smaller and larger scale.

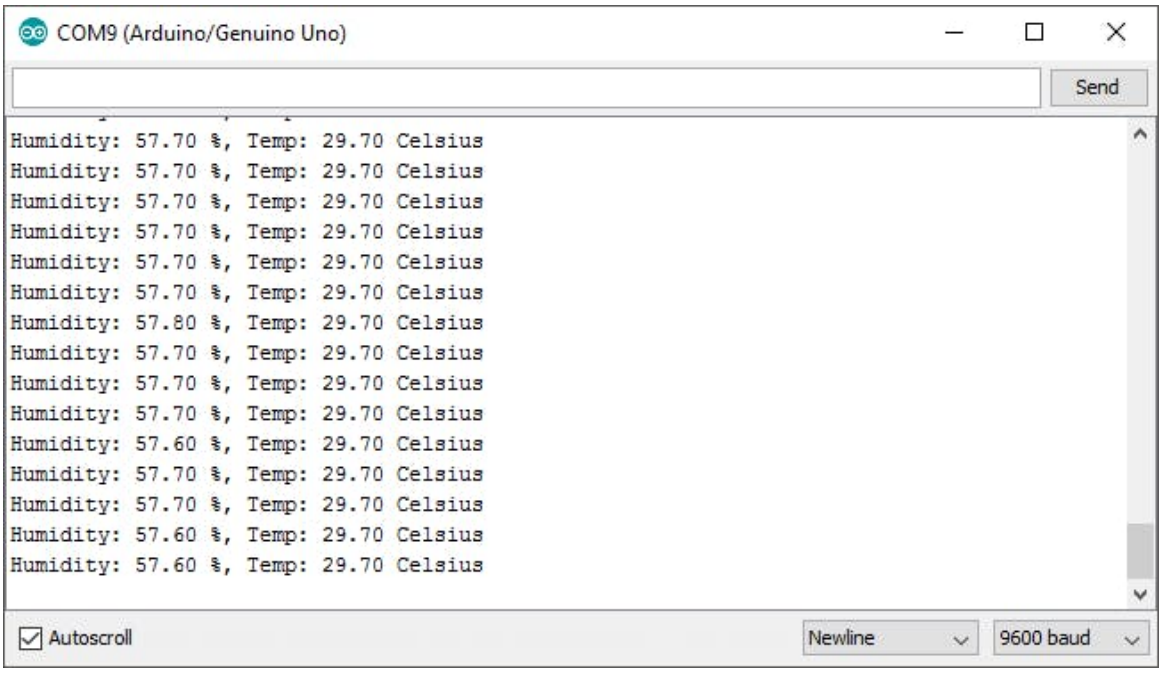

Figure 1.3:com9 (Arduino/Genuino uno)

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III. CONCLUSION

After the analysis, review and assessment of all the findings, the proponents arrived at the successive conclusion. Waste segragating is one of the most difficult process in the world. Even each local authority carries out this segragation process, the segragation output is not one hundred percent. By continuing the segragating cycle further we can attain maximum efficiency. By using this Automatic Garbage Isolator(AGI) in each home, the local authorities can reduce their burden. Local-level implementation of this program reduces the pressure on local authorities. Domestic separation of all these pollutants will also be time-saving

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