To Develop Wet Garbage sensitive Device based on Moisture Sensor

A Report submitted in partial fulfilment of the requirement to complete team Work of Project Based Learning (PBL) in the department of

FIRST YEAR ENGINEERING

As Prescribed by

SAVITRIBAI PHULE PUNE UNIVERSITY

By

Name: Sangle Harshal Vishnu
PRN.NO:72307779H

Name: Shewale Jeevan Sanjaykumar PRN NO:72307825E

Name: Shinde Ashish Ramchandra Vidhaya PRN NO:72307832H

Name: Shinde Omkar PRN NO:72307836L

Name: Survase Aditya Vikas PRN NO:72307832E

Name: Tarade Nikhil Gajendra PRN. NO:72307906E

Name: Thorat Shrutuja Gangaram
PRN.NO.72307919G

Under the supervision of

Dr.A.K.Diwan

Sinhgad Institutes

First Year Engineering Department

SINHGAD COLLEGE OF ENGINEERING

44/1, Vadgaon (Bk),off Sinhgad Road, pune-411041

Sinhgad Institutes

SINHGAD COLLEGE OF ENGINEERING

S.No.44/1,Vadgaon (Bk),Off Sinhgad Road,Pune-411041

Department of First Year Engineering

CERTIFICATE

This is to certify that the following students,

1. **Name: Sangle Harshal Vishnu**
2. **Name: Shewale Jeevan Sanjaykumar**
3. **Name: Shinde Ashish Ramchandra Vidhaya**
4. **Name: Shinde Omkar**
5. **Name: Survase Aditya Vikas**
6. **Name: Tarade Nikhil Gajendra**

7. Name: Thorat Shrutuja Gangaram

*Have completed all the team work and Practical Work in the subject **Project based learning (PBL**) Satisfactorily in the department of First Year Engineering as prescribed by Savitribai Phule Pune University, in the academic year 2023-2024*

Faculty-in-charge Head of Department Principle

Date:

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Title

To Develop Wet Garbage Sensitive Device Based On Moisture Sensor

Abstract

Today enormous urban and rural communities all throughout planet are dealing with a typical issue, i.e., garbage. The garbage present on earth are of two types 1.Dry garbage and 2.Wet garbage

Different type of materials are found in dry garbage like empty plastic bottles ,paper, dry leaves, rubber, cloth, metals, etc. can be recycled into new products further .Dry garbage is not biodegradable.

Vegetable and fruits peels, tea bags, leftover food, flowers, coconut shells, expired food items etc. are found in wet garbage .It is biodegradable. Hence it can be converted into new products and reused further.

Unfortunately ,it's too late now to take individual steps to tackle a problem so globally wide .This gave us an idea.1.Detectection of wet garbage . This gave us an idea of creating mechanised method to separate the wet garbage from dry garbage. In this dry and wet garbage detector model we have used sensors ,buzzer ,dry and wet garbage and power source, etc. In this model Arduino uno sensor and Moisture sensor are used. This model is used to sense dry and wet garbage and separate them by sensors. This model detects the mixing

of dry and wet garbage and gives sense by buzzer. Moisture sensor is used for segregating dry garbage and wet garbage and another set of sensor is used to display interfaces ,alarm system ,temperature sensing and much more.

This model helps is to avoid the mixing of dry garbage and wet garbage .This model is useful in day to day life by which wet garbage can be recycled for further use and dry garbage is recycled as well as use to form new products. This model is useful to detect presence of wet garbage in dry garbage.

Introduction

" CLEANLINESS IS EQUAL TO GODLINESS"

Garbage has become one of the most serious global issues in today's times . According to an estimation by a report published in the Nature journal, by the end of the century (2100),garbage production will reach a level of 11 million tonnes per day. That would be 3 times the rate at which garbage was published. Increase in the quantity of garbage is not as much of a problem as is leaving garbage open and untreated. Garbage must be recycled and reused which can be done by separating dry garbage and wet garbage. So for separating garbage into dry and wet garbage detector is used.

Dry garbage and wet garbage detector is a model used to detect the presence of wet garbage in dry garbage and it is useful to detect the wet garbage when it is mixed with other garbage. This model consists of sensors and buzzer (alarm) used to detect the presence of wet garbage. This model works by power source .Due to use of power source electrical energy is passed through wires to sensors and when

wet garbage is mixed with dry garbage its gets sensed due to moisture sensor and buzzer gets on. Another set of moisture sensor is used to display interfaces, sound detection, temperature detection/sensing and much more, etc .This model is useful for daily use due to detection of wet garbage from dry garbage , by this model wet garbage can be recycled for further uses. Dry garbage can be reused as well as new products can also be formed. This model is useful in kitchens, parks and also many other places.

Circuit Diagram-

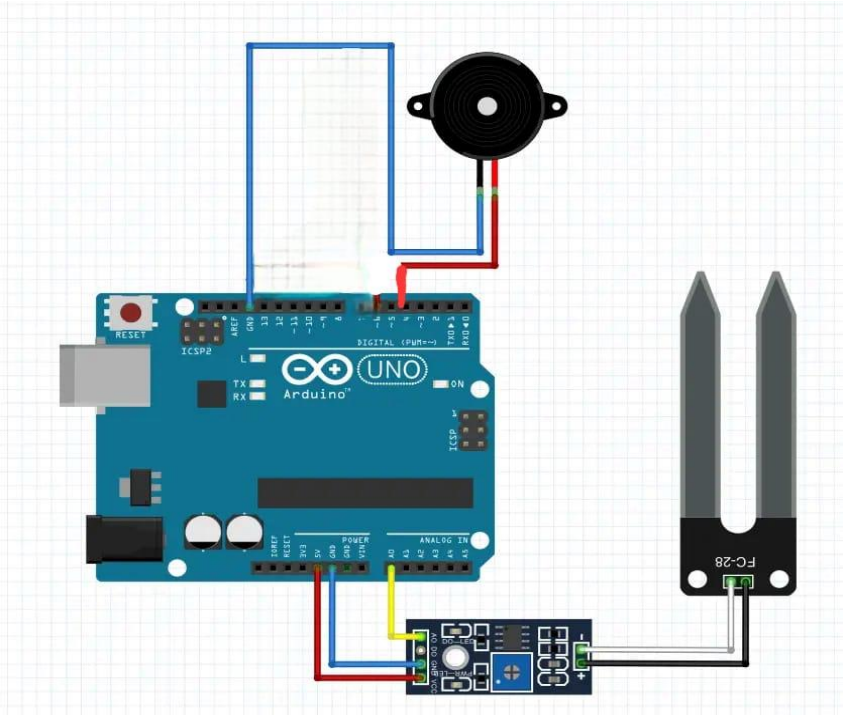

Diagram-

Work Carried Out

For making this model we all first discuss about different problems and everyone in group found five problems each. We discuss on ,all the problems and then while gong we saw a dustbin full of garbage, some of spread on ground and all the wet garbage and dry garbage was mixed ,which cannot be reused and was full of waste which cannot be reused or recycle. By looking this we get an idea related to waste management ,and of making a detector model which can detect wet garbage from dry garbage and used to separate wet and dry garbage from each other, and those separated garbage can be used for recycling ,reuse, as well as forming new products.

Then we started collecting all the information related to detector model. In this model we use cardboard, sensors, wires ,buzzer and dustbin filled with garbage. Most important in this model is program(code).We get to know about use of moisture sensors and Arduino sensor.

Moisture sensor is useful to detect wet object and gives senses.

Arduino sensor is used for alarm system , temperature detection/sensing and were connected to dustbin containing dry as well as wet garbage . All connections were done by wires, one end was connected to power source and other end to the dustbin which is filled with full of wet garbage and dry garbage.

Due to power source i.e., electrical current was passed through the wires and given to sensors to detect the wet garbage present in the dustbin. Moisture Sensor detects the presence of wet garbage and was sufficient to separate wet garbage from dry garbage, after detection of wet garbage buzzer gets on and gives sound senses . One of the important work done in this model is program, which was used for further working of model. By all the proper setup the model was properly and successfully working. The garbage management should be effectively and efficiently implemented. So for implementation , this model plays an important role, it is useful for separation as well as detection of wet garbage.

This model can be used for day to day life for segregating of wet and dry garbage, it is helpful whenever by mistake dry and wet garbage gets mixed. Mostly it can be used in kitchen and other places were they are necessary.

Future scope

This model will be useful in future for detecting wet garbage**.**

This model is totally pollution free.it does not cause any harm to human being.it is design by connections of wires and power source as a electrical current ,it is useful in present times as well as in future.

This detection model can be changed by changing its setup and making it more advanced by using advanced quality sensors ,in future different type of new sensors will get developed by their use this model can be made more advanced. If we need to do some other changes we can do that for making this model more accurate and for getting proper results.

This model gives 100%of accuracy but unfortunately it cannot work if any type of default takes place , telling about this model rarely it may occur . This model has lots of advantages and some

of rare disadvantages . In present as well as in future it will be always useful.

Conclusion

Dry and wet garbage detector has been successfully implemented for detection of wet garbage from dry garbage . However, this model is very useful at higher rate. Due to use of power source i.e., electricity it does not cause any type of pollution .This model is totally pollution free and doesn't cause any harm

This model is safe for use ,it has highest chances of working.100% this model works but rarely 1%chance is not to work due to default in sensor or due to change in setup(i.e., by wrong connections or by wrong wiring).

We can also make more improved by making some critical changes .Some of changes can be done for betterments and also for making more accurate, this model works accurately and safely. It does not cause any harm. From above all the information we can conclude that wet and dry garbage detector model is effective, accurate and safely usable.

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