# Automated Manure Machine

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**Abstract**

Farmers are considered to be the backbone of our country. They are gaining increased attentions in today's world. Many people with other professions are switching towards farming today. The aim of this project is to provide manures to people at a reasonable price. This application provides new generation farmers with information about manure to be used for which crop. It also allows the farmer to purchase the manure online and then collect them through an automated manure machine which is located in the nearest location. This project also focuses on implementation of organic manure to manage waste resources efficiently. In conclusion, this server as a way to increase organic farming among people.

**Keywords:** Block Chain, Manure, Farming, Hash values, Manure machine

## 1. Introduction

In a challenging economy, farmers and business people are looking for new profit centers. As green products gain in popularity, green farming with organic fertilizers is growing as well. Nowadays, there are many people cultivating crops in their homes. In order to help these people with the right details about which manure to be used for the crops and also purchasing the manure in a reasonable price this AUTOMATED MANURE MACHINE is developed. This contains all the details about where the manure in available according to the location preferred by the user.

The proposed system is an automated manure machine. This machine provides people with manure at a reasonable price. There is also a web application where user can see the details of the manure. Details like which manure to be used for which crop will be available. The user can also purchase the manure in the online application and the collect the manure at the nearest available location of the manure by using a code or receipt number given during the purchase of the manure. This system uses blockchain in order to check the availability of the manure in the machine. It allows the people to collect the manure from alternate locations that are near.

## 2. Literature Survey

The author [1] proposed an autonomous vending machine that is governed by a public blockchain and smart contracts platform. It can be made as a decentralised place to buy and sell goods. This helps in understanding the significance of decentralized transactions and marketing.

The author [2] proposed a machine that dispenses products by inserting currency or credit to the machine. These are generally used in public and private areas. In this machine Arduino Mega board, LCD for display, coin acceptor mechanism, motor and push button are used. The rectifier circuit is used for power supply. The customer can choose the product by clicking the necessary button.

The author [3] has stated that the decentralization provided by blockchain can be used for peer-to-peer trading without the involvement of any third party. The basic concept of blockchain along with consensus mechanism plays an important role in a blockchain enabled IoT system. The main objective of consensus mechanisms is to list the limitations in IoT.

The author [4] has stated that Blockchain allows transactions to take place in a decentralized manner. Blockchain is used in financial services. There are still many challenges of blockchain technology such as scalability and security problems. An overview of blockchain architecture was firstly compared and some typical consensus algorithms were used in blockchain.

The author [5] explains how the immutability of the blockchain technology facilitates. The main disadvantages is when it is used in other areas modification of data in blockchain is demanded. It is used for building modifiable blockchain in decentralized public network. For the hash value of the block, it uses truncated hash values of the transactions that are modifiable. Also used to modify those transactions by making truncated hash values of modified versions equal to their original target values. It uses several cryptographic techniques to prevent the modification of the transaction. Hash-based modification is sufficiently secure.

The author [6] has proposed that the modern agriculture is based on the use of high yielding varieties of seeds, chemical fertilizer, irrigation water, pesticides etc. to satisfy the demand for food grains. The need for sustainable practice is to reduce adverse changes being caused to the environment and ecosystem. Organic farming is not only revival to the farming community, it also revival to the consumers to lead a "Healthy and Happy life".

The author [7] has stated that organic fertilizers such as manure have been used in agriculture for thousands of years. Interest in organic farming is growing worldwide nowadays. Organic farming can reinstate the natural fertility of the damaged soil, thus improving the crop productivity. Organic fertilizers enhance the natural soil processes, which have long-term effects on soil fertility.

The author [8] has stated the concept of "more efficiency with less fertilizer input". Chemical fertilizer is combined with organic manure to protect soil and for sustainable production of dry-land maize. The integrated effects of chemical fertilizer strategies and additional organic manure on nutrients availability in soil and water usage in maize. The results showed that, after harvest, soil bulk density decreased significantly. Addition of organic manure promotes sustainable soil and increased maize grain productivity.

In this [9] the author has stated that two-year-old yellow poplar (*Liriodendron tulipifera* L.) seedlings were treated with an organic manure, nitrogen–phosphorus–potassium, and organic manure plus NPK chemical fertilizer which was left untreated. Organic manure significantly increased the soil pH .In contrast, the NPK chemical fertilizer decreased the soil pH. These findings indicate that organic manure derived from livestock byproducts and sawdust can be utilized in seedling production systems.

In this paper [10] the author has proposed the concept of designing an IoT enabled service of a vending machine which will be operated through a mobile application and digital payment system along with cloud computing. This Project aims to be cost effective, time efficient and user friendly. The ultimate goal is to introduce demand for mass adoption of the cost effective IoT based vending machines.
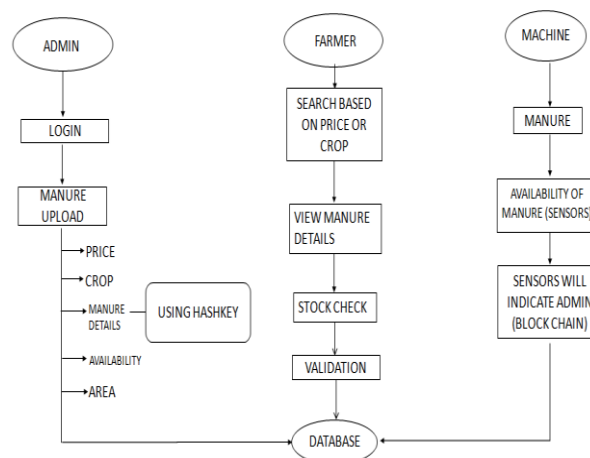
## 3. System Architecture



**Fig 1. Architecture of the system**

The above figure represents the system architecture of the proposed system which consists of all the required constraints for the system like manure details, availability, purchase, etc,.

## 4. Methodology

- User Interface Design

- Admin login and upload data

- User search based on parameters

- Stock check by admin

- Stock availability check by user

- Maintaining details

- Payment process by user

- Stock availability in the machine

### 4.1 User Interface Design

This is the first module of our project. The important role for the user is to move login window to user window. This module has created for the security purpose. In this login page we have to enter login user id and password. It will check username and password is match or not (valid user id and valid password). If we enter any invalid username or password we can't enter into login window to user window it will shows error message. So we are preventing from unauthorized user entering into the login window to user window. It will provide a good security for our project. So server contain user id and password server also check the authentication of the user. It well improves the security and preventing from unauthorized user enters into the network. In our project we are using JSP for creating design. Here we validate the login user and server authentication.

### 4.2 Admin Login and Upload Data

The administrator must login first and upload all the required details for the user to access.

### 4.3 User Search Based on Parameters

The user must login/ sign in first and the search for the products based on parameters like cost, quantity and type.

### 4.4 Stock Check by Admin

The administrator must regularly check for the availability of the stock so that the manure can be added according.

### 4.5 Stock Availability Check by User

The user must check for the availability of the product and the select or purchase according.

### 4.6 Maintaining Details

The administrator needs to check all the details of the user and also the needs of the user in order to maintain it.

### 4.7 Payment Process by User

The user can make the payment after purchasing the product and can collect the manure in the machine.

**4.8 Stock Availability  in the Machine**

The availability of the manure in the machine is checked by using hash values and the admin will upload the manure accordingly in the machine.

**5. Result and Discussion**

- In this project, we introduced the purchase of manure by online and then collecting the manure from a machine.

- Administrator of the application uploads the manure details into databases, from the user interface fields.

- Number of users can create their profile and login and go to their main page.

- User checks the manure details from the uploaded details from the database.

- Users can view the details of the manure available in the nearest location and collect it from the machine after making successful payment.
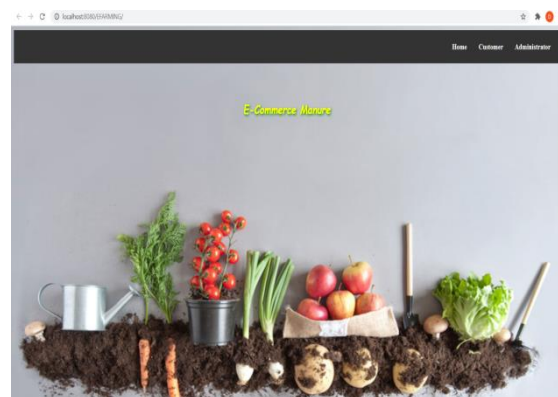


**Fig 2. Home Page**



**Fig 3. Admin Login Page**

**Fig 4. Admin Main Page**



**Fig 5.Data Upload by Admin**



| AREA NAME | ITEM NAME | CROP | ITEM COST(PER/Kg) | QUANTITY (PER/Kg) |
|-----------|-----------|------|-------------------|-------------------|
| area1 | item1 | crop1 | 100 | 50 |
| area2 | item2 | crop2 | 100 | 150 |
| area4 | item4 | crop4 | 100 | 50 |
| area3 | item3 | Okra | 80 | 40 |
| Vadapalani | Compost | Tomato | 100 | 6 |
| Anna Nagar | Earthworm Manure | Okra | 100 | 6 |
| Mogappair | Animal waste manure | Brinjal | 100 | 6 |

**Fig 6. Product List by Admin**

**Fig 7. Customer Login**
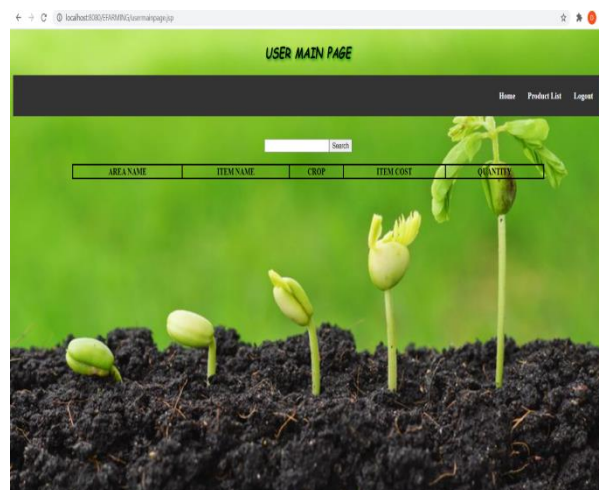


**Fig 8. User Main Page**
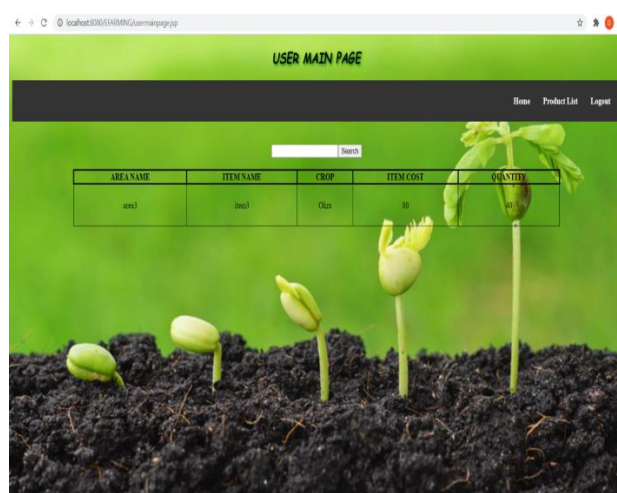


**Fig 9.Product Search by User**

**Fig 10.Product List for User**



**Fig 11.Payment by User**

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