



EFFECTIVE FARMING MONITORING, QUALITY CHECKING, COST VERIFICATION OF FRUIT TRACKING WITH AUTHENTICATION USING BLOCK CHAIN

S.AKSHAYA¹, G.DIVYA², D.UMA³, S.KALAIVANI⁴

UG Scholar¹⁻²⁻³ -Department of Computer Science, GRT Institute of Engineering and Technology, Tiruttani, India.

Assistant Professor⁴ Department of Computer Science, GRT Institute of Engineering and Technology, Tiruttani, India.

akshaya25abi18@gmail.com, divyagovindasamy24@gmail.com, umadesunaidu@gmail.com, kalaivani.s.cse@grt.edu.in

Abstract - The main purpose of the project is farmer will update all the farming information to the main server which is verified by the Local Administrator or Depot person. Farmer will add the Cost information along with the Fertilizer or pesticide information also to the server. Distributor will add the cost details to the Server. All the details are securely stored using Block chain Technology. Public can verify Trace the Product development process like Organic or not and purchase the product. In case of High profit to the Distributor or Retailer then some amount out of Profit will be shared to the farmer also to protect the Farmer. The utilization of smart contracts to govern and control all interactions and transactions among all the participants involved within the supply chain ecosystem. All transactions are recorded and stored in the block chain. This providing to all a high level of transparency and traceability into the supply chain ecosystem in a secure, trusted, reliable, and efficient manner. Particular Product can be sold to the consumer directly and the amount can be transferred directly to the provider. So that maximum cost can be given to the farmer or producer. Cost estimation is always analysed by the server.

1. INTRODUCTION

Monitoring the development of agricultural products and efficient logistics management in the food and agricultural supply chain is critical to ensure product safety. The developing worries approximately meals protection and infection dangers have renewed the focal point for superior traceability throughout the deliver chain [1], [2]. In addition agricultural merchandise being traded throughout numerous nations require particular monitoring and conformance to united states of America particular regulations [3], [4]. Traceability of products in the agricultural supply chain requires collection, communication and management of important statistics through exactly figuring out the origin, diverse statistics exchanges withinside the deliver chain. The dynamic nature of statistics

withinside the agricultural/meals deliver chain in which merchandise are Produced, processed and despatched thru numerous intermediaries makes it tough to tune and trace. Product contamination and its implications to public health strongly emphasize traceability as a necessary policy tool towards monitoring food quality and safety [5]. Dabbene and Gay [6] argue the use of precise data collection via information communication tools such As bar-codes and RFID allows facts acquisition and higher traceability in agricultural and meals deliver chains.

The current practice of traceability in the agriculture supply chain largely suffers from data fragmentation and centralized controls which proves vulnerable to both data modification and management. In the event of contamination, identifying the source and swiftly isolating the product from the supply chain requires close coordination among multiple stakeholders in the agricultural supply chain. Individual levels in meals deliver chains regularly have top traceability however change of data among levels proves to be hard and time consuming [7]. Recent generation trends thru the utility of blockchain generation can offer a significant and practical answer making sure traceability of agricultural produce and removes the want for a relied on centralized authority [8]. Blockchain technology has gained immense popularity among the supply chain and logistics community due transparency and immutability of transactions, enhances trust among participating stakeholders. Due to its tamperproof, trusted, steady and traceable nature, blockchain may be deployed efficaciously withinside the agriculture and meals deliver chain management. The overall structure and functioning of the food supply chain is vast And complicated regarding a couple of stakeholders starting from farmers, manufacturers, processors, and consumers [9]. Food and agricultural supply chain is getting a lot of attention from the research community due to the problematic long supply Chain, from uncooked substances to the give up client makes it extraordinarily difficult and time-ingesting in monitoring lower back the foundation of a product.

Hence, there may be a want to create a stable framework for monitoring information about the origin, farming methods Adopted, and protection of the meal’s product at some stage in the deliver chain cycle without a celebration or centralized control. Few other major issues to be solved in the supply chain cycle includes provenance, protocol regulations across multiple distributors, processors and retailers.

2. BACKGROUND

“The blockchain is an incorruptible virtual ledger of monetary transactions that may be programmed to report now no longer simply economic transactions however certainly the entirety of value.”

2.1. Over view of Block Chain

The blockchain is an undeniably ingenious invention The brainchild of someone or institution of humans acknowledged with the aid of using the pseudonym, Satoshi Nakamoto. But considering that then, it has developed into something greater, and the principle query each unmarried character is calling is: What is Blockchain?

By allowing digital information to be distributed but not copied, blockchain technology created the backbone of a new type of internet. Originally devised for the digital currency, Bitcoin, (Buy Bitcoin) the tech community is now finding other potential uses for the technology. Bitcoin has been called “digital gold,” and for a good reason. To date, the total value of the currency is close to \$112 billion US. And blockchains can make other types of digital value. Like the internet (or your car), you don’t need to know how the blockchain works to use it. However, having a basic knowledge of this new technology shows why it’s considered revolutionary. So, we are hoping you experience this, What Is Blockchain Guide. And if you already know what blockchain is and want to become a blockchain developer (2018 – currently in high demand!) please check out our in-depth blockchain tutorial and create your very first blockchain.

2.1 Over view of MySQL

A relational database shops facts in separate tables in preference to setting all of the facts in a single huge storeroom. The database systems are prepared into bodily documents optimized for speed. The logical model, with items which include databases, tables, views, rows, and columns, gives a bendy programming environment. You installation regulations governing the relationships among exclusive statistics fields, together with one-to-one, one-to-many, unique, required or optional, and “pointers” among exclusive tables. The database enforces those rules, in order that with a well-designed database, your utility in no way sees inconsistent, duplicate, orphan, out-of-date, or lacking data. The SQL component of “MySQL” stands for “Structured Query Language”. SQL is the maximum not un usual place standardized language used to get right of entry to databases. Depending to your programming environment, you may input SQL directly (for example, to generate reports), embed SQL Statements into code written in every other language, or use a language-unique API that hides the SQL syntax. SQL is described with the aid of using the ANSI/ISO SQL Standard. The SQL trendy has been evolving for the reason that 1986 and numerous variations exist. We use the phrase “the SQL standard” to intend the cutting-edge model of the SQL Standard at any time.

3. RELATED WORK

Improving food safety, reducing the impacts of food safety problems and so. This paper explores the economic functions of traceability, examining the extent to which traceability can bolster liability incentives for firms to practice due diligence. The quantity to which clients cost traceability in keeping with see, as opposed to verifiable quality, is evaluated empirically using survey and experimental auction data.

Other paper designs a novel Food Trading System to eliminate information asymmetry in the food trade, in order to establish a sustainable and credible trading environment, the system uses consortium blockchain technology to meet the challenge of different authentications and permissions for different roles in food trade.

4. PROPOSED SYSTEM

The usage of clever contracts to control and manipulate all interactions and transactions amongst all of the individuals concerned in the deliver chain ecosystem. All transactions are

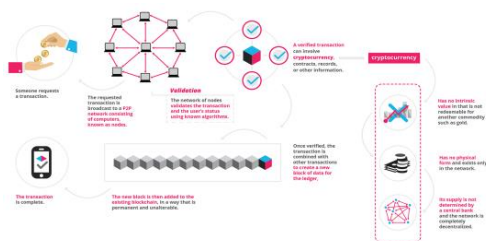


Fig.2.1 Block chain process

recorded and saved withinside the blockchain's immutable ledger with hyperlinks to a decentralized record system (IPFS) and accordingly providing to all excessive degree of transparency and traceability into the deliver chain environment in a secure, trusted, reliable, and green manner.

5.CASE DEFINE ADMIN MODULE

ARCHITECTURE DIAGRAM:

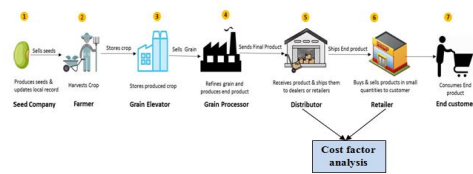


Fig.5.1.Architecture diagram

5.1 FARMER REGISTRATION

In this module farmer will registering by providing their all information like land and what are crop to cultivate along with name, email id, mobile number, location et., Farmer have to give their information on application and those details will stored on database MySQL .

5.2 DEPOT VERIFICATION

In this module we need to deploy the depot for the particular area all the farmers belong to the particular area will give information about the crops and cultivating process and what are all the methods they are using for the cultivation those information will store on the depot part. Every goods information will be verified by the application with the stock holding the depot.

5.3 QUALITY VERIFICATION

In this module what are all the data that fed by the farmer are subject to quality verification based on the quality we segregate the particular products quality based on the input given by the farmer. Every product's quality will be verified by the application.

5.4PROFIT MANAGEMENT

In this module, farmers earn very less money as getting much more delayed part of revenue so they are getting less profit and even sometimes they got loss on cultivation. So to overcome this issue we deploy an system to enhance the farmer's profit by implementing reverse method. If any item's price

suddenly increases on the market place, those profit will amount will credited to the farmer's account.

6. Existing System

The developing quantity of troubles associated with meals protection and infection dangers has mounted a giant want for powerful traceability answer that acts as an vital pleasant control device making sure ok protection of merchandise withinside the agricultural deliver chain.

7. FEASIBILITY STUDY:

The feasibility of the challenge is analysed on this section and a commercial enterprise notion is positioned forth with a totally widespread plan for the challenge and a few value estimates. During machine evaluation the feasibility have a look at of the proposed machine is to be carried out. This is to make certain that the proposed machine isn't always a burden to the company. For feasibility analysis, a few knowledge of the fundamental necessities for the device is essential.

Three key considerations involved in the feasibility analysis are

- **ECONOMICAL FEASIBILITY**
- **TECHNICAL FEASIBILITY**
- **OPERATIONAL FEASIBILITY**

A. Economic Feasibility

This observe is accomplished to test the financial effect that the machine may have at the organization. The quantity of budget that the employer can pour into the studies and improvement of the machine is limited. The expenses need to be justified. Thus the evolved machine as properly in the finances and this become finished due to the fact maximum of the technology used are freely available. Only the custom designed merchandise needed to be purchased. Economically this system is little bit costlier when compare

B. Technical Feasibility

This have a look at is achieved to test the technical feasibility, that is, the technical necessities of the system. Any gadget evolved have to now no longer have an excessive call for at the to be had technical resources. This will result in excessive needs at the to be had technical resources. This will result in excessive needs being positioned at the client.

C. Operational Feasibility

The thing of look at is to test the extent of recognition of the machine via way of means of the user. This consists of the manner of schooling the

consumer to apply the device efficiently. The consumer have to now no longer sense threatened through the system, as a substitute have to be given it as a necessity. The degree of recognition through the customers completely relies upon at the techniques which can be hired to teach the person approximately the device and to make him acquainted with it. That is welcomed, as he's the very last consumer of the system.

8. EXPERIMENTAL RESULTS

8.1 FARMER REGISTRATION

All the farmer had to register there details and so different types fertilizer are farmer using in their own product details are register

Fig.8.1. Farmer Registration

8.2 GOVERNMENT REGISTRATION

Government registration is more important to verified the farmer using materials in there farm and so verified the product cost also.

Fig.8.2. Government Registration

8.3 DISTRIBUTOR REGISTRATION

Distributor is the middle person in between the farmer and the retailer. This registration is used to intimate the product verification and cost estimation and also benefits.

Fig.8.3. Distributor Registration

8.4 HOME PAGE

Home page is use of all kind of the Registration, Login, Verification of product and also cost benefits in between the farmer and retailer. It used to all farmer and user login page.

Fig.8.4. Home page for all

8.5 RETAILER PAGE

Retailer application form page is for the retailer to register and verified cost of the product to through the application to perform their role.

Fig.8.5. Retailer Page

8.7 USER PAGE

Here customer specifies the product with weight of it and mention the pesticides, fertilizer used with organic or inorganic product and so it corresponding to there amount to buy the product. It is very use full for the customer to verified there product.

Fig.8.7. User or Customer Page

8.6 GOVERNMENT PAGE

It is for the cost verification of the product and rectify the amount for it.

Fig.8.6. Government Cost Verification

9.CONCLUSION

The main objective of the project is to find the quality of the product and to find all the agricultural processes of vegetation involved in the development of the product. All the data is stored into a server securely using the Block chain concept. Cost analysis and profit sharing is also implemented.

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