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PERFORMANCE IMPROVEMENT OF AGRICULTURE FOOD SUPPLY CHAIN USING BLOCKCHAIN

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ABSTRACT :- Blockchain is an emerging digital technology allowing ubiquitous financial transactions among distributed untrusted parties, without the need of middle people like banks. This analyzes the effect of blockchain innovation in farming and food production network, presents existing continuous activities and drives, and talks about generally suggestions, difficulties and potential, with a basic view over the development of these ventures. Our discoveries show that blockchain is a promising innovation towards a straightforward inventory network of food, with numerous continuous drives in different food items and food-related issues, however numerous boundaries and challenges still exist, which hinder its wider popularity among farmers and systems. These challenges involve technical aspects, education, policies and regulatory frameworks.

***Keywords* -:** Agricultural applications, Blocks, Block chain, Data integrity, Data security, Food supply chain,

I. INTRODUCTION

An expanding request in the public arena for more noteworthy data about food mirrors the requirement for more straightforwardness and the absence of trust. Simultaneously, increasingly more food items and refreshments are marked and joined by an assortment of accreditation plans, with an expanding hazard of extortion (selling inadequate item with great names or claims) and debasement. In the current circumstance, a significant part of the consistence information and

data is reviewed by confided in outsiders and put away either on paper or in a brought together data set and these methodologies are known to experience the ill effects of numerous enlightening issues, for example, the significant expense and failure of paper-based cycles and misrepresentation, defilement and blunder both on paper and in IT frameworks. These data issues, showing that current transparency and trust systems have not been able to solve or at times even have exacerbated the problems of low transparency and trust in agrifood chains, pose a severe threat to food safety, food quality, and sustainability. In particular, food integrity has become a major concern. Food integrity refers to the fairness and authenticity of food in food value chains both at the physical layer and the digital layer, where the digital layer should provide reliable and trustworthy information on the origin and provenance of food products in the physical layer

1.1 OBJECTIVES

• To eliminate outsider association in food store network.

• To gather information from farmers

• To execute a java based web application.

• To carry out blockchain based dispersed record.

II. METHODOLOGIES

BCT Agricultural items are the establishment of the people groups endurance, and the nature of rural items has consistently been the focal point of consideration of society and the public authority; the first horticultural item discernibility framework is too hard to even think about altering information because of the unreasonable convergence of information stockpiling, it faces the test of deceitful information following, and it is hard for purchasers to believe such detectability results. Also, the concentrated stockpiling strategy isn't helpful for the unified administration of detectable information from numerous ventures, and there will be issues of low detectability and trouble in government management. The development of blockchain innovation gives another answer for information security issues of food discernibility, its decentralization, against altering and different qualities and information encryption innovation improve the trouble of information extortion and guarantee information security. On the off chance that the blockchain is joined with the detectability of farming items, the wellbeing of discernible

information and the altering of information can be ensured to the greatest extent, the producers production behavior can be regulated, and consumers confidence in food quality can be improved. This project mainly proposes a framework of agricultural product traceability system based on blockchain technology, it uses blockchain to store the traceability data of agricultural products safely, and proposes a traceability model of agricultural products, which can cover the entire industrial chain of agricultural products, and consumers can query the authentic source of traceability of agricultural products.

2.1 APPLICATIONS

- 1. Farmers
- 2. Government Organizations
- 3. Banking Sector.
- 4. Educational System

Table 3.1: Hardware Requirements

Sr. No.	Parameter	Minimum Requirement	Justification
1	CPU Speed	2 GHz	Remark Required
2	RAM	3 GB	Remark Required

2.2 SOFTWARE RESOURCES REQUIRED

1. Operating System: Windows 7 , Windows 10,
2. IDE: NetBeans

III. SOFTWARE REQUIREMENT SPECIFICATION

3.1 SYSTEM REQUIREMENTS

3.1.1 Database Requirements

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MySQL Database

MySQL is on open source information base which is essentially a RDBMS for example social data set administration framework. As a data set worker, essential capacity of this product is to putting away and recovering information as mentioned by other from end programming applications like java which may Or may not run either on the same computer or on different computer. This can be across the network either in internet or intranet.

3.1.1.1 Software Requirements(Platform Choice)

1. Operating System:Microsoft Windows 7 and Above
2. Programming Language: Java

4.1.1.2 Hardware Requirements

1. Processor:Intel Core I3 or Higher 2. RAM:4 GB or Higher 3.
GB (min)

IV. SYSTEM DESIGN

4.1 SYSTEM ARCHITECTURE

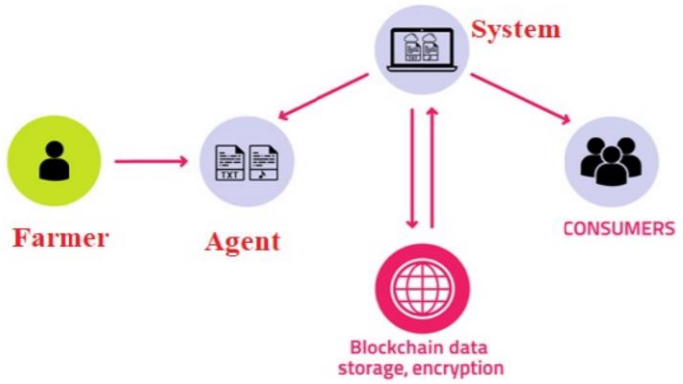

Figure 1: System Architecture

Whenever any transaction will occur in the system , the record of that transaction 10is maintained in the form of hash value in a block. Each next block will get attached to the previous block and in this way a virtual square chain will happen. The hash worth of a current square is created utilizing the information of a current square and the hash of the past block. Along these lines if any of the square is tempered the resulting every one of the squares hash should be changed . Such various duplicates are kept up at various workers, which will assure the data

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security and confidentiality. As everything is through application interface, it will maintain the transparency in the agricultural supply chain management.

4.2 DATA FLOW DIAGRAMS

A data flow diagram (DFD) is a graphical representation of the "flow" of data through an information system, modeling its process aspects. A DFD is often used as a preliminary step to create an overview of the system, which can later be elaborated. DFDs can also be used for the visualization of data processing.

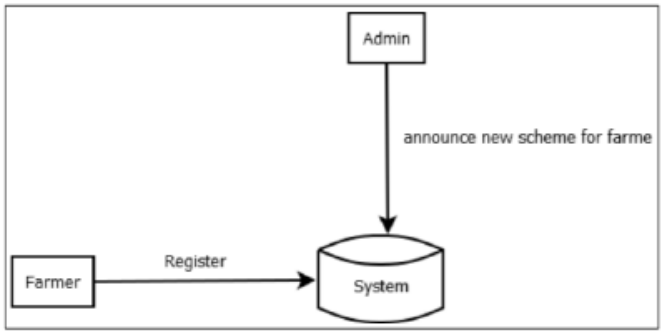

Figure 2: Level 0 Data Flow Diagram

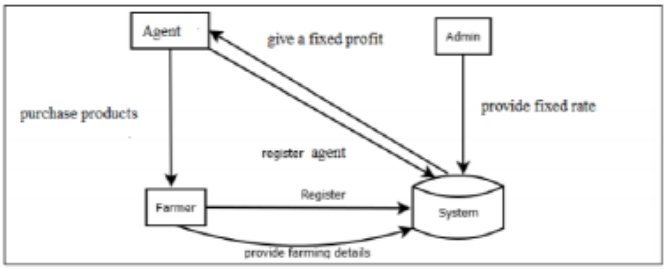

Figure 3: Level 1 Data Flow Diagram

4.3 UML DIAGRAMS

4.3.1 Class Diagram - A class diagram in the world of Unified Modeling Language or UML can be defined as a type of static structure diagram which mainly defines the structure of a system. It works by showing the systems classes and their attributes and operations or methods also the relationships among objects.

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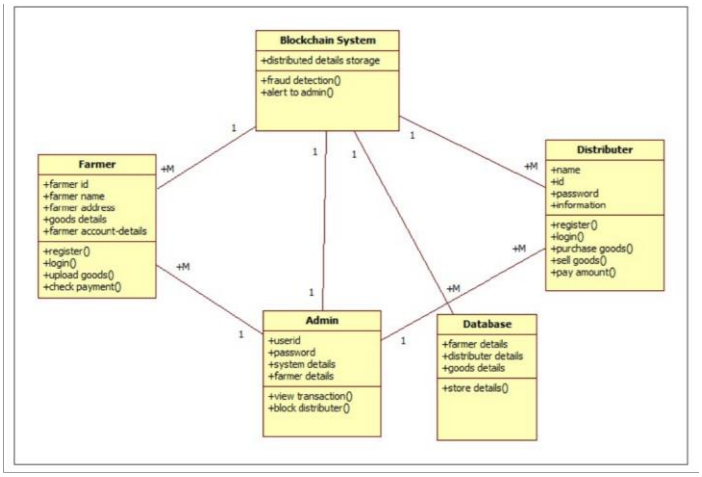

Figure 4: Class Diagram

4.4 Use Case Diagram

Dynamic behavior is most important aspect to capture the model of any system. Dynamic behavior can be defined as the behavior of the system when it is running or operating. Static behavior is not sufficient to model a system rather dynamic behavior is more important than static behavior.

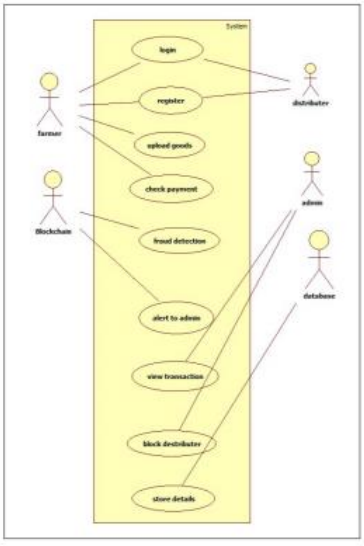

Figure 5: Use Case Diagram

V. CONCLUSION

In this way we will execute a model web programming application in Java for use of BCT in production network the executives . We have will carry out block chain highlights, for example, 1. Decentralization 2. Visual Cryptography 3. Hash Algorithm 4. Encoded Database. utilizing java programming language.Thus it is feasible to follow farming store network and to give least cost for horticultural items.

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