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E-cart for Farmer in Sustainable Supply Chain

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Abstract The system proposed in this journal is a sustainable supply chain of smallholder farmers. Their real purpose of this supply chain is to create value for farmers and also increase the profitability of every member in that chain. Farmers can enter their product with dealers, retailers , and customers can purchase depending on their wishes. There is more waste of food due to delays. By this we can minimise the delays and eliminate unethical pricing activities and provide a good service. The success of the supply chain is not only dependent on movement of the product but how data is maintained in all stages. So to provide security for data by using the SHA 256 algorithm.

Key Words: small holder farmer , supply chain , SHA 256

1.INTRODUCTION

Small farmers have the most importance in Indian agriculture. They are facing problems due to non availability of quantity input lock access to credit facilities, public resource technology . 70 percent of rural households still depend primarily on agriculture for their livelihood with 82 percent of farmers being small and marginal. The demand for food is growing much faster than ever. Farmers, retailers, dealers, and customers are looking for the best supply chain to make profit for everyone in the supply chain .Supply chain are principally concerned with the flow of product and information between the supply chain formation to farmer to end user.

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2. system analysis

To achieve the sustainable supply chain in an effective way these participation of these people are needed

Farmer:

First the farmer can upload their product for sale before that farmer needs to register. For registration, farmers need to upload their details like username, phone number, email, and password. After this process, farmer products are listed for sale. And farmers can view products listed for sale and payment. In case any unethical pricing is done by a dealer or retailer, farmers can complain to customer care to take the right action against them.

Dealer

Dealers can view the product which was uploaded by the farmer and they can buy the product .After that the dealer can view their stock .

Retailer

Retailers can buy the stock for their shop from dealers once they have bought the product, the retailer can view and move the product for sale. Retailers can see their transaction history made by the customer and calculate account balance.

Customer

Once the retailer moves the stock for sale, customers can buy the product.

Working Principle:

This web development project is a working prototype consisting of front end, back end, database and server. To design a structure of a web page we have used Hyper Text Markup Language. To describe the presentation of a web page including colour, layout and fonts we have a Cascading Style Sheet. The browser send the Http request to the web server and when web server recognize it forward it to JSP engine .By using the JSP page the extension of page is .jsp instead of .html. Then JSP engine convert it into servlet. Then it compile the servlet into the executable class and forward the original request to servlet engine. During this servlet produce an output in HTML format .Then the output is passed on to web server inside an HTTP response. then it forward http response in term of static html content.then it dynamically generated html page inside the http respond. To store data we have used SQL(Structured Query Language) and stored it in the form of a table. Backend is developed using java programming. In the end we have used Blockchain technology to connect the users one by one and data is stored securely, it can't be modified. In blockchain technology to create a hash value we used the SHA-256 algorithm.

SHA256 algorithm:

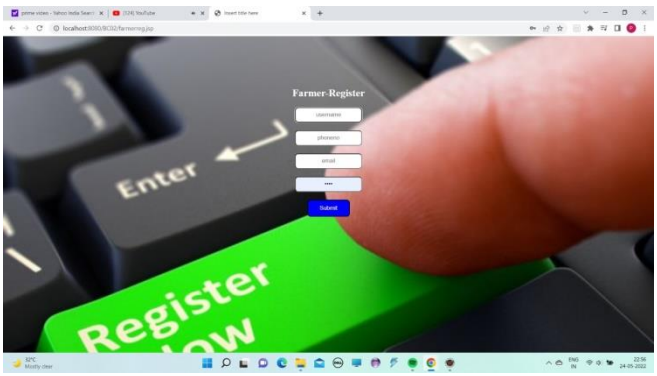
Secure Hash Algorithms, conjointly referred to as SHA, area unit a family of cryptological functions designed to stay information secured. It works by remodeling the info employing a hash function: Associate in Nursing formula that consists of bitwise operations, standard additions, and compression functions. The hash operate then produces a fixed-size string that appears nothing just like the original. These algorithms area unit designed to be unidirectional functions, which means that when they're reworked into their several hash values, it's just about not possible to remodel them back to the initial information.

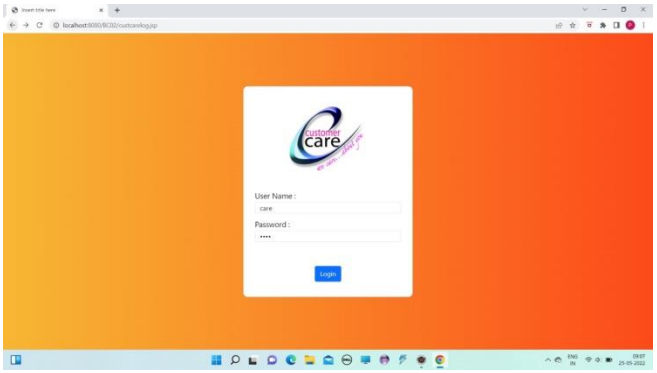
A common application of SHA is to encode passwords, because the server facet solely must keep track of a particular user's hash price, instead of the particular watchword. this is often useful just in case Associate in Nursing offender hacks the info, as they'll solely notice the hashed functions and not the particular passwords, therefore if they were to input the hashed price as a watchword, the hash operate can convert it into another string and later deny access.

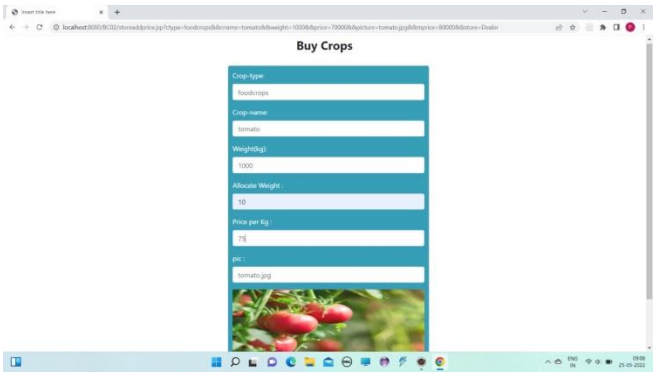
a number of algorithms of interest area unit SHA-1, SHA-2, and SHA-3, every of that was in turn designed with progressively stronger cryptography in response to hacker attacks. SHA-256 can be below the SHA-2 family.

Three properties create SHA-256 this secure. First, it's nearly not possible to reconstruct the initial information from the hash price. A brute-force attack would wish to create 2256 tries to get the initial information. Second, having 2 messages with identical hash price (called a collision) is extraordinarily unlikely. With 2256 potential hash values (more than the quantity of atoms within the proverbial universe), the probability of 2 being identical is infinitesimally, unthinkably little. Finally, a minor amendment to the initial information alters the hash price such a lot that it's not apparent the new hash price comes from similar data; this is often referred to as the avalanche impact

Output screenshots







3. CONCLUSIONS

Agriculture supply chain manages the flow of the product and information along the supply chain by capturing the value added in each stage. It also offers the opportunity to reduce the cost and risk along the supply chain. In conclusion we drew from the present journal , in the world more crops were wasted due to ineffective supply chains. To make the best use of crop effective design of the supply chain needed to be developed. This can be achieved through sustainable supply chain in secured way.

REFERENCES

[1] C. Bai and J. Sarkis, "A supply chain transparency and sustainability
technology appraisal model for blockchain technology," *Int. J. Prod. Res.*, vol. 58, no. 7, pp. 2142–2162, 2020, doi: 10.1080/00207543.2019.1708989.

[2] R. Birner and D. Resnick, "The political economy of policies for smallholder
agriculture,"*World Develop.*, vol. 38, no. 10, pp. 1442–1452, 2010, doi: 10.1016/j.worlddev.2010.06.001.

[3] R. Glavee-Geo, U. Burki, and A. Buvik, "Building trustworthy relationships
with smallholder (small-scale) agro-commodity suppliers: Insights from the Ghana cocoa industry," *J. Macromarketing*, vol. 40, no. 1, pp. 110–127, 2020, doi: 10.1177/0276146719900370.

[4] A. Kamilaris,A. Fonts, and F.X. Prenafeta-Bold´*v*, "The rise of blockchain
technology in agriculture and food supply chains," *Trends Food Sci. Technol.*, vol. 91, pp. 640–652, 2019, doi: 10.1016/j.tifs.2019.07.034.

[5] P. Kittipanya-ngam and K. H. Tan, "A framework for food supply chain
digitalization: Lessons from Thailand," *Prod. Planning Control*, vol. 31,
no. 2/3, pp. 158–172, 2020, doi: 10.1080/09537287.2019.1631462.