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Supply Chain Management System Using Java

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A B S T R A C T

"SUPPLY CHAIN MANAGEMENT SYSTEM" is the management of a network of interconnected businesses involved in the ultimate provision of product and service packages required by the end customers. It spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point-of-origin to point-of-consumption. It is mainly designed for the production sector, which gives the information related to client and dealers of the company with respect to product launches. This application system is designed to run on any computer. Based on the designation of the web system user who registers into the system he has the permission to submit his registration form and then specify the requirements. This System plays a vital role in that company will deal directly with each client of the company regarding product information. The specific purpose of the system is to automate the communication between the Admin, clients and the dealers of the Organization.

Keywords: Customer, Management, Production, Raw Materials, Supply Chain.

1. Introduction

"SUPPLY CHAIN MANAGEMENT SYSTEM" is the web-based application, designed for a production sector, which gives information connected to the clients and dealers of the company with respect to its product launches. This product develops application that can be used by the company management to keep track of the sales, dealers and its clients. In the existing method of tracking of all the product details is tedious and time consuming. As a part of product survey and launching of the area carried out manually by representatives, which is a time taking task. It fulfills different requirements of clients of the company. Thespecific point of the system is to automate the communication between clients, Admin and the dealers of the organization.Supply chain management is generally, the movement of raw materials into finished goods. In this paper the Client provides its requirements about the product. Admin contacts its various dealers for gathering the requirements. The dealers display the list of items from which the admin selects the items as specified by the client. After gathering the required items, admin gives the gathered items to the inventory department where the processing is done. Ultimately the final product is manufactured and then finally delivered to the client which is the output of the project. In the meanwhile the manufacturing cost is tabulated by the accounting department and given to the client. Ultimately, the client gives its feedback which is transferred to the Admin and the dealers.

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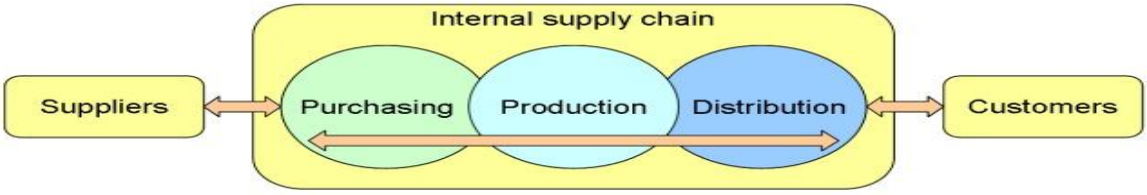


Fig1. Internal Supply Chain

2. Literature Survey

Paper 1: "Controlling Random Lead Time Demand Through a Flexible Production System Under Supply Chain Management," [1]
Author Name: M.Sarkar and B. D. Chung
Description: This study proposes a supply chain management model with a flexible production rate and a price discount offer for the backorder situation, where the ordering cost is lead time dependent. This lead time demand may follow a known distribution, or it may not have any specified distribution with the aim of minimization of supply chain cost under the simultaneous optimization of the production rate, lot size in each shipment, number of shipments, lead time, probability of movement of uncontrolled state to controlled state, safety factor, and price discount backorder.

Paper 2:"Physically Unclonable Functions (PUFs): A New Frontier in Supply Chain Product and Asset Tracking,"[2]
Author Name: J. Davies and Y. Wang
Description: In this article, we introduce and explore the early implications of an innovative technological development known as physically unclonable functions (PUFs). We review the main technological developments of product and asset tracking in the supply chain management field ranging from barcode, radio frequency identification tags, and the Internet of Things.

Paper 3: "Value of Bargaining Contract in a Supply Chain System With Sustainability Investment: An Incentive Analysis"[3]
Author Name: J. Shi, H. -L. Chan and C. Dong
Description: Sustainability is a prevalent topic as the consumers and the governments are much more concerned about the environmental pollution. To reduce the carbon emission, in real world practice, governments have executed different forms of policies to motivate the firms to operate in a sustainable manner. This paper aims to examine the value of bargaining contract when the supply chain member invests in the sustainability projects, and explore the effectiveness of the direct (e.g., cash grant) and indirect (e.g., an increased environmental tax rate) subsidies in reducing the total carbon emission.

Paper 4: "Research on Influencing Factors of Cross Border E-Commerce Supply Chain Resilience Based on Integrated Fuzzy DEMATEL-ISM,"[4]
Author Name: X. Liu, Z. Dou and W. Yang
Description: Supply chain resilience is the key for cross-border e-commerce enterprises to continuously obtain competitive advantages. This paper studies the influencing factors of cross-border e-commerce supply chain resilience (CBSCR), so as to further enhance the competitiveness of global supply chain and ensure the safe operation of cross-border e-commerce supply chain.

3. Proposed System

While Supply Chain Management is tightly interwoven with Operations Management, that focuses coordinating and optimizing the internal process, whether it will be designing and manufacturing goods and developing services.

Advantages:

- Systems are installed to address needs of a new business requirement or to achieve a desired level of competitive advantage.
- The best companies around the world are discovering a powerful new source of competitive edge. That's called supply-chain management and it encompasses all of those integrated activities that bring product to market and create satisfied customers..
- growth of share, in turn, brings with it competitive advantages such as lower warehousing and transportation costs, decreased inventory levels, less waste, and lower transaction Prices.

4. Problem Statement

The problem statement within the supply chain management is that short description of the issues that need to be addressed improve the level of

efficiency. Following to conduct essential qualitative research on supply chain management, it is essential to identify the exact issues within the logistics operations. Supply chain system is the most crucial part in any business organizations. The causes of supply chain activities to failed are due to lack of understanding or knowledge on the nature of demand. Supply chains have become more multifarious than before thus the ruthlessness and occurrence of supply chain disruption seems to be increasing . These outlines could be worst to firms which does not achieve responsiveness in relation to its supply chain strategies.

As per current economic turmoil, it will be affecting the flow of supply chain in the country especially when it involves the global supply chain. Fall of our currency value will discourage the end-users to purchase items as their buying power has drop tremendously. Additionally, firms will also lose suppliers reliability and as a result they could not sustain an efficient and systematic flow of supply network due to the drop of value in the country currency. Hence, the experts in the industry need to have a thorough review in solving these issues by observing to the supply chain activities and strategy so that they can achieve supply chain responsiveness

5 . Existing System

The team's first task is to assess the supply-chain competitiveness of the organization. The evaluation starts with a comparison of business objectives against existing capabilities and performance. This application typically reveals where the existing supply chain can achieve immediate competitive advantage (Kearney calls these the "early wins") and where inefficiencies may be leaving the company vulnerable to the competition. • Step two in the agenda-setting process is to create a vision of the desired supply chain. Through a series of "visioneering" sessions that might also include key customers and suppliers, the team considers how such trends as globalization, channel shifts, and new technology will affect the desired supply-chain configuration. That application addresses such questions as, what supply-chain factors and performance levels drive customer buying decisions.

Disadvantages:
Handwritten orders were being reenter into the materials-planning system on weekends, which meant that some orders were sitting around unprocessed for an entire week. Production control would be overcome with a week's worth of orders. It often took them several days to work through the backlog and issue manufacturing orders.

6. Architecture

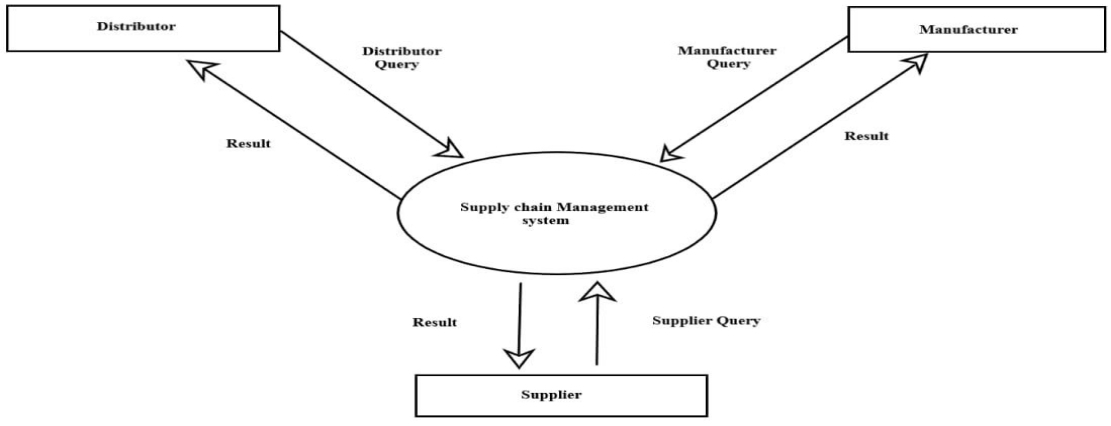


Fig 2. System Architecture

The above figure represents system architecture where you can find supply chain management system blocks like Supplier, Distributor, and Manufacturer and their queries.

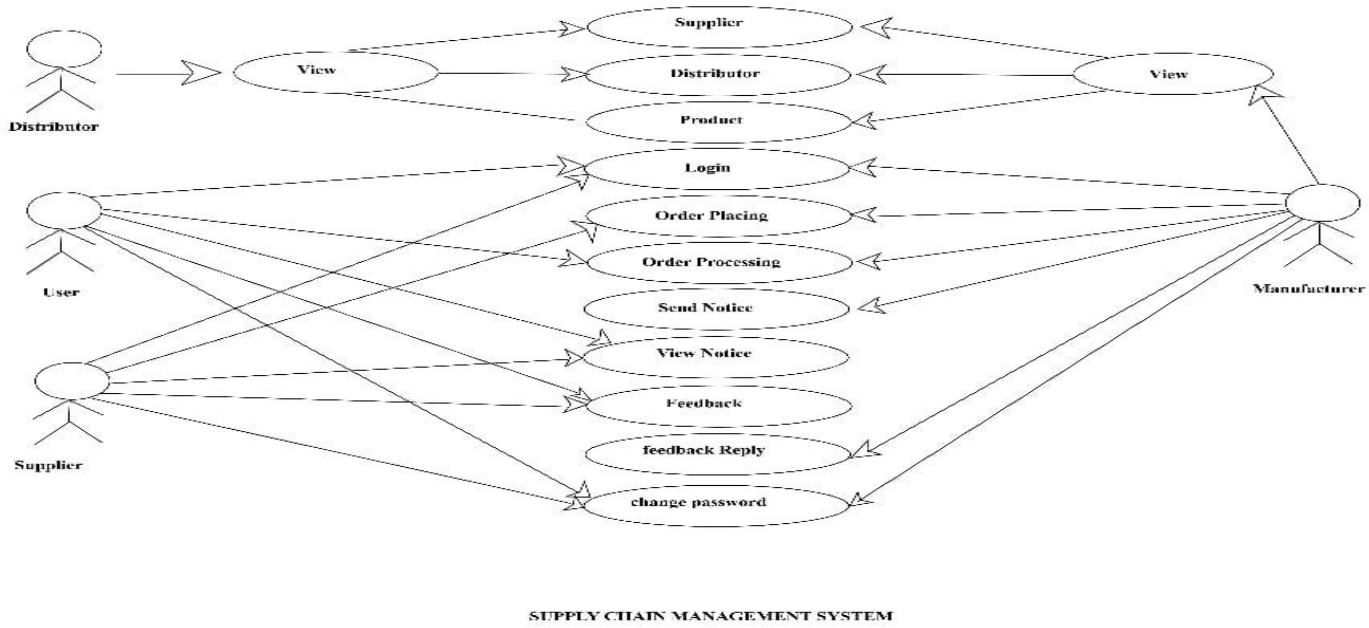


Fig 3. Supply Chain Management System

Initially, a customer will search for a product by using the search bar or visitor can navigate to shop page where he/she can find all products on the website. After finding the desired product, one can find all the data like product description, cost, reviews and feedback, etc. Then, product selection takes place after that customer will add product or products to cart.

He/she asked to register or login to our website. Later, customer will turn into lead (buyer) then he/she has to add billing or shipping address.

Final step is payment, after successful transaction order notification will be sent to customer and if customer accepts the order automatically buyer will be notified with notifications via registered mail until the product is delivered successfully.

7. Process

The best companies around the world are discovering a dynamical new source of competitive advantage. That's called supply-chain management and it encompasses all of those integrated activities that bring product to market and create satisfied customers. The Supply Chain Management integrates topics from manufacturing operations, purchasing, transportation, and physical distribution into a unified program. Successful supply chain management, then, coordinates and integrates all of these activities into a seamless process. It includes and links all of the partners in the chain. Addition to the departments within the organization, these partners include vendors, carriers, third party companies, and information.

Supply Chain Management System consists of main Three modules. They are

1.Admin Module

2.Client Module

3.Dealer Module

Admin module

In this module Admin can checks the availability of the product, the new launched product information. It can also checks the delivery of product to the clients request and filters the products which are not being ordered by the clients. Whenever the admin log's in into the system, it first checks the client requirements and then contacts the several dealers depending upon the requirements specified by the client. It also shows the record of various Dealers related to the system. Admin also gets the feedback given by the client after the delivery of the product. The admin transfers the feedback related to the product to particular dealer. It also shows and checks the delivery of product to the clients request and filters the products which are not being ordered by the clients.

Client Module

It consists of registration and regulations for the client. It also consists of the information about the product. The major function of the Client

is that-it first gets registered into the system if it is not registered. The Client Specifies the requirements in order to get the product build. The is intimated when the product is completely built according to the specified requirements and is ready for the delivery. The Client then gives the feedback with respect to the services provided and the functionality of the product.

Dealer Module

The Dealer module consists the entire information about the dealers. It consists the list of Dealers associated with the system. The dealers maintain the total record of items and generate the list of items when needed. The dealer can also updates the list of items. The dealer gets the feedback related to the product functionality and the quality from the Admin. The above are the three main modules of the project. The sub module of the project is the Feedback module.

Feed Back Module

This module is generally used to specify the feedback after the product delivery. It is mainly used by the client to give the feedback. This module consists of two main parts Product Feedback and the General Feedback. The product feedback is transferred to the particular dealer which will be regarding the product functionality and the quality. The next one, that is, the general feedback is kept with the admin which will be regarding the services provided.

8. Result

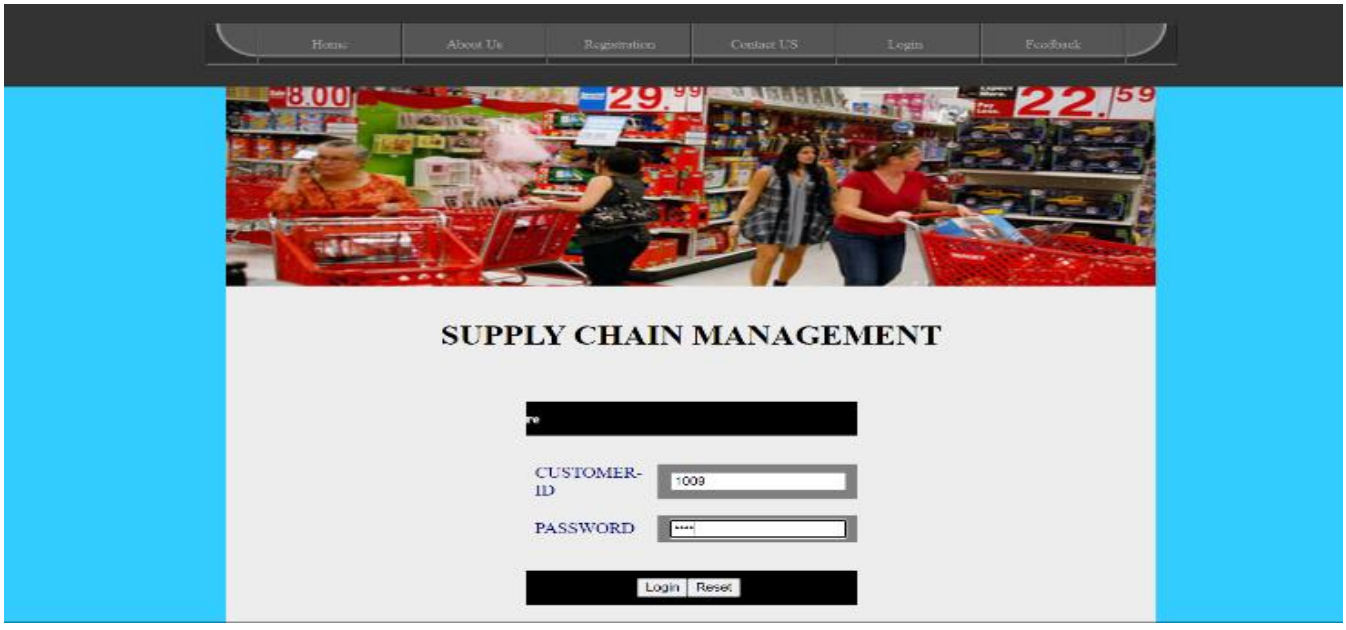


Fig.4

Here the above screen(Fig.4) shows that home Screen of the Website. After the client gets registered, he logs in into the system with the valid user's name and password. The above screen illustrates the same.

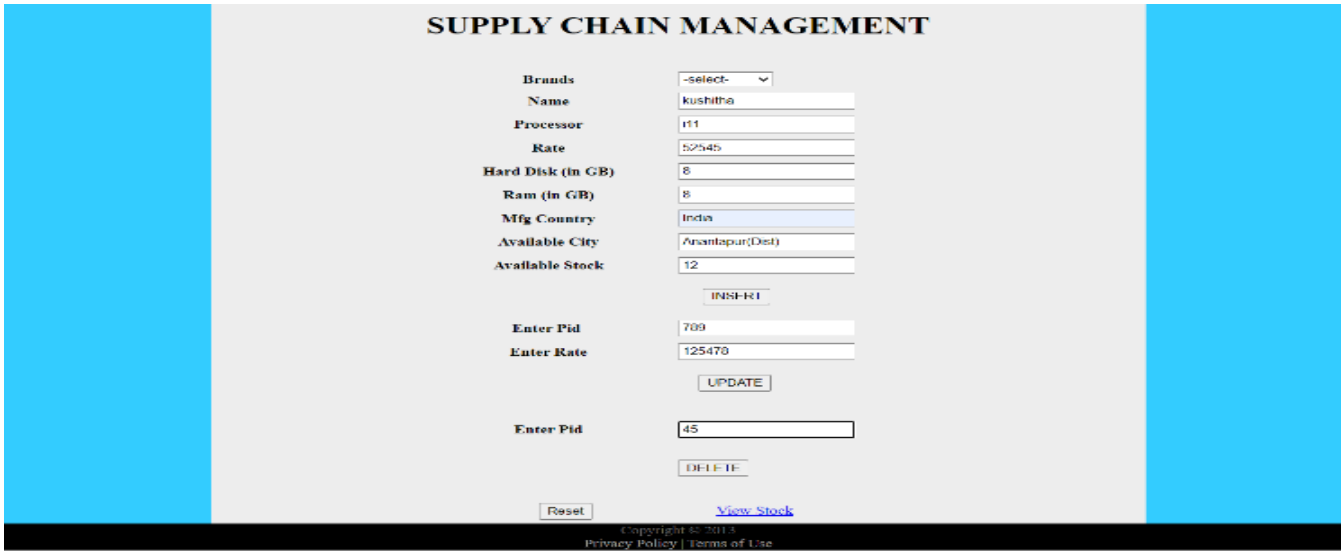
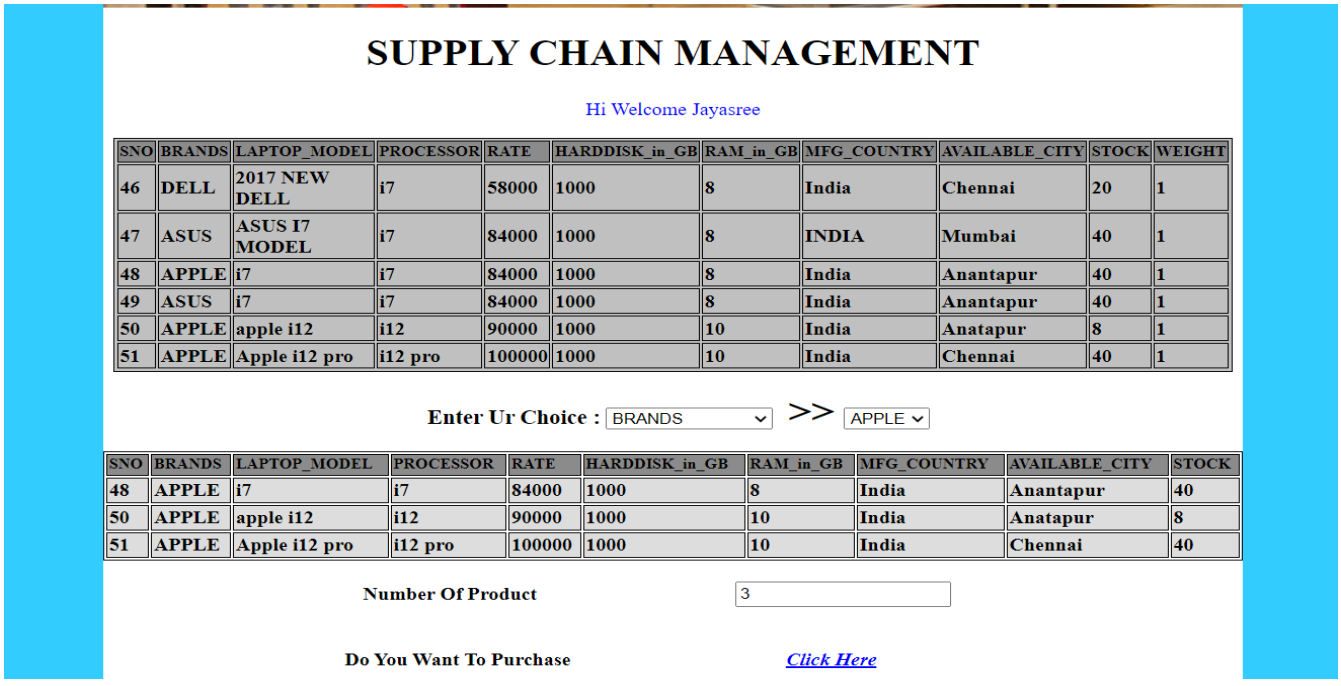


Fig.5

The above Screen(Fig.5) represents If the user is new, then he has to first get registered. The above screen is the Client registration form which has to be completely filled by the Client. Only after the registration the client is considered as the authorized and he can log in into the system.



SNO	BRANDS	LAPTOP_MODEL	PROCESSOR	RATE	HARDDISK_in_GB	RAM_in_GB	MFG_COUNTRY	AVAILABLE_CITY	STOCK	WEIGHT
46	DELL	2017 NEW DELL	i7	58000	1000	8	India	Chennai	20	1
47	ASUS	ASUS I7 MODEL	i7	84000	1000	8	INDIA	Mumbai	40	1
48	APPLE	i7	i7	84000	1000	8	India	Anantapur	40	1
49	ASUS	i7	i7	84000	1000	8	India	Anantapur	40	1
50	APPLE	apple i12	i12	90000	1000	10	India	Anatapur	8	1
51	APPLE	Apple i12 pro	i12 pro	100000	1000	10	India	Chennai	40	1

SNO	BRANDS	LAPTOP_MODEL	PROCESSOR	RATE	HARDDISK_in_GB	RAM_in_GB	MFG_COUNTRY	AVAILABLE_CITY	STOCK
48	APPLE	i7	i7	84000	1000	8	India	Anantapur	40
50	APPLE	apple i12	i12	90000	1000	10	India	Anatapur	8
51	APPLE	Apple i12 pro	i12 pro	100000	1000	10	India	Chennai	40

Fig.6

The above Screen(Fig.6) shows the available brands and products. Here we can choose the brand and enter how many products we want to buy there was an option to click that we can purchase the product.

Fig.7

The above screen(Fig.7) shows that customer selects which product he/she want to purchase and click that order button to proceed.

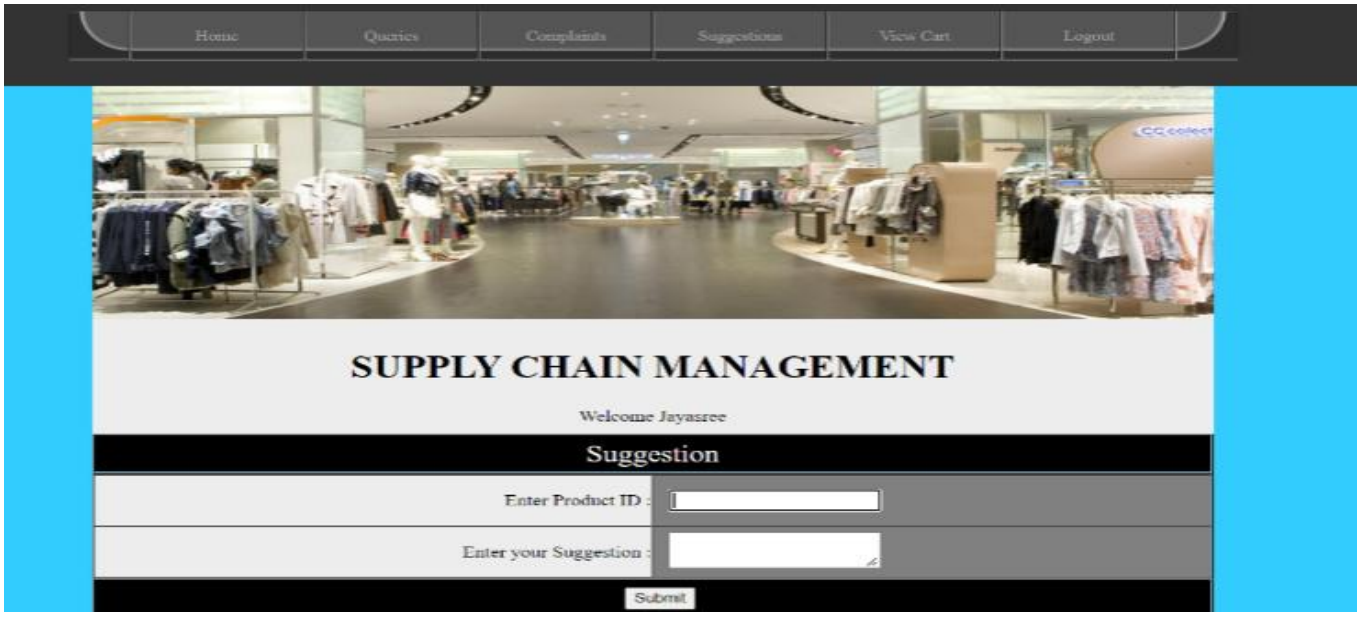


Fig.8

Here the above screen(Fig.8) shows that, Customer enters the product id and gave his product suggestions.

4. Conclusion

This supply chain management (SCM) can help people to join collaboration between the outsourcing partners, suppliers, and customers. Supply chain can also comprises the transformation of goods from raw materials through to the delivery of the finished product. Whenever, SCM also involves the integration of these activities that can improve relationship between the various parties. As we know that, SCM is closely linked with enterprise resources planning (ERP) and electronic commerce system. So, it can give benefit to make an easier supply form other party. Supply Chain Management (SCM) is an integrated path to planning, implementing and controlling the flow of information, materials and services from raw material and component suppliers through the manufacturing of the product for ultimate distribution to the end customer. In these processes, which employ a combination of people, systems and technology, can be performed by the firm itself or in the collaboration with external supply system. Supply chain management is strategic in orientation and identify that the competitive strength of a firm is not only determined by its products but also the operations and activities that place the products into customers hands and provide supporting services. The well-organized and effective supply chain management enhances firm performance and adds value by increasing asset utilization to gain competitive market advantage. The impressionable and efficiency of a company's supply chain arising from its design and management is integral to the firm's ability to successfully complete in the global marketplace.

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REFERENCES

[1] M.Sarkar and B. D. Chung, "Controlling Random Lead Time Demand Through a Flexible Production System Under Supply Chain Management," in IEEE Access, vol. 9, pp. 112236-112256, 2021, doi: 10.1109/ACCESS.2021.3103967.

[2] J.Davies and Y. Wang, "Physically Unclonable Functions (PUFs): A New Frontier in Supply Chain Product and Asset Tracking," in IEEE Engineering Management Review, vol. 49, no. 2, pp. 116-125, 1 Secondquarter,june 2021, doi: 10.1109/EMR.2021.3069366.

[3] J. Shi, H. -L. Chan and C. Dong, "Value of Bargaining Contract in a Supply Chain System With Sustainability Investment: An Incentive Analysis," in IEEE Transactions on Systems, Man, and Cybernetics: Systems, vol. 50, no. 4, pp. 1622-1634, April 2020, doi: 10.1109/TSMC.2018.2880795.

[4] X. Liu, Z. Dou and W. Yang, "Research on Influencing Factors of Cross Border E-Commerce Supply Chain Resilience Based on Integrated Fuzzy DEMATEL-ISM," in IEEE Access, vol. 9, pp. 36140-36153, 2021, doi: 10.1109/ACCESS.2021.3059867.

[5] C. Talay, L. Oxborrow and C. Brindley, "How small suppliers deal with the buyer power in asymmetric relationships within the sustainable fashion supply chain", J. Bus. Res., vol. 117,pp. 604-614, Sep. 2020.

[6] Wieland, Andreas (2021). "Two perspectives on supply chain resilience". Journal of Supply Chain Management. 57 (1). doi:10.1111/jscm.12248. ISSN 1745-493X.