

INVENTORY MANAGEMENT SYSTEM

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Abstract – The website hosts the inventory management system such as fashion dresses to be sold in the online. Every Seller can register their information and their clothe details in the site to sale using this application. Administrator creates the products types and items and uploads it on the site to sale. This system allows the small scale clothe merchants and familiar middle class clothe merchants can register their products to trade their clothes through this online application. Using this portal, customers who are surrounding the particular city can purchase clothes online from specified shops which are nearby their places and which are familiar shops in the city. So customers get the delivery of clothe items from the specified shop quickly. All the uploaded products in the site are available online. Any user visits the site can view the products and can purchase online. The products are displayed category wise using K-means clustering so that the search of the product is easy. Users can select the products from the site and can add in their account. Then on finishing the purchase of items from the site, user needs to confirm the products purchased. Then the order is send to the site.

Key Words: clothe merchants, K-Means clustering, search products.

I. INTRODUCTION

The main aim of the site is to cut the convenience of the user while shopping the products in shopping complexes. Important information may not be sent or received on time when necessary. Time may be consumed when we purchase clothe in shops. It may also lead to more expensive. Customer could not search and select the dresses easily based on their prerequisite. This online shopping helps the user to shop fashion clothing for men, women and children through online. So that the user is not needed to leave his/her house for shopping. The site is attractive and user friendly so that any new user to the site also easily able to purchase the items from the site. The user interface is defined in HTML and CSS. All these technologies are blended fine so that the working of the site is error less and easy to navigate through the pages. These prices are for Online shopping only and are discounted from pricing available in our store. Even some small clothe merchants sell the high quality of clothe with

affordable price, they don't get popular and they could not get the right revenue from their business. These kinds of small clothe merchants surrounding the city can register their products for online sales and getting benefits to both clothe shop merchants and customers who are in the same place.

II. LITERATURE SURVEY

"Online Apparel Shopping: A Review of the Literature and Future Research Directions" by Xi Zhang and Jihyun Kim (2013).

This paper provides an overview of the literature on online apparel shopping, including the factors influencing online purchase intention, the effects of website quality and design on online shopping behavior, and the role of online reviews.

"The Influence of Social Media on Consumer Behavior: An Overview of Research on Online Fashion Shopping" by Yiting Li and Xiaoxiao Fu (2017).

This paper surveys the research on the impact of social media on online fashion shopping, including the role of social media in consumer decision-making, the effects of social media content on online purchase intention, and the influence of social media on brand loyalty.

"Online Shopping for Fashion: A Review of the Influence of E-Service Quality on Customer Satisfaction and Loyalty" by David Gikandi Ngugi, William Musyoka, and Simon Iravo (2019).

This paper reviews the literature on the impact of e-service quality on customer satisfaction and loyalty in online fashion shopping, including the dimensions of e-service quality, the relationship between e-service quality and customer satisfaction, and the impact of e-service quality on customer loyalty.

"A Review of the Literature on the Factors Influencing Online Shopping Behavior of Consumers for Apparel Products" by Syed Muhammad Arslan, Adeel Arshad, and Muhammad Anas (2019).

This paper provides a comprehensive review of the factors influencing online shopping behavior for apparel products,

including the role of trust, perceived risk, perceived value, and online reviews.

"A Systematic Literature Review of Online Fashion Retailing Research" by Fei Liu, Yanwen Jin, and Weiwei Wang (2021).

This paper presents a systematic literature review of research on online fashion retailing, including the factors influencing online purchase intention, the impact of website design on online shopping behavior, and the effects of social media and mobile commerce on online fashion shopping.

An Investigation on Shoppers' Buying Behavior Towards Apparel Products IEEE Transactions on Dependable and Secure Computing, vol. 15, no. 5, pp. 883-897, 2019.

The shopper's perception will also vary depending on what kind of product they are looking to purchase. For instance, Klein (1998) said that products which require searching before purchase (such as books) will be different from products that are purchased through experiences (such as clothes). Zhou et al (2007) also stated that the online shoppers' perception will vary depending on the type of product because the risk factors are different for each (Liu & Forsythe, 2010). Some consumers do not shop online because they perceive traditional shopping as being something and fun.

They are attentive towards sales promotions and are influenced by celebrities when it comes to fashion. A recent research found that almost half of the respondents were spending a minimum of one hour every day on online retail websites. It was also found that men's fashion has led more men to participate in online shopping.

III. EXISTING SYSTEM

Online shopping system is an integrated fault tolerant network based on user-friendly software. If any person wants to get an idea about online shopping then the project should be done manually of which it will consume most of the time & money. The need for computerization is the only solution in which we can get information about the project. In existing online shopping like amazon, flipkart providing services of high level shopping and which are giving benefit to the corporate companies only. In addition to, customers also do not have any idea about those companies and their products. So it will not reach, it could not be used by all type of customers.

A. Drawbacks

- The traditional system of fashion shopping involves visiting a physical store or boutique to browse and purchase clothing and accessories.
- Customers may try on items in the store and receive assistance from sales associates. Payment is typically made at the point of sale, either in cash

or by credit/debit card.

- Important information may not be sent or received on time when necessary. Time may be consumed when we purchase clothes in shops. It may also lead to more expensive.
- Customer could not search and select the dresses easily based on their prerequisite.

IV. PROPOSED SYSTEM

The invention of the new system is an achievement since it satisfies the requirements of the users. Therefore it is time saving and easier to access. The software developed in Java Server Pages and it is an internet programming, since it is online it is possible for users to gather more information about various online shops. All the tasks are system oriented, and admin has the full control of the site. The admin can view all the data about stock or users outstanding. But even the admin cannot do any non allowable tasks, such as deleting a customer who has outstanding amount. So this site is carefully developed so that no information will be lost.

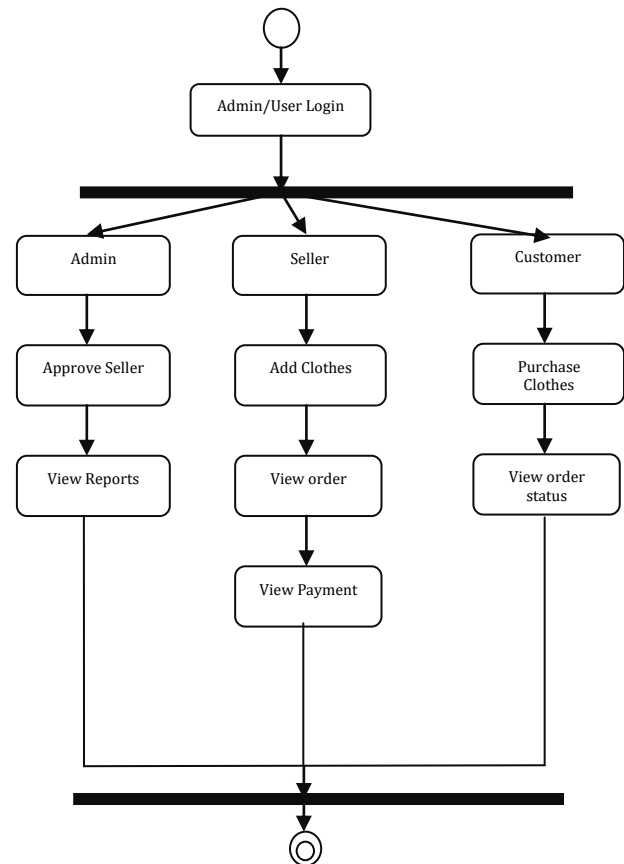


Figure1. Architecture of Proposed System

Advantages of proposed system

Changing consumer behavior: With the rise of online shopping, consumers are changing the way they shop for fashion. Understanding the factors that drive online fashion shopping can help retailers and brands better serve their customers.

Market trends: E-commerce is rapidly growing and transforming the fashion industry. Studying online fashion

shopping can provide insights into market trends, such as which products are popular, how consumers shop, and what influences their purchasing decisions.

Business strategy: For fashion brands and retailers, online shopping is an important channel for reaching customers. Understanding online fashion shopping can help businesses develop effective strategies for online sales, marketing, and customer service.

Technology and innovation: The fashion industry is constantly evolving, and technology is a key driver of innovation.

Studying online fashion shopping can help businesses identify new technologies and tools to improve the online shopping experience and stay competitive.

V. METHODOLOGY

K-means clustering is a popular unsupervised machine learning algorithm used to group similar data points into a predefined number of clusters. The goal of k-means clustering is to minimize the sum of squared distances between data points and their respective cluster centroids. The k-means algorithm starts by randomly selecting k centroids from the data set, where k is the desired number of clusters. Each data point is then assigned to the cluster whose centroid is closest to it. After all data points have been assigned, the centroids are updated to be the mean of all data points assigned to the cluster. This process is repeated until the centroids no longer change significantly or a maximum number of iterations is reached. One of the main advantages of k-means clustering is its simplicity and speed, making it a popular choice for clustering large datasets. However, one limitation of k-means is that it requires the number of clusters to be specified beforehand and it may not perform well when clusters have varying sizes or densities. Additionally, k-means can be sensitive to the initial random selection of centroids and may converge to a local minimum instead of the global minimum.

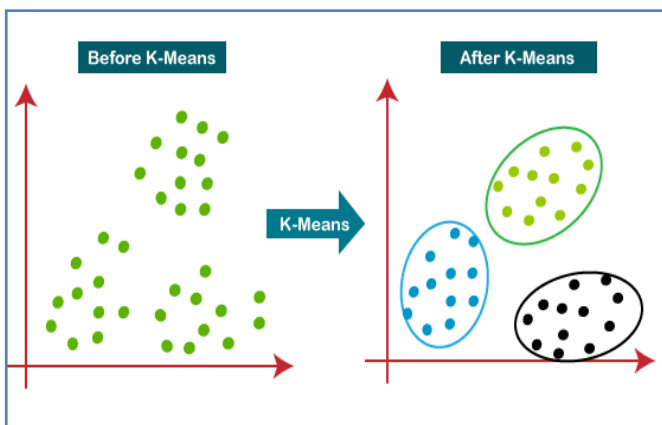


Figure2. Working of K-Means Clustering Algorithm

- k-means is one of the simplest unsupervised learning algorithms that solve the well known clustering problem.
- The procedure follows a simple and easy way to classify a given data set through a certain number of clusters (assume k clusters) fixed a priori.

- The main idea is to define k centers, one for each cluster. These centers should be placed in a cunning way because of different location causes different result. So, the better choice is to place them as much as possible far away from each other.
- The next step is to take each point belonging to a given data set and associate it to the nearest center.
- This algorithm aims at minimizing an objective function known as squared error function.

Algorithmic steps for k-means clustering

Let $X = \{x_1, x_2, x_3, \dots, x_n\}$ be the set of data points and $V = \{v_1, v_2, \dots, v_c\}$ be the set of centers.

- 1) Randomly select 'c' cluster centers.
- 2) Calculate the distance between each data point and cluster centers.
- 3) Assign the data point to the cluster center whose distance from the cluster center is minimum of all the cluster centers..
- 4) Recalculate the new cluster center using:

Advantages

- 1) Fast, robust and easier to understand.
- 2) Relatively efficient: $O(tknd)$, where n is # objects, k is # clusters, d is # dimension of each object, and t is # iterations. Normally, $k, t, d \ll n$.
- 3) Gives best result when data set are distinct or well separated from each other.
- 4) Recalculate the distance between each data point and new obtained cluster centers.
- 5) If no data point was reassigned then stop, otherwise repeat from step 3

VI IMPLEMENTATION

A. Administrator

Administrator is a focal organizer of this application. Here, Administrator is a responsible person for approving the requisition of clothe shop merchant who desires to connect with this employment to trade their clothe materials through online. After they are authorized by administrator, they can enter their clothe details with brand name and price; otherwise they cannot log into this application. Finally, admin can view information about approved clothe merchants, customer details who are ordered and purchased clothe items by this application, delivery status and payment details.

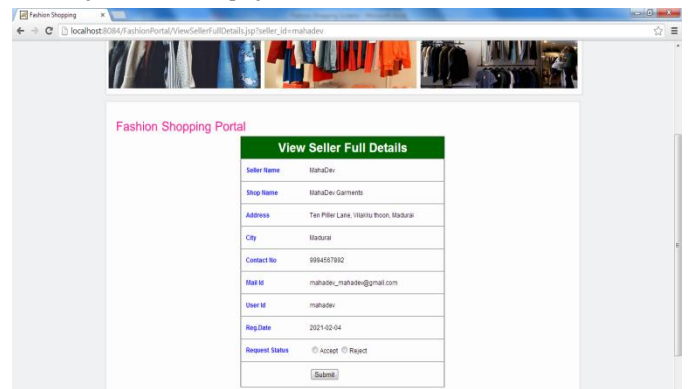


Figure3. Sellers approved by Admin

B. Merchants

Clothe merchants be able to reveal their details to attach with this portal. After this process, administrator of this portal should endorse their requisition. After admin verifies the reliability, consistency and prompt about the requested company, he may approve/reject the company to use this portal.

Once a clothe merchant is getting approval, he can insert and update the variety of clothe details with brand name, price and etc. After they store the clothe details in the server, they can view and modify the clothe information. If the stock is not available and if the specified brand is not available in the market, remove it from the collections.

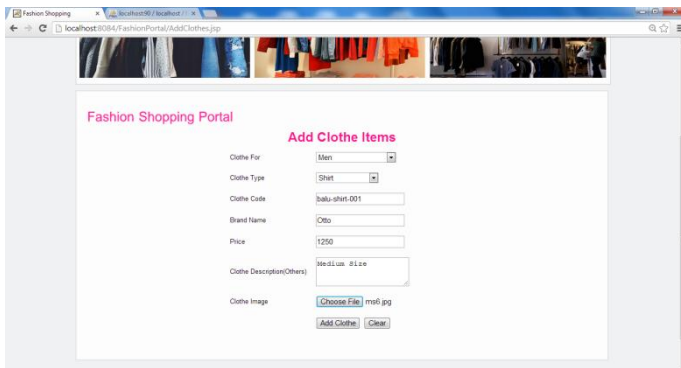


Figure4. Add Clothe Items by Merchants

C. Client

Clients are capable of enrolling their information into the portal to employ this application. After the successful registration, they may log into this application by giving their user id and password. Then, Customer can view and select the clothe information based on their wishes and based on their requirement. It show all kind of clothe items including for men, women, kids with brand name price. After that, customer may select the merchant details which nearby their cities. Then, they can choose clothe items, provide quantity for each items. Based on quantity it will calculate the price, finally customer can shop which will be forwarded and notified to the respective clothe merchant.

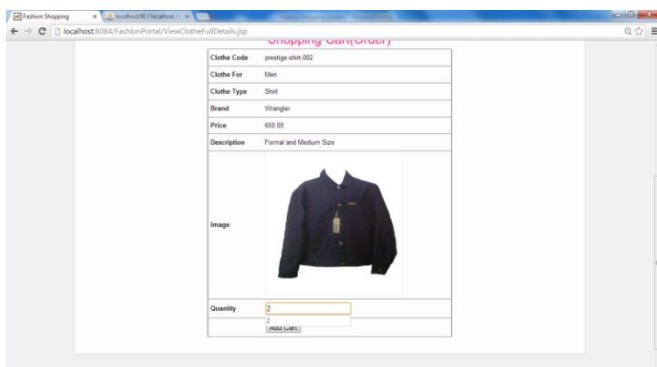


Figure5. Clothe order by customer

D. Payment

After customers complete the order of clothe items from the particular clothe merchants, they go to the online payment. In which, it estimates the price based on purchased items. Then client has to select the payment type, bank details such as bank

name, account number to debit the estimated amount. After this process, administrator can become aware of order status and payment progression.

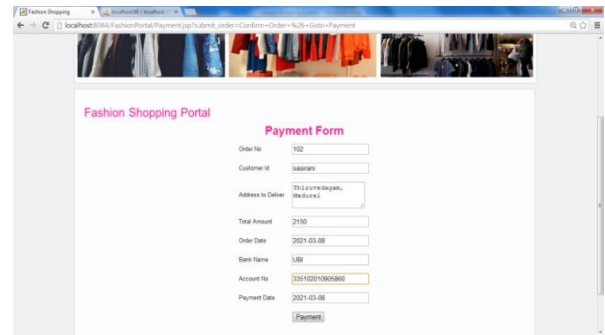


Figure6. Payment Form

E. Delivery Status & Report

This module helps the administrator to deliver the products which are sold to the customers. It displays all the delivered products date wise and admin can update the delivery report by clicking the deliver product link under each product. After delivery the product is seen in the delivery list. It also generates report to show all the sold products, where the delivered product is displayed with the delivered date.

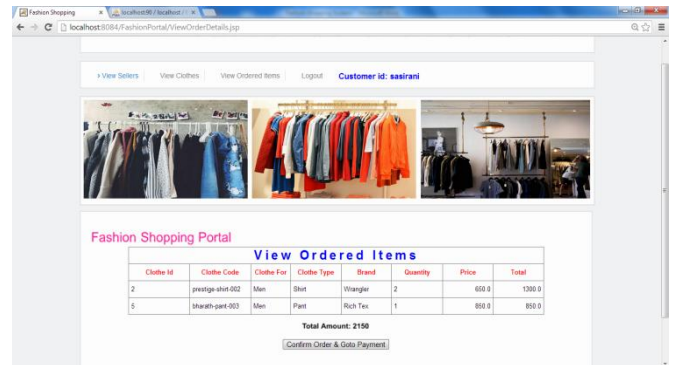


Figure7. View Delivered Items

VII RESULT & DISCUSSION

The results of research studies on online fashion shopping have shown that it has become an increasingly popular way for customers to purchase clothing and accessories. One study found that the online fashion market is expected to reach \$872 billion by 2023, indicating the significant growth potential for this industry.

One of the key reasons for the popularity of online fashion shopping is the convenience it offers. Customers can shop from anywhere, at any time, without having to travel to a physical store. This is particularly important for busy consumers who do not have the time to visit a store during regular business hours.

Another factor contributing to the growth of online fashion shopping is the wider variety of products available compared to physical stores. Online retailers can offer a broader selection of styles, colors, and sizes since they are

not limited by physical space. Additionally, customers can easily compare prices across different retailers, which can help them find the best deals and save money. One challenge of online fashion shopping is ensuring that customers can accurately assess the quality and fit of products before purchasing them. To address this, many online fashion retailers offer detailed product descriptions, multiple photos, and customer reviews to help customers make informed purchasing decisions. Overall, the results of research on online fashion shopping indicate that it is a popular and growing industry, driven by its convenience, wider variety of products, and competitive prices. While there are challenges associated with online fashion shopping, such as ensuring customer satisfaction with product quality and fit, the advantages it offers have made it an increasingly popular option for fashion-conscious consumers.

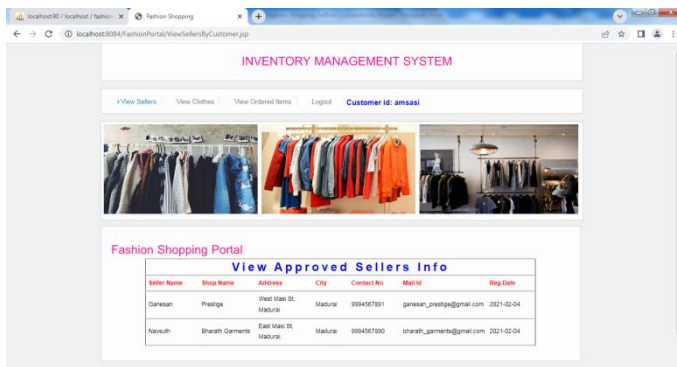


Figure8. View Sellers by Customer

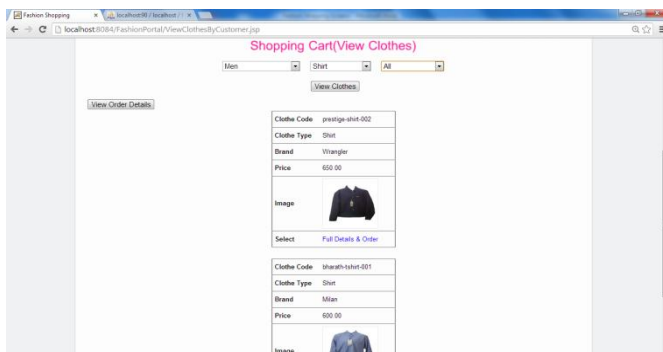


Figure9. View available clothes by customer

VIII CONCLUSION

This online shopping helps the user to shop fashion clothing for men, women and children through online. So that the user is not needed to leave his/her house for shopping. The invention of the new system is an achievement since it satisfies the requirements of the users. Therefore it is time saving and easier to access. Small clothe merchants surrounding the city can register their products for online sales and getting benefits to both clothe shop merchants and customers who are in the same place.

Even some small clothe merchants sell the high quality of clothe with affordable price, they don't get popular and they could not get the right revenue from their business. These kinds of small clothe merchants surrounding the city can register their products for online sales and getting benefits to both clothe shop merchants and customers who are in the same place. In future, it can be implemented securely with help of wallet code or quick response code to verify and approve legitimate and honest users only. Based on friend recommendation, customers can decide to select the shop and purchase the items from recommended shops only.

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