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MartShop – An E-Commerce Portal

Charul Mehta
charulmehta24@gmail.com
Priyadarshini College of Engineering, Nagpur, Maharashtra

Anisha Ninawe
ninaweanisha3@gmail.com
Priyadarshini College of Engineering, Nagpur, Maharashtra

Dipti Deoke
diptideoke@gmail.com
Priyadarshini College of Engineering, Nagpur, Maharashtra

Aditi Pidurkar
apidurkar90@gmail.com
Priyadarshini College of Engineering, Nagpur, Maharashtra

Janvi Ghate
janvighate10499@gmail.com
Priyadarshini College of Engineering, Nagpur, Maharashtra

Dr. Snehal Golait
snehal.golait@gmail.com
Priyadarshini College of Engineering, Nagpur, Maharashtra

ABSTRACT

With the increasing popularity of ecommerce, it is very essential to involve every minuscule vendor who is innovating sundry products and selling them at a plausible price. The proposed system is implemented utilizing the latest technology flutter and with the firebase, which makes this system platform amicable and independent. The system is for all the minute vendors who are selling and earning through their hard work. Here utilizer has to register first without any registration fees and can integrate their store with rudimentary info needed for establishing the online store. After the successful registration the utilizer can upload a number of products with description and pricing additionally. Features like managing order history, contacting customers, sharing product images, sharing shop details, receiving payment, and updating shop details is given to vendors. For users features like view products, integrate products to wish list or cart, contact sellers directly, share products, and make payment is available. Utilizing the latest technology makes this shopping app more flexible and utilizer amicable. All these processes are done through data mining and using a data warehouse to collect multiple data for processing. Analysis of the data is done by K-Means algorithm and unsupervised ML.

Keywords— *Laptop; Flutter; Firebase; Android Studio, data mining, data warehouse, data collection*

1. INTRODUCTION

The cyber world has transmuted many aspects of society, from business to recreation, from culture to communication and technology, as well as shopping and travelling. This incipient form of communication has provided incipient ways of doing business with the avail of technological development. E-commerce is the incipient way of shopping and doing business. Technology has sanctioned vendors to promote and sell their products on incipient markets, surmounting geographical borders as never before. Consumers have access to a wider market of products when they utilize wireless and internet technologies. Mobile contrivances with wide access to the Internet have sanctioned companies to reach consumers in more diverse ways, thus ascertaining deep market perforation. This study investigates the opportunities engendered through mobile telephone access to the Internet. More expeditious wireless networking standards sanction wireless contrivances to utilize more ecommerce applications, and consequently, sanction wider access to mobile commerce (m-commerce).

The system is for all the minute vendors who are selling and earning through their hard work. Here utilizer has to register first without any registration fees and can integrate their store with rudimentary info needed for establishing the online store. After the successful registration the utilizer can upload a number of products with description and pricing additionally. Features like managing order history, contacting customers, sharing product images, sharing shop details, receiving payment, and updating shop details is given to vendors. For users features like view products, integrate products to wish list or cart, contact sellers directly, share products, and make payment is available. Utilizing the latest technology makes this shopping app more flexible and utilizer amicable. In this we made use of data mining to collect data from different users to analyse their needs according to their searches and also used data warehouses to store this info for business purposes, so that many vendors can analyse the data whenever they need. And for analysing the data we are using K-means Clustering algorithm and unsupervised machine learning techniques.

1.1 Multi-Vendor

A Multi-vendor ecommerce website avails to sell accommodations directly to customers and can avail to earn profit by inviting different vendors to sell their accommodations on the website. It has been visually perceived that people mostly

search for a website where they can get different accommodations under one roof. This increases the injunctive authorization for a multi-vendor shopping cart system which avails a customer to access multiple company's profiles at a time.

1.2 Cross Platform

Being developed utilizing flutter and dart programming this system can be run on any contrivances and any platform whether it can be android or IOS.

2. METHODOLOGY

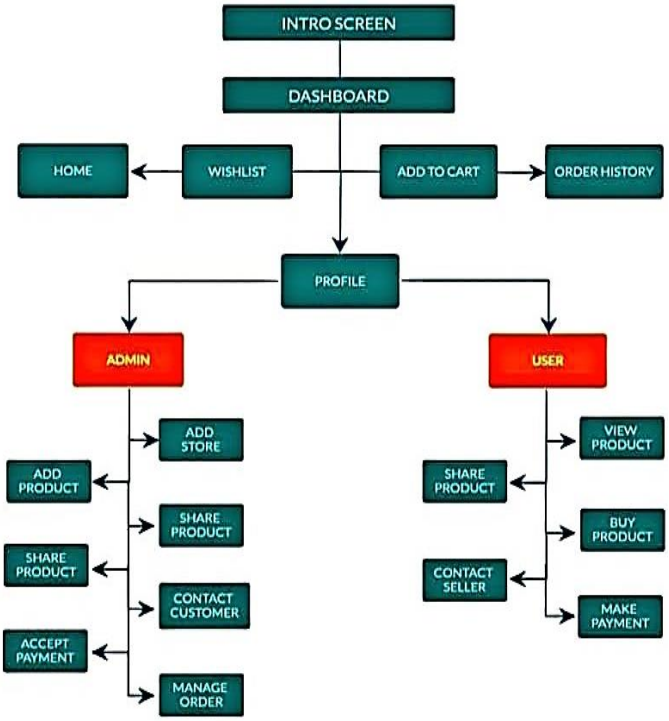

Figure. 1 Flow Diagram of Mart Shop App

This system is proposed as the market demand has been incremented for online shopping and distributing goods door to door without wasting mazuma and extra efforts. This system is being developed utilizing the latest technology and secured environment to forfend utilizer data taken at the time of registration. The system is free for everyone and anyone can utilize this on any kind of contrivance they have like android or IOS. It doesn't require any kind of secret information from the utilizer only the rudimentary details are required to register here. Starting from the rudimentary this system has 2 modules as you can see in figure 1 i.e. first is Admin Module with defined as the vendor's module and the second one is the utilizer's module additionally Kennedy as the consumer's module.

2.1 Admin / Vendor Module

Admin module requires registration of the utilizer by entering mobile number and OTP. After the prosperous completion of the registration process, the admin is able to integrate other details like shop designation, shop logo, front banner, contact details, and payment details, manage orders, order history, etc.

Admin can now integrate their products of sundry kinds with their prices. Can apportion products as well as shop catalog with anyone they optate via whatsapp, facebook, or any other media transfer apps. This feature will enable them to spread their diminutive business all over the area utilizing this free multi-vendor system.

2.2 User / Consumer Module

This module is for the utilizer who is fascinated to do shopping from this system. The utilizer can check the products without registering the app and can additionally share a product with their friends and family members by just clicking the quota button given at the top of the system.

Products are integrated to the cart if the utilizer wants to buy them and afore proceeding it is indispensable to first register the system utilizing a mobile number and OTP sent to that given mobile number. After the prosperous registration process now the utilizer can purchase any product from the system.

2.3 Dashboard

The main dashboard of the system has all the facilities that a customer wants while doing shopping online. It has a dashboard menu where all the products can be viewed utilizing the product category.

On the other hand, it has a wish list menu where utilizers can preserve their favourite products for further use or purchase. A cart menu is additionally there to show the antecedent authoritatively mandated history from the utilizer and to integrate more products to it.

2.4 Firebase

Firebase helps to save data from the system. This system is integrated with firebase to store data and send notifications using some methods shown below. We'll store each user by a unique username, and we'll also store their full name and date of birth. Since each user will have a unique username, it makes sense to use PUT here instead of POST since we already have the key and don't need to create one.

Utilizing PUT, we can inscribe a string, number, Boolean, array, or any JSON object to our Firebase database. In this case, we'll pass it an object.

```
curl -X PUT -d '{
  "alanis awesome": {
    "mobile": "789654123",
    "password": "7896"
  }
}'                                    'https://docs-
examples.firebaseio.com/rest/savingdata/fireblog/users.json'
```

Updating Data with PATCH: When an admin or user wants to update the details of them can easily go to the system profile section and change it anytime. But the backend work is of firebase which we are using to update data of the user or admin.

```
curl -X PATCH -d '{
  "mobile ": "369852147"
}' \
'https://docs-
examples.firebaseio.com/rest/savingdata/users/alanisawesome.j
son'
```

2.5 Data Mining

In this system, we have utilized the data mining process to extract an immensely colossal quantity of data from astronomically immense datasets. Data mining is additionally a process of analysing data patterns. The Data mining cycle is shown in figure 2. Data accumulation from different customers for different purposes then data mining techniques is applied. Data mining is a frequently used method to do marketing and

product development in sizably voluminous-scale e-commerce businesses.

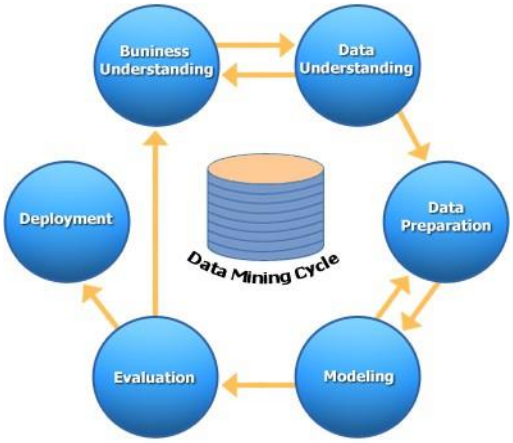

Figure. 2 Data Mining Cycle

2.6 K-Means Clustering

For analysis, we are utilizing the most commonly used and the most expeditious algorithm that is the K-Means Clustering algorithm for the site data analysis. It is widely utilized because it is facile to utilize, expound, implement, and expeditious. Implementation of this K-Means Clustering algorithm is to next refine the data to a point where the information can be applied to business decisions.The same type of data get clustered and form a group as you can see in figure 3.

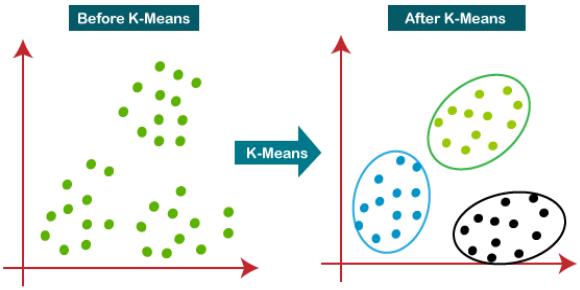

Figure. 3 K-Means classification

2.7 Unsupervised ML

Unsupervised learning is a type of machine learning technique which sanctions the utilizer to input raw data without any training and relegate the raw data into propitious output with congruous training of that data. It sanctions the model to work on its own pattern and undetected data. In simple words, we can verbally express it works on unlabelled data as shown in figure 4.

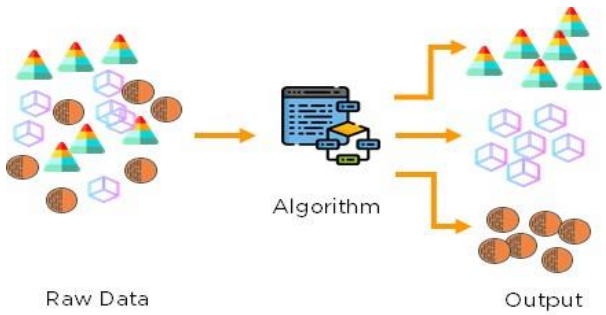

Figure. 4 Unsupervised ML

2.8 Data Warehouse

Data warehousing is the process of amassing all the cognate data together. It is the process of extracting and storing data to sanction more facile reporting. The process of data warehousing is done by the engineers as it requires a puissant, expeditious and facile strategy to probe for utilizable information. The process of data warehousing is explained in figure 5.

Figure. 5 Data Warehouse System

3. RESULTS

Having your very own internet site is a crucial piece of your ecommerce approach. It's far a high-quality way if you want to grow your emblem, collect dependable customers, benefit new insights, and get innovative along with your advertising. Diversifying in which you sell on-line lets you attain new clients, mainly as ecommerce will become more competitive. Here Brand adds their store as shown in the figure 6.

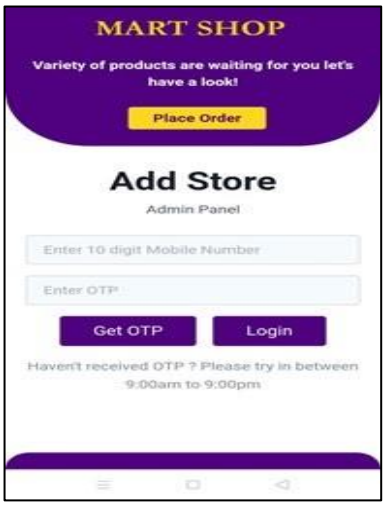

Figure 6

After the admin is done with putting in all of the things in the application then their store will be publicly seen as shown in figure 7, now the client should buy from their store and whatever could be the transaction accomplished will directly with the store proprietor.

Figure 7

After that the customer can see their product on the application and Product details shown in figure 8 and figure 9.

Figure 8

Figure 9

Users can see their cart wish list and order list as shown in the figure 10, figure 11 and figure 12 respectively.

Figure 10

Figure 11

Figure 12

The below figure 13 shows the graph of analysis of data in our system using K-Means & Unsupervised learning.

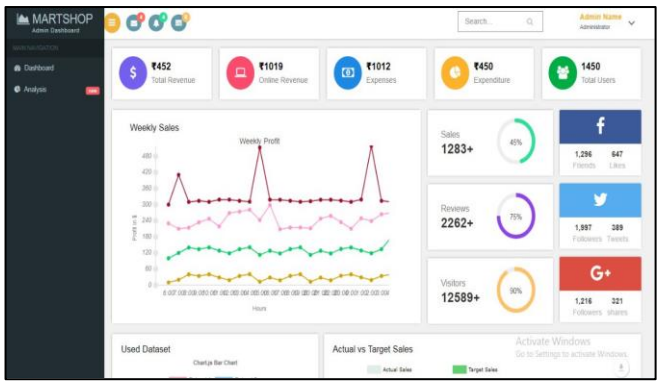

Figure. 13 Analysis using K-Means & Unsupervised ML

4. CONCLUSION

Here in this system we have used the latest technologies like Flutter, web server, data mining, data analytics, data warehouse, etc. This project concept is launched to launch small vendors in the market through this app so that one can sell their products and promote their business without paying any cost as it is free for everyone. All the features of e-commerce have been added here with the admin panel too.

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