Local Mart: Online Grocery Application

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Abstract:
This review paper is for a web-based shopping system for an existing business, with the goal of delivering an online grocery shopping application to an Android platform that is built keeping COVID-19 in mind. If stores offer an internet platform via which clients can purchase conveniently from anywhere, they will not lose customers to popular online retailers such as Flipkart or Amazon. The application is instantly accessible and always available because it is available on an Android Smartphone. There is no need to stand in a queue, nor to carry bags or struggle with trolleys. Customers can buy for groceries from the comfort of their own homes by viewing photos of various items and adding them to their shopping cart. The Application will have significant role in this COVID circumstances by limiting social gatherings and time spent in crowded places. At all appropriate levels, special attention was paid to ensuring that the system ensures data consistency using relevant business rules and validations. The database connectivity was arranged utilizing the most recent “Database connection” technology provided by Mongo dB. Authentication and authorization were double-checked at every stage of development.

Keywords: Grocery Shopping, Pandemic, Web-Scraping, Model–view–view model (MVVM).

I. INTRODUCTION

Online grocery shopping is the act of purchasing groceries from a merchant in real time through the Internet without the need of an intermediary service. It’s an instance of electronic commerce. The application's basic principle is to allow users to shop virtually via the Internet and to purchase the goods they want from the store. At the server side, the information about the items is stored in a Non-Relational DBMS (store). Customers are processed by the Server, and products are dispatched to the addresses provided by them. There are two primary modules in the system. The first module is for clients who want to buy groceries. The second module is for the Sellers, who are responsible for maintaining and updating product and customer information. The end user of this service is a grocery store, and the application is hosted on the web with the database managed by the administrator. The database of all the things is updated at the end of each transaction by the application that is deployed at the customer database, and the information of the products is brought forward from the database for the customer view based on the selection through the list. Data can be entered into the application through a variety of panels designed for different levels of clients. Several reports could be generated in accordance with the security when authorized personnel input the required data into the application.

II. RESEARCH METHODOLOGY

A quantitative methodology is used in the research. The information was gathered by mailing online surveys to the participants and utilising adequate and snowball sampling techniques. Within the timeframe, 100 respondents completed questionnaires, which were then analysed using SPSS software. To uncover significant differences between the perspectives of subpopulations of Demographic features and usage behaviour towards online grocery shopping in India, an independent sample T-test and one way ANOVA were utilised. The goal of the survey is to find out how Indian customers feel about online grocery shopping.[1]

<table>
<thead>
<tr>
<th>Table 1. Age of Respondent</th>
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<tbody>
<tr>
<td>AGE</td>
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<td>Below 20 years</td>
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<td>Above 40</td>
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<td>Total</td>
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A. To see how Discerned Factors influence online shoppers' attitudes on online grocery ordering.
Customers who are inexperienced with online grocery shopping and those who are accustomed with online grocery shopping will have differing perceptions of cost. Varied age groups have different perspectives on risk. Non-Online grocery consumers and online grocery shoppers will assess risk in different ways. Married clients are more likely to detect risk than single customers. Males and females perceive costs in different ways.[2]

B. To see how Discerned Convenience influences consumers' perception on online grocery ordering.
Customers who are familiar with online grocery shopping and those who are not familiar with online grocery shopping will evaluate convenience in different ways. Customers who are single and married will evaluate convenience in different ways. Customers who are employed and those who are unemployed will evaluate convenience in different ways. Convenience will be seen differently by different age groups. [2]

C. To see how Discerned Enjoyable affects customers' attitudes on online grocery ordering.
Customers who buy for groceries online and those who do not shop for groceries online will have distinct experiences. Customers who are experienced with online grocery shopping and customers who are not will have different experiences. Males and females have distinct perceptions of what is enjoyable. Customers who are single and married will have different perspectives on what is enjoyable. Customers who are employed and those who are unemployed will have different perspectives on what is entertaining. [2]
III. RECENT SCENARIO IN E-COMMERCE

The purchasing and selling of goods and services through the internet, as well as the money and data transfers required to accomplish these transactions, is referred to as e-commerce or Electronic Commerce. In India, the e-commerce sector is expanding at a breakneck speed. E-commerce's expansion is altering how individuals think, search, perform, and generate a yield. Most shoppers are adopting new purchasing technology, and many of them, being liberal thinkers, seek fast and efficient buying while also taking into account other factors. The majority of businesses in the small, medium, and big size sectors have a website to help them grow their business, and they do so by using online marketing and promotional events, effectively taking a "digital" jump in their business cycles. Consumer convenience, needs, wants, and solace, as well as their purchasing behaviour and process, are the basis of E-unstoppable commerce's expansion.

A. India is one of the world's fastest-growing markets, and the organisation has recognised it as one of its most promising future markets.

According to Muralikrishnan B., country manager for eBay India, Electronic devices and books, which are currently the most popular but have smaller profit margins and are less frequent purchases, are preferred by Indian consumers over high-margin commodities like clothes and shoes, which are popular with eBay users in the West. In a country where Internet usage is rapidly increasing, he depicted India's burgeoning e-commerce market, which was largely limited to people purchasing train, flight, and movie tickets until recently, as being in the midst of a surge as a younger, tech-savvy middle class gradually takes to shopping online. Techno Park, a consultancy group, predicts a $70-billion yearly industry by 2020, up from $600 million presently, or 0.05 percent of worldwide internet buying.

B. Due to the modest margins and logistics costs involved, many firms are difficult to transform into commercial endeavours.

According to Gaurav Saraf, director of Epiphany Ventures, the notion of online grocery shopping has the challenge of turning their businesses into viable ventures because the concept is new to the market, resulting in low margins and significant transportation costs. In addition to these issues, some commodities, such as fruits and vegetables, have a short shelf life, and if they are not delivered before their shelf life expires, there will be wastage, which will increase the cost. The conclusion drawn from the foregoing is that these businesses operate on a razor-thin profit margin. The research model is depicted below.

C. E-commerce: A support system for the present economic downturn.

The e-commerce market in India has clocked close to Rs55,000 crores by the end of 2014, according to First Data Corporation and ICICI Merchant Services. Even if there are only about 10 million internet users in India who are interested in e-commerce, there are approximately 150 million internet users in India, or over 75 million households, who are ready to participate in e-commerce. Because entry and operations expenses are lower than in other countries, such as the United States, the second half of 2011 and the start of the current calendar year saw the introduction of a slew of new e-commerce sites covering a wide range of industries— Fashion for women, men, and shoes is followed by accessories, sports, food, home furnishings, toys, jewellery, automobiles, electronic equipment’s, bicycles and electrical equipment, among others. IV. PROBLEM IN ONLINE GROCERY SHOPPING

Online grocery shopping is a fantastic idea that allows individuals to purchase from the convenience of their own homes. There will be no more searching various stores for the product, dealing with overly eager salespeople, or waiting in long queues at the checkout desk. The rise of electronic commerce has unquestionably improved our shopping habits. However, like everything else, internet grocery shopping isn't without its drawbacks. Despite the efforts of electronic commerce organisations to alleviate them, clients still have to deal with a few issues when purchasing online. The following are a few of these issues. [5]

A. Delivery and logistics

When shopping online, one issue that frequently arises is when the order will be delivered. While all e-commerce platforms provide order tracking for their consumers, these systems are not always reliable. Because there is no way to schedule a certain delivery time, delivery staff frequently arrive at our houses while our customers are at work or elsewhere. When it comes to returning things, the problem is the same. Another issue is that the great majority of Indians who live in rural areas and Tier-III cities are unable to shop online because not all e-commerce platforms offer delivery to their locations. [6]

B. Quality issues

The biggest issue with buying things online is that you can't be sure of their quality. Reviews aren't always trustworthy, and no amount of research can guarantee a product's quality. Fraudulent vendors who purposefully mislead buyers in order to maximize sales are the leading cause of faulty products being sold online. With the volume of commodities that electronic commerce organisations handle daily, conducting quality checks on each and every product they sell can be tough. [7]

C. Additional charges

How many times have you seen a terrific offer on a product only to discover an extra shipping charge when you're one click away from purchasing it? When your order amount isn't large enough to qualify for free shipping, this is a typical occurrence on all e-commerce sites. Even when it is, these shipping charges are occasionally tacked on to purchases. [10]

V. PROPOSED WORK

To overcome these challenges we came up with the idea of “LOCAL MART”:
• To overcome with the quality issue we maximized the reachability of customer and seller to 1km, by this merchant can’t offer a faulty or terminated item to the customer as the customer won’t be obscure to him and if vendor attempts to do so it will make a negative impact of the store.

• In “LOCAL MART”, since just the nearby stores will be displayed therefore we have planned a functionality where there will be no challenge in delivery and logistics. If some store doesn’t provide home delivery the customer will also have a self-pickup option where seller will keep the product ready to pick up and the customer can himself pick up the product and there will be no need of waiting in long queues and this functionality will play a major role in this COVID situation by limiting social gathering and time spent in crowded place.

• Since everyone doesn’t have a digital payment method or everyone doesn’t trust it especially in provincial zone that’s why we have a cash on delivery mode on payment also where customer can pay when product reaches their doorstep and there is no limit on cash on delivery payment.

• Customers will be notified when the price of a product they’ve added to their cart decreases, which is a vital feature. Customers will be able to purchase the product at a lesser cost, increasing the store’s revenues.

• There will be no additional charges on the delivery of the products and if a customer is ordering an individual product or products whose cost is in less than the minimum order limit then the customer can choose to self-pickup or the product will be delivered to him when the seller receives an order from other customer who lives nearby first customer.

• Vendors can compare the price of a product to that of larger competitors such as Flipkart and Amazon, which will boost the likelihood of a client ordering from their store. The application will also include an analytics functionality that will provide information to vendors regarding sales. This feature will show the top selling products and top customers to the seller. The seller can also change the number of best-selling products and top customers.

VI. APPLICATION

A. Customers
Local Online Shopping App will allow customers to place their order online that will save time and money and provide a better shopping experience. It will be a convenient way to shop for groceries. It will be highly beneficial for working people because they will be able to complete all of their shopping at any time and will not have to go to stores. It’s also open 24 hours a day, 7 days a week, and is regarded as an innovative and creative way to shop.

• Shopping for groceries no longer requires a lot of work and time.
• Get a notification whenever price drops.
• Place your order anytime and anywhere.

Figure 2. Organization and wiring of the physical components.

Figure 3. Static deployment view of the system.

VII. RESULTS

A. CUSTOMERS: Login/Register: When users initially access the app, they are prompted to register if they didn’t have a registered account. Customers will be able to place an order from anywhere at any time.

Figure 4. User login information.

Figure 5. Sign in Page.
Email Verification: An electronic mail will be sent to the customer’s email id, for identity verification and on successful payment. This feature is added keeping security of user in mind.

Slider Banner: It provides primary benefits to app users on a constant basis. With a slider banner displaying your special offers, appealing deals, and central message, our application can nail the bull’s eye.

Search Functionality: The main element of an e-commerce application is product discovery. Search becomes one of the most significant functions of any online grocery store when there are thousands of products displayed in the app. In addition to the essential auto-suggest features, our application has the ability to add things to the cart from search results with a single click, eliminating the need to navigate to the product page.

Product Page: We gave the option to add any product from the listing to your cart, but this does not reduce the energy of the product page, which presents more information to buyers such as:
- Product description
- Product price
- Product availability in various sizes
- Buttons for adding items to cart
Add to Cart: The ability to add a product to a shopping basket and subsequently proceed with payment is the core of any e-commerce platform.

Push Notification: Customers will be notified when the price of a product they have added to their cart decreases, which is a vital feature. Customers will be able to purchase the product at a lesser cost and reminds them that they have not placed the order yet.

Checkout: The checkout page is well-designed, and in order to achieve this, the location for all of the items, quantities, and prices is created ahead of time.

• We made it simple to remove products without stress from this page, which is one of our distinctive features.
• At the checkout step, the user can also increase the quantity of any individual product. A ‘plus’ sign is located near the supply box and can be clicked to enlarge the number.
• An important colour is assigned to a ‘Proceed to Pay’ button to indicate the following stage.
Payment Options: We support a variety of payment methods, including:
- Cash on delivery (COD)
- Internet banking
- Credit/debit cards

B. VENDOR:
Login/Register: When seller initially access the app, they are prompted to register by providing their information. They will be requested to log in if they have already registered.
Email Verification: An electronic mail will be sent to the seller’s email id, for identity verification and on successful payment. This feature is added keeping security of user in mind.

![Figure 24. Verification Email Details.](image)

![Figure 25. Verification Email.](image)

**Add Product:** A simple and easy interface allows the seller to add any number of products. The seller will just disclose the product's name, description, price, and quantity available. In addition, the seller can upload a product image.

![Figure 26. Post request by vendor to add products.](image)

![Figure 27. Add product interface for vendor.](image)

Compare Products: After adding a product, the seller can compare the price of a product to that of larger competitors such as Flipkart and Amazon, which will boost the likelihood of a client ordering from their store. This functionality is achieved by using web-scrapping technique.

![Figure 29. Compare product using web-scrapping.](image)

![Figure 30. List of Products added in a store.](image)
Sales Analytics: The seller will have access to an analysis screen where they can review sales data. This feature will display the most popular items and customers. The vendor can also alter the amount of best-selling products and top consumers.

Order Details: The order details screen will provide all of the information regarding the order placed by the customer like Customer Name, Payment Method, Product Name, Quantity, Total Billing Amount, and Delivery Address.

VII. CONCLUSION

The Goal of this paper is to present the study done for online shopping and how that can be used for grocery shopping and the work done for building an android application for the same.
Technology has advanced significantly in recent years to provide consumers with a better online shopping experience, and it will continue to do so in the future. People have predicted that internet shopping will overtake in-store purchasing due to the rapid rise of products and brands. While this is true in some regions, there is still a desire for grocery stores in market areas where customers can see and touch the products they are purchasing. The advent of online purchasing, on the other hand, has resulted in a more knowledgeable customer who can browse around with relative ease and without wasting a lot of time. Online shopping has provided opportunities for numerous small businesses. At the end of the day, it was a win-win situation for both the buyer and the seller. The application will not only help customers and stores but will also help stop spreading corona virus. In comparison to physical shopping, a thorough analysis of the above findings reveals that easy accessibility of products on online application, as well as flexibility and efficiency of time, are the two most important factors that are likely to make consumers stick with online grocery shopping even after the pandemic ends. For building this application various fields of software development such as web-scrapping for comparing the price of the product with other competitors were studied and implemented accordingly. Various technologies like Android Studio for building the user interface of the application, Retrofit for retrieving and uploading JSON (or other structured data) via a REST based web service, MongoDB for storing the data of customers and stores and approaches like Model-view-viewModel were used for developing various modules for the application.

VIII. REFERENCES


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