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A Survey on E-Commerce App for Online Grocery Shopping with Chat Negotiation

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ABSTRACT: Online grocery shopping is an entirely novel means of buying preferred grocery goods for household consumption. Initially for specific regions in a city. Gathering data of all categories like medicines, furniture, grocery, hardware, and food items, etc. Building an app for firing queries of all listed items by user and categorizing it in front end. Customer will select items, and then it will be added to cart with all specifications, which includes: quality, quantity, brand, Type of product. Listed items in cart will be analysed and will be send to respected retailer. On the other hand, retailer or seller will get notifications whenever the item is added to cart. After generating all bills chat box will come in to role. It will help to negotiate discount as per retailer convince or policy. The one with lowest price bill will be sanctioned and it will be proceeded to Payment Gateway. There is a use of Business Intelligence for recommendation system and use of different protocols for allowing networking and use of database to save users details.

KEYWORDS: Database, Business Intelligence, Networking, Gateway.

I. INTRODUCTION

Motivation: Fully Marketed objects are non-negotiable. So, consumer find problem to negotiate price as given in final bill at any shop. we consider any household goods, it almost required minimum 1 day to get delivered. Now a day, due to big wholesalers like D-mart, Best Price, Flipkart, etc. Small retailers have lost their existence in market. Customers are not so much involved with retailers for buying any goods. So, there is need to full fill this gap and provide suitable platform.

Basic Idea: Application will have 2 login both for user as well as retailer. After authentication we will get information of both user and retailer. Both parties will be asked for their location. User will then create a list of items and will proceed further for chat negotiation. On the other hand, retailer will get notification and will be asked for Chat Negotiation. Before this the partial bill will be send by retailers to user. User will then start negotiation with joined retailers. Final bill will be generated after deal with retailer. And it will proceed to payment mode. Retailer will get payment and will deliver the items.

II. LITERATURE SURVEY

Drawbacks of Existing Algorithms:

Delay of Goods: E-Commerce websites delivery take a lot longer to get the goods into your hands. Even with express shipping, the earliest you get goods is usually tomorrow but if you want to buy a pen because you need to

write something right now, you cannot buy it off an e-commerce website. Likewise, with candy that you want to eat now, a book that you want to read tonight, a birthday gift that you need this evening.



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Everything cannot be Purchased online: Despite its many conveniences, there are goods that you cannot buy online. Most of these would be in the categories of 'perishable' or 'odd -sized' You cannot order an ice cream, or a dining table set. Well, you could order both online, but consider the inconvenience. The ice cream would have to be transported in refrigerated trucks. Unless the seller was willing to make a huge loss, the cost of shipping that popsicle would far exceed the cost of the popsicle. Likewise, a dining table set can certainly be purchased online. In some cases, the cost of logistics is bearable. But if you must return the furniture, you will get well-acquainted with the inconvenience of e-commerce.

Experience the Product Before Purchase: You cannot touch the fabric of the garment you want to buy. You cannot check how the shoe feels on your feet. You cannot test the perfume that you want to buy. In many cases, customers want to experience the product before purchase. E-commerce does not allow that. If you buy a music system, you cannot play it online to check if it sounds right? If you are purchasing a home -theatre system, you would much rather sit in the experience centre that several retail stores set up.

Lack of Relationship: Shopping at retail outlets is reassuring and refreshing. Clicking on Buy Now and piling up products in virtual shopping carts, is just not the same for everybody.

Apriori Algorithm

Introduction: Apriori is an algorithm for frequent item set mining and association rule learning over transactional databases. It proceeds by identifying the frequent individual items in the database and extending them to larger and larger item sets if those item sets appear sufficiently often in the database. The frequent item sets determined by Apriori can be used to determine association rules which highlight general trends in the database this has applications in domains such as market basket analysis.

Limitations: Apriori, while historically significant, suffers from several inefficiencies or trade-offs, which have spawned other algorithms. Candidate generation generates large numbers of subsets (the algorithm attempts to load up the candidate set with as many as possible before each scan). Bottom-up subset exploration (essentially a breadth-first traversal of the subset lattice) finds any maximal subset S of its proper subsets.

```
01:  $L_1 = \{l_1, \dots, l_n \mid \forall l \in \text{large itemsets}\}$  //see Section 2.2.1
02: set  $k = 2$ 
03: while ( $L_{k-1} \neq \emptyset$ )
04:  $C_k = \text{apriori-gen}(L_{k-1}) = \{c_1, \dots, c_p \mid c \in \text{candidate } k\text{-itemsets}\}$ 
    // see Section 2.2.2
05: if ( $C_k = \emptyset$ )
06:   return
07: end if
08: for (all  $t \in D$ )
09:    $C_t = \text{subset}(C_k, t)$  // see Section 2.2.3
10:   for (all  $c \in C_t$ )
11:      $c.\text{count}++$ 
12:   end for
13: end for
14:  $L_k = \{c \in C_k \mid c.\text{count} \geq \text{minsup}\}$ 
15:  $k++$ 
16: end while
```

Fig1: Pseudo Code for Apriori Algorithm



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III. PROPOSED METHODOLOGIES AND DISCUSSIONS

Requirement Analysis

Develop an app which lets you buy day to day grocery items from your nearby retailers (we are using "Google Maps APIs" to limit the region of searching). Limiting the region of searching will give customer faster access to the products. Customer also have a platform to negotiate with retailers in case the billing amount is of considerably high value.

A Business Intelligence module to make the application more interactive (helping the customer to jump to conclusions faster) and increase the scope. Analysing the customer's data and suggesting best deal for them. Retailer can also broadcast his special offers.

Customers are also given an option of suggesting retailers that are not registered to the app.

Front End:

- 1)Software: Android Studio 2.1.
- 2)Language: XML script.
- 3)Firebase Dependencies.

Back End:

- 1)Firebase,SQLite Db.
- 2)Language:Android Java,mysql.

Hardware Interface:

Android version 'lollipop' or above.

Software Interface:

- 1)Google Maps API's.
- 2)R-Programming.
- 3)Android Studio 3.0.1.
- 4)Firebase API's.

Proposed system Modules

Customer Side:

The user registers themselves on the application as customers. They can create their shopping list of required items either selecting the items from list or by typing the item name. These lists will be uploaded to the retailer side, where he must enter the amount for each item in the customers shopping list. The customer can initiate the negotiation if retailer agrees. The customer chooses the best offer and proceeds to the payment gateway.



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Retailer Side:

The user registers themselves on the application as retailers. They receive customers shopping list. They assign amount to each item in customers shopping list. They can enter negotiation initiated by customer as per their wish.

Negotiation Interface:

Negotiator Interface helps to join Customer side and retailer side for negotiating listed items by customer side, all retailer take part in negotiation and final bill is generated and deal is done between customer and the retailer. From here it proceeds to payment mode. These features come into play as soon as customer get all the proposed bill by concerned retailers. A new activity will be launched where customer can chat with the retailer who has the lowest bill for further negotiation if possible. Chatting can be done in two ways either a group will be formed with some of the retailers or one-to-one communication will be done with retailer and customer. Group will be banished as customer clicks on finalise button. This can be implemented by using a database and storing a list of concerned retailers in an array and taking retailer's id and storing messages on database and then displaying them in their own sequence as they arrive at another end. Other than this, we can also use httpPost and httpGet method to store and retrieve messages. Messages will be deleted as soon as retailers and customer leave chat room and database will be dropped.

IV. SIMULATION RESULTS

Existing Techniques:

Groffers: Groffer are a local mobile e-commerce platform that is transforming the shopping experience for people like us, by connecting them to local stores. Users can order through the app and get everything delivered to their doorstep. Groffer provides assortment of groceries, fruits and vegetables, cosmetics, electronics, bakery items, flowers and much more.

Flipkart: Flipkart is an eminent marketplace and extensive website which allows the seller to sell their diverse product on this well-known marketplace once they have registered. To provide customer home delivery of their product. It includes big whole sellers.

Big Basket: Big Basket provides same e-commerce store as groffer but provides its own delivery. From vegetables to every daily need big basket provide platform to connect to consumer and provide this service.

Result:

Sr.No	Technique Name	Description	Pros	Cons
1	Groffer	Grocery Delivery Service	Delivery service, All grocery at one place	Does not provide all types of good Does not include all small retailers Does Not provide Negotiation
2	Flipkart	Ecommerce Store	Provide Home delivery service Provide all most every item	Does not include small retailer Does not have chat negotiation
3	Big basket	Vegetable,fruits and Grocery	Provide Home delivery service	Does not have chat Negotiation

Fig2: Comparison between Existing Techniques.

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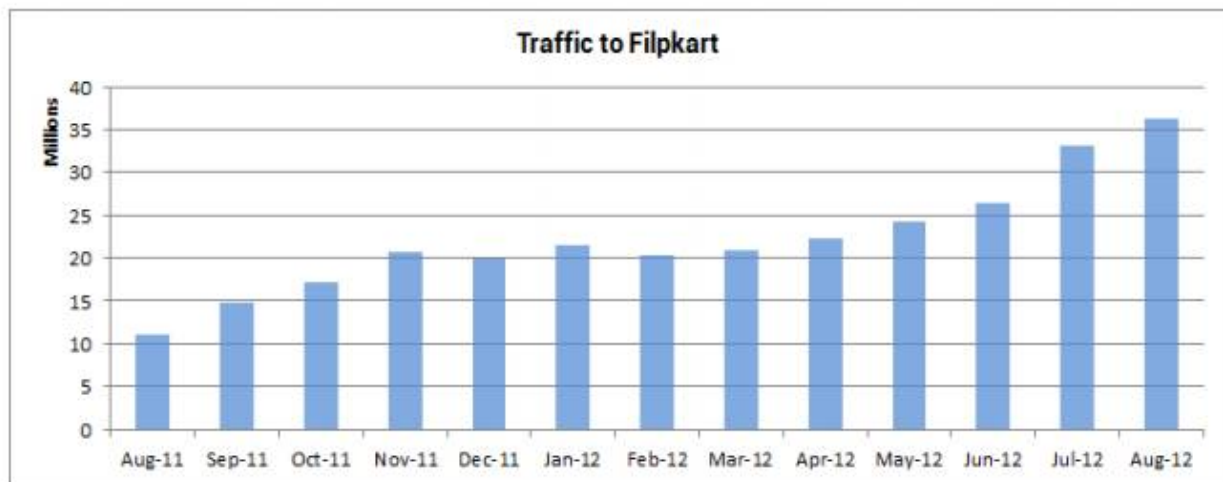


Fig3: Rise in the Users of Flipkart.

V. CONCLUSION

Future Scope: This application can be improved in future by adding customer care service along with feedback system to get input from customer to provide better service in future. To reach as much as retailer to allow retailer to enter in e-commerce market by providing this platform.

Also, application can be extended to B2B structure where a person will be able to place bulk order and all big wholesaler will participate to fulfil that need. That means not only wholesaler, also retailer will on same e-commerce platform. Inventory can be provided with specification and detailed of every item. More Choices for customer, as the supermarket will be extended to various categories of items like, Clothing, Footwear, Furniture.

Conclusions: In general, today's businesses must always strive to create the next best thing that consumers will want because consumers continue to desire their products, services etc. to continuously be better, faster, and cheaper. In this world of new technology, businesses need to accommodate to the new types of consumer needs and trends because it will prove to be vital to their business success and survival. E-commerce is continuously progressing and is becoming more and more important to businesses as technology continues to advance and is something that should be taken advantage of and implemented.

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