

# Grocery products Comparison in Marts/Malls Based on User's Preference

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**Abstract :** We propose a grocery comparison and shopping system, which automates the grocery shopping process by comparing the price of groceries with the user's preference. In this process admin gather the information and creates an application which can compare the price of that items which user selected. This process helps user to buy smallest item of groceries in smallest price so they can save their money of the other shopping and this process also helps provider (mall/marts) to increase their sales on the basis of offer they have given to the user. In these system we also provide a cash on pickup option where user can select their item and buy that product in these payment option we provide the button where user can self-pickup their items which is ready by the provider so it can save the time of user and burden of the provider in their shop.

## I. INTRODUCTION

The rapid advancement of information and communication technology has made it possible fix people to buy various products on Internet. [4]Today's scenario are people can buy groceries online but that groceries are come from any providers but that provider are not from different malls/marts but that providers are reseller that provides the product to online market. But that products are fresh or not? All the customers have this problem to buying the products online.[3] They have problem that products are original or not (product are fresh or not). In place of buying groceries online from the reseller we introduce another scenario that what if you can buy groceries online from your nearby marts/malls. [6]Also we provides a comparison of products from that nearby marts so customer have to choose the mall/mart which is giving that products in minimum price so customer have this advantage of pay less and get what they want in low price.[3] This is all about customer side what about provider side. If malls/marts provide the comparison of their products if customer want a product and that product is in less price in D-mart so customer order from that mart so provider increases their sells from that process also from these application providers can decrease the rush in the mart. What about order? How to do order? How to pay money? How to pick-up the order? That all the questions answer are shown in detail in following part of these paper.

## II. METHODOLOGY

### (I) Barcode Generation

in the bar code reading algorithms we present the research effort. From poor-quality images to extract bar code characters knowledge-based bar code segmentation and a wavelet-based bar code region location scheme is applied.[5] For the recognition engine there are input all the characters which are segmented bar code, and he bar code character string as the final recognition result with the smallest total distance is output of the bar code based on the recognition distance.

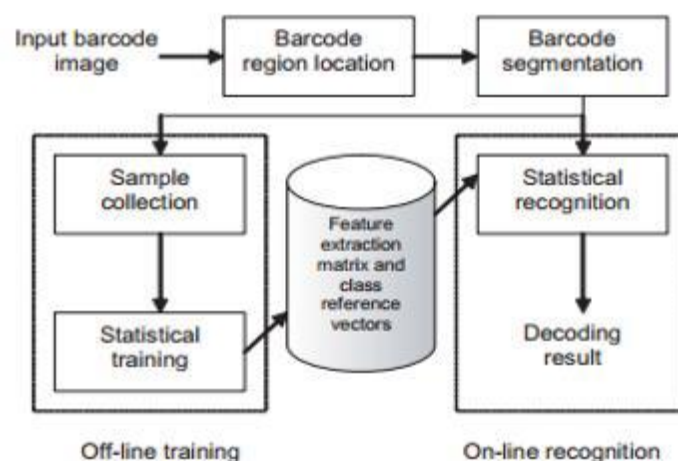


Figure 1 : Barcode Generation

### (II) Searching and Linking

The aims to compare and contrast the use of searching and linking methods in online grocery shopping. It was realised that the study might be biased by the use of a single online shopping site because that site might inherently favour one method over the other, so the study was conducted in two phases. [8]In the first phase, it was necessary to identify a number of online stores with comparable, well-designed linking and searching facilities. Worldwide grocery sites were assessed against a checklist of advanced

search features. Having selected appropriate sites, the second phase involved the use of searching and linking to complete multiple item, variable quantity shopping tasks.

Each of the selected online grocery stores was evaluated.

- The ability to truncate words used in a product search. For example, the ability to enter 'mayo' as opposed to 'mayonnaise'. This feature is able to save the user time, and is convenient when the spelling of a term is unknown.
- The ability to search for both singular and plural versions of a word. For example, when one record states 'arnotts', and another states 'arnott', both records should be returned when either word is searched.
- The ability to use a range of standard Boolean and other operators, including: AND, OR, +, -, &.
- The ability for the system to recognise when a user has misspelt a search term (for example, when no records are returned) and suggest similar terms or possible products in the database.
- The ability for users to search using correct and full descriptions, and have the appropriate product(s) returned when companies have chosen to include abbreviations in product descriptions.
- The ability to use a wildcard character, such as '\*', when searching using truncations.
- The ability to include numbers in the search, where these numbers relate to the title of the product (for example, Nescafe Blend 43) or when they are the size/weight of the item.
- The ability for the system to provide a suggestion when no or few results are returned, similar to the 'Do you mean...?' found on many websites.

### (III) OTP Algorithm

In existing one-time password algorithm, Java MIDlet is a client application and we assume that this runs in client mobile phones which can be able to receive one time passwords.[12] A MIDlet is an application that uses the Mobile Information Device Profile (MIDP) of the Connected Limited Device Configuration (CLDC) for the Java ME environment. Typical applications include games running on mobile devices and cell phones which have small graphical displays, simple numeric keypad interfaces and limited network access over HTTP. This whole design describes the two main protocols used by Java MIDlet system. Initially, the user downloads the client (Java MIDlet) to his mobile phone.[12] Then the client executes a protocol to register with both server and a service.

provider utilizing server system for user authentication. In order to secure the system, the generated OTP must be hard to guess, retrieve, or trace by hackers. Therefore, it's very important to develop a secure OTP generating algorithm. Several factors can be used by the OTP algorithm to generate a difficult-to-guess password. Users seem to be willing to use simple factors such as their mobile number and a PIN for services such as authorizing mobile micro payments. Note that these factors must exist on both the mobile phone and server in order for both sides to generate the same password. In the proposed design, the following factors were chosen:

- IMEI number
- IMSI number
- Username
- PIN
- Hour
- Minute

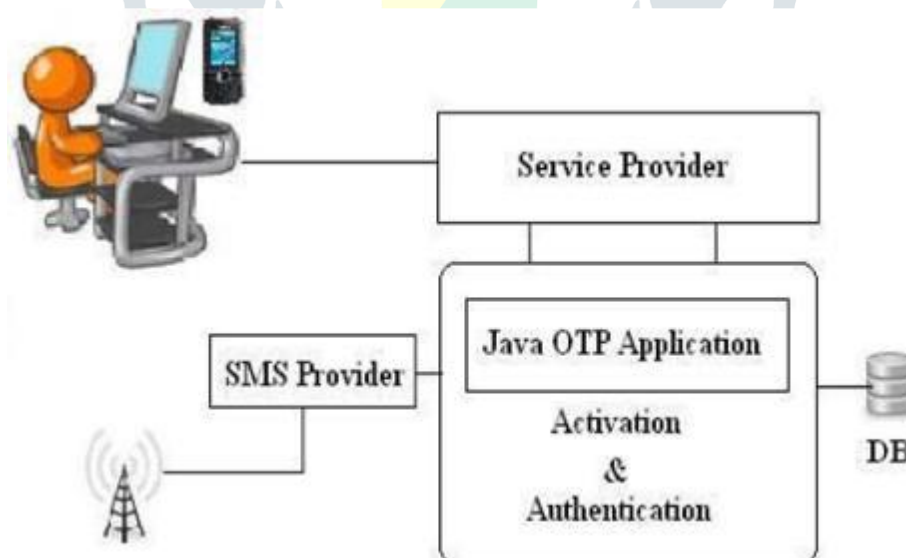


Figure 2 : OTP Generation Algorithm

### (IV) User efficiency

The user can reduce or eliminate time-consuming activities of grocery shopping because the agents execute them on behalf of the user. (2) Automated process of grocery shopping. The grocery shopping activity is divided into several small tasks. By assigning them to proper agents, we can automate the grocery shopping process. (3) User adaptation. Agents can adjust purchasing quantity using user's stock, and manage the total cost of shopping under his/her budget. By learning from user's evaluation, the agent can maintain up-to-date user's preference. (4) Flexibility. A compare agent can be selected from among many for specific grocery item. The primitive agents can be reorganized when there are changes in user's requirements, system environment, and system function. Figure 1 shows the structure of the grocery shopping system.

(V) User agent (UA):

Compare agent is a primitive agent that gathers grocery information, compares it, and places order with grocery stores.[1]The compare agent utilizes knowledge of the user’s preference of both groceries and stores that are managed by the IMA User Interface agent is an organization agent to manage and control the following primitive agents. - Initial agent starts the shopping process. It gathers the menu list IMA. Menu Selection agent asks the user to select the preferable dishes in the menu lists. Evaluation agent receives the user’s evaluation of shopping and asks IMA to update the user’s preference.

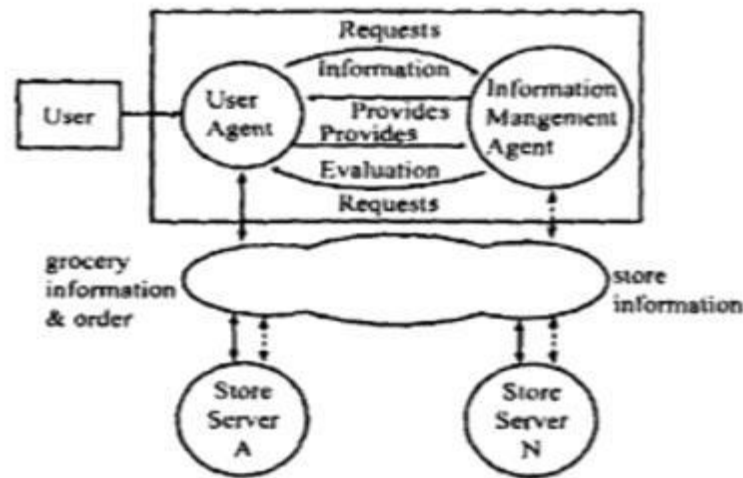
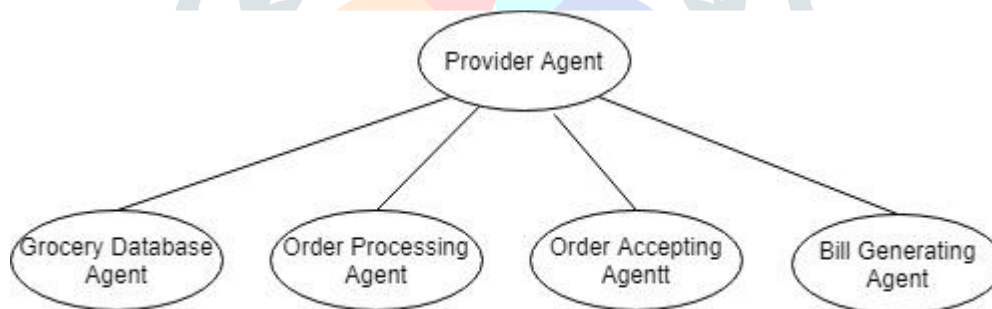


Figure 3 : User Efficiency

(VI) Stock Management agent (Stock MA):

Stock Management agent (Stock MA) an organization agent that controls the following agents that manage knowledge base or database directly.

[1]Preference agent is a primitive agent that manages user’s preference knowledge of groceries. Recipe agent is a primitive agent that manages user’s recipe knowledge. Stock agent is a primitive agent that manages grocery stock Somation at user’s hand. Store agent is a primitive agent that manages store information.



Provider Agent  
Figure 4 : Provider Server Agent

(VII) Provider Server agent(PSA)

Provider server provides groceries information at the request of UA or IMA. It is an organization agent that organizes agents to provide grocery information to user agent and get an order from user agent. [1]Grocery DB agent is a primitive agent that manages grocery information and provides it to who requests it. order Processing agent is a primitive agent that carries out the verification of the grocery inventory. If the store has enough inventories, it asks Order Accepting Agent to accept the order. Order Accepting Agent is a primitive agent that confirms an order from UA and asks a clerk to deliver the ordered groceries to the user.

(VIII) Admin Server agent(ASA):

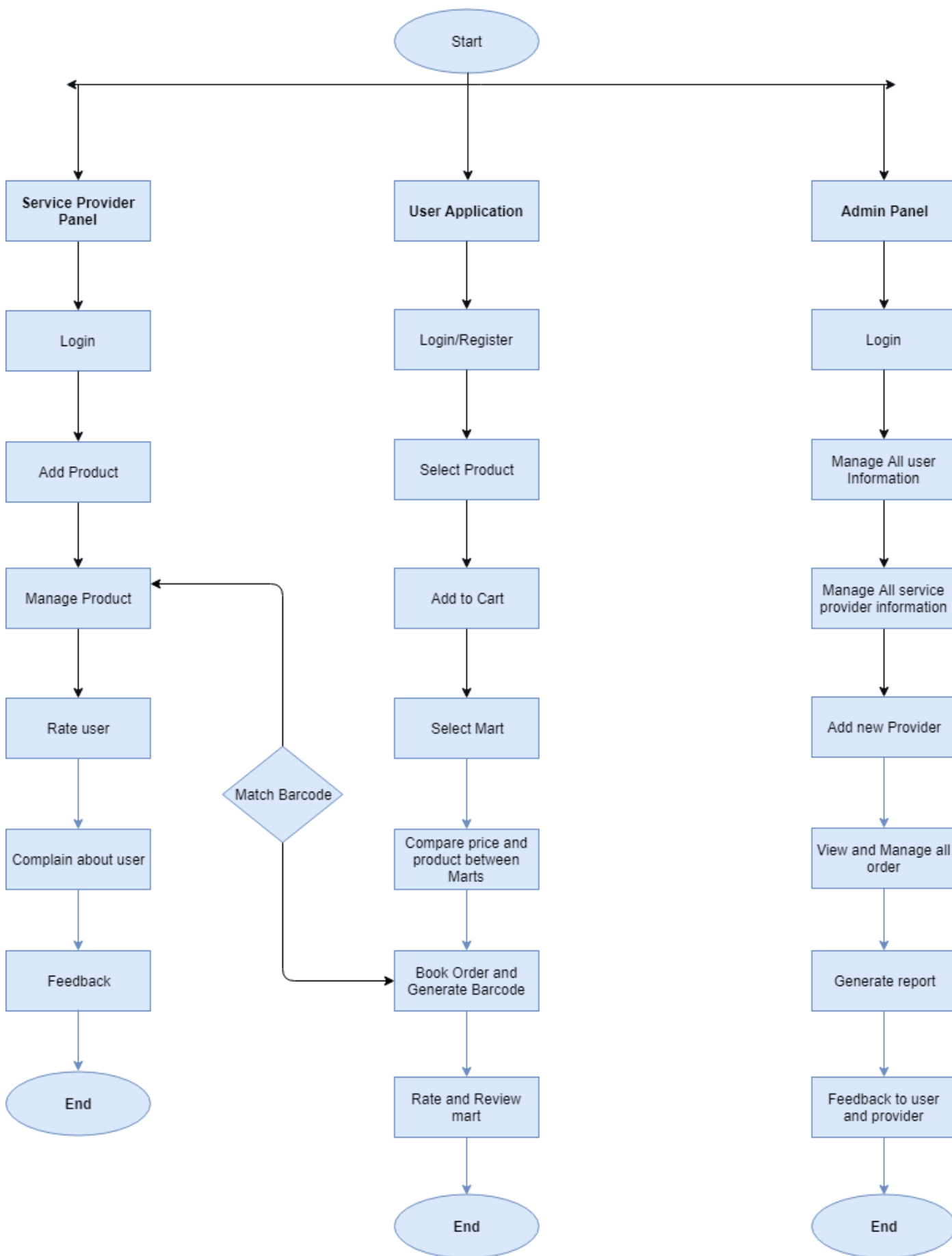


Figure 5 : Flow Chart

Admin Server agent which is for user and provider management .[1]ASA also manage the order which is for accepting and rejecting order.ASA is also for the Data Management of User and provider and it also collect the feedback of the customer and provider.

## CONCLUSION

Here, the authors have presented review of all parameter related to comparing the price of Grocery in different malls/marts. From the Methodology it is clear that how user, provider and Admin works on that areas from the grocian we can comparing the prices of grocery items. In the grocian provides process of OTP login/register, Selection of nearest store, adding and removing products to cart, comparing the price of cart items and for the payment it describes an Online payment option or cash on pickup(COP). These all process are done by the user. A provider have their own panel for managing orders, manage products and it manage also user. Admin is the owner of the application it manages all the things related to Application and panel.

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