

# SMART SHOPPING SYSTEM

<sup>1</sup>Mr. Vilas C. Rathod, <sup>2</sup>Shreyas Kshirsagar, <sup>3</sup>Atharva Bhatawadekar, <sup>4</sup>Rohin Chitroda

<sup>1</sup>Professor, <sup>2</sup>Diploma student, <sup>3</sup>Diploma student, <sup>4</sup>Diploma student

Information Technology Department,  
MIT Polytechnic, Pune, Maharashtra, India

<sup>1</sup>vilasrathod18@gmail.com

<sup>2</sup>atharva.24.ab@gmail.com

<sup>3</sup>kshirsagar.shreyas2810@gmail.com

<sup>4</sup>rohinchitroda@gmail.com

**Abstract:** This system helps is especially made to make the job simple. The job of the cashier at the billing counters in a supermarket. Customers would get in supermarket. They would shop as per their requirements and open the website, login/sign-up. The customer can scan the product and add it to the cart using mobile phone and after payment he'll get a soft copy of bill on his e-mail. We are developing the setup in such a way where the whole system would work on web server and user can access it on mobile.

**IndexTerms – Barcode Scanning, Supermarket, Shopping, Ecommerce.**

## I. INTRODUCTION

The project is on supermarket billing. Supermarket is a place where customers come to purchase their daily using products and pay for that. So that there is a need to calculate how many products are sold and to generate bill for the customer. We have to wait at the counter for a long time in the queue with debit cards and cash. To overcome all these problems, we developed supermarket billing software system. It will reduce the time taken at the billing counter. This system will reduce the work force required in maintaining the database i.e. this system will require less human force. This system will provide the user with precise detailed and a bill zero error probability i.e. an extremely precise or without error bill. This system will provide a much more convenient shopping experience for the shopper or customer.

In this we are developing software where the user can scan the product and add it to the cart using mobile phone and after payment he'll get a soft copy of bill on his e-mail. We are developing the setup in such a way where the whole system would work on web server and user can access it on mobile.

## II. LITERATURE SURVEY

We know that lot of supermarkets like D-mart, Big Bazaar, etc. but there is lot of rush at these supermarket and billing system is a big issue. Therefore, billing is a lot time consuming process. Also, theft is an issue in these supermarkets. People may steal chocolates, chips, etc. and employees working in malls never get an acknowledgement regarding these issues. Due to large variety of products these supermarkets need a large display area to keep their products for sale. But by using our proposed system, these supermarkets can understand what type of products are getting sold largely and are in demand and therefore more stock of these products can be stored in the shop and hence display area can be managed easily. When customer enter supermarket, he will choose the product he wants, open the website, scan the product and it get added to his cart.

After scanning the product, bill will be generated automatically and each time the customer chooses a new product, the bill automatically gets updated.

## III. PROPOSED SYSTEM

In this system, user has to sign-up if he doesn't have an account or has to login if he already has an existing account to access the system/website. Customer can create his account by going to customer section column and then click on my account to create the account. Once the user has logged in, he has access to the system. Customer can choose the product he wants to shop, then he'll scan the product, and then he adds the product to cart.

The customer scans the product using the scan option present on the top right corner of the website. Customer can search the item/product he wants by typing the name of the item/product he wants in the search bar. The details about the product will be displayed below. After that customer can click on "add to cart" option and then he'll be redirected to cart where he'll see the list of all products he shopped. Then, customer will click "proceed to checkout" option and then he'll be provided with payment options which include cash and credit/debit cards. He can also review his order before finalizing the payment.

### Pros of proposed system –

- It will reduce the time taken at the billing counter.
- This system will reduce the work force required in maintaining the database i.e. this system will require less human force.
- This system will provide the user with precise detailed and a bill zero error probability i.e. an extremely precise or without error bill.
- This system will provide a much more convenient shopping experience for the shopper or customer.

## IV. ARCHITECTURAL VIEW

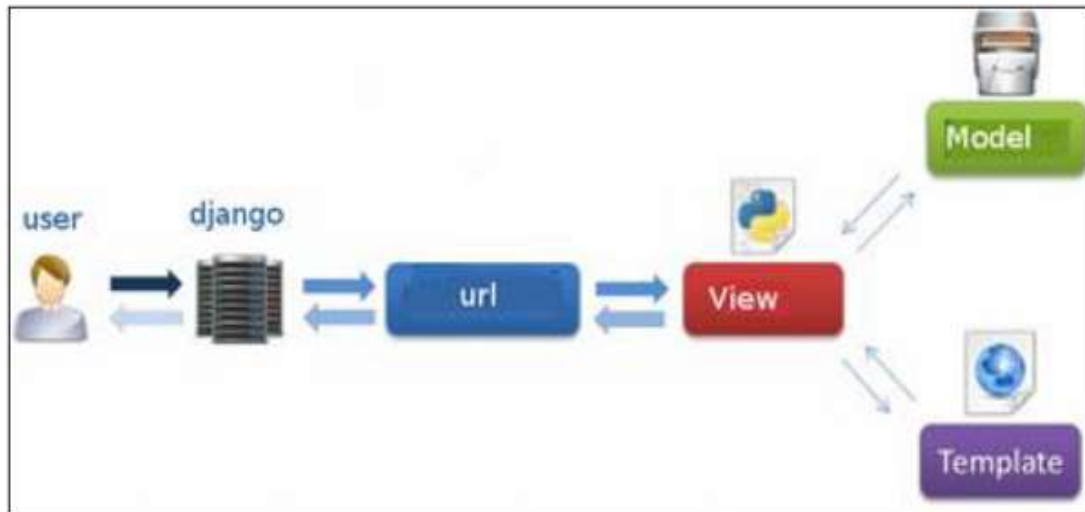


Fig. System Architecture

Our project is based on Django framework. So basically, Django framework uses MVT pattern i.e. Model – View – Template. The MVT (Model View Template) is a software design pattern. It is a collection of three important components Model View and Template.

1. **Model-** The Model helps to handle database. It is a data access layer which handles the data. Model is database which is MySQL. It consists of hardware and software requirements. Django framework mainly works with only 3 files.i.e. models.py, views.py and urls.py. models.py contains our database attributes. Views.py contain the python functions which we use and urls.py contains the URLs which we will access on the browser.
2. **View** – to create a basic structure of a website we use HTML. Basically, we know that CSS is a cascading style sheet to make the website more attractive. To make it even more attractive we have use Bootstrap. We have use JavaScript at client-side scripting. The View is used to execute the business logic and interact with a model to carry data and renders a template. For backend we have used Django framework that uses Python and for database we have used MySQL.
3. **Template** - The Template is a presentation layer which handles User Interface part completely. Template is a file written in HTML and DTL (Django Template Language). Template is used to present the data to the user at frontend.

## Modular description-

**Admin Side** – It provides real time synchronization. It can easily manage and maintain the inventory and sales. Admin can select inventory management on catalogue. It can set-up configuration for allowing sales person log in into a single system (or same IP Address) at a time or it can even evoke the authorization given to the same salesperson earlier. Admin can also manage the customer's data. The salesperson who is controlling the admin side can add new customers. Discounts and offers on the specific products can be added through admin side. "Consumers and their online shopping expectations – Ecommerce News "Kothrud's Big Bazaar. All the team members of the group visited the supermarket. As Big Bazar is largest supermarket of India, we chose Big Bazar to understand the current billing system implemented by them. We also went through and understood the working of the billing system thoroughly. We observed that there is a lot of rush at the billing counter and the cashier has to scan all the products one by one, so its time consuming. Even for minimalistic products, the customer had to wait for a long time into the long ques and customer's patience got tested. Also, a lot of man power at the billing counter. Also, theft is an issue in these supermarkets. People may steal chocolates, chips, etc. and employees working in malls never get an acknowledgement regarding these issues. When crowd increases a lot, sometimes there is no proper management at the counter.

## V. ALGORITHMS

### Customer Side: -

- Customer will scan at the entry of the shop, so that he doesn't need to remember the URL.
- He will enter his email id for login/enter basic details for registration.
- Customers will scan the barcode on the product and product will be added to his cart.
- Then his cart will get opened and then he can add multiple products.
- Customer can also remove the products that are added from the cart if needed.
- After that the bill will be generated automatically and sent to customer on email.
- Recommendations of frequently used products will go on his email id.
- He can also see his past purchases.

### Admin Side: -

- Admin side provides real-time synchronization. Products can be added to cart by Barcode.
- Taxation is calculated by admin side.

- Admin side will scan the barcode on the product the customer has purchased. (admin side will be having the barcodes pre-registered in it).
- Admin side can easily manage and maintain the inventory and sales.
- Admin side can print the barcode slip.

## VI. RESULTS AND DISCUSSION

Product	Unit Price	Discount	Total
Maggi	12/-	-	12/-
Toothbrush	30/-	10/-	20/-
Hard Disk	3500/-	500/-	3000/-
Total	3542	510/-	3032

- The above table shows working of the developed system, which represents the shopping cart of the customer. The proposed system represents a system which was pre-used at multiple supermarkets in USA but there was no diversity present. So, we decided to create a system for every supermarket with customizations as per supermarket's needs. A USA software company named "Spectrum" proposed a similar system but, there system had multiple drawbacks.
- So, our literature survey was conducted at the Kothrud's Big Bazaar. All the team members of the group visited the supermarket. As Big Bazar is largest supermarket of India, we chose Big Bazar to understand the current billing system implemented by them. We also went through and understood the working of the billing system thoroughly. We observed that there is a lot of rush at the billing counter and the cashier has to scan all the products one by one, so its time consuming. Even for minimalistic products, the customer had to wait for a long time into the long ques and customer's patience got tested. Also, a lot of man power at the billing counter. Also, theft is an issue in these supermarkets. People may steal chocolates, chips, etc. and employees working in malls never get an acknowledgement regarding these issues. When crowd increases a lot, sometimes there is no proper management at the counter.

## VII. CONCLUSION AND FUTURE SCOPE

This project tells us about the alternate possible ways of shopping at a supermarket rather than the old process and we aim to introduce this smart shopping system to the supermarket to enhance the customers experience as well as the management of the supermarket. This system also reduces the time and the customer doesn't have to stand in a long queue spending time at the billing counter. Also, the theft issues are reduced. The system does have few disadvantages but with further updates and improvement this system can be the future of the supermarket billing. Overall development of the system is very high and therefore no payment gateway is not included. If the server or database signal strength or the network strength weakens or breaks then this system has a high probability to fail.

## VIII. ACKNOWLEDGMENT

The authors would like to thank the researchers as well as publishers for making their resources available and teachers for their guidance. We are thankful to the authorities of MIT POLYTECHNIC. We also thank the college authorities for providing the required infrastructure and support. Finally, we would like to extend a heartfelt gratitude to friends and family members.

## IX. REFERENCES

- [1] Kannan, P. K; Alice Li, Hongshuang (2017). "Digital Marketing: A framework, review and research agenda". International Journal of Research in Marketing.
- [2] "Consumers and their online shopping expectations – Ecommerce News".