

Android Based Bill Generating System using Barcode

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Abstract – “Bill Generation Using Barcode Scanning” is an android app in which we calculating bill of purchasing goods in super markets using bar code scan through mobile. It is very useful to customers to select product and easy billing without waiting on queues in super market. In the current system, there is lot of manual work has been done by the shop keepers to scan bar code of each and every product that customer pick in the basket, and calculating bill then he/she collects money from the customers. This will make other customers to wait on queue lot of time. To this end, we design an efficient android app to scan product bar code and calculate bill easily without waiting in queue.

Keywords – Barcode Scanning, Billing Generation, User Friendly.

I. INTRODUCTION

To meet business needs efficiently, every organization demands IT-enabled solutions. With every business detailing in retail, there is a need to automate the billing process, and to reduce the overall process time. We all have seen small images offline, a rectangular or square image, stickered on the products. These black lines consist of product details and can be read through a barcode scanner software. Such codes are applied to a product for quick identification and are used in the retail store as a part of the purchase process, to track the inventory in the warehouse and on invoices to scan through the records and the documents.

In existing system, the shop keepers done manual work to scan each and every product on the basket and generate bill then collects cash from the customers. This will makes wait the other customers in queue lot of time. Calculating bill is done by system but other works done by manual. This system brings many overheads such as Manual Work Inefficiency Lot of time waste

To solve the aforementioned problems, we design an efficient android app to reduce the manual work. Not only reduce the manual process but also save the time, improves the productivity. It is very convenient way to purchase goods/products by customer and make payment easily. In this project we develop user friendly GUI for admin and customers. This system has many advantages reduce the manual work, improves productivity, more user friendly, and very efficient. The other benefits include: Growth in sales, Increase footfall at the store and Saves money as it cuts down the workforce involved and requires no extra expertise to operate.

We can use barcode based billing software in following business

- Retail Stores – café and bakery, supermarkets, take away business, textile stores, workshop, gadget repair, jewelry store etc.
- Manufacturing business
- E-commerce Backend
- Packers and Movers
- Transporters
- Electronics and spare part dealers
- Operations and process management

II. BACKGROUND WORK

The rectangular lines labeled on the products, also known as the barcode lines consist of information about the products. It contains the details, such as price, manufacturing date, expiry date, packaging number, size, color, etc. This series of lines can be scanned by the barcode scanner software to retrieve the information stored. It helps to read, process, and store the barcode information encrypted in the barcode lines.

The barcode billing software is programmed with the barcode scanner. Once the barcode reader scans the code, it is then processed by the barcode scanner software and the information is displayed on the screen. The scanner eliminates the manual time of entering the details of the product and help process the information in a fraction of second. Barcode billing software is the technology that allows users to design, create and print barcode lines, also known as barcode labels using database driven data. The software makes sure the billing process to be faster, smoother and managed with proper records. This helps in real-time data collection and helps in effective store handling.

The billing software with barcode scanner not only ease down the work for the organization but also help cut down the cost and processing time. Following are a few of the benefits of implementing barcode scanner software:

Create quick custom labels? - While barcode scanning is one key function of the barcode billing software, the other major function is to generate the barcodes. The barcode labeler consists of all the information related to a product and generates barcode lines. As soon the information related to the product is entered, the label with all the product information encrypted in the barcode lines is generated. It is easy with the barcode software to create labels, asset tags, shipping labels, Id, badges, and address tags. All the custom labels, including barcodes, graphics and texts can be quickly designed, hence saving the cost and time involved.

Easy allocation of serial numbers? - The barcode billing software while allocating the tags to the products, also records the information in the system with a unique serial number associated with each product. Hence, the unification of the products is maintained based on the serial number.

Eliminate the data entry errors? - Making use of software cuts down the scope of human error. The barcode scanner software eliminates the human error associated with product billing. It eliminates the manual data entry work by creating the barcode and hence cuts down on the mistakes.

Reduce employee training time? - The billing software with barcode scanner is fairly easy to understand and easy to use. With the barcode reader software pre-loaded with information, it saves the time of manual entries and training each employee on how to use the desired software. The employees just need to scan the barcode lines which is fairly an easy process and doesn't require any special skills or training.

Improve accuracy? - With centralized and proper database connectivity, the processing time can be saved and connectivity issues can be resolved. With the data stored at a centralized platform, it can be retrieved easily and in no time. Hence saving the manpower cost and the associated time.

Improve efficiency? - The efficiency of the business can be improved with the installation of the proper software. With barcode billing software functioning, the retail store can cut down on the bill processing time and also the weight of the bulky items can be pre-feed in the system to shorten the line and make the billing process faster.

III. PROPOSED WORK

System Model

The system can be shown in the Figure 1 in which mainly have two entities 1) Admin and 2) Customer and these are consider main modules of the system.

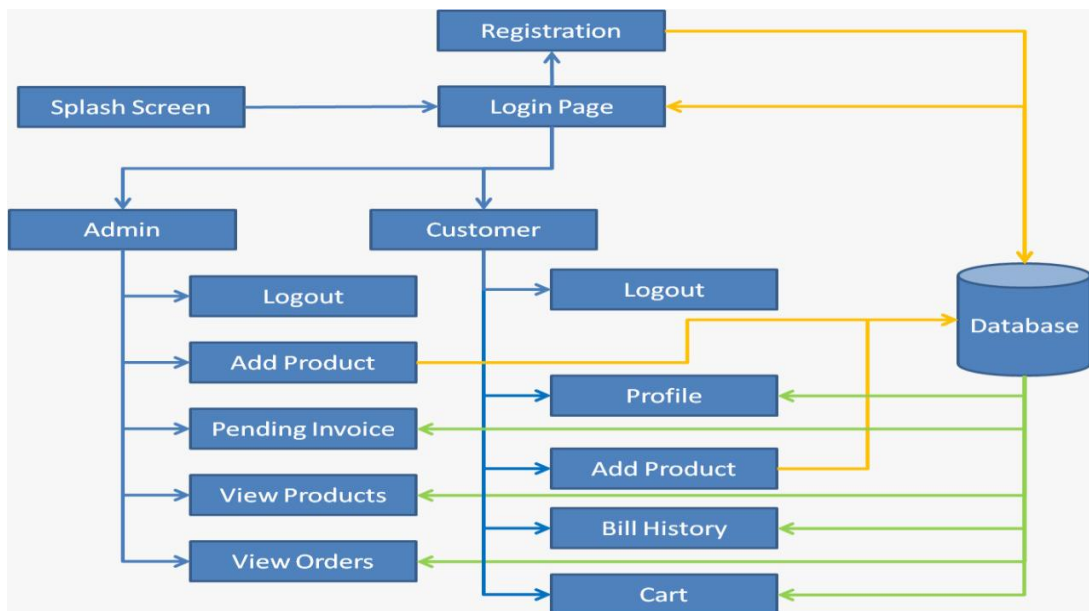


Fig. 1: System Overview

Admin

- ✓ In this module, the admin has login to the system.
- ✓ He allowed to add the product information.
- ✓ He allowed to check the pending invoice and clear the payment status after payment completed.
- ✓ He able to edit or delete the product information.

Customer

- ✓ In this module, customer register and login to the system.
- ✓ Select the product and scan the barcode using mobile camera then it automatically adds to cart page.
- ✓ Customer allowed to manage the cart data.
- ✓ And he checks out using payment module.

The other system Modules are:

Invoice Module

- ✓ In this module, the admin allowed to view the pending bill information and update the bill status after payment is completed.

Payment Module

- ✓ This module, allows the customer pay the amount using either payment method or cash on delivery options.
- ✓ If the customer make payment using any payment method automatically update the status of the bill.

To process the barcode, we present an algorithm as follows:

Bayesian deformable template model of the barcode that combines prior knowledge of barcode geometry, including the allowed configuration of bars and allowing for geometric distortions, with evidence for edges based on intensity gradients. Our model is also strengthened by exploiting the checksum information embedded in the barcode, which constrains the values of the encoded digits, thereby allowing us to detect and correct single-digit errors.

IV. RESULTS AND DISCUSSION

In this system we developed mobile based billing system to improve the user experience and productivity. The following screens show that our system is more users friendly and efficient.

When installation is done, the registration page will be displayed as below screen in Fig-2.

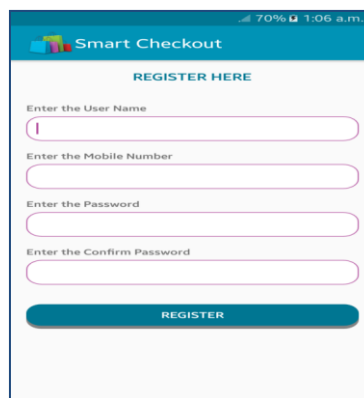


Fig. 2: Registration Page

After registration, the users are able to login into the application. And this application has two types of users, admin and client.

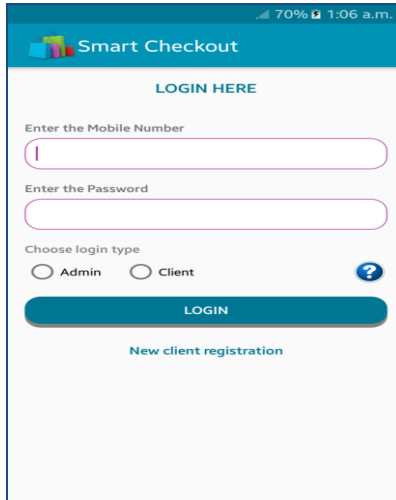


Fig. 3: Login Page

Fig-4 shows the admin menu, and the following are the various operations that are done by the admin.

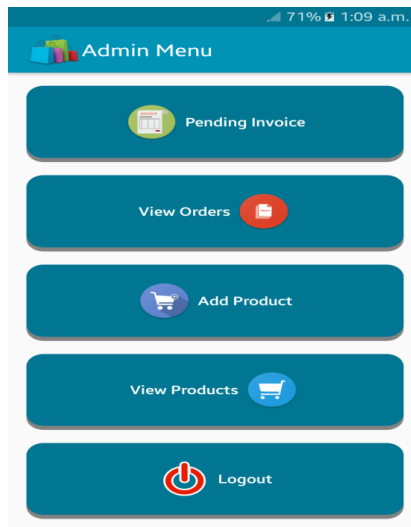


Fig. 4: Admin Menu Page

Fig-5 showing the product scanning and the bill is automatically generated.



Fig. 5: Scan Barcode

Fig-6 shows the product list which are added by the admin then the clients are able to see available products to buy.



Fig. 6: Product List

The below Fig-7 shows the current status of the bill which is stated by admin.

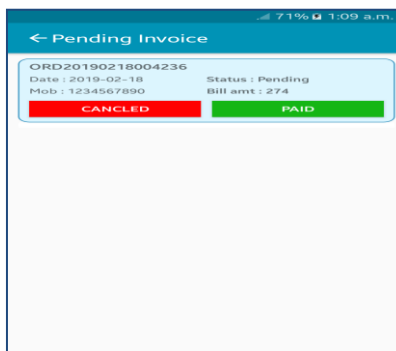


Fig. 7: Pending Invoice

Fig-8 shows the bill history whether it is paid or cancelled.

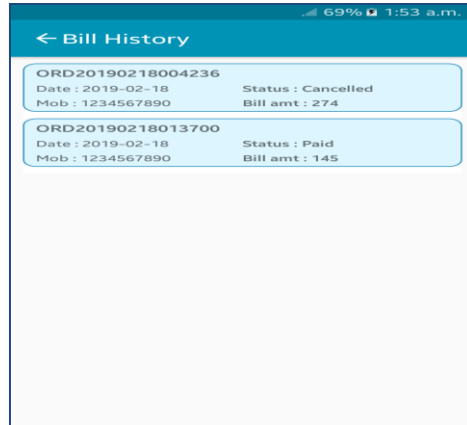


Fig. 8: Bill History

V. CONCLUSION

In this project, we proposed and developed “Android Based Bill Generation Using Barcode” is an android application in which we perform the Bill Generation Using Barcode activities in efficient manner. This application helps not only we design an efficient android app to scan product bar code and calculate bill easily without waiting in queue. mobile or COD by verifying bill information in mobile phone. to provide effective and efficient services to their customers. In future payment can also be done by using this application in order to improve the efficiency and flexibility for the users.

REFERENCES

1. https://www.tutorialspoint.com/android/android_resources.htm
2. <https://developer.android.com/guide/index.html>
3. <https://www.engineersgarage.com/articles-/what-is-android-introduction>
4. <http://www.beginandroid.com/intro.shtml>
5. <http://www.gcflearnfree.org/androidbasics/intro-to-android-devices/1/>
6. <https://en.wikipedia.org/wiki/Android>
7. Vogelstein, Fred (April 2011). "How the Android Ecosystem Threatens the iPhone". Wired. Retrieved June 2, 2012.



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