

Digitalizing The Billing Procedure in Mall and Complexes

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ABSTRACT: There is huge change in technology, so the rate of people of all ages attracted towards electronic gadgets is increasing. In different type of industries the electronic devices like smart card reader, barcode scanner etc having more usage. This type of gadgets also required in supermarkets. In the existing, in the mall every person takes product put into trolley. After the shopping is done that person have to stand in the queue for billing. In the billing process a sell person scan barcode of each and every product and gives final bill. This process is very time consuming and it becomes worst on holidays, special offers or peak days.

To overcome that we have been developed a smart way for shopping in malls where the main objective of the project is to help people shop easily using digitalized billing procedure, to have a better shopping experience for customers and it will reduce the time spent in the queue for the billing purpose. Each and every product has barcode so self-checking out can be one option. It can be define as any machine/scanner/system which will allow consumers to scan products themselves while picking them up from shelves. When a person scans a product from a mobile where he/she has registered with given credentials. The cost, name and expire date of the product will display. Cost will add into final bill. Bill will be stored in microcontroller memory. The invoice will be generated to customer and shopkeeper. Eventually the shopkeeper verifies the invoice for security purpose[1][2].

KEYWORDS: Barcode, Barcode Scanner, Android Mobile Phone.

I. INTRODUCTION

Seller uses the price list for the details of items by searching and preparing the price list. Later it was computerized by the usage of barcode. "Barcode Based product billing System"(B.B.P.B.S) is a software which utilizes barcode scanner which is integrated in mobile camera to record and maintain bills of product. After printing barcode label in any item we required to collect data exist in the barcode, for this data collection software are used. A Barcode is a machine-readable representation of information in a visual format. A bar code consists of a series of parallel, adjacent bars and spaces and also contains some narrow and wide bars[3][4].

The types of Barcode are:

Linear barcodes:

A first generation, "one dimensional" barcode that is made up of lines and spaces of various widths that create specific patterns.



Matrix barcodes:

A matrix barcode, also termed as a 2D barcode or simply a 2D code, is a two-dimensional way to represent information. It is similar to a linear (1-dimensional) barcode, but can represent more data per unit area[5].

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These barcodes are read using a device called as the barcode scanner.

There are different types of Barcode Scanners:

Pen Type Reader:

Pen-type readers consist of a light source and photodiode that are placed next to each other in the tip of a pen or wand. It is the cheapest barcode scanner available in market[6].



CCD Reader:

CCD readers use an array of hundreds of tiny light sensors lined up in a row in the head of the reader. Each sensor measures the intensity of the light immediately in front of it.



Smartphone Cameras:

Smartphone cameras have the ability to read both QR codes (which automatically take you to a website URL) as well as scanning a barcode to bring up product information such as price comparisons and user reviews[7].



Handheld Scanner:

It is a scanner with a handle and typically a trigger button for switching on the light source[8].



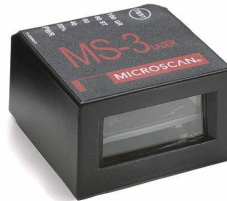
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Automatic reader:

A back office equipment to read barcoded documents at high speed (50,000/hour).



II. RELATED WORK

A notable work has done by HemaSubramaniam, Marina Hassan, SetyawanWidyarto on “Student Attendance System (SAS)” at SekolahMenengahKebangsaan (SMK) DatoHarun, Kuala Selangor, Malaysia. This paper was published in 2013, in TICOM journal. This paper explained how to replace the manual attendance recording process at schools in Malaysia. SAS can reduce the time spent by teacher in calculating the percentage of attendance for a student as well as for a class. SAS been implemented into one of the secondary school in Selangor state of Malaysia. The student already been equipped with student card which contain bar code. Student attendance recording process been assigned to the people who responsible to add the data. User acceptance testing conducted among few user categories before the system being released into the production. The measurement is on the satisfaction of the user towards student attendance system. Qualitative analysis used in determining the effectiveness of the system. Interview method used to gather the information on the user satisfaction. School attendance determines the academic achievement of a student. An application required by most of the schools in Malaysia in order to ensure efficient attendance record keeping. Student attendance system (SAS) that developed for secondary school expected to replace the manual attendance recording process at schools in Malaysia. SAS can reduce the time spent by teacher in calculating the percentage of attendance for a student as well as for a class. In a click of button teacher can generate report at any point of time. Moreover, student’s image which displayed after the scanning process expected to help teacher identify students before record their attendance. During SAS launching session, user acceptance test has been conducted and feedbackfrom potential users being gathered. Feedback given by users highlighted few issues that need a consideration from SAS development team[9][10].

III. PROPOSED SYSTEM

In shopping, during peak days the number of customers in shopping malls will be high. Even though there are number of billing counters, the queue will be too high. Everyone in western society suffers from frightful shortage of time so spending time in billing process is worthless. Consider a scenario where a person wants to purchase minimum product and people in front of him/her wants to purchase more number of products then that person may take longer time for his turn to bill the products.so this problem can overcome by digitalizing the billing process.

Self-checking out can be one option. So what is Self-Checkout mechanism? In colloquial term, it can be defined as any machine/scanner/system which will allow consumers to scan products themselves while picking them up from shelves. Some form of self-checking out mechanism has a presence in western world. However, same cannot be said for India. But yes, with invasion of organized retailing and consumers embracing the usage of technology, there is a need and requirement of provision of a self-operating scanner or a self-checkout machine.

In our opinion; the way advent of ATMs minimized total time spent at a bank, in similar fashion; installation of Self-Checkout system will also minimize time spent at a retail store. This will in turn be a key to improve the consumer service and satisfaction.We are proposing to develop a mobile application which will help the consumer or the people to scan the product that he or she buys from the retailer. The user will login or register to our application and select the retailer that he or she is going to use frequently or for the first time.

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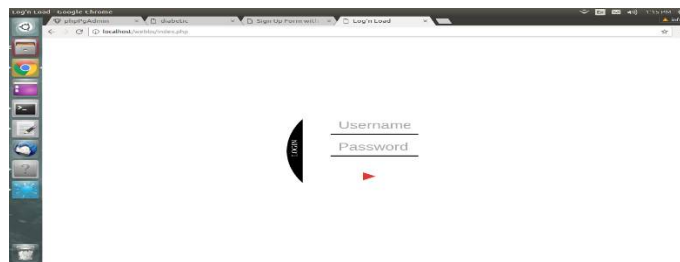
The app will show the items listed and also show the items which have maximum discounts and any offers provided by the retailers. All this information will be visible to the consumer.

The consumer when he picks up a item from the retailer, he can scan the barcode from this application which will form the list of items the consumer is willing to buy. The consumer gets to know about the product details including cost of it. At the check out counter, the consumer just has to tell customer Id to the store operator to verify the item list and the cash that has to be collected from the consumer or customer. This will reduce a lot of time spend standing in the queue to complete the shopping procedure.

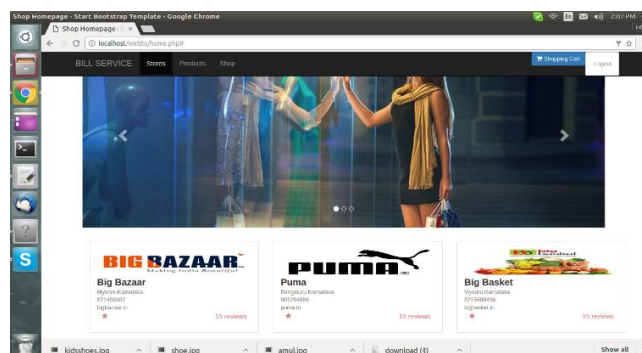
The retailers can also benefit by implying more people on the store maintenance and less people on the check out counter.

IV. EXPERIMENTAL RESULTS

1.Login page



2.Listof store

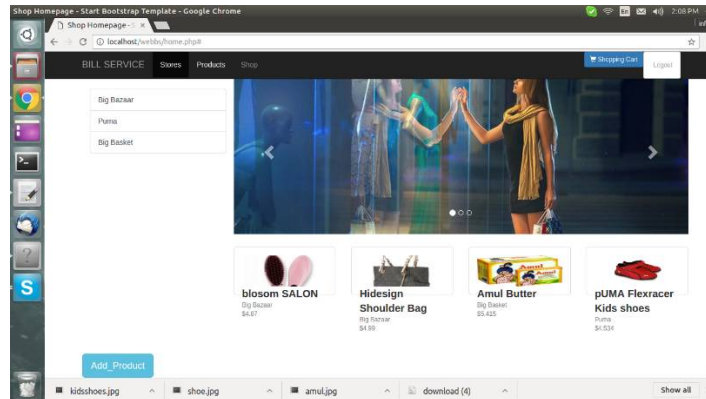


3.List of product

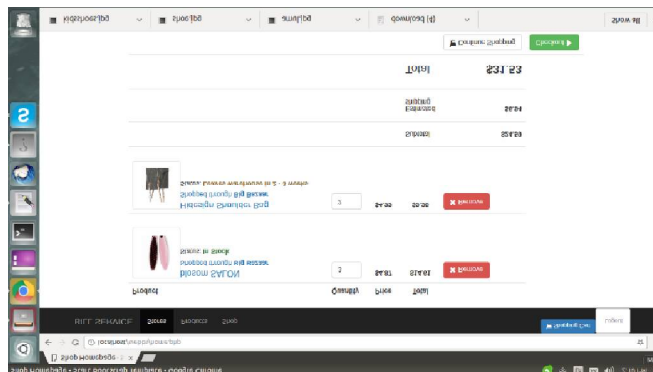
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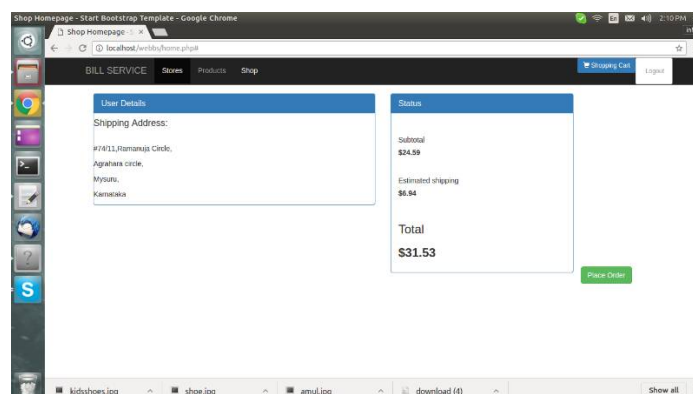
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4. Products in cart after scanning



5. Generation of invoice



V. CONCLUSION

We will be able to help the customer and retailer to spend less time in check out queue and spend more time in shopping. This will be a application which can be installed in all android smartphones.

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