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Smart Billing Application for Shopping

Yogita Ganage[1], Ajit Gaud[2], Hrithik Gharat[3], Shubham Gupta[4]

[1]*Professor, Department of Information Technology, Rajiv Gandhi Institute of Technology, Mumbai*
[2,3,4]*Student, Department of Information Technology, Rajiv Gandhi Institute of Technology, Mumbai*

ABSTRACT: The present work describes the construction of an application that will help users to shop easily and take less time to bill their products even though there is a long queue technology has changed so much, so is the rate of people of all ages who are attracted to electronic gadgets. Currently, almost everyone in India chooses to buy groceries and clothes offline at the stores people like to buy products after having hands-on. After acquiring the product, the person will have to stand in a long queue for billing just two to three products for a long time. In the billing process, an employee scans each product's barcode and bills it to the final. This process can take a lot of time and it can be even worse in today's situation with the lockdown and restrictions. The process of billing by a single cashier can be expensive for the shops. To overcome this, a smart way to shop in malls has been developed. The customer will be provided with an application on their mobile phones. Customers have to login into the app. The user can scan the QR on the product in the app and get details of the product. After all the products are scanned the total bill is displayed, which the customer can pay with any method, rather than waiting in long queues. Admin can have an excess to add inventory into the databases and have the option to check out the customer. The purpose of this project is to produce software and implement a technology that can ease human life and conjointly produce a more cost-effective operation than any typical kind of billing system.

KEYWORDS: App Development

1.INTRODUCTION

Since the age of digitization, the use of mobile phones has greatly increased, which has led to carrying out our daily activities using mobile phones. Shopping traditionally is tedious and requires a lot of time. The trend for shopping online is increasing with each passing day, there is some sort of inkling to buy the products in the shop itself, and people like to buy the things that are present in front of them. Customers also are afraid of carrying out online purchases because of less secure transactions that lead to hacking of sensitive data, credit/debit card cloning, inconsistency, or rupture of privacy.

The concept of the project is to address the customer's expectations whose basic demands are to reduce the number of problems that arise when making a purchase. By initiating the idea of an app-based shopping cart, people will be easily able to understand the cost of the products themselves, irrespective of the staff of the shop is present or not as the details will be readily available and would be displayed on the app's interface as they add the product by scanning them on the app.

As the cashier scans the barcode for every individual product and then produces the bill, thus consuming a lot of time and energy for both the shopper as well as the cashier. To overcome this problem, the user can scan the QR using the mobile's camera instead of scanning the barcode, which requires a separate scanner, while making a purchase, retrieve essential details of all products from the database of the shop and produce the bill themselves.

The outcome of this project will not only favour the customers but also the mall owners who are making a one-time investment which can lead to possible long-term benefits in terms of financial growth as well as the satisfaction of the customer.

2.LITERATURE SURVEY

The use of RFID in Shopping Cart is the modern way of shopping and avoiding long queues. Every object will be attached with a unique reader tag which will be detected by the trolley having the RFID Reader and the object will be added to the cart. The amount of the bill changes according to the items added or removed from the cart. The amount of installing the RFID physically is way more expensive than developing an app.[1]

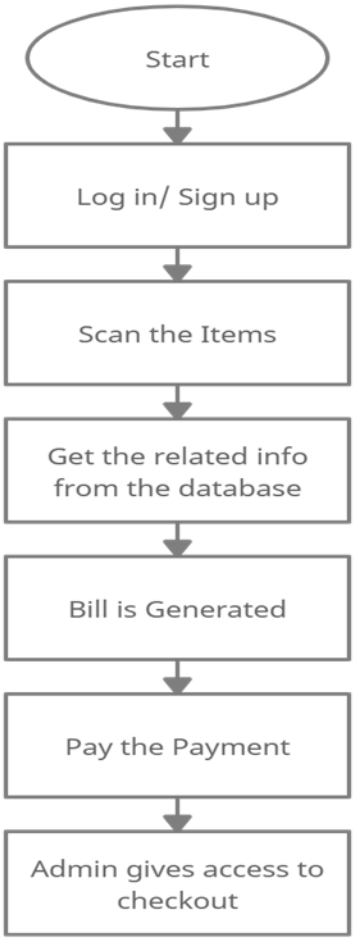
This is a simple and very productive method of online shopping and the sense of money security with the additional advantage of Customer satisfaction. To Use this the Customer needs to physically pick up the item by visiting the store and then scan the item barcode in the application. After scanning, the item is added to the cart. The application also provides the option to add or remove the item. Developing an app provides a better interface for the project.[2]

Every item has an RFID tag attached to it. Also, every trolley comes with an RFID reader, which reads the test on every item, and it comes with an LCD. Wherever a product is scanned the LCDs the product name, cost, expiration date. The bill is stored in the microprocessor memory. Once the shopping is completed the total cost is displayed on the trolley LCD. The purchase details are sent to the customer through the GAM module. Having read through the paper we determined the use of RFID in our project was unnecessary.[3]

QR codes are two-dimensional barcodes. They are very feasible and easy to use. For this very reason, there is a rapid growth in the use of QR codes in traditional businesses and commercial industries. But the use of QR codes in the information field and inventory management is still in its primary stage. This paper focuses on the familiarisation of QR codes in their work and their characteristics. It explains its usage of concerning QR codes. Thus, the use of QR in the project is very useful.[4]

3.PROPOSED SYSTEM

The App is made on the Microsoft Visual Studio with data mart and flutter libraries. For the database part we are using firebase database for storing and retrieving the data for our app.



4.IMPLEMENTATION

Features of the Application: -

- Scanning time of items is reduced
- History of purchased products is maintained

Technologies Used

- Microsoft Visual Studio
- Flutter
- Firebase

To create a login interface: -

There are two types of logins in the app, a user log in and an admin login. User login redirects towards the customer page where he can shop and pay the bill, whereas admin login directs towards login page where admin can manage all the information about the store

To create a database: -

Google Firebase is used for storing data, all users' login data is stored in the database, unique I'd of all products QR code is stored in the database, every unique I'd have information about the product such as price, name. When data is scanned, quantity is added to the database. Admin can modify the information of the database, firebase-auth or firebase_core are the libraries used, quantities of every item are shared with the application in real-time.

The admin can add the products from the app also, which later is updated on the firebase database. After the customer pays the bill, the admin has the right to give checkout to the customer.

Working of the app: -

The user will first register into the application. And the next time user will only need to enter their email id and password to log in. After logging in as the customer will be physically present in the store, they will select whatever product they want. After selecting all the products, they will start scanning QR codes present on the product. While checking out the customer can pay in any way they want.

5.FUTURE SCOPE

The project has been developed at a basic level. However, it has significant scope in the future to Improvise the user shopping experience. The security of user profiles and shopping centers can be increased by using identification cards. Moreover, there is a scope to add more features like live Tracking of the user in the shop to provide a path to the desired item by use of cameras in every alley the information about the products can be added, recommendations of products can be added, there can also be Live updates in the database of the products as the project.

6.CONCLUSION

Smartphones have become an important part of our daily lives and the increasing demand for shopping makes the need for a more viable, easy, and secure way of shopping. Thus, this app not only fulfils the above requirements but also opens new possibilities to make it more customizable according to the requirements of the users. The QR feature in it will help reduce the long queues in shops for scanning the items and there will happen no such frauds as seen in online shopping. The shop's database will become more and more secure with each passing transaction. Thus, ensuring that the database remains free from any mishaps either from the customer or unauthorized personnel. While there are a lot of papers out there but none of them have been able to produce such an economical version of the same.

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