Barcode checkout application in Android

1 Problem statement

Customers at retail stores and shopping malls always face long delays at checkout counters to bill their purchased items. This happens due to limited counters and staff to complete the billing process, due to which shoppers have to wait in long queues. This results in inefficiently utilizing time in day-to-day activities.

2 Objective and Potential benefits

"Barcode checkout application in Android” objective is to overcome the problem faced by the customers at the checkout counters by reducing the time taken by the customer at the checkout counter of retail store by using this application. This application reads the barcode of the product and obtains detail such as price of the product which is used for the billing. The major benefit from this application to the customers is improved efficiency by self billing and reduced hardware costs for the checkout counters at retail stores. This also helps staff at retail stores to engage and provide service to customers.

3 Description

"Barcode checkout application in Android” is an app for self-checkout. Every customer who wants to smartly use their time at retail stores and mall have to download this application on their Android phones. On opening and starting the application, the customer/user must use their camera to scan the barcode of the item. If the product’s barcode is scanned correctly, price of the item must be retrieved from the database. The user can scan the next item by using add item option. If the scan was unsuccessful, the user must rescan the barcode till it’s successful. At the back end of the application, the scanned barcode is decoded and looks for a match with the list of barcodes in the database. On the matched barcode, the details of the product is obtained and customer is displayed with the price of the item. If the database fails to match the barcode, user must be notified with an error message. For testing of this application, a database is created with few barcodes. Next, with successful addition of items to be billed, the customer will be directed to the payment section. The user needs to fill in the card
details and authenticate for the billing to be completed. If the payment is successful, the user is displayed with the receipt and if not the procedure of payment section must be redone.

4 Flowchart

The below shown flowchart indicates the working flow of the application
Start

User opens the self-checkout application

Scans the bar-code of the product

Scanned Correctly

Search in the database and get product details

Authenticate the payment by choosing the card

Status of the payment

Payment Successful

Show the receipt at the exit

Stop
5 Related work

The current applications use barcode scanner to scan the product and connect to the related website. The application we are deploying barcode scanner is different.

   html
cascan&hl=en
[7] https://www.youtube.com/watch?v=7ZkY6PTGhsA

6 Current status and plan

We have started the project by learning and experimenting few basic sample codes of android programming. The necessary libraries and packages required for the application have been collected that would be useful to develop the app. Barcode scanner uses different libraries and API compared to other applications, thereby we are gathering all that is required for the deployment. We’ll follow the application development cycle to complete this project. Currently, we have analyzed the requirements, designed the architecture, collected the required information and have a brief idea on how to achieve the design. The next milestone is to invoke the camera sensor to read the barcode and be able to decode it. The step following this, would be to integrate the database with sample data to this application. We would like to run few tests to verify the application and its successful in extracting the data. If we are running ahead of time, we would like to implement the payment option as shown in the flow chart.