Survey paper on Automizing Sales Cycle using Google vision library

"A Step towards Counter-less Society"

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Abstract: Nowadays because of the tremendous or we can say a sudden increase in the amount of people going to the malls, there has been an unorganized chaos which is difficult to handle by the staff members & also by the customers either to manage their amnesties at the time of Checkout/Billing system. In order to tackle this situation, we came up with an idea of completely eradicating or finding a better initiative to the current billing System. This initiative mainly focuses on the above idea and on minimizing the time parameters required for any kind of shopping. We believe that the current Conventional Method of Billing/Payments system having a long chaotically situations and carrying a huge amount of hard cash including credit cards & debits cards has to be stopped. So in the context of resolving this problems, we are focusing on using Barcodes that can bescanned through mobile, tablets & other handsetsdevices.

Keywords **- Barcode, Scanning, billings, payments, Ecommerce.**

I. INTRODUCTION

The core focus is on the use of Barcodes in Mobile Payments. The Barcode can represent a pre-paid, credit or debit account number via a smart phone application, or the code can contain payment information that can be scanned via user's smart phones. Smartphone are enabling an even greater range of use-cases as barcodes can be generated in real-time and displayed on individual devices. A common way to generate particular information on the mobile devices is via 2D barcodes, such as Quick Response (QR) codes to be saved or shared easily. A smart phone can even become a barcode reader. Each mobile software system offers numerous native and third party applications for this purpose. At present there are multiple ways by which barcode commit to scale back friction in mobile payments these days. For unbanked segments with low smart phone penetration, we see printed barcodes being applied in fascinating ways that to alter larger moneyinclusion.

1.1 PURPOSE

This Document describes the intended details of the Software networking service named Automizing Sales Cycle. Who so ever interested in the requirement specification of Automizing Sales Cycle will benefit from reading this document. Automizing Sales Cycle is an idea of emphasizing the cashless transactions and expanding implementation of digital payment system. The goal is to have minimum amount of complexities regarding final billing systems at the checkout. We aim to provide a simple and efficient way to checkout without standing in ques at the billing Counters. The retailers could be benefitted by this system as it provides a digital approach towards the whole checkout system. Functions in different local and multinational department stores around the city. No need for wasting valuable productive time on deciding how to pay and waiting in Ques. ASC displays a simpler Home–Page which helps user to easily decide that which is more convenient way of paying. No need for the user to wait for long hours in final Checkout/Billing system.ASC provides Automatic Login & Logout System whenever user Enters or exits the shop. Manually, the user can add the products that the user intends to purchase in the virtual cart. Automatically billing can be done from the virtual cart. Automatically debiting the users according to his/her virtual cart. Lastly an Invoice will be displayed having all the details of purchased items and a confirmation question. Automizing Sales Cycle is an application so it is will be hosted on server and can be accessed by any device supporting basic requirements like internet connection, webbrowser.

II. LITERATURESURVEY

Prior State of Art reveals few works is done in the area of Automizing Sales cycle.

Seung-Seok et.al has proposed to a technique which is known as "Method and system for shopping/payment using handy barcode scanner terminal". [1] The Inventor states a method and for processing shopping/payment with a handy barcode scanning terminal are provided to enable customers to determine purchase of goods by assigning the handy barcode scanning terminal to each customer visiting a shopping mall, and making the customer scan a barcode attached to each goods with the their handy barcode scanning terminal and to confirm and pay the purchased goods at a self-counter or a counter. AutomizingSales

Cycle removes the counter payment part and according to the virtual cart it will generate an invoice which will be shown to the EXIT part and the process will be completed.

GaemerShareefer& John T. Kennedy et.al has also proposed a technique which is known as "Billing with Q-R codes" similar to Automizing Sales Cycle.[2] The Inventors have directed the disclosure receiving billing information at a television receiver and then they will communicate that billing information to a user's mobile device. The television receiver may create a two- dimensional barcode with billing information and output the two-dimensional barcode for display on a display device.Once displayed on the display device, the two-dimensional barcode may be scanned into a mobile device where the billing information maybe used to allow a user to view billing information and/or submit payment information through the mobile device. Automizing Sales Cycle will allow User to scan the barcode spontaneous/Live at the present time of shopping and this will help to reducecomplexities.

Similarly Gregory .G. Rayleigh et.al has also proposed a work which is known as "Open transaction central billing system" which is at some extent similar to Automizing Sales Cycle.[3] The Inventor's method comprises an end-user device, including one or more processors configured to execute a payment component, the payment component configured to transmit, by the end-user device to a transaction server, an indication of a user desire to use a data service. The data service being outside a current service plan of the end-user device or available at a lower cost within a different service plan, receive a billing request from a transaction server in response to the indication of the user desire, the billing request including a service plan offer associated with the data service, and transmit a response to the billing request, wherein the end-user device is in secure network communication with the transaction server via a first network. Automizing Sales Cycle also provides the Transaction Layer but not with these much complexities. ASC provides an automated displayed mode of payments and then an optionalInvoice.

Another work done by Mark Ounttung & Darren Linscott et.al in this area is known as "Enhanced Electronic Data and Metadata Interchange System and Process for Electronic Billing and Payment System" [4] The Inventors laid emphasis on transmitted bills that may contain an electronic signature, a line item billing, and/or other transaction-specific meta data, and, based on cash flow needs and outstanding bills, some or all customers is also offered a really substantial time-limited discount for payment.Also, customers could use the line-item charge feature to withhold partial payments for specific problems attributed to specific things.
Alternatively, a communication module between SAAS units (CSU) is also deployed to piece the third-party accounting so send and receive information between the 2 systems.

Similar Craig. R. White et.al discussed some key points similar to our work which he named as "Centralized billing credit system utilizing a predetermined unit of usage" [5] The Inventor stated that this system is an electronic transaction recording system for accumulating data from printer devices comprising a mobile access unit containing content which is to be printed, a printer device which receives the content from the mobile access unit and prints the content in response to a authorization process, a billing manager coupled to the printer device and the mobile access unit for determining the amount of printer usage and associating a predetermined amount of token values with the costs of printing and generates an accounting of usage based on a predetermined measure of usage and a billing system for maintaining accounting records of user and associating user account information with the predetermined measure of usage and stores account information in an account recordsdatabase.
Automizing Sales Cycle emphasis on Transparent Transaction which is being delivered during the ongoing process, but if we want than ASC can also store the previous transaction details as user preference to thedatabase.

III. THE PROPOSED TECHNIQUEWORK

Stepwise Flow of how Automizing Sales Cycle works?

Step 1: The registered User or First Time User will Login or Register himself in the Portal.

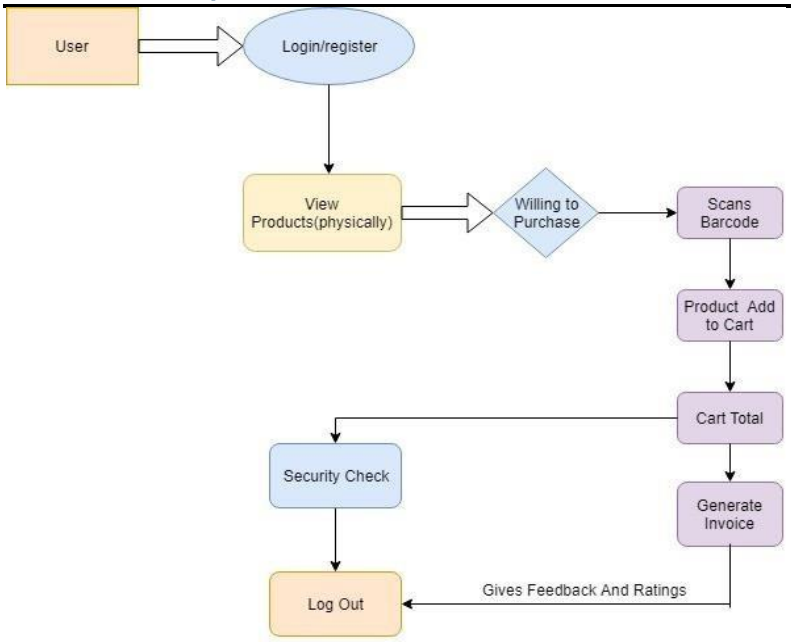
Step 2: After Entering the Store, The user will view Product manually or physically as in the sake of purchasing. Step3: The user will

scan the barcode which is already present in the product details.

Step 4: After it the Product will get added to cart and will be further moved for Cart Total.

Step 5: The Final Stage Includes Generating Invoice, a kind of Final Bill after which the user will give his Feedback for the services he experienced.

Step 6: And then at last, user can logout until the next process.



Automizing Sales Cycle : The Platform Work

Figure (1.0)

IV. RESEARCHMETHODOLOGY

Barcode developer's perspective:

1. Google Mobile Vision API[6]
2. GoogleMobileVisionAPIhelpsinfindingobjectsinanimage.Itprovidesfunctionalitieslikebarcodedetection&Q-Rcode detection. All these functionalities is used individually or combined along. This aims to explain the barcode detection with a real-time use case scenario. We can see ton of barcode scanning apps utilized in supermarkets, theatres and hotels that scans a barcode and provides user desired data.. In this application we'll try to build a simple bill payment scanner app which scans a barcode / QR code and displays the movie information tobook aticket.

The google vision library could be a part of play services and might be side to any project's build gradle. Google provided a straightforward tutorial to tryout the barcode scanning library with a straightforward image. But when it comes to scanning a real-time camera feed for a barcode, things become difficult to implement as we need to perform barcode detection on camera video. We have developed a simple barcode scanner library by forking the google vision sample. In this library few bugs were mounted and supplemental alternative functionalities like callbacks once barcode is scanned and an overlay scanning line indicator which will be employed in the following apps [7]

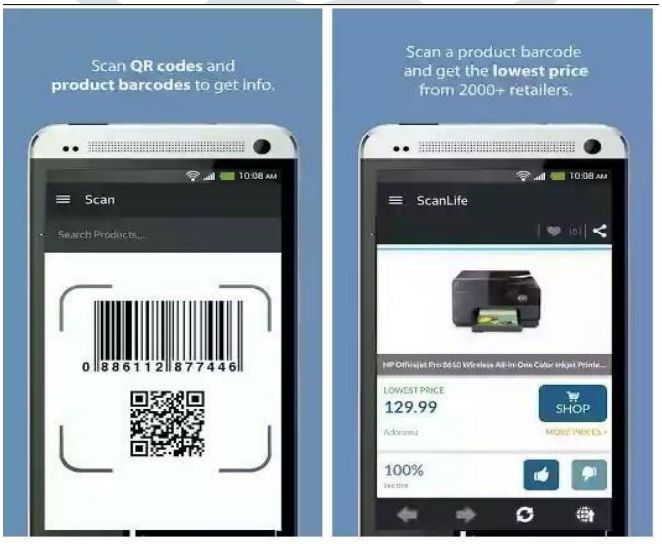
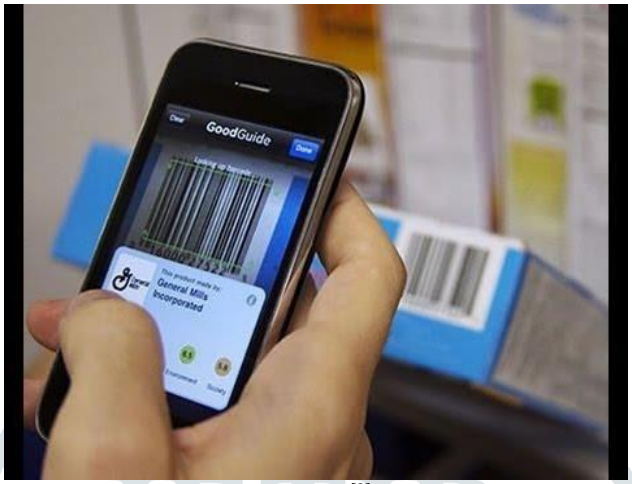


Figure (1.1) [8]

3. Using the Barcodelibrary

- Addition of the androidhive barcode reader and google vision library to the app's build.gradlefile.
- Integrating the barcode camera fragment to the current activity orfragment.
- Implementation the following activity from "BarcodeReader.BarcodeReaderListener" and override the necessary methods.



Figure(1.2) [9]

4. While running the process and try the scanning of barcode .The scanned output will be returned as a Scanned Multiple () method. After that we will try to integrate the "Add Scanning Overlay Indicator Line" [10] .Generally the scanning apps adds an indicator line on the camera overlay to indicate the scanning progress in going on. To achieve this, an addition of a reusable class in the same library which can be added on to the camera screen. To add the animating scanning line, an addition of the "Info.androidhive.barcode.ScannerOverlay" will be done to same activity overlapping thecamera fragment.Thelibraryadditionallycontainsfewdifferenthelpfulfunctionalitieslikelightflash,beepsoundetc.

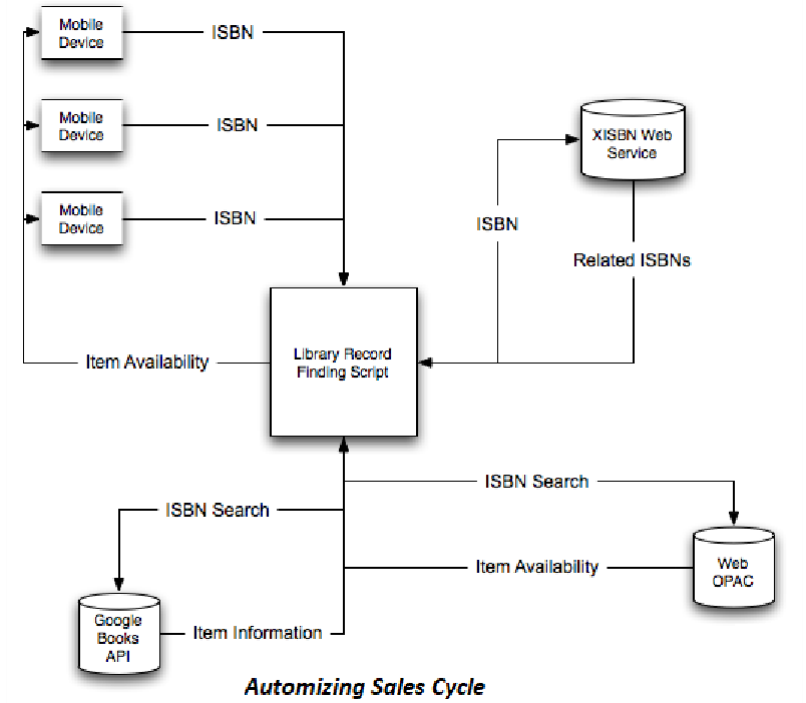


Figure (1.3)

Barcode API Overview:-

The Barcode API detects barcodes respectively in real time w.r.t. orientation. Simultaneously it can detect multiple barcodes at a single instance.
Automizing Sales cycle will scan the barcodes in general are mentioned below [11]

- 1-Dimensional barcodes: EAN-13 & EAN-8, UPC-A, Code-93, Code-128, ITF, andCoda-bar
- 2-Dimensional barcodes: QR Code, Data Matrix, PDF-417, AZTEC It automatically parses QR Codes, knowledge, for the subsequent supportedformats:
- Contact information (VCARD,etc.)
- URL
- ISBN
- Wi-Fi/ Data connectivity
- AAMVA driver license/ID Geo-location (latitude &longitude) The Technological approach is mentioned asfollow:

1. Programming language :JAVA
2. Framework : Spring , Springboot
3. Database :RDS
4. Methodology :Agile

Figure (1.4) [12]

- Barcode Generation[13]

Before we can begin using barcodes, will first assign the numbers that go inside the barcode, called GS1 Identification Keys. The first step in assigning a GS1 Identification Key is to obtain a GS1 Company Prefix from a GS1 MemberOrganization.

Figure (1.5) [14]

V. DATASET[15]

1) Storeinformation
2) Productdetails
3) Productcategory
4) ProductSub-category
5) Barcode –API web services
6) Mostly information provided by registereduser.

VI. CONCLUSION AND FUTURESCOPE

Our System's initiative is to create a chaos free Shopping/Billing environment and we are also promoting cashless and counter less society in the era of digital economy and digitization. Automizing Sales Cycle enables us from refraining to the whole hectic conventional Billing/Payments ritual .To conclude, we will make a product that is going to satisfy the users and will accept an suggestion or recommendations from them through a feedback procedure.

VII. REFERENCES

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