NOVATEUR PUBLICATIONS
INTERNATIONAL JOURNAL OF INNOVATIONS IN ENGINEERING RESEARCH AND TECHNOLOGY
[IJIERT] ISSN: 2394-3696 Website: ijiert.org
VOLUME 9, ISSUE 5, May. -2022

APPLICATION OF INTERACTIVE QR CODE BASED ONLINE SHOPPING SYSTEM

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ABSTRACT
In this research work, the authors are nominating a solution for busy life style of the people to convert their waiting time into the shopping time without going to any shopping mall. A 'QR' code is used to provide this above-mentioned solution due to various advantages over other systems. Combination of Image Processing with Data Mining to provide encoding and decoding data into QR for providing various services has been done. Authors conclude that the data mining technology can generate new business opportunities by providing the capabilities, automated prediction of trends and behaviors, and automated discovery of previously unknown patterns.

INTRODUCTION
In the QR code based Interactive online shopping scheme the waiting moment of people is being transformed to shopping instant even travel time. In this structure, the variety of QR codes will be generated for the everyday used household goods. These QR code are posted all along with its advertisement at diverse locations like Railway stations, Cinema Halls, Bus stops, & public places. That means structure is bringing shopping malls towards the people. Anybody who needs to buy the product subsequent to looking in the hoardings will straight away scan the Quick Response code by his/her smart phone, having QR camera. He/she will get all the information about that merchandise along with cost and thereafter end user should put the order for that along with number he wants. As this system takes online commands from customers, accommodating their payments, providing information about the order verification, and many more actions being mixed up as a functionality of our structure from placing of the order to the delivery of the order to the customer. People will feel contented with this system instead of visit a mall to shop by taking their time from their busy timetable. In addition, there will also be reduction in investments of the shopping mall.
As this system can create online transactions with all the necessary credentials also with appropriate security, the dispensation of shopping service will be speedy. Based on every day shopping demand from community the data mining technique will be implemented to obtain various data for study and future improvement.
Main objective of this work is to implement an Interactive advance & real time capturing system for consumer supplies using QR code in an Android smart phone which is used by the mass public to do shopping but for that they no need to visit shopping malls. Mall will pursue them in public places to transfer their waiting time into the shopping time. At the present whatsoever study, research & implementation made of QR codes particularly it is successful for marketing is their small cost and worldwide applicability. Targeted to cellular phone users, QR Codes help to attain people at any instance and place. Apart from the Smartphone, no extraordinary equipment is required, and there are no mediators between the users. The notion of QR code billing system for shop request is fashioned using android & the verification is done during the scanning of QR-Code through the mobile phone scanner application. The client login has to

register by means of the application and the QR-Code will provide successful connection. On scanning the QR-Code, the shopping will be asked for the password. Once the authentication is done, the buying is made by proceeding with the shopping process

LITERATURE REVIEW

To generate QR code different methods implemented in various applications. Somdip Dey et al [1] proposed a system, based on the various methods of encryption. One of the methods is encrypted message is treated as a large string and the reverse of the string is generated. This will generate new encrypted message and that is converted into QR Code. Sankara Narayanan et al. [2] offered the security solution for QR code. The assault method used in the QR code was that whilst a consumer scans the code he is headed towards a website and after that a malicious file downloaded in the user's gadget without the information of the user. S Ambareesh et al. [3] presented a QR-Maps tool that can be used in smartphones to obtain accurate indoor user locations. A user that arrives at an indoor location and wishes to know where he/she is just needs to locate a QR-Code and decode it with the QR-Maps application in the smartphone. Ji-Hong Chen et al. [4] presented the QR code into two parts, visible and invisible, and then embedded them into cover images. The visible part can directly provide users with related information and the invisible watermark can protect copyright information.

M.G.Harish et al. [5] presented an android app for justification of tickets through QR code. Voucher checkers scans the QR code of the user, previous to the user enter or leaves the station. This app automatically detects the passenger's fare according to the distance travelled as well as detects the passenger's identification. Neha Yadav et al. [6] implement a cashless college campus using QR code expertise. The structure is used to create all the transactions within the campus devoid of cash. The user have to scan the QR code to proceed to payment. If the QR code is valid, purchase amount will be debited from their account.Kinjal H. Pandya1 et al. [7] presented the different areas in which researchers have experimented with QR codes. Some of these are improving data capacity: color barcodes, use of multiplexing to increase information and scratch removal technique. Iranna Shettar et.al.[8] presented a paper which is a Quick Response (QR) Codes in Libraries: Case study on the use of QR codes in the Central Library, NITK. In this paper, they gave information about QR code, how QR code works and QR code functions. In addition, it includes features of QR codes, how to generate QR codes and QR codes in modern libraries. Phaisarn Sutheebanjard et al. [9] presented a paper, which is based on QR code generator. QR code is a method of encoding additional information than a traditional bar code. In this paper, they show how to create the QR codes via the web browser that facilitates users to easily create their own QR codes for websites, emails, business cards, print ads and so on. Donny Jacob Ohana et al. [10] presented a paper in which they have given information about QR code encoding and decoding. QR codes can be generated using Google API (Google Chart Application Programming Interface). Several common ways to decode QR code symbols are to upload the symbol to a website, scan the symbol with a camera-equipped cell phone. Hussain Abo Surrah et al. [11] presented a paper, which is the importance of using google API chart as a content of QR code. In this paper, they discussed about the charts, which are related to google API where Charts are the content of QR Code also, they described about customization chart & how encode it in a QR code. how to Customize the size of QR code and Customize the color of QR code, the type of Google API chart and the number of variables will represent in charts. Ji Qianyu et al. [12] presented a book, which is based on exploring the concept of QR code and benefits of QR code for companies in which there are different topics related to QR code. That is QR methodologies, types of QR codes, QR characteristics, new technologies and its solutions. Abhishek Mehta et al. [13] presented a paper which is based on the QR Code Recognition from images is a challenging problem due to differences in size, style, orientation, and alignment, as well as low

image contrast and complex background. Many algorithms have been proposed for recognizing QR Code Recognizing an image. Mohammad Zainuddin et al. [14] presented a paper, which is based on Generating SMS in the form of Quick Response Code. In this paper, generation of QR-codes for ready-to-send SMS is focused mainly. The future work can be generating QR-codes for contacts in phonebook for a mobile device. László Várallyai et al. [15] presented a paper in which gave information about QR code storage. The amount of data that can be stored in the QR Code symbol depends on the data type, version and error correction level. Devinder Kumar et al. [16] presented a paper, which is based on emerging threat to mobile security and protective system. In this paper, they specified that if there is increase in usage of QR code then the threat posed by them to mobile security is also increasing also, this paper presents different kinds of possible attacks that QR code user can be subjected to their future trends. Sayantan Majumdar et al. [17] presented a paper, Advanced Security Algorithm Using QR Code Implemented for an Android Smartphone System. Elliptic curve cryptography (ECC), ECDSA (Elliptic Curve Digital Signature Algorithm) is an approach to public key cryptography based on the algebraic structure of elliptic curves over finite fields.

The literature review has provided us the research gap for our project work. The concept that we are working on is a kind of novel thing. However, we feel that the work we have done will be of benefit of society also.

Hardware and Software used for the Research work:

3.1 Hardware:

i3 Computer
RAM 1GB
QR code Digital Banner
Mobile
Scanner to scan QR

3.2 Software:

1) HTML5
2) CSS3
3) PHP
4) AJAX
5) Jscript
6) Jquery
7) Google API
8) MySQL
9) XAMPP (Apache server)
10) Web services

METHODOLOGY

The system we have developed is using following sequence of order for work.

1. User Registration
2. Verifying user with ID and OTP
3. QR code Generator to generate codes for various products
4. Publishing QR codes to People
5. 2nd verification & Accepting orders online
6. Processing Payment

7. Forwarding order to the Packaging Department
8. Confirmation of Order delivery by Customer

4.1 Database Storage:

The data user passes will be converted to an SQL statement, which will be used to retrieve data from the database. When user scans a QR Code on the side of the product, it will then pull up a website that displays everything about that product. A simple scan captures the desired information. The Decoded data can be stored in the server and can be viewed by the administrator. The information encoded may be text, a URL, or other data. If the user selects the product, the details will directly forward to the server. (As shown in appendix 1)

4.2 Admin Maintenance:

The admin module of this projected system can do all crucial activities for making this system user friendly. Admin safeguarding module should hold the full control for all other modules. Admin protection will track and manage all the proposed activities of this system. (As shown in appendix 1)

4.3 Publishing QR Codes to People:

After creation of QR codes for the goods, they require to be printed and published so that one can with no trouble get admission of these codes for shopping. Publishing of these codes can be completed at a variety of crowded location like Railway stations, cinema hall, and bus stands and at a range of public places. (As shown in appendix 1)

4.4 Second verification of user & Accepting orders online:

In this module, verification of the user is done critically as he/she may be already registered with the given system. Second verification of user will allow that particular user to scan the code and make the orders. Once the user is verified by system then he becomes eligible to make order and then his/her orders will further be processed. (As shown in appendix 1)

4.5 Processing Payment:

A simple payment gateway system is associated with our system. Having high security features. (As shown in appendix 1)

4.6 Forwarding order to the Packaging Department:

In this module, our system having a provision to collect orders those are made at real time, will collect it and forward those to the packaging department page (As shown in appendix 1)

4.7 Confirmation of order delivery by Customer:

Finally, the confirmation of order delivery by customer after delivering his order to his location is done. This can be achieved by the two-way confirmation i.e. from customer as well as delivery person. (As shown in appendix 1)

CONCLUSION

The research work carried out here is a real time capturing system for consumer supplies using Quick Response code (QR Code) in an android Smartphone. In addition, for checking the product after the payment is done automatically with the help of Interactive system. The system will be instrumental for the

costumers since it helps in saving their valuable time as well as it reduces stress of shopping of daily usage items for a household.

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Appendix I

Online system working screenshots:

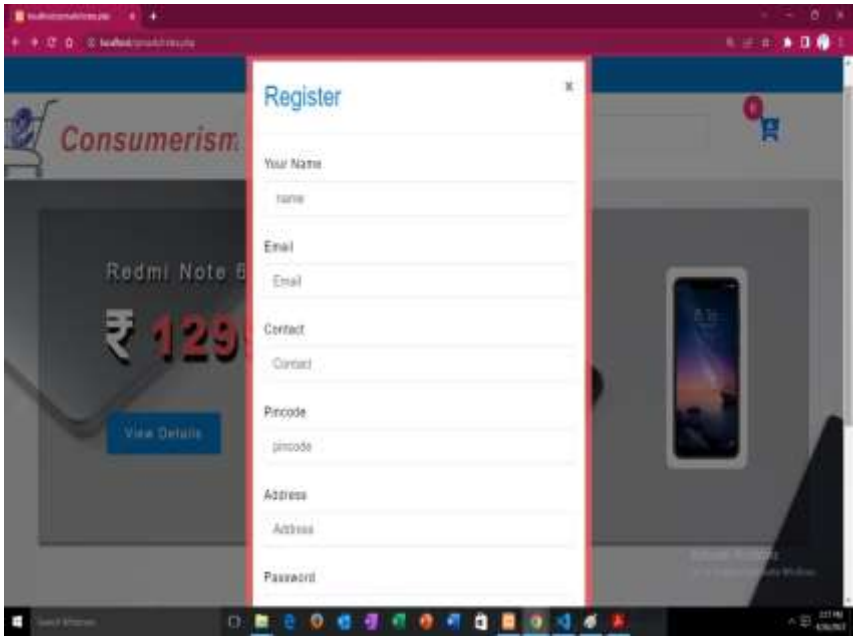

Fig. No. 1 Registration of user

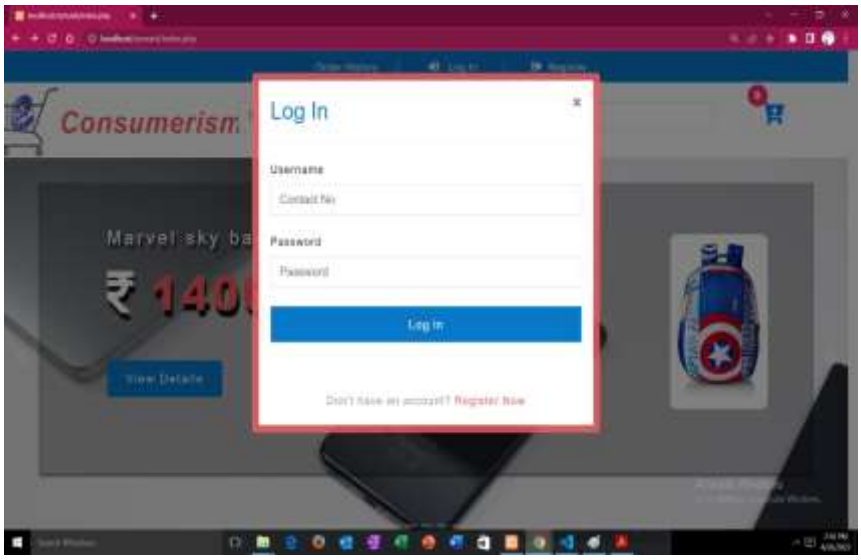

Fig. No. 2, Logging in of user

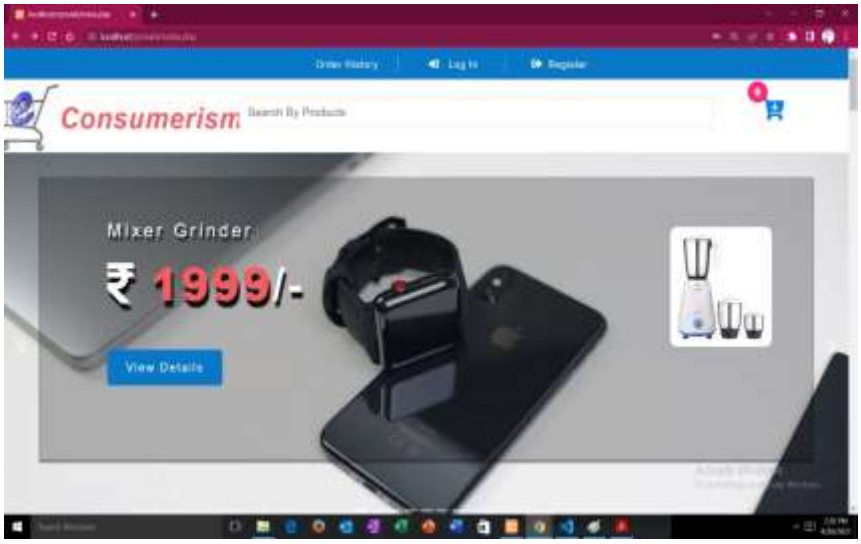

Fig. No.3 Home page for user

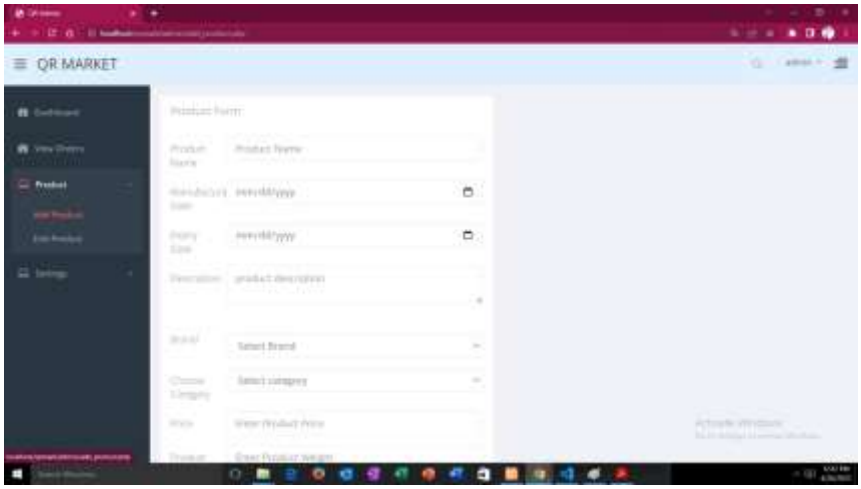

Fig. No. 4 Product adding

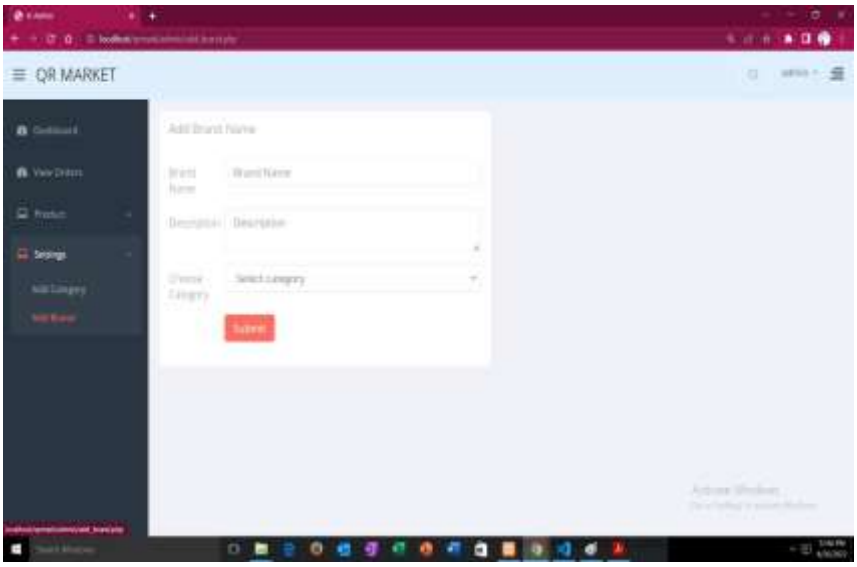

Fig. No. 5 Adding Brand Name etc

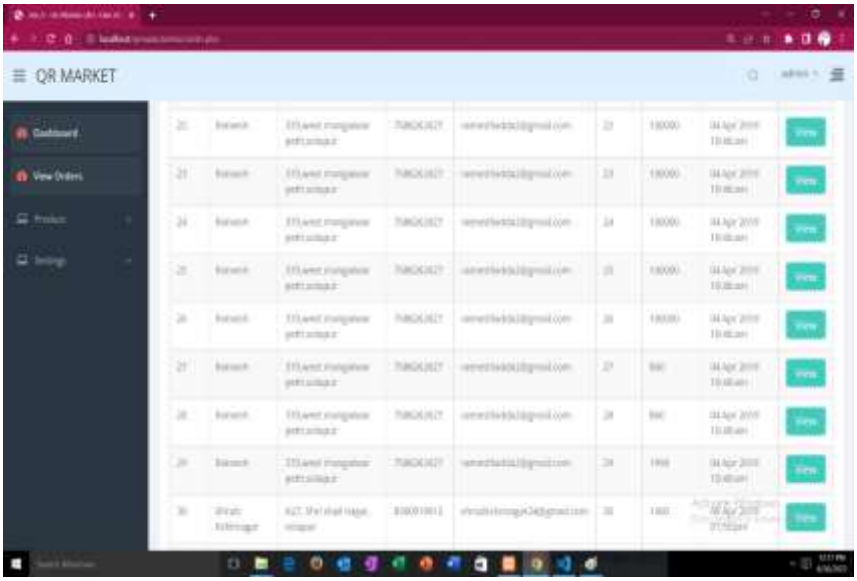

Fig. No. 6 Dashboard of user details

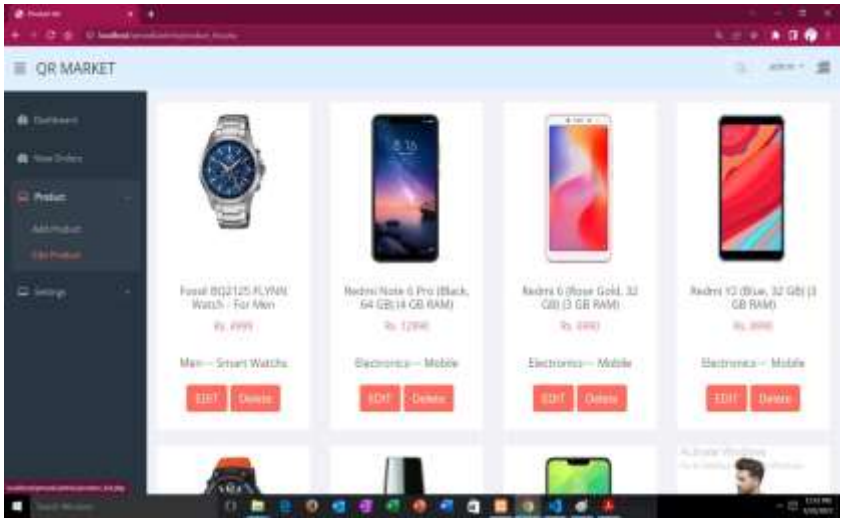

Fig. No. 7 Product List

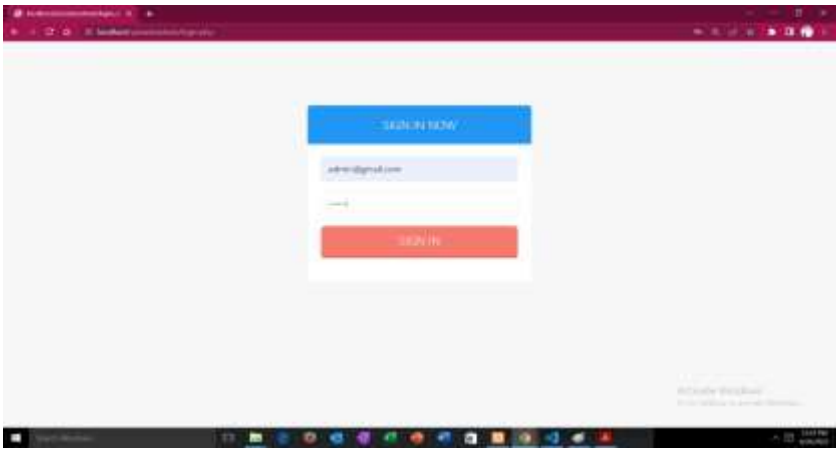

Fig. No. 8 Admin login

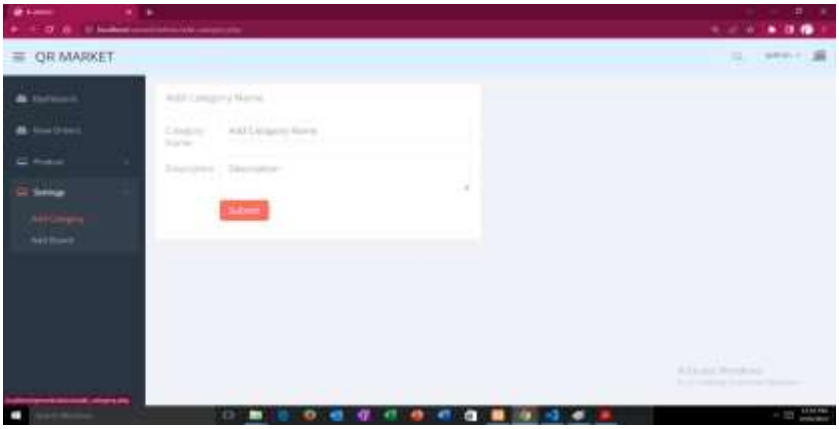

Fig. No. 9 Category adding

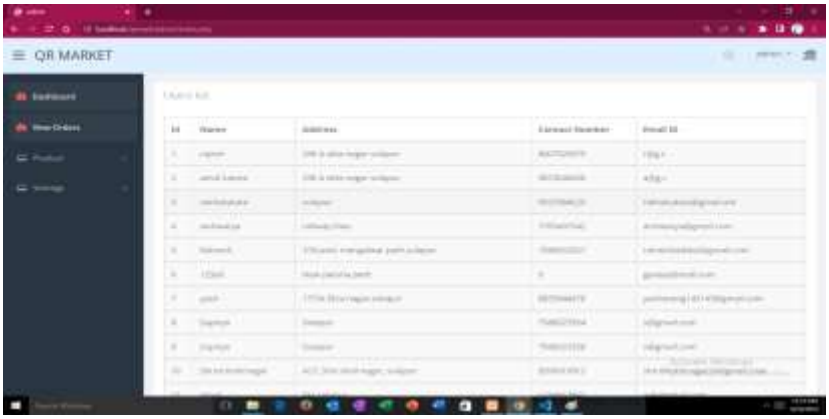

Fig. No. 10 Index

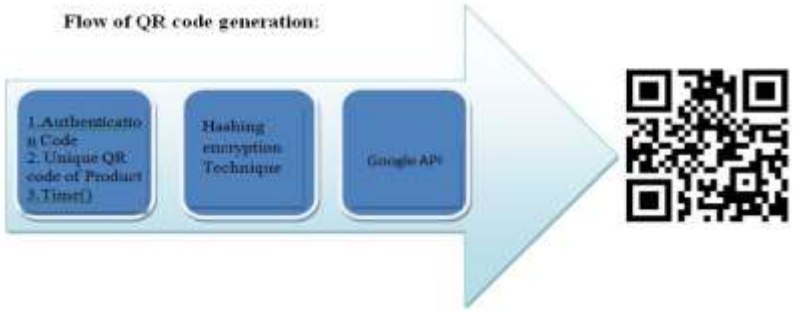

Fig. No. 11 Flow of QR code generation