

# RETRIEVE FORGOTTEN PASSWORD BY USING BIOMETRIC APPROACH IN E-COMMERCE APPLICATION

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**Abstract:** Information security is mainly focused on the assertion with confidentiality, integrity and availability of information in various forms. The ancient Greek word: bios means “life” and metron means “measure.” At present E-Commerce applications are WAP enabled applications, where Hacking or Spoofing or the misuse of the application is continuously increasing even though we are using very high secure network.

Finger print approach is used in the application to send the password of your account to your email Id through internet, it helps to avoid hackers and spammers to get the desires of relevant information about the account of login credentials of account, so that to get rid of this problem Biometric System provides the secure transaction to prevent of data spoofing in e-commerce application to make secure transaction.

**IndexTerms – Retrieve, finger printer, E-commerce, spam, Hacking**

## I. INTRODUCTION

Biometric is a physical or biological attribute that can be measured, where biometric approach will make the identification to accept or rejects the users credentialed based on his/her or behavior features. Usually a biometric identification system is a pattern – recognition system, where the system recognize the user based on a key features derived from specific behavior characteristics of the person possessed for authentication purposes.

Characteristics of biometric system are:

1. Universality
2. Uniqueness
3. Permanence
4. Collectability
5. Acceptability
6. Performance

### 1.1 Fingerprint Image Identity

In order to ensure that the performance of an automatic fingerprint identification / verification system will be robust with respect to the quality of the fingerprint images, it is essential to incorporate a fingerprint enhancement algorithm in the minutiae extraction module, shown in figure 1.



Figure 1: Advances fingerprint scanner

E-commerce application has successfully utilized into the daily routine of the common man for getting them access to reliable and cost effective products in comparison to those available in the local markets. The ease and comfort of online shopping has facilitated people to get products at home, whereas merchants have also explored these channels to endorse their products to revenue maximization. Despite the benefits, the E-Commerce industry has brought several insecurities to the table regarding the personal and confidential information of customers. The buyers are interested in placing orders online, but the fear of fraud often prevents them from doing so. Traditional security methods like remembering a username, password. if user forgotten his or her password, For preventing identity user password, biometric technology is proposed to be implemented on E-Commerce websites because a biometric identification system uses physical and behavioral characteristics of an individual to grant account access for retrieving password.

Every online business wants to strengthen their platform to provide a safe shopping experience to the end consumer, that's why they have altered or defined new strategies with the passage of time. The ability to pay from the comfort of your home through credit cards or any other payment gateways has made the E-Commerce world.

To lower the risks associated with an online store, biometric technology has replaced conventional identity verification in favor of behavioral and physiological attributes. The most commonly used biometric is fingerprinting that needs the installation of a fingerprint reader and a database to capture and record the biometrics of users.

If user forgotten his or her password The system reads fingerprints of a user and grants access for Retrieving password of user only if it matches with the records, or else access is denied.

Online store owners who have made their website mobile friendly to facilitate the majority of online users can easily turn users into loyal customers by allowing them to sign up for an account through fingerprints and get rid of entering passwords and personal details

Store managers often receive queries when a user forgets password, and they have to set up a system to allow them easily reset their credentials. Biometrics saves merchants time by removing a single chance of getting such kind of queries. You can achieve a competitive advantage by allowing customers to sign up with their biometrics.

## II. LITERATURE REVIEW

Users often decline to use passwords or other methods of securing their mobile devices. Passwords have historically been used to authenticate users; they're convenient to implement, requiring minimal hardware. Passwords require an exact match, which allows them to be protected using one-way transforms, or hashes. They can be authenticated very quickly and provide no ambiguity-a password is either an exact match and is authenticated, or it isn't an exact match and is denied [1].

Authentication represents the process which verifies the identity of a user who has got the rights to make certain actions or changes in an application or on a device. Methods for authenticating users into their devices and online services have to be user-friendly and must uphold privacy. This paper aims on discussing the different methods adopted for authentication using biometrics rather than using the conventional methods for authentication such as PIN or Password. Biometrics can be used as a very effective method against cyber theft. They are so unique that it is nearly impossible to precisely reproduce a user characteristic [2].

The main goal of this literature is to study the Biometric image capture and recognition which is to be done through biometric multiplatform web access, either performed locally in the mobile phone, PDA or remotely in personal computer (PC). However main goal of this experiment is to do deep analysis of the present mobile web-browser limitations; thus, it is concluded that, it is impossible to use the same technologies for embedded web page in order to capture and send the biometrics are Applet Java, ActiveX controls, Flash technology, JavaScript, and Microsoft Silverlight [3].

Basically Fractal compression technique will remove redundancy and attain high compression rate with small change in quality grade on comparison with other primitive compression techniques. Moreover, the need of very high similarity in the image might be the key disadvantage process in fractal compression technique, but on computation of image processing, it is an intensive encoding process. Many approaches have been designed and developed in compression of images, now with respect to many compression techniques, it reduces the computational cost to find similar regions in the image [5].

The purpose of online based voting system used in public elections that would allow peoples to vote electronically, from their current city. In this system, voting is based on Aadhar's biometric database that is a fingerprint. This voting system would offer higher security and it will increase voting percentage [4].

Web services are loosely coupled, reusable software components and distributed in nature, where all basic services are programmatically accessible over the internet. The reusability of software component minifies the amount of code being written for every specific application. Web services are represented in Service-Oriented Architecture (SOA), so specialized and generalized services in an application can be deployed and accessed by other services or business logic [6].

## III. SYSTEM ARCHITECTURE

All e-commerce environments require support for security properties such as authentication, authorization, data confidentiality, and non-repudiation. The most common method of authentication or protection against intrusion in a computer system is to use alphanumeric usernames and password. Choosing a strong password and protecting the chosen password has always been a popular topic among security researchers.

The system architecture of biometric approach based e-commerce application shown in figure 2.

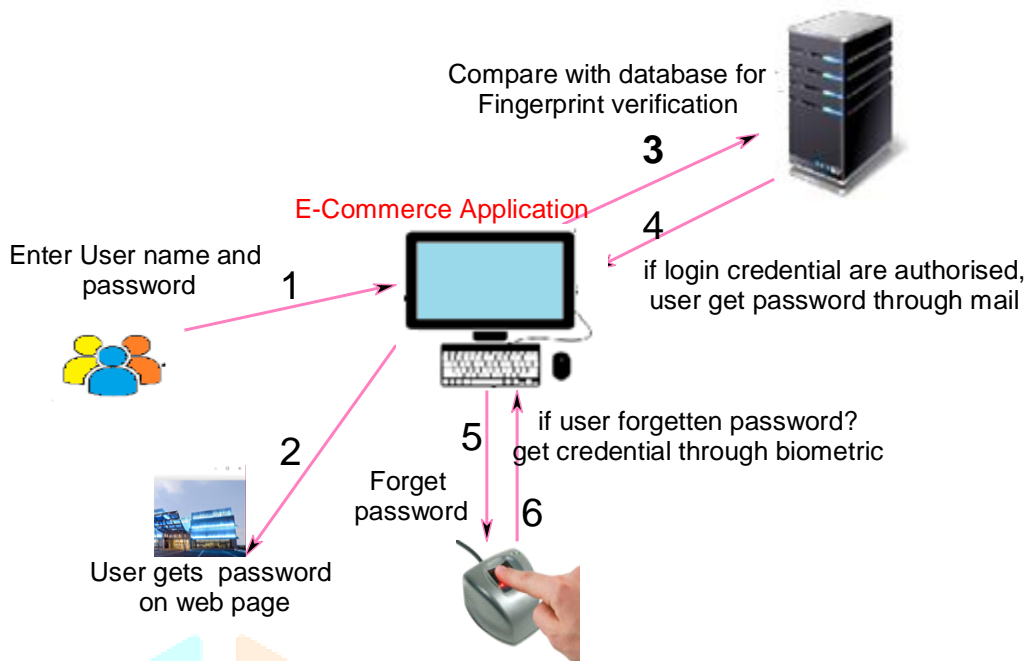


Figure 2 – biometric approach used in E-commerce application

Customer security and comfort is the ultimate priority of an online store which is why every merchant has to define effective strategies according to technological changes. The implementation of biometrics on your E-Commerce website is also among the strategic moves that are performed to lead the market.

**IV. SYSTEM METHODOLOGY**

E-commerce application have made this website mobile friendly and it facilitate the security on majority of online users, so that it can easily turn users into loyal customers, i.e. biometric scanner used in the e-commerce application allow the login credentials to sign up with user name, password for an account through fingerprints. Figure 3 defines the control flow diagram of login verification process in the e-commerce application.

**4.1 Selecting fingerprint biometric:** Select a behavioral or physical aspect of a user to set as identity verification. It can be fingerprint that is unique to each individual. By nature, every person has a distinct features and personality, and no one can have same or exactly similar features.

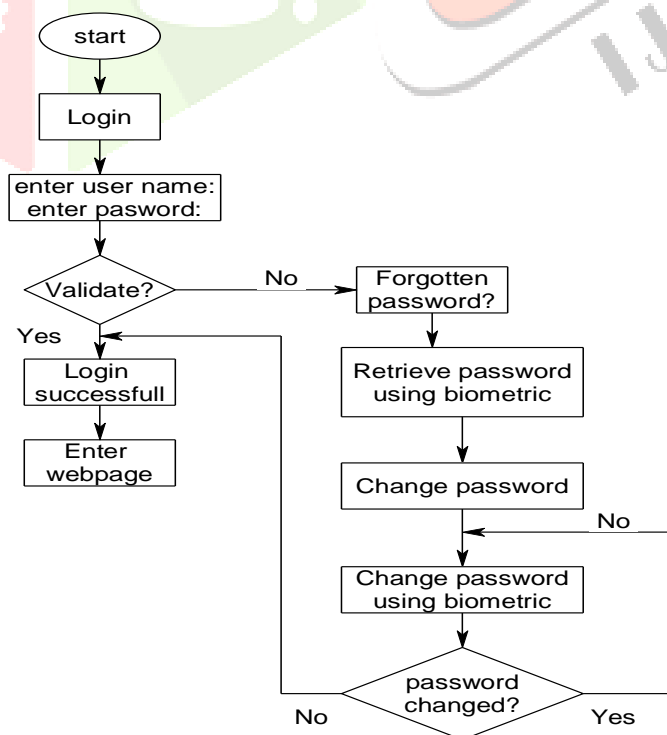


Figure 3: Login screen verification process

**4.2 Enrollment and verification system:** The selection of a biometric shall be based on user ease-of-use entering their personnel details, i.e, if user set fingerprint scanning as the primary identity to check user authentication purpose, if user forgotten his password, you will need to take a record of every user registered with in the user database. After creation of biometric enrollment template, users can be verify and authenticated by scanning of fingerprints and proof of usage in the E-commerce application.

**4.3 Retrieving password using fingerprints:** Generally in the server of E-Commerce web site, the scanned fingerprints are stored in binary format rather than actual images and whenever they retrieved the fingerprint image it undergone the matching process of images, whenever a user tries to access his/her personnel account.

**4.4 Change of password using fingerprints:** the change of password is possible, whenever the user can Change the password by finger print based approach, i.e. when if the finger print of the user is get matched then really you can alter or change the password of the user, if not user cannot access the account.

**V. CONTROL MODULE:**

The control module of the application can be divided into two types, like, Admin module and User module and it is represented in figure 4.

Admin Module:

Admin module is the most important module in the application, where admin can confirm all these services without integrating the user interaction, so that admin module is admiring very important feature in the application. Some of the features of the admin module are,

- 1. Application controller.
- 2. Admin can add/delete users.
- 3. Admin can view the list of users.
- 4. Admin can add / Edit / Delete items
- 5. Reset login of users by using finger print

User module:

User module can provide the option to register the new user, with his/her own credential ties, some of the features of the user module are,

- 1. User can register using username, password & finger print
- 2. User login
- 3. view items and buy the product
- 4. User can retrieve current password and change password using finger print for user security.

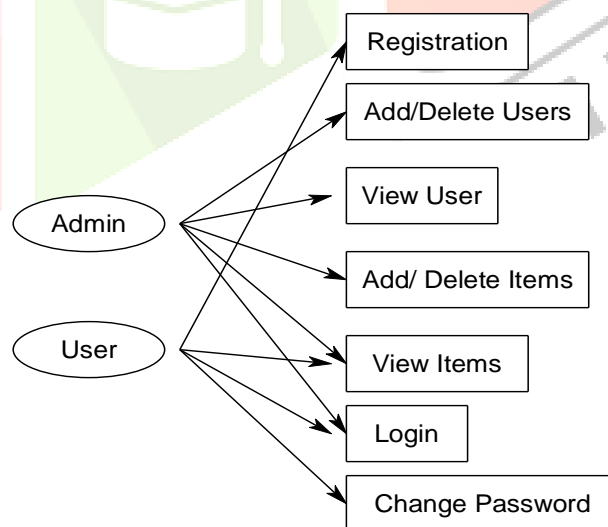


Figure 4 – Data flow diagram of system module

**5.1 Applications of Biometric Approach:**

Most of the biometric applications are correlated with web security and it is extensively used in security purposes and other secured government purposes. The various applications of biometric in the generic domain may include:

- 1. Prison visitor systems,
- 2. Driver's licenses,
- 3. Canteen administration,

- 4. Payment systems
- 5. Voting systems,
- 6. Gold and diamond mines,
- 7. Banking application

**5.2 Advantages of Biometric Approach**

- 1. Increase security
- 2. Reduce fraud by employing.
- 3. Reduce problems in IDs
- 4. Retrieve the forgotten passwords by using physiological attributes.
- 5. Reduce password administration costs.
- 6. Replace hard-to-remember passwords which may be shared or observed.
- 7. User can get his or her forgotten via mail or web page itself.

**VI. RESULT ANALYSIS**

E-commerce applications are user friendly in nature, so that any persons can interact with the application in any time without any human intervention. Figure 5 represents the various outcome of the e-commerce application implementation.

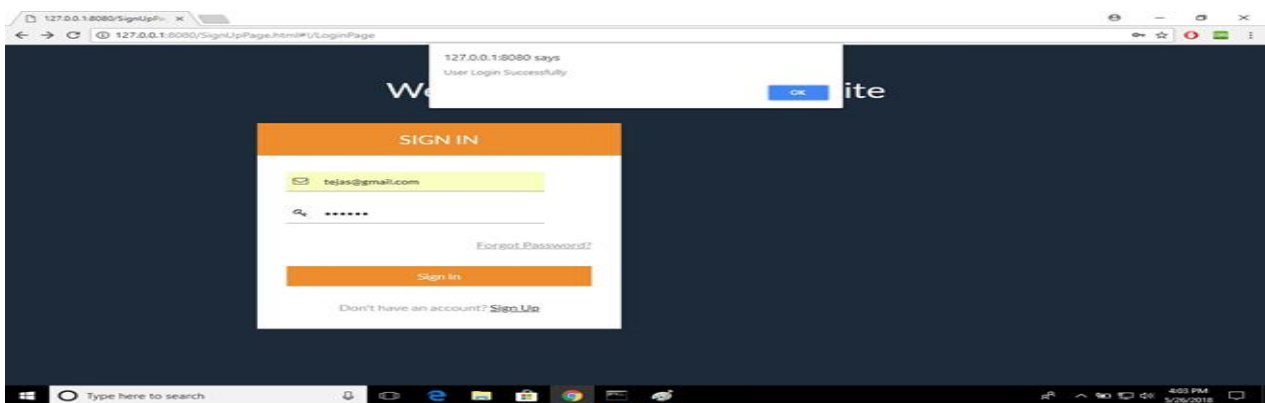


Figure 5 a – Registration of Web site

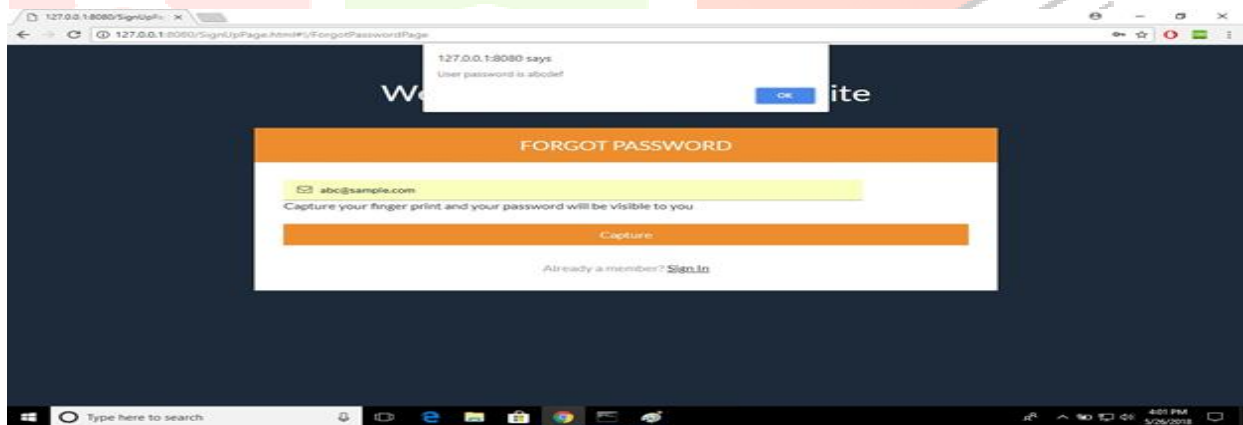


Figure 5 b - Forgotten Password in Web site

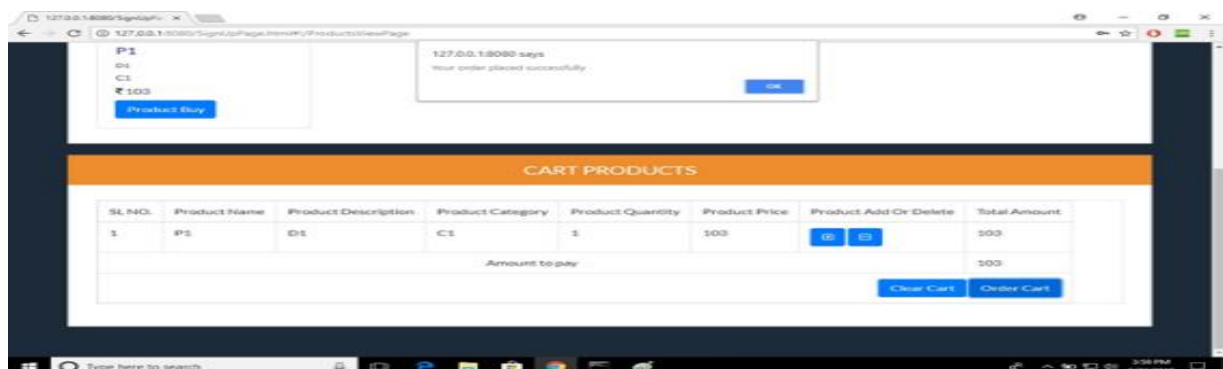


Figure 5 c – Product transaction

## VII. CONCLUSION

Design and implementations of biometric approach is a best practice in the inception of E-Commerce applications, generally it improves the security and identity of user verification. It provides a safe transaction and feel free experience to the registered users in the specified web application, so the application will add near feature to implemented technology with future strategic development.

The finger print approach is implemented in such application, so that it directly sends the user password of your account through your email Id within the internet, so that it generally helps to avoid hackers and spammers to get the desires of relevant information about the account of login credentials of account.

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