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AN IMPROVED HYBRID GRAPHICAL USER AUTHENTICATION SCHEME

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ABSTRACT

Authentication is the process to provide guaranteed information security and the graphical password authentication method is a convenient and easy process to provide authentication. The major problem of user registration, mostly text base password, is well known. If the login user be inclined to select a simple password which is frequently in his mind it becomes straightforward for attackers to guess. If the password is machine generated it is mostly complicated for user to keep in mind[1].So, Graphical Password has been introduced as an alternative to text based approaches motivated by the fact that humans can remember images better than text[2]. In this paper we have proposed a Graphical User Authentication scheme that is a hybrid technique, combination of recognition based scheme and dynamic graphics[3]. The scheme basically focuses on resistivity to shoulder surfing attackwithout sacrificing usability, while at the same time improving strength against guessing attacks. User authenticated password using cued click points graphical password scheme includes memo ability, usability and security evaluations[1]. This paper is on enhanced user graphical password authentication with a usability and memo ability, so that users select more random or more difficult to guess passwords. In click-based graphical passwords, image or video frames provide database to load the image, and then give authenticated access to all information in database[1].

Keywords: *Cued-Recall Clickpoints, Dynamic Graphics, Graphical Authentication, Shoulder Surfing Attacks, User Security*

1. INTRODUCTION

Authentication is the central component in most computer security contexts. Despite the large number of options available for authentication text passwords remains the common choice. The reasons behind this are ease of use, familiarity to all users and inexpensive implementation of text based approaches. Research analyses have shown that text based passwords need to satisfy two contradictory requirements simultaneously. They should be easy to remember and hard to guess at the same time. As a result, people choose easily guessable password which are an easy target of brute force attacks and dictionary attacks. Reinforcement of strong passwords often makes the users to write their password on sticky notes exposing them to direct theft. In order to overcome the security issues of text passwords, the idea of graphical password was proposed by Greg Blonder in 1996. After that numerous graphical password schemes have been proposed. [3]

In graphical password schemes, the password comprises of images, part of images or sketches. Psychology studies prove that the human brain is better at recognizing images than text. In this project, we had proposed a new hybrid technique recognition based scheme combined with dynamic graphics. During authentication/login process, the parts ofimage from a slideshow (24 parts in an image) are been selected within a time duration of 1 minute. The preliminary security analysis and user study were carried out which validated that the proposed scheme is robust, memorable and resistant to different security threats.

2. PROJECT IDEA

In recent years, new methods of Authentication Process have been developed. Computer users are moving from Textual Passwords to Graphical User Authentication. The aim of this project is to make password more relevant to user while adding complexity in guessing passwords by unauthorized users.

3. PROJECT SCOPE

The scope of this project:

a) Study an existing graphical password schemes and concern on recognition base type.
b) Study the usability features of the existing graphical password methods from the general and ISO features.
c) Mapping between the recognition base graphical password methods and the usability features and extract a collection of usability features to be built in the new prototype.
d) Design and Develop a graphical password prototype which carries the most usability features to give a usable graphical password system.
e) Implement the usability features in Graphical Password Prototype System.

4. SYSTEM ARCHITECTURE

Fig. 5.1 indicates basic system architecture that involves basic user functions, i.e. authentication and file uploading and downloading. User can register into the system using a graphical password that is comprises of 24 parts in an image which are in the format of slideshow with the interval time of 1 minute. Then, user is logged in to the database and can upload and download files. Then, user can log out.

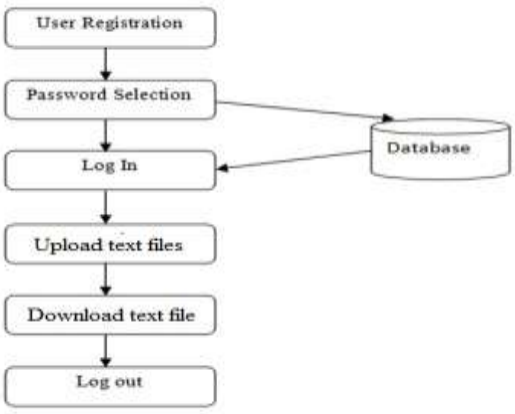

Fig.4.1: Architecture Diagram

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5. MODULES

The module of project includes five modules:

a) User Registration Module: In this we register a user using name, email id, phone number, username and password combined of parts in an image in the form of slideshow.

Fig. 5.1: Registration Phase

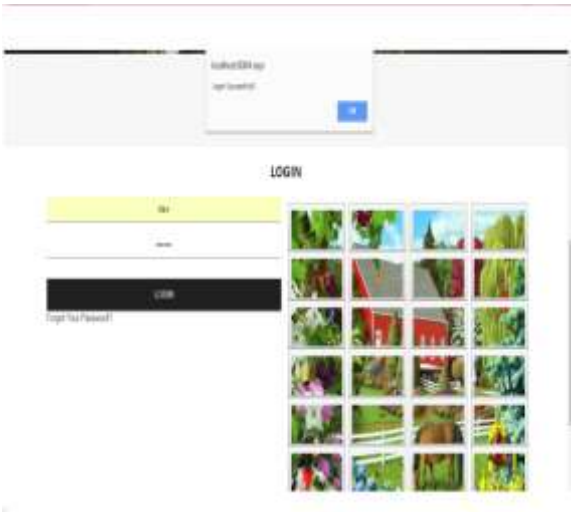

Fig 5.2: User Login Phase

b) User Login Module: By using the data i.e. username and graphical password from registration phase user login to the system.

Fig. 5.3: Admin Login Module

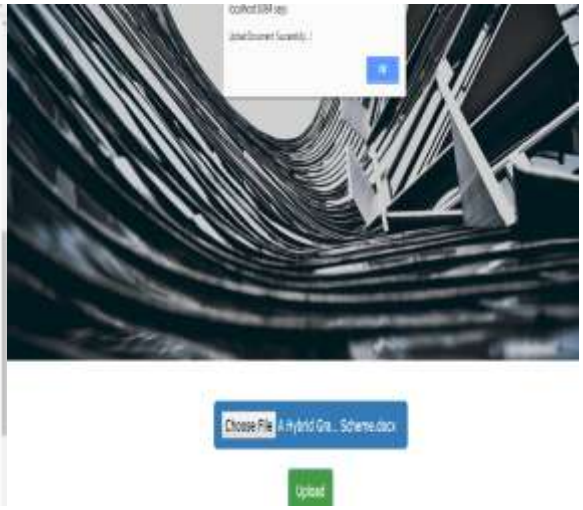

Fig. 5.4: Upload File Module

c) Admin Login Module: Admin login to the system using predefined password provided by the system.

d) Upload-download module: This module is used to upload and download text documents by user as well as admin.

e) User Activation Deactivation module: In this module admin is able to activate as well as deactivate users from login to the systems.

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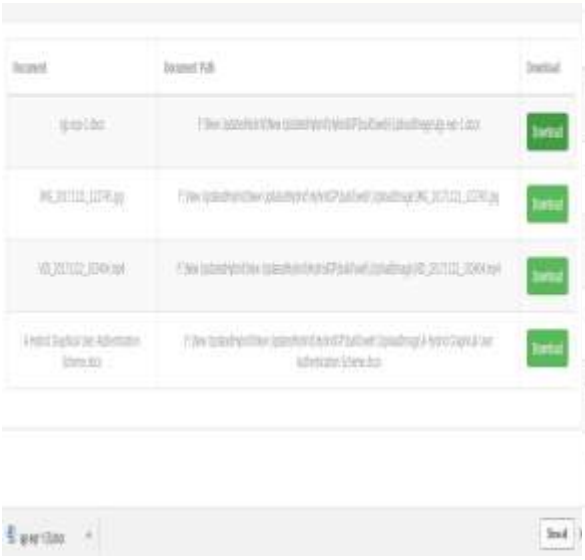

Fig. 5.5: Download File Module

Fig. 5.6: User Activation Deactivation Module

6. GOALS

a) The objective of this project is to develop and implement a new graphical password scheme to improve the usability features of graphical password.

b) Identify and explore the characteristics, schemes, methods of the graphical password and the conventional password as well as existing usability features.

c) Design and develop a new graphical password scheme by using selected Graphical Password usability features.

d) Implement and test the new scheme by simulating a prototype of the new scheme.

7. CONCLUSION

The proposed method scheme shows secure as a usable and memorable certification method. By delightful benefit of clients' capability to recognize images. The proposed method has advantages over PassPoints, Cued Click Point, and Persuasive Cued Click Point in terms of usability and also security. Being click point as on images shown and having to remember click-point on given image appears easier than having to remember a difficult textual password. Generally, there are many drawbacks associated with the textual passwords such as brute-force and dictionary attack[3]. Alike is the folder with the graphical passwords which include shoulder-surfing and are very expensive to implement[3]. In this proposed thesis, it is made use of both graphical password techniques to decrease vulnerability. The proposed method offers a more secure alternative to PassPoints, Cued Click Point, and Persuasive Cued Click Point method. This proposed method increases the workload for attackers by forcing them to select click points within the given time else next image displays and it makes it more difficult to hackers.

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It gives us great pleasure in presenting the preliminary project report on

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REFERENCES

[1] "Enhanced User Graphical Password Authentication with an Usability and Memorability", Saraswati B. Sahu, Associate Prof.Angad Singh, Volume 5, Issue 6, June 2015 IJARCSSE International Journal of Advanced Research inComputer Science and Software Engineering

[2] "Graphical Password or Graphical User Authentication as Effective Password Provider", Khundrakpam Johnson Singh, Usham Sanjota Chanu, Volume 2 Issue 9 September 2013, IJCES International Journal of Engineering and Computer Science

[3] "A Hybrid Graphical User Authentication Scheme", Swaleha Saeed, M. Sarosh Vmar, 2015 IEEE International Conference on Communication, Control and Intelligent Systems (CCIS)

[4] "A Hybrid Graphical Password Based System", Wazir Zada Khan, Yang Xiang, Mohammed Y. Aalsalem, Quratulain Arshad, Y. Xiang et al. (Eds.): ICA3PP 2011 Workshops, Part II, LNCS 7017, pp. 153–164, 2011.© Springer-Verlag Berlin Heidelberg 2011

[5] "Authentication Scheme Resistant To Shoulder Surfing Attack Using Image Retrieval", Thorawade M. B., Patil S.M., International Journal of Knowledge Engineering, ISSN: 0976-5816 & E-ISSN: 0976-5824, Volume 3, Issue 2, 2012, pp.-197-201.

[6] "A complete comparison on Pure and Cued Recall-Based Graphical User Authentication Algorithms", Arash Habibi Lashkari, Farnaz Towhidi, Dr.Rosli Saleh, Samaneh Farmand, IEEE 2009 Second International Conference on Computer and Electrical Engineering.