

Authentication using Color & Session based Two-Level Security

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ABSTRACT

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In this modern era of world everything is resides in a computer which require high level of security to protect that data. Now a day's many Authentication techniques are available to provide authentication to the data on a Network. Security can provide by using different type of passwords.

Password can be textual password or Graphical Passwords which are having their drawbacks like many attacks can be possible on this type of password in order to break it i.e. eves dropping, dictionary attacks, social engineering, shoulder surfing, brute force attack. In this paper we are going to propose a system where we are using Text and Colors as password in order to Provide Security to the Application on internet.

KEYWORDS: Authentication using Color & Session based

Introduction: In order to provide Security to the user's data we have to provide Authentication to the user using some set of Password. Password can be in any form Textual or Graphical Passwords.

Textual Passwords is Common method to provide authentication, even though it us mostly used method it has its own drawback.

- Small passwords are easy to crack and long passwords are hard to remember.
- Dictionary attacks can be possible on such passwords where a number of combinations of character and digits are generated to break the password.

Graphical Password is another method used for authentication where images, colors are used to set as a password.

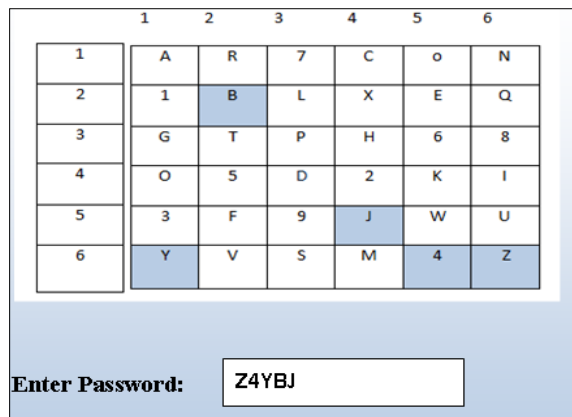
- Graphical passwords are vulnerable to Shoulder Surfing and brute force attack.
- These types of passwords have their own limitations and are quite expensive.

Thus we are going to propose a system where we are combining Textual Password with Colors to give the authentication. Two approaches are used to implement this system.

1. Pair Based Textual Authentication.
2. Pattern Based Color Authentication.

1. Pair Based Textual Authentication:

In this we are introducing a new for textual password where system will generate a Grid of characters and digits. Using password and based on their intersection point new password which is called session password is get generated. It creates a Session for a single password and this password gets change every time of new login attempt.



2. Pattern Based Color Authentication:

In this second level of authentication if user got authentication at first level then system will generate Grid which consist seven rainbow Colors on which user need to click as per the priority given by user at the time of registration



Literature Survey:

N. S. Joshi. [1], The security system which was implemented by them consist both the idea that is Pair and Hybrid based authentication using colors and session for web based application which has a restricted scope and confusing user interface.

Sonkar S.K,Paikrao R.L,Awadesh Kumar[2],The work of implementing this approach consist recording the sequence of color click where user have to select minimum one color and can select maximum N number of color image block therefore user can select any kind of password . Security is achieved because only valid user is knowing that what kind of color image block selected and in what sequence.

Katta Shyam Prasad, Dr.Aruna Varanasi, Ummaneni Vinay Kumar [3], in this security system they have implemented two factor authentication using intervened password and color pattern. During the registration phase the intervened password and color pattern is been registered. Intervened password is nothing but time gap between two key strokes. After the registration the color pattern is been shown which grid changes whenever user logins. Time consuming security system.

Mr. Sagar A. Dhanake, Mr. Umesh M. Korade, Mr.Chetan P. Shitole,Mr. Sagar B. Kedar, Prof. V. M. Lomte[4],The security system includes three main phases registration, primary level authentication(Pair-based authentication and hybrid based authentication) and secondary level authentication(Matrix as password pattern same as mobile security pattern).The drawback was very complicated user interface and too many level of authentication.

Shfali Amlani et al[5],This system had implemented simple security system which has only registration and color pattern authentication for providing security to confidential data.During registration phase rating to the color is been given.Pair based authentication used with color pattern. Only 4 colors are used so pattern can be easily gussed.

Miss.Swati Tidke, Miss Nagama Khan, Miss.Swati Balpande[6],They have implemented the project based on Password Authentication Using Text and Colors. During registration phase password will be set and password will be

get according to color pattern specified during registration phase and grid is been used to get password. Very limited scope as not easy to remember 9 colors for users.

Proposed System:

The system which we are designing consist two types of passwords which is used to give to level security to the user. We are not only designing the two level security system but also implementing it on two different platforms to increase its scope so that large group of user will be able to use it. We are using these for E-Banking & implementing it both

- 1. Web Application
- 2. Android Application.

System Flow:

Step 1: User has to register in order to use our application by providing some personal details and have to set two passwords first is textual password and another is color priority as a pattern.

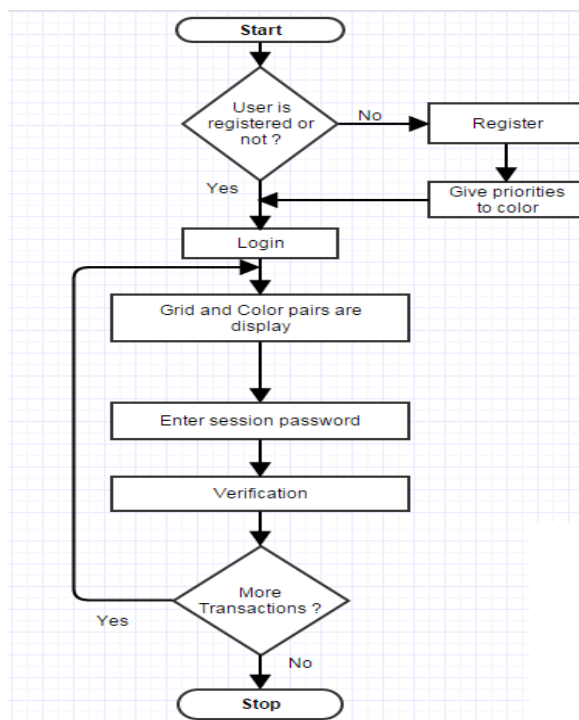
Step 2: User have to enter valid username if user is registered user, then system will generate grid which consist session password and that grid will change for each login attempt. If user is not valid then user has to follow step1.

Step 3: if user enters the correct session password generated by system using textual password which was set by user at the time of registration, system will show grid of colors which consist rainbow colors.

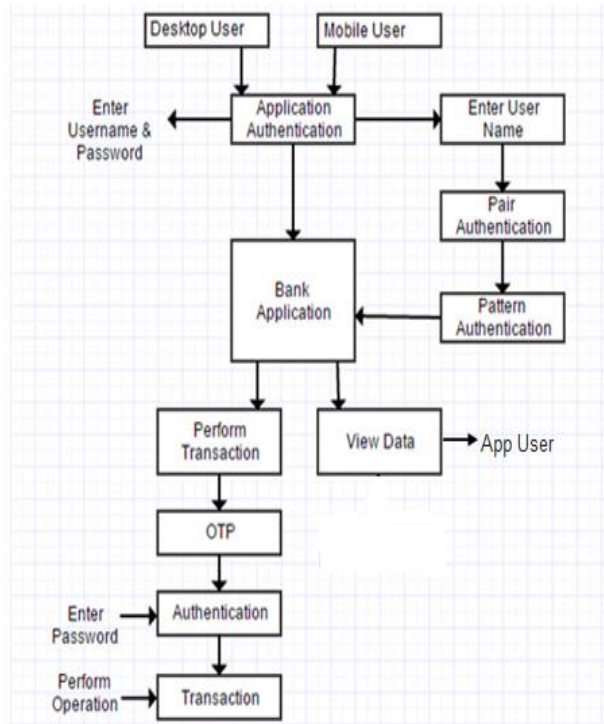
Step 4: User has to click on Colors based on the priority set by user at the time of registration.

Step 5: If user got authentication in first two level then system will allow user to view account details.

Step 6: if user wants to do some transactions then system will verify user by sending OTP on registered mobile number. If user enters correct OTP then system will perform transaction.



System Architecture:



Conclusion

These techniques generate session passwords and are resistant to dictionary attack, brute force attack and shoulder-surfing. This technique uses grid for session password generation. For hybrid textual scheme, ratings should be given to colors, based on these ratings and the pattern displayed during login, session passwords are generated. However this scheme is completely new to the users and the proposed authentication techniques should be verified extensive.

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