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PASSWORD PREVENTION TECHNIQUE TO REDUCE CYBER ATTACKS USING HONEYWORD BY HYBRID GENERATION ALGORITHM

Kalpana Sharma , Parvati karhale, Prof. Priyanka Mane

Department of Information Technology

G. S. Moze College of Engineering Pune, India

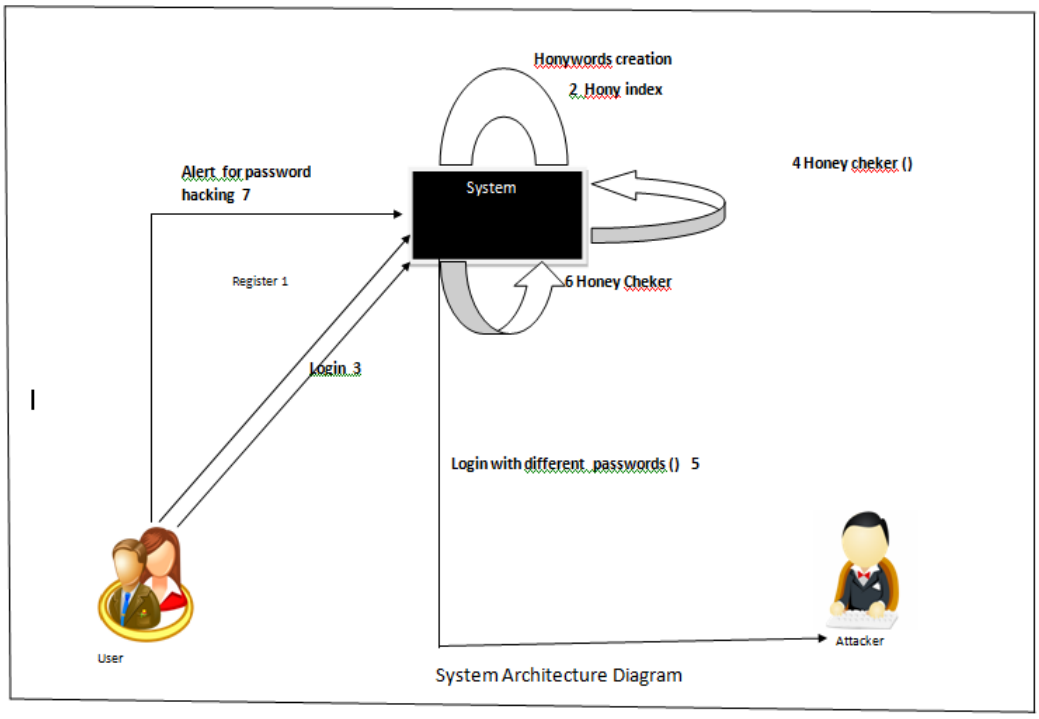
Abstract: *This paper focus on the user security issue which is very critical and all system that deals with sensitive data of user has to provide strong security services. So, HoneyWords is a approach that secure user passwords with honeywords(decoy password) . For Honeywords generation we have used Hybrid algorithm. Attacker will not able to differentiate actual user password and honeywords. Hence, attacker will try different combination of password and user will be alerted for the same.*

Keywords: *Honey words, secure passwords,*

1. INTRODUCTION

Leak of password files is a major security problem that has affected millions of users and companies like bank data, company's data, LinkedIn, eHarmonyand Adobe since exposed passwords make the user's target of many possible forgery-attacks.

For this, there are two issues that should be concerned to overcome these security problems: First, passwords should be secured by taking desired precautions and storing them with their hash values computed through some other complex mechanisms. Hence, for an adversary it must be difficult to invert hashes to get plaintext passwords. The second point is that a safe system should detect whether the password file exposure incident happened or not to take proper actions.



Combination of Simple word generation algorithm and Random function algorithm is

Hybrid Algorithm: Combining both above mentioned algorithm together.

Algorithm 1 : Simple Model algorithm for honey words Generation

```
procedure SIMPLEMODEL(L)
        w   random(L) .
         d   length(w) .
        honey word(1)   w(1) .
        for j   2 to d do
         if mod1 then
        w   random(L), honey word(j)   w(j) word
         else if mod2 then
        w   random(L),
         else
        honey word(j)  <-  w(j)
         end for
 end procedure
```

Algorithm 2: Model algorithm for honey Random Generation

Inputs: words between [1-26 letter],
chose the random functions and its limit.
Random value generation.
Convert the random ascii value to its corresponding letter.

Output:
Random cipher text of original password.

Step 1 =Honey pots creation: fake user account

1]For each account honey index set is created like

Xi =(xi;1; xi;2; : : : ; xi;k); one of the elements in Xi is the correct index (sugar index) as ci

2]create two password file file f1 and file f2

- F1 Store username and honeywords set <hui,xi) Where hui is honey pot account
- F2 keeps the index number and the corresponding hash of the password(create the hash of the password), < ci;H(pi) >

Step 2=Generation of honeywords set

Gen(k; SI) -> ci;Xi

Generate Xi

1]select xi randomly selecting k-1 numbers from SI and also randomly picking a number ci **ϵ**SI .

2] ui; ci pair is delivered to the honey checker and F1, F2 files are updated.

Step 3=Honey checker

Set: ci, ui

Sets correct password index ci for the user ui

Check: ui, j

Checks whether ci for ui is equal to given j. Returns the result and if equality does not hold, notifies system a honey word situation.

2. LITERATURE SURVEY

[1]. Avanish Pathak, “An analysis of various tools, methods and systems to generate fake accounts for social media,” in Northeastern University Boston, Massachusetts December 2014. In this Paper, To study the mechanisms used by modern account creation programs and their overall effectiveness. This study analyzes the different ways in which these tools create fake accounts and how they manage to circumvent existing security measures. It also helps to get an insight into what websites do in order to handle fake accounts, both during the account sign-up process, as well as and after the fake accounts have been created. Tests that reveal the number of accounts that can be fabricated prior to an OSN’s countermeasures and their longevity due to the inability of the OSN’s detection mechanisms are presented. This study highlights whether major websites are following security best practices to mitigate fake account creation, and if existing security countermeasures are effective.

Major websites provide critical functionality to billions of Internet users every day. However, some users will always try to abuse these websites and exploit their resources for personal or commercial gain. The tools we examined give us a cogent understanding of how easy it is to fabricate fake accounts on these services. These fake accounts make their way onto underground marketplaces where they can be cheaply purchased, and used to launch attacks like spam, political censorship, and blackhat SEO. The wide availability of account creation tools is proof that miscreants will find a mechanism to bypass any countermeasure put forward by websites.

Disadvantages:

Social spam campaigns can have a variety of objectives. The most obvious uses are promoting shady e-commerce sites, foreign pharmaceuticals, surveys, and scams i.e. the same kinds of content found in email spam. Social spam may also be used to spread malicious social applications that leverage the graph structure of OSNs propagate from friend to friend To give an idea of the scope of this problem: 8% of 25 million URLs that are posted to Twitter point to sites that are known for phishing, scams, or malware. Unfortunately it has been shown that 90% of the visitors click on these malicious links before they are blacklisted by OSNs. Another spam phenomenon that is unique to social networks is the manipulation of trending topics. Trending topics are highlighted by many OSNs, and receive many clicks and views. Thus, attackers often use fake accounts to try and create their own trending topics, or inject spam content into existing trending topics.

[2]. R. Butler and M.J. Butler “An Assessment of the Human Factors Affecting the

Password Performance of South African Online Consumers” in *Proceedings of the Eighth International Symposium on Human Aspects of Information Security & Assurance (HAISA 2014),* In this Paper, Research suggests that passwords breaches are frequently the result of poor user security behavior. Internationally, poor password behavior among users is common. The objective of this stud y was to investigate the password performance of South African online consumers and to understand the factors contributing to poor password performance. A web-based survey was designed to determine online consumers’ perceptions of their password-related knowledge, measure their ability to apply safe practices and asses their motivational levels to employ secure practices. Poor password practices among South African online consumers were evident from this study. Using a construct for password performance, this analysis indicated a deficiency in the knowledge, capability and motivation of users.

Disadvantages:

Human computer interface and relevant education, training and awareness programs are required to protect password it time consuming and not 100 % correctness that password Wright and secure.Human users are the 'weakest link' in password control

3. CONCLUSION

We have analyzed the use of the honeyword system and addressed a number of faults that need to be handled before successful release of the scheme. In this way, we have figured out that the strength of the honeyword directly relied on the generation algorithm Finally, we have presented a new way to make the hybrid algorithm algorithm for generating honeywords with randomly picking passwords that belong to other users in the system.

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