

## Multilayer Graphical Password Authentication

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**Abstract**— *Nowadays computer system access uses alphanumerical password. Such password hard to remember due to its length (long) or sometime it is randomly generated. Short and simple passwords may lead to vulnerability as well as write password in text file and put it in insecure place (drawer) which is also highly vulnerable. To overcome it, we introduce passwords which make use of graphical, such as images. Human brain are more supportive to pictures rather than text. So such password easy to remember to use.*

**Keywords**— *Brute force attack, Dictionary Attack, Malware, Social Engineering.*

### 1. INTRODUCTION

Authentication is the process of determining whether a user is authorized or not. authentication mainly applied to system, website, files, folder etc. traditional authentication include using alphanumerical password. but there are some drawback with it as vulnerable in most common attack like dictionary attack. simple password are easy to remember but it leads to vulnerable situation where guessing password plays an important role. complicated password are hard to guess as well as hard to remember as well. sometime user write their password on paper and put it in drawer which is obvious insecure place

Biometric password may overcome such issues. But it is more complex and expensive. Psychological survey says that human brain more compatible with picture than the text. Graphical password scheme is less complex than the biometric. graphical password authentication technique, user is given with the set of images, Sequential click on images, Considered as password. The purpose behind graphical password is that images are more memorable. No need to use keyboard, Easy to work with it.

### RELATED WORK

Authentication is very sensitive job. where authentication can be done in three ways.

1. Text password
2. Token as a password
3. Biometric

**Text Base Password:-** It is traditional way of authentication. This passwords are combination of alphabets, numerals or special symbol. This passwords are good if they are complicated and they contain minimum 8 character and necessarily contain special symbol.

The disadvantage of it include, hard to remember, easy to guess. Simple password mainly contain name date of birth which are easy to crack and complicated password which are long enough are hard to remember

Another major drawback is vulnerable to dictionary attack. In dictionary attack, all the possible sequence are applied in order to breach the security.

**Biometric:-** This authentication is hard to spoof or forge. Here biological characters are the authentication key biometric authentication goes with two ways. They are Physiological and Behavioral include shape of body like finger print, palm etc. Behavioral characteristics include voice most common used technique is fingerprints.

The disadvantages are cost. Device use by Biometric system are of high cost. It is complex and time consuming. Another major drawback is it breach by denial-of-service attack which will result in recognize authenticating person is authorize or vice versa.

*Safety:-* There are various attacks namely Brute force, Dictionary attack, Malware, Social Engineering. But according to research these attack does not make lead in case of graphical password

**Brute force attack:-**

Attacker try each and every passwords sequence by guessing until correct passwords found. Graphical passwords are less affected by these attack as password space is  $94^N$  where  $N$ =number of character in passwords and 94 is number of printable characters,As many passwords images give high space.

*Dictionary Attack :-*

Here dictionary of every possible string is referred to breach the password. Graphical password are safe in this case as it contain password in term of mouse click. So Graphical password are less vulnerable in this attack.

**Malware:-**

In this attack a special software capture the keyboard motion but in case of graphical password capturing motion of mouse is not enough.

*Social Engineering:-*

In this case of attack, Psychologically user get manipulated by attacker. But having graphical password, user put away from such situation.

**I.Proposed plan**

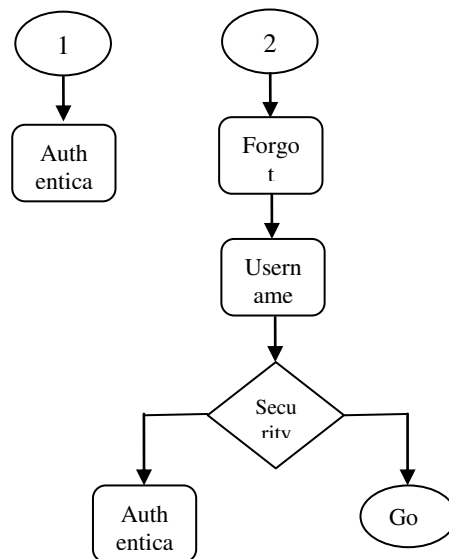
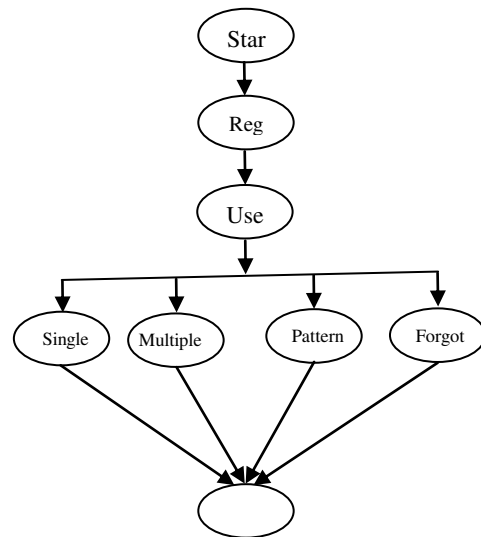
The main purpose of “Multilayer Authentication password” is to provide multilayer password security which is based on graphics. The layer contains four modules.

First module contain the single image and the multiple points have to be selected from that image which will verify at the time of authentication.

Second module contain the multiple image and single point from each image have to be select which will verify at the time of authentication.

In Third module the pattern to be form which will user has to drawn at the authentication time And the fourth module contain to select the security question and the answer it. If user forget

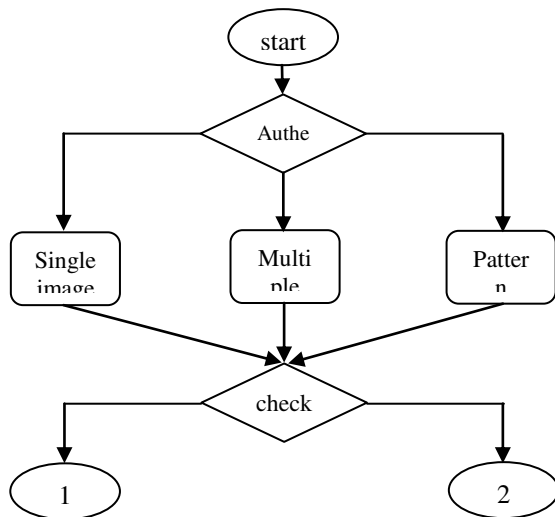
the password then these module helps for accessibility.



**CONCLUSION AND FUTURE WORK**

Text password are widely used authentication yet. But Text based password are vulnerable in term of security. Another more secure ways of authentication as compare to text base password is graphical password. But graphical password are less aware. Graphical password tends to click point an image and make a pattern which takes place of typing textual password graphical

password are able to resist Brute Force Attack, Dictionary Attack, Social Engineering are malware etc. Graphical password still not in use because it requires large storage space and time consuming.



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