

## Providing a Secure Hybrid Method for Graphical Password Authentication to Prevent Shoulder Surfing, Smudge and Brute Force Attack

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**Abstract :** Nowadays, purchase rate of the smart device is increasing and user authentication is one of the important issues in information security. Alphanumeric strong passwords are difficult to memorize and also owners write them down on papers or save them in a computer file. In addition, text password has its own flaws and is vulnerable to attacks. Graphical password can be used as an alternative to alphanumeric password that users choose images as a password. This type of password is easier to use and memorize and also more secure from pervious password types. In this paper we have designed a more secure graphical password system to prevent shoulder surfing, smudge and brute force attack. This scheme is a combination of two types of graphical passwords recognition based and Cued recall based. Evaluation the usability and security of our proposed scheme have been explained in conclusion part.

**Keywords :** brute force attack, graphical password, shoulder surfing attack, smudge attack

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