

# Graphical Password Authentication

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**Abstract:** A pattern password is an authentication system that works when a user selects images in a specific sequence displayed on a graphical user interface (GUI). For this reason, the graphical password method is called Graphical User Authentication (GUA). The most common way to authenticate a computer is by using an alphanumeric username and password. This method has been shown to have significant drawbacks. For example, users tend to choose passwords that are easy to guess. On the other hand, if a password is difficult to guess, it is often difficult to remember. To overcome these security issues, researchers have developed an authentication method that uses colours and images as passwords. In this research paper, we present a comprehensive overview of existing pattern password methods and introduce our own theory. Graphic cryptosystems have been proposed as a possible alternative to text-based schemes because people can remember colours and images better than text. Colours and Images are usually easier to remember or recognize than text. In this composition, this paper provides a comprehensive overview of existing graphical password ways. These ways fell into two orders: recognition-based and memory-based approaches. Thereafter the strengths and limitations of each approach and coming research directions in this field will be talked over in detail.

**Keywords:** User Authentication, Memorability, Recognition, Image based Authentication, Pattern based Authentication, Cognitive Psychology, Biometrics, Cued Click Points, Shoulder Surfing, Attack resistance, NodeJs, Hashing, Front-end, Back-end, Image Processing, Data Encryption

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