

A Three-Step One-Time Password, Textual and Recall-Based Graphical Password for an Online Authentication

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Abstract—Text passwords are the most extensively used technique of computer authentication. This approach has been found to have several flaws. Users, for example, typically select passwords that are simple to guess. A difficult-to-guess password, on the other hand, is also difficult-to-remember. Textual passwords are vulnerable to brute-force and keylogger attacks. Graphic passwords have been proposed in the literature as a possible replacement for alphanumerical passwords, based on the assumption that people remember pictures better than text. Existing graphical passwords, on the other hand, are vulnerable to a shoulder surfing assault. To solve these security flaws, this paper proposes an authentication method for online applications that uses a combination of one-time passwords, textual, and graphical passwords. The efficacy of the recommended solution was confirmed by usability testing and security analysis procedures. A total of thirty participants took part in the system evaluation. The security assessment found that the proposed system meets all its primary security requirements. The proposed system was found to

be simple to use, friendly, and secure throughout the usability test. When compared to traditional authentication solutions, this study exhibited greater usability and security

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Keywords—Textual Password, One-Time Password, Graphical Password, Shoulder Surfing, Key-logging