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Keyloggers Prevention with Time-Sensitive Obfuscation

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Abstract : Nowadays, the abuse of keyloggers is one of the most widespread approaches to steal sensitive information. In this paper, we propose an On-Screen Prompts Approach to Keyloggers (OSPAK) and its analysis, which is installed in public computers. OSPAK utilizes a canvas to cue users when their keystrokes are going to be logged or ignored by OSPAK. This approach can protect computers against recoding sensitive inputs, which obfuscates keyloggers with letters inserted among users' keystrokes. It adds a canvas below each password field in a webpage and consists of three parts: two background areas, a hit area and a moving foreground object. Letters at different valid time intervals are combined in accordance with their time interval orders, and valid time intervals are interleaved with invalid time intervals. It utilizes animation to visualize valid time intervals and invalid time intervals, which can be integrated in a webpage as a browser extension. We have tested it against a series of known keyloggers and also performed a study with 95 users to evaluate how easily the tool is used. Experimental results made by volunteers show that OSPAK is a simple approach.

Keywords : authentication, computer security, keylogger, privacy, information leakage
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