MULTI-LEVEL ACCESS CONTROL SYSTEM FOR INTERNET FINANCIAL TRANSACTIONS

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ABSTRACT

This study developed an improved multi-level access control system for internet financial transactions. It formulated, simulated and evaluated the performance of the model. This was with a view of preventing internet financial transaction fraud, which mitigates against users. Three factors of entity authentication policies in four levels were integrated. The model was transformed into an algorithm and simulated with MATLAB. A set of passwords, challenge questions, token codes and Iris images were obtained to serve as input data to the simulated model. Performance comparison of the proposed model with an existing model was carried out using False Acceptance Rate (FAR) and False Rejection Rate (FRR) as metrics. The result showed that 50% of FAR and 5% of FRR was recorded resulting in 50 % and 95 % Total Success Rate (TSR) respectively in the existing scheme. In the proposed scheme, FAR of 3 % and 0 % FRR were achieved, this implied 97 % and 100 % TSR respectively. The research implementation served its purpose when compared with the existing scheme by showing a better performance in users' authentication. This proposed system can be effective in protecting sensitive customers' information by significantly reducing the rate of internet financial transaction frauds.

Keywords: Access Control, Authentication, Internet, Security.