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**Abstract:**

In this paper, an expert system of to data mining has been designed for identifying the credit card users' suspected behaviors by using the experts' viewpoint. In this system, the type of user's performance facing with the credit cards system has been considered as the input of data mining system and the output will be one of five categories of customer's normal, slightly suspicious, suspicious, very suspicious and dangerous behavior. The main advantage of this system, compared to the methods used in other articles, is first the possibility to model the users' behavior in five different categories which predict the user's behavior more accurately, and then, considering a wide scope of input variables makes a more comprehensive coverage of factors which identify the users' behavior and performance. Furthermore, the real implementation of this system in the bank workplace of one of the greatest banks, which provide the Internet network services in Iran, indicates the accuracy of system function with degree 93% which shows its powerful performance. In this paper, it is concluded that the intensity of bank customers' unusual behavior can be estimated through the data mining system by using MATLAB software and the inference of this data mining system will be the assignment of user to one of five defined categories of behavior. Output values up to the level 0.50 and less than it are considered as the user's normal behavior and suspicious behaviors are specified with the output greater than 0.50. According to the experts' estimation and calculations, the results are consistent with the fact to about 93%.

**Keywords:** Internet Banking, Data Mining, Credit cards, Data Warehousing