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Credit Card Fraud Detection System

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ABSTRACT
The most accepted payment mode is credit card for both online and offline in today's world, it provides cashless shopping at every shop in all countries. It will be the most convenient way to do online shopping, paying bills etc. Hence, risks of fraud transaction using credit card has also been increasing. In the existing credit card fraud detection business processing system, fraudulent transaction will be detected after transaction is done. It is difficult to find out fraudulent and regarding loses will be barred by issuing authorities. Hidden Markov Model is the statistical tools for engineer and scientists to solve various problems. In this paper, it is shown that credit card fraud can be detected using Hidden Markov Model during transactions. Hidden Markov Model helps to obtain a high fraud coverage combined with a low false alarm rate.

1.1 INTRODUCTION

2 In day to day life credit cards are used for purchasing goods and services with the help of virtual card for online transaction or physical card for offline transaction. In a physical-card based purchase, the cardholder presents his card physically to a merchant for making a payment. To carry out fraudulent transactions in this kind of purchase, an attacker has to steal the credit card. If the cardholder does not realize the loss of card, it can lead to a substantial financial loss to the credit card company. In online payment mode, attackers need only little information for doing fraudulent transaction (secure code, card number, expiration date etc.). In this purchase method, mainly transactions will be done through Internet or telephone. To commit fraud in these types of purchases, a fraudster simply needs to know the card details. Most of the time, the genuine cardholder is not aware that someone else has seen or stolen his card information. The only way to detect this kind of fraud is to analyze the spending patterns on every card and to figure out any inconsistency with respect to the "usual" spending patterns. Fraud detection based on the analysis of existing purchase data of cardholder is a promising way to reduce the rate of successful credit card frauds. Since humans tend to exhibit specific behaviorist profiles, every cardholder can be represented by a set of patterns containing information about the typical purchase category, the time since the last purchase, the amount of money spent, etc. Deviation from such patterns is a potential threat to the system

1.2 BASIC CONCEPT

In the existing credit card fraud detection business processing system, fraudulent transaction will be detected after transaction is done. It is difficult to find out fraudulent and regarding loses will be barred by issuing authorities. Hidden Markov Model is the statistical tools for engineer and scientists to solve various problems. In this paper, it is shown that creditcard fraud can be detected using Hidden Markov Model during transactions. Hidden Markov Model helps to obtain a high fraud coverage combined with a low false alarm rate.

1.3 APPLICATIONS

- The detection of the fraud use of the card is foundmuch faster than the existing system.
- The Transactions of the account holder never stoppedAs this system allows the user to use the virtual cardUsing the virtual ID and password,untill he gets thenew card.
- The user can easily block the card by himself when hefinds that the card is being stollen.
- In this system we have used the ONE TIMEPASSWORD for the security to get the virtual ID and Password securely.
- We can find the most accurate detection using thistechnique.

1.4 Performance

- . It determines the length of time system used by the system to process data. This test is conducted prior to implementation to transaction determine how long it takes to get a response to an inquiry, make a backup copy of a file, or send a transmission and get a response.

Peak workload performance

- It determines whether the system will handle the volume of activities that occur when the system is at the peak of its processing demand. For example, test the system by activating all terminals at the same time.

1.5 Maintainability

- Maximizes the correct prediction and maintain the incorrect prediction at an acceptable level

1.6 Environmental

- The credit card fraud detection system shall not cause physical harm to users and non-users.
- The credit card fraud detection system shall not cause interference to external systems or any type of misbehave.

2. System for project

The information form will be arise which has set of questions where the user has to answer that question correctly to do the transaction.These form have informationlikePersonal,Professional address,Dob,etc.are available in database.If user entered information will be matched with the database information then the transaction will be done securely.Else user transaction will bbe terminated and transfer to online shopping website.

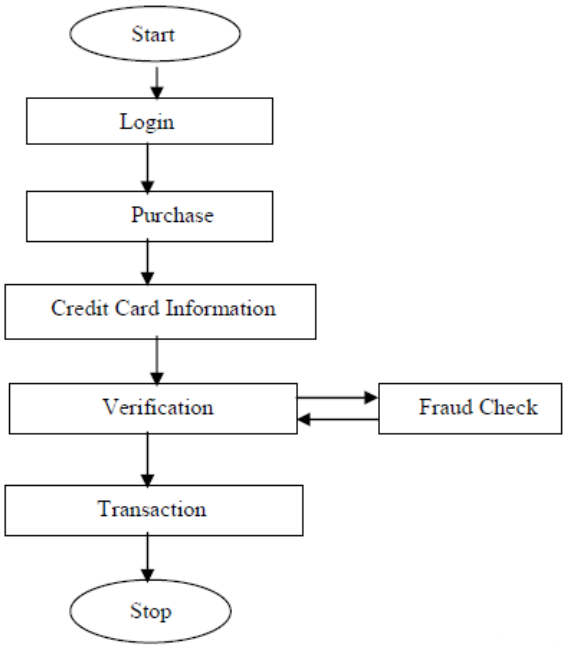

Fig 1.0

3.1 Technologies Used:

MICROSOFT VISUAL STUDIO

C# (MS Visual Studio 2010)

About Visual Studio:-

The Microsoft Visual Studio development system is a suite of development tools designed to aid software developers—whether they are novices or seasoned professionals—face complex challenges and create innovative solutions. Every day, software developers break through tough problems to create software that makes a difference in the lives of others. Visual Studio's role is to improve the process of development to make the work of achieving those breakthroughs easier and more satisfying.

How Visual Studio improves the process of development:

Productive:-

Visual Studio-branded tools continually deliver better ways for software developers to do more with less energy wasted on repetition and drudgery. From efficient code editors, IntelliSense, Wizards, and multiple coding languages in one integrated development environment (IDE) to high-end application life-cycle management (ALM) products in Microsoft® Visual Studio® Team System. New versions of Visual Studio keep bringing innovative tools to help developers focus on solving problems, not waste time on minutiae.

Integrated:-

With Visual Studio, software developers benefit from an integrated product experience that spans tools, servers, and services. Visual Studio products work well together—not just with one another, but also with other Microsoft software, such as Microsoft server products and the Microsoft Office system.

Comprehensive:-

Visual Studio offers a choice of tools for all phases of software development—development, testing, deployment, integration, and management—and for every kind of developer—from the novice to the skilled professional. Visual Studio is also engineered to support development across all types of devices—PCs, servers, the Web, and mobile devices.

Reliable

Visual Studio is engineered and tested to be consistently dependable, secure, interoperable, and compatible. Visual Studio offers an unmatched combination of security features, scalability, and interoperability. Although Visual Studio always incorporates forward-thinking features, it is designed to ensure backward-compatibility wherever possible.

About SQL Server:-

Microsoft SQL Server 2005 is a comprehensive, integrated data management and analysis software that enables organizations to reliably manage mission-critical information and confidently run today's increasingly complex business applications. SQL Server 2005 allows companies to gain greater insight from their business information and achieve faster results for a competitive advantage.

Key Capabilities:-

•High Availability: Ensure business continuity with the highest levels of system availability through technologies that protect your data against costly human errors and minimize disaster recovery downtime.

•Performance and Scalability: Deliver an infrastructure that can grow with your business and has a proven record in handling today's large amounts of data and most critical enterprise workloads.

•Security: Provide a secure environment to address privacy and compliance requirements with built-in features that protect your data against unauthorized access.

•Manageability: Manage your infrastructure with automated diagnostics, tuning, and configuration to reduce operational costs while reducing maintenance and easily managing very large amounts of data.

•Developer Productivity: Build and deploy critical business-ready applications more quickly by improving developer productivity and reducing project life cycle times.

•Business Intelligence: Gain deeper insight into your business with integrated, comprehensive analysis and reporting for enhanced decision making.

3.**SystemRequirement**

3.1 Minimum Hardware Interface:

- Interface between the software product and hardware components
- The device types supported would be:
- 600Mhz processor
- 192 MB RAM

- Basic Webcam (Inbuilt Or External)
- Standard keyboard

- Microsoft mouse and compatible pointing device
- Video 800×600,256 color s

3.2 Minimum Software Interface:-The software required is

- Microsoft windows server 2003
- Microsoft windows server 2005
- Microsoft SQL server 2005

4. Conclusion

We have proposed an application of HMM in credit card fraud detection. The different steps in credit card transaction processing are represented as the underlying stochastic process of an HMM. We have used the ranges of transaction amount as the observation symbols, whereas the types of item have been considered to be states of the HMM. We have suggested a method for finding the spending profile of cardholders, as well as application of this knowledge in deciding the value of observation symbols and initial estimate of the model parameters. It has also been explained how the HMM can detect whether an incoming transaction is fraudulent or not. Comparative studies reveal that the Accuracy of the system is close to 80 percent over a wide variation in the input data. The system is also scalable for handling large volumes of transactions..

5. Acknowledgement

We would like to express our deep gratitude towards all the people who have selflessly helped us in our project. We would like to thank everyone for always having faith in us and providing us with this valuable opportunity of pursuing such a challenging project.

6. Refrences

[1] Ghosh, S., and Reilly, D.L., 1994. Credit Card Fraud Detection with a Neural-Network, 27th Hawaii International l Conference on Information Systems, vol. 3 (2003), pp. 621- 630.

[2] Syeda, M., Zhang, Y. Q., and Pan, Y., 2002 Parallel Granular Networks for Fast Credit Card Fraud Detection, Proceedings of IEEE International Conference on Fuzzy Systems, pp. 572-577 (2002).

[3] Stolfo, S. J., Fan, D. W., Lee, W., Prodromidis, A., and Chan, P. K., 2000. Cost-Based Modeling for Fraud and Intrusion Detection: Results from the JAM Project, Proceedings of DARPA Information Survivability Conference and Exposition, vol. 2 (2000), pp. 130-144.

[4] Aleskerov, E., Freisleben, B., and Rao, B., 1997. CARDWATCH: A Neural Network Based Database Mining System for Credit Card Fraud Detection, Proceedings of IEEE/IAFE: Computational Intelligence for Financial Eng. (1997), pp. 220-226.

[5] M.J. Kim and T.S. Kim, "A Neural Classifier with Fraud Density Map for Effective Credit Card Fraud Detection," Proc. Int'l Conf. Intelligent Data Eng. and Automated Learning, pp. 378-383, 2002.