DAB 402 – CAPSTONE PROJECT

ASSESSEMENT 1 – PROBLEM FORMULATION

Cyber Space Security in Banking (CSS)

Credit Card Fraud Detection



GROUP 13

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**Title:**

**Credit Card Fraud Detection:** Our main topic is Secure Cyberspace and we choose the sub field i.e. cyber security in banking sector. There are so many factors that increase the human worries, about the online transactions. According to our search and what we think is that the high level of crime happened in credit card transactions. So, we put the title name as **Credit Card Fraud Detection.**

**Introduction**

The most complex challenge engineering has ever faced is electronic communication and computing. **Cyber Crime** is the most serious problem in the present era. According to U.S.A. government more than 600 billion amount of fraud happened annually and it is increasing by 1.2 billion. And more than 200 billion amounts of fraud happened in the banking sector. South Africa has recently been afflicted by fraud in credit and banking information from online banking subscribers.

Following are the factors of cybercrime in banking:

* Fraudulent with use of Automated Teller Machine (ATM) cards and accounts
* Credit card frauds
* Frauds involving electronic funds transfers
* On Call Frauds
* Frauds relating to data Interchange.
* Email spam is the serious issue.
* Non- payment and non-delivery spam
* Investment scams
* Multi factors of password

The main reason of fraud in banking is the online transactions and crypto jacking. Crypto jacking helps the hackers to freeze the system and take all the data of the banks through the networks.

Day to day, cybercrime is drastically growing, and we are finding more fraud cases in banks. Due to this fraud cases the credit scores also will decline eventually because our credit card directly linked with our accounts. Many people are compromising in buying their desire car or house or any product due to low credit score or bad credit score that is occurring because of fraud cases. So, we as a group found this topic interesting and want to find the reasons and the solutions regarding to this fraud’s cases in the bank. Nowadays, there are so many fraud cases in Banks. These types of frauds are related to our credit card, bank transactions etc. For buying a new car or house, we must show good credit scores. Due to this fraud case, our credit scores automatically detect. So, we will find these reasons. Fraud detection involves monitoring the behavior of population of user in order to estimate, detect or avoid undesirable behavior.

**Objectives**

Credit card fraud is a serious problem in financial services. Billions of dollars are lost due to credit card fraud every year. There is a lack of research studies on analyzing real-world credit card data owing to confidentiality issues. The prevention of credit card fraud cyber security is an important application for prediction techniques. They are the most important factor of this system as they improve the existing banking system and help in removing the vulnerabilities and development of systems so that banking frauds can be mitigated.

**Challenges**

* Finding the dataset.
* Find the relative data for comparison between the two field. Because this is very vast field to work.
* We search and read number of articles on the cybercrime topic and finally we choose this topic as this is the measure factor.
* It is quit challenging for us to work on this field.
* Finalize the data according to the problem statement.
* Work on the data with machine learning algorithms.

**Solutions:**

* We analysis our data to detect the fraud in credit card transactions. Do some python coding if it requires. To solve this problem, we are planning to create a survey that help us to find the rate of frauds among the peoples. And ask for the solutions.
* Look at the places that are highlighted in frauds and crimes. Provide them the solution to solve this problem.
* Our aim is to detect the 100% of the frauds in online transaction while minimize the incorrect fraud classification.
* Response activities effectively coordinated with internal and external stakeholders.

**Our Goals**

Firstly, we select the data and analyze it, with the help of the machine algorithm and predict the fraud. Find the main reason which increase the frauds. And in which field the more fraud is happening. Also, find which countries, area and which age group are more effected by these kinds of fraud. Analyze in which types of account the fraud is happening, like business, Current or Saving accounts etc. find the solution to solve this problem. Create a transparency for the customer regarding this field that enhance their Knowledge and prevent them from the fraud.

**Tools & Techniques**

Machine learning algorithms are used to detect credit card fraud. Standard models are first used. Then, hybrid methods and majority voting methods are applied. Understand common mistake made with imbalanced datasets. Visualize the data with help of tableau and highlight the region of fraud in the continent. Also, excel and deep learning to analyze the data. Sql help us to go into the depth of the data.

**Reference**

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