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REVIEW ARTICLE

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Ragina Nair,
Digambar Patil,
Bhavana Dhobale,
Rutuja Pachkude
Computer Engineering, Indira College of Engineering and ManagementParandwadi, Pune
ragina251293@gmail.com
rutuja.pachkude@gmail.com

QR Code for Mobile users

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Database Analysis as an Anti-Money Laundering Strategy for Financial Institutions

Ragina Nair, Digambar Patil, Bhavana Dhobale,Rutuja Pachkude
Computer Engineering Indira College of Engineering and Management, Parandwadi, Pune.

ABSTRACT
In financial institutions in which large amount of financial data is investigated in large amount. In financial institutions there are various forms of crime and money laundering is one comprising the internal policies .However, the majority of financial institutions have adopted that does not produce the desired effect for detection procedures and large in area for reporting tasks to detect money laundering without incorporating digital forensic practices to handle evidence. Thus, in this article, we propose an anti-money laundering modelby combining digital forensics practices along with database tools and database analysis methodologies. As there are adverse effects, able to admitted Suspicious Activity Reports (SARs) can be generated, based on evidence obtained from forensically analysing database financial logs in compliance with Know-Your-Customerpoliciesfor money laundering detection.

Keywords: Digital forensics, database log, business intelligence, BI, MySQL, stored procedure ,extractor, ETL, FTK

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INTRODUCTION

Definition:

"Combining Digital Forensic Practices and Database Analysis as an Anti-Money Laundering Strategy for Financial Institutions" The Money Laundering, causes the most serious harm to national security, financial system and development of global economic with involving an amount in large, covering a wide range and complicated process.
So our project focuses on anti-money laundering which is topic of highly concerned.

Background:

Denys A. Flores and Richard J. Self [1].In this research paper it is proposed that the Financial Action Task Force (FATF) has noted increasingly characteristic of combinations of techniques, such as the become greater use of authorized persons to disguise the true ownership and control the proceeds which are against law, and an increased use of professionals to provide advice and assistance in laundering criminal funds.
V. H. Bhat, P. G. Rao, A. R. V and L. M. Patnaik[2]. Anti- Money Laundering (AML) poses a serious threat not only to financial institutions but also to the nation. Clustering algorithm is repetitively executed to analysis transactions depending on the characteristic of each transaction datasets**.**
G. Palmer[3] . In this research paper proposed that the methodology for combining digital forensics and database analysis in order to enhance money laundering detection.
N. A. Le Khac and M.-T.Kechadi[4] The research in this paper introduces a structured and consistent approach for digital forensic investigation.
R. Hankins, U. Tetsutaroh and L. Jigang[5] In this paper it is proposed that different clustering algorithms for analysing different financial datasets varied from time series to transactions.

Theoretical Model of Project:

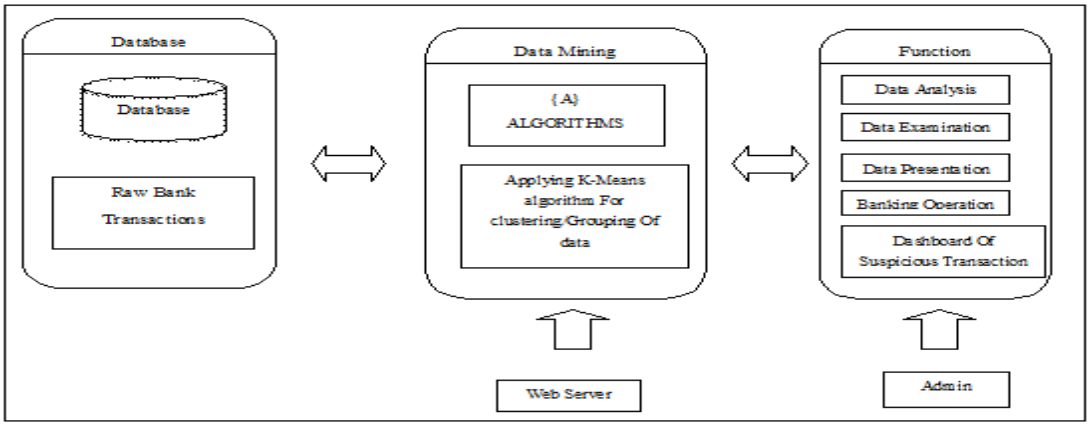

Fig 2:Database Analysis Anti-Money Laundering Strategy For Financial Institution

1. Data Analysis
   Transactions of all users will be analysed properly and after analysing completely then suspicious transactions will be send for examination.
2. Data Examination
   Transactions which are found suspicious are then examined for money laundering.
3. Data Presentation
   Transactions which are then found suspicious are then presented with the full details of account holder.
4. Banking Features
   Our application includes all the crude operations of the bank. So user can add – edit payee, transfer fund, view transactions and update profile.

Research Directives:

K-Means Clustering Algorithm:
vector quantization is a process in which k-means clustering is used, signal processing is the technique. Most popular methods in data mining for cluster analysis is k-means algorithm. In k-means algorithm the observations are partitioned into k clusters with most possible mean as it is indicated for the prototype of cluster. This results in a partitioning of the data space into Voronoi cells.

There set of observations from $(x_1, x_2, \ldots, x_n)$, here each value is a d-dimensional real vector, k-means clustering aims to partition the n observations into k sets ($k \leq n$) $S = \{S_1, S_2, \ldots, S_k\}$ so as to minimize the within-cluster sum of squares (WCSS):

$$\arg\min_{\mathbf{S}} \sum_{i=1}^{k} \sum_{\mathbf{x}_j \in S_i} \|\mathbf{x}_j - \boldsymbol{\mu}_i\|^2$$

Where μ_i is the mean of points in S_i.

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