ASIAN SCHOOL OF MEDIA STUDIES
SCHOOL OF DATA SCIENCE

Location based Transaction Analysis using Data Analysis

Diploma in

Data Science

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June 2025

Abstract

This project analyses a bank transaction dataset containing fields like date, domain, location, transaction value, and transaction count. The objective is to identify patterns, trends, and anomalies in financial transactions. We explored transaction behaviour across different domains and geographic locations. Time-based trends helped identify peak transaction periods and high-value activities. Visualization techniques were used to make the data easier to understand. The insights can help banks in decision-making, fraud detection, and service optimization. Overall, the project highlights the power of data analysis in the banking sector.

Motivation

In today’s digital world, banks handle millions of transactions every day.
Understanding customer transaction patterns is essential for better decision-making, fraud detection, and service improvement.
This project was inspired by the growing importance of data-driven insights in the banking and finance sector.
By analysing real transaction data, we can uncover hidden trends that are not immediately visible.
It helps banks optimize their operations, understand customer behavior, and improve financial security.
With data analysis skills becoming increasingly valuable, this project also supports personal growth and career development.
The challenge of turning raw banking data into useful information sparked my interest in this project.
It is a step towards applying data science techniques to real-world financial problems.

Literature review

Several studies have shown that analysing banking transaction data can provide deep insights into customer behaviour, financial risk, and fraud patterns.

According to research papers and financial reports, banks are increasingly using data analytics to improve customer experience and operational efficiency.

Techniques such as time series analysis, clustering, and anomaly detection are commonly used in financial data analysis.

Studies also highlight the importance of domain-wise and location-wise analysis to identify market trends and regional financial activity.

Past literature emphasizes that transaction value and count can reveal spending habits, income patterns, and seasonal changes in behavior.

Researchers have used tools like Python, R, Excel, and Power BI to perform such analyses.

Many banking institutions apply these insights to detect unusual activities that may indicate fraud or system errors.

This project builds upon these studies by applying basic analysis methods to real-world transaction data, aiming to generate similar actionable insights.

It connects academic concepts of data analytics with practical applications in the financial sector.

Methodology

This project focuses on analyzing a bank transaction dataset containing fields like Date, Domain, Location, Value**,** and Transaction Count**.**
The main objective is to discover patterns and trends in customer transactions across different locations and services.
The data was cleaned, processed, and visualized using tools such as [insert tool name: Excel / Python / Power BI]**.**
Key insights include identifying peak transaction periods, high-value domains, and regional activity variations.
Visualizations like bar charts and line graphs helped present the data clearly.
Time-based analysis revealed how transaction behavior changes over months or seasons.
The findings can support banks in improving services, managing risks, and detecting unusual patterns.
This project demonstrates how data analysis can turn raw banking data into valuable business insights.

Plan of Action

The project was planned in a structured manner, beginning with understanding the dataset and identifying key attributes like Date, Domain, Location, Value, and Transaction Count.
Tools such as [Excel / Python / Power BI**]** were selected for data analysis and visualization.
Data cleaning was performed to handle missing values, correct formats, and ensure consistency.
Exploratory Data Analysis (EDA) helped in discovering patterns and trends in the transactions.
Domain-wise and location-based comparisons were done to understand customer behaviour.
Time-series analysis was used to identify peak periods and seasonal trends.
Visualizations such as bar graphs and line charts were created to simplify findings.
The insights were interpreted and documented clearly in the final report.
Each step was planned to ensure a smooth workflow and accurate results.

Facilities required for proposed work

- **Access to Data**: Access to representative datasets that contain banking analysis data sets which are used for identify trend hidden pattern from insight data.

- **Software Libraries and Tools:** Pandas, Numpy,Matplotlib,Seaborn Python Libraries & Power BI that is use for analysis data and Dashboard.

- **Storage of Data:** Sufficient storage is required to handle large banking datasets containing transaction details.
  Cloud or on-premises storage helps in managing data files, backups, and reports efficiently.
  It ensures smooth access and processing during analysis.
  Storage is also needed for saving visualizations and model outputs (if used).

- **Tools for Collaboration:** Git and other version control systems are used to manage codebases and track changes made during project iterations.

- **Tools for Reporting and Documentation:** Instruments for recording experimental outcomes, methods, and project progress. Tools for creating reports that allow you to create tables, charts, and visualisations to show the results and insights of your investigation.

Project Outcomes

- Identified patterns in transaction values and counts.
- Detected peak transaction periods and active locations.
- Analysed domain-wise customer behaviour.
- Helped in visualizing data for better decision-making.

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