Anomaly Detection in Credit Card Transactions

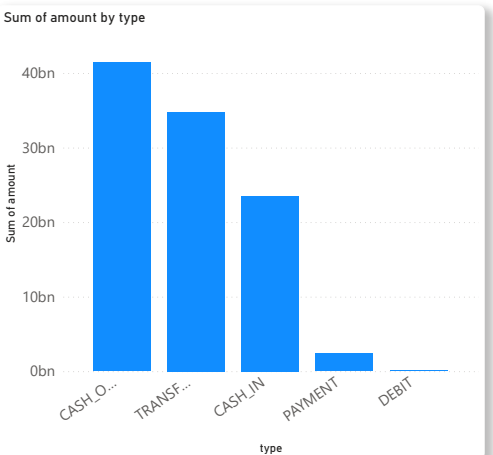
161.50K	881.59K	10.00M	6.42M	631K	383	-3.58M	0.06%
Average if original	Average if fraud	Highest fraud	Highest normal	Count of transaction	Count of fraud tran...	Diff in normal and f...	Percentage of fraud

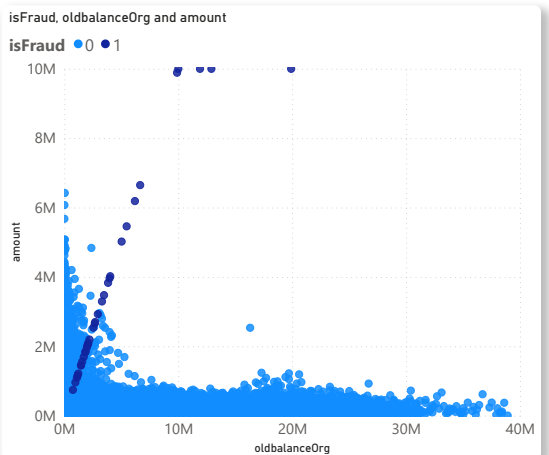
step

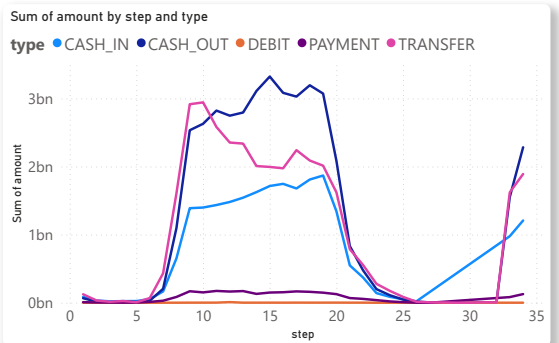
1 34

isFraud

0 1







nameDest	Sum of amount
M1964436639	92,595.57
M1098072792	92,057.11
M1115616079	91,381.93
M1367797661	88,957.40
M193121326	88,702.64
M371893332	87,436.81
M400618280	87,285.26
M1843661588	85,184.02
M1853596481	84,450.62
Total	**881,480.31**

Table for Top 10 Merchants (Starts with 'm'):

Setup:

- Fields: 'dest' (merchant names), Sum of amounts (total transaction amounts)

Filtering:

- Advanced Filtering: Name (dest) starts with 'm', Top 10

Explanation:

Field Selection:

'dest' for merchant names, Sum of amounts for total transaction amounts.

Advanced Filtering:

Focus on merchants starting with 'm', emphasizing specificity.

Top N Selection:

Highlight the Top 10 merchants based on total transaction amounts.

Interpretation:

Provides a concise view of the highest-contributing merchants.

Use Cases:

Useful for quick identification and comparison of top merchants.

Further Analysis:

Enables targeted exploration of transaction patterns for specific merchants

Table for Merchants with High Occurrence of Fraudulent Transactions:

Setup:

- Fields: 'dest' (merchant names), Sum of amounts (total transaction amounts), 'isFraud' (fraud indicator)

Filtering:

- Advanced Filtering: Name (dest) starts with 'm', 'isFraud' equals 1 (fraudulent transactions)

Explanation:

Field Selection:

'dest' for merchant names, Sum of amounts for total transaction amounts, 'isFraud' for indicating fraudulent transactions.

Advanced Filtering:

Conditions set for merchants starting with 'm' and having 'isFraud' equal to 1.

Interpretation:

No output indicates no merchants starting with 'm' have a high occurrence of fraudulent transactions based on the specified criteria.

Answer:

Result: No merchants meet the specified criteria for high occurrence of fraudulent transactions among those starting with 'm' in the dataset.

Possible Reasons:

Scatter Plot (oldbalanceOrg vs. amount):

Purpose:

- Explore the relationship between 'oldbalanceOrg' (originalbalance) and 'amount' (transaction amount).

Why this visualization:

- Useful for visualizing the distribution and relationship between two continuous variables.
- Identifies patterns, clusters, and outliers.
- In financial transactions, reveals insights into spending patterns or anomalies.

Interpretation:

- Points clustered in regions indicate common transaction behaviors.
- Outliers or patterns may suggest fraudulent activities or abnormal transactions.

Line Chart (Transaction Amount Over Time):

Purpose

-The line chart aims to illustrate the trends in transaction amounts over time (represented by 'step').

Why this visualization:

- Line charts are suitable for visualizing trends and patterns over a continuous variable, such as time.
- It helps in identifying unusual spikes or drops in transaction amounts, which might be indicative of irregular activities.

Interpretation:

- Sudden spikes or drops in the line may represent abnormal transaction behavior.
- Consistent trends can indicate regular transaction patterns over time.