

# Anomaly Detection of Credit Card

161.50K

Average Normal Transaction ...

881.59K

Average Fraudulent Transacti...

10.00M

Max Fraudulent Transaction ...

6.42M

Max Normal Transaction Am...

631K

Total Transactions

383

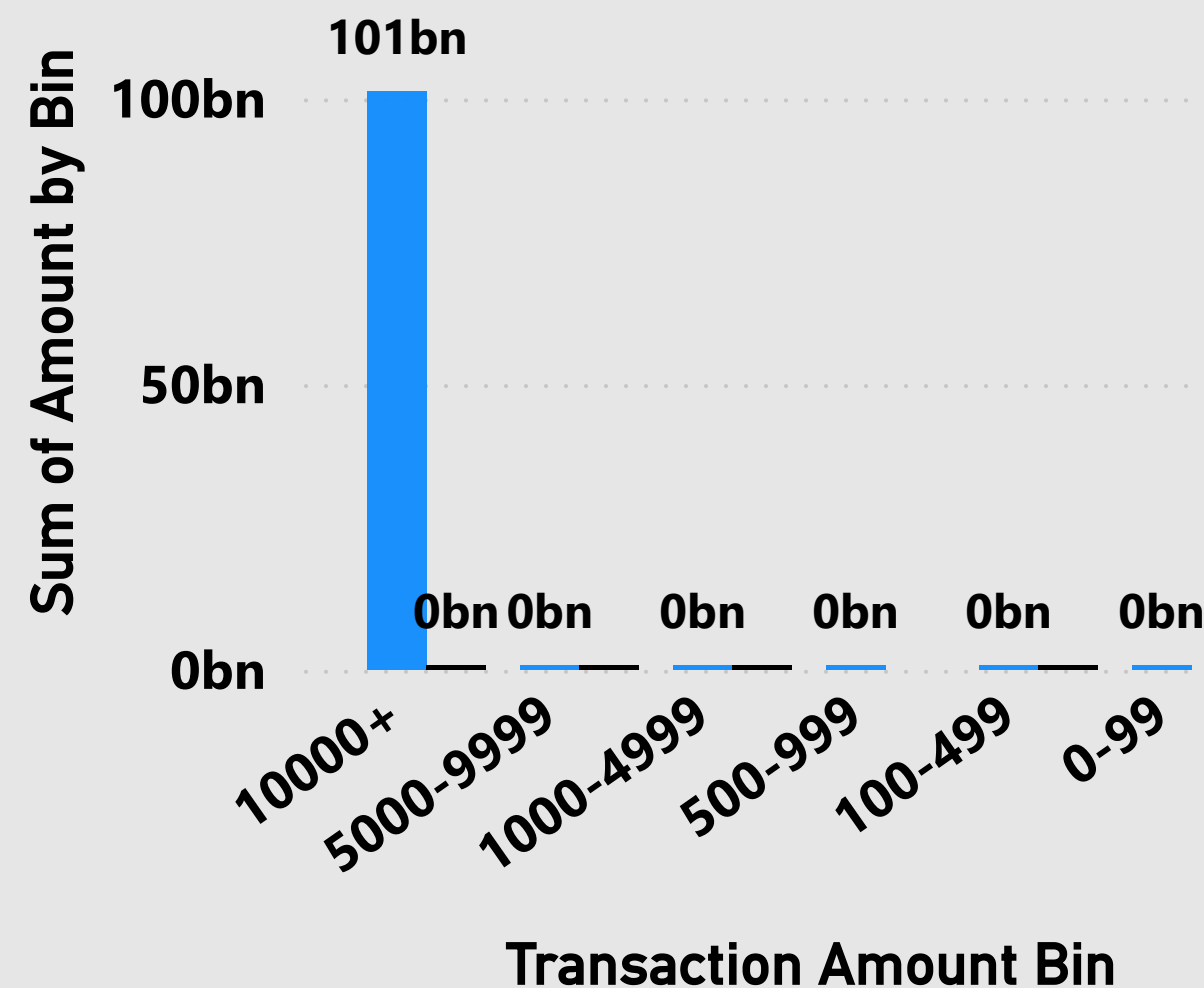
Count of Fraudulent Transact...

3.58M

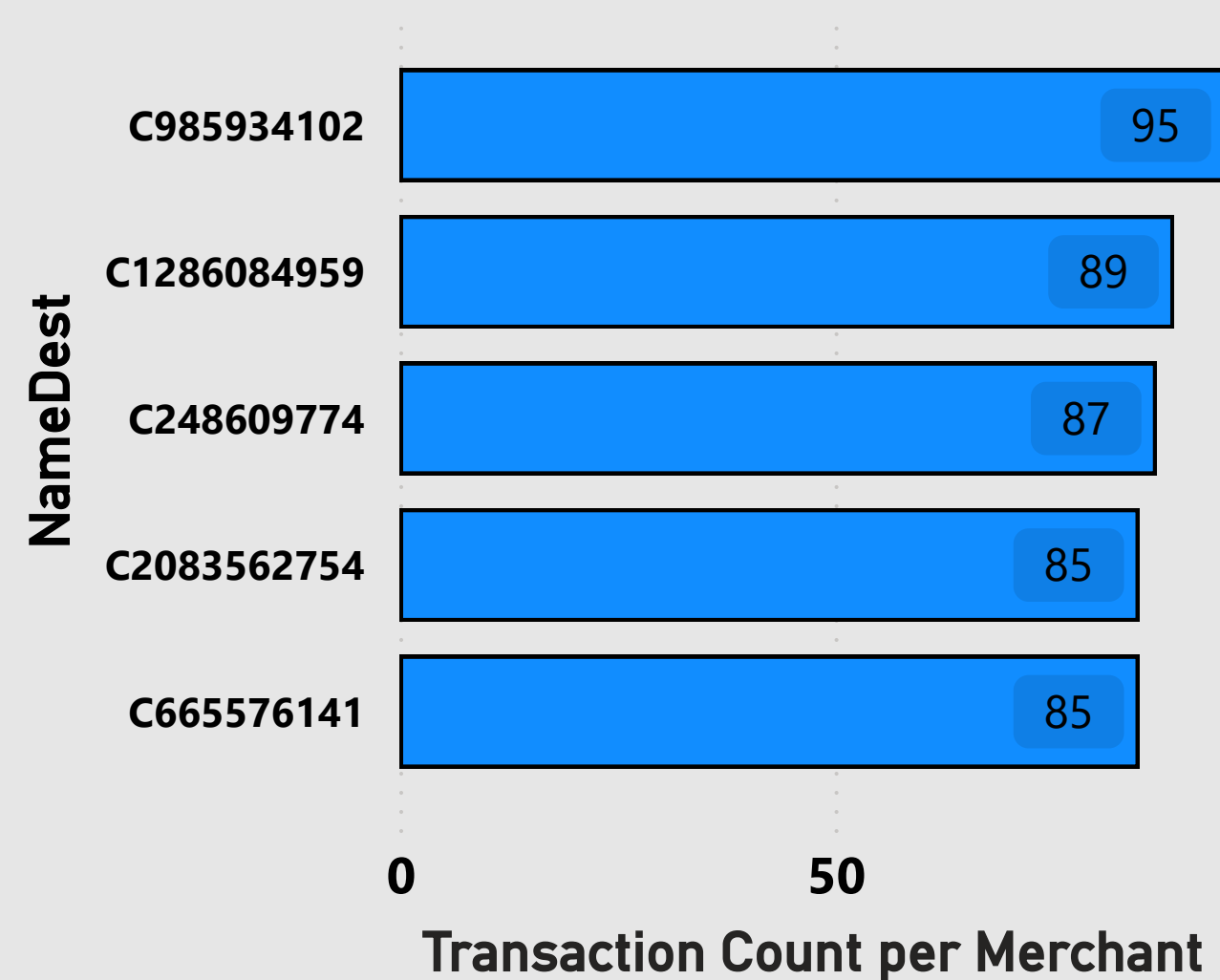
Difference in Max Transactio...

## Distribution of Transaction Amounts by Bin and Fraud Status

IsFraud ● 0 ● 1



## Top Merchants by Transaction Count



NameDest

All

Type

All

IsFraud

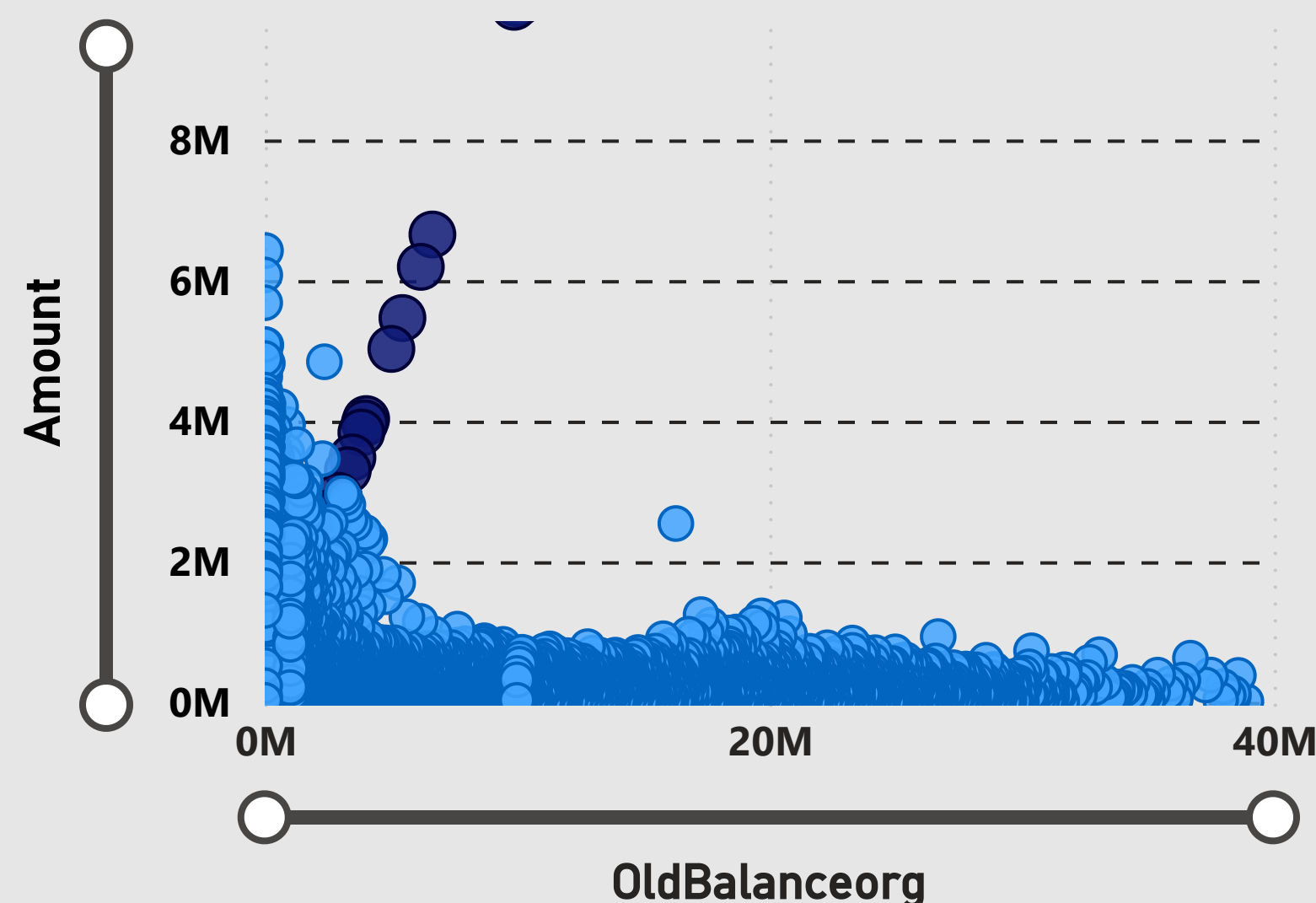
All

Steps

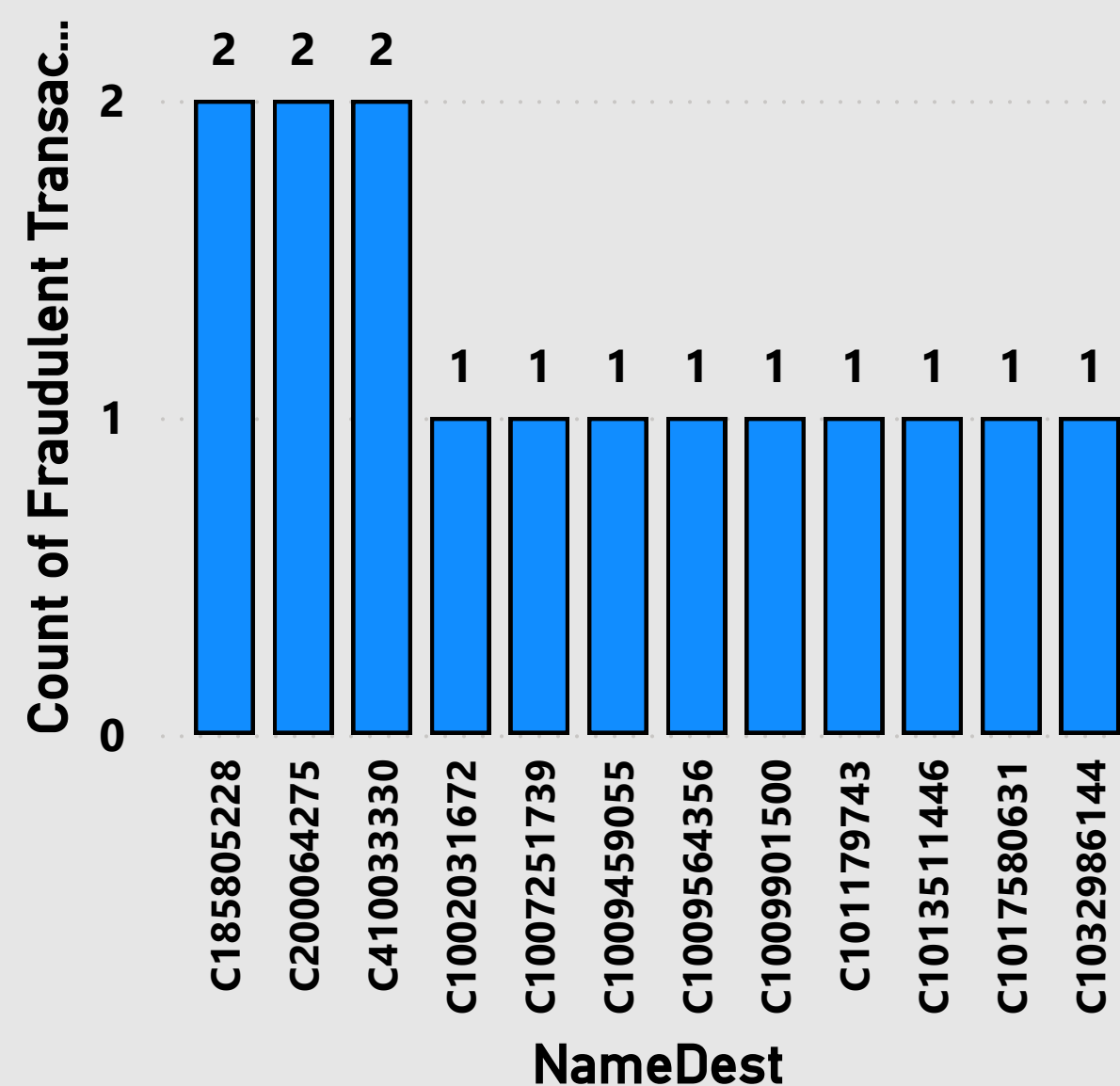
All

## Transaction Balance Changes by Fraud and Amount

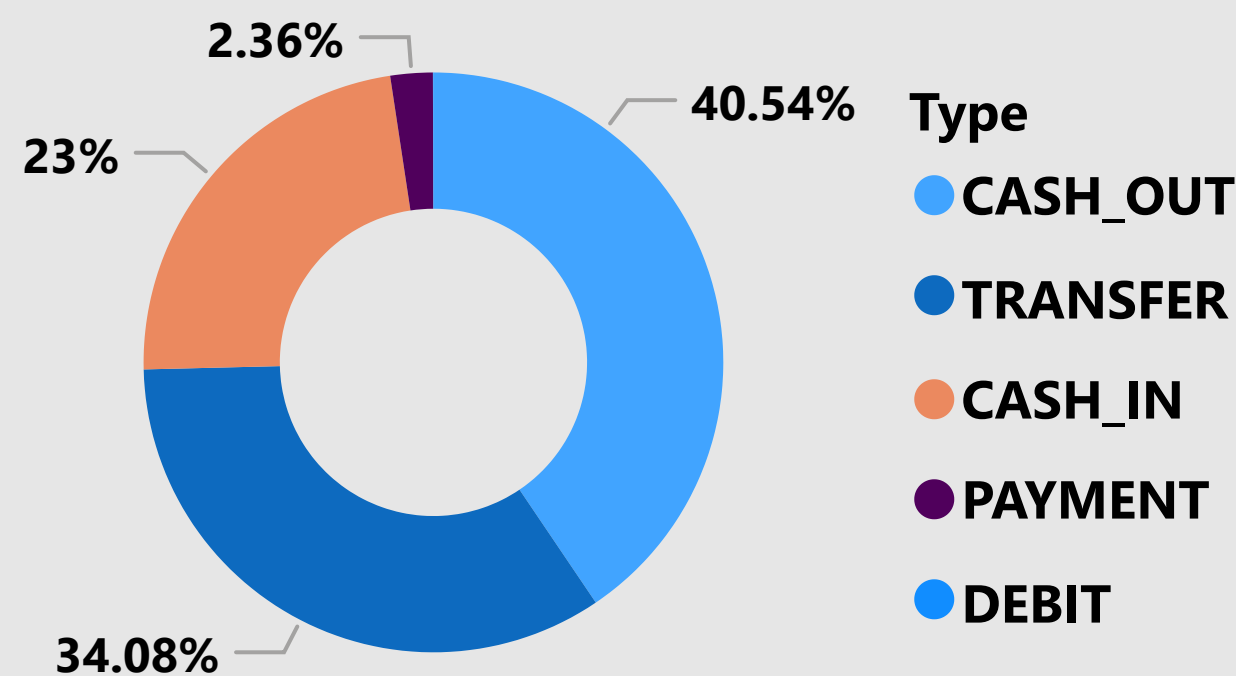
IsFraud ● 0 ● 1



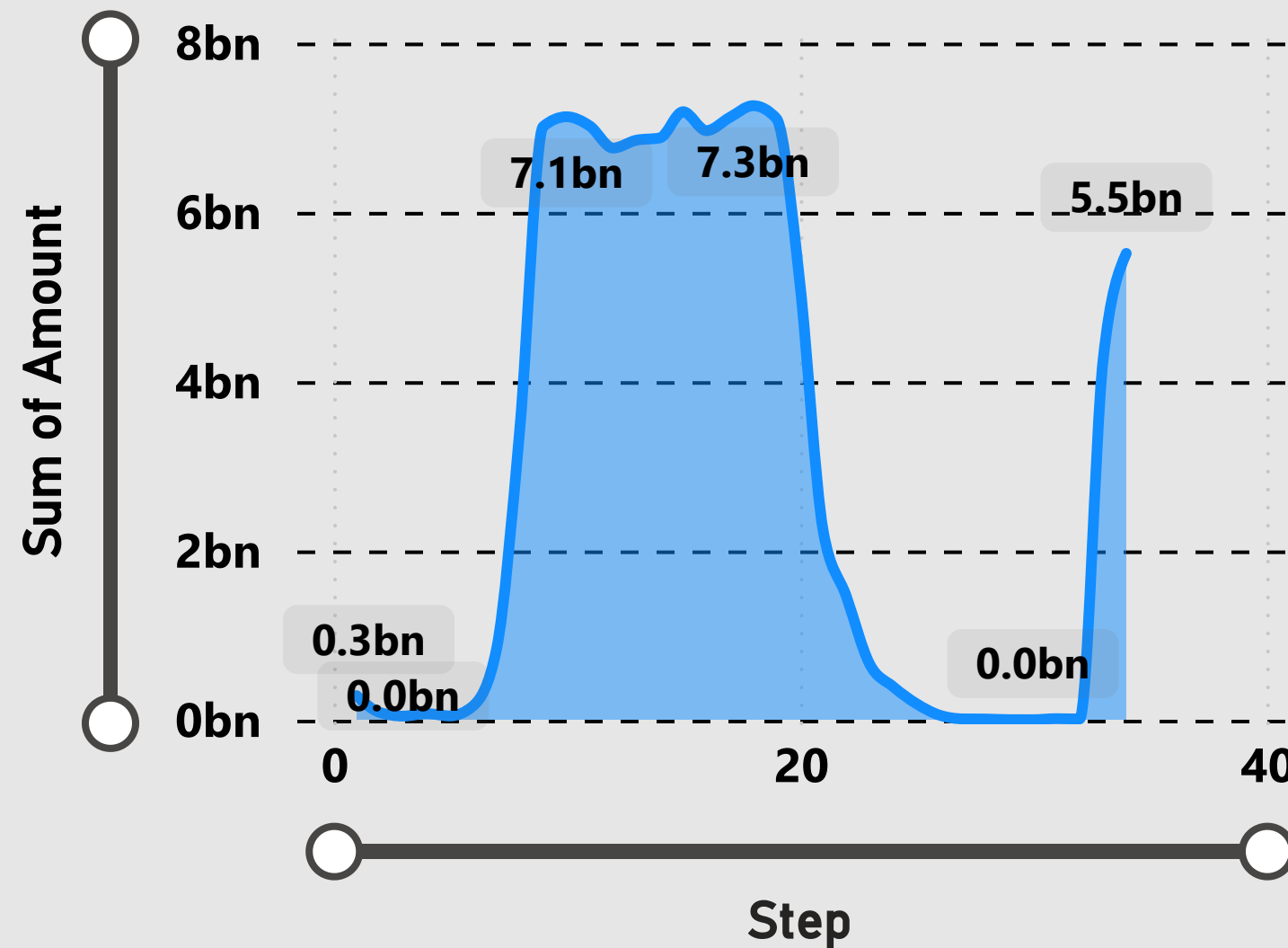
## Fraudulent Transactions by Merchant



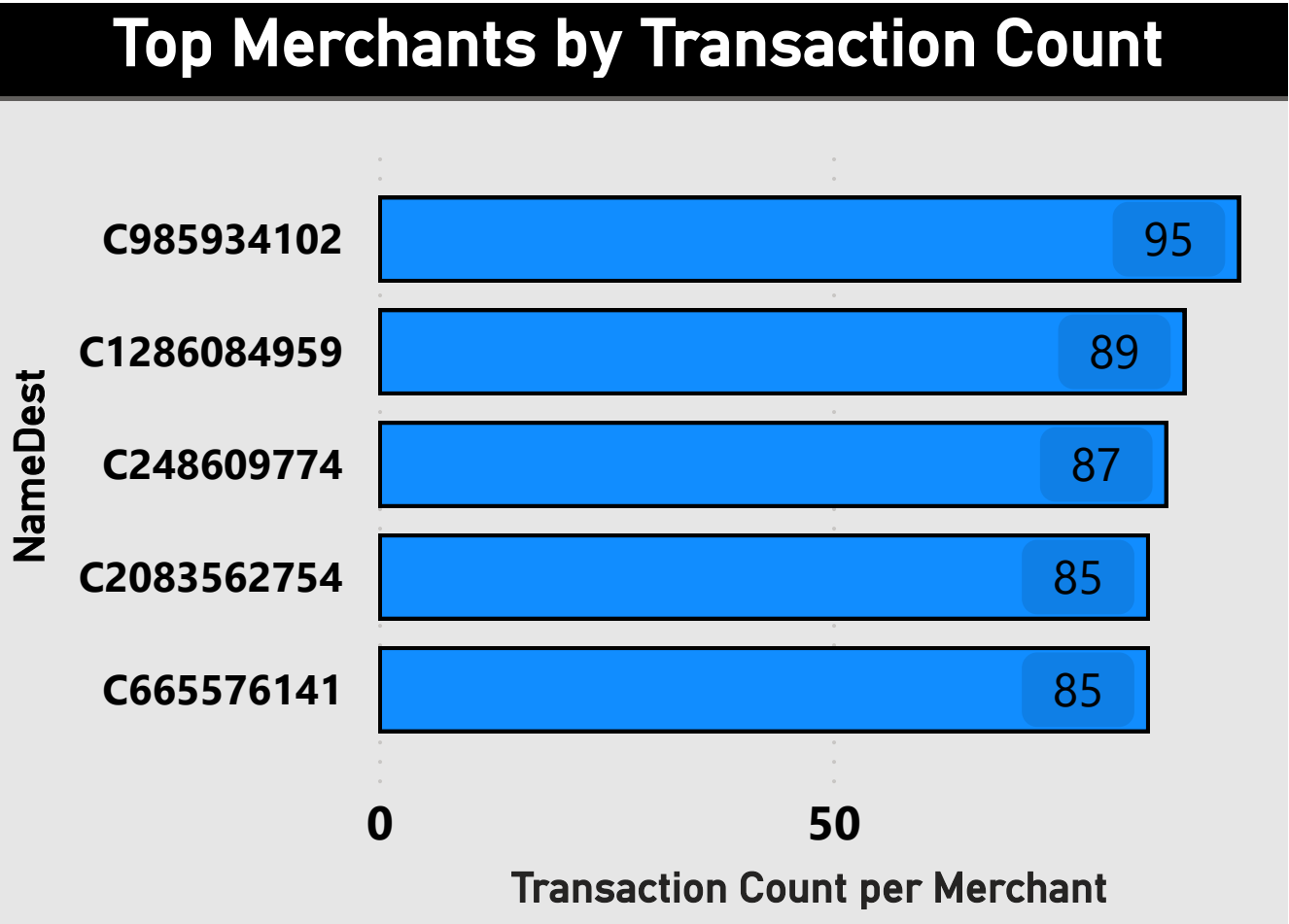
## Sum of Amount by Type



## Sum of Amount by Step



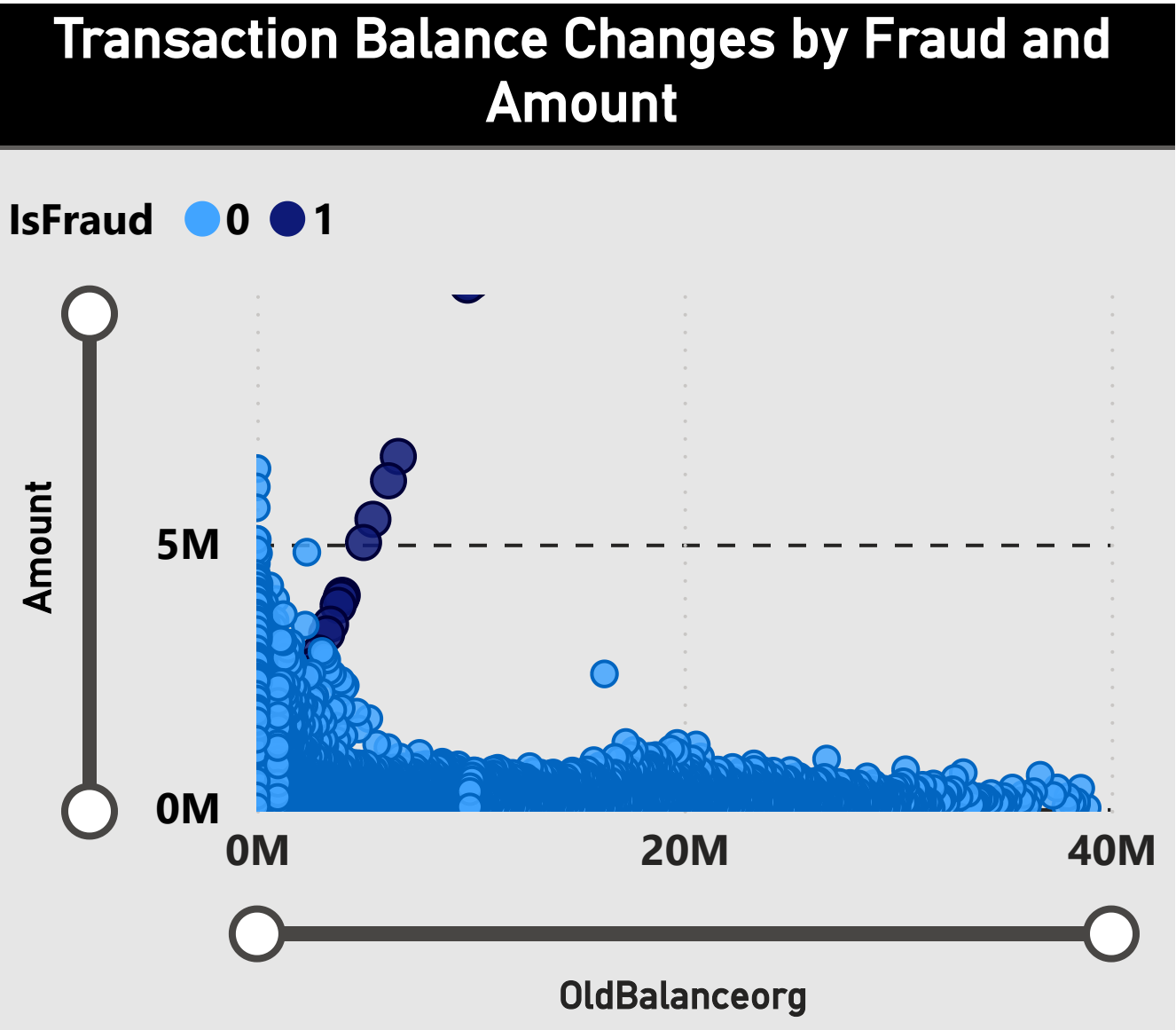
Which merchants have the highest number of transactions? (Only Top 5)



**Visual Explanation:** A **Bar Chart** is ideal for showing rankings and comparisons across different categories. It allows for easy reading of labels and values, especially when dealing with a top N list. This chart type helps in identifying the top 5 merchants with the highest number of transactions quickly and clearly. This bar chart shows the top five merchants based on the number of transactions they've processed.

- Key Insights:**
- **Merchant C985934102** is the clear leader with the highest number of transactions.
  - **Merchants C1286084959, C248609774, C2083562754, and C665576141** follow closely behind, indicating a relatively competitive market.

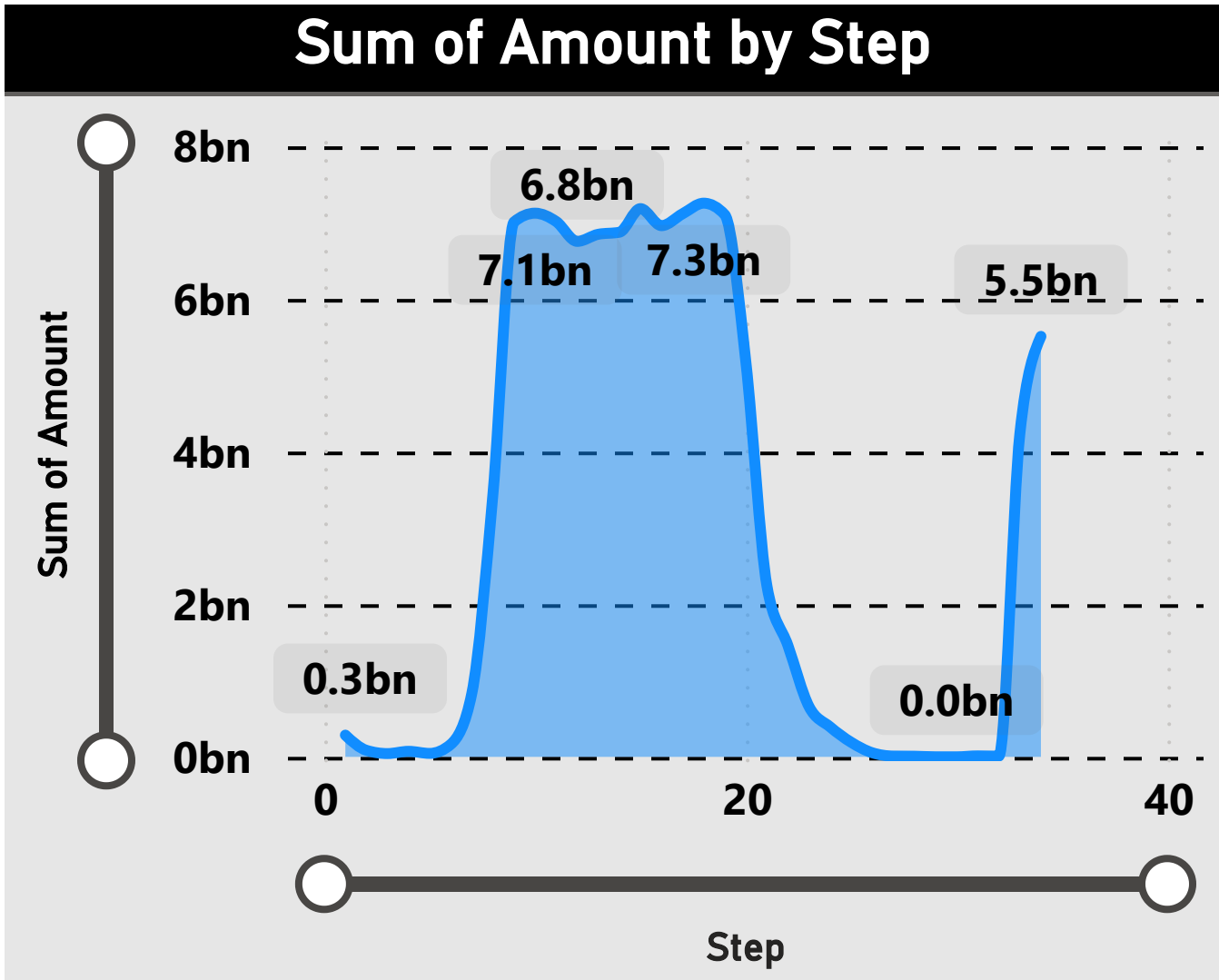
Create a scatter plot to visualize the relationship between 'oldbalanceOrg' and 'amount' columns.



**Visual Explanation:** A **Scatter Plot** is the best choice for visualizing the relationship between two continuous variables. It helps in identifying correlations, patterns, and outliers between **oldbalanceOrg** and **amount** columns. This chart type is particularly useful for showing how these variables interact with each other. This scatter plot illustrates the relationship between the **'oldbalanceOrg'** (original account balance) and **'amount'** (transaction amount) columns.

- Key Insights:**
- The majority of transactions are for smaller amounts, regardless of the original balance.
  - There's a general trend where larger transactions tend to occur in accounts with higher original balances.
  - A few outliers with high transaction amounts in accounts with relatively low original balances might indicate potential fraud or unusual activity.

Use a line chart to plot the transaction amount over time (step) to identify any unusual spikes or drops in transaction amounts.

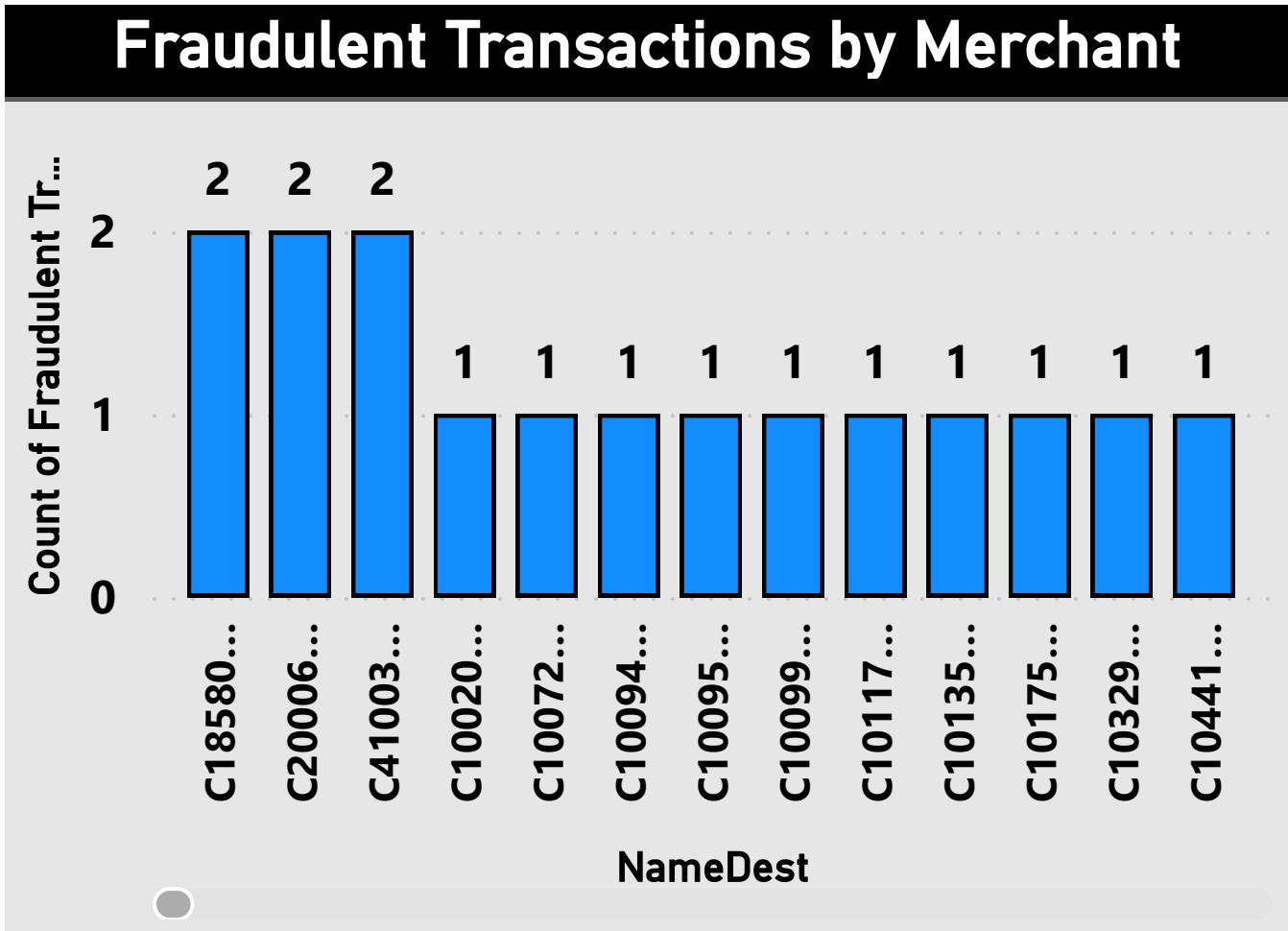


**Visual Explanation:** A **Line Chart** is perfect for showing trends over time. It helps in visualizing how transaction amounts change over steps (time), making it easier to identify any unusual spikes or drops. This chart type is ideal for time-series data and allows for a clear view of patterns and anomalies. This line chart visualizes the cumulative sum of transaction amounts over time, represented by 'steps'.

**Key Insights:**

- The transaction volume steadily increases, reaching a peak at around Step 20.
- After the peak, there's a sharp decline in transaction amounts, followed by a slight increase towards Step 40.
- The sudden drop at Step 20 might indicate an unusual event or a change in the underlying process.

Are there any merchants with a high occurrence of fraudulent transactions?

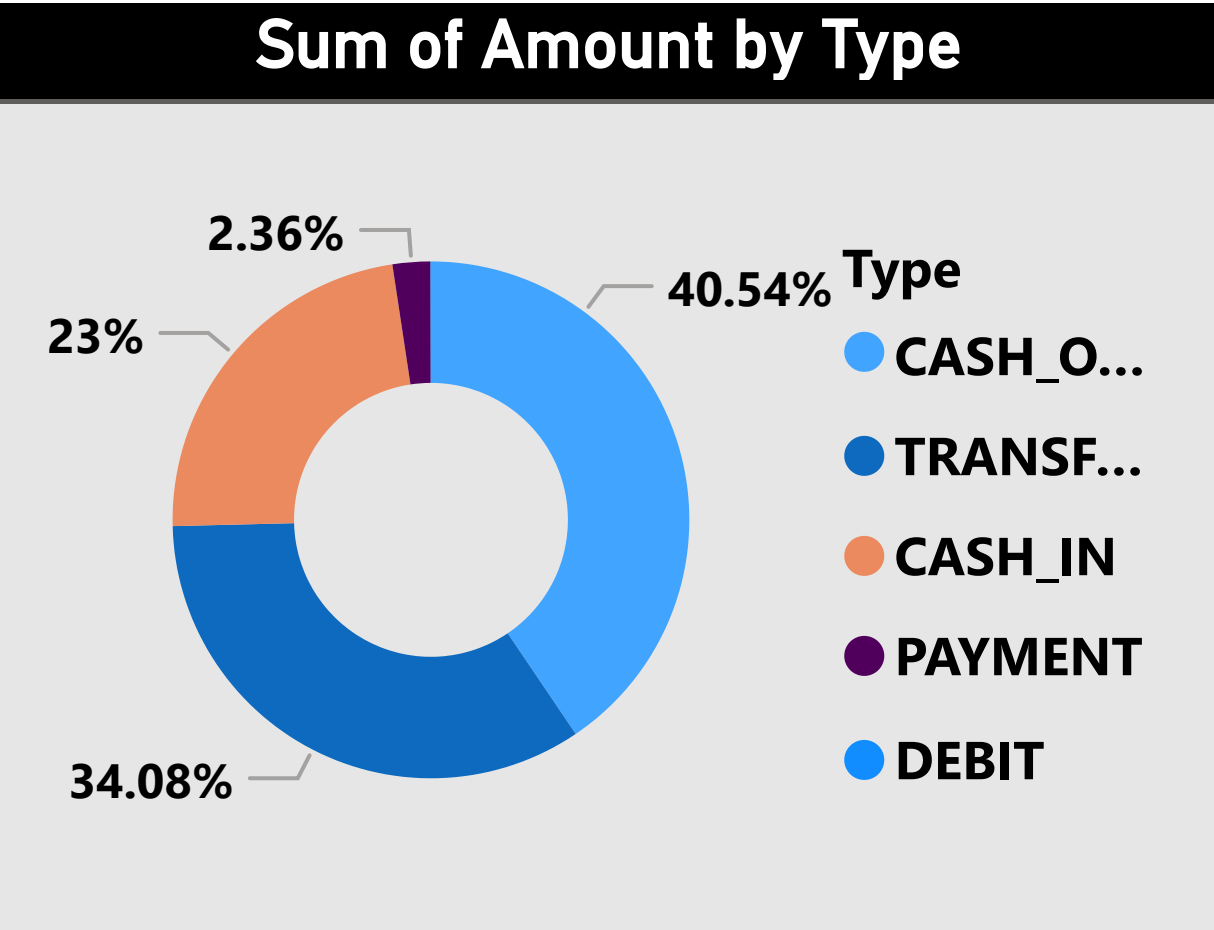


**Visual Explanation:** A **Column Chart** with a top N filter is suitable for showing the top merchants with the highest occurrence of fraudulent transactions. This chart type allows you to rank merchants based on the count of fraudulent transactions and easily identify the top ones. The top N filter ensures that only the most relevant data points are displayed. This bar chart shows the number of fraudulent transactions for each merchant.

**Key Insights:**

- **Merchants C185805228, C200064275, and C410033330** have the highest number of reported fraudulent transactions.
- **Several other merchants** have also experienced fraudulent activity, although to a lesser extent.

Sum of Amount by Credit Card Type.

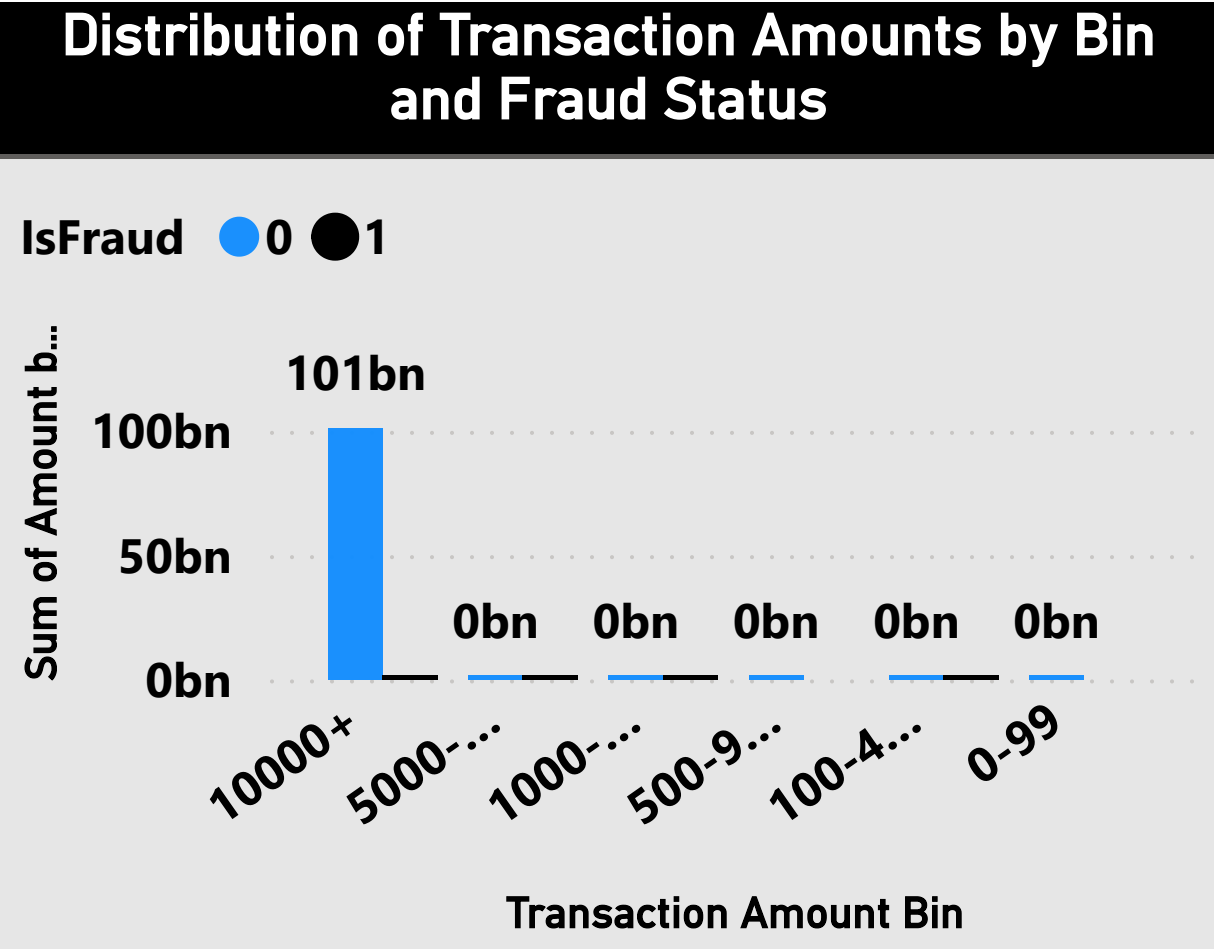


**Visual Explanation:** A **Donut chart** is a variation of a pie chart with a central hole. It's often used to represent categorical data where the size of each segment indicates its proportion to the whole. This Donut chart shows the distribution of transaction amounts based on different payment types.

**Key Insights:**

- **CASH\_OUT** is the dominant payment type, accounting for 40.54% of the total transaction amount.
- **CASH\_IN** and **DEBIT** are the next largest categories, each representing a significant portion of the total.
- **PAYMENT** and **TRANSFER** have smaller shares, indicating less frequent or lower-value transactions.

Distribution of Transaction Amount by Bin and Fraud Status.



**Visual Explanation:** This **Clustered Column Chart** illustrates the distribution of transaction amounts across different bins (ranges) and their association with fraudulent activity.

**Key Insights:**

- The majority of transactions fall within the 0-99 bin, with significantly smaller amounts in higher bins.
- Fraudulent transactions are concentrated in the 10000+ bin, suggesting that larger transactions may be more susceptible to fraud.
- Lower transaction bins have a negligible number of fraudulent cases.