Fraud Transaction Detection

The dataset ready on your local machine. To proceed with building and integrating the fraud detection model in Power BI, follow these steps:

1. Load the Dataset in Power BI

1. Open Power BI Desktop.
2. Go to **Home** > **Get Data** > **Text/CSV**.
3. Navigate to C:\power bi\Fraud Transaction Detection\creditcard.csv and load the dataset.

2. Preprocess the Data

You can use Power Query to clean and preprocess the data:

1. Remove any unnecessary columns.
2. Handle missing values.
3. Normalize numerical features if needed.

3. Run Python Script in Power BI

1. Go to **Home** > **Transform Data** > **Run Python Script**.
2. Use the following Python script to build and evaluate the model:

```
import pandas as pd

from sklearn.model_selection import train_test_split

from sklearn.linear_model import LogisticRegression

from sklearn.metrics import classification_report



# Load the dataset

data = pd.read_csv(r'C:\power bi\Fraud Transaction Detection\creditcard.csv')



# Preprocess the data

X = data.drop('Class', axis=1)

y = data['Class']
```

```
# Split the data

X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)


# Build the model

model = LogisticRegression(max_iter=1000, random_state=42)

model.fit(X_train, y_train)


# Make predictions

y_pred = model.predict(X_test)


# Evaluate the model

report = classification_report(y_test, y_pred, output_dict=True)

report_df = pd.DataFrame(report).transpose()


# Output the evaluation report

report_df
```

the Results

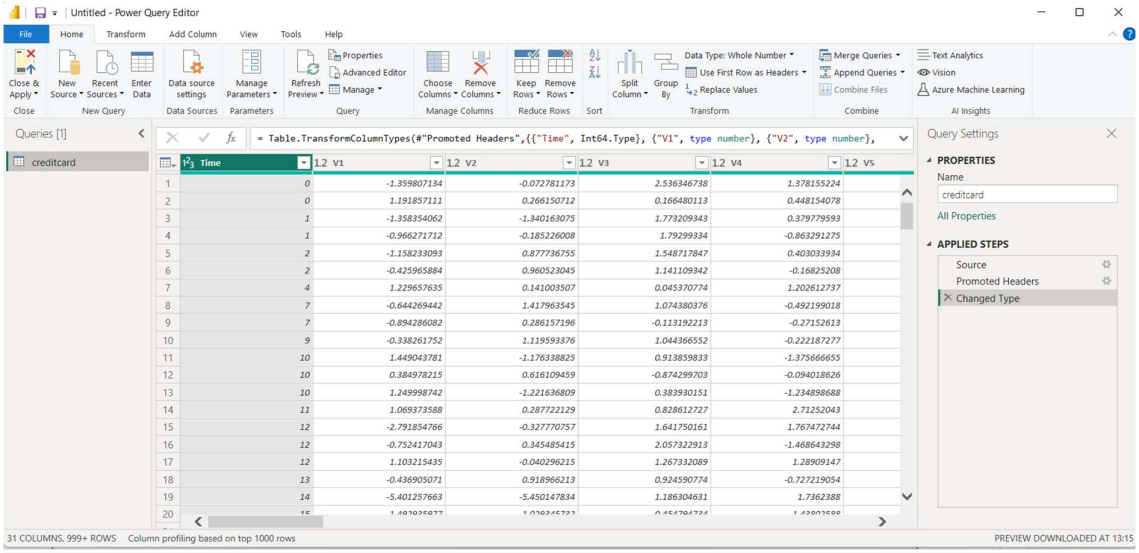
	Precision	Recall	F1-score	support
0	**0.9991939**	0.999807	0.999473	56864.000000
1	**0.816667**	0.500000	0.620253	98.000000
Accuracy	**0.998947**	0.998947	0.998947	0.998947
Macro avg	**0.907903**	0.749903	0.809863	56962.000000
Weighted avg	**0.998825**	0.998947	0.998820	56962.000000

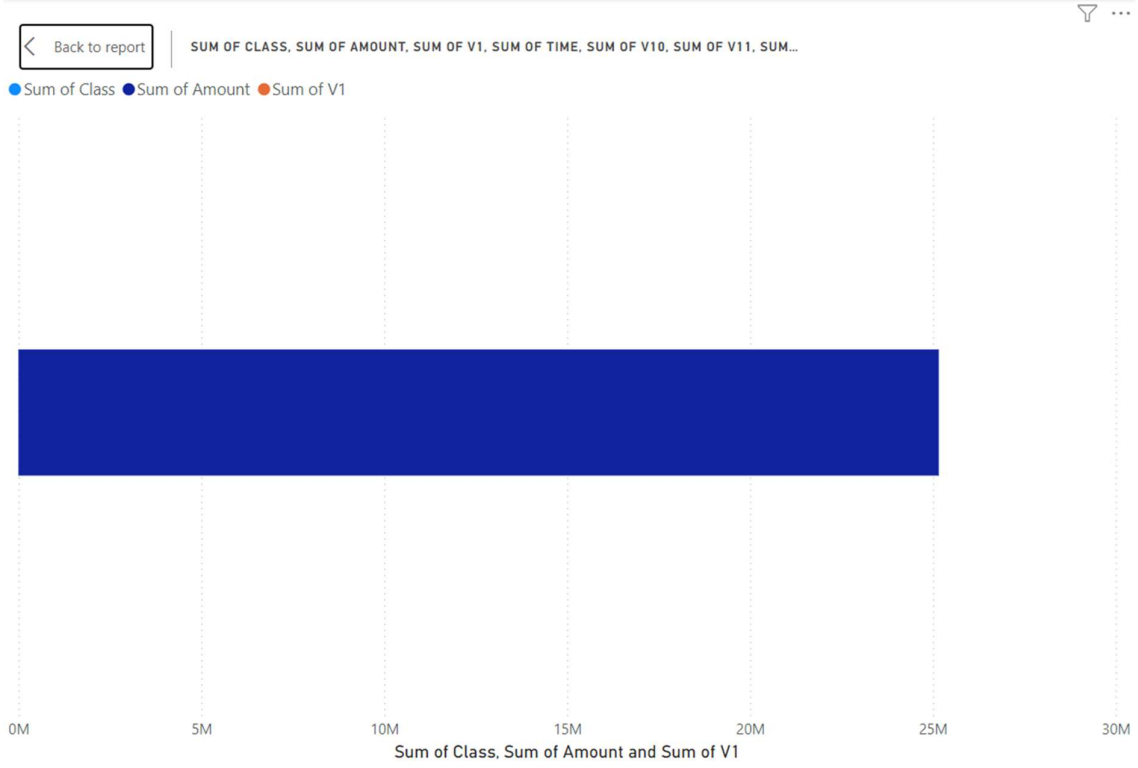
1. After running the script, the output will be available as a new table in Power BI.
2. Use this table to create visualizations such as:
    - Confusion Matrix
    - Precision, Recall, and F1-Score charts
    - Distribution of predicted fraudulent transactions

5. Create Dashboards

Design interactive dashboards to monitor and analyze the transaction data and model predictions.

If you encounter any issues or need further assistance, feel free to ask!


Untitled - Power Query Editor
File
Home
Transform
Add Column
View
Tools
Help
Close & Apply
New Source
Recent Sources
Enter Data
Data source settings
Manage Parameters
Refresh Preview
Properties
Advanced Editor
Manage
Choose Columns
Remove Columns
Keep Rows
Remove Rows
Split Column
Group By
Data Type: Whole Number
Use First Row as Headers
Replace Values
Merge Queries
Append Queries
Combine Files
Text Analytics
Vision
Azure Machine Learning
Queries [1]
creditcard
= Table.TransformColumnTypes(#"Promoted Headers",{{"Time", Int64.Type}, {"V1", type number}, {"V2", type number},
Time
V1
V2
V3
V4
V5
Query Settings
PROPERTIES
Name
creditcard
All Properties
APPLIED STEPS
Source
Promoted Headers
Changed Type
31 COLUMNS, 999+ ROWS
Column profiling based on top 1000 rows
PREVIEW DOWNLOADED AT 13:15


Back to report
SUM OF CLASS, SUM OF AMOUNT, SUM OF V1, SUM OF TIME, SUM OF V10, SUM OF V11, SUM...
Sum of Class
Sum of Amount
Sum of V1
0M
5M
10M
15M
20M
25M
30M
Sum of Class, Sum of Amount and Sum of V1

Back to report
SUM OF CLASS, SUM OF AMOUNT, SUM OF V1, SUM OF TIME, SUM OF V10, SUM OF V11, SUM...
Sum of Class
Sum of Amount
Sum of V1
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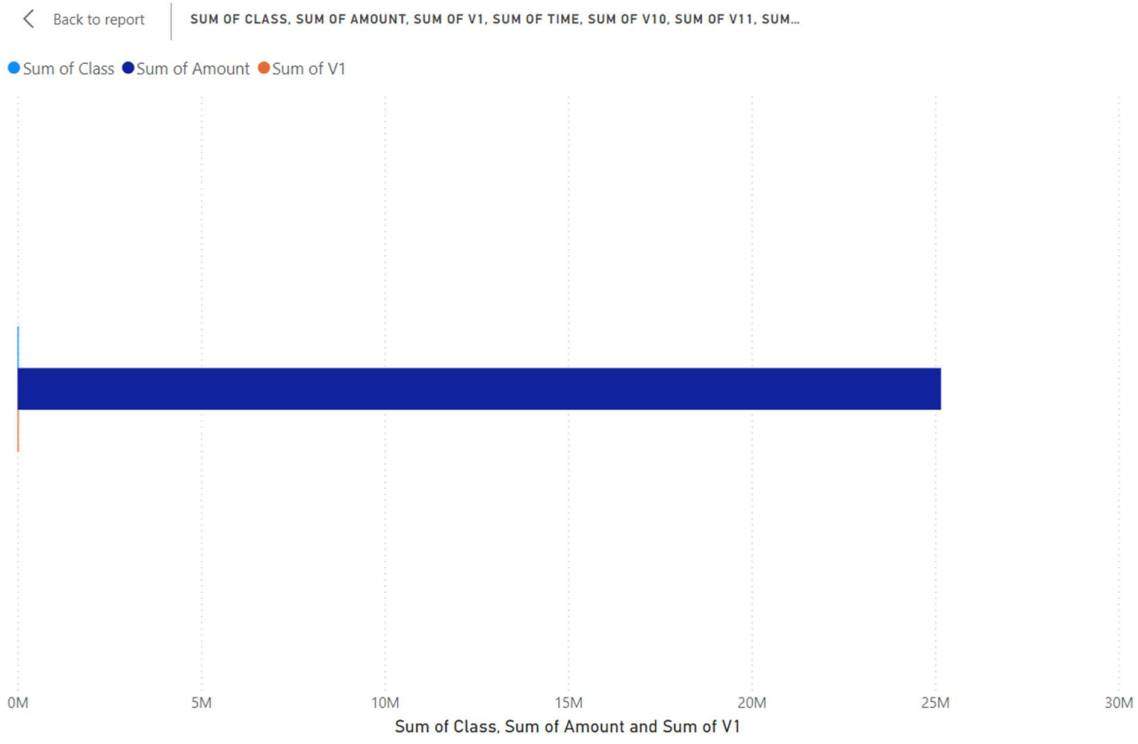
Sum of Class, Sum of Amount and Sum of V1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Sum of Class
Sum of Amount
Sum of V1
0M
5M
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Sum of Class, Sum of Amount and Sum of V1

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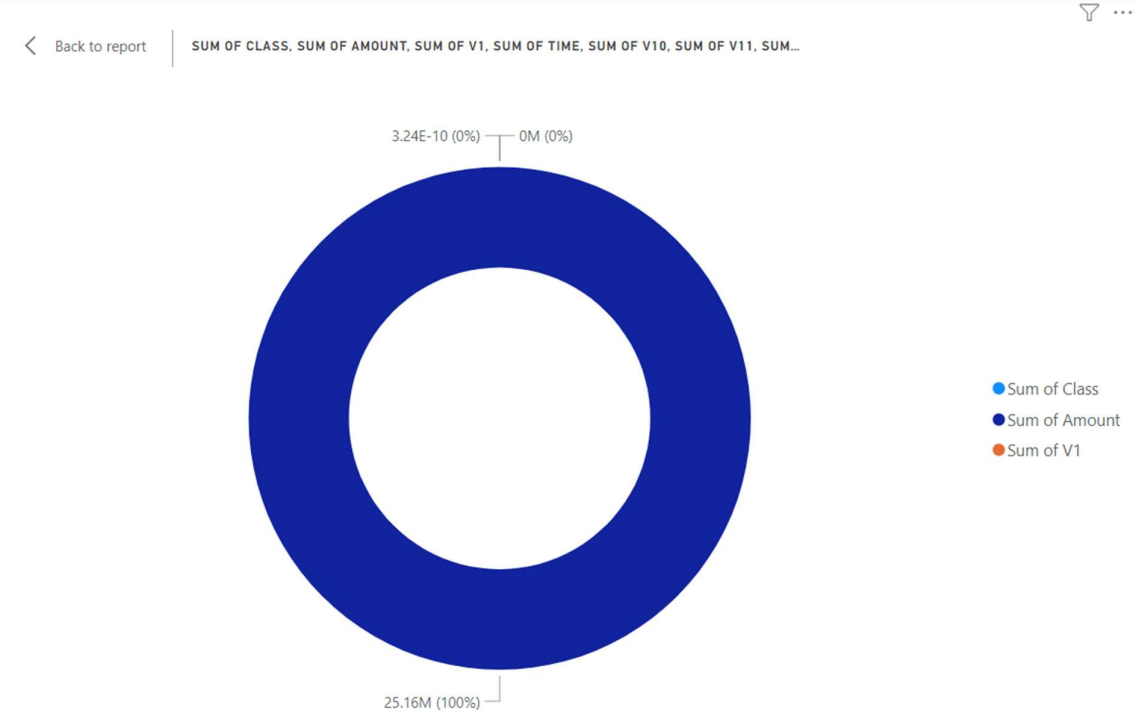
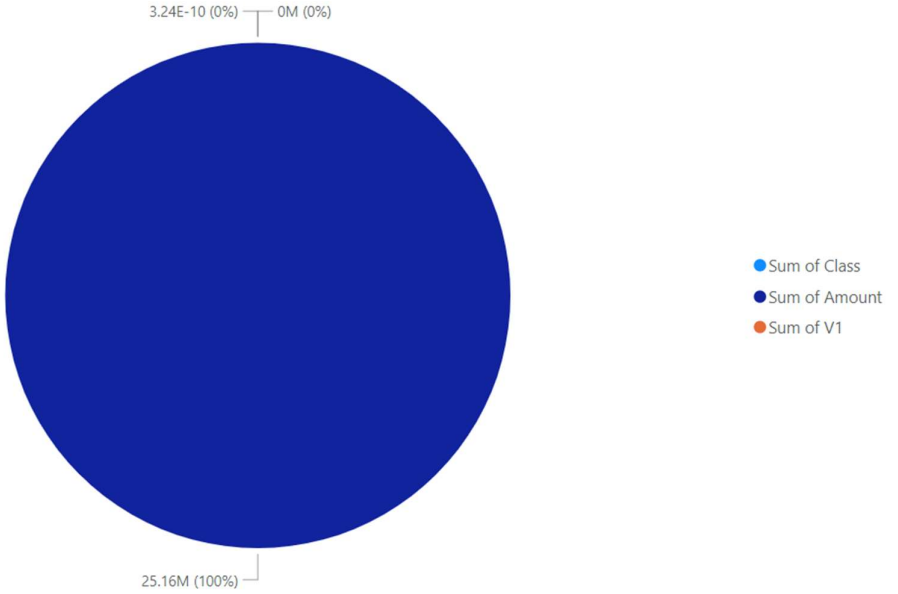
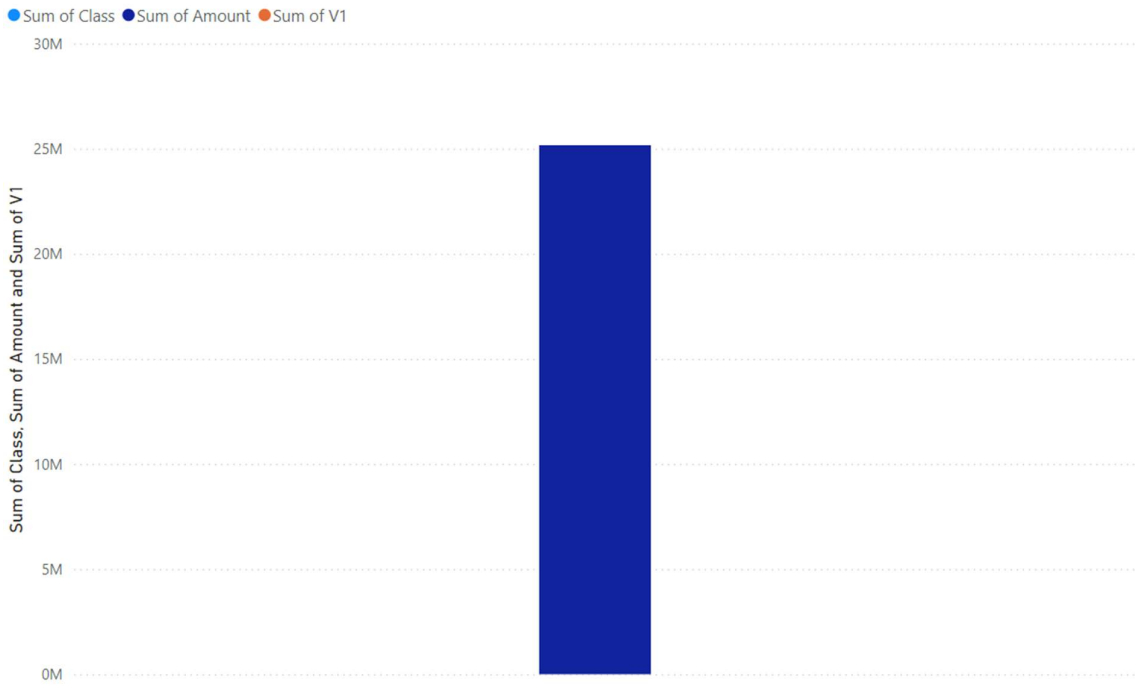
SUM OF CLASS, SUM OF AMOUNT, SUM OF V1, SUM OF TIME, SUM OF V10, SUM OF V11, SUM...
Sum of Class
Sum of Amount
Sum of V1
30M
25M
20M
15M
10M
5M
0M
Sum of Class, Sum of Amount and Sum of V1


Back to report
SUM OF CLASS, SUM OF AMOUNT, SUM OF V1, SUM OF TIME, SUM OF V10, SUM OF V11, SUM...
3.24E-10 (0%)
0M (0%)
25.16M (100%)
Sum of Class
Sum of Amount
Sum of V1

Back to report | SUM OF CLASS, SUM OF AMOUNT, SUM OF V1, SUM OF TIME, SUM OF V10, SUM OF V11, SUM...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