# CREDIT CARD FRAUD DETECTION

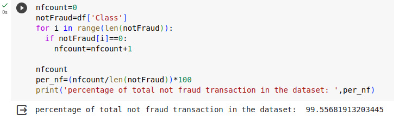
## PHASE 5:SUBMISSION

###### DATASET LINK:“https://www.kaggle.com/datasets/mlg-ulb/creditcardfraud”

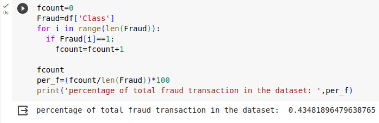


Now we can perform ,

###### PERCENTAGE OF TOTAL NOT FRAUD TRANSACTION

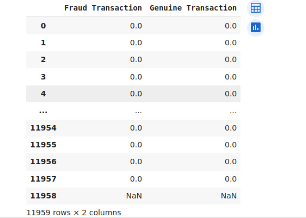


###### PERCENTAGE OF TOTAL FRAUD TRANSACTION

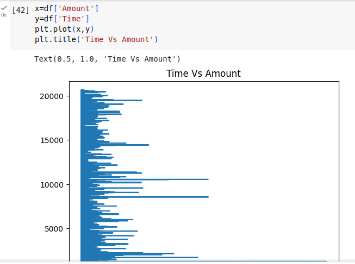


###### FRAUD AND GENUINE TRANSACTION





###### CALCULATING TIME VS AMOUNT

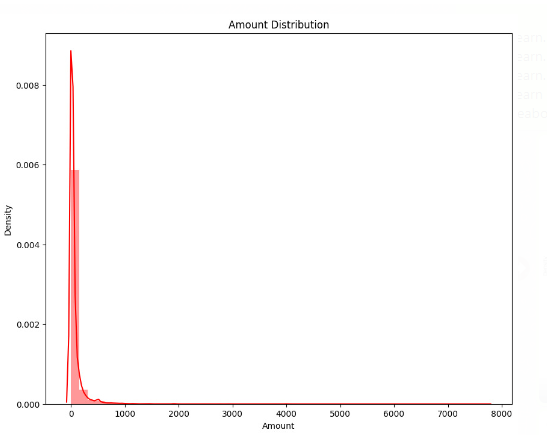


###### CALCULATING AMOUNT DISTRIBUTION

plt.figure(figsize=(10,8),)

plt.title('Amount Distribution')

sns.distplot(df['Amount'],color='red');



###### OUTLIERS

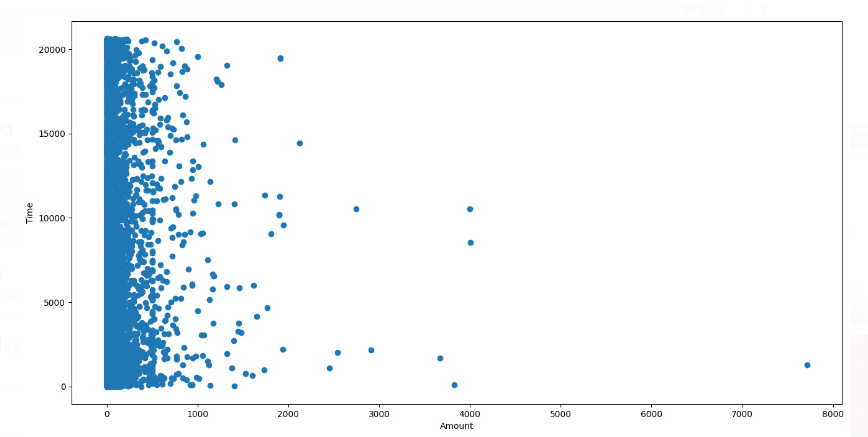
fig, ax=plt.subplots(figsize=(16,8))

ax.scatter(df['Amount'],df['Time'])

ax.set\_xlabel('Amount')

ax.set\_ylabel('Time')

plt.show()

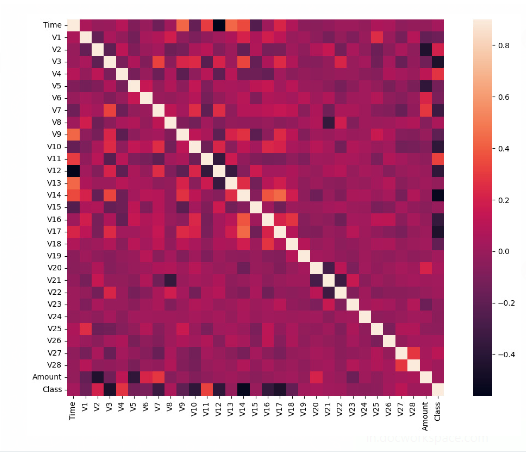


###### CORRELATION\_METRICS

correlation\_metrics=df.corr()

fig=plt.figure(figsize=(14,9))

sns.heatmap(correlation\_metrics,vmax=.9,square=True)

plt.show()

##### ACCURACY SCORE

import pandas as pd

from sklearn.model\_selection import train\_test\_split

from sklearn.linear\_model import LogisticRegression

from sklearn.metrics import accuracy\_score

# Load the dataset

df = pd.read\_csv("creditcard.csv")

# Split the dataset into training and testing data

X\_train, X\_test, y\_train, y\_test = train\_test\_split(df.drop(columns=["Class"]), df["Class"], test\_size=0.25, random\_state=42)

# Create a LogisticRegression model

model = LogisticRegression()

# Train the model

model.fit(X\_train, y\_train)

# Reshape the X\_test variable to a 2D array

X\_test = X\_test.reshape(-1, 1)

# Make predictions on the test data

y\_pred = model.predict(X\_test)

# Calculate the accuracy score

accuracy = accuracy\_score(y\_test, y\_pred)

print("Accuracy score:", accuracy)

OUTPUT:



##### CONCLUSION:

* Credit card fraud detection is a complex but essential task for protecting consumers and financial institutions. Machine learning algorithms are particularly well-suited for fraud detection, as they can learn to identify patterns in transaction data that are associated with fraud.
* In conclusion, credit card fraud detection is an important area of research and development, as fraudsters continue to develop new methods. By using a variety of techniques and by continually adapting their systems, financial institutions can help to protect their customers and reduce the risk of fraud.