In [2]:
```python
import pandas as pd
creditCard = pd.read_csv('/content/creditcard.csv')
```

In [3]:
```python
creditCard
```

Out[3]:

	Time	V1	V2	V3	V4	V5	V6	V7	V8	
0	0	-1.359807	-0.072781	2.536347	1.378155	-0.338321	0.462388	0.239599	0.098698	0.
1	0	1.191857	0.266151	0.166480	0.448154	0.060018	-0.082361	-0.078803	0.085102	-0.
2	1	-1.358354	-1.340163	1.773209	0.379780	-0.503198	1.800499	0.791461	0.247676	-1.
3	1	-0.966272	-0.185226	1.792993	-0.863291	-0.010309	1.247203	0.237609	0.377436	-1.
4	2	-1.158233	0.877737	1.548718	0.403034	-0.407193	0.095921	0.592941	-0.270533	0.
...	...	...	...	...	...	...	...	...	...	
5969	6634	-1.611463	0.190648	0.901715	1.531254	-1.535865	0.799245	1.513786	0.495829	0.
5970	6635	-1.420272	1.449354	1.320110	-1.894320	0.913695	0.454601	0.894179	-0.385450	2.
5971	6637	-1.206696	0.284728	2.152053	-2.850437	-0.437285	-0.238376	-0.333341	0.334679	2.
5972	6644	1.067611	0.091006	-0.153917	0.704233	0.113894	-0.826866	0.567690	-0.464181	0.
5973	6645	-0.535272	-0.132299	2.180041	1.018303	-1.498819	0.529570	0.420147	0.045445	1.

5974 rows × 31 columns

In [4]:
```python
import numpy as np
import matplotlib.pyplot as plt
import matplotlib.font_manager
from sklearn import svm
from matplotlib.pyplot import figure
```

In [5]:
```python
creditCard["Class"].unique()
```

Out[5]:
```
array([ 0.,  1., nan])
```

In [6]:
```python
# Last row is a null interesting.
```

In [7]:
```python
creditCard=creditCard[creditCard["Class"].notnull()]
```

In [8]:
```python
creditCard.isnull().sum()
```

```
Out[8]:   Time      0
          V1        0
          V2        0
          V3        0
          V4        0
          V5        0
          V6        0
          V7        0
          V8        0
          V9        0
          V10       0
          V11       0
          V12       0
          V13       0
          V14       0
          V15       0
          V16       0
          V17       0
          V18       0
          V19       0
          V20       0
          V21       0
          V22       0
          V23       0
          V24       0
          V25       0
          V26       0
          V27       0
          V28       0
          Amount    0
          Class     0
          dtype: int64
```

In [9]:
```python
X = creditCard.drop(columns=['Class'])
```

In [10]:
```python
y = creditCard['Class']
```

the values all look standarized

In [11]:
```python
from sklearn.model_selection import train_test_split

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

In [12]:
```python
X_train
```

Out[12]:

	Time	V1	V2	V3	V4	V5	V6	V7	V8
1881	1448	1.099511	-0.714102	0.303979	-0.177317	-0.401431	0.835766	-0.692951	0.260083	0.1
2835	2412	-0.558177	0.475508	2.479363	1.013296	-0.304118	0.611804	-0.202171	0.434428	-0.0
4095	3739	1.314973	-0.498729	0.780156	-0.412901	-1.146490	-0.740209	-0.780601	-0.086521	0.0
1173	915	-0.846062	1.229172	1.199372	-0.159955	-0.100758	-0.133499	0.225048	0.610909	-0.9
5749	6103	-0.295100	2.607655	-2.742706	1.112940	1.756604	-0.291342	0.711233	0.000777	1.5
...	...	...	...	...	...	...	...	...	...	
3772	3273	-1.321780	-0.900295	1.764513	-0.694127	-1.595632	0.503269	1.358065	0.168836	0.2
5191	4949	1.031677	-0.006787	0.568099	1.583664	-0.348881	0.030754	-0.214084	0.147572	1.0
5226	5025	-1.159628	0.318803	2.420991	-0.499201	0.812783	2.196387	-0.421759	0.789287	1.4
5390	5345	-0.914827	0.834317	2.130190	0.935591	-0.460889	0.029705	0.331374	-0.503894	1.1
860	654	-0.833568	0.606174	-0.051329	-2.091447	0.968764	-0.030220	0.887288	0.099009	0.8

4778 rows × 30 columns

In [14]:
```python
clf = svm.OneClassSVM(nu=0.1, kernel="rbf", gamma=0.1)
clf.fit(X_train)
y_pred_train = clf.predict(X_train)
y_pred_test = clf.predict(X_test)
#y_pred_outliers = clf.predict(X_outliers)

n_error_train = y_pred_train[y_pred_train == -1].size
n_error_test = y_pred_test[y_pred_test == -1].size
#n_error_outliers = y_pred_outliers[y_pred_outliers == 1].size
```

In [15]:
```python
print(n_error_train)
print(n_error_test)
```

```
1734
1165
```

In [ ]: