Import necessary libraries

```
import numpy as np
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LogisticRegression
from sklearn.metrics import accuracy_score
```

Mount Google Drive and load the data

```
# Mount Google Drive if your dataset is stored there
from google.colab import drive
drive.mount('/content/drive')

# Load the credit card fraud dataset from Google Drive
data = pd.read_csv('/content/drive/MyDrive/dataset_folder/creditcard.csv')
```

```
Drive already mounted at /content/drive; to attempt to forcibly remount, call drive.mount("/content/drive", force_remount=True).
```

Displaying dataset

```
data.head()
```

	Time	V1	V2	V3	V4	V5	V6	V7	V8	V9	...	V21	V22	V23	
0	0.0	-1.359807	-0.072781	2.536347	1.378155	-0.338321	0.462388	0.239599	0.098698	0.363787	...	-0.018307	0.277838	-0.110474	0.
1	0.0	1.191857	0.266151	0.166480	0.448154	0.060018	-0.082361	-0.078803	0.085102	-0.255425	...	-0.225775	-0.638672	0.101288	-0.
2	1.0	-1.358354	-1.340163	1.773209	0.379780	-0.503198	1.800499	0.791461	0.247676	-1.514654	...	0.247998	0.771679	0.909412	-0.
3	1.0	-0.966272	-0.185226	1.792993	-0.863291	-0.010309	1.247203	0.237609	0.377436	-1.387024	...	-0.108300	0.005274	-0.190321	-1.
4	2.0	-1.158233	0.877737	1.548718	0.403034	-0.407193	0.095921	0.592941	-0.270533	0.817739	...	-0.009431	0.798278	-0.137458	0.

5 rows × 31 columns

Check dataset information

```
data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 284807 entries, 0 to 284806
Data columns (total 31 columns):
 #   Column  Non-Null Count   Dtype  
---  ------  --------------   -----  
 0   Time    284807 non-null  float64
 1   V1      284807 non-null  float64
 2   V2      284807 non-null  float64
 3   V3      284807 non-null  float64
 4   V4      284807 non-null  float64
 5   V5      284807 non-null  float64
 6   V6      284807 non-null  float64
 7   V7      284807 non-null  float64
 8   V8      284807 non-null  float64
 9   V9      284807 non-null  float64
 10  V10     284807 non-null  float64
 11  V11     284807 non-null  float64
 12  V12     284807 non-null  float64
 13  V13     284807 non-null  float64
 14  V14     284807 non-null  float64
 15  V15     284807 non-null  float64
 16  V16     284807 non-null  float64
 17  V17     284807 non-null  float64
 18  V18     284807 non-null  float64
 19  V19     284807 non-null  float64
 20  V20     284807 non-null  float64
 21  V21     284807 non-null  float64
 22  V22     284807 non-null  float64
 23  V23     284807 non-null  float64
 24  V24     284807 non-null  float64
```

```
 25  V25     284807 non-null  float64
 26  V26     284807 non-null  float64
 27  V27     284807 non-null  float64
 28  V28     284807 non-null  float64
 29  Amount  284807 non-null  float64
 30  Class   284807 non-null  int64
dtypes: float64(30), int64(1)
memory usage: 67.4 MB
```

Check for missing values

```
missing_values = data.isnull().sum()
```

Exploring distribution of legitmate and fradulent transcation

```
class_distribution = data['Class'].value_counts()
```

Separate the data for analysis

```
legitimate_transactions = data[data.Class == 0]
fraudulent_transactions = data[data.Class == 1]
```

Display statistical measures for legitimate transactions

```
legit_stats = legitimate_transactions.Amount.describe()
```

Display statistical measures for fraudulent transactions

```
fraud_stats = fraudulent_transactions.Amount.describe()
```

Create an under-sampled dataset with balanced classes

```
fraud_sample = fraudulent_transactions.sample(n=31)
undersampled_data = pd.concat([fraud_sample, legitimate_transactions], axis=0)
```

Display the class distribution in the undersampled dataset

```
undersampled_class_distribution = undersampled_data['Class'].value_counts()
```

Split the data into features and target

```
X = undersampled_data.drop(columns='Class', axis=1)
Y = undersampled_data['Class']
```

Split the data into training and testing sets

```
X_train, X_test, Y_train, Y_test = train_test_split(X, Y, test_size=0.2, stratify=Y, random_state=2)
```

Initialize and train a logistic regression model with increased max_iter

```
print('Training accuracy: ', train_accuracy)
print('Testing accuracy: ', test_accuracy)
```

```
Training accuracy:  0.999223156092958
Testing accuracy:  0.9991397773954567
```