In [2]:

```
#Import important labories and read dataset

import pandas as pd
import numpy as np

#read dataset
data = pd.read_csv('online_payment.csv')
print(data.head())
```

```
   step      type    amount     nameOrig  oldbalanceOrg  newbalanceOrig  \
0     1   PAYMENT   9839.64  C1231006815       170136.0       160296.36   
1     1   PAYMENT   1864.28  C1666544295        21249.0        19384.72   
2     1  TRANSFER    181.00  C1305486145          181.0            0.00   
3     1  CASH_OUT    181.00   C840083671          181.0            0.00   
4     1   PAYMENT  11668.14  C2048537720        41554.0        29885.86   

      nameDest  oldbalanceDest  newbalanceDest  isFraud  isFlaggedFraud  
0  M1979787155             0.0             0.0        0               0  
1  M2044282225             0.0             0.0        0               0  
2   C553264065             0.0             0.0        1               0  
3    C38997010         21182.0             0.0        1               0  
4  M1230701703             0.0             0.0        0               0  
```

In [4]:

```
# check dataset has any null value or not
print (data.isnull().sum())
```

```
step              0
type              0
amount            0
nameOrig          0
oldbalanceOrg     0
newbalanceOrig    0
nameDest          0
oldbalanceDest    0
newbalanceDest    0
isFraud           0
isFlaggedFraud    0
dtype: int64
```

In [5]:

```
#Exlporing trasaction type
print(data.type.value_counts())
```

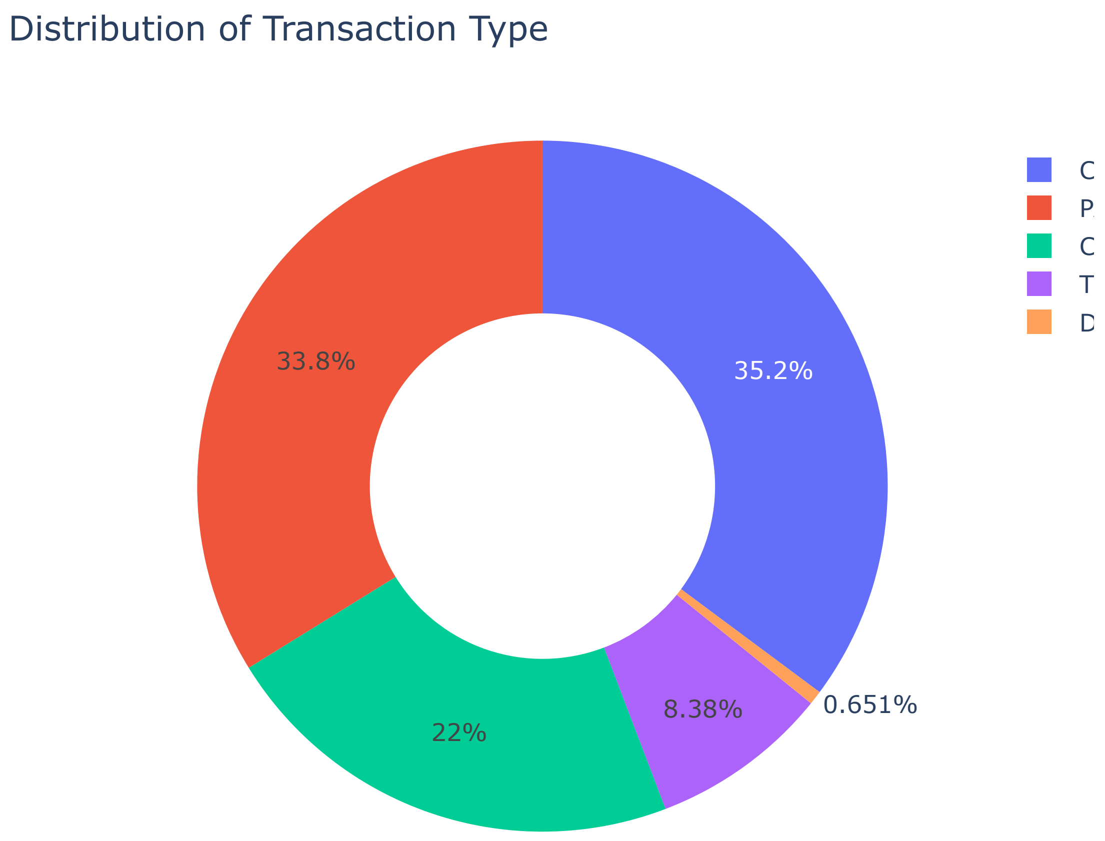
```
CASH_OUT    2237500
PAYMENT     2151495
CASH_IN     1399284
TRANSFER     532909
DEBIT         41432
Name: type, dtype: int64
```

In [ ]:

```
!pip install plotly==5.15.0
```

In [7]:

```
type = data["type"].value_counts()
transactions = type.index
quantity = type.values
import plotly.express as px
figure = px.pie(data, values=quantity, names=transactions,hole = 0.5, title='
figure.show()
```



In [8]:

```
# check correlation b/w the feature of data with the isFraud coloumn

#checking correlation
correlation = data.corr()
print (correlation["isFraud"].sort_values(ascending=False))
```

```
isFraud           1.000000
amount            0.076688
isFlaggedFraud    0.044109
step              0.031578
oldbalanceOrg     0.010154
newbalanceDest    0.000535
oldbalanceDest   -0.005885
newbalanceOrig   -0.008148
Name: isFraud, dtype: float64
```

In [9]:

```
data["type"]= data["type"].map({"CASH_OUT":1,"PAYMENT": 2,"CASH_IN":3,"TRANSI
data["isFraud"]=data["isFraud"].map({0:"No Fraud",1:"Fraud"})
print(data.head())
```

```
   step  type    amount     nameOrig  oldbalanceOrg  newbalanceOrig  \
0     1     2   9839.64  C1231006815       170136.0       160296.36
1     1     2   1864.28  C1666544295        21249.0        19384.72
2     1     4    181.00  C1305486145          181.0            0.00
3     1     1    181.00   C840083671          181.0            0.00
4     1     2  11668.14  C2048537720        41554.0        29885.86

      nameDest  oldbalanceDest  newbalanceDest   isFraud  isFlaggedFraud
0  M1979787155             0.0             0.0  No Fraud               0
1  M2044282225             0.0             0.0  No Fraud               0
2   C553264065             0.0             0.0     Fraud               0
3    C38997010         21182.0             0.0     Fraud               0
4  M1230701703             0.0             0.0  No Fraud               0
```

In [14]:

```
#splitting the data
from sklearn.model_selection import train_test_split
x = np.array(data[["type","amount","oldbalanceOrg","newbalanceOrig"]])
y = np.array(data[["isFraud"]])
```

In [18]:

```
# training a machine learning model
xtrain, xtest, ytrain, ytest = train_test_split(x,y,test_size=0.10, random_s
```

In [19]:

```
from sklearn.tree import DecisionTreeClassifier
```

In [20]:

```
model = DecisionTreeClassifier()
model.fit(xtrain, ytrain)
print(model.score(xtest,ytest))
```

```
0.999732814469511
```

In [21]:

```
#prediction
#features=[type,amount,oldbalanceOrg,newbalanceOrig]
features=np.array([[4,9000.60,9000.60,0.0]])
print(model.predict(features))
```

```
['Fraud']
```

In [ ]:

In [ ]: