MIN MAX AND STANDARD SCALER

Program:

```
import matplotlib.pyplot as plt

from sklearn.preprocessing import MinMaxScaler

from sklearn.preprocessing import StandardScaler

import pandas as pd

data=pd.read_csv("data.csv")

print(data)

print("Min Max Scaler")

numeric_col=data.select_dtypes(include='number').columns

scaler=MinMaxScaler()

data_normalized=pd.DataFrame(scaler.fit_transform(data[numeric_col]),columns=numeric_
col)

print(data_normalized.head())

print("data Scaler")

numeric_col1=data.select_dtypes(include="number").columns

scaler=StandardScaler()

data_standardized=pd.DataFrame(scaler.fit_transform(data[numeric_col1]),columns=numeri
c_col1)

print(data_standardized.head())

plt.figure(figsize=(8,6))

plt.hist(data['Avg_Price'],bins=10)

plt.title("Distribution of Sales", )

plt.xlabel("Avg_Price")

plt.ylabel("Frequency")

plt.show()
```

OUTPUT:

```
PS C:\Users\Kaviya S\Documents\week3> & "C:/Program Files/Python313/python.exe" "c:/Users/Kaviya S/Documents/week3/weekproj3.py"
       Unnamed: 0  CustomerID Gender Location  Tenure_Months  Transaction_ID  ...        Date Offline_Spend Online_Spend Month  Coupon_Code  Discount_pct
0               0     17850.0      M  Chicago           12.0         16679.0  ...  01-01-2019        4500.0        2424.5     1       ELEC10          10.0
1               1     17850.0      M  Chicago           12.0         16680.0  ...  01-01-2019        4500.0        2424.5     1       ELEC10          10.0
2               2     17850.0      M  Chicago           12.0         16696.0  ...  01-01-2019        4500.0        2424.5     1       ELEC10          10.0
3               3     17850.0      M  Chicago           12.0         16699.0  ...  01-01-2019        4500.0        2424.5     1       ELEC10          10.0
4               4     17850.0      M  Chicago           12.0         16700.0  ...  01-01-2019        4500.0        2424.5     1       ELEC10          10.0
...           ...         ...    ...      ...            ...             ...  ...         ...           ...           ...   ...          ...           ...
52950       52950         NaN    NaN      NaN            NaN             NaN  ...         NaN           NaN           NaN    11         GC20          20.0
52951       52951         NaN    NaN      NaN            NaN             NaN  ...         NaN           NaN           NaN    11         NJ20          20.0
52952       52952         NaN    NaN      NaN            NaN             NaN  ...         NaN           NaN           NaN    10        AND10          10.0
52953       52953         NaN    NaN      NaN            NaN             NaN  ...         NaN           NaN           NaN    11        AND20          20.0
52954       52954         NaN    NaN      NaN            NaN             NaN  ...         NaN           NaN           NaN    12        AND30          30.0

[52955 rows x 21 columns]
Min Max Scaler
   Unnamed: 0  CustomerID  Tenure_Months  Transaction_ID  Quantity  Avg_Price  Delivery_Charges       GST  Offline_Spend  Online_Spend  Month  Discount_pct
0    0.000000    0.927068       0.208333        0.000000  0.000000   0.431462          0.012467  0.384615       0.888889      0.496674    0.0           0.0
1    0.000019    0.927068       0.208333        0.000031  0.000000   0.431462          0.012467  0.384615       0.888889      0.496674    0.0           0.0
2    0.000038    0.927068       0.208333        0.000534  0.001112   0.344393          0.012467  0.384615       0.888889      0.496674    0.0           0.0
3    0.000057    0.927068       0.208333        0.000629  0.000000   0.228254          0.012467  0.384615       0.888889      0.496674    0.0           0.0
4    0.000076    0.927068       0.208333        0.000660  0.000000   0.431462          0.012467  0.384615       0.888889      0.496674    0.0           0.0
data Scaler
   Unnamed: 0  CustomerID  Tenure_Months  Transaction_ID  Quantity  Avg_Price  Delivery_Charges       GST  Offline_Spend  Online_Spend     Month  Discount_pct
0   -1.732018    1.417059      -1.048214       -1.818890 -0.173973   1.585350         -0.206292 -0.817509       1.782934      0.658472 -1.695688     -1.224726
1   -1.731953    1.417059      -1.048214       -1.818774 -0.173973   1.585350         -0.206292 -0.817509       1.782934      0.658472 -1.695688     -1.224726
2   -1.731887    1.417059      -1.048214       -1.816924 -0.124233   1.101960         -0.206292 -0.817509       1.782934      0.658472 -1.695688     -1.224726
3   -1.731822    1.417059      -1.048214       -1.816577 -0.173973   0.457179         -0.206292 -0.817509       1.782934      0.658472 -1.695688     -1.224726
4   -1.731756    1.417059      -1.048214       -1.816461 -0.173973   1.585350         -0.206292 -0.817509       1.782934      0.658472 -1.695688     -1.224726
```