quantiumtask1

April 1, 2025

[1]:

```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

[7]:

```
transaction_data =pd.read_excel('QVI_transaction_data.xlsx')
```

[3]:

```
```

[3]:

```
         DATE  STORE_NBR  LYLTY_CARD_NBR  TXN_ID  PROD_NBR  \
0       43390          1            1000       1         5
1       43599          1            1307     348        66
2       43605          1            1343     383        61
3       43329          2            2373     974        69
4       43330          2            2426    1038       108
…       …        …             …     …       …
264831  43533        272          272319  270088        89
264832  43325        272          272358  270154        74
264833  43410        272          272379  270187        51
264834  43461        272          272379  270188        42
264835  43365        272          272380  270189        74

                                       PROD_NAME  PROD_QTY  TOT_SALES
0         Natural Chip        Compny SeaSalt175g         2        6.0
1                       CCs Nacho Cheese    175g         3        6.3
2         Smiths Crinkle Cut  Chips Chicken 170g         2        2.9
3         Smiths Chip Thinly  S/Cream&Onion 175g         5       15.0
4       Kettle Tortilla ChpsHny&Jlpno Chili 150g         3       13.8
…                                          …       …        …
264831   Kettle Sweet Chilli And Sour Cream 175g         2       10.8
264832             Tostitos Splash Of  Lime 175g         1        4.4
264833                  Doritos Mexicana    170g         2        8.8
264834   Doritos Corn Chip Mexican Jalapeno 150g         2        7.8
264835             Tostitos Splash Of  Lime 175g         2        8.8

[264836 rows x 8 columns]
```

[4]:

```
df = pd.read_csv('QVI_purchase_behaviour.csv')
```

[5]:

```
df
```

[5]:

```
       LYLTY_CARD_NBR               LIFESTAGE PREMIUM_CUSTOMER
0                1000   YOUNG SINGLES/COUPLES          Premium
1                1002   YOUNG SINGLES/COUPLES       Mainstream
2                1003          YOUNG FAMILIES           Budget
3                1004   OLDER SINGLES/COUPLES       Mainstream
4                1005  MIDAGE SINGLES/COUPLES       Mainstream
…                 …                     …                 …
72632         2370651  MIDAGE SINGLES/COUPLES       Mainstream
72633         2370701          YOUNG FAMILIES       Mainstream
72634         2370751          YOUNG FAMILIES          Premium
72635         2370961          OLDER FAMILIES           Budget
72636         2373711   YOUNG SINGLES/COUPLES       Mainstream

[72637 rows x 3 columns]
```

[9]:

```
transaction_data.describe()
```

[9]:

```
                DATE     STORE_NBR  LYLTY_CARD_NBR        TXN_ID  \
count  264836.000000  264836.00000    2.648360e+05  2.648360e+05
mean    43464.036260     135.08011    1.355495e+05  1.351583e+05
std       105.389282      76.78418    8.057998e+04  7.813303e+04
min     43282.000000       1.00000    1.000000e+03  1.000000e+00
25%     43373.000000      70.00000    7.002100e+04  6.760150e+04
50%     43464.000000     130.00000    1.303575e+05  1.351375e+05
75%     43555.000000     203.00000    2.030942e+05  2.027012e+05
max     43646.000000     272.00000    2.373711e+06  2.415841e+06

            PROD_NBR       PROD_QTY      TOT_SALES
count  264836.000000  264836.000000  264836.000000
mean       56.583157       1.907309       7.304200
std        32.826638       0.643654       3.083226
min         1.000000       1.000000       1.500000
25%        28.000000       2.000000       5.400000
50%        56.000000       2.000000       7.400000
75%        85.000000       2.000000       9.200000
max       114.000000     200.000000     650.000000
```

[10]:

```
transaction_data.isnull().sum()
```

[10]:

```
DATE              0
STORE_NBR         0
LYLTY_CARD_NBR    0
TXN_ID            0
```

```
PROD_NBR          0
PROD_NAME         0
PROD_QTY          0
TOT_SALES         0
dtype: int64
```

[11]:

```
data_types = transaction_data.dtypes
print(data_types)
```

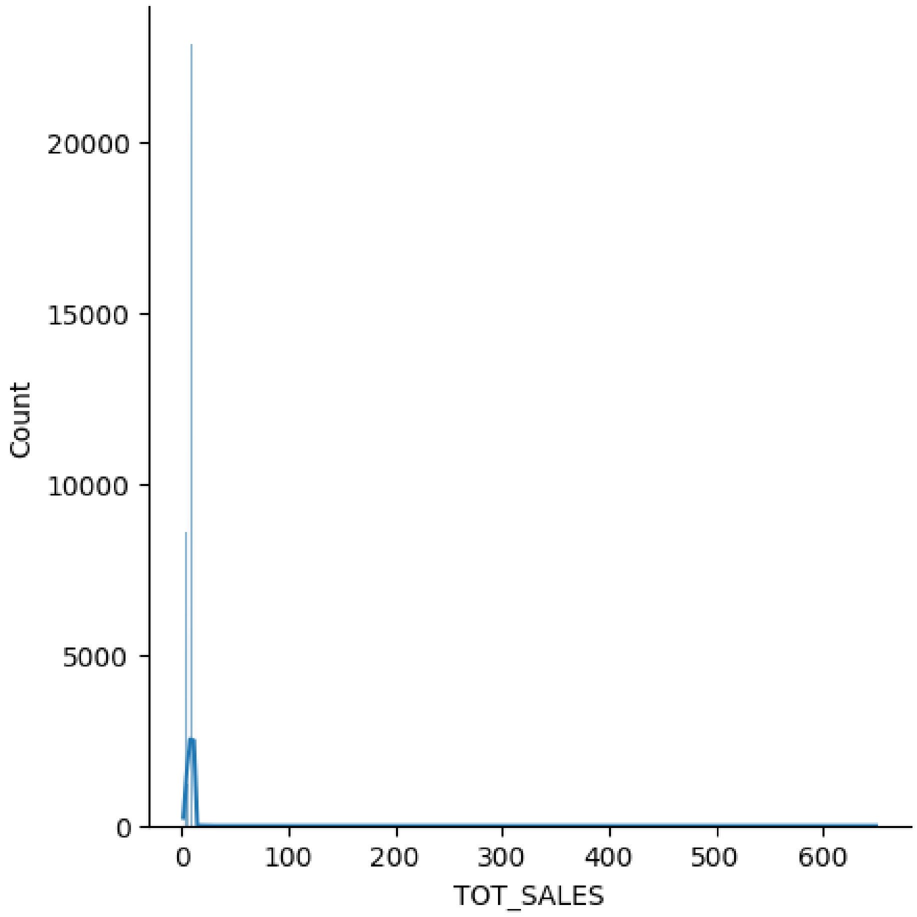
```
DATE                int64
STORE_NBR           int64
LYLTY_CARD_NBR      int64
TXN_ID              int64
PROD_NBR            int64
PROD_NAME          object
PROD_QTY            int64
TOT_SALES         float64
dtype: object
```

[15]:

```
sns.displot(transaction_data.TOT_SALES, kde= True)
```

[15]:

```
<seaborn.axisgrid.FacetGrid at 0x18112c2dca0>
```



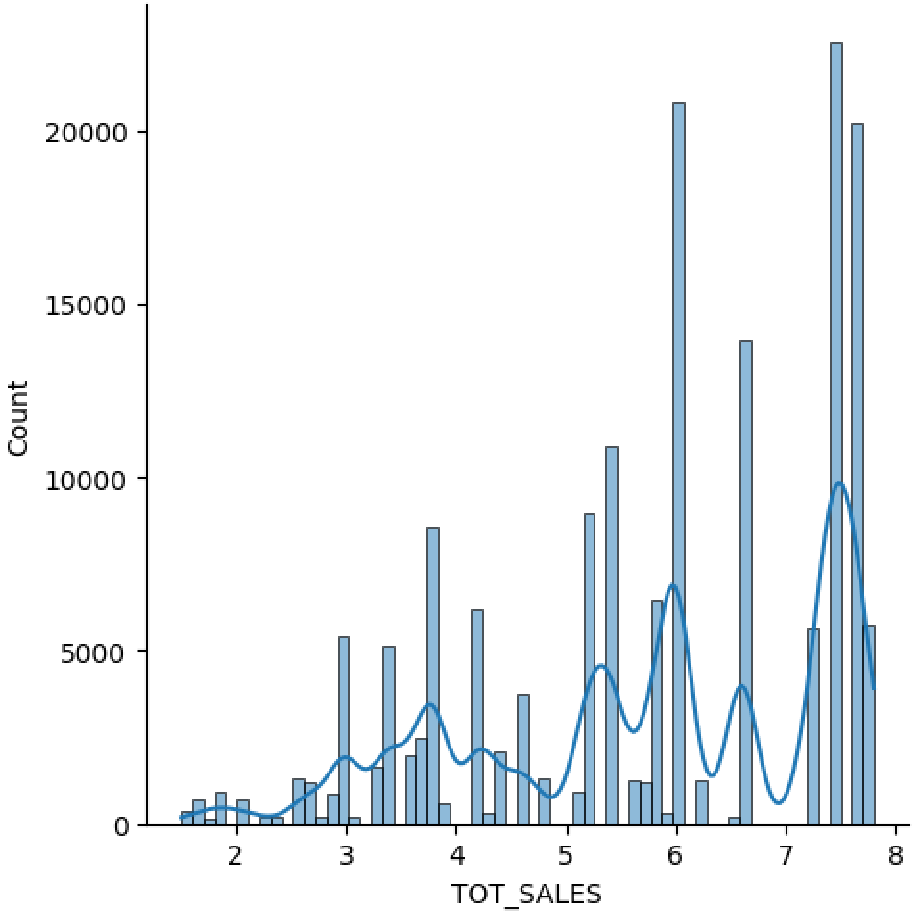
```
[17]: numericdata = transaction_data.select_dtypes(['float','int'])
      numericdata.head()
```

```
[17]:     DATE  STORE_NBR  LYLTY_CARD_NBR  TXN_ID  PROD_NBR  PROD_QTY  TOT_SALES
      0  43390          1            1000       1         5         2        6.0
      1  43599          1            1307     348        66         3        6.3
      2  43605          1            1343     383        61         2        2.9
      3  43329          2            2373     974        69         5       15.0
      4  43330          2            2426    1038       108         3       13.8
```

```
[18]: x = numericdata[numericdata['TOT_SALES']<8.000]
```

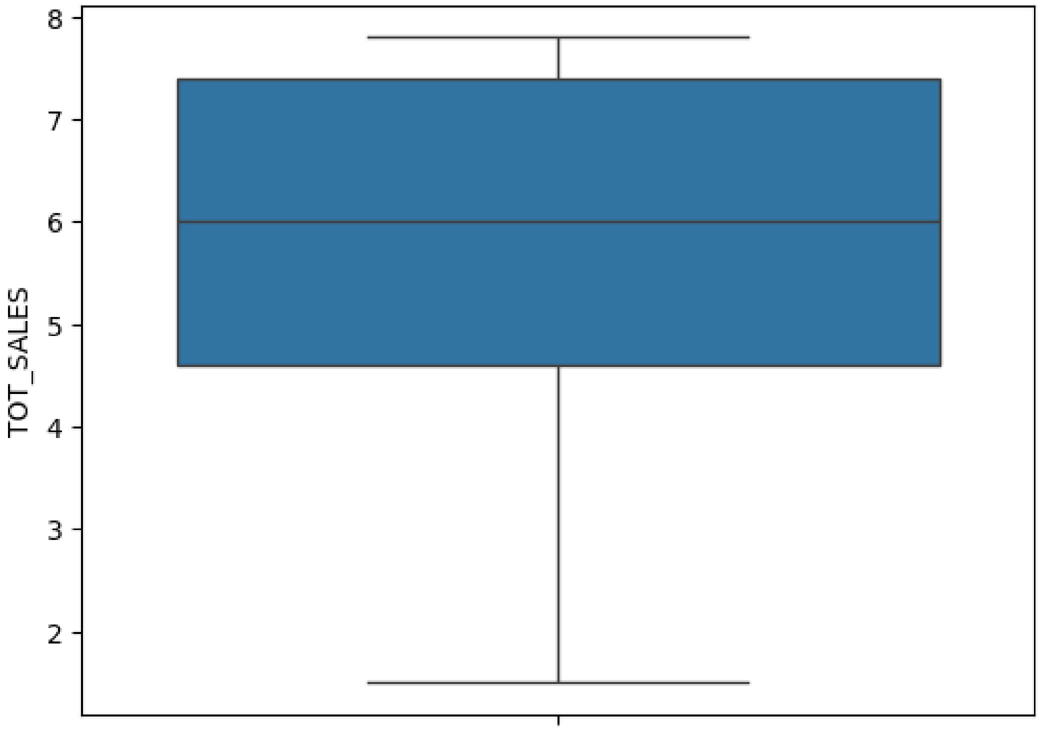
```
[19]: sns.displot(x.TOT_SALES,kde=True)
```

```
[19]: <seaborn.axisgrid.FacetGrid at 0x18110f17140>
```



```
[21]: sns.boxplot(x.TOT_SALES)
```

```
[21]: <Axes: ylabel='TOT_SALES'>
```


8
7
6
5
4
3
2
TOT_SALES

[ ]: