quantium-task-1

June 17, 2024

[1]:
```
import pandas as pd
import numpy as np
import seaborn as sns
```

[2]:
```
pwd
```

[2]:
```
'C:\\Users\\Atharva\\OneDrive\\Desktop\\jupyter'
```

[6]:
```
file_path ="C:/Users/Atharva/OneDrive/Desktop/jupyter/"
```

[11]:
```
transaction_data =pd.read_csv(file_path + "QVI_transaction_data.csv")
```

[12]:
```
transaction_data.head()
```

[12]:
```
    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

                                  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
```

[14]:
```
customer_data =pd.read_csv(file_path + "QVI_purchase_behaviour.csv")
```

[15]:
```
customer_data.head()
```

[15]:
```
   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
```

0.0.1 Summarize Dataset

[16]:
```
transaction_data.describe()
```

[16]:
```
                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
```

0.0.2 Check Null Value

[18]:
```
transaction_data.isnull().sum()
```

[18]:
```
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
```

0.0.3 Check Data Type

[20]:
```
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
```

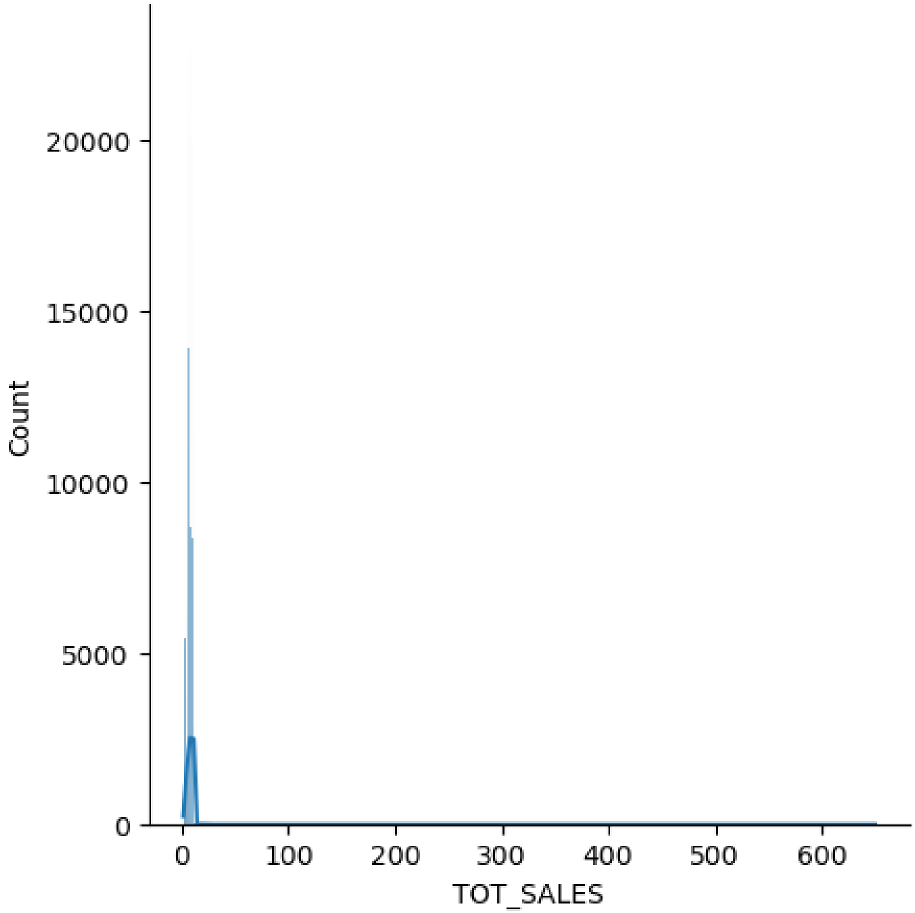
0.0.4 Check Outliers

[21]:
```
import matplotlib.pyplot as plt
import seaborn as sns
```

[22]:
```
sns.displot(transaction_data.TOT_SALES ,kde=True)
```

```
C:\ProgramData\anaconda3\Lib\site-packages\seaborn\_oldcore.py:1119:
FutureWarning: use_inf_as_na option is deprecated and will be removed in a
future version. Convert inf values to NaN before operating instead.
  with pd.option_context('mode.use_inf_as_na', True):
```

[22]:
```
<seaborn.axisgrid.FacetGrid at 0x17ee375ab10>
```



[27]:

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

[27]:

```
    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
```

[28]:

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

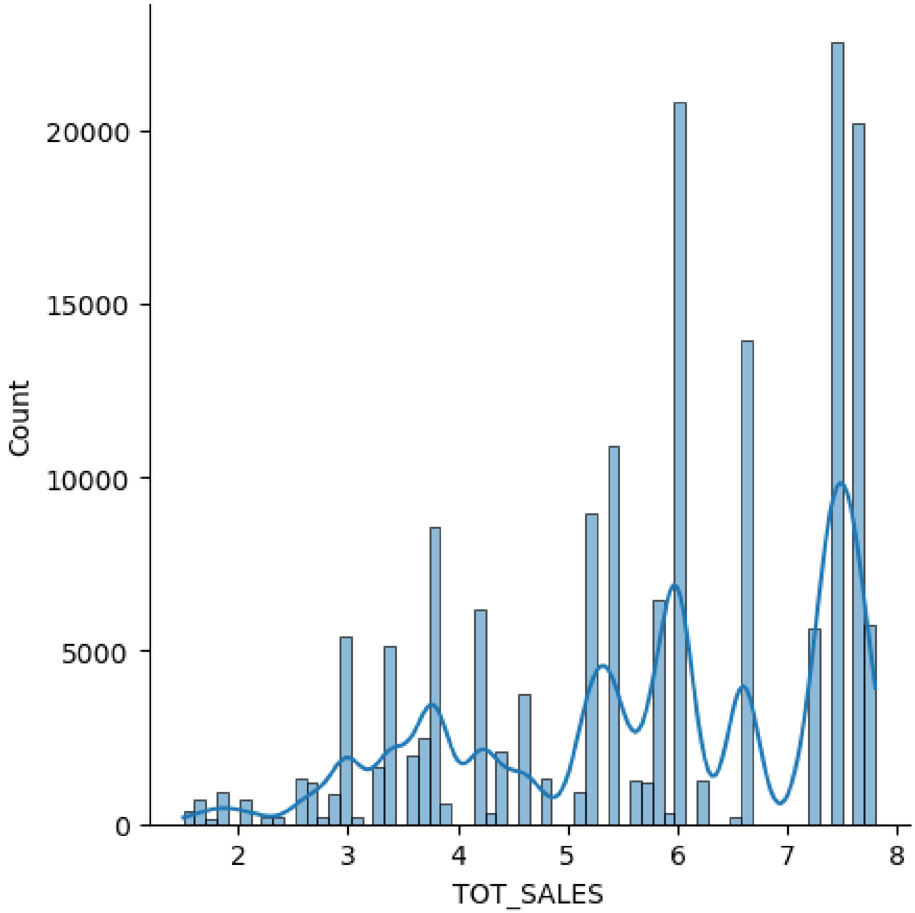
[29]:

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

```
C:\ProgramData\anaconda3\Lib\site-packages\seaborn\_oldcore.py:1119:
FutureWarning: use_inf_as_na option is deprecated and will be removed in a
future version. Convert inf values to NaN before operating instead.
  with pd.option_context('mode.use_inf_as_na', True):
```

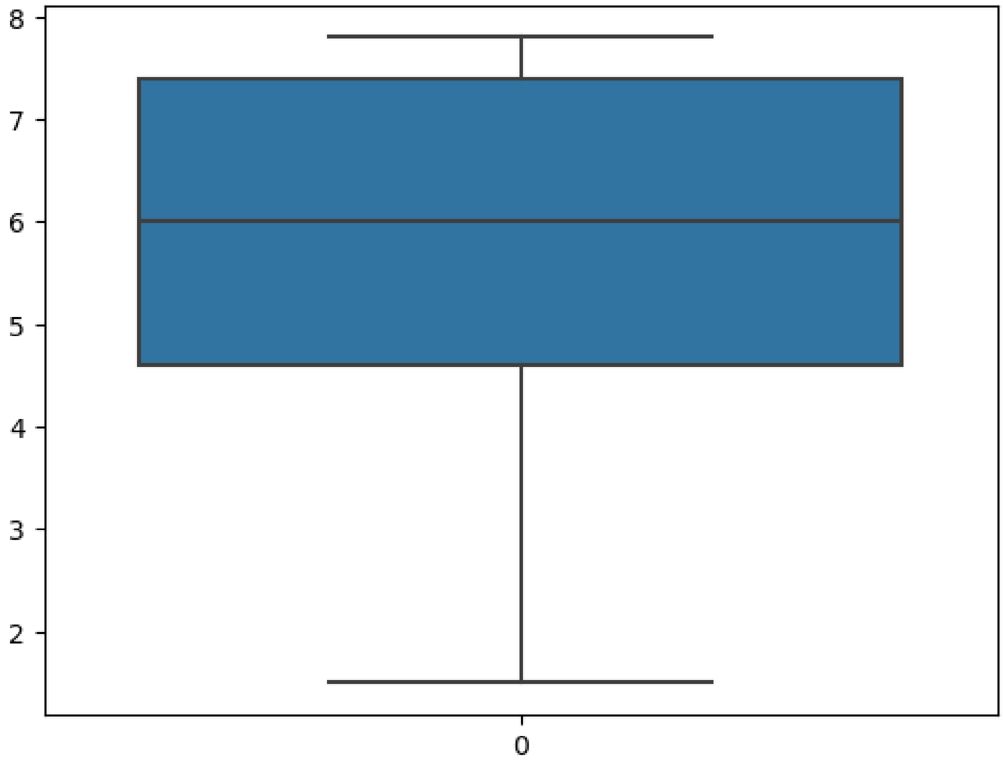
[29]:

```
<seaborn.axisgrid.FacetGrid at 0x17eea864750>
```



[30]:
```
sns.boxplot(x.TOT_SALES)
```

[30]:
```
<Axes: >
```


8
7
6
5
4
3
2
0

```
[ ]:
```