```
import pandas as pd
import numpy as np
import seaborn as sns


transaction_data = pd.read_csv("QVI_trans.csv")

transaction_data.head()
```

	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

```
customer_data = pd.read_csv("QVI_purchase.csv")

customer_data.head()
```

	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

```
transaction_data.describe()
```

	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
```

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

```
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
```

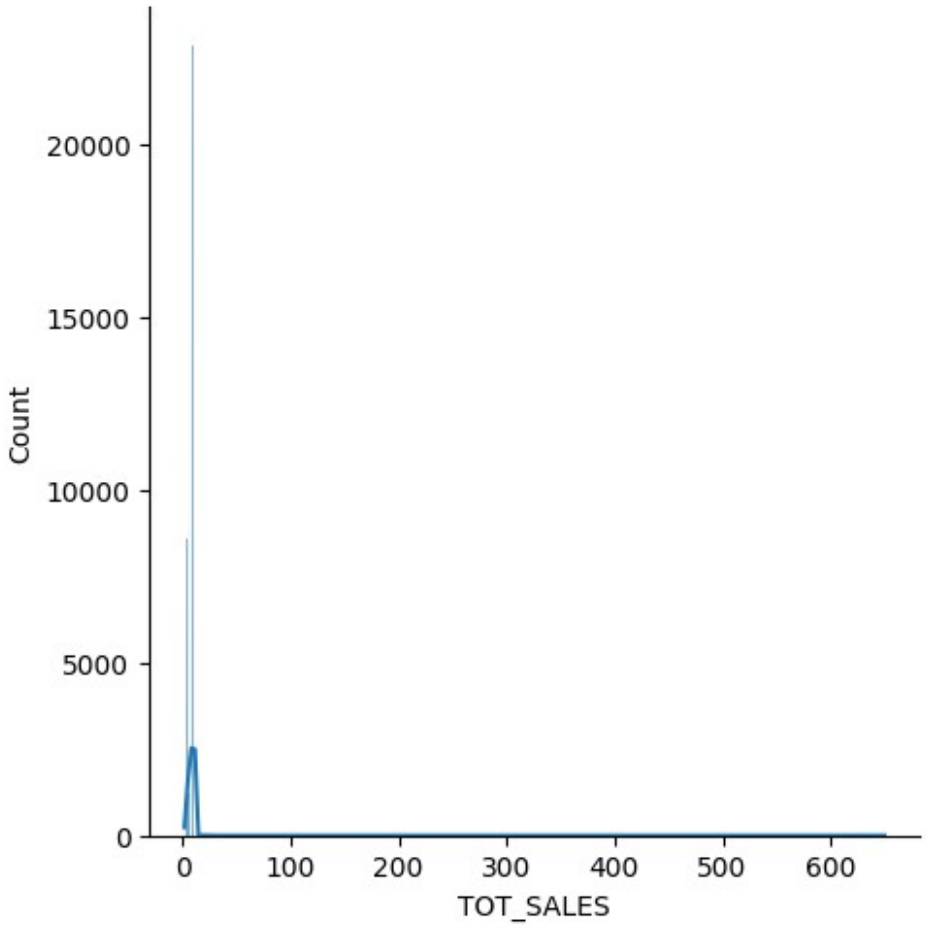
```
data_type =  transaction_data.dtypes
print(data_type)
```

```
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
```

```
import matplotlib.pyplot as plt
import seaborn as sns

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

```
<seaborn.axisgrid.FacetGrid at 0x21ba84d5040>
```

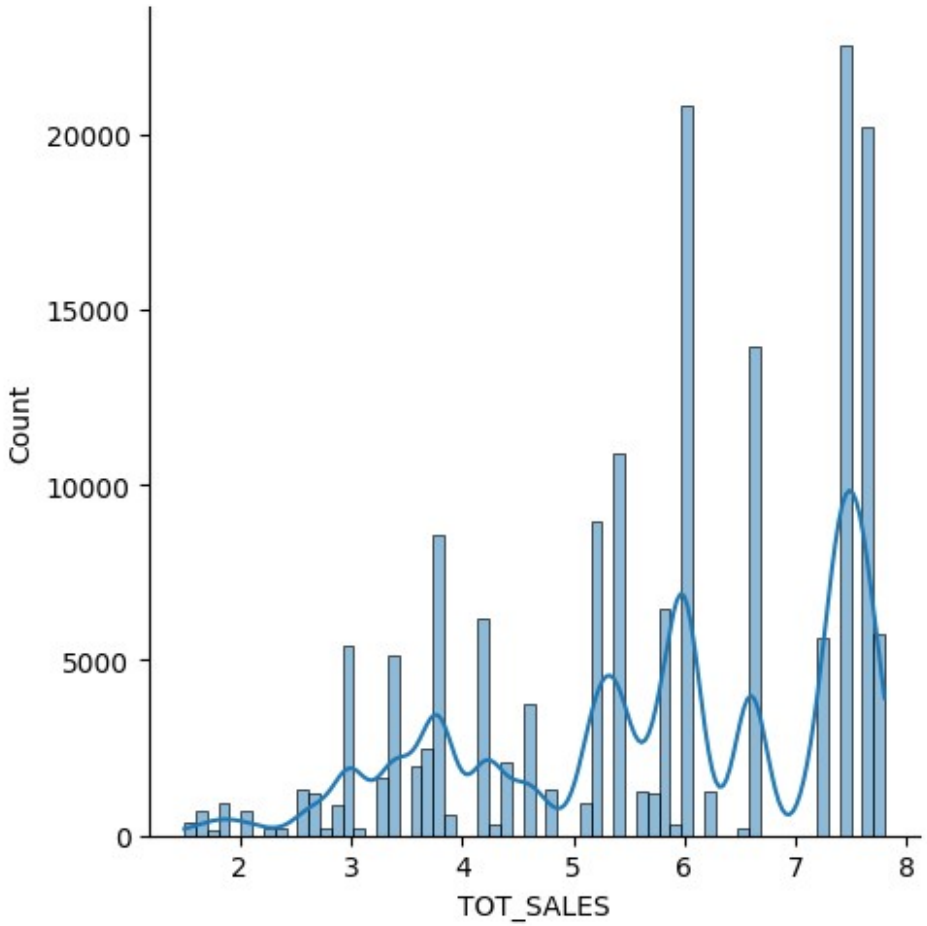



```
numericdata = transaction_data.select_dtypes(['float','int'])
numericdata.head()
```

	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

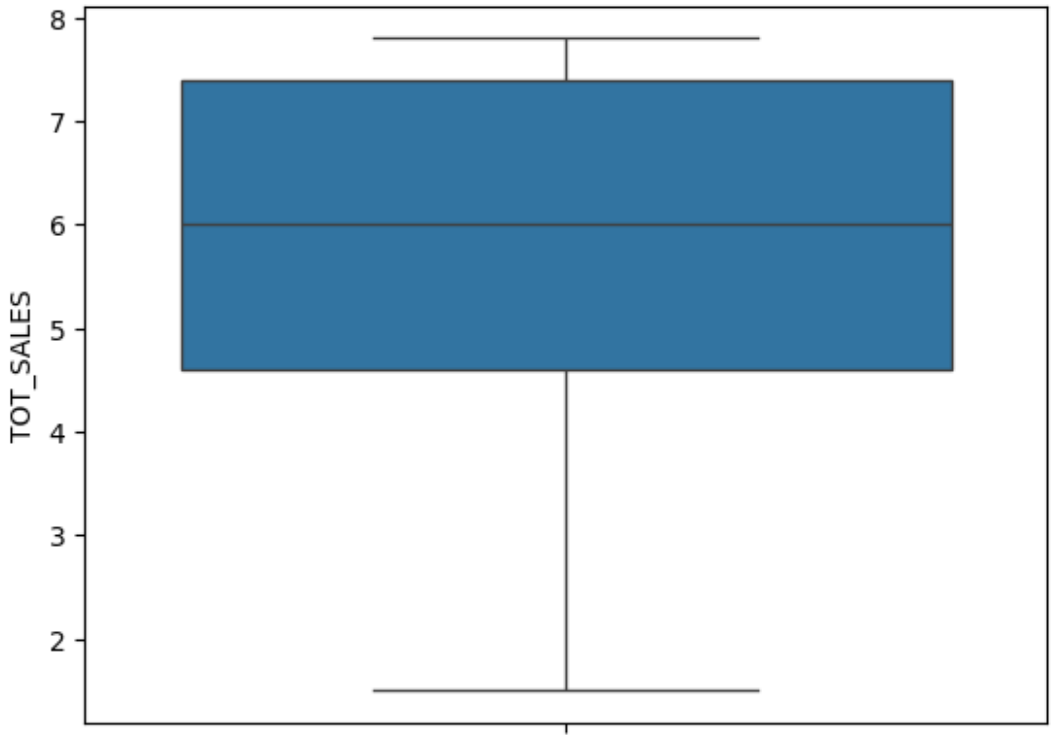
```
x = numericdata[numericdata['TOT_SALES']<8.000]
sns.displot(x.TOT_SALES, kde = True)
```

```
<seaborn.axisgrid.FacetGrid at 0x21ba84eda30>
```




```
sns.boxplot(x.TOT_SALES)
```

```
<Axes: ylabel='TOT_SALES'>
```


8
7
6
5
4
3
2
TOT_SALES