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

```
from google.colab import files
uploaded= files.upload()
```

Choose Files QVI_transa…n_data.xlsx

- **QVI_transaction_data.xlsx**(application/vnd.openxmlformats-officedocument.spreadsheetml.sheet) - 11979155 bytes, last modified: 6/3/2025 - 100% done

Saving QVI_transaction_data.xlsx to QVI_transaction_data.xlsx

```
transaction_data= pd.read_excel('/content/QVI_transaction_data.xlsx')
transaction_data.head(5)
```

	DATE	STORE_NBR	LYLTY_CARD_NBR	TXN_ID	PROD_NBR	PROD_NAME	PROD_QTY	TOT_SALES
0	43390	1	1000	1	5	Natural Chip Compny SeaSalt175g	2	6.0
1	43599	1	1307	348	66	CCs Nacho Cheese 175g	3	6.3
2	43605	1	1343	383	61	Smiths Crinkle Cut Chips Chicken 170g	2	2.9
3	43329	2	2373	974	69	Smiths Chip Thinly S/Cream&Onion 175g	5	15.0
4	43330	2	2426	1038	108	Kettle Tortilla ChpsHny&Jlpno Chili 150g	3	13.8

```
from google.colab import files
uploaded= files.upload()
```

Choose Files QVI_purch…ehaviour.csv

- **QVI_purchase_behaviour.csv**(text/csv) - 2452463 bytes, last modified: 6/3/2025 - 100% done

Saving QVI_purchase_behaviour.csv to QVI_purchase_behaviour.csv

```
purchase_behaviour= pd.read_csv('/content/QVI_purchase_behaviour.csv')
purchase_behaviour.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

Next steps: Generate code with purchase_behaviour View recommended plots New interactive sheet

```
transaction_data.describe()
```

	DATE	STORE_NBR	LYLTY_CARD_NBR	TXN_ID	PROD_NBR	PROD_QTY	TOT_SALES
count	264836.000000	264836.00000	2.648360e+05	2.648360e+05	264836.000000	264836.000000	264836.000000
mean	43464.036260	135.08011	1.355495e+05	1.351583e+05	56.583157	1.907309	7.304200
std	105.389282	76.78418	8.057998e+04	7.813303e+04	32.826638	0.643654	3.083226
min	43282.000000	1.00000	1.000000e+03	1.000000e+00	1.000000	1.000000	1.500000
25%	43373.000000	70.00000	7.002100e+04	6.760150e+04	28.000000	2.000000	5.400000
50%	43464.000000	130.00000	1.303575e+05	1.351375e+05	56.000000	2.000000	7.400000
75%	43555.000000	203.00000	2.030942e+05	2.027012e+05	85.000000	2.000000	9.200000
max	43646.000000	272.00000	2.373711e+06	2.415841e+06	114.000000	200.000000	650.000000

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

```
                0
DATE            0
STORE_NBR       0
LYLTY_CARD_NBR  0
TXN_ID          0
PROD_NBR        0
PROD_NAME       0
PROD_QTY        0
TOT_SALES       0
```

```
transaction_data.dtypes
```

```
                      0
DATE              int64
STORE_NBR         int64
LYLTY_CARD_NBR    int64
TXN_ID            int64
PROD_NBR          int64
PROD_NAME        object
PROD_QTY          int64
TOT_SALES       float64
```

now come on outlier

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

```
sns.distplot(transaction_data['TOT_SALES'], kde= True)
```

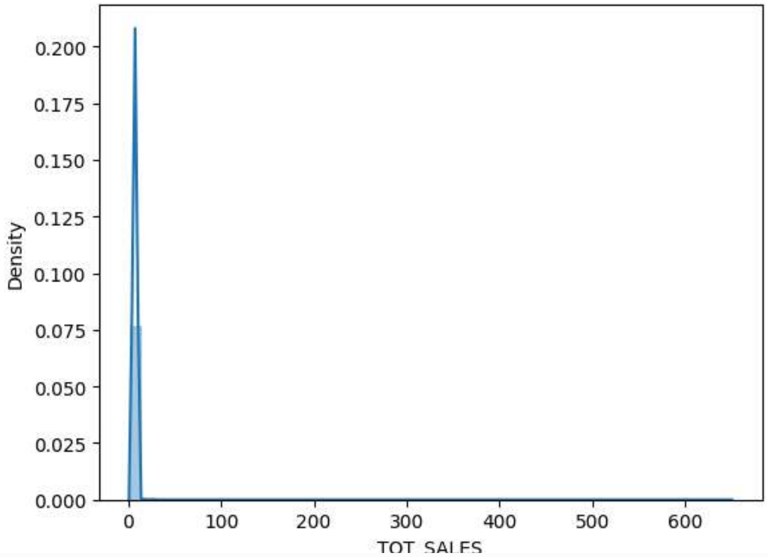
```
<ipython-input-16-8cb2e9261753>:1: UserWarning:

`distplot` is a deprecated function and will be removed in seaborn v0.14.0.

Please adapt your code to use either `displot` (a figure-level function with
similar flexibility) or `histplot` (an axes-level function for histograms).

For a guide to updating your code to use the new functions, please see
https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751

  sns.distplot(transaction_data['TOT_SALES'], kde= True)
<Axes: xlabel='TOT_SALES', ylabel='Density'>
```



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

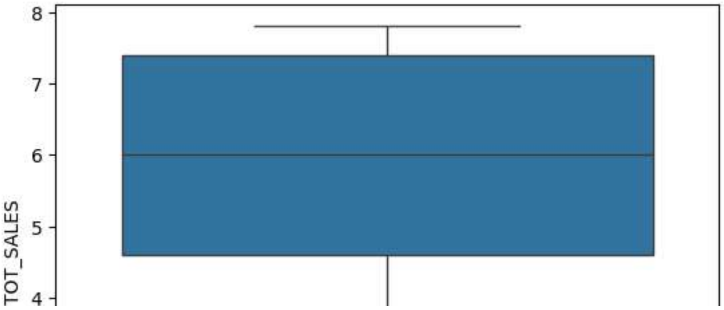
	DATE	STORE_NBR	LYLTY_CARD_NBR	TXN_ID	PROD_NBR	PROD_QTY	TOT_SALES
0	43390	1	1000	1	5	2	6.0
1	43599	1	1307	348	66	3	6.3
2	43605	1	1343	383	61	2	2.9
3	43329	2	2373	974	69	5	15.0
4	43330	2	2426	1038	108	3	13.8

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

```
<seaborn.axisgrid.FacetGrid at 0x7dfe11f689d0>
```

```
sns.boxplot(x.TOT_SALES)
plt.figure(figsize=(4, 2))
```

```
<Figure size 400x200 with 0 Axes>
```


TOT_SALES