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

```python
# Step 1: Load DataSet
basket=pd.read_csv('BigBasket Products.csv')
basket
```

| | index | product | category | sub_category | brand | sale_price | market_price | type | rating | description |
|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 1 | Garlic Oil - Vegetarian Capsule 500 mg | Beauty & Hygiene | Hair Care | Sri Sri Ayurveda | 220.00 | 220.0 | Hair Oil & Serum | 4.1 | This Product contains Garlic Oil that is known... |
| **1** | 2 | Water Bottle - Orange | Kitchen, Garden & Pets | Storage & Accessories | Mastercook | 180.00 | 180.0 | Water & Fridge Bottles | 2.3 | Each product is microwave safe (without lid), ... |
| **2** | 3 | Brass Angle Deep - Plain, No.2 | Cleaning & Household | Pooja Needs | Trm | 119.00 | 250.0 | Lamp & Lamp Oil | 3.4 | A perfect gift for all occasions, be it your m... |
| **3** | 4 | Cereal Flip Lid Container/Storage Jar - Assort... | Cleaning & Household | Bins & Bathroom Ware | Nakoda | 149.00 | 176.0 | Laundry, Storage Baskets | 3.7 | Multipurpose container with an attractive desi... |
| **4** | 5 | Creme Soft Soap - For Hands & Body | Beauty & Hygiene | Bath & Hand Wash | Nivea | 162.00 | 162.0 | Bathing Bars & Soaps | 4.4 | Nivea Creme Soft Soap gives your skin the best... |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **27550** | 27551 | Wottagirl! Perfume Spray - Heaven, Classic | Beauty & Hygiene | Fragrances & Deos | Layerr | 199.20 | 249.0 | Perfume | 3.9 | Layerr brings you Wottagirl Classic fragrant b... |
| **27551** | 27552 | Rosemary | Gourmet & World Food | Cooking & Baking Needs | Puramate | 67.50 | 75.0 | Herbs, Seasonings & Rubs | 4.0 | Puramate rosemary is enough to transform a dis... |

Next steps:  [ Generate code with `basket` ]   [ ⦿ View recommended plots ]   [ New interactive sheet ]

Start coding or generate with AI.

```python
# Step 4: Find Information about the DataFrame.

basket.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 27555 entries, 0 to 27554
Data columns (total 10 columns):
 #   Column         Non-Null Count  Dtype
---  ------         --------------  -----
 0   index          27555 non-null  int64
 1   product        27554 non-null  object
 2   category       27555 non-null  object
 3   sub_category   27555 non-null  object
 4   brand          27554 non-null  object
 5   sale_price     27549 non-null  float64
 6   market_price   27555 non-null  float64
 7   type           27555 non-null  object
 8   rating         18919 non-null  float64
 9   description    27440 non-null  object
dtypes: float64(3), int64(1), object(6)
memory usage: 2.1+ MB
```

```python
# Step 2: Use head function to look for first 12 rows.
basket.head(12)
```

| index | | product | category | sub_category | brand | sale_price | market_price | type | rating | description |
|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 1 | Garlic Oil - Vegetarian Capsule 500 mg | Beauty & Hygiene | Hair Care | Sri Sri Ayurveda | 220.0 | 220.0 | Hair Oil & Serum | 4.1 | This Product contains Garlic Oil that is known... |
| **1** | 2 | Water Bottle - Orange | Kitchen, Garden & Pets | Storage & Accessories | Mastercook | 180.0 | 180.0 | Water & Fridge Bottles | 2.3 | Each product is microwave safe (without lid), ... |
| **2** | 3 | Brass Angle Deep - Plain, No.2 | Cleaning & Household | Pooja Needs | Trm | 119.0 | 250.0 | Lamp & Lamp Oil | 3.4 | A perfect gift for all occasions, be it your m... |
| **3** | 4 | Cereal Flip Lid Container/Storage Jar - Assort... | Cleaning & Household | Bins & Bathroom Ware | Nakoda | 149.0 | 176.0 | Laundry, Storage Baskets | 3.7 | Multipurpose container with an attractive desi... |
| **4** | 5 | Creme Soft Soap - For Hands & Body | Beauty & Hygiene | Bath & Hand Wash | Nivea | 162.0 | 162.0 | Bathing Bars & Soaps | 4.4 | Nivea Creme Soft Soap gives your skin the best... |
| **5** | 6 | Germ - Removal Multipurpose Wipes | Cleaning & Household | All Purpose Cleaners | Nature Protect | 169.0 | 199.0 | Disinfectant Spray & Cleaners | 3.3 | Stay protected from contamination with Multipu... |
| **6** | 7 | Multani Mati | Beauty & Hygiene | Skin Care | Satinance | 58.0 | 58.0 | Face Care | 3.6 | Satinance multani matti is an excellent skin t... |
| **7** | 8 | Hand Sanitizer - 70% Alcohol Based | Beauty & Hygiene | Bath & Hand Wash | Bionova | 250.0 | 250.0 | Hand Wash & Sanitizers | 4.0 | 70%Alcohol based is gentle of hand... |

Next steps: | Generate code with `basket` | View recommended plots | New interactive sheet |

```
# Step 3: Get Description of the data in the DataFrame.
basket.describe()
```

| | index | sale_price | market_price | rating |
|---|---|---|---|---|
| **count** | 27555.00000 | 27549.000000 | 27555.000000 | 18919.000000 |
| **mean** | 13778.00000 | 334.648391 | 382.056664 | 3.943295 |
| **std** | 7954.58767 | 1202.102113 | 581.730717 | 0.739217 |
| **min** | 1.00000 | 2.450000 | 3.000000 | 1.000000 |
| **25%** | 6889.50000 | 95.000000 | 100.000000 | 3.700000 |
| **50%** | 13778.00000 | 190.320000 | 220.000000 | 4.100000 |
| **75%** | 20666.50000 | 359.000000 | 425.000000 | 4.300000 |
| **max** | 27555.00000 | 112475.000000 | 12500.000000 | 5.000000 |

```
basket.isnull().sum()
```

| | 0 |
|---|---|
| **index** | 0 |
| **product** | 1 |
| **category** | 0 |
| **sub_category** | 0 |
| **brand** | 1 |
| **sale_price** | 6 |
| **market_price** | 0 |
| **type** | 0 |
| **rating** | 8636 |
| **description** | 115 |

dtype: int64

```
basket.head()
```

| | index | product | category | sub_category | brand | sale_price | market_price | type | rating | description |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | Garlic Oil - Vegetarian Capsule 500 mg | Beauty & Hygiene | Hair Care | Sri Sri Ayurveda | 220.0 | 220.0 | Hair Oil & Serum | 4.1 | This Product contains Garlic Oil that is known... |
| 1 | 2 | Water Bottle - Orange | Kitchen, Garden & Pets | Storage & Accessories | Mastercook | 180.0 | 180.0 | Water & Fridge Bottles | 2.3 | Each product is microwave safe (without lid), ... |
| 2 | 3 | Brass Angle Deep - Plain, No.2 | Cleaning & Household | Pooja Needs | Trm | 119.0 | 250.0 | Lamp & Lamp Oil | 3.4 | A perfect gift for all occasions, be it your m... |
| 3 | 4 | Cereal Flip Lid Container/Storage | Cleaning & ... | Bins & Bathroom | Nakoda | 149.0 | 176.0 | Laundry, Storage | 3.7 | Multipurpose container with an... |

Next steps: Generate code with `basket`  |  View recommended plots  |  New interactive sheet

```
basket["product"]= basket["product"].str.replace('-', '', regex=False)
basket
```

| | index | product | category | sub_category | brand | sale_price | market_price | type | rating | description |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | Garlic Oil Vegetarian Capsule 500 mg | Beauty & Hygiene | Hair Care | Sri Sri Ayurveda | 220.00 | 220.0 | Hair Oil & Serum | 4.1 | This Product contains Garlic Oil that is known... |
| 1 | 2 | Water Bottle Orange | Kitchen, Garden & Pets | Storage & Accessories | Mastercook | 180.00 | 180.0 | Water & Fridge Bottles | 2.3 | Each product is microwave safe (without lid), ... |
| 2 | 3 | Brass Angle Deep Plain, No.2 | Cleaning & Household | Pooja Needs | Trm | 119.00 | 250.0 | Lamp & Lamp Oil | 3.4 | A perfect gift for all occasions, be it your m... |
| 3 | 4 | Cereal Flip Lid Container/Storage Jar Assorte... | Cleaning & Household | Bins & Bathroom Ware | Nakoda | 149.00 | 176.0 | Laundry, Storage Baskets | 3.7 | Multipurpose container with an attractive desi... |
| 4 | 5 | Creme Soft Soap For Hands & Body | Beauty & Hygiene | Bath & Hand Wash | Nivea | 162.00 | 162.0 | Bathing Bars & Soaps | 4.4 | Nivea Creme Soft Soap gives your skin the best... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 27550 | 27551 | Wottagirl! Perfume Spray Heaven, Classic | Beauty & Hygiene | Fragrances & Deos | Layerr | 199.20 | 249.0 | Perfume | 3.9 | Layerr brings you Wottagirl Classic fragrant b... |
| 27551 | 27552 | Rosemary | Gourmet & World Food | Cooking & Baking Needs | Puramate | 67.50 | 75.0 | Herbs, Seasonings & Rubs | 4.0 | Puramate rosemary is enough to transform a dis... |

Next steps: Generate code with `basket`  |  View recommended plots  |  New interactive sheet

```
basket["product"]= basket["product"].str.replace('-', '', regex=False)
basket
```

| | index | product | category | sub_category | brand | sale_price | market_price | type | rating | description |
|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 1 | Garlic Oil Vegetarian Capsule 500 mg | Beauty & Hygiene | Hair Care | Sri Sri Ayurveda | 220.00 | 220.0 | Hair Oil & Serum | 4.1 | This Product contains Garlic Oil that is known... |
| **1** | 2 | Water Bottle Orange | Kitchen, Garden & Pets | Storage & Accessories | Mastercook | 180.00 | 180.0 | Water & Fridge Bottles | 2.3 | Each product is microwave safe (without lid), ... |
| **2** | 3 | Brass Angle Deep Plain, No.2 | Cleaning & Household | Pooja Needs | Trm | 119.00 | 250.0 | Lamp & Lamp Oil | 3.4 | A perfect gift for all occasions, be it your m... |
| **3** | 4 | Cereal Flip Lid Container/Storage Jar Assorte... | Cleaning & Household | Bins & Bathroom Ware | Nakoda | 149.00 | 176.0 | Laundry, Storage Baskets | 3.7 | Multipurpose container with an attractive desi... |
| **4** | 5 | Creme Soft Soap For Hands & Body | Beauty & Hygiene | Bath & Hand Wash | Nivea | 162.00 | 162.0 | Bathing Bars & Soaps | 4.4 | Nivea Creme Soft Soap gives your skin the best... |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **27550** | 27551 | Wottagirl! Perfume Spray Heaven, Classic | Beauty & Hygiene | Fragrances & Deos | Layerr | 199.20 | 249.0 | Perfume | 3.9 | Layerr brings you Wottagirl Classic fragrant b... |
| **27551** | 27552 | Rosemary | Gourmet & World Food | Cooking & Baking Needs | Puramate | 67.50 | 75.0 | Herbs, Seasonings & Rubs | 4.0 | Puramate rosemary is enough to transform a dis... |

Next steps: | Generate code with `basket` | ◑ View recommended plots | New interactive sheet |

```
product_counts = basket.groupby('product')['product'].count().reset_index(name='count')
print(product_counts)
```

```
                                product  count
0                      & Moms  Citrus Soap      1
1                      & Moms  Sandal Soap      1
2            & Moms Bathing Soap  Jasmine      1
3               & Moms Bathing Soap  Tulsi      1
4                 0.0 Non Alcoholic Beer      1
...                                 ...    ...
23531   oriental Instant Noodles  Curry Flavour      1
23532   oriental Instant Noodles  Masala Flavour      1
23533  oriental Instant Noodles  Tom Yam Flavour      1
23534   orientalInstant Noodles  Tomato Flavour      1
23535                           pasta shell      1

[23536 rows x 2 columns]
```

```
# Step 5: Find out Top &amp; least sold products.
top_10_products = product_counts.sort_values('count', ascending=False).head(10)
print(top_10_products)
```

```
                                product  count
22253           Turmeric Powder/Arisina Pudi      26
7193                 Extra Virgin Olive Oil      15
5365                        Cow Ghee/Tuppa      14
4984     Colorsilk Hair Colour With Keratin      12
19967                           Soft Drink      12
14500           Olive Oil  Extra Virgin      12
17008               Powder  Coriander      11
5297               Coriander Powder      11
8429                         Ghee/Tuppa      11
15997           Peanut Butter  Creamy      10
```

```
bottom_10_products = product_counts.sort_values('count', ascending=True).head(10)
print(bottom_10_products)
```

```
                                product  count
0                      & Moms  Citrus Soap      1
15291   Organic Pure Sweetener Blend  1:4 Sugar Replac...      1
15290        Organic Pure Cashew Butter  Unsweetened      1
15289        Organic Pure Argan Oil  For Hair & Skin      1
15287           Organic Proso Millet Rava      1
```

```
15285              Organic Pressed Groundnut/Peanut Oil    1
15284                      Organic Premium Green Tea        1
15283                      Organic Powder  Wheat Grass      1
15281                      Organic Powder   Sambhar         1
15280                      Organic Powder  Red Chilly       1
```

```
display(top_10_products)
```

| | product | count |
|---|---|---|
| **22253** | Turmeric Powder/Arisina Pudi | 26 |
| **7193** | Extra Virgin Olive Oil | 15 |
| **5365** | Cow Ghee/Tuppa | 14 |
| **4984** | Colorsilk Hair Colour With Keratin | 12 |
| **19967** | Soft Drink | 12 |
| **14500** | Olive Oil Extra Virgin | 12 |
| **17008** | Powder Coriander | 11 |
| **5297** | Coriander Powder | 11 |
| **8429** | Ghee/Tuppa | 11 |
| **15997** | Peanut Butter Creamy | 10 |

Next steps:     **Generate code with `top_10_products`**     ⊙ **View recommended plots**     **New interactive sheet**

```
display(bottom_10_products)
```

| | product | count |
|---|---|---|
| **0** | & Moms Citrus Soap | 1 |
| **15291** | Organic Pure Sweetener Blend 1:4 Sugar Replac... | 1 |
| **15290** | Organic Pure Cashew Butter Unsweetened | 1 |
| **15289** | Organic Pure Argan Oil For Hair & Skin | 1 |
| **15287** | Organic Proso Millet Rava | 1 |
| **15285** | Organic Pressed Groundnut/Peanut Oil | 1 |
| **15284** | Organic Premium Green Tea | 1 |
| **15283** | Organic Powder Wheat Grass | 1 |
| **15281** | Organic Powder Sambhar | 1 |
| **15280** | Organic Powder Red Chilly | 1 |

Next steps:     **Generate code with `bottom_10_products`**     ⊙ **View recommended plots**     **New interactive sheet**

```
#least sold products LEAST SOLD PRODUCT
least_sold_products = product_counts.sort_values('count', ascending=True).head(10)
print(least_sold_products)
```

```
                                              product  count
0                              & Moms  Citrus Soap        1
15291  Organic Pure Sweetener Blend  1:4 Sugar Replac...   1
15290            Organic Pure Cashew Butter  Unsweetened   1
15289            Organic Pure Argan Oil  For Hair & Skin   1
15287                     Organic Proso Millet Rava       1
15285            Organic Pressed Groundnut/Peanut Oil     1
15284                     Organic Premium Green Tea       1
15283             Organic Powder  Wheat Grass            1
15281                     Organic Powder   Sambhar        1
15280             Organic Powder  Red Chilly             1
```

```
display(least_sold_products)
```

| | product | count | |
|---|---|---|---|
| **0** | & Moms Citrus Soap | 1 | |
| **15291** | Organic Pure Sweetener Blend 1:4 Sugar Replac... | 1 | |
| **15290** | Organic Pure Cashew Butter Unsweetened | 1 | |
| **15289** | Organic Pure Argan Oil For Hair & Skin | 1 | |
| **15287** | Organic Proso Millet Rava | 1 | |
| **15285** | Organic Pressed Groundnut/Peanut Oil | 1 | |
| **15284** | Organic Premium Green Tea | 1 | |
| **15283** | Organic Powder Wheat Grass | 1 | |
| **15281** | Organic Powder Sambhar | 1 | |
| **15280** | Organic Powder Red Chilly | 1 | |

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

```
basket.head(2)
```

| | index | product | category | sub_category | brand | sale_price | market_price | type | rating | description |
|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 1 | Garlic Oil Vegetarian Capsule 500 mg | Beauty & Hygiene | Hair Care | Sri Sri Ayurveda | 220.0 | 220.0 | Hair Oil & Serum | 4.1 | This Product contains Garlic Oil that is known... |

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

```
#Step 6: Measuring discount on a certain item.
basket['sale_price'] = basket['market_price'] - basket['sale_price']
basket
```

| | index | product | category | sub_category | brand | sale_price | market_price | type | rating | description |
|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 1 | Garlic Oil Vegetarian Capsule 500 mg | Beauty & Hygiene | Hair Care | Sri Sri Ayurveda | 0.00 | 220.0 | Hair Oil & Serum | 4.1 | This Product contains Garlic Oil that is known... |
| **1** | 2 | Water Bottle Orange | Kitchen, Garden & Pets | Storage & Accessories | Mastercook | 0.00 | 180.0 | Water & Fridge Bottles | 2.3 | Each product is microwave safe (without lid), ... |
| **2** | 3 | Brass Angle Deep Plain, No.2 | Cleaning & Household | Pooja Needs | Trm | 131.00 | 250.0 | Lamp & Lamp Oil | 3.4 | A perfect gift for all occasions, be it your m... |
| **3** | 4 | Cereal Flip Lid Container/Storage Jar Assorte... | Cleaning & Household | Bins & Bathroom Ware | Nakoda | 27.00 | 176.0 | Laundry, Storage Baskets | 3.7 | Multipurpose container with an attractive desi... |
| **4** | 5 | Creme Soft Soap For Hands & Body | Beauty & Hygiene | Bath & Hand Wash | Nivea | 0.00 | 162.0 | Bathing Bars & Soaps | 4.4 | Nivea Creme Soft Soap gives your skin the best... |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **27550** | 27551 | Wottagirl! Perfume Spray Heaven, Classic | Beauty & Hygiene | Fragrances & Deos | Layerr | 49.80 | 249.0 | Perfume | 3.9 | Layerr brings you Wottagirl Classic fragrant b... |
| **27551** | 27552 | Rosemary | Gourmet & World Food | Cooking & Baking Needs | Puramate | 7.50 | 75.0 | Herbs, Seasonings & Rubs | 4.0 | Puramate rosemary is enough to transform a dis... |

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

```
#Step 7: Find out the Missing Values from the Dataset.
basket.isnull().sum()
```

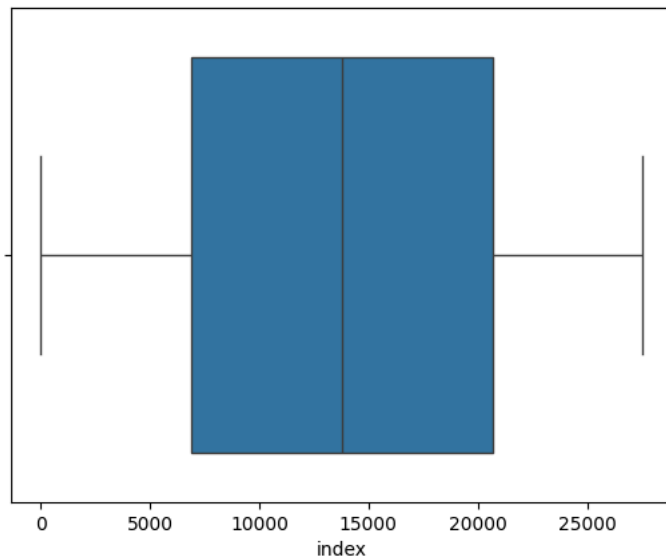|  | 0 |
|---|---|
| **index** | 0 |
| **product** | 1 |
| **category** | 0 |
| **sub_category** | 0 |
| **brand** | 1 |
| **sale_price** | 6 |
| **market_price** | 0 |
| **type** | 0 |
| **rating** | 8636 |
| **description** | 115 |

**dtype:** int64

```
# Step 8: Find out the outliers from the dataset according to the columns.

for column in basket.select_dtypes(include=np.number).columns:
        sns.boxplot(x=basket[column])
        plt.title(f'Box Plot of {column}')
        plt.show()
```

## Box Plot of index



## Box Plot of sale_price
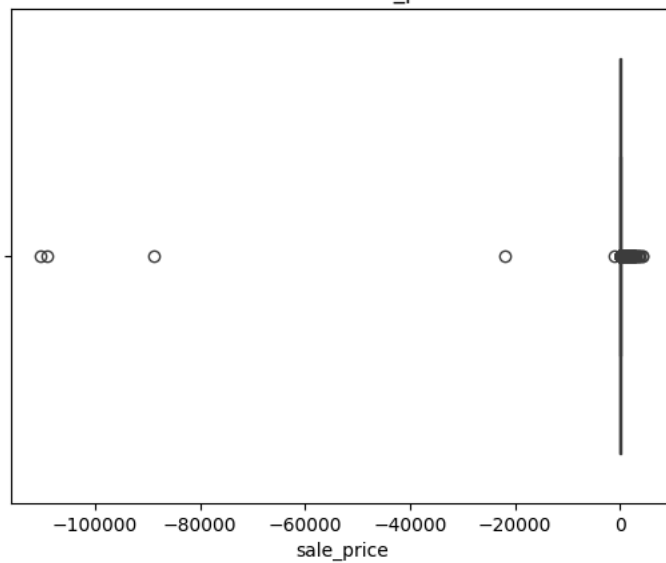


## Box Plot of market_price
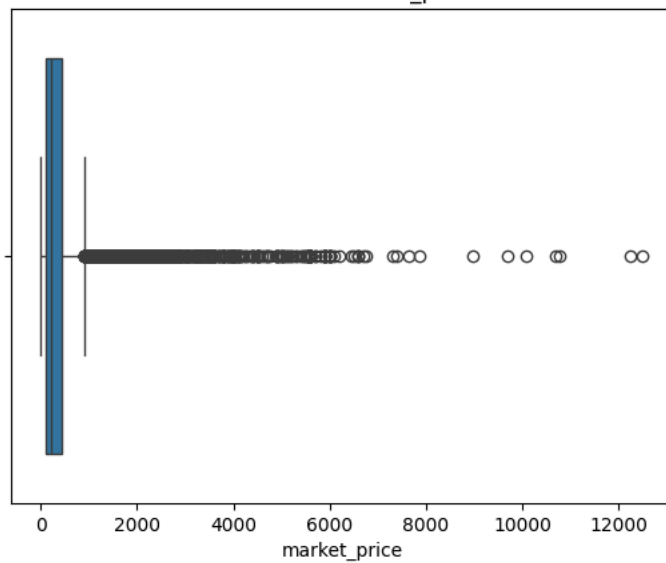


## Box Plot of rating

```
basket.head()
```

| | index | product | category | sub_category | brand | sale_price | market_price | type | rating | description |
|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 1 | Garlic Oil Vegetarian Capsule 500 mg | Beauty & Hygiene | Hair Care | Sri Sri Ayurveda | 0.0 | 220.0 | Hair Oil & Serum | 4.1 | This Product contains Garlic Oil that is known... |
| **1** | 2 | Water Bottle Orange | Kitchen, Garden & Pets | Storage & Accessories | Mastercook | 0.0 | 180.0 | Water & Fridge Bottles | 2.3 | Each product is microwave safe (without lid), ... |
| **2** | 3 | Brass Angle Deep Plain, No.2 | Cleaning & Household | Pooja Needs | Trm | 131.0 | 250.0 | Lamp & Lamp Oil | 3.4 | A perfect gift for all occasions, be it your m... |
| **3** | 4 | Cereal Flip Lid Container/Storage | Cleaning & Household | Bins & Bathroom | Nakoda | 27.0 | 176.0 | Laundry, Storage | 3.7 | Multipurpose container with an |

Next steps:   [ Generate code with `basket` ]   [ ⊙ View recommended plots ]   [ New interactive sheet ]

```
# MEAN
for column in basket.select_dtypes(include=np.number).columns:
    mean_value = basket[column].mean()  # Calculate the mean
    basket[column] = basket[column].fillna(mean_value)  # Fill NaN with mean
    print(f"Mean value for {column}: {mean_value}")
```

```
Mean value for index: 13778.0
Mean value for sale_price: 47.469267850012706
Mean value for market_price: 382.05666448920346
Mean value for rating: 3.9432951001638563
```

```
basket_cleaned_all = basket.dropna()
print(basket_cleaned_all)
```

```
27551  27552                        Rosemary
27552  27553       PeriPeri Sweet Potato Chips
27553  27554          Green Tea  Pure Original
27554  27555  United Dreams Go Far Deodorant

                   category              sub_category  \
0           Beauty & Hygiene                Hair Care
1      Kitchen, Garden & Pets     Storage & Accessories
2         Cleaning & Household               Pooja Needs
3         Cleaning & Household      Bins & Bathroom Ware
4           Beauty & Hygiene          Bath & Hand Wash
...                      ...                       ...
27550       Beauty & Hygiene         Fragrances & Deos
27551    Gourmet & World Food   Cooking & Baking Needs
27552    Gourmet & World Food  Snacks, Dry Fruits, Nuts
27553               Beverages                       Tea
27554       Beauty & Hygiene            Men's Grooming

                  brand  sale_price  market_price  \
0      Sri Sri Ayurveda        0.00         220.0
1            Mastercook        0.00         180.0
2                   Trm      131.00         250.0
3                Nakoda       27.00         176.0
4                 Nivea        0.00         162.0
...                 ...         ...           ...
27550             Layerr       49.80         249.0
```

```
2          Lamp & Lamp Oil      3.4
3      Laundry, Storage Baskets  3.7
4          Bathing Bars & Soaps  4.4
...                        ...   ...
27550                  Perfume   3.9
27551  Herbs, Seasonings & Rubs  4.0
27552          Nachos & Chips    3.8
27553               Tea Bags     4.2
27554        Men's Deodorants    4.5

                                           description
0      This Product contains Garlic Oil that is known...
1      Each product is microwave safe (without lid), ...
2      A perfect gift for all occasions, be it your m...
3      Multipurpose container with an attractive desi...
4      Nivea Creme Soft Soap gives your skin the best...
...                                               ...
27550  Layerr brings you Wottagirl Classic fragrant b...
27551  Puramate rosemary is enough to transform a dis...
27552  We have taken the richness of Sweet Potatoes (...
27553  Tetley Green Tea with its refreshing pure, ori...
27554  The new mens fragrance from the United Dreams ...

[27439 rows x 10 columns]
```

```
basket.head(2)
```

| | index | product | category | sub_category | brand | sale_price | market_price | type | rating | description |
|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 1 | Garlic Oil Vegetarian Capsule 500 mg | Beauty & Hygiene | Hair Care | Sri Sri Ayurveda | 0.0 | 220.0 | Hair Oil & Serum | 4.1 | This Product contains Garlic Oil that is known... |

Next steps:   Generate code with `basket`      ⊙ View recommended plots      New interactive sheet

```
correlation = basket['market_price'].corr(basket['sale_price'])
print(f"Correlation between market_price and sale_price: {correlation}")
```

```
Correlation between market_price and sale_price: 0.07967336527430496
```

```
basket.head(2)
```

| | index | product | category | sub_category | brand | sale_price | market_price | type | rating | description |
|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 1 | Garlic Oil Vegetarian Capsule 500 mg | Beauty & Hygiene | Hair Care | Sri Sri Ayurveda | 0.0 | 220.0 | Hair Oil & Serum | 4.1 | This Product contains Garlic Oil that is known... |

Next steps:   Generate code with `basket`      ⊙ View recommended plots      New interactive sheet

```
# Step 9: Create Plots or visualizations.

numeric_basket = basket.select_dtypes(include=['number'])
basket_corr = numeric_basket.corr()
print(basket_corr)
```
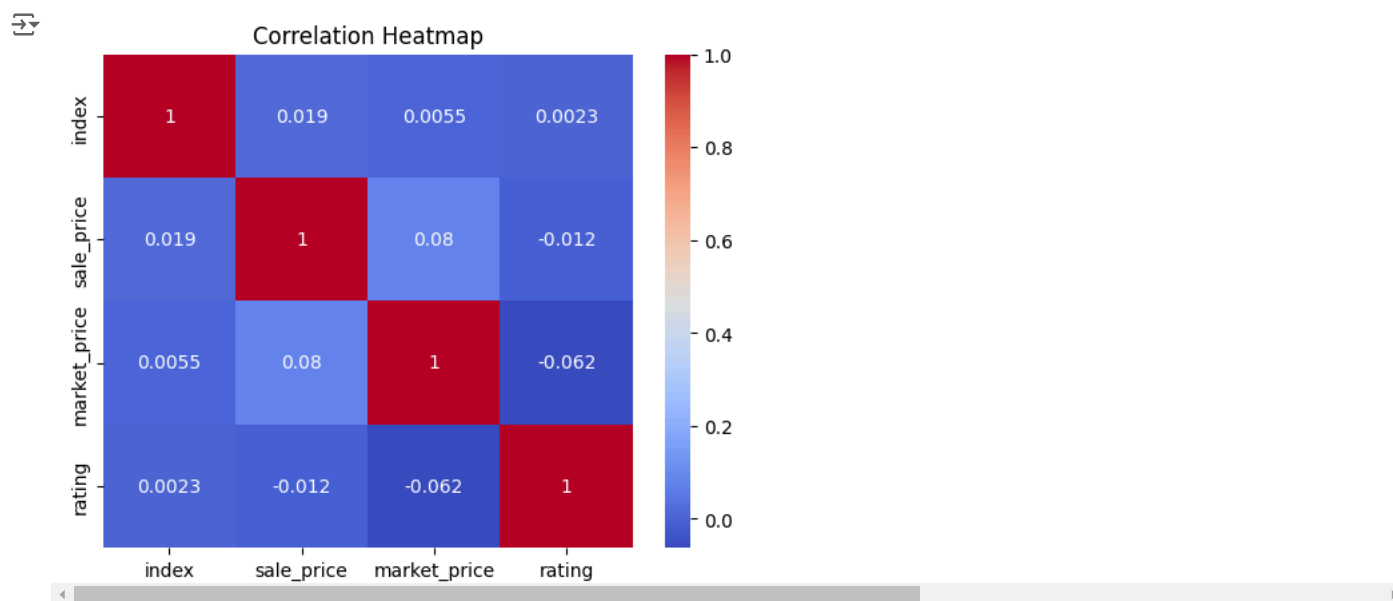
```
                 index  sale_price  market_price    rating
index         1.000000    0.018884      0.005493  0.002290
sale_price    0.018884    1.000000      0.079673 -0.012227
market_price  0.005493    0.079673      1.000000 -0.062212
rating        0.002290   -0.012227     -0.062212  1.000000
```
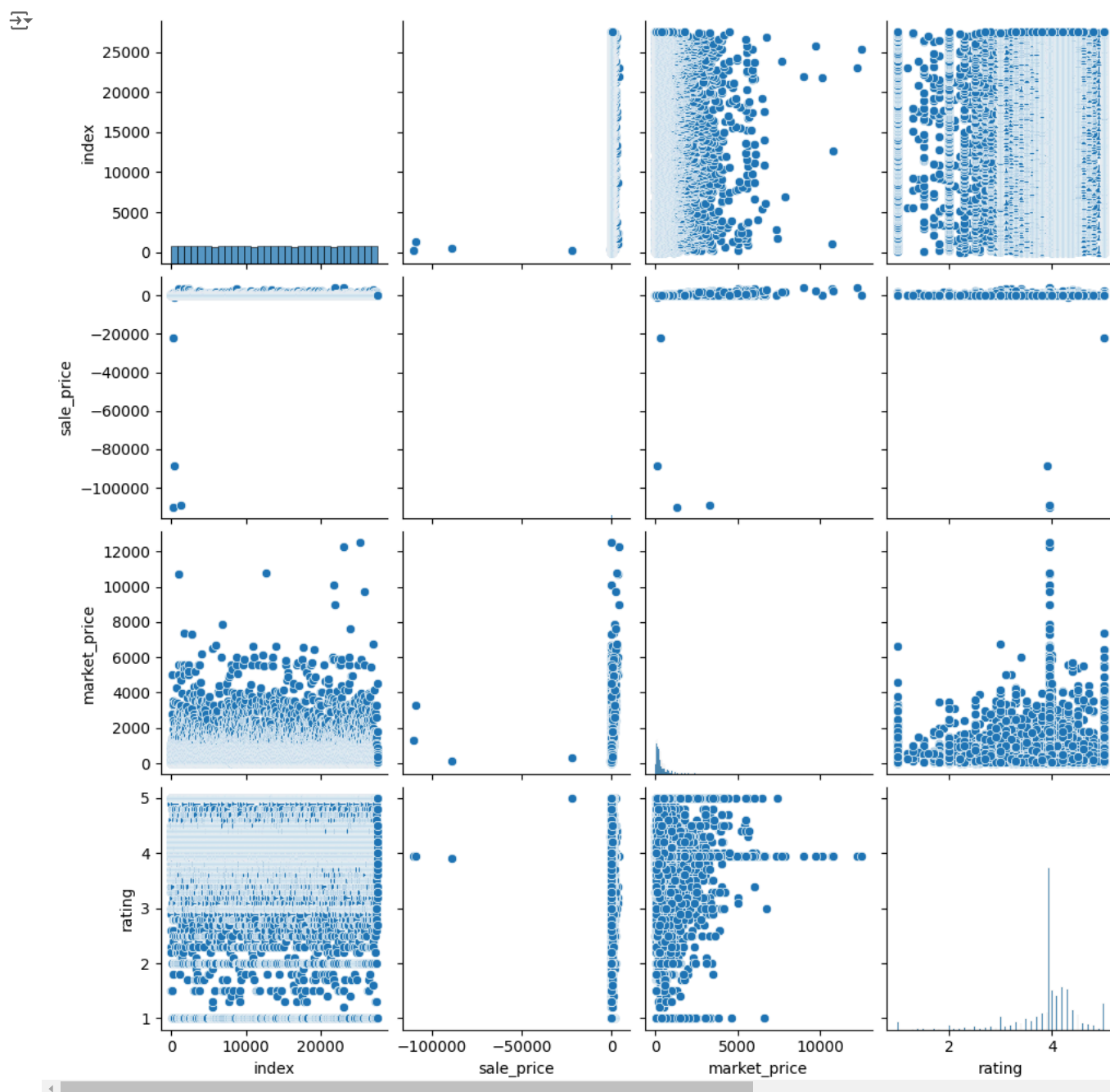
```
sns.heatmap(basket_corr, annot=True, cmap='coolwarm')
plt.title('Correlation Heatmap')
plt.show()
```
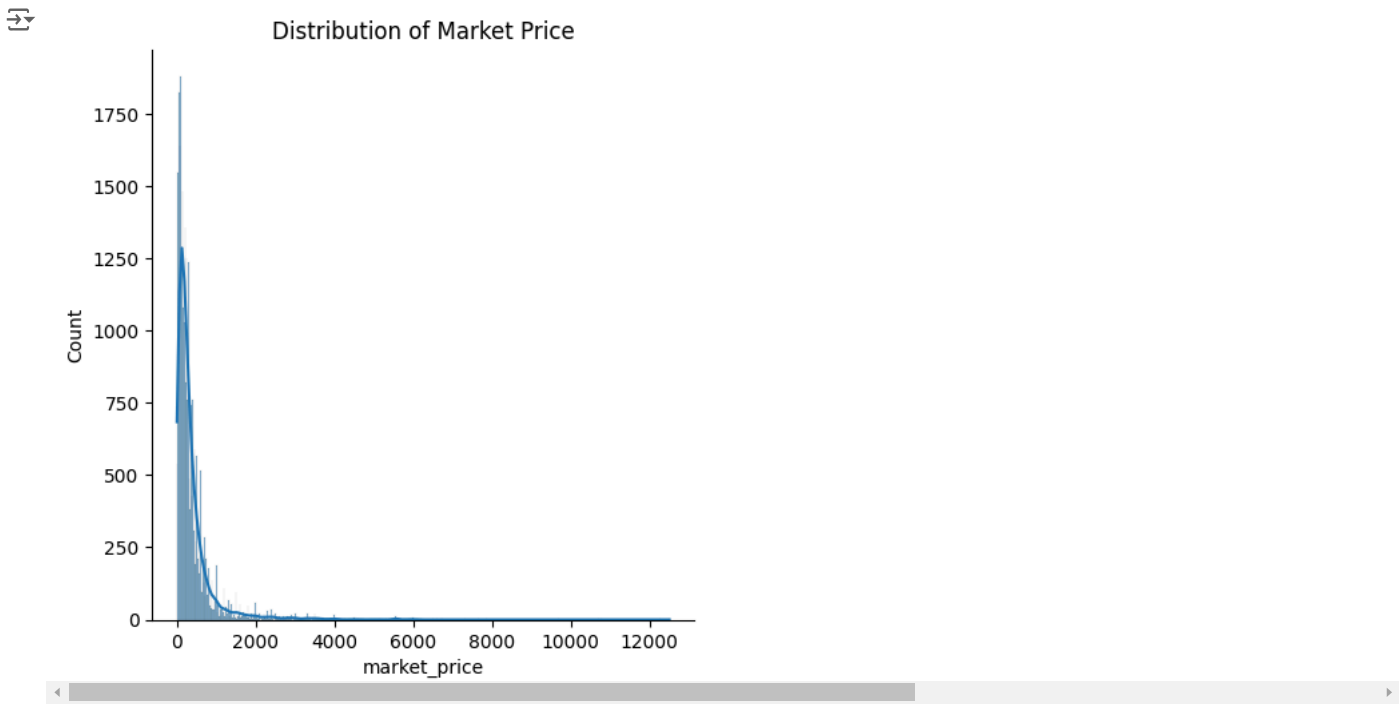
Correlation Heatmap

```
sns.pairplot(numeric_basket)
plt.show()
```



```
sns.displot(basket['market_price'], kde=True)
```

```
plt.title('Distribution of Market Price')
plt.show()
```



Distribution of Market Price

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


import plotly.express as px
```

```
basket.head(2)
```

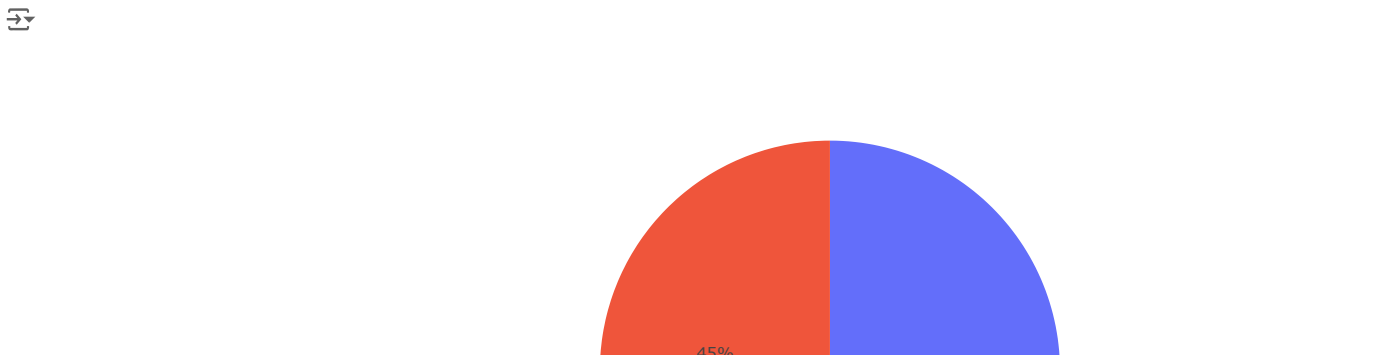| | index | product | category | sub_category | brand | sale_price | market_price | type | rating | description | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | Garlic Oil Vegetarian Capsule 500 mg | Beauty & Hygiene | Hair Care | Sri Sri Ayurveda | 0.0 | 220.0 | Hair Oil & Serum | 4.1 | This Product contains Garlic Oil that is known... | |

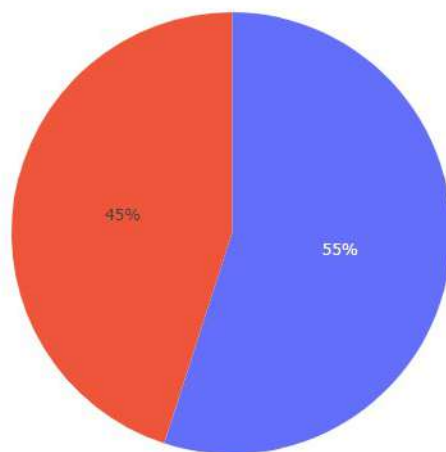Next steps:  **Generate code with `basket`**     ◉ View recommended plots     New interactive sheet

```
import plotly.graph_objects as go
img = go.Figure(data=[go.Pie(labels=["product", "market_price"], values=[220, 180])])
img.show()
```

45%  55%

product
market_price

```
basket.head(5)
```

| | index | product | category | sub_category | brand | sale_price | market_price | type | rating | description |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | Garlic Oil Vegetarian Capsule 500 mg | Beauty & Hygiene | Hair Care | Sri Sri Ayurveda | 0.0 | 220.0 | Hair Oil & Serum | 4.1 | This Product contains Garlic Oil that is known... |
| 1 | 2 | Water Bottle Orange | Kitchen, Garden & Pets | Storage & Accessories | Mastercook | 0.0 | 180.0 | Water & Fridge Bottles | 2.3 | Each product is microwave safe (without lid), ... |
| 2 | 3 | Brass Angle Deep Plain, No.2 | Cleaning & Household | Pooja Needs | Trm | 131.0 | 250.0 | Lamp & Lamp Oil | 3.4 | A perfect gift for all occasions, be it your m... |
| 3 | 4 | Cereal Flip Lid Container/Storage Jar Assorte... | Cleaning & Household | Bins & Bathroom Ware | Nakoda | 27.0 | 176.0 | Laundry, Storage Baskets | 3.7 | Multipurpose container with an attractive desi... |
| 4 | 5 | Creme Soft Soap For Hands & Body | Beauty & Hygiene | Bath & Hand Wash | Nivea | 0.0 | 162.0 | Bathing Bars & Soaps | 4.4 | Nivea Creme Soft Soap gives your skin the best... |

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

```
slot = go.Scatter3d(
    x=basket['product'],
```

```
slot = go.Scatter3d(
    x=basket['product'],
    y=basket['market_price'],
    z=basket['sale_price'],
    mode="markers"
)
img = go.Figure(data=[slot])
img.show()
```