test-code-2ipynb

May 6, 2025

```python
[2]: import pandas as pd
     dataset_sample=pd.read_csv("shopee_sample_data.csv")
     dataset_sample.head()
```

```
[2]:    price_ori                                          delivery  \
     0      29.16   Shipping Pre-Order (ships in 11 days) Shipping…
     1      57.78   Shipping Free shipping Free shipping for order…
     2      82.00   Shipping Free shipping Shipping from overseas …
     3     115.00   Shipping Free shipping Shipping to KL City, Ku…
     4      40.90   Shipping Free shipping Shipping from overseas …

                                  item_category_detail  \
     0               Shopee | Women's Clothing | Skirts
     1   Shopee | Women's Clothing | Dresses | Midi Dre…
     2   Shopee | Women's Clothing | Dresses | Maxi Dre…
     3   Shopee | Women's Clothing | Dresses | Maxi Dre…
     4   Shopee | Women's Clothing | Dresses | Maxi Dre…

                                         specification  \
     0   Category Shopee Women's Clothing Skirts Brand …
     1   Category Shopee Women's Clothing Dresses Midi …
     2   Category Shopee Women's Clothing Dresses Maxi …
     3   Category Shopee Women's Clothing Dresses Maxi …
     4   Category Shopee Women's Clothing Dresses Maxi …

                                                 title      w_date  \
     0   Alice's new elegant style ultra-fairy French d…  20201123.0
     1    Korean Vintage Style Square Neck Slim Midi D…   20201123.0
     2   ZANZEA Women Sleeveless Drawstring Pleated Swi… 20201123.0
     3   AIR SPACE V-Neck Ruffle Sleeve Tassel Side Tie… 20201123.0
     4   ZANZEA Women Crew Neck Long Sleeve Ethnic Vint… 20201123.0

                                         link_ori  item_rating  \
     0   https://shopee.com.my/Alice's-new-elegant-styl…         NaN
     1   https://shopee.com.my/ Korean-Vintage-Style-S…          NaN
     2   https://shopee.com.my/ZANZEA-Women-Sleeveless-…         5.0
     3   https://shopee.com.my/AIR-SPACE-V-Neck-Ruffle-…         NaN
```

```
4  https://shopee.com.my/ZANZEA-Women-Crew-Neck-L…              4.8

              seller_name                        idElastic  …  \
0              8ysl9a1301   6e1e3d7b51a4c1099c368114ab91a88a  …
1       showcasemywardore   a4248a77a54045ea69f18cb87ada6fb2  …
2               zanzea.os   8ef1159741c3ad608ab376a1def1a8d5  …
3            airspacemy.os   e5f6337f3faa4badad794fb211b35c61  …
4               zanzea.os   3dbb5a357043464af36d6591d215a19c  …

                         idHash  \
0  97dcb011fc73ec4b3c31eed989ae0094
1  5b870a335a74b055c9a24083da6e925a
2  fb6977c44fd154310f800c3155594121
3  5c935733c665ede79faa95d00e146d11
4  e806e77f75c6bc43ad52adf457dd7004

                              seller_details  \
0  8ysl9a1301 Active 3 hours ago chat now view sh…
1  showcasemywardore Active 3 hours ago chat now …
2  zanzea.os Active 37 minutes ago chat now view …
3  airspacemy.os Active 14 minutes ago chat now v…
4  zanzea.os Active 37 minutes ago chat now view …

                      location total_rating            id  \
0    Lubok China, 000001 Melaka            0   6.445109e+09
1      KLCC, 50088 Kuala Lumpur            1   5.445225e+09
2                Mainland China            3   4.843064e+09
3  Kuala Langat, 42500 Selangor            0   6.245303e+09
4                Mainland China          123   3.430108e+09

                             pict_link  total_sold favorite  \
0  https://cf.shopee.com.my/file/63256421fb228665…         NaN       80
1  https://cf.shopee.com.my/file/559058f73c771491…         NaN       61
2  https://cf.shopee.com.my/file/5ce472482e927cf4…           3       24
3  https://cf.shopee.com.my/file/fdab91ad3c366064…         NaN       28
4  https://cf.shopee.com.my/file/0af4b832a74478f1…         242      744

      timestamp                                               desc
0  1.606064e+12  Promotions: Summer's new elegant style ins sup…
1  1.606064e+12   – Color: Multicolor\n\n- Material: Polyester\n…
2  1.606064e+12   Item Type:Dress\nMaterial: Cotton \nColors:Gre…
3  1.606064e+12   Welcome to Air Space Malaysia Official where w…
4  1.606064e+12   Material:Cotton\nPackage?included:1Dress\nColo…

[5 rows x 22 columns]
```

[ ]:

```
[3]: def isfloat(value):
         try:
             float(value)    # Try to convert the value to float
             return True     # If successful, it's a float
         except ValueError:  # If it fails, it's not a float
             return False
     dataset_sample.iloc[dataset_sample[dataset_sample['item_category_detail'].
      ↪apply(lambda x: isfloat(x)) == True].index]
     dataset_sample.dropna(thresh=10,inplace=True,axis=0)
     dataset_sample['item_category_detail'] = dataset_sample['item_category_detail'].
      ↪apply(lambda x: x.lower())
     dataset_sample['item_category_detail'] = dataset_sample['item_category_detail'].
      ↪apply(lambda x: x.split('|'))
     dataset_sample['item_category_detail'] = dataset_sample['item_category_detail'].
      ↪apply(lambda x: [st.strip() for st in x])
```

```
[4]: dataset_sample['Type of product']=dataset_sample["item_category_detail"].
      ↪apply(lambda x: x[1])
     dataset_sample['Type of product_2']=dataset_sample["item_category_detail"].
      ↪apply(lambda x : x[2] if len(x)>3 else x[1])
     dataset_sample.loc[:,['Type of product','Type of product_2']]
```

```
[4]:          Type of product Type of product_2
     0        women's clothing  women's clothing
     1        women's clothing           dresses
     2        women's clothing           dresses
     3        women's clothing           dresses
     4        women's clothing           dresses
     …                      …                 …
     42420  women's clothing  traditional wear
     42421  women's clothing  women's clothing
     42422  mobile & gadgets    cases & covers
     42423  mobile & gadgets    cases & covers
     42424  mobile & gadgets    cases & covers

     [42363 rows x 2 columns]
```

```
[5]: import pprint
     pd.reset_option('display.max_colwidth')
     dataset_sample[dataset_sample['Type of product']=='baby & toys']['Type of␣
      ↪product_2'].unique()
```

```
[5]: array(['baby clothing', 'baby gear', 'feeding & nursing',
            'bath & toiletries', 'formula & food', 'boys fashion',
            'toys & education', 'nursery', 'girls fashion',
            'diapers & potties', 'kids fashion accessories & bags',
            'baby & toys', 'baby & toddler play', 'kids sports & outdoor play',
```

```
              'kids health & skincare', 'baby safety', 'maternity care'],
            dtype=object)
```

[6]:
```python
fashion_names=["women's clothing", "men's clothing", 'muslim fashion',
               'baby & toys', 'watches',
               "men's bags & wallets",
               "women's bags", 'sports & outdoor', 'fashion accessories'
               , "men's shoes", "women's shoes", 'women clothes']
fashion_names_2=['baby clothing', 'boys fashion', 'girls fashion', 'kids␣
 ↪fashion accessories & bags']
```

[7]:
```python
new_set=dataset_sample[(dataset_sample['Type of product'].isin(fashion_names))␣
 ↪| (dataset_sample['Type of product_2'].isin(fashion_names_2))]
```

[8]:
```python
new_set['item_category_detail'].apply(lambda x: x[1]).unique()
```

[8]:
```
array(["women's clothing", "men's clothing", 'muslim fashion',
       'baby & toys', 'watches', "men's bags & wallets", "women's bags",
       'sports & outdoor', 'fashion accessories', "men's shoes",
       "women's shoes", 'women clothes'], dtype=object)
```

[9]:
```python
new_set[new_set['item_category_detail'].apply(lambda x: (('sports & outdoor' in␣
 ↪x) or('baby & toys' in x)))]['Type of product_2'].unique()
```

[9]:
```
array(['baby clothing', 'baby gear', 'feeding & nursing',
       'bath & toiletries', 'formula & food', 'boys fashion',
       'toys & education', 'nursery', 'girls fashion',
       'diapers & potties', 'kids fashion accessories & bags',
       'baby & toys', 'baby & toddler play', 'kids sports & outdoor play',
       'outdoor & adventure', 'exercise & fitness equipment',
       'sports & outdoor', 'badminton', 'cycling & skates',
       'kids health & skincare', 'baby safety', "men's sports shoes",
       'acrobatic & martial arts', 'basketball', 'running',
       'racket sports', 'maternity care', 'stick & ball games', 'fishing',
       'water sports', 'performance wear', 'football & futsal',
       "women's sports shoes"], dtype=object)
```

[10]:
```python
list_to_drop=['baby gear', 'feeding & nursing',
       'bath & toiletries', 'formula & food',
       'toys & education', 'nursery',
       'diapers & potties',
       'baby & toys', 'baby & toddler play', 'kids sports & outdoor play',
       'outdoor & adventure', 'exercise & fitness equipment',
       'sports & outdoor', 'badminton', 'cycling & skates',
       'kids health & skincare', 'baby safety',
       'acrobatic & martial arts', 'basketball', 'running',
       'racket sports', 'maternity care', 'stick & ball games', 'fishing',
```

```
            'water sports', 'performance wear', 'football & futsal']

new_set=new_set[new_set['Type of product_2'].apply(lambda x: x not in↵
  ↪list_to_drop)]
```

[11]:
```
new_set.reset_index(inplace=True)
new_set.drop('index',axis=1,inplace=True)
```

[12]: `new_set.describe()`

[12]:
```
              price_ori        w_date   item_rating  price_actual            id  \
count   17756.000000  1.777500e+04  14975.000000  17770.000000  1.777500e+04
mean       71.900686  2.020115e+07      4.838624     49.598278  4.003205e+09
std       254.833548  3.600125e+01      0.329221    155.445781  2.240457e+09
min         0.100000  2.020112e+07      1.000000      0.090000  1.675570e+05
25%        15.980000  2.020112e+07      4.800000     11.505000  2.100148e+09
50%        34.995000  2.020112e+07      4.900000     25.000000  3.840939e+09
75%        68.000000  2.020120e+07      5.000000     48.600000  6.001580e+09
max     16258.000000  2.020120e+07      5.000000   9470.000000  9.600688e+09

           timestamp
count   1.777500e+04
mean    1.606315e+12
std     3.041915e+08
min     1.606064e+12
25%     1.606064e+12
50%     1.606151e+12
75%     1.606756e+12
max     1.606842e+12
```

[13]: `new_set.info()`

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 17775 entries, 0 to 17774
Data columns (total 24 columns):
 #   Column               Non-Null Count  Dtype
---  ------               --------------  -----
 0   price_ori            17756 non-null  float64
 1   delivery             17775 non-null  object
 2   item_category_detail 17775 non-null  object
 3   specification        17775 non-null  object
 4   title                17775 non-null  object
 5   w_date               17775 non-null  float64
 6   link_ori             17775 non-null  object
 7   item_rating          14975 non-null  float64
 8   seller_name          17775 non-null  object
 9   idElastic            17775 non-null  object
```

5

```
10   price_actual          17770 non-null  float64
11   sitename              17775 non-null  object
12   idHash                17775 non-null  object
13   seller_details        17654 non-null  object
14   location              11213 non-null  object
15   total_rating          17775 non-null  object
16   id                    17775 non-null  float64
17   pict_link             17775 non-null  object
18   total_sold            14975 non-null  object
19   favorite              15621 non-null  object
20   timestamp             17775 non-null  float64
21   desc                  17775 non-null  object
22   Type of product       17775 non-null  object
23   Type of product_2     17775 non-null  object
dtypes: float64(6), object(18)
memory usage: 3.3+ MB
```

[14]: `new_set.columns`

[14]:
```
Index(['price_ori', 'delivery', 'item_category_detail', 'specification',
       'title', 'w_date', 'link_ori', 'item_rating', 'seller_name',
       'idElastic', 'price_actual', 'sitename', 'idHash', 'seller_details',
       'location', 'total_rating', 'id', 'pict_link', 'total_sold', 'favorite',
       'timestamp', 'desc', 'Type of product', 'Type of product_2'],
      dtype='object')
```

[15]:
```
columns_to_drop=['link_ori', 'seller_name','sitename',
        'idElastic', 'idHash', 'seller_details', 'id', 'pict_link', 'total_sold']
```

[16]: `new_set.drop(columns_to_drop,axis=1,inplace=True)`

[17]: `new_set`

[17]:
```
        price_ori                                     delivery  \
0           29.16  Shipping Pre-Order (ships in 11 days) Shipping…
1           57.78  Shipping Free shipping Free shipping for order…
2           82.00  Shipping Free shipping Shipping from overseas …
3          115.00  Shipping Free shipping Shipping to KL City, Ku…
4           40.90  Shipping Free shipping Shipping from overseas …
…             …                                              …
17770        6.00  Shipping Free shipping Shipping to KL City, Ku…
17771       49.99  Shipping Free shipping Shipping to KL City, Ku…
17772       32.00  Shipping Shipping from Mainland China to KL Ci…
17773      105.00  Shipping Pre-Order (ships in 14 days) Shipping…
17774       80.00  Shipping Shipping to KL City, Kuala Lumpur shi…

                              item_category_detail  \
```

```
0                          [shopee, women's clothing, skirts]
1           [shopee, women's clothing, dresses, midi dresses]
2           [shopee, women's clothing, dresses, maxi dresses]
3           [shopee, women's clothing, dresses, maxi dresses]
4           [shopee, women's clothing, dresses, maxi dresses]
…                                                           …
17770                        [shopee, women's clothing, tops]
17771            [shopee, men's shoes, sneakers, plimsolls]
17772      [shopee, women's clothing, traditional wear, s…
17773      [shopee, women's clothing, traditional wear, s…
17774          [shopee, women's clothing, traditional wear]

                                            specification  \
0         Category Shopee Women's Clothing Skirts Brand …
1         Category Shopee Women's Clothing Dresses Midi …
2         Category Shopee Women's Clothing Dresses Maxi …
3         Category Shopee Women's Clothing Dresses Maxi …
4         Category Shopee Women's Clothing Dresses Maxi …
…                                                       …
17770     Category Shopee Women's Clothing Tops Brand No…
17771     Product Specifications Category Shopee Men's S…
17772     Category Shopee Women's Clothing Traditional W…
17773     Category Shopee Women's Clothing Traditional W…
17774     Category Shopee Women's Clothing Traditional W…

                                            title       w_date  \
0         Alice's new elegant style ultra-fairy French d…  20201123.0
1          Korean Vintage Style Square Neck Slim Midi D…  20201123.0
2         ZANZEA Women Sleeveless Drawstring Pleated Swi…  20201123.0
3         AIR SPACE V-Neck Ruffle Sleeve Tassel Side Tie…  20201123.0
4         ZANZEA Women Crew Neck Long Sleeve Ethnic Vint…  20201123.0
…                                                      …           …
17770          [Live Only] KNIT BY MEMZ | Shopee Malaysia  20201202.0
17771     BUM Equipment Unisex Canvas Shoes  – Black/Blu…  20201202.0
17772     Zumba T002061 T-shirt closet for fitness | Sho…  20201202.0
17773         Georgette Embroidery Saree | Shopee Malaysia  20201202.0
17774     SONGKET SUT 8 [ORIGINAL PAKISTAN MADE] | Shope…  20201202.0

          item_rating  price_actual                      location total_rating  \
0                 NaN         29.16      Lubok China, 000001 Melaka            0
1                 NaN         57.78         KLCC, 50088 Kuala Lumpur            1
2                 5.0         39.36                   Mainland China            3
3                 NaN        115.00    Kuala Langat, 42500 Selangor            0
4                 4.8         40.90                   Mainland China          123
…                   …             …                               …            …
17770             5.0          6.00       Shah Alam, 40200 Selangor          491
17771             4.9         19.00  Seri Kembangan, 43300 Selangor          608
```

```
17772          NaN     28.80                              NaN        1
17773          NaN    105.00        Johor Bahru, 81300 Johor        2
17774          5.0     80.00        Johor Bahru, 81200 Johor        1

       favorite    timestamp  \
0            80  1.606064e+12
1            61  1.606064e+12
2            24  1.606064e+12
3            28  1.606064e+12
4           744  1.606064e+12
…           …            …
17770         7  1.606842e+12
17771       480  1.606842e+12
17772       NaN  1.606842e+12
17773         1  1.606842e+12
17774         1  1.606842e+12


                                                    desc    Type of product  \
0          Promotions: Summer's new elegant style ins sup…  women's clothing
1           - Color: Multicolor\n\n- Material: Polyester\n…  women's clothing
2          Item Type:Dress\nMaterial: Cotton \nColors:Gre…  women's clothing
3          Welcome to Air Space Malaysia Official where w…  women's clothing
4          Material:Cotton\nPackage?included:1Dress\nColo…  women's clothing
…                                                      …                  …
17770  NAK CARI BAJU BUNDLE MURAH ? CANTIK ? BRANDED …  women's clothing
17771  Welcome To Our Online Store BUM Equipment ! \n…       men's shoes
17772  zumba fitness clothes zumba T02061 - Buy Zumba…  women's clothing
17773  *DN:HD50*\n\n*FABRIC:GEORGETTE WITH EMBROIDERY…  women's clothing
17774  BAJU MELAYU - 2PCS\nSAMPIN          - 1PCS\n…  women's clothing


      Type of product_2
0        women's clothing
1                 dresses
2                 dresses
3                 dresses
4                 dresses
…                      …
17770  women's clothing
17771           sneakers
17772  traditional wear
17773  traditional wear
17774  women's clothing

[17775 rows x 15 columns]
```

```python
import plotly.express as px
import seaborn as sns
```
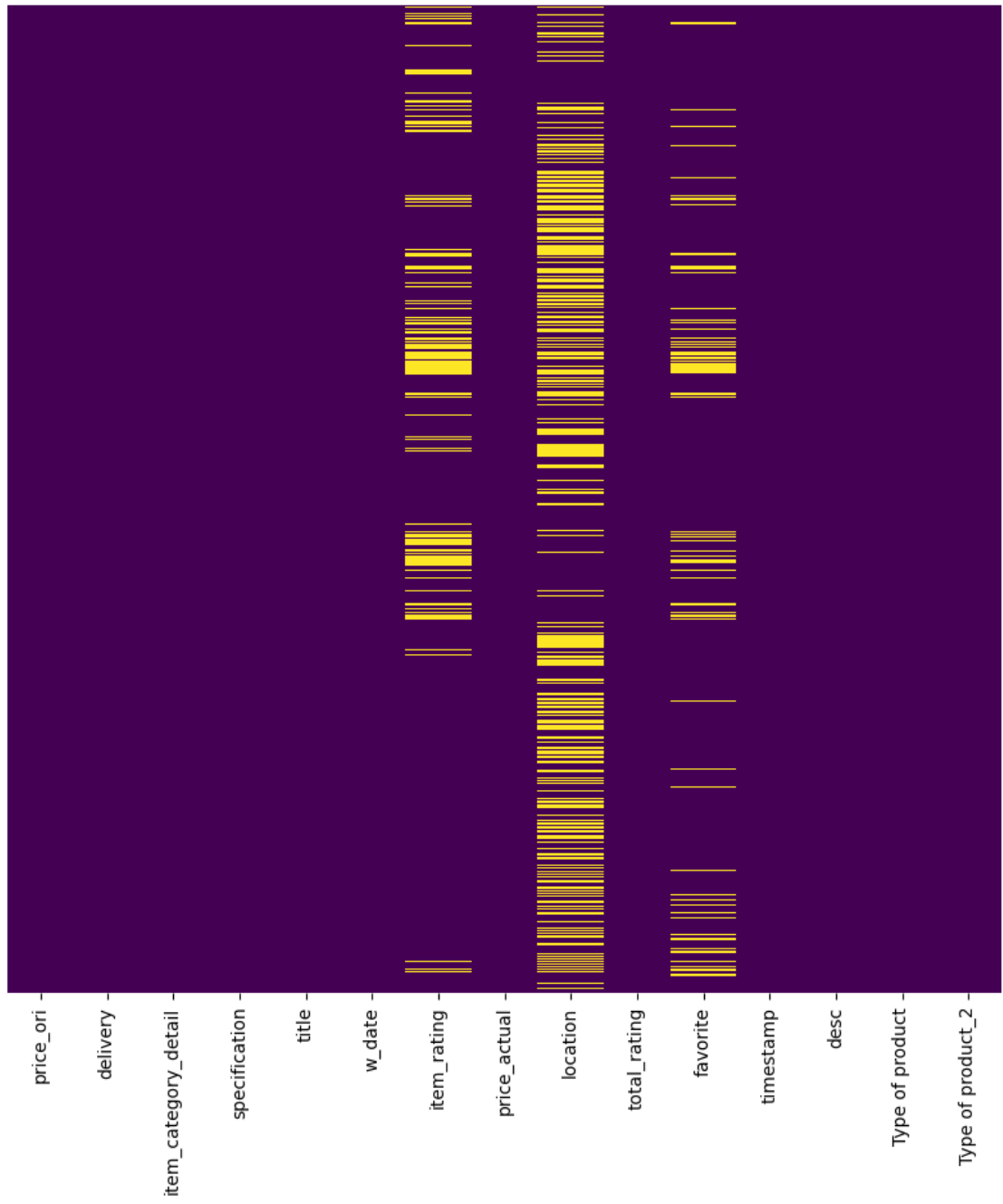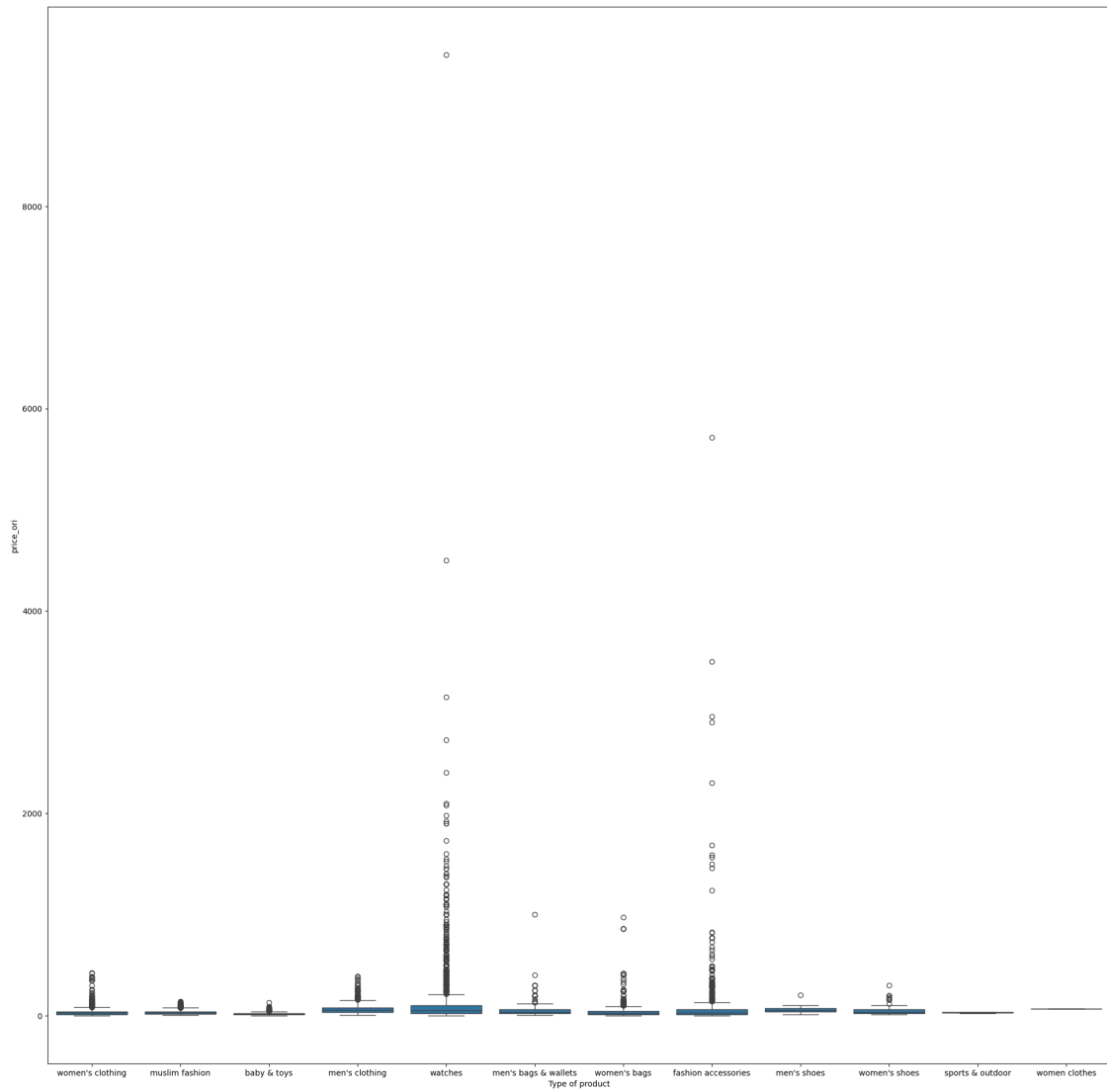
```python
import matplotlib.pyplot as plt
plt.figure(figsize=(10,10))
sns.heatmap(new_set.isnull(),yticklabels=False,cbar=False,cmap='viridis')
plt.figure(figsize=(24,24))
sns.boxplot(x='Type of product',y='price_ori',data=new_set.
 ↪dropna(inplace=False))

sns.pairplot(data=new_set)
plt.figure(figsize=(24,24))
sns.boxplot(x='Type of product',y='item_rating',data=new_set.
 ↪dropna(inplace=False))
sns.countplot(data=new_set.dropna(inplace=False),x='item_rating')
px.histogram(new_set, x='item_rating', color='Type of product',␣
 ↪barmode='overlay')


px.histogram(
    data_frame=new_set,
    x='price_actual'
    )
```
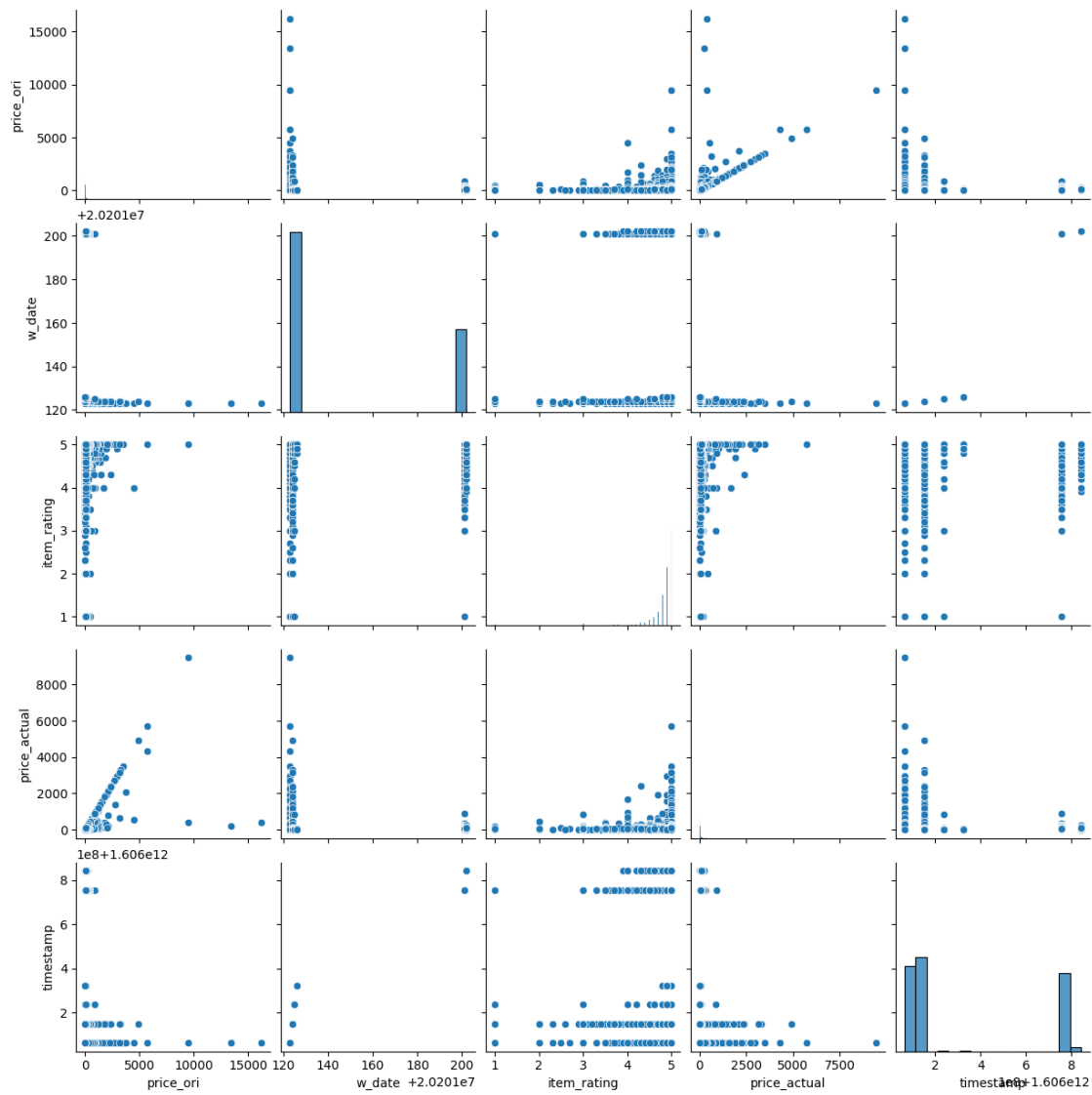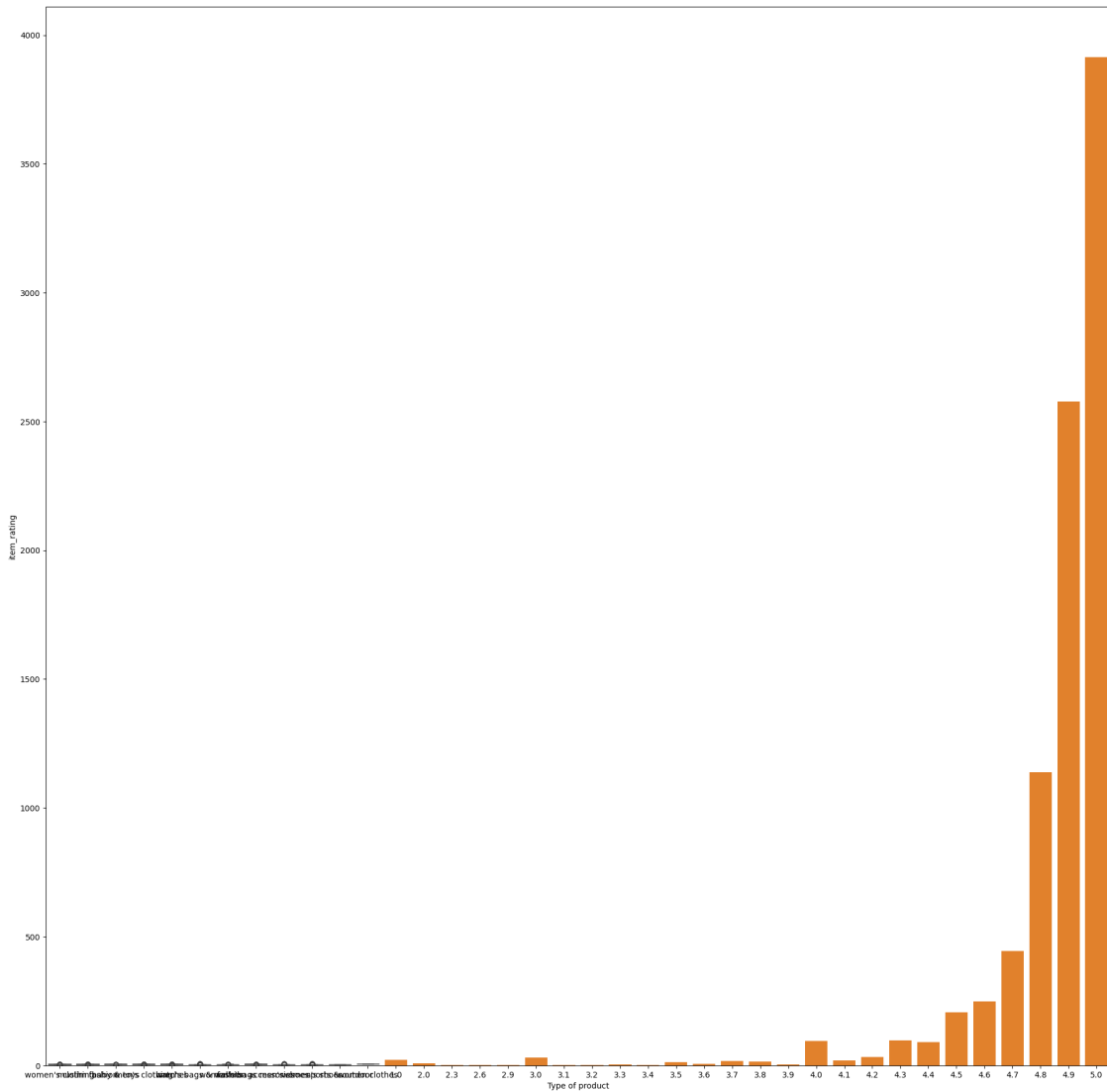
```
[19]: plt.figure(figsize=(12,12))
      set_box=new_set[(new_set['price_actual']<100) ].copy()

      print(set_box)
      sns.boxplot(data=set_box.dropna(axis=0,inplace=False),x='item_rating',␣
        ↪y='price_actual')
```

```
         price_ori                                      delivery  \
0            29.16  Shipping Pre-Order (ships in 11 days) Shipping…
1            57.78  Shipping Free shipping Free shipping for order…
2            82.00  Shipping Free shipping Shipping from overseas …
4            40.90  Shipping Free shipping Shipping from overseas …
5            37.00  Shipping Free shipping Shipping from overseas …
…              …                                             …
```

```
17769      26.60   Shipping Free shipping Shipping from Mainland …
17770       6.00   Shipping Free shipping Shipping to KL City, Ku…
17771      49.99   Shipping Free shipping Shipping to KL City, Ku…
17772      32.00   Shipping Shipping from Mainland China to KL Ci…
17774      80.00   Shipping Shipping to KL City, Kuala Lumpur shi…


                                    item_category_detail  \
0                    [shopee, women's clothing, skirts]
1         [shopee, women's clothing, dresses, midi dresses]
2         [shopee, women's clothing, dresses, maxi dresses]
4         [shopee, women's clothing, dresses, maxi dresses]
5         [shopee, women's clothing, dresses, mini dresses]
…                                          …
17769           [shopee, women's clothing, tops, blouse]
17770                   [shopee, women's clothing, tops]
17771          [shopee, men's shoes, sneakers, plimsolls]
17772   [shopee, women's clothing, traditional wear, s…
17774        [shopee, women's clothing, traditional wear]


                                        specification  \
0         Category Shopee Women's Clothing Skirts Brand …
1         Category Shopee Women's Clothing Dresses Midi …
2         Category Shopee Women's Clothing Dresses Maxi …
4         Category Shopee Women's Clothing Dresses Maxi …
5         Category Shopee Women's Clothing Dresses Mini …
…                                          …
17769   Category Shopee Women's Clothing Tops Blouse B…
17770   Category Shopee Women's Clothing Tops Brand No…
17771   Product Specifications Category Shopee Men's S…
17772   Category Shopee Women's Clothing Traditional W…
17774   Category Shopee Women's Clothing Traditional W…


                                         title        w_date  \
0         Alice's new elegant style ultra-fairy French d…  20201123.0
1          Korean Vintage Style Square Neck Slim Midi D…  20201123.0
2         ZANZEA Women Sleeveless Drawstring Pleated Swi…  20201123.0
4         ZANZEA Women Crew Neck Long Sleeve Ethnic Vint…  20201123.0
5         Women Summer Ruffled V-Neck Chiffon Sexy Polka…  20201123.0
…                                          …          …
17769   [Ready Stock] couple set Simple Daisy Printed …  20201202.0
17770           [Live Only] KNIT BY MEMZ | Shopee Malaysia  20201202.0
17771   BUM Equipment Unisex Canvas Shoes  - Black/Blu…  20201202.0
17772   Zumba T002061 T-shirt closet for fitness | Sho…  20201202.0
17774   SONGKET SUT 8 [ORIGINAL PAKISTAN MADE] | Shope…  20201202.0


        item_rating  price_actual                       location total_rating  \
0               NaN         29.16      Lubok China, 000001 Melaka            0
1               NaN         57.78        KLCC, 50088 Kuala Lumpur            1
```

```
2             5.0          39.36                  Mainland China            3
4             4.8          40.90                  Mainland China          123
5             3.0          27.75                             NaN            1
...           ...            ...                             ...          ...
17769         4.9          13.30                  Mainland China           44
17770         5.0           6.00        Shah Alam, 40200 Selangor          491
17771         4.9          19.00  Seri Kembangan, 43300 Selangor          608
17772         NaN          28.80                             NaN            1
17774         5.0          80.00        Johor Bahru, 81200 Johor            1

       favorite     timestamp  \
0            80  1.606064e+12
1            61  1.606064e+12
2            24  1.606064e+12
4           744  1.606064e+12
5            69  1.606064e+12
...         ...           ...
17769       242  1.606842e+12
17770         7  1.606842e+12
17771       480  1.606842e+12
17772       NaN  1.606842e+12
17774         1  1.606842e+12


                                                    desc    Type of product  \
0      Promotions: Summer's new elegant style ins sup…  women's clothing
1      - Color: Multicolor\n\n- Material: Polyester\n…  women's clothing
2      Item Type:Dress\nMaterial: Cotton \nColors:Gre…  women's clothing
4      Material:Cotton\nPackage?included:1Dress\nColo…  women's clothing
5      Features \nStyle:Fashion\nSilhouette:A-Line\nP…  women's clothing
...                                                  …                …
17769  Size  Length ---------------- Bust ----------…  women's clothing
17770  NAK CARI BAJU BUNDLE MURAH ? CANTIK ? BRANDED …  women's clothing
17771  Welcome To Our Online Store BUM Equipment ! \n…       men's shoes
17772  zumba fitness clothes zumba T02061 - Buy Zumba…  women's clothing
17774  BAJU MELAYU - 2PCS\nSAMPIN          - 1PCS\n…  women's clothing

      Type of product_2
0       women's clothing
1                dresses
2                dresses
4                dresses
5                dresses
...                    …
17769               tops
17770   women's clothing
17771           sneakers
17772   traditional wear
17774   women's clothing
```
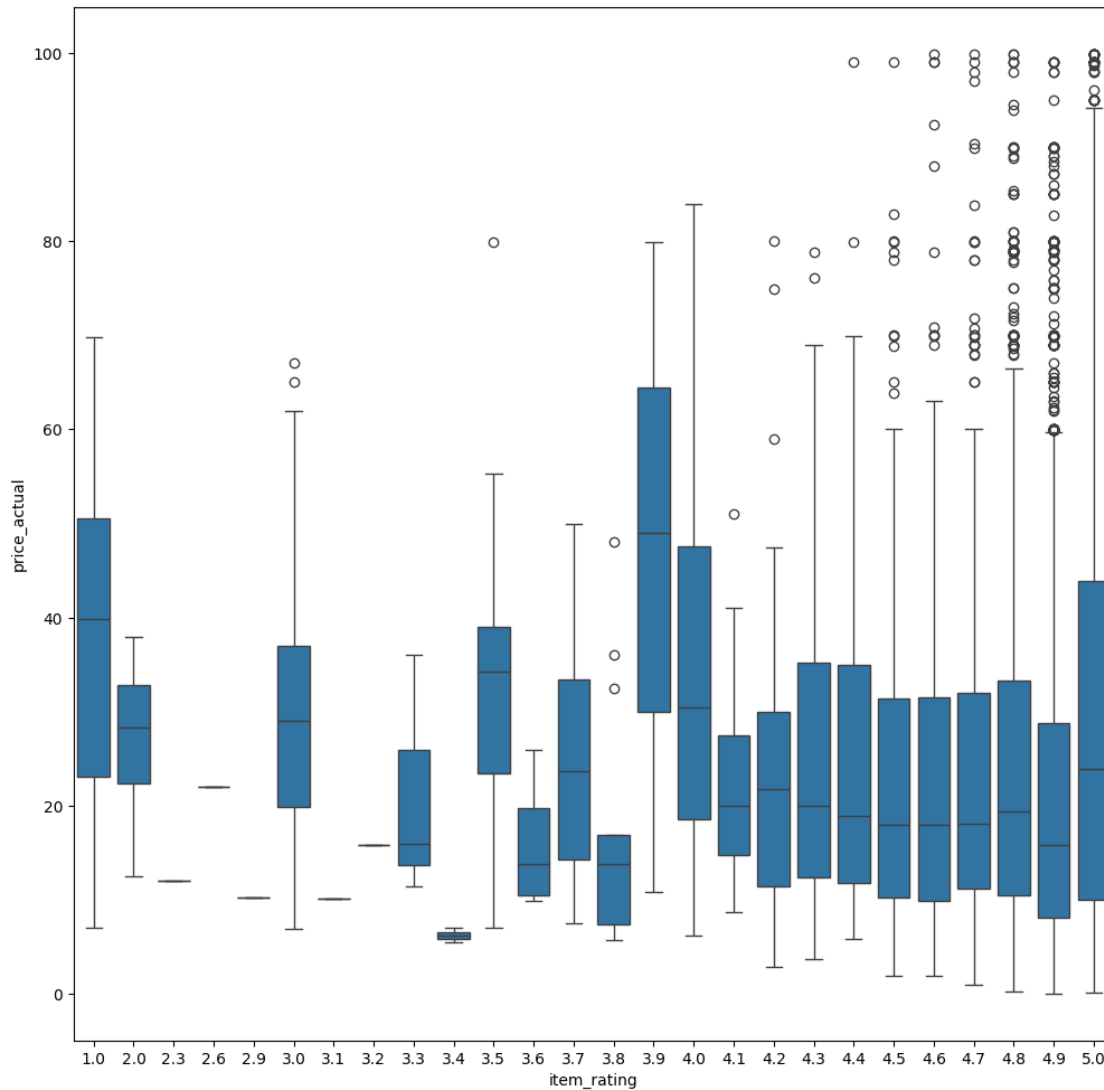
```
[16339 rows x 15 columns]
```

```
[19]: <Axes: xlabel='item_rating', ylabel='price_actual'>
```



```
[20]: def rating_count(price_tag):
          if price_tag >=1000 :
              if ((price_tag <2500) and (price_tag >=1900) ):
                  return 0.5*(5+4.9)
              else :
                  return 5
          if ((price_tag<1000) and (price_tag >=100)):
              if (price_tag > 630) :
                  return 5
```

```
        if ((price_tag < 630) and (price_tag >=390)):
            return 3
        if ((price_tag < 390) and (price_tag >=300)):
            return 3.5
        if ((price_tag <300) and (price_tag >=250)):
            return 4
        if ((price_tag < 250) and (price_tag >=200)):
            return 4.5
        if ((price_tag <200) and (price_tag >=100)):
            return 3.33
    else :
        if (price_tag >= 85) :
            return 4.7
        if(price_tag <85 and price_tag >= 50):
            return 3.9
        if (price_tag <50 and price_tag >=20):
            return 2
        if (price_tag < 20):
            return 4.7
```

[21]:
```
new_set.loc[new_set['item_rating'].isna(), 'item_rating']=new_set.
 ↪loc[new_set['item_rating'].isna(), 'price_actual'].apply(lambda row:␣
 ↪rating_count(row))
```

[22]:
```
import datetime
new_set['date_date']=new_set["w_date"].apply(lambda x: datetime.datetime.
 ↪strptime(
    (str(int(x))[0:4]+'-'+str(int(x))[4:6]+'-'+str(int(x))[6:]),'%Y-%m-%d'
    ).date()
                                                )
```
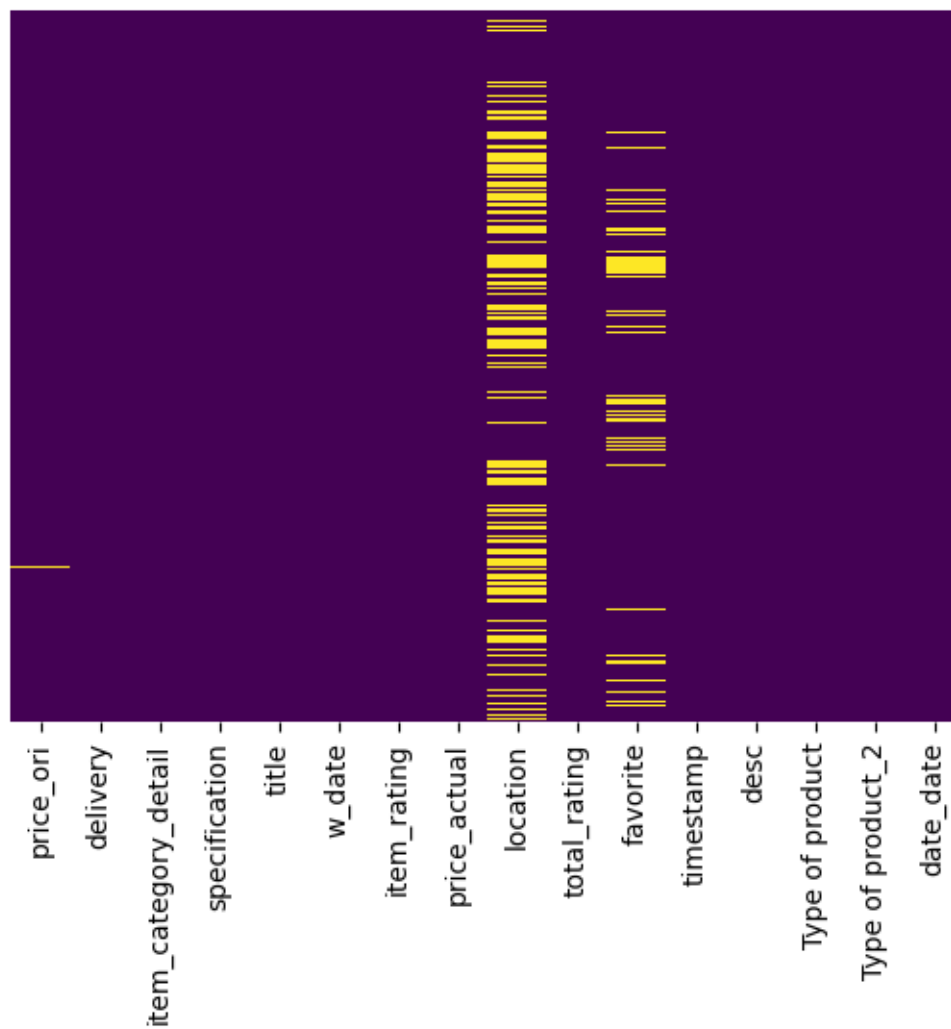
[23]:
```
sns.heatmap(new_set.isnull(),cbar=False,cmap='viridis',yticklabels=False)
```
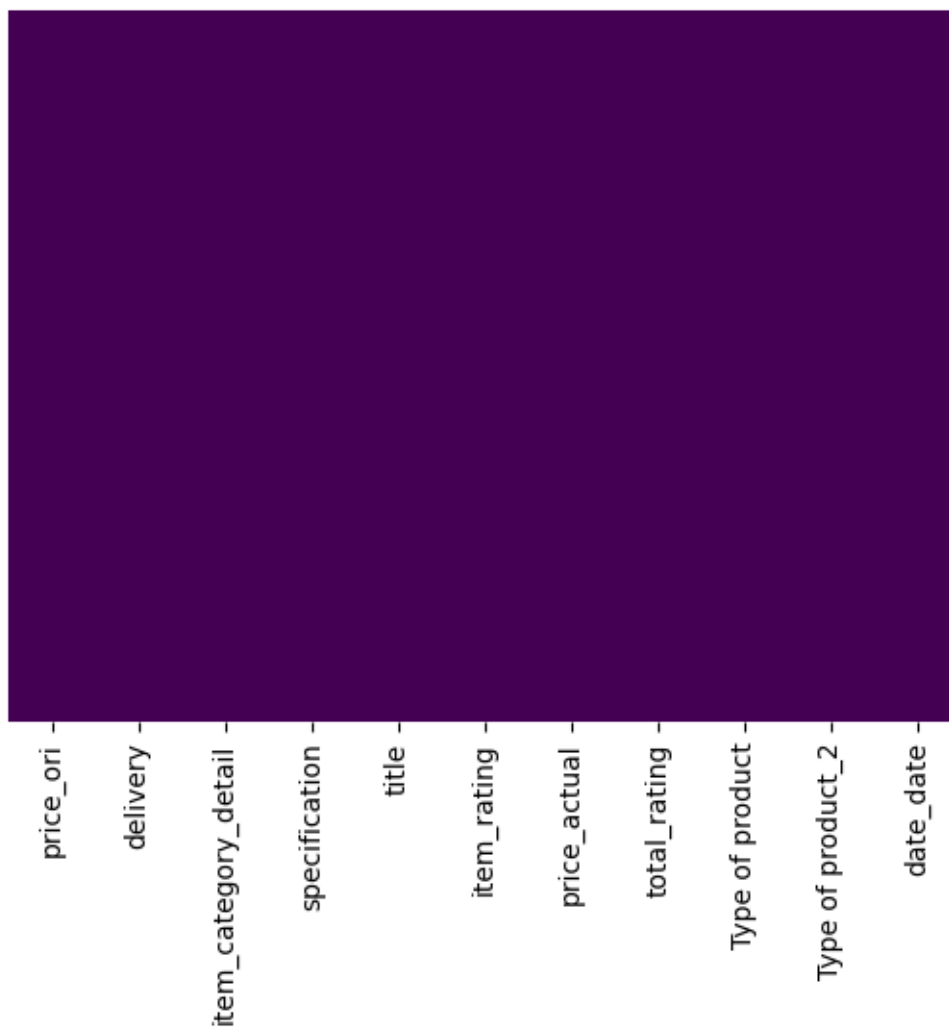
[23]: <Axes: >

```
[24]: new_set=pd.read_csv('fashion_data_set.csv')
      sns.heatmap(new_set.isnull(),cbar=False,cmap='viridis',yticklabels=False)
```
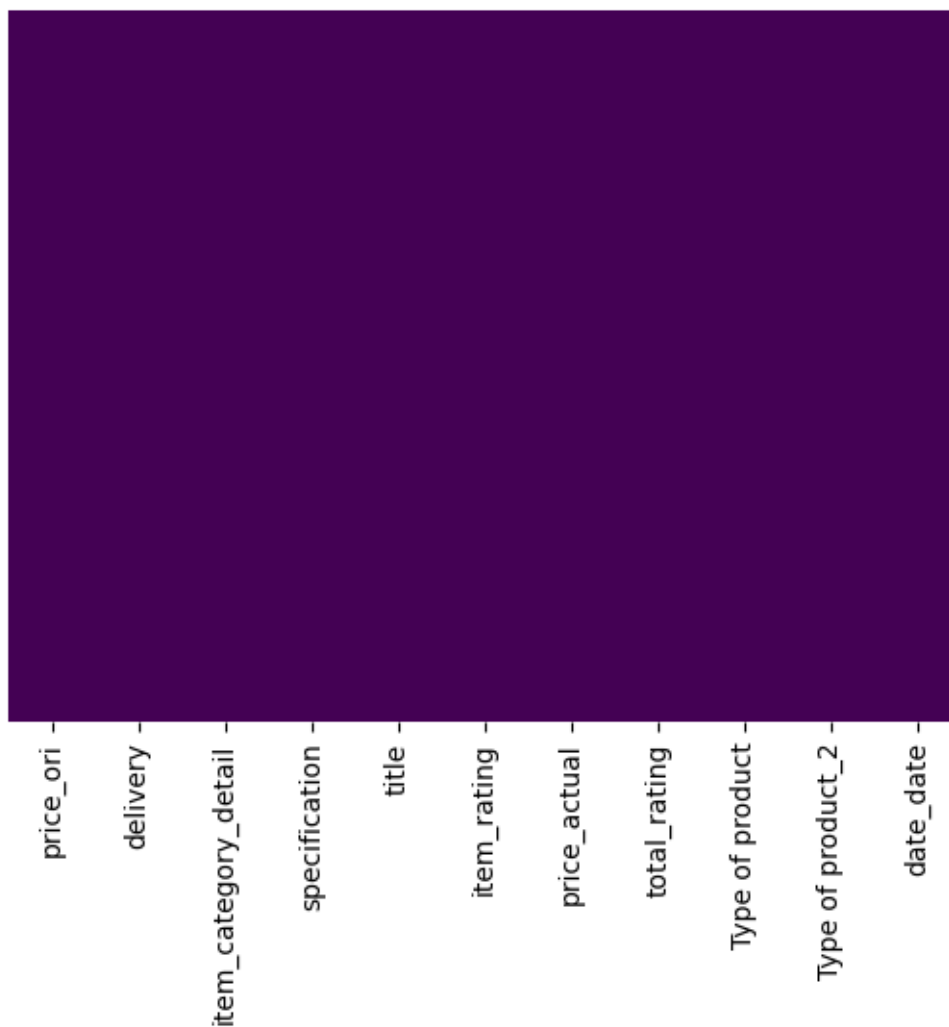
```
[24]: <Axes: >
```

```
[25]: new_set.loc[new_set['price_ori'].isna(),'price_ori'] = new_set.
      ↪loc[new_set['price_ori'].isna(),'price_actual']
```

```
[26]: sns.heatmap(new_set.isnull(),cbar=False,cmap='viridis',yticklabels=False)
```

```
[26]: <Axes: >
```

```
[27]: df['total_rating']
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[27], line 1
----> 1 df['total_rating']

NameError: name 'df' is not defined
```