Amazon Brazil Products 2023

```
In [1]: import numpy as np
        import pandas as pd
        import seaborn as sns
        import matplotlib.pyplot as plt
```

```
In [2]: df = pd.read_csv(r"C:\Users\Admin\Downloads\amz_br_total_products_data_processed.csv", engine = 'python', encod
```

```
In [3]: df
```

Out[3]:

	asin	title	imgUrl	productURL	stars	reviews
0	B0C154VR2L	SAMSUNG Smart TV Crystal 50" 4K UHD CU7700 - A...	https://m.media-amazon.com/images/I/71vk2qFDSP...	https://www.amazon.com.br/dp/B0C154VR2L	4.6	269	227
1	B0C85J5HYD	Mini Projetor Portatil 5G Wifi 6 Bluetooth 5.0...	https://m.media-amazon.com/images/I/5133wKaOqS...	https://www.amazon.com.br/dp/B0C85J5HYD	4.5	816	40
2	B0C1538ZJ4	Samsung Smart TV Crystal 43" 4K UHD CU7700 - A...	https://m.media-amazon.com/images/I/71vk2qFDSP...	https://www.amazon.com.br/dp/B0C1538ZJ4	4.7	638	196
3	B0B4V379PC	Samsung 60BU8000 - Smart TV LED 60' 4K UHD, Wi...	https://m.media-amazon.com/images/I/8110fzpU-P...	https://www.amazon.com.br/dp/B0B4V379PC	4.6	675	309
4	B0899BRB4B	Smart TV LED 32" HD Samsung LH32BETBLGGXZD	https://m.media-amazon.com/images/I/61M025WzQd...	https://www.amazon.com.br/dp/B0899BRB4B	4.7	3945	107
...	...	...	...	...	...	...
1344508	B0CG81Q7YZ	Capa INFiLAND Flex Cover Tab S8 Plus 12.4 pol ...	https://m.media-amazon.com/images/I/71L1XW1F6R...	https://www.amazon.com.br/dp/B0CG81Q7YZ	0.0	0	22
1344509	B0CJ418PM1	Teclado para Notebook compatÃvel com Thinkpad...	https://m.media-amazon.com/images/I/61c7FFn0Ji...	https://www.amazon.com.br/dp/B0CJ418PM1	0.0	0	23
1344510	B09YHX87RM	KKcare Tablet grÃ¡fico LED A5 Light Pad Digita...	https://m.media-amazon.com/images/I/616v6AkvNV...	https://www.amazon.com.br/dp/B09YHX87RM	0.0	0	8
1344511	B0CKS1GBMM	Bateria para Notebook Ne57007b	https://m.media-amazon.com/images/I/41NnZx7wg+...	https://www.amazon.com.br/dp/B0CKS1GBMM	0.0	0	13
1344512	B00P10QYCC	Plantronics headset qd mono encorepro hw510 ca...	https://m.media-amazon.com/images/I/51EHaYprjI...	https://www.amazon.com.br/dp/B00P10QYCC	4.2	26	24

1344513 rows × 11 columns

```
In [4]: # Columns REname name
        df.rename(columns={'productURL':'Product URL','title':'Title','imgUrl':'Image URL','stars':'Stars','reviews':'R
```

```
In [5]: # List of Columns Name
        df.columns
```

```
Out[5]: Index(['asin', 'Title', 'Image URL', 'Product URL', 'Stars', 'Reviews',
               'Price', 'List Price', 'Category Name', 'Best Seller',
               'Bought In Last Month'],
              dtype='object')
```

```
In [6]: # Describe the table
        df.describe
```

```
Out[6]:  <bound method NDFrame.describe of              asin                                              Title  \
         0        B0C154VR2L  SAMSUNG Smart TV Crystal 50" 4K UHD CU7700 - A...
         1        B0C85J5HYD  Mini Projetor Portatil 5G Wifi 6 Bluetooth 5.0...
         2        B0C1538ZJ4  Samsung Smart TV Crystal 43" 4K UHD CU7700 - A...
         3        B0B4V379PC  Samsung 60BU8000 - Smart TV LED 60' 4K UHD, Wi...
         4        B0899BRB4B         Smart TV LED 32'' HD Samsung LH32BETBLGGXZD
         ...            ...                                                ...
         1344508  B0CG81Q7YZ  Capa INFiLAND Flex Cover Tab S8 Plus 12.4 pol ...
         1344509  B0CJ418PM1  Teclado para Notebook compatÃvel com Thinkpad...
         1344510  B09YHX87RM  KKcare Tablet grÃ¡fico LED A5 Light Pad Digita...
         1344511  B0CKS1GBMM                      Bateria para Notebook Ne57007b
         1344512  B00P10QYCC  Plantronics headset qd mono encorepro hw510 ca...

                                                          Image URL  \
         0        https://m.media-amazon.com/images/I/71vk2qFDSP...
         1        https://m.media-amazon.com/images/I/5133wKaOqS...
         2        https://m.media-amazon.com/images/I/71vk2qFDSP...
         3        https://m.media-amazon.com/images/I/8110fzpU-P...
         4        https://m.media-amazon.com/images/I/61M025WzQd...
         ...                                                    ...
         1344508  https://m.media-amazon.com/images/I/71L1XW1F6R...
         1344509  https://m.media-amazon.com/images/I/61c7FFn0Ji...
         1344510  https://m.media-amazon.com/images/I/616v6AkvNV...
         1344511  https://m.media-amazon.com/images/I/41NnZx7wg+...
         1344512  https://m.media-amazon.com/images/I/51EHaYprjI...

                                          Product URL  Stars  Reviews    Price  \
         0        https://www.amazon.com.br/dp/B0C154VR2L    4.6      269  2279.05
         1        https://www.amazon.com.br/dp/B0C85J5HYD    4.5      816   409.99
         2        https://www.amazon.com.br/dp/B0C1538ZJ4    4.7      638  1969.00
         3        https://www.amazon.com.br/dp/B0B4V379PC    4.6      675  3099.00
         4        https://www.amazon.com.br/dp/B0899BRB4B    4.7     3945  1079.90
         ...                                          ...    ...      ...      ...
         1344508  https://www.amazon.com.br/dp/B0CG81Q7YZ    0.0        0   229.00
         1344509  https://www.amazon.com.br/dp/B0CJ418PM1    0.0        0   235.34
         1344510  https://www.amazon.com.br/dp/B09YHX87RM    0.0        0    81.89
         1344511  https://www.amazon.com.br/dp/B0CKS1GBMM    0.0        0   139.41
         1344512  https://www.amazon.com.br/dp/B00P10QYCC    4.2       26   249.09

                  List Price           Category Name  Best Seller  \
         0               0.0  TV, Ãudio e Cinema em Casa        False
         1               0.0  TV, Ãudio e Cinema em Casa         True
         2            2499.0  TV, Ãudio e Cinema em Casa        False
         3               0.0  TV, Ãudio e Cinema em Casa        False
         4            1369.0  TV, Ãudio e Cinema em Casa         True
         ...             ...                     ...          ...
         1344508       254.0  Computadores e InformÃ¡tica        False
         1344509         0.0  Computadores e InformÃ¡tica        False
         1344510         0.0  Computadores e InformÃ¡tica        False
         1344511         0.0  Computadores e InformÃ¡tica        False
         1344512         0.0  Computadores e InformÃ¡tica        False

                  Bought In Last Month
         0                           0
         1                        5000
         2                           0
         3                           0
         4                           0
         ...                       ...
         1344508                     0
         1344509                     0
         1344510                     0
         1344511                     0
         1344512                     0

         [1344513 rows x 11 columns]>
```

In [7]:
```python
# Statisctical Information
df.describe().transpose()
```

Out[7]:

	count	mean	std	min	25%	50%	75%	max
Stars	1344513.0	1.471351	2.107560	0.0	0.0	0.0	4.20	5.0
Reviews	1344513.0	212.230983	4581.190312	0.0	0.0	0.0	3.00	1878552.0
Price	1344513.0	217.856979	856.208637	0.0	25.0	69.0	153.99	100000.0
List Price	1344513.0	65.303842	2874.167154	0.0	0.0	0.0	0.00	1999000.0
Bought In Last Month	1344513.0	4.350088	94.358861	0.0	0.0	0.0	0.00	40000.0

In [8]:
```python
# check Null Values
df.isnull().sum()
```

```
Out[8]:  asin                    0
         Title                   1
         Image URL               0
         Product URL             0
         Stars                   0
         Reviews                 0
         Price                   0
         List Price              0
         Category Name           0
         Best Seller             0
         Bought In Last Month    0
         dtype: int64
```

```
In [9]:  # delete the null values
         df1 = df.dropna()
```

```
In [10]:  # check the null values after the delete in table
          df1.isnull().sum()
```

```
Out[10]:  asin                    0
          Title                   0
          Image URL               0
          Product URL             0
          Stars                   0
          Reviews                 0
          Price                   0
          List Price              0
          Category Name           0
          Best Seller             0
          Bought In Last Month    0
          dtype: int64
```

```
In [11]:  # check table size
          df1.shape
```

```
Out[11]:  (1344512, 11)
```

```
In [12]:  # give the full information of table
          df1.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Index: 1344512 entries, 0 to 1344512
Data columns (total 11 columns):
 #   Column                Non-Null Count    Dtype
---  ------                --------------    -----
 0   asin                  1344512 non-null  object
 1   Title                 1344512 non-null  object
 2   Image URL             1344512 non-null  object
 3   Product URL           1344512 non-null  object
 4   Stars                 1344512 non-null  float64
 5   Reviews               1344512 non-null  int64
 6   Price                 1344512 non-null  float64
 7   List Price            1344512 non-null  float64
 8   Category Name         1344512 non-null  object
 9   Best Seller           1344512 non-null  bool
 10  Bought In Last Month  1344512 non-null  int64
dtypes: bool(1), float64(3), int64(2), object(5)
memory usage: 114.1+ MB
```

```
In [13]:  # top data from table
          df1.head()
```

Out[13]:

	asin	Title	Image URL	Product URL	Stars	Reviews	Price	
0	B0C154VR2L	SAMSUNG Smart TV Crystal 50" 4K UHD CU7700 - A...	https://m.media-amazon.com/images/I/71vk2qFDSP...	https://www.amazon.com.br/dp/B0C154VR2L	4.6	269	2279.05	
1	B0C85J5HYD	Mini Projetor Portatil 5G Wifi 6 Bluetooth 5.0...	https://m.media-amazon.com/images/I/5133wKaOqS...	https://www.amazon.com.br/dp/B0C85J5HYD	4.5	816	409.99	
2	B0C1538ZJ4	Samsung Smart TV Crystal 43" 4K UHD CU7700 - A...	https://m.media-amazon.com/images/I/71vk2qFDSP...	https://www.amazon.com.br/dp/B0C1538ZJ4	4.7	638	1969.00	24
3	B0B4V379PC	Samsung 60BU8000 - Smart TV LED 60' 4K UHD, Wi...	https://m.media-amazon.com/images/I/8110fzpU-P...	https://www.amazon.com.br/dp/B0B4V379PC	4.6	675	3099.00	
4	B0899BRB4B	Smart TV LED 32" HD Samsung LH32BETBLGGXZD	https://m.media-amazon.com/images/I/61M025WzQd...	https://www.amazon.com.br/dp/B0899BRB4B	4.7	3945	1079.90	13

```
In [14]:   # Bottom top data
           df1.tail()
```

Out[14]:

	asin	Title	Image URL	Product URL	Stars	Reviews	Price	L Pr
1344508	B0CG81Q7YZ	Capa INFiLAND Flex Cover Tab S8 Plus 12.4 pol ...	https://m.media-amazon.com/images/I/71L1XW1F6R...	https://www.amazon.com.br/dp/B0CG81Q7YZ	0.0	0	229.00	25
1344509	B0CJ418PM1	Teclado para Notebook compatÃ-vel com Thinkpad...	https://m.media-amazon.com/images/I/61c7FFn0Ji...	https://www.amazon.com.br/dp/B0CJ418PM1	0.0	0	235.34	
1344510	B09YHX87RM	KKcare Tablet grÃ¡fico LED A5 Light Pad Digita...	https://m.media-amazon.com/images/I/616v6AkvNV...	https://www.amazon.com.br/dp/B09YHX87RM	0.0	0	81.89	
1344511	B0CKS1GBMM	Bateria para Notebook Ne57007b	https://m.media-amazon.com/images/I/41NnZx7wg+...	https://www.amazon.com.br/dp/B0CKS1GBMM	0.0	0	139.41	
1344512	B00P10QYCC	Plantronics headset qd mono encorepro hw510 ca...	https://m.media-amazon.com/images/I/51EHaYprjl...	https://www.amazon.com.br/dp/B00P10QYCC	4.2	26	249.09	

```
In [15]:   # show unique values of columns
           df1['asin'].unique()
```

Out[15]:   array(['B0C154VR2L', 'B0C85J5HYD', 'B0C1538ZJ4', ..., 'B09YHX87RM',
                  'B0CKS1GBMM', 'B00P10QYCC'], dtype=object)

```
In [16]:   # count the total values
           df1['asin'].value_counts()
```

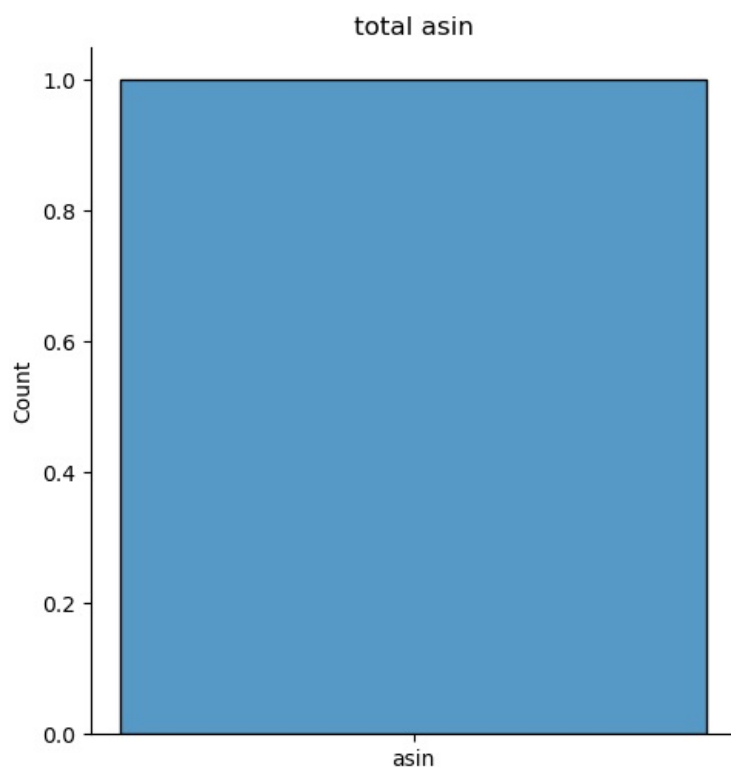Out[16]:   asin
           B0C154VR2L   1
           B08ZM1G6DP   1
           B08L9MYQ4T   1
           B08TR76NFT   1
           B079H2H7P8   1
                        ..
           B0C3WSHPPX   1
           B0C9SQV2TL   1
           B0C9VKVKS1   1
           B0CGKN2GKX   1
           B00P10QYCC   1
           Name: count, Length: 1344512, dtype: int64

```
In [17]:   # check the indivual refrences bar chart of columns
           plt.figure(figsize=(10,5))
           sns.displot('asin')
           plt.title('total asin')
           plt.show()
```

C:\Users\Admin\anaconda3\Lib\site-packages\seaborn\axisgrid.py:118: UserWarning: The figure layout has changed to tight
  self._figure.tight_layout(*args, **kwargs)
<Figure size 1000x500 with 0 Axes>

total asin

```
In [18]: df['Title'].value_counts()

Out[18]: Title
         Mochila escolar durÃ¡vel para faculdade, mochila casual resistente Ã  Ã¡gua para mulheres e homens, mochila par
         a laptop campus para viagens, negÃ³cios, caminhadas, Multicor, Large                    184
         Ã\culos de TitÃ¢nio ArmaÃ§Ã£o Feminina Lentes FotocromÃ¡ticas Rosa Roxo cor Oculos Miopia -3.0 Oculos Femininos
         8301                                                                                      90
         Lona transparente com ilhÃ³s, lona de cobertura Ã  prova d'Ã¡gua, capa de chuva multifuncional externa de 0,35
         mm, cobertura de dossel de planta de pÃ¡tio de toldo externo (2,8 x 4 m/9,2 x 13 pÃ©s) ()      63
         TÃªnis masculino
         62
         SandÃ¡lia SandÃ¡lia My shoes, My shoes, feminino
         61
                                                                                                       ...
         ADOCARN Removedor De Unhas 3 PeÃ§as Kit De Pedicure DomÃ©stico Ferramentas DomÃ©sticas Corretor Ferramenta De R
         emoÃ§Ã£o De Unhas Encravadas Conjunto De CutÃ\cula De Manicure Ferramenta                       1
         Beavorty Protetores De PÃ©s De Gel De Silicone Para PÃ©s Protetores De Calcanhar Meias Fascite Plantar Manga De
         Silicone Sapatos Saltos Meias Cuidados Com Os PÃ©s Meias De Calcanhar De Gel                    1
         Beavorty Massageador Facial Massageador ElÃ©trico Para Os Olhos Massageador ElÃ©trico Para Os Olhos Mini Massag
         eador Para Os Olhos Caneta De Massagem Bateria Seca Choque Rosa Rugas                           1
         FRCOLOR 6 Folhas De Adesivos De Unhas DecoraÃ§Ãµes De Unhas Para Arte De Unhas Decalques De Arte De Unhas Adesi
         vos Para Unhas Adesivos Luminosos De Unhas 3D Decalque De Arte De Unhas De                      1
         Plantronics headset qd mono encorepro hw510 cancelamento de ruÃdo
         1
         Name: count, Length: 1308168, dtype: int64

In [19]: df['Title'].unique()
```

```
Out[19]:  array(['SAMSUNG Smart TV Crystal 50" 4K UHD CU7700 - Alexa built in, Samsung Gaming Hub',
                 'Mini Projetor Portatil 5G Wifi 6 Bluetooth 5.0 Android 11, Projetor 4K 1080P Full HD Suporte 8000 Lumen
         s, Projetor Led Auto de CorreÃ§Ã£o TrapezÃ³ide Horizontal, 180Â°GirÃ¡vel Projector para TelefÃ³nico',
                 'Samsung Smart TV Crystal 43" 4K UHD CU7700 - Alexa built in, Samsung Gaming Hub',
                 ...,
                 'KKcare Tablet grÃ¡fico LED A5 Light Pad Digital Tablet Copyboard com brilho ajustÃ¡vel de 3 nÃ\xadveis
         para rastreamento de desenho cÃ³pia visualizaÃ§Ã£o arte DIY artesanato joia de diamante suprimentos de pintura'
                 ,
                 'Bateria para Notebook Ne57007b',
                 'Plantronics headset qd mono encorepro hw510 cancelamento de ruÃ\xaddo'],
                dtype=object)
```
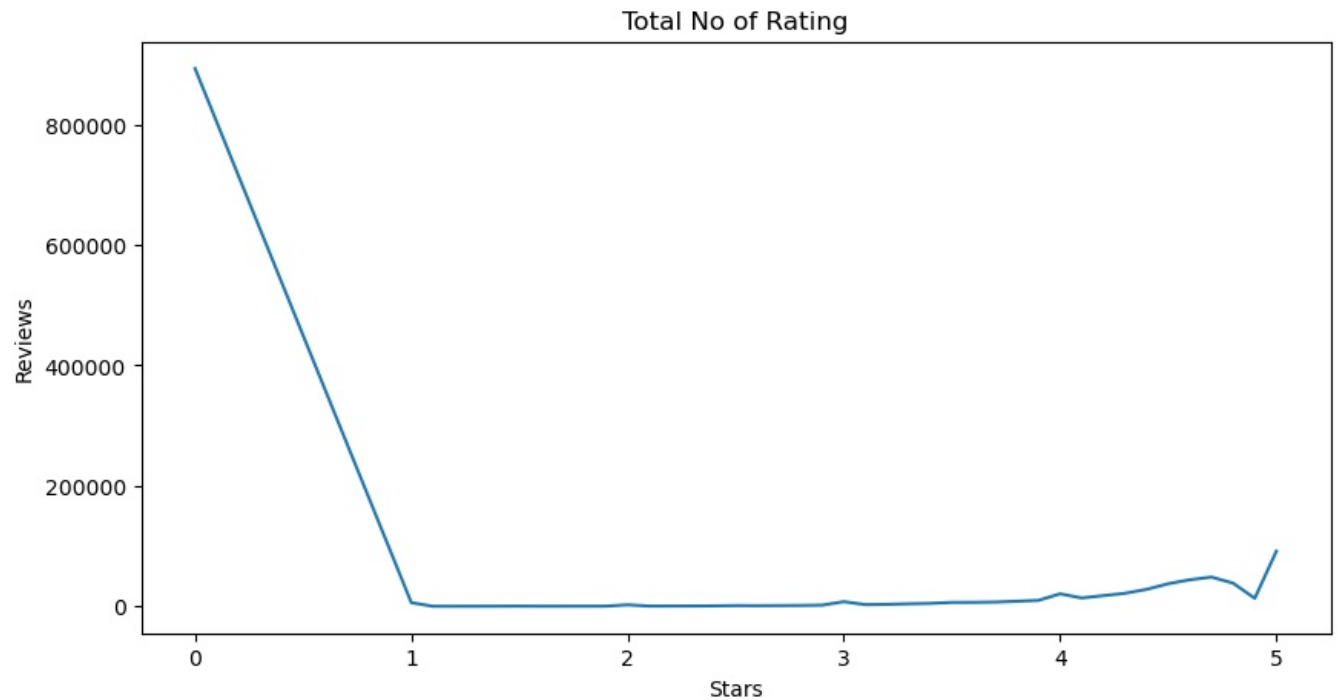
In [20]: `df['Stars'].unique()`

```
Out[20]:  array([4.6, 4.5, 4.7, 4.4, 4.3, 4.9, 4.8, 3.9, 4.1, 5. , 4.2, 4. , 3.6,
                 3.3, 3.7, 3.8, 3.5, 0. , 3. , 3.4, 2.7, 2.5, 2.9, 3.1, 2. , 1.7,
                 3.2, 1. , 2.6, 1.9, 2.1, 2.8, 2.3, 1.8, 2.4, 2.2, 1.6, 1.4, 1.5,
                 1.2, 1.3, 1.1])
```

In [21]: `df['Stars'].value_counts()`

```
Out[21]:  Stars
          0.0    892728
          5.0     91408
          4.7     48410
          4.6     43997
          4.8     38335
          4.5     37354
          4.4     28053
          4.3     21499
          4.0     20619
          4.2     17602
          4.1     13827
          4.9     13229
          3.9      9804
          3.8      8292
          3.0      7586
          3.7      6939
          3.6      6455
          3.5      6373
          1.0      5948
          3.4      4787
          3.3      4082
          3.2      3159
          3.1      2725
          2.0      2373
          2.9      1848
          2.8      1351
          2.7      1134
          2.5      1106
          2.6       949
          2.4       631
          2.3       420
          2.2       338
          2.1       305
          1.5       224
          1.9       170
          1.8       131
          1.4       102
          1.7        92
          1.6        77
          1.3        42
          1.2         8
          1.1         1
          Name: count, dtype: int64
```

In [37]:
```python
#Total No of Rating
model_year_counts = df.groupby('Stars')['Reviews'].count()
plt.figure(figsize=(10,5))
plt.plot(model_year_counts.index,model_year_counts.values)
plt.xlabel('Stars')
plt.ylabel('Reviews')
plt.title('Total No of Rating')
```

Out[37]: Text(0.5, 1.0, 'Total No of Rating')

Total No of Rating


```
In [23]: df['Price'].value_counts()
```

```
Out[23]: Price
         0.00       264114
         152.17       7929
         39.90        4701
         209.00       4435
         49.90        3999
                      ...
         829.08          1
         435.51          1
         715.45          1
         1044.76         1
         1986.90         1
         Name: count, Length: 85794, dtype: int64
```

```
In [24]: df['Price'].unique()
```

```
Out[24]: array([2279.05,  409.99, 1969.  , ..., 7199.9 , 3169.22, 1986.9 ])
```

```
In [25]: df['List Price'].value_counts()
```

```
Out[25]: List Price
         0.00       1186414
         39.90         1419
         59.90         1401
         49.90         1321
         29.90         1185
                       ...
         2136.39          1
         140.12           1
         150.83           1
         216.72           1
         1128.00          1
         Name: count, Length: 30668, dtype: int64
```

```
In [26]: df['List Price'].unique()
```
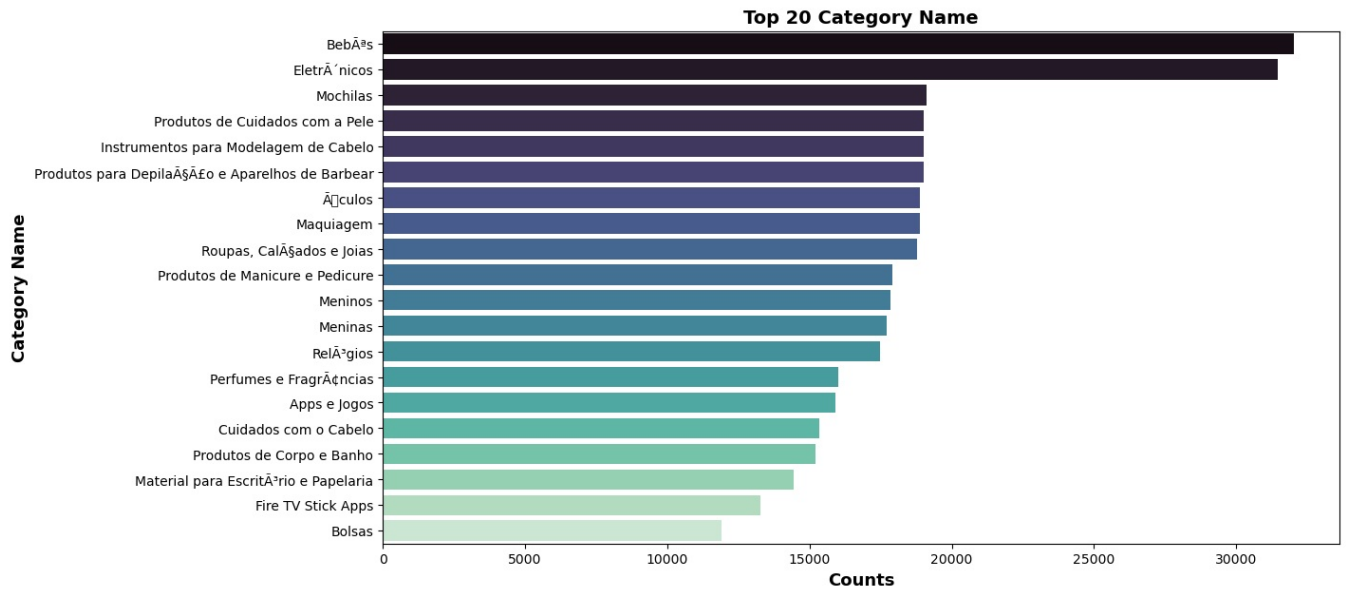
```
Out[26]: array([   0.  , 2499.  , 1369.  , ...,  182.73,  117.87,  227.03])
```

```
In [27]: aws_counts = df1['Category Name'].value_counts().nlargest(20)
         plt.figure(figsize=(13, 7))
         sns.barplot(x=aws_counts.values, y=aws_counts.index, palette="mako")
         plt.title('Top 20 Category Name', fontweight='bold', fontsize=14)
```

```python
plt.xlabel('Counts', fontweight='bold', fontsize=13)
plt.ylabel('Category Name', fontweight='bold', fontsize=13)
plt.show()
```

```
C:\Users\Admin\anaconda3\Lib\site-packages\IPython\core\pylabtools.py:152: UserWarning: Glyph 147 (\x93) missin
g from current font.
  fig.canvas.print_figure(bytes_io, **kw)
```


In [28]: `df['Stars'].count()`

Out[28]: 1344513

In [29]: `df['Best Seller'].value_counts()`

Out[29]:
```
Best Seller
False    1342124
True        2389
Name: count, dtype: int64
```
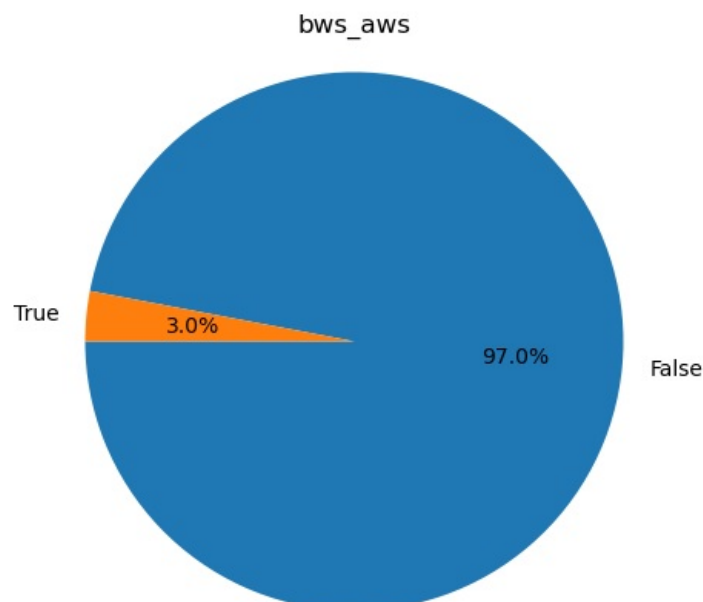
In [30]: `df['Best Seller'].unique()`

Out[30]: `array([False,  True])`

In [31]:
```python
bws_aws = ['False','True']
percentages = [97, 3]  # These should add up to 100%

# Create a pie chart
plt.figure(figsize=(10, 5))
plt.pie(percentages, labels=bws_aws, autopct='%1.1f%%', startangle=180)

# Add a title
plt.title("bws_aws")

# Display the pie chart
plt.axis('equal')  # Equal aspect ratio ensures that the pie is drawn as a circle.
plt.show()
```

```
In [32]: df['Bought In Last Month'].unique()

Out[32]: array([     0,  5000,  2000,  1000,   700,  3000,   300,   200,   800,
                   900,   500,   600,   400,   100,    50,  4000, 10000,  9000,
                  7000,  6000,  8000, 40000, 30000, 20000], dtype=int64)

In [33]: top_model = [0,  5000,  2000,  1000,   700,  3000,   300,   200,   800,
                   900,   500,   600,   400,   100,    50,  4000, 10000,  9000,
                  7000,  6000,  8000, 40000, 30000, 20000]

         model_evtype = df1[df1["Bought In Last Month"].isin(top_model)]

         top_model_evtype = model_evtype.groupby(["Price", "Bought In Last Month"]).size().reset_index(name="Count")

         top_model_evtype
```

Out[33]:

	Price	Bought In Last Month	Count
0	0.00	0	263730
1	0.00	50	175
2	0.00	100	118
3	0.00	200	31
4	0.00	300	19
...	...	...	...
100153	67020.00	0	1
100154	67858.78	0	1
100155	73434.41	0	1
100156	85916.98	0	1
100157	100000.00	0	1

100158 rows × 3 columns

```
In [35]: df.sample(1).T
```

Out[35]:

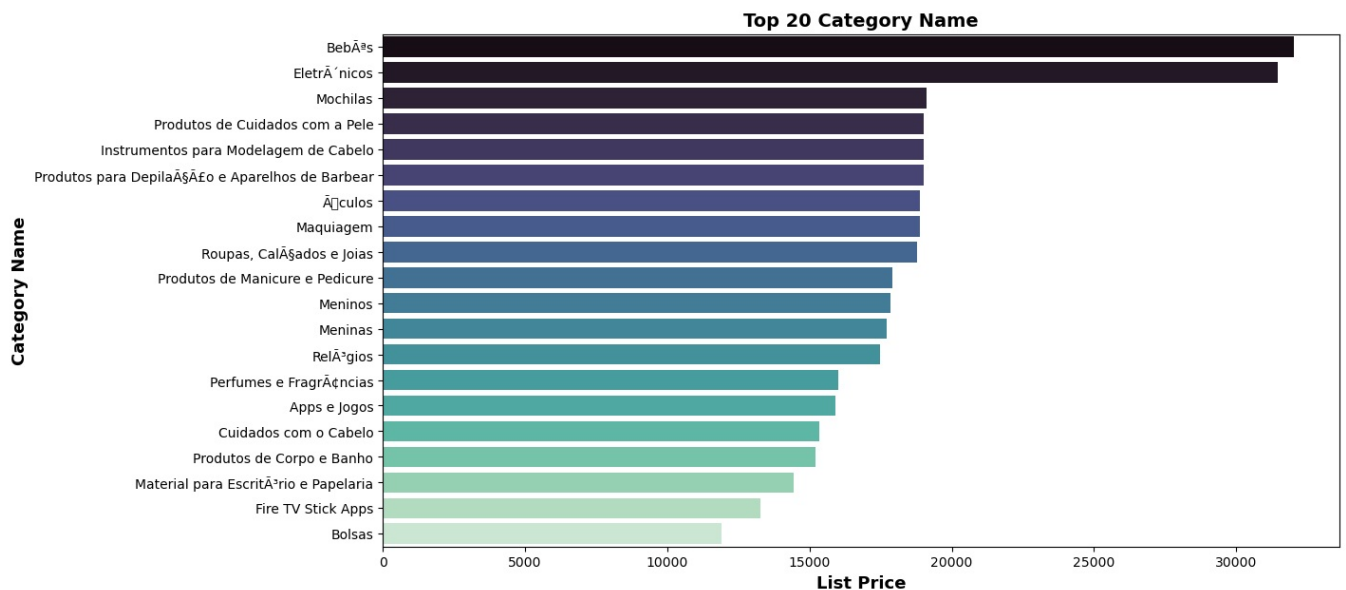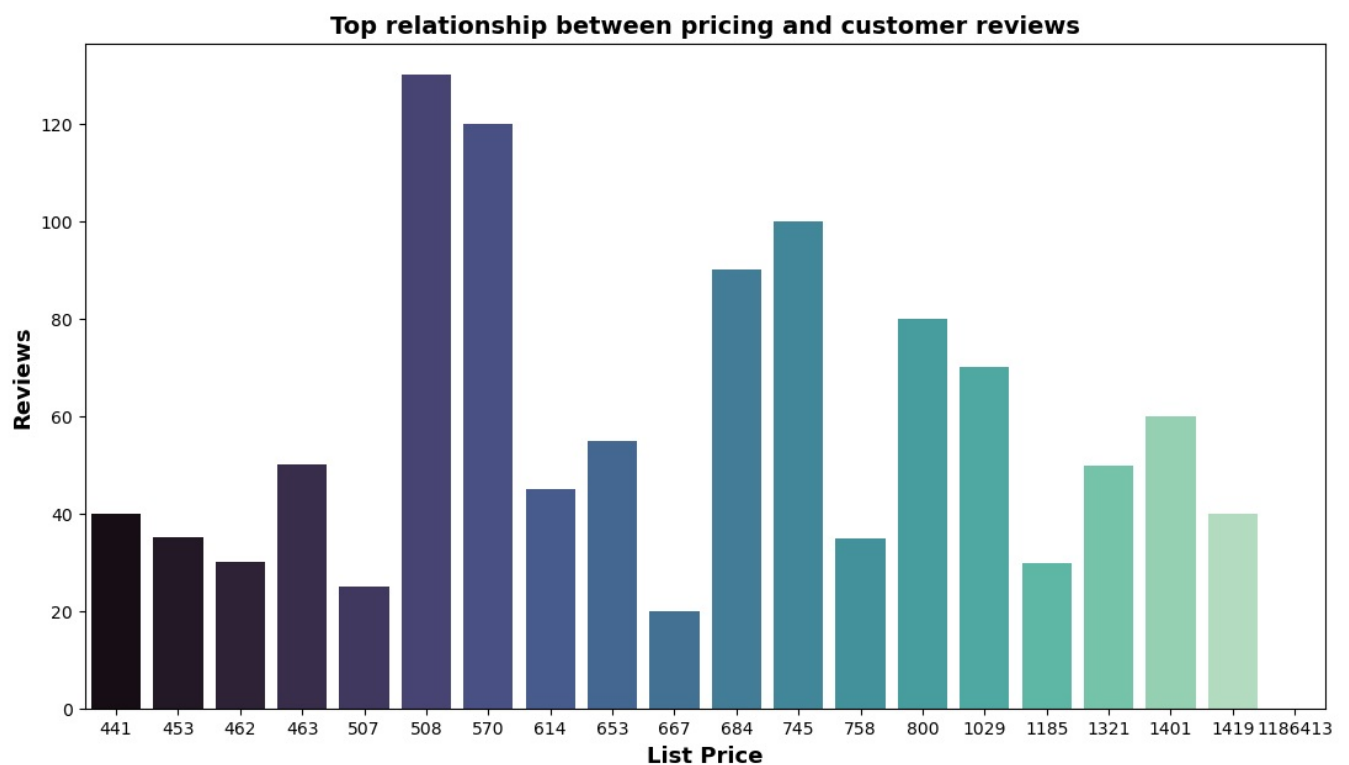|	778781
asin	B0CJBLG5S3
Title	KKcare Carregador USB para motocicleta Super F...
Image URL	https://m.media-amazon.com/images/I/617D3SMKut...
Product URL	https://www.amazon.com.br/dp/B0CJBLG5S3
Stars	0.0
Reviews	0
Price	88.49
List Price	0.0
Category Name	Carregadores de Celular
Best Seller	False
Bought In Last Month	0

```
In [36]: # List Price vs trend of Category Name
         aws_counts = df1['Category Name'].value_counts().nlargest(20)
         plt.figure(figsize=(13, 7))
         sns.barplot(x=aws_counts.values, y=aws_counts.index, palette="mako")
         plt.title('Top 20 Category Name', fontweight='bold', fontsize=14)
         plt.xlabel('List Price', fontweight='bold', fontsize=13)
         plt.ylabel('Category Name', fontweight='bold', fontsize=13)
         plt.show()
```
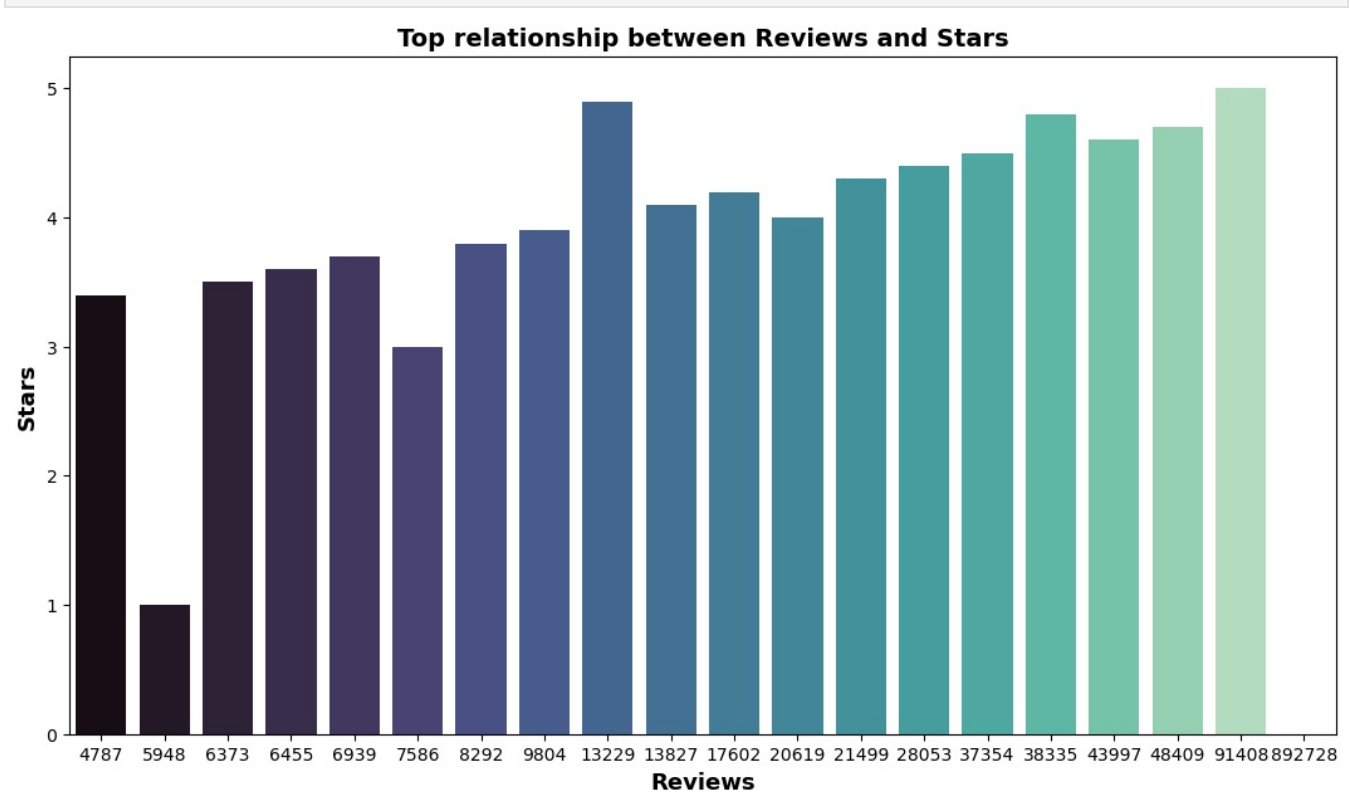
```
C:\Users\Admin\anaconda3\Lib\site-packages\IPython\core\pylabtools.py:152: UserWarning: Glyph 147 (\x93) missing from current font.
  fig.canvas.print_figure(bytes_io, **kw)
```

Top 20 Category Name


```
In [38]:   # Study the relationship between pricing and customer reviews
           aws_counts = df1['List Price'].value_counts().nlargest(20)
           plt.figure(figsize=(13, 7))
           sns.barplot(x=aws_counts.values, y=aws_counts.index, palette="mako")
           plt.title('Top relationship between pricing and customer reviews', fontweight='bold', fontsize=14)
           plt.xlabel('List Price', fontweight='bold', fontsize=13)
           plt.ylabel('Reviews', fontweight='bold', fontsize=13)
           plt.show()
```

Top relationship between pricing and customer reviews


```
In [42]:   # Top relationship between Reviews and Stars
           aws_counts = df1['Stars'].value_counts().nlargest(20)
           plt.figure(figsize=(13, 7))
           sns.barplot(x=aws_counts.values, y=aws_counts.index, palette="mako")
           plt.title('Top relationship between Reviews and Stars', fontweight='bold', fontsize=14)
           plt.xlabel('Reviews', fontweight='bold', fontsize=13)
           plt.ylabel('Stars', fontweight='bold', fontsize=13)
           plt.show()
```

Top relationship between Reviews and Stars

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