assignment-4

March 18, 2024

[1]:
```
import requests
from bs4 import BeautifulSoup as BS
import pandas as pd
```

[2]:
```
import seaborn as sns
import matplotlib.pyplot as plt
%matplotlib inline
```

[3]:
```
url = "https://www.amazon.in/s?
 ↪bbn=1389401031&rh=n%3A1389401031%2Cp_89%3AApple&dc&qid=1710587165&rnid=3837712031&ref=lp_13
header = ({'User-Agent':'Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/
 ↪537.36 (KHTML, like Gecko) Chrome/122.0.0.0 Safari/537.36 Edg/122.0.0.
 ↪0','Accept-Language':'en-US, en;q=0.5'})
```

[4]:
```
r = requests.get(url,headers=header)
r
```

[4]:
```
<Response [200]>
```

[5]:
```
soup = BS(r.content,'html.parser')
```

[6]:
```
product_titles = soup.find_all('h2',class_="a-size-mini a-spacing-none␣
 ↪a-color-base s-line-clamp-4")
product_title=[]
for title in product_titles:
    product_title.append(title.text.strip())
```

[7]:
```
product_title
```

[7]:
```
['Apple 20W USB-C Power Adapter (for iPhone, iPad & AirPods)',
 'Apple iPhone 13 (128GB) - Starlight',
 'Apple iPhone 13 (128GB) - Midnight',
 'Apple iPhone 13 (128GB) - Green',
 'Apple iPhone 13 (128GB) - Pink',
 'Apple iPhone 13 (256GB) - Midnight',
 'Apple Wired EarPods with Lightning Connector',
 'Apple iPhone 13 (128GB) - Blue',
```

```
 'Apple iPhone 13 (256 GB) - Green',
 'Apple iPhone 13 (256GB) - Starlight',
 'Apple Lightning to 3.5 mm Headphone Jack Adapter',
 'Apple iPhone 13 (256GB) - Blue',
 'Apple EarPods with 3.5mm Headphone Plug',
 'Apple iPhone 15 (128 GB) - Black',
 'Apple iPhone 13 (256GB) - Pink',
 'Apple iPhone 15 (128 GB) - Blue',
 'Apple iPhone 14 (128 GB) - Blue',
 'New Apple AirTag',
 'Apple USB-C to 3.5 mm Headphone Jack Adapter',
 'Apple iPhone 15 (256 GB) - Black',
 'Apple Pencil (2nd Generation) \u200b\u200b\u200b\u200b\u200b\u200b\u200b',
 'Apple iPhone 14 (128 GB) - Midnight',
 'Apple iPhone 15 (256 GB) - Blue',
 'Apple iPhone 14 (128 GB) - Starlight']
```

[8]:
```
products_price = soup.find_all('span',class_="a-price-whole")
product_price=[]
for price in products_price:
    product_price.append(price.text)
```

[9]:
```
product_price
```

[9]:
```
['1,699',
 '49,499',
 '49,499',
 '49,499',
 '49,499',
 '59,999',
 '1,899',
 '49,499',
 '59,999',
 '59,999',
 '900',
 '59,999',
 '1,699',
 '71,499',
 '59,999',
 '71,499',
 '58,999',
 '3,490',
 '900',
 '80,999',
 '11,499',
 '58,999',
 '80,999',
```

```
 '58,999']
```

[10]:
```
product_reviews = soup.find_all('span',class_="a-size-base s-underline-text")
product_review=[]
for review in product_reviews:
    product_review.append(review.text)
```

[11]:
```
product_review
```

[11]:
```
['82,605',
 '25,264',
 '25,264',
 '25,264',
 '25,264',
 '25,264',
 '18,634',
 '25,264',
 '25,264',
 '25,264',
 '95,207',
 '25,264',
 '29,847',
 '866',
 '25,264',
 '866',
 '4,656',
 '95,574',
 '11,579',
 '866',
 '51,708',
 '4,656',
 '866',
 '4,656']
```

[12]:
```
products = {'Product Name':product_title,'Price':product_price,'Reviews':
 ↪product_review}
df = pd.DataFrame(products)
```

[13]:
```
df
```

[13]:

	Product Name	Price	Reviews
0	Apple 20W USB-C Power Adapter (for iPhone, iPa…	1,699	82,605
1	Apple iPhone 13 (128GB) - Starlight	49,499	25,264
2	Apple iPhone 13 (128GB) - Midnight	49,499	25,264
3	Apple iPhone 13 (128GB) - Green	49,499	25,264
4	Apple iPhone 13 (128GB) - Pink	49,499	25,264
5	Apple iPhone 13 (256GB) - Midnight	59,999	25,264

6	Apple Wired EarPods with Lightning Connector	1,899	18,634
7	Apple iPhone 13 (128GB) - Blue	49,499	25,264
8	Apple iPhone 13 (256 GB) - Green	59,999	25,264
9	Apple iPhone 13 (256GB) - Starlight	59,999	25,264
10	Apple Lightning to 3.5 mm Headphone Jack Adapter	900	95,207
11	Apple iPhone 13 (256GB) - Blue	59,999	25,264
12	Apple EarPods with 3.5mm Headphone Plug	1,699	29,847
13	Apple iPhone 15 (128 GB) - Black	71,499	866
14	Apple iPhone 13 (256GB) - Pink	59,999	25,264
15	Apple iPhone 15 (128 GB) - Blue	71,499	866
16	Apple iPhone 14 (128 GB) - Blue	58,999	4,656
17	New Apple AirTag	3,490	95,574
18	Apple USB-C to 3.5 mm Headphone Jack Adapter	900	11,579
19	Apple iPhone 15 (256 GB) - Black	80,999	866
20	Apple Pencil (2nd Generation)	11,499	51,708
21	Apple iPhone 14 (128 GB) - Midnight	58,999	4,656
22	Apple iPhone 15 (256 GB) - Blue	80,999	866
23	Apple iPhone 14 (128 GB) - Starlight	58,999	4,656

[14]:
```
df.describe()
```

[14]:

	Product Name	Price	Reviews
count	24	24	24
unique	24	10	10
top	Apple 20W USB-C Power Adapter (for iPhone, iPa…	49,499	25,264
freq	1	5	10

[15]:
```
df.isnull()
```

[15]:

	Product Name	Price	Reviews
0	False	False	False
1	False	False	False
2	False	False	False
3	False	False	False
4	False	False	False
5	False	False	False
6	False	False	False
7	False	False	False
8	False	False	False
9	False	False	False
10	False	False	False
11	False	False	False
12	False	False	False
13	False	False	False
14	False	False	False
15	False	False	False
16	False	False	False

```
17          False  False    False
18          False  False    False
19          False  False    False
20          False  False    False
21          False  False    False
22          False  False    False
23          False  False    False
```

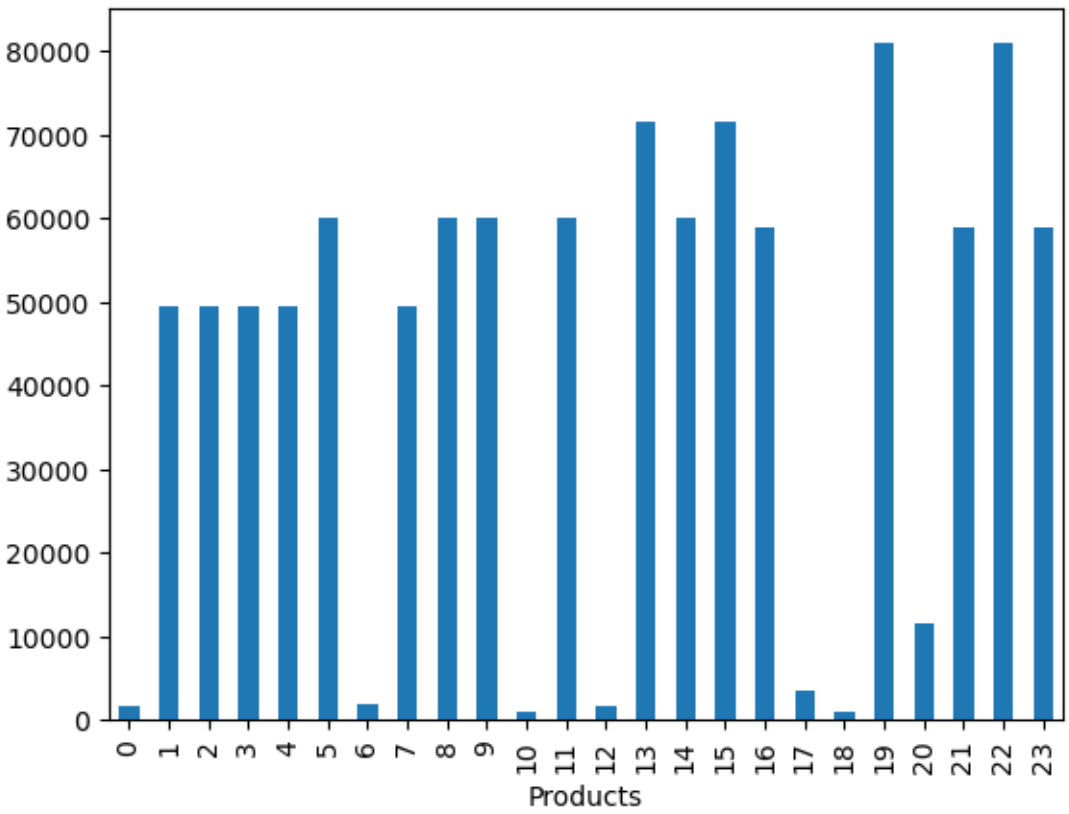
[16]:
```
df.isnull().sum()
```

[16]:
```
Product Name    0
Price           0
Reviews         0
dtype: int64
```

[17]:
```
df["Price"] = df["Price"].str.replace(",", "").astype(float)
```

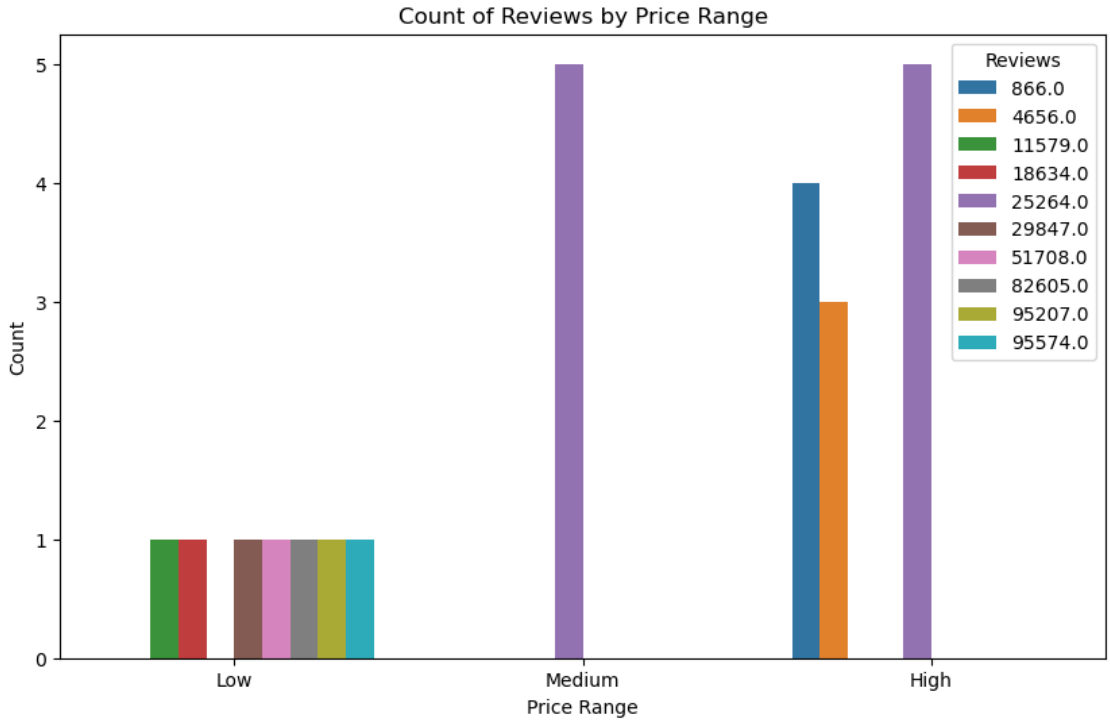
[18]:
```
df["Reviews"] = df["Reviews"].str.replace(",", "").astype(float)
```

[19]:
```
df['Price'].plot(kind='bar')
plt.xlabel('Products')
plt.show()
```



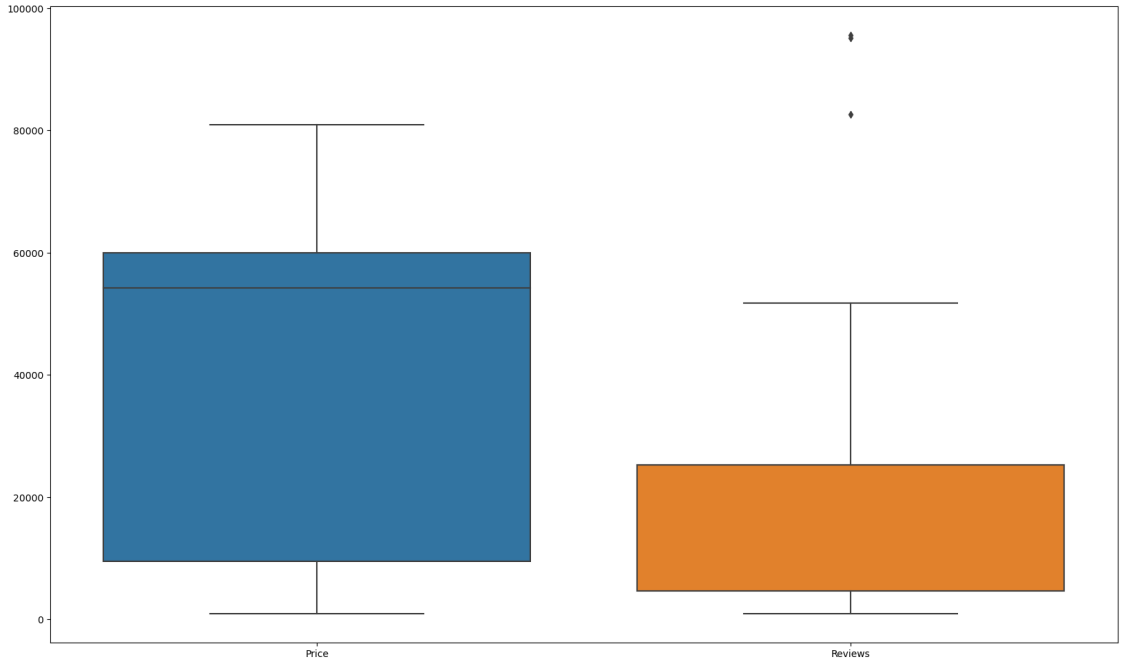
[20]:
```
price_ranges = pd.cut(df["Price"], bins=3, labels=["Low", "Medium", "High"])
df["Price Range"] = price_ranges
```

[21]:
```
plt.figure(figsize=(10, 6))
sns.countplot(x="Price Range", hue="Reviews", data=df)
plt.title("Count of Reviews by Price Range")
plt.xlabel("Price Range")
plt.ylabel("Count")
plt.show()
```



[22]:
```
plt.figure(figsize=(20,12))
data_n = ['Price','Reviews']
sns.boxplot(data = df[data_n])
```

[22]: <Axes: >



[23]:
```
df.to_csv('Amazon_Products.csv')
```