

## project 2

August 9, 2023

```
[2]: import pandas as pd
import numpy as np
import plotly.express as px
import plotly.graph_objects as go
```

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[3]: data = pd.read_csv(r"C:\Users\Lenovo\Downloads\apple_products.csv")
```

```
[4]: data.head()
```

```
[4]:
```

	Product Name \	Product URL	Brand	Sale Price \
0	APPLE iPhone 8 Plus (Gold, 64 GB)			
1	APPLE iPhone 8 Plus (Space Grey, 256 GB)			
2	APPLE iPhone 8 Plus (Silver, 256 GB)			
3	APPLE iPhone 8 (Silver, 256 GB)			
4	APPLE iPhone 8 (Gold, 256 GB)			

  

	Mrp	Discount Percentage	Number Of Ratings	Number Of Reviews \
0	49900	0	3431	356
1	84900	0	3431	356
2	84900	0	3431	356
3	77000	0	11202	794
4	77000	0	11202	794

  

	Upc	Star Rating	Ram
0	MOBEXRGV7EHHTGUH	4.6	2 GB
1	MOBEXRGVAC6TJT4F	4.6	2 GB
2	MOBEXRGVGETABXWZ	4.6	2 GB
3	MOBEXRGVMZWUHCBA	4.5	2 GB
4	MOBEXRGVPK7PFEJZ	4.5	2 GB

```
[5]: print(data.isnull().sum())
```

```
Product Name      0
Product URL       0
Brand             0
Sale Price        0
Mrp               0
Discount Percentage 0
Number Of Ratings 0
Number Of Reviews 0
Upc               0
Star Rating       0
Ram               0
dtype: int64
```

```
[6]: print(data.describe())
```

	Sale Price	Mrp	Discount Percentage	Number Of Ratings \
count	62.000000	62.000000	62.000000	62.000000
mean	80073.887097	88058.064516	9.951613	22420.403226
std	34310.446132	34728.825597	7.608079	33768.589550
min	29999.000000	39900.000000	0.000000	542.000000
25%	49900.000000	54900.000000	6.000000	740.000000
50%	75900.000000	79900.000000	10.000000	2101.000000
75%	117100.000000	120950.000000	14.000000	43470.000000
max	140900.000000	149900.000000	29.000000	95909.000000

  

	Number Of Reviews	Star Rating
count	62.000000	62.000000
mean	1861.677419	4.575806
std	2855.883830	0.059190
min	42.000000	4.500000
25%	64.000000	4.500000
50%	180.000000	4.600000
75%	3331.000000	4.600000
max	8161.000000	4.700000

```
[7]: highest_rated = data.sort_values(by=["Star Rating"],
                                     ascending=False)
highest_rated = highest_rated.head(10)
print(highest_rated['Product Name'])
```

```
20    APPLE iPhone 11 Pro Max (Midnight Green, 64 GB)
17      APPLE iPhone 11 Pro Max (Space Grey, 64 GB)
16    APPLE iPhone 11 Pro Max (Midnight Green, 256 GB)
15      APPLE iPhone 11 Pro Max (Gold, 64 GB)
14      APPLE iPhone 11 Pro Max (Gold, 256 GB)
0      APPLE iPhone 8 Plus (Gold, 64 GB)
```

```

29             APPLE iPhone 12 (White, 128 GB)
32         APPLE iPhone 12 Pro Max (Graphite, 128 GB)
35             APPLE iPhone 12 (Black, 128 GB)
36             APPLE iPhone 12 (Blue, 128 GB)
Name: Product Name, dtype: object

```

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[8]: iphones = highest_rated["Product Name"].value_counts()
label = iphones.index
counts = highest_rated["Number Of Ratings"]
figure = px.bar(highest_rated, x=label,
                y = counts,
                title="Number of Ratings of Highest Rated iPhones")
figure.show()

```

```

[9]: iphones = highest_rated["Product Name"].value_counts()
label = iphones.index
counts = highest_rated["Number Of Reviews"]
figure = px.bar(highest_rated, x=label,
                y = counts,
                title="Number of Reviews of Highest Rated iPhones")
figure.show()

```

```

[10]: figure = px.scatter(data_frame = data, x="Number Of Ratings",
                        y="Sale Price", size="Discount Percentage",
                        trendline="ols",
                        title="Relationship between Sale Price and Number of Ratings_
↳ of iPhones")
figure.show()

```

```

[11]: figure = px.scatter(data_frame = data, x="Number Of Ratings",
                        y="Discount Percentage", size="Sale Price",
                        trendline="ols",
                        title="Relationship between Discount Percentage and Number_
↳ of Ratings of iPhones")
figure.show()

```

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[ ]:

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