

Apple I phone Sales Analysis Project

```
import pandas as pd
import numpy as np
import plotly.express as px
import plotly.graph_objects as go
```

```
data = pd.read_csv ("apple_products.csv")
```

```
data
```

	Product Name \
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)
..	...
57	APPLE iPhone SE (Black, 64 GB)
58	APPLE iPhone 11 (Purple, 64 GB)
59	APPLE iPhone 11 (White, 64 GB)
60	APPLE iPhone 11 (Black, 64 GB)
61	APPLE iPhone 11 (Red, 64 GB)

	Product URL	Brand	Sale
Price \			
0	https://www.flipkart.com/apple-iphone-8-plus-g...	Apple	49900
1	https://www.flipkart.com/apple-iphone-8-plus-s...	Apple	84900
2	https://www.flipkart.com/apple-iphone-8-plus-s...	Apple	84900
3	https://www.flipkart.com/apple-iphone-8-silver...	Apple	77000
4	https://www.flipkart.com/apple-iphone-8-gold-2...	Apple	77000
..
..			
57	https://www.flipkart.com/apple-iphone-se-black...	Apple	29999
58	https://www.flipkart.com/apple-iphone-11-purpl...	Apple	46999
59	https://www.flipkart.com/apple-iphone-11-white...	Apple	46999
60	https://www.flipkart.com/apple-iphone-11-black...	Apple	46999
61	https://www.flipkart.com/apple-iphone-11-red-6...	Apple	46999

	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
..
57	39900	24	95909	8161
58	54900	14	43470	3331
59	54900	14	43470	3331
60	54900	14	43470	3331
61	54900	14	43470	3331

	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
..
57	MOBFWQ6BR3MK7AUG	4.5	4 GB
58	MOBFWQ6BTFFJKGKE	4.6	4 GB
59	MOBFWQ6BVWVEH3XE	4.6	4 GB
60	MOBFWQ6BXGJCEYNY	4.6	4 GB
61	MOBFWQ6BYYV3FCU7	4.6	4 GB

[62 rows x 11 columns]

Data cleaning

```
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
```

```
print(data.describe())
```

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

	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

```
## Top 10 Iphone sales in India
```

```
highest_rate = data.sort_values( by = ["Star Rating"], ascending =
False)
highest_rate = highest_rate.head(10)
print(highest_rate['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

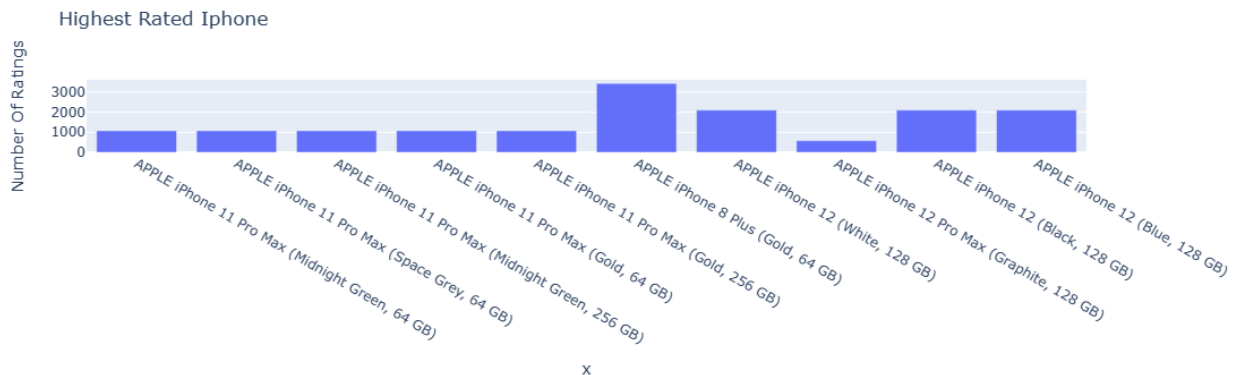
```

Highest Rated Iphone

```

iphones = highest_rate["Product Name"].value_counts()
labels = iphones.index
counts = highest_rate["Number Of Ratings"]
figure = px.bar(highest_rate, x=labels, y=counts, title= "Highest
Rated Iphone")
figure.show()

```

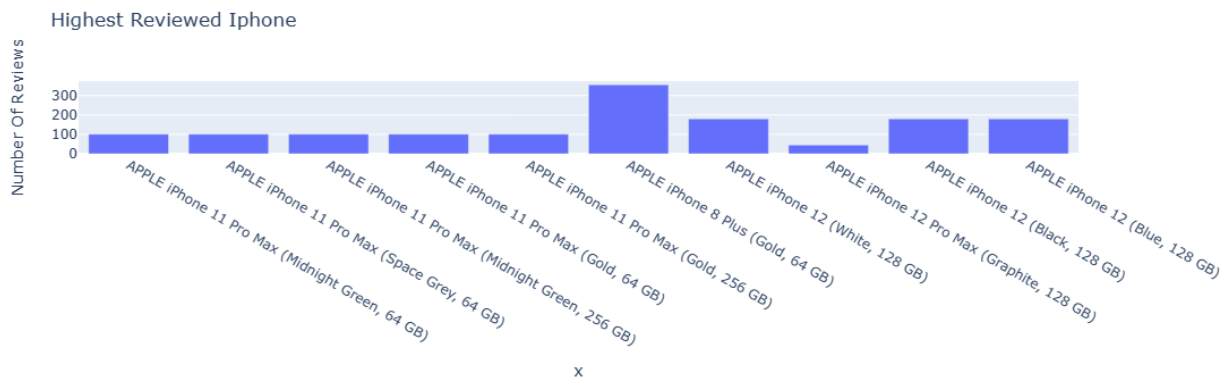


Highest Reviewed Iphone

```

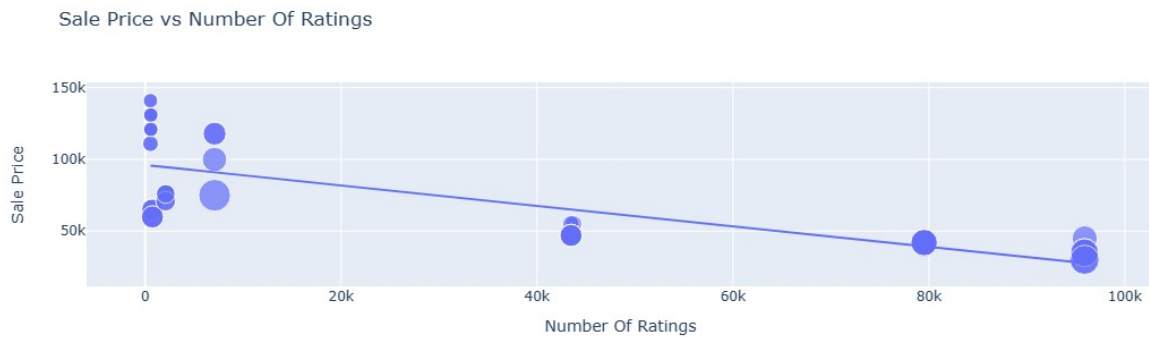
iphones = highest_rate["Product Name"].value_counts()
labels = iphones.index
counts = highest_rate["Number Of Reviews"]
figure = px.bar(highest_rate, x=labels, y=counts, title= "Highest
Reviewed Iphone")
figure.show()

```



Sale Price vs Number Of Ratings

```
figure = px.scatter(data_frame= data , x= "Number Of Ratings" , y=
"Sale Price" , size = "Discount Percentage", trendline= "ols",
title = " Sale Price vs Number Of Ratings ")
figure.show()
```



Number Of Ratings vs Discount Percentage

```
figure = px.scatter(data_frame= data , x= "Number Of Ratings" , y=
"Discount Percentage" , size = "Sale Price", trendline= "ols",
title = " Number Of Ratings vs Discount Percentage
")
figure.show()
```

Number Of Ratings vs Discount Percentage

