Python Apple Iphone sale

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

In [3]:
```
df=pd.read_csv(r"F:\kailash\Project\Python Apple iphone sales\appleIphone_products .csv")
```

In [4]:
```
print(df.head())
```

```
                            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)

                                      Product URL  Brand  Sale Price  \
0  https://www.flipkart.com/apple-iphone-8-plus-g... (https://www.flipkart.com/apple-iphone-8-plus-g...)  Apple       49900
1  https://www.flipkart.com/apple-iphone-8-plus-s... (https://www.flipkart.com/apple-iphone-8-plus-s...)  Apple       84900
2  https://www.flipkart.com/apple-iphone-8-plus-s... (https://www.flipkart.com/apple-iphone-8-plus-s...)  Apple       84900
3  https://www.flipkart.com/apple-iphone-8-silver... (https://www.flipkart.com/apple-iphone-8-silver...)  Apple       77000
4  https://www.flipkart.com/apple-iphone-8-gold-2... (https://www.flipkart.com/apple-iphone-8-gold-2...)  Apple       77000

     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
```

Now i will check any null value in this Dataset

In [5]:
```
print(df.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
```

In the dataset doesn't have any null values. Now i will look at the descriptive statistics of the Dataset.

In [6]:
```
print(df.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
```

Apple Iphone sales Analysis

In [7]:
```
df.columns
```

Out[7]:
```
Index(['Product Name', 'Product URL', 'Brand', 'Sale Price', 'Mrp',
       'Discount Percentage', 'Number Of Ratings', 'Number Of Reviews', 'Upc',
       'Star Rating', 'Ram'],
      dtype='object')
```

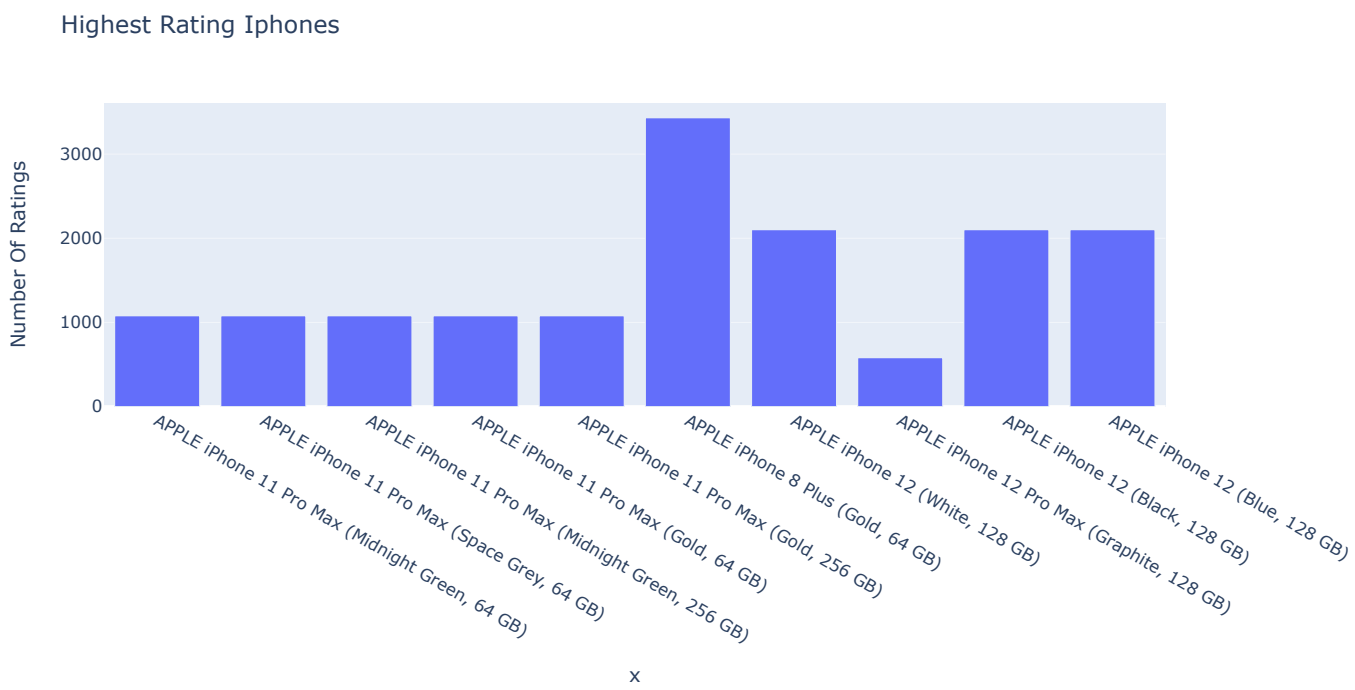
In [8]:
```
highest_rated = df.sort_values(by=["Star Rating"],ascending = False)
```

In [9]:
```
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
```

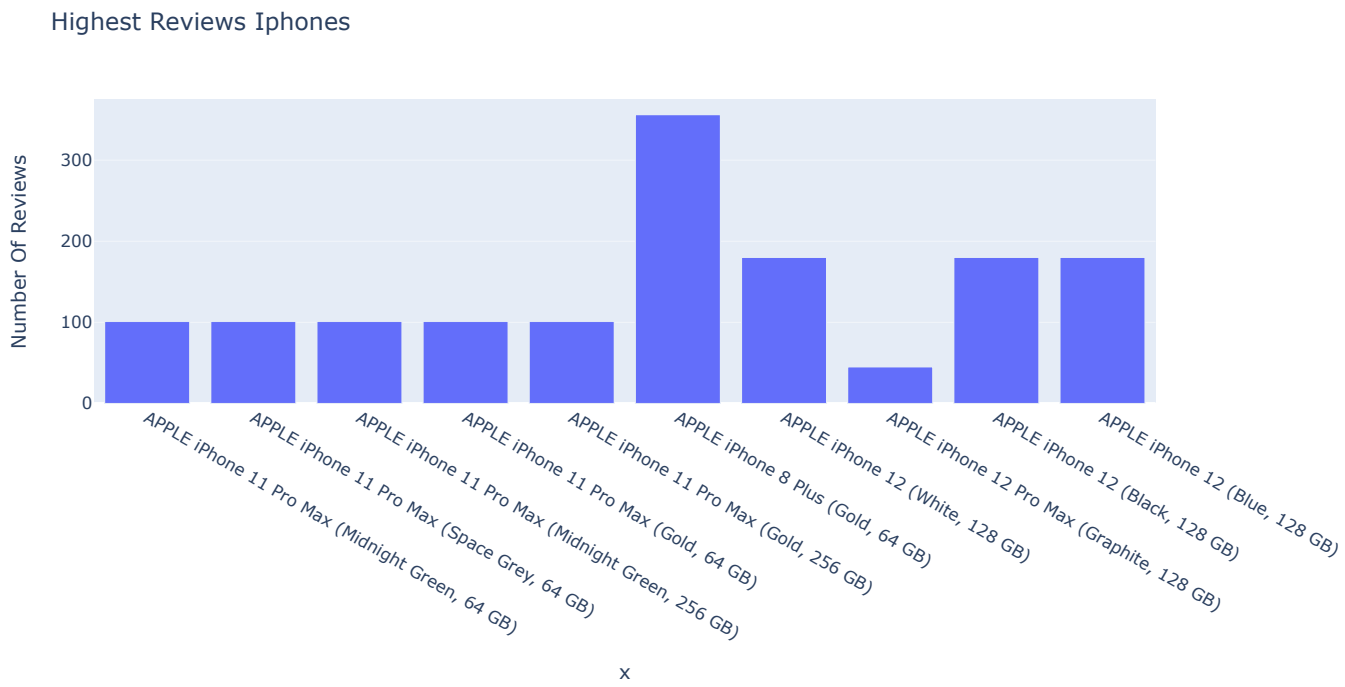
Count Number of highest rated Iphone

In [10]:
```
Phones = highest_rated["Product Name"].value_counts()
label = Phones.index
counts = highest_rated["Number Of Ratings"]
figure = px.bar(highest_rated, x=label, y = counts, title="Highest Rating Iphones")
figure.show()
```



Apple Iphone 8 plus (gold,64gb) has the most ratings on flipkart.Apple Iphone 8 plus (gold,64gb) has got 3431 highest Number of Ratings.

In [11]:
```
Phones = highest_rated["Product Name"].value_counts()
label = Phones.index
counts = highest_rated["Number Of Reviews"]
figure = px.bar(highest_rated, x=label, y = counts,title="Highest Reviews Iphones")
figure.show()
```



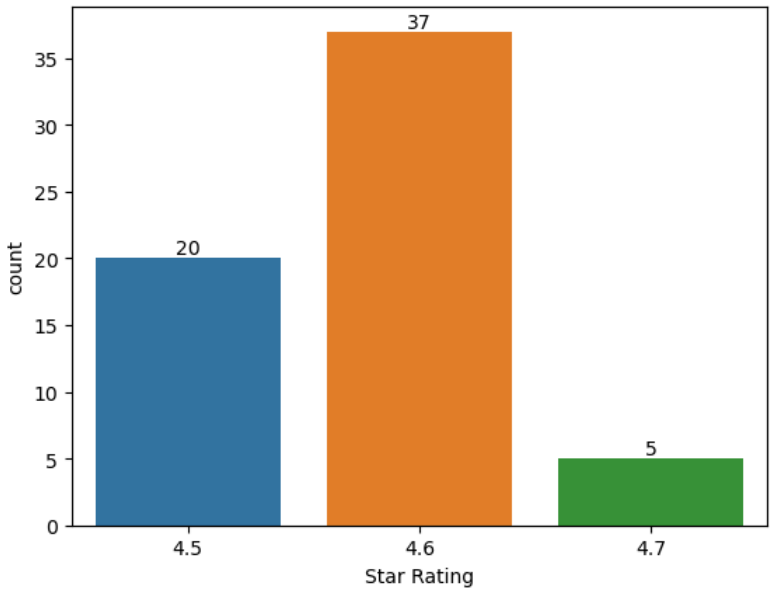
Apple Iphone 8 plus(gold) is the highest number of review on fiplkart among the highest rated Iphones.Apple Iphone 8 plus (gold,64gb) has got 356 highest Number of Reviews.

In [ ]:
```
1
```

Count of Star Rating

In [12]:
```
ax =sns.countplot(data = df , x ="Star Rating")

for bars in ax.containers:
    ax.bar_label(bars)
```



Relationship between Sale Price and Number of Ratings

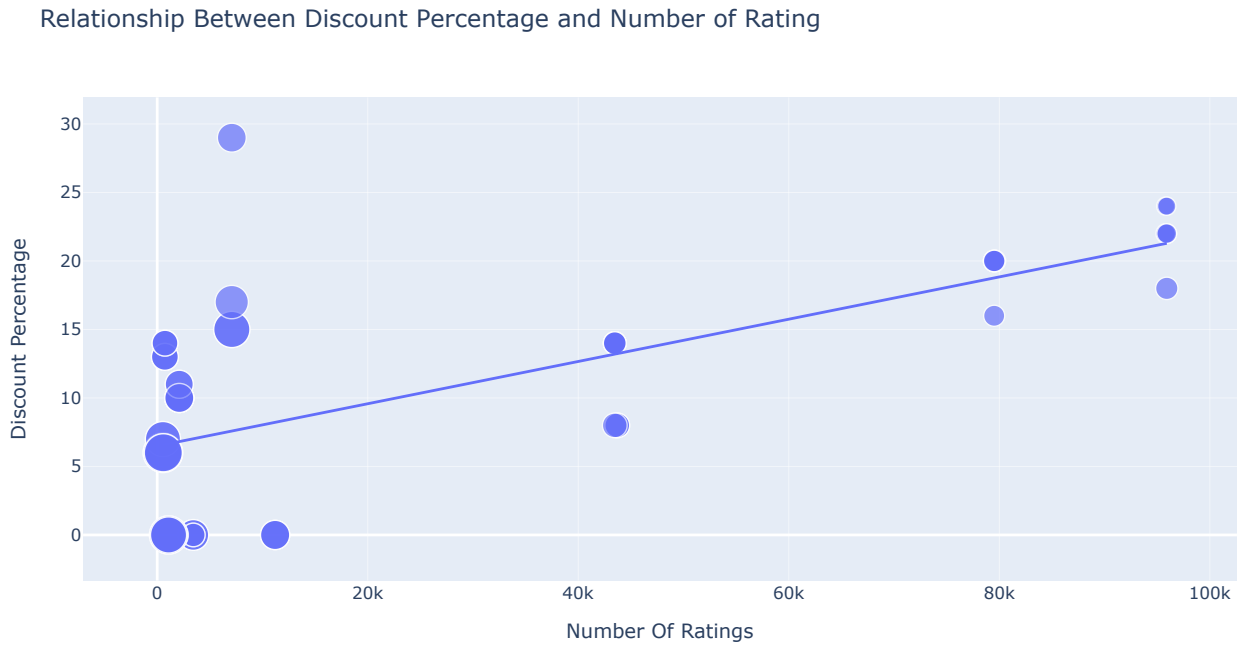
In [13]:
```
figure = px.scatter(data_frame=df, x= "Number Of Ratings",
                    y="Sale Price", size= "Discount Percentage",
                    trendline= "ols",
                    title="Relationship between Sale Price and Number of Ratings")
figure.show()
```

There is a Negative Linear relationship between the sale price of Iphone and Number of Ratings .It means Iphone with lower sale prices are sold.

Relationship Between Discount Percentage & Number of Rating

In [14]:
```
figure = px.scatter(data_frame=df, x= "Number Of Ratings",
                    y="Discount Percentage", size= "Sale Price",
                    trendline= "ols",
                    title="Relationship Between Discount Percentage and Number of Rating")
figure.show()

```



There is a Positive Linear relationship between the Discount peprcentage of Iphone and Number of Ratings .It means Iphone with high Discount percentage are buying higher by Customer..

Summary

Apple Iphone 8 Plus (Gold,64GB) was the best selling Iphone.Iphone with Lower Sale price and high discount was Most appreciated and Buying by people.