In [1]:
```
import pandas as pd
import numpy as np
import plotly.express as px
import plotly.graph_objects as go
```

In [2]:
```
data=pd.read_csv("apple_products.csv")
```

In [3]:
```
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
```

In [4]:
```
data.describe()
```

Out[4]:

	Sale Price	Mrp	Discount Percentage	Number Of Ratings	Number Of Reviews	Star Rating
count	62.000000	62.000000	62.000000	62.000000	62.000000	62.000000
mean	80073.887097	88058.064516	9.951613	22420.403226	1861.677419	4.575806
std	34310.446132	34728.825597	7.608079	33768.589550	2855.883830	0.059190
min	29999.000000	39900.000000	0.000000	542.000000	42.000000	4.500000
25%	49900.000000	54900.000000	6.000000	740.000000	64.000000	4.500000
50%	75900.000000	79900.000000	10.000000	2101.000000	180.000000	4.600000
75%	117100.000000	120950.000000	14.000000	43470.000000	3331.000000	4.600000
max	140900.000000	149900.000000	29.000000	95909.000000	8161.000000	4.700000

iphone sales analysis in India

In [5]:
```
highest_rating=data.sort_values(by=['Star Rating'], ascending=False)
highest_rated = highest_rating.head(10)
```

In [6]:
```
highest_rated
```

Out[6]:

	Product Name	Product URL	Brand	Sale Price	Mrp	Discount Percentage	Numb Ratin
20	APPLE iPhone 11 Pro Max (Midnight Green, 64 GB)	https://www.flipkart.com/apple-iphone-11-pro-m...	Apple	117100	117100	0	10
17	APPLE iPhone 11 Pro Max (Space Grey, 64 GB)	https://www.flipkart.com/apple-iphone-11-pro-m...	Apple	117100	117100	0	10
16	APPLE iPhone 11 Pro Max (Midnight Green, 256 GB)	https://www.flipkart.com/apple-iphone-11-pro-m...	Apple	131900	131900	0	10
15	APPLE iPhone 11 Pro Max (Gold, 64 GB)	https://www.flipkart.com/apple-iphone-11-pro-m...	Apple	117100	117100	0	10
14	APPLE iPhone 11 Pro Max (Gold, 256 GB)	https://www.flipkart.com/apple-iphone-11-pro-m...	Apple	131900	131900	0	10
0	APPLE iPhone 8 Plus (Gold, 64 GB)	https://www.flipkart.com/apple-iphone-8-plus-g...	Apple	49900	49900	0	34
29	APPLE iPhone 12 (White, 128 GB)	https://www.flipkart.com/apple-iphone-12-white...	Apple	75900	84900	10	21
32	APPLE iPhone 12 Pro Max (Graphite, 128 GB)	https://www.flipkart.com/apple-iphone-12-pro-m...	Apple	120900	129900	6	5

	Product Name	Product URL	Brand	Sale Price	Mrp	Discount Percentage	Numb Ratin
35	APPLE iPhone 12 (Black, 128 GB)	https://www.flipkart.com/apple-iphone-12-black...	Apple	75900	84900	10	21
36	APPLE iPhone 12 (Blue, 128 GB)	https://www.flipkart.com/apple-iphone-12-blue-...	Apple	75900	84900	10	21

In [7]:
```
iphones = highest_rated['Product Name'].value_counts()
```

In [8]:
```
iphones
```

Out[8]:
```
APPLE iPhone 11 Pro Max (Midnight Green, 64 GB)     1
APPLE iPhone 11 Pro Max (Space Grey, 64 GB)         1
APPLE iPhone 11 Pro Max (Midnight Green, 256 GB)    1
APPLE iPhone 11 Pro Max (Gold, 64 GB)               1
APPLE iPhone 11 Pro Max (Gold, 256 GB)              1
APPLE iPhone 8 Plus (Gold, 64 GB)                   1
APPLE iPhone 12 (White, 128 GB)                     1
APPLE iPhone 12 Pro Max (Graphite, 128 GB)          1
APPLE iPhone 12 (Black, 128 GB)                     1
APPLE iPhone 12 (Blue, 128 GB)                      1
Name: Product Name, dtype: int64
```

In [16]:
```
iphones = highest_rated['Product Name'].value_counts()
labels = iphones.index
counts = highest_rated['Number Of Ratings']
figure = px.bar(highest_rated, x=labels,  y=counts, title = 'Number of ratings o
print(figure.show())
```

```
None
```

In [15]:
```
iphones = highest_rated['Product Name'].value_counts()
labels = iphones.index
counts = highest_rated['Number Of Reviews']
figure = px.bar(highest_rated, x=labels, y=counts, title = 'Number Of Reviews')
print(figure.show())
```

```
None
```

In [14]:
```
figure = px.scatter(data_frame = data, x='Number Of Ratings', y='Sale Price', si
print(figure.show())
```

```
None
```

In [13]:
```
figure = px.scatter(data_frame = data, x = 'Number Of Ratings', y = 'Discount Pe
print(figure.show())
```

None

----------END----------