

iPhone Sales Analysis

Name of Students:

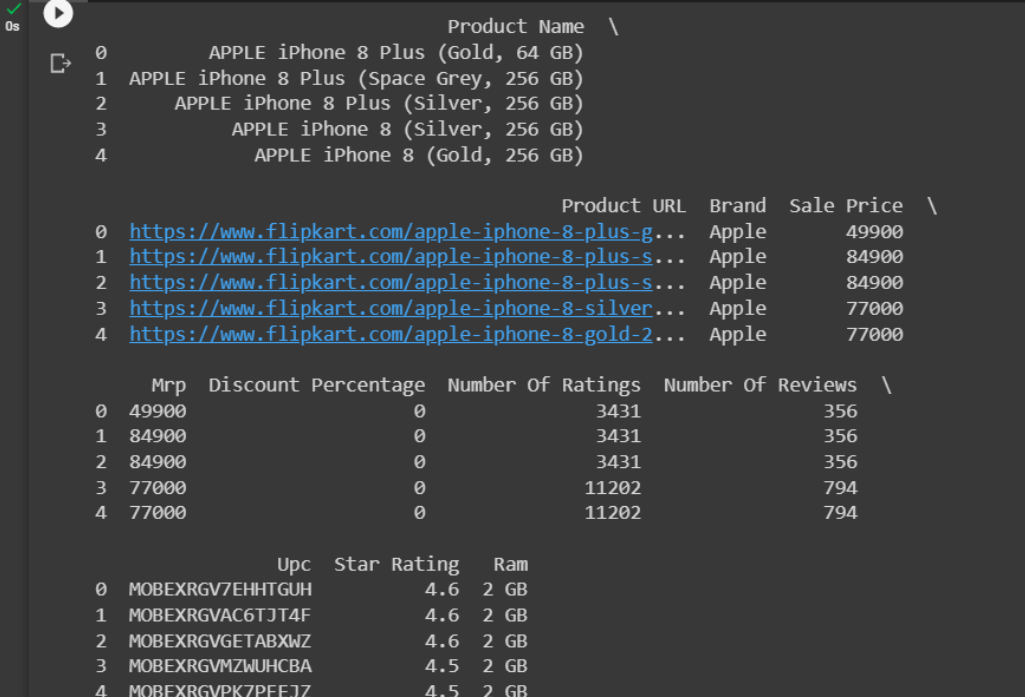
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2	Jain Shruti Anup	4
3	Desarda Khushi Sandeep	7
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Code of iphone sales Analysis:

```
1. 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")
print(data.head())
//This code reads in a csv filenamed "apple_products.csv".
```

Output:



	Product Name \	Product URL	Brand	Sale Price \
0	APPLE iPhone 8 Plus (Gold, 64 GB)	https://www.flipkart.com/apple-iphone-8-plus-g...	Apple	49900
1	APPLE iPhone 8 Plus (Space Grey, 256 GB)	https://www.flipkart.com/apple-iphone-8-plus-s...	Apple	84900
2	APPLE iPhone 8 Plus (Silver, 256 GB)	https://www.flipkart.com/apple-iphone-8-plus-s...	Apple	84900
3	APPLE iPhone 8 (Silver, 256 GB)	https://www.flipkart.com/apple-iphone-8-silver...	Apple	77000
4	APPLE iPhone 8 (Gold, 256 GB)	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	MOBEXRGVVK7PFEJZ	4.5	2 GB

2. `print(data.isnull().sum())`

//It Checks whether this dataset contains any null values or not.

Output:

```
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
```

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

//The descriptive statistics of the data.

Output:

```
count      Sale Price      Mrp  Discount Percentage  Number Of Ratings \
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

count      Number Of Reviews  Star Rating
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
```

iPhone Sales Analysis in India 🇮🇳 :

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

//Now I will create a new dataframe by storing all the data about the top 10 highest-rated iPhones in India on Flipkart. It will help in understanding what kind of iPhones are liked the most in India.

Output:

```
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
```

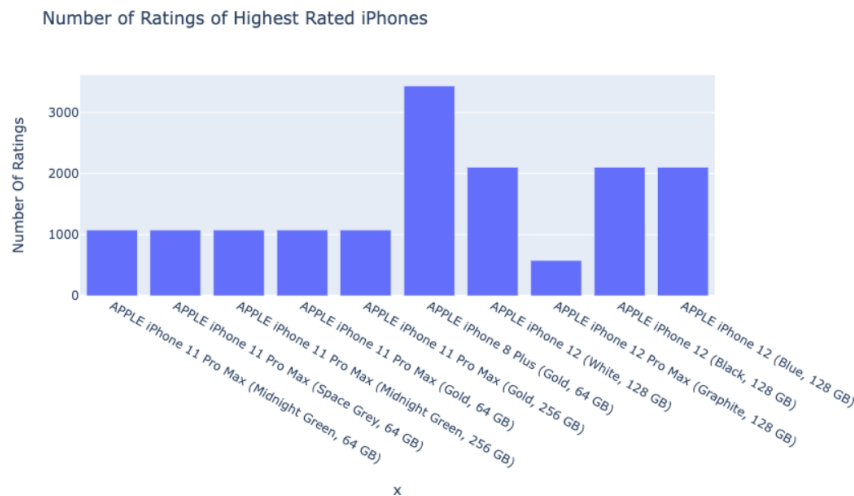
According to the above data, below are the top 5 most liked iPhones in India:

- **APPLE iPhone 11 Pro Max (Midnight Green, 64 GB)**
- **APPLE iPhone 11 Pro Max (Space Grey, 64 GB)**
- **APPLE iPhone 11 Pro Max (Midnight Green, 256 GB)**
- **APPLE iPhone 11 Pro Max (Gold, 64 GB)**
- **APPLE iPhone 11 Pro Max (Gold, 256 GB)**

```
5. 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()
```

//This code generates a bar plot to display the number of ratings of the highest-rated iPhones.

Output:

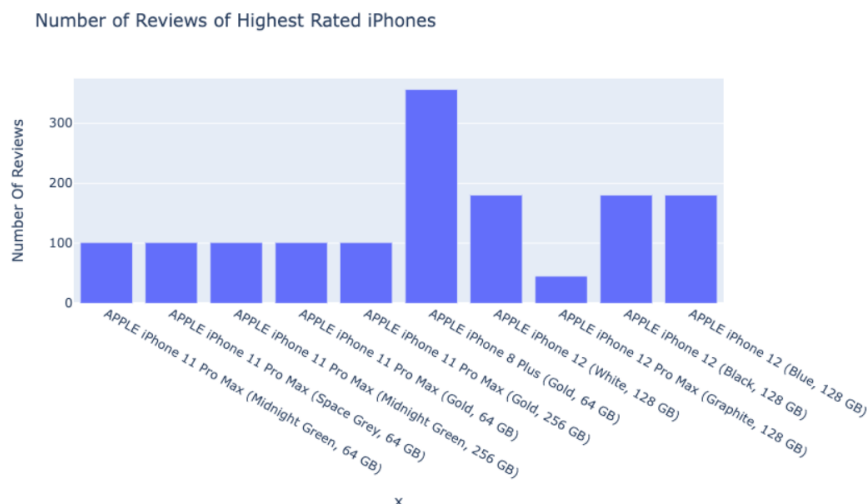


- ```
6. iphones = highest_rated["Product Name"].value_counts()
 label = iphones.index
 counts = highest_rated["Number Of Reviews"]
 figure = px.bar(highest_rated, x=label, y = counts,
 title="Number of Reviews of Highest Rated iPhones")
 figure.show()
```

*//This code creates a bar chart using Plotly Express that displays the number of ratings for each iPhone model in the highest\_rated dataset.*

The `value_counts()` method is used to count the number of occurrences of each unique value in the "Product Name" column, and the resulting counts are used as the y-axis values. The x-axis values are the unique product names.

**Output:**



```
7. 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()
```

*//This code is used to create a scatter plot of the relationship between the sale price and number of ratings of iPhones. The x-axis represents the number of ratings, the y-axis represents the sale price, and the size of each data point represents the discount percentage.*

### **Output:**

