SMARTPHONE SALES ANALYSIS AND VISUALISATION

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OVERVIEW

Unveiling Insights from Smartphone Analysis Dataset.

- Comprehensive analysis of a rich smartphone dataset
- Uncover key insights into user behavior, market trends, and technological preferences
- Explore demographic patterns, operating system dynamics, and user habits
- Navigate through data to reveal the pulse of the contemporary smartphone landscape
- Gain insights into popular brands, models, and emerging trends
- Understand the ever-evolving world of mobile technology
- Discover the stories hidden in numbers and charts
- Shaping the future of connectivity

To find missing values in Database

```
In [6]: df.isna().sum()

Out[6]: Brands                0
        Models                0
        Colors                0
        Memory               43
        Storage              39
        Camera                0
        Rating              144
        Selling Price         0
        Original Price        0
        Mobile                0
        Discount              0
        discount percentage   0
        dtype: int64
```

```
In [16]: df.isna().sum()

Out[16]: Brands                0
         Models                0
         Colors                0
         Memory                0
         Storage               0
         Camera                0
         Rating                0
         Selling Price         0
         Original Price        0
         Mobile                0
         Discount              0
         discount percentage   0
         dtype: int64
```

- There was some missing values in database. The constraints which were having missing values were memory, storage, rating.
- In order to fill the null values we used median and mode to fill them.
- Therefore there are no null values in dataset.

Sorted data in high to low order.

(According to price)

```
In [8]: df.sort_values(by='Selling Price')
```

Out[8]:

	Brands	Models	Colors	Memory	Storage	Camera	Rating	Selling Price	Original Price	Mobile	Discount	discount percentage
1501	Nokia	105	Black	4 MB	4 MB	Yes	4.3	1000	1000	Nokia 105	0	0.000000
2054	Nokia	Ta -1010/105	Black	4 MB	4 MB	Yes	4.2	1000	1000	Nokia Ta -1010/105	0	0.000000
2487	GIONEE	S96	Black	8 MB	16 MB	Yes	3.7	1099	1999	GIONEE S96	900	45.022511
978	GIONEE	L700	Black	8 MB	16 MB	Yes	3.9	1099	1099	GIONEE L700	0	0.000000
1338	SAMSUNG	GT 1200 R/I/M	Black	NaN	2 MB	Yes	4.1	1099	1099	SAMSUNG GT 1200 R/I/M	0	0.000000
...	...	...	...	...	...	...	...	...	...	...	...	...
831	Apple	iPhone 13 Pro Max	Gold	4GB	1 TB	Yes	4.7	179900	179900	Apple iPhone 13 Pro Max	0	0.000000
1079	Apple	iPhone 13 Pro Max	Gold	6 GB	NaN	Yes	NaN	179900	179900	Apple iPhone 13 Pro Max	0	0.000000
2032	Apple	iPhone 13 Pro Max	Graphite	6 GB	1 TB	Yes	NaN	179900	179900	Apple iPhone 13 Pro Max	0	0.000000

903	Apple	iPhone 13 Pro Max	Silver	4GB	1 TB	Yes	4.7	179900
799	Apple	iPhone 13 Pro Max	Sierra Blue	4GB	1 TB	Yes	4.7	179900

3114 rows × 12 columns

```
In [12]: df['Selling Price'].max()
```

```
Out[12]: 179900
```

```
In [13]: df['Selling Price'].min()
```

```
Out[13]: 1000
```

- We got minimum selling price :1000
- maximum selling price:179900

OBSERVATION

1. Brand and Model Preferences:
   - Dominance of certain brands or models in the dataset.
   - Samsung, Nokia, Realme , Infinix , Apple.

2. Market Share Distribution:
   - Visual representation of market share among major smartphone brands.
   - We observe that Samsung has the more sales as compare to others brands and Nokia has the lowest sales as compare to the others.

3. Challenges Encountered:
   - We got big data set of Smartphone sales therefore graph of sales getting more complex. We solved this problem by changing dimensions of the graph.

4. Emerging Trends:

   - Understand market trends and dynamics by analyzing sales data over time.

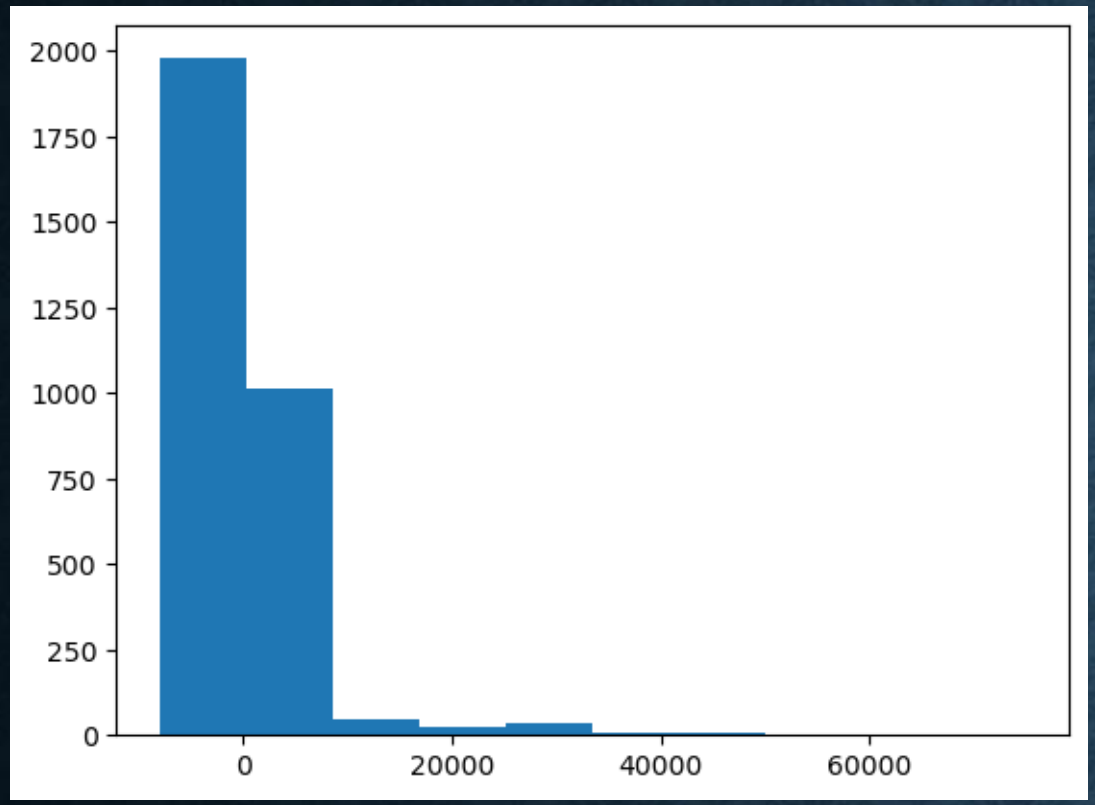
   - Evaluate the market share of different smartphone brands and models.

5. User Behavior Insights:

   - Popular features and specification

   - Brand loyality

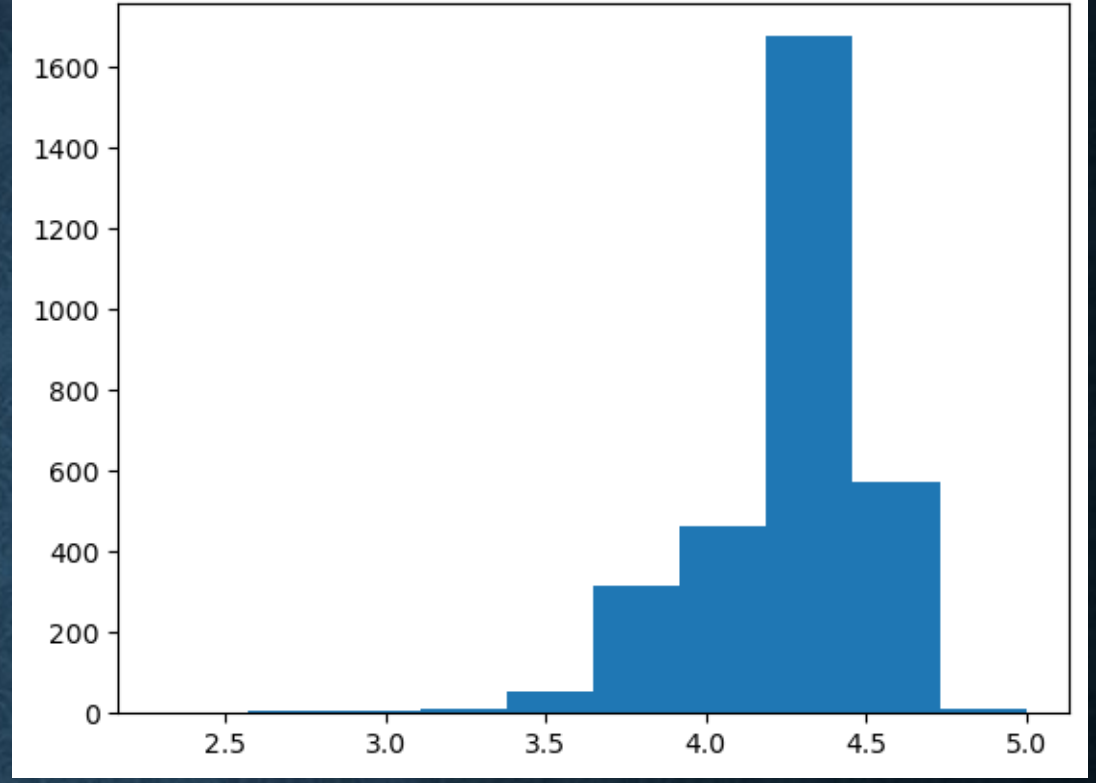
   - Operating system preference



Discount

- The analysis reveals a diverse range of discounts applied to the 2000 phones under consideration, spanning from 0 to 10000.

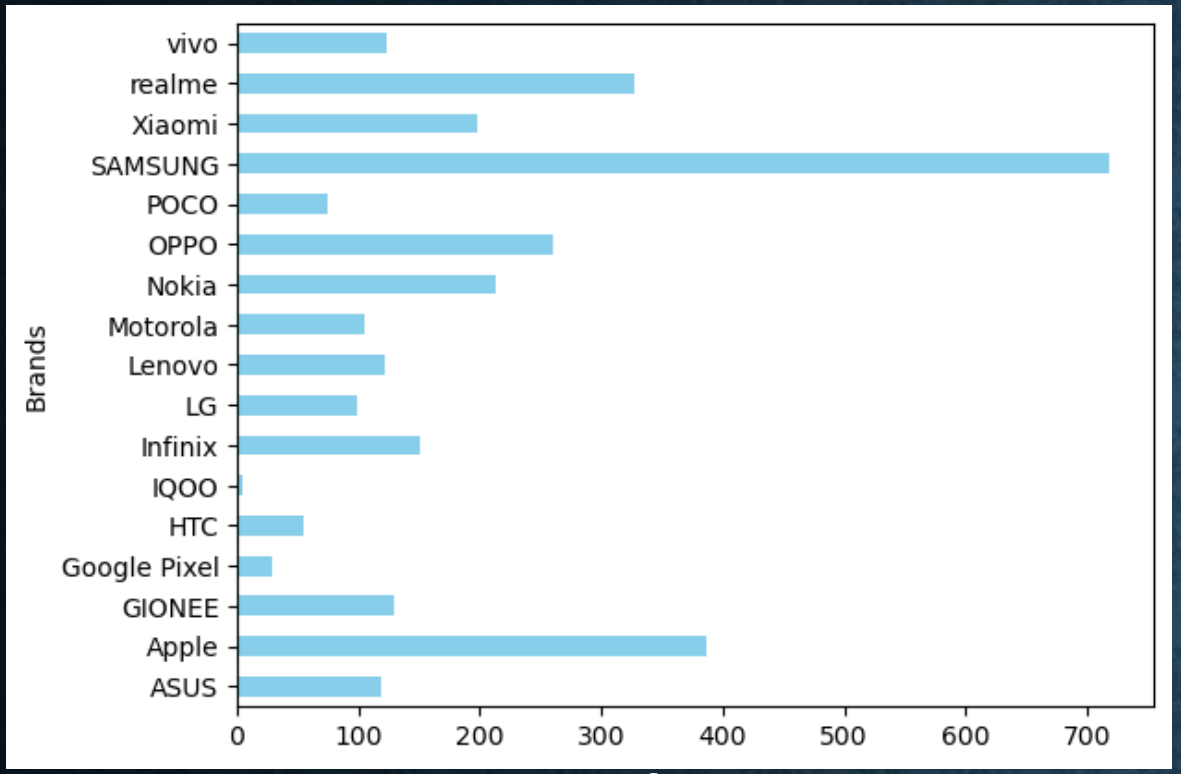
- Explore the potential implementation of dynamic pricing models based on consumer response to discounts.



Rating

- The predominant placement of phones within this rating range suggests a widespread satisfaction among consumers. Phones garnering ratings between 3.5 and 4.5 seem to strike a balance, meeting or even exceeding user expectations.

- For consumers, this range becomes a focal point for decision-making. Products falling within this bracket are likely to capture the attention of those seeking a harmonious balance between features, performance, and overall satisfaction.



Brands

1.Samsung Dominance:

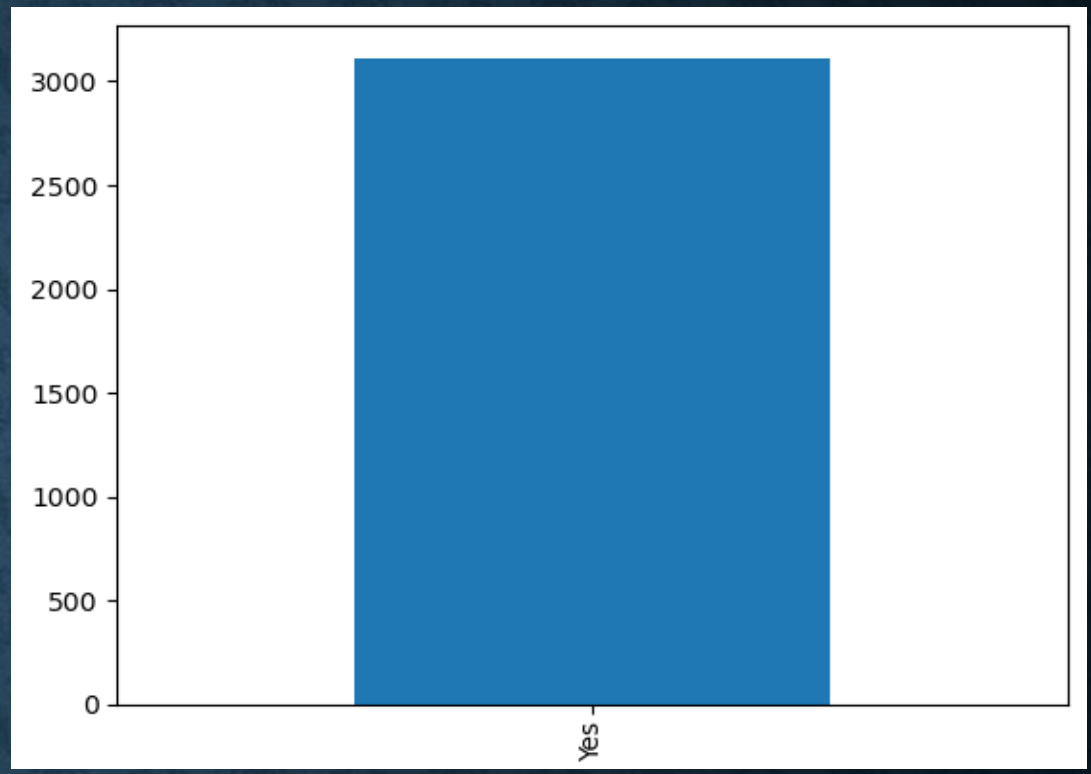
The bar graph clearly indicates that Samsung has the highest number of models among the compared phone brands.

2.Diversity in Brand Offerings:

Assess the diversity in the number of models offered by each brand. Identify if other brands exhibit a wide or narrow range of smartphone models.

3.Market Presence:

Samsung's dominance in terms of the number of models reflects its extensive presence in the smartphone market, catering to various consumer preferences.



Camera

- Here we found that almost all phones in data base is having the camera feature.

1.Correlation between Discount and Rating:

The heatmap highlights the correlation between the discount offered and the product rating. Identify if there is a pattern where higher-rated products receive specific discount ranges.

2.Impact of Discount Percentage on Selling Price:

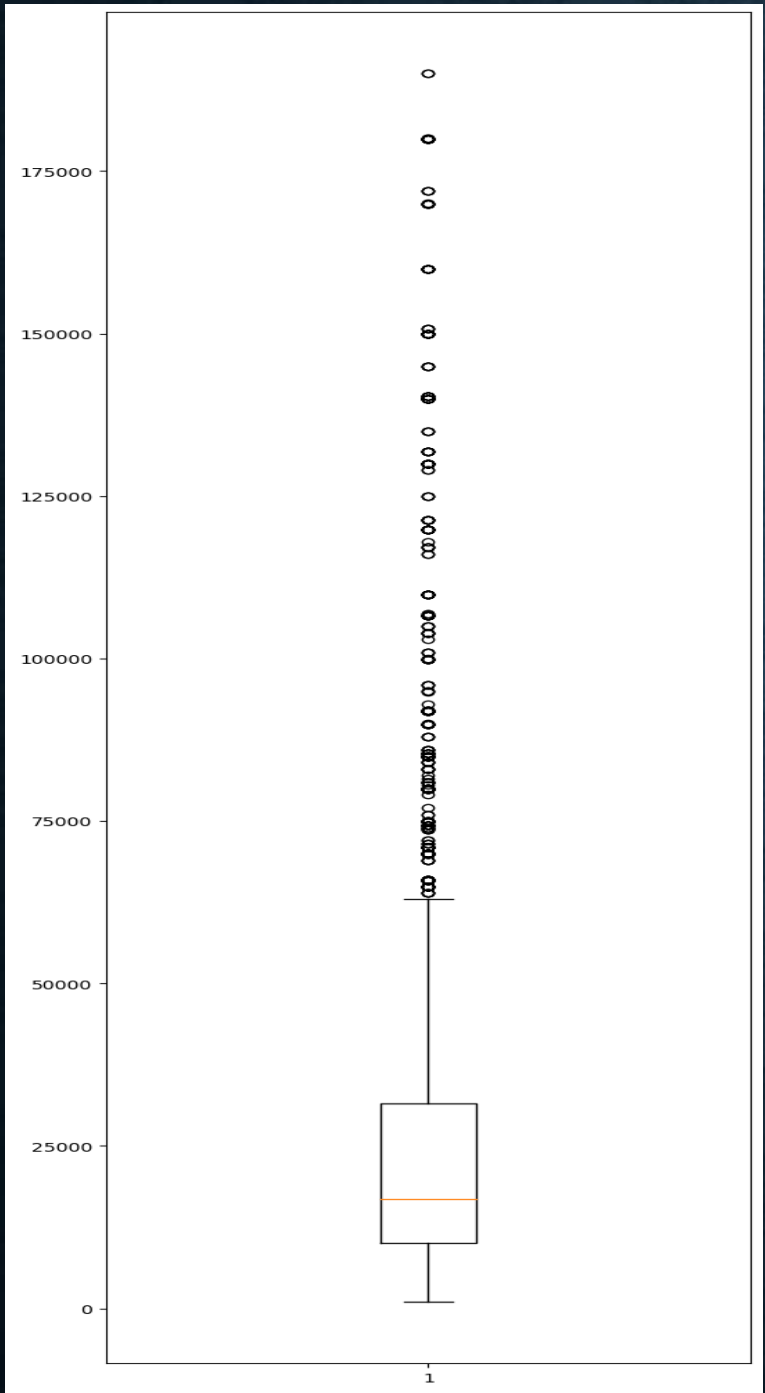
Explore how the discount percentage influences the selling price. Are there clear trends indicating the relationship between the discount percentage and the final selling price?

3.Distribution of Discounts Across Original Prices:

Analyze how discounts are distributed across different original price ranges. Identify sweet spots where certain discount percentages are more effective in driving sales.

4.Rating and Selling Price Trends:

Investigate the relationship between product ratings and the resulting selling prices. Understand if higher-rated products tend to have higher or lower selling prices.



1.Concentration of Original Prices:

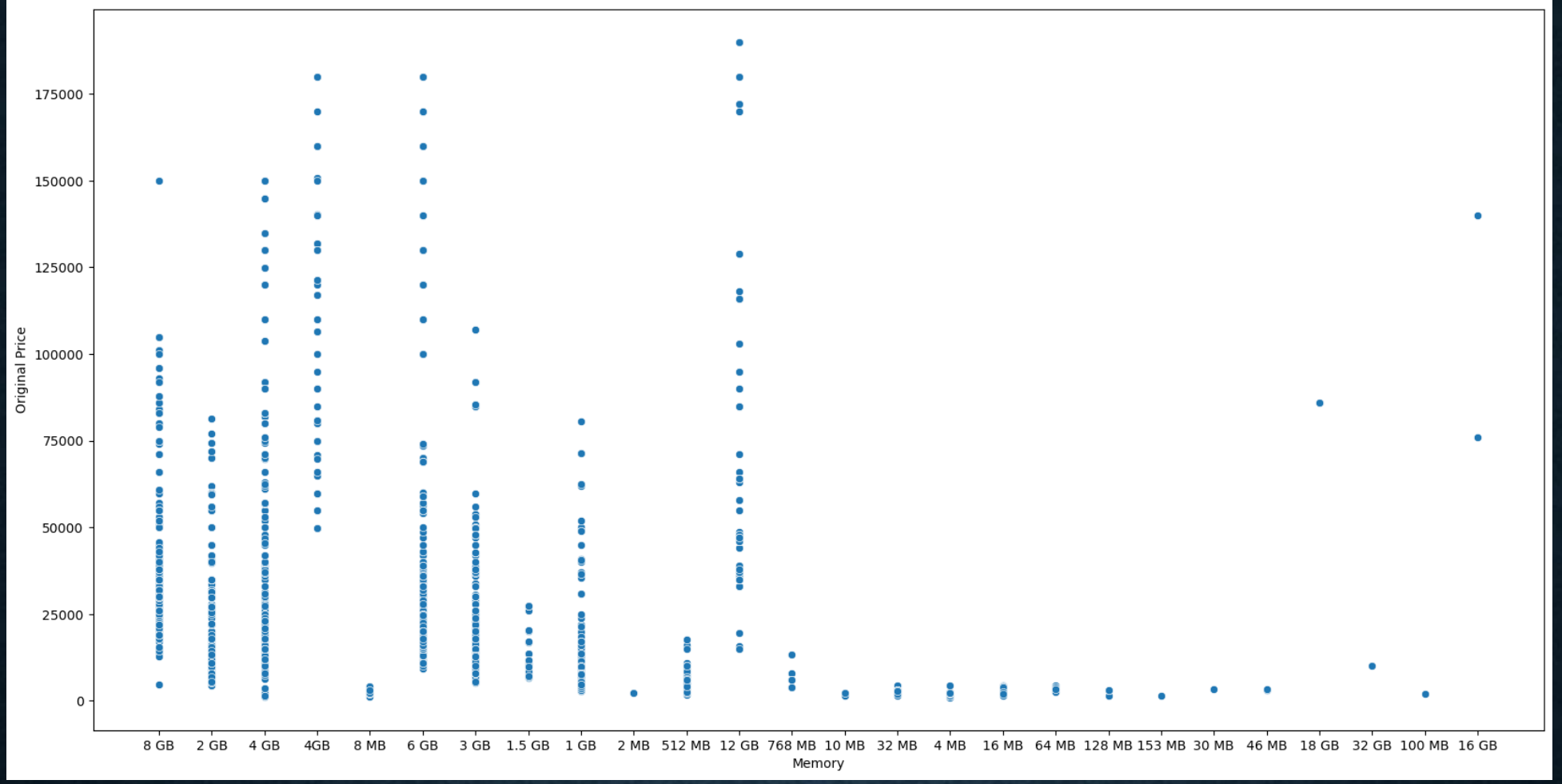
The boxplot illustrates a concentration of mobile phones with original prices predominantly falling within the range of 25000 to 40000.

2.Rating Distribution within Price Bands:

Analyze the distribution of ratings within different price bands. Identify if there's a correlation between higher original prices and higher ratings.

3.Outliers and Premium Devices:

Identify outliers in the higher price range, representing premium devices. Investigate whether these outliers correspond to higher-rated smartphones.



- **Price Differentiation Strategies:**
  - Consider implementing price differentiation strategies based on memory configurations to cater to diverse consumer preferences.
- **Premium Memory Offerings:**
  - Leverage the insights to introduce or enhance premium memory configurations for consumers seeking high-end devices.
- **Market Positioning:**
  - Strategically position products in the market based on memory capacity and original price to target specific customer segments.

Conclusion

1. **Market Trends and Dynamics:**
   - The analysis of the smartphone database has unveiled key trends and dynamics within the market. These insights include [highlight specific trends, e.g., shifts in consumer preferences, emerging technologies.
2. **Brand and Model Performance:**
   - An in-depth examination of the database has provided valuable insights into the performance of different smartphone brands and models. Notably, Samsung, Realme , Apple , Oppo.
3. **User Behavior Patterns:**
   - The database analysis sheds light on user behavior patterns, such as [examples include upgrade cycles, app usage preferences, or brand loyalty. Understanding these patterns is crucial for tailoring marketing and product strategies.
4. **Pricing and Discount Strategies:**
   - Insights into pricing and discounting strategies have been garnered from the database.

Any Questions?

THANK YOU