

# Analysis Report for the Laptop Market

**Name of the student:** Dasari Ramesh

**ID Number:** 23038360

**Github link:** <https://github.com/rameshpc9/Final-visualisation->

## Introduction

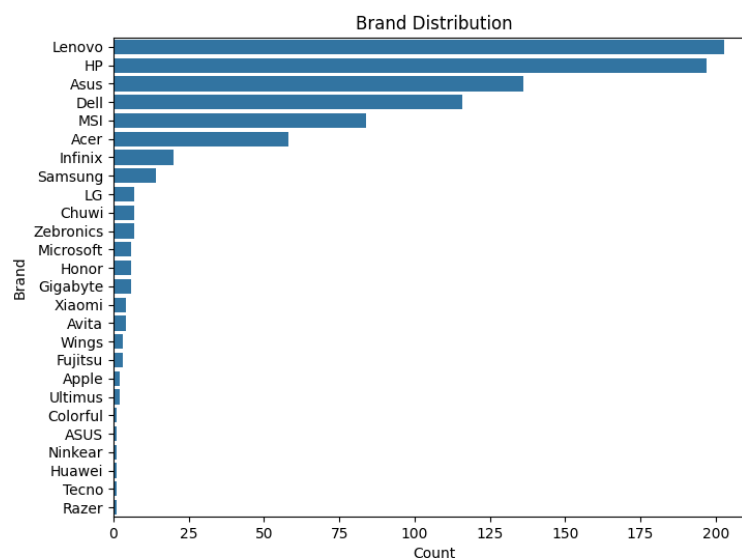
It is a report about data analysis, which details various kinds of laptops from the market. It represents a broader aspect of laptop specifications, which entail brand, price, ratings, processor detail graphics, and display characteristics and the operating systems. The following is an analysis of the general exploratory data analysis (EDA) performed on this dataset.

## Analyzing the Dataset

The dataset comprises 891 entries of cleaned laptops, each with 28 attributes or features, such as brand, price, technical specifications, among others. It captures a wide set of products, from budget specifications to high-end. EDA seeks to develop trends and patterns that might be able to explain customer preference or market strategy.

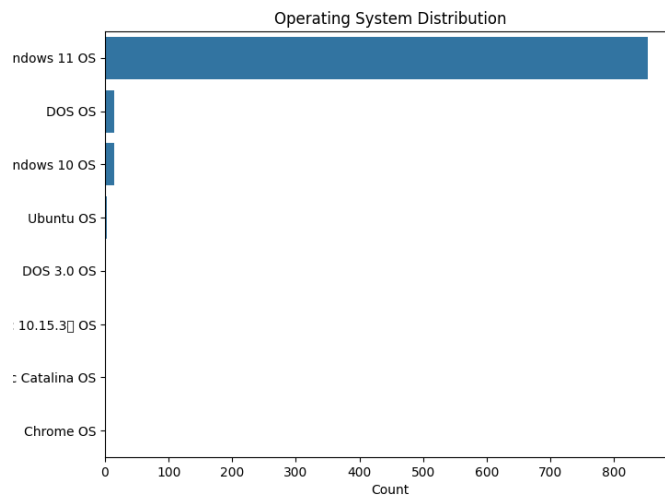
## Brand Distribution

Glancing at the brand distribution plot, it shows a very varied landscape with some dominant players. Most likely, these brands cover more market share or offer more varieties in their products.



## Distributions of Operating Systems

The plot of the distribution of the laptop OS in question evidently shows that the most preferred OS by the users was the Windows 11 OS, and others followed in ranking. Therefore, this trend reflects the dominance of Windows in personal computing.



### Rating vs. Price

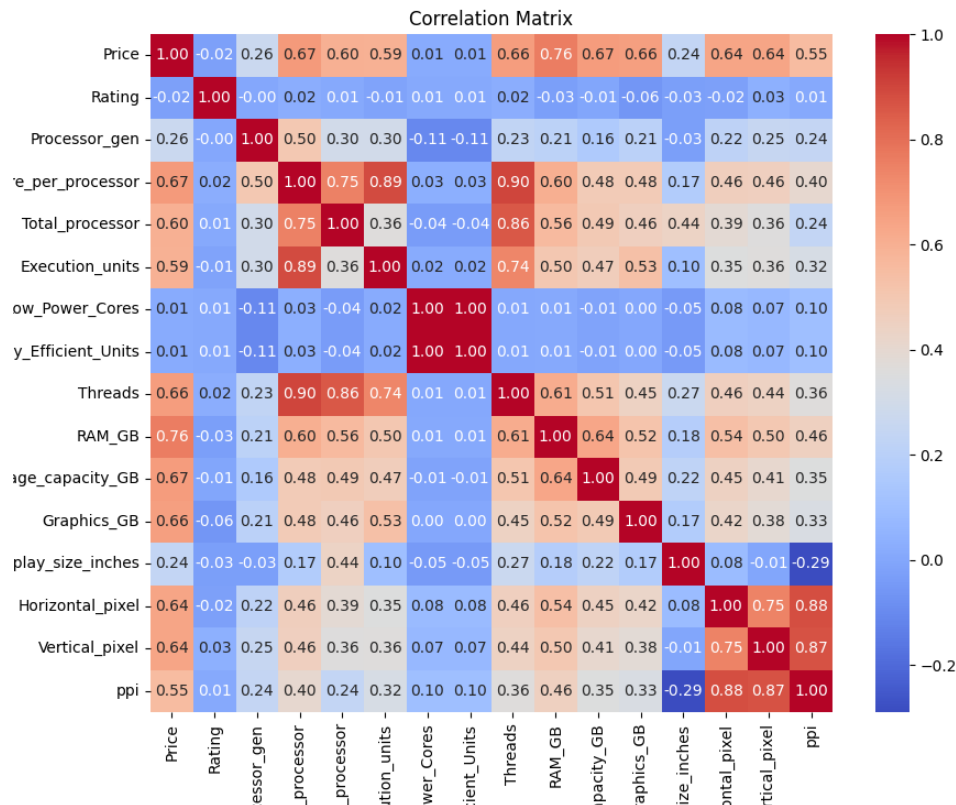
Scatter graph between price and rating did not show a definite relationship. This could depict that an increase in the price may not necessarily justify an increase in the rating by the consumer, hence consumers may value other things above the price when they give their satisfaction rating.



### Statistical Analysis and Correlation Matrix

Table for statistical analysis gives us a quantitative summary of the dataset with some of the key observations like average price point, rating, and technical specifications of RAM, storage capacities, etc. The correlation matrix precisely tells the relation between these variables. For instance, a laptop's RAM and storage capacity indicated a very strong positive correlation. From this, it is evident that a higher amount of RAM in a laptop might also increase the odds for more storage space.

	count	mean	std	min	25%	50%	75%	max
	891.0	80566.10437710438	5008.49159951451	18990.0	45245.0	62940.0	89990.0	599990.0
	891.0	4.371604938271604	2325037270168151	3.95	4.175000000000001	4.35	4.55	4.75
en	891.0	10.450056116722782	966579291621343	1.0	7.0	12.0	13.0	14.0
ssor	891.0	3.498316498316498	1.168736972891725	2.0	6.0	8.0	10.0	24.0
or	505.0	3.815841584158415	934376395210273	1.0	2.0	4.0	6.0	8.0
its	505.0	6.970297029702972	763335076484868	4.0	4.0	8.0	8.0	16.0
res	891.0	0.0022446689113356	0670025210172808	0.0	0.0	0.0	0.0	2.0
_Units	891.0	0.0011223344556677	0335012605086404	0.0	0.0	0.0	0.0	1.0
	891.0	12.88327721661055	5.233197921322941	2.0	8.0	12.0	16.0	32.0
	891.0	14.02020202020202	6.76106137898318	4.0	8.0	16.0	16.0	64.0
y_GB	891.0	638.042648709315401	2983037489014	128.0	512.0	512.0	512.0	4000.0
B	891.0	6.952861952861951	699312551691802	2.0	6.0	6.0	6.0	16.0
ches	891.0	15.25549943883277	912896398585429	12.0	14.0	15.6	15.6	18.0
xel	891.0	2014.5858585858588	65.2451634419999	1080.0	1920.0	1920.0	1920.0	3840.0
el	891.0	1196.8529741863027	79.6110133892439	768.0	1080.0	1080.0	1200.0	2560.0
	891.0	154.47084175084172	79.8573245501109	100.45	141.21	141.21	157.35	337.93



## Conclusions and Interpretation

The analysis shows that even with the diversity, the market has the prevalence of some brands and operating systems. Such a failure of this correlation between price and rating might mean that manufacturers need to shift focus from pricing and concentrate more on quality and performance to cater to consumer satisfaction. Further, the correlations of technical specification suggest that there are certain functions which tend to scale together, and these aspects may be taken advantage of by the manufacturer for designing product lines.

**The insights obtained from this try to outline the exact structure of the laptop market using data. Manufacturers and retailers will use this to rationalize their development of the product and marketing strategies according to how consumers would prefer and the direction that the market may take.**

## References:

<https://www.kaggle.com/datasets/siddiquifaiznaeem/laptop-sales-price-prediction-dataset-2024>