



LAPTOP PRICE ANALYSIS

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INTRODUCTION AND DATA OVERVIEW

The dataset consists of the latest available laptops in the market. The laptops became one of the key features in education. With the help of analysis, I am trying to find the patterns and trends to gain insightful information.

Dataset Information:

1. **Source :**
<https://www.kaggle.com/datasets/talhabarkaatahmad/laptop-prices-dataset-october-2023/data>
2. **Name of the Dataset:** Laptops.csv
3. **Attributes:** Manufacturer, Model Name, Category, Screen, CPU, RAM, Storage, Operating System, Operating System Version, Weight, Price
4. **Records:** 977 Observations

QUESTIONS TRYING TO SOLVE

1. What screen types are most commonly manufactured, and by which manufacturers?
2. Which GPU and CPU types are the most popular among the latest laptops?
3. What are the most common screen sizes preferred by different brands?
4. Which operating systems are widely used, and how do they correlate with laptop prices?
5. Which laptop brands tend to be more expensive based on the dataset?

DATA CLEANING

1. **Removed Columns:** Removed Model name and storage columns as we didn't get any insights from this column
2. **NA values:** when searching for NA values Operating.System.Version had 136 missing values. We replaced the missing values with mode values.
3. **Grouping:** Categorized laptops based on Manufacturer, CPU types, and Screen types to get an overview of the data.
4. **Data type conversion and standardized representation:** Data types like RAM, GPU, Operating system version, and weight are converted to the required data type for the analysis process

DESCRIPTIVE STATISTICS

The total observation of the dataset is 977

Highest price is 54232308

Minimum is 1706375

Mean is 10018995

```
> summary(laptop)
Manufacturer      Model.Name      Category
Length:977      Length:977      Length:977
Class :character Class :character Class :character
Mode  :character Mode  :character Mode  :character

Screen.Size      Screen      CPU
Length:977      Length:977      Length:977
Class :character Class :character Class :character
Mode  :character Mode  :character Mode  :character

RAM      Storage      GPU
Length:977 Length:977      Length:977
Class :character Class :character Class :character
Mode  :character Mode  :character Mode  :character

Operating.System Operating.System.Version Weight
Length:977      Length:977      Length:977
Class :character Class :character Class :character
Mode  :character Mode  :character Mode  :character

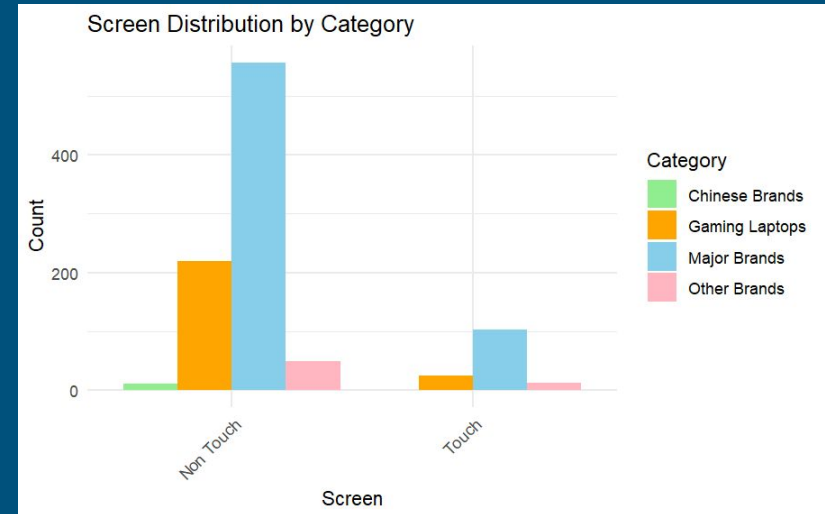
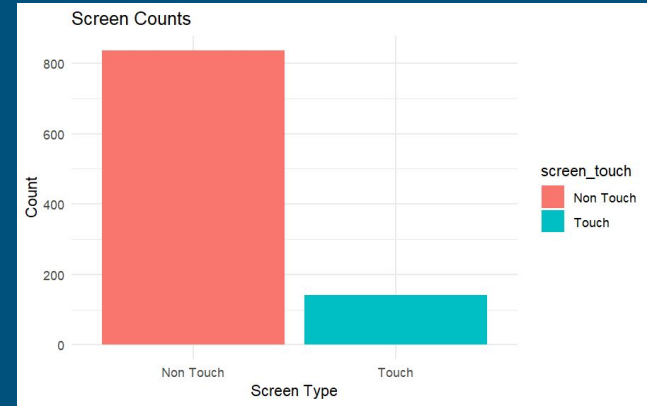
Price
Min.   : 1706375
1st Qu.: 5326308
Median : 8527428
Mean   :10018995
3rd Qu.:13115700
Max.   :54232308
```

DATA VISUALIZATION:

1. Screen type count and Category

The screen types are categorized into touch and non-touch when we try to find the count we found that the non-touch laptops are more in manufacturing.

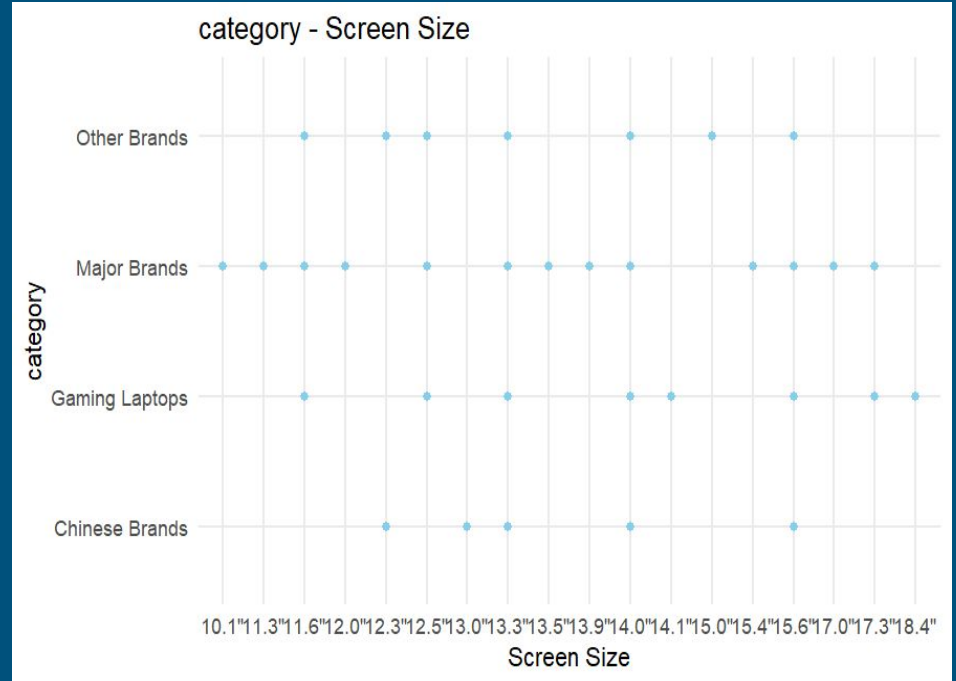
When trying to find the relation between manufacturer and touchscreen it is evident that the major brands like Apple, Dell, Microsoft, HP are manufacturing more laptops both in touchscreen and non-touch screen



2. Screen Size and Category

When trying to find the most common screen size that is being used we found that 13.3", 14.0", and 15.6" are most common in all the brands.

It is also evident that Major Brands has almost all types of screen size



3. Price vs Category

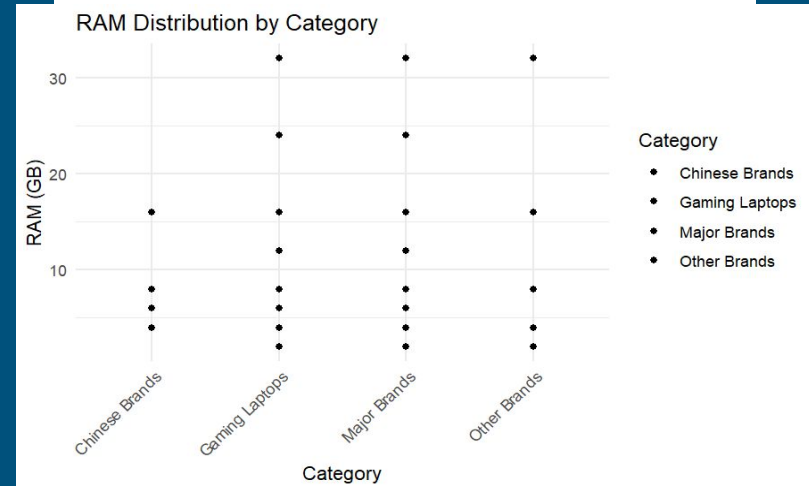
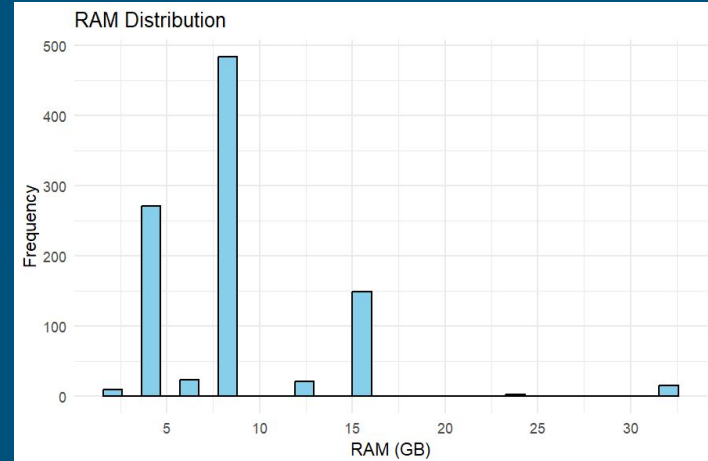
Laptops are pretty expensive. So when we tried to find which category is less expensive we found that Chinese brands like Chuwi, Huawei, Xiaomi, and Vero are less expensive as the highest price is around 8,500,000 while in all other brands, it is till 10,000,000 but it is evident that the major brands have laptops in all range.



4. RAM Distribution

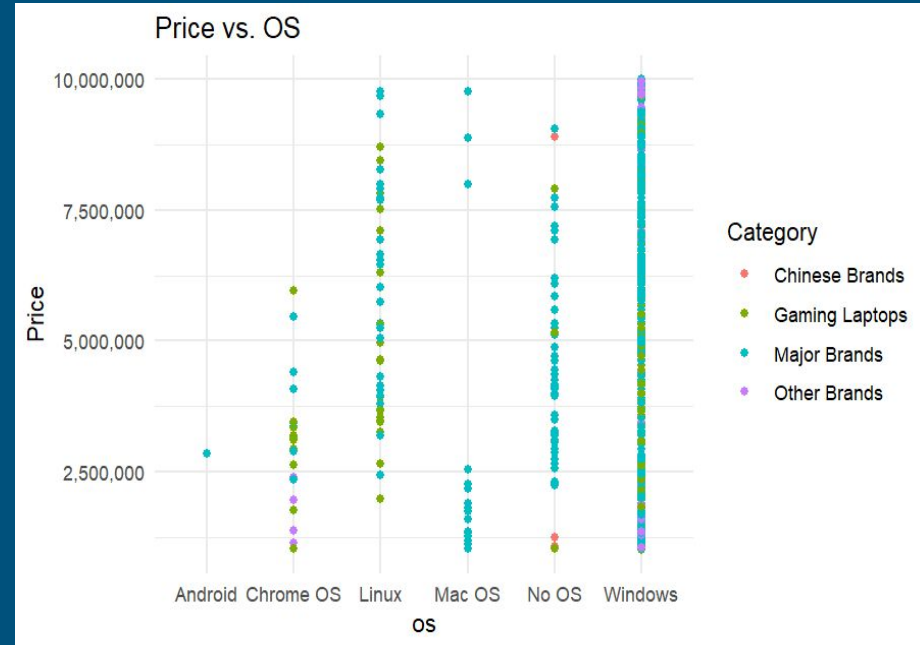
8GB RAM has more count than comes the 4GB.

Gaming laptops and Major brands produce more laptops in different GB. The Chinese brand is the one which produces the least GB RAM(16GB) while the remaining laptops produce 32GB



5. OPERATING SYSTEM AND PRICE

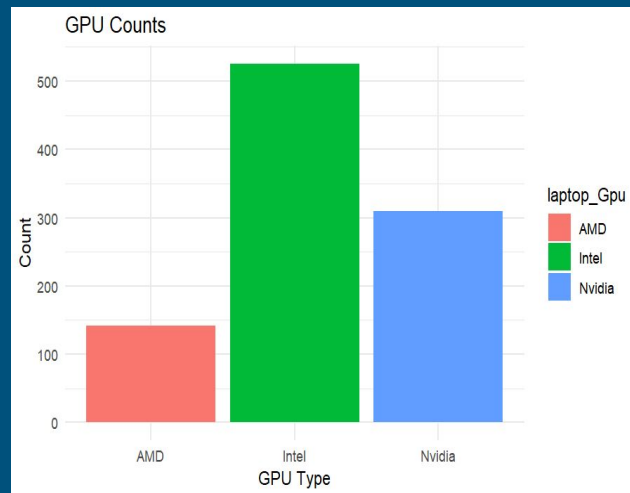
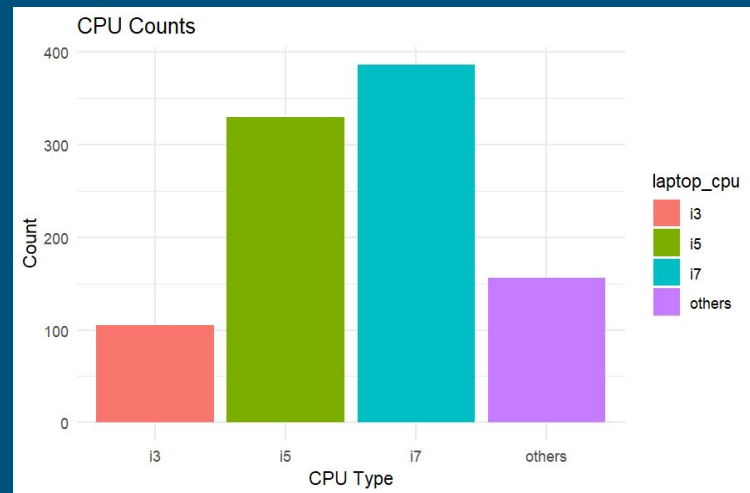
Windows is commonly manufactured in all brands and is available at any price. The usage of Windows is more, while Android usage is very low only the major brands support usage of Android that too 3,000,000.



5. CPU and GPU

i7 CPU processor is pretty common among the public as it is more advanced than the rest.

Intel stands first in GPU type and it is very popular to use.



INSIGHTS

The analysis reveals a preference for major brands, especially models without touchscreen features, featuring 13.0" screens, 8GB RAM, Windows OS, and Intel i7 CPUs. These specifications are well-suited for educational purposes, particularly for college students.

RECOMMENDATION

Manufacturers looking to cater to the education sector should focus on producing laptops aligned with these preferences. Additionally, consumers seeking reliable laptops for educational needs can confidently opt for major brands offering these specifications.

CITATION

1. [Aemyjutt. \(2023\). Deep EDA/Feature Engineering. Kaggle.](#)