

Samsung Innovation Campus

Artificial Intelligence Course

A person with short dark hair, wearing a grey and black striped sweater, is seen from behind, looking at a wall covered in numerous sticky notes, diagrams, and sketches. The scene is dimly lit, with the wall's contents being the primary light source. The text 'Laptop price' is overlaid in a large, white, serif font, and 'prediction' is overlaid in a smaller, white, sans-serif font below it. A thin white vertical line is positioned to the left of the main title.

Laptop price

prediction



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Zyad Saeed



Ali Hamed

Concept

- Objective of project
- Overview of dataset
- Data processing
- Data visualization
- Feature selection
- Modeling & Algorithm
- Business Recommendation

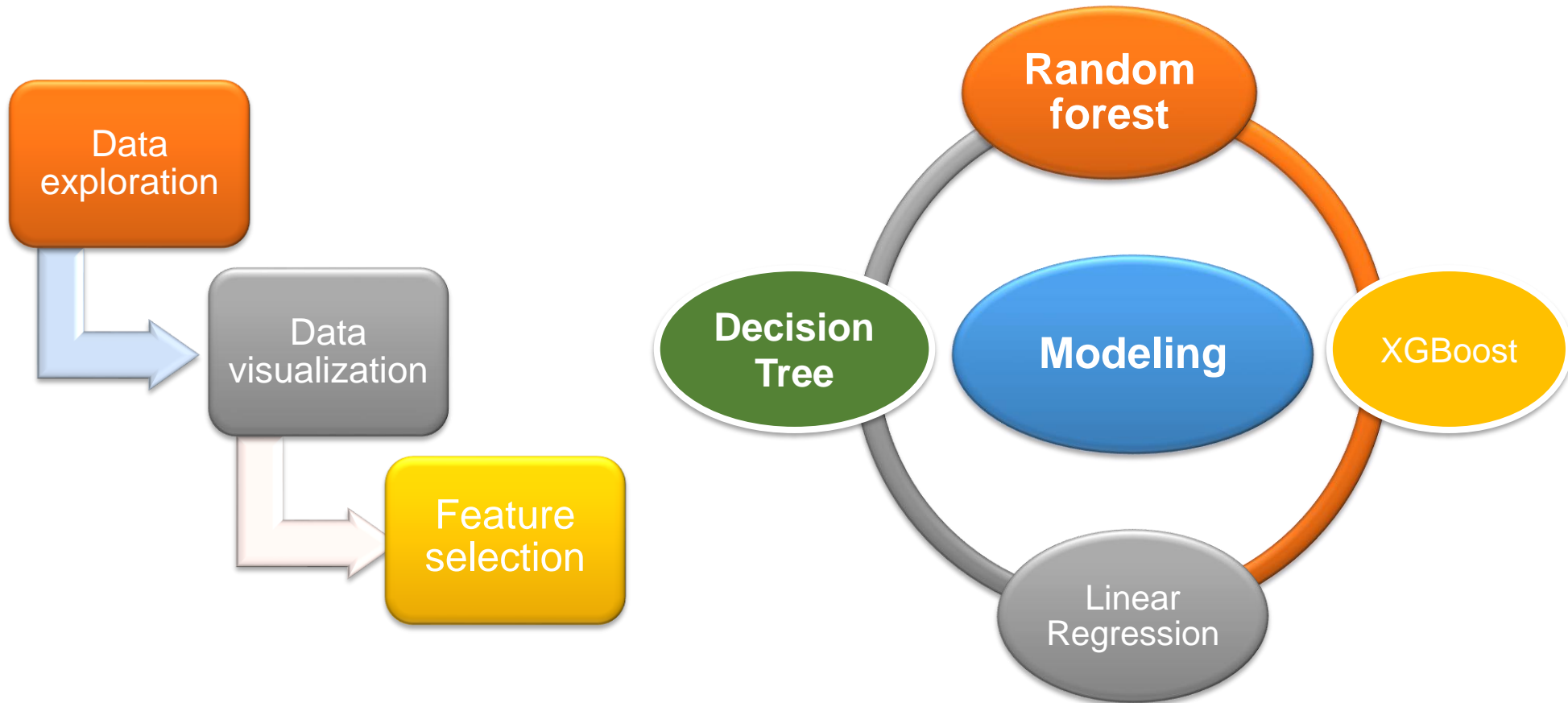


Objective

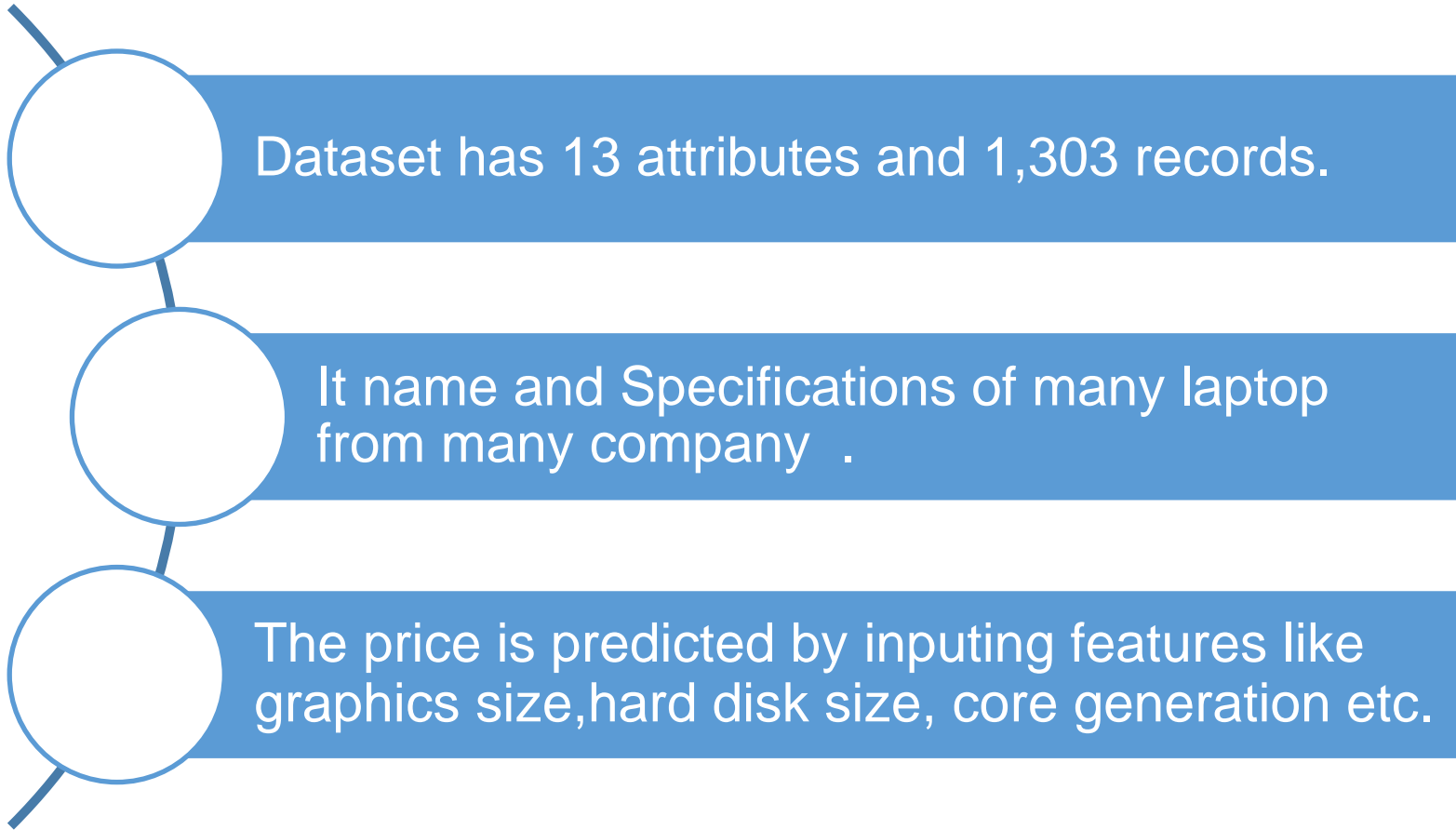
Analysis of this data will lead to identify the best laptop price and the target customers to achieve the maximum profit.



Data processing



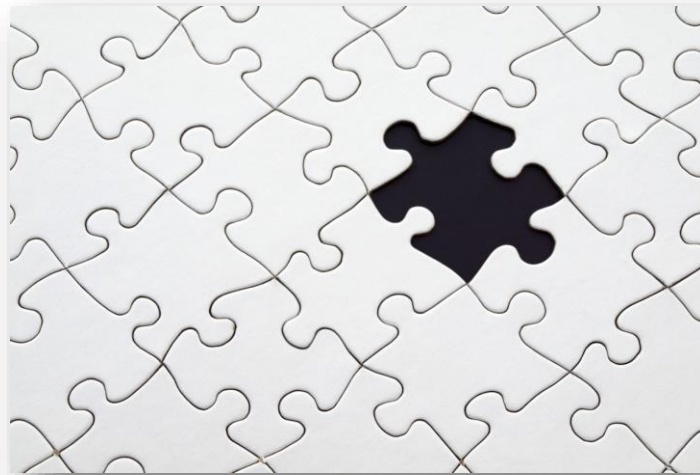
Objective



Data exploration

Checking missing value

- No missing values

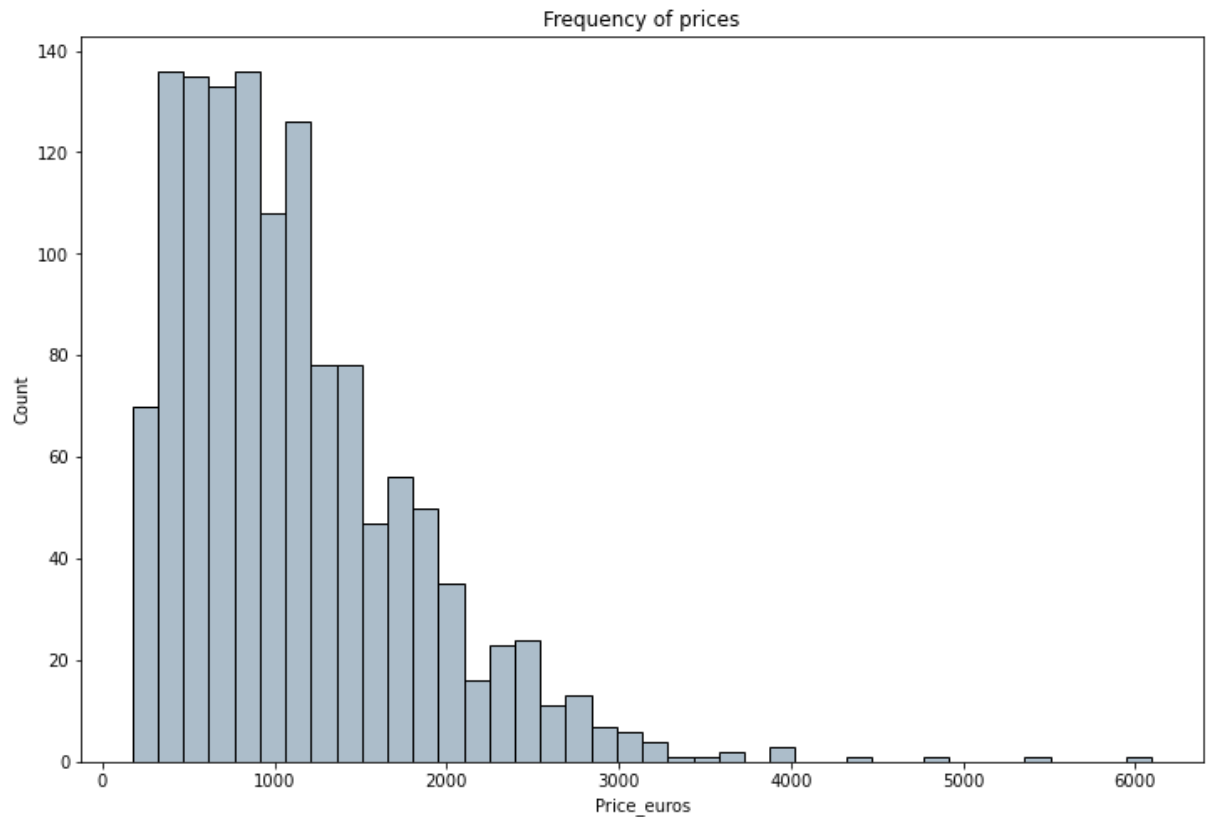


- No duplicated data

Data visualization

Average laptop price

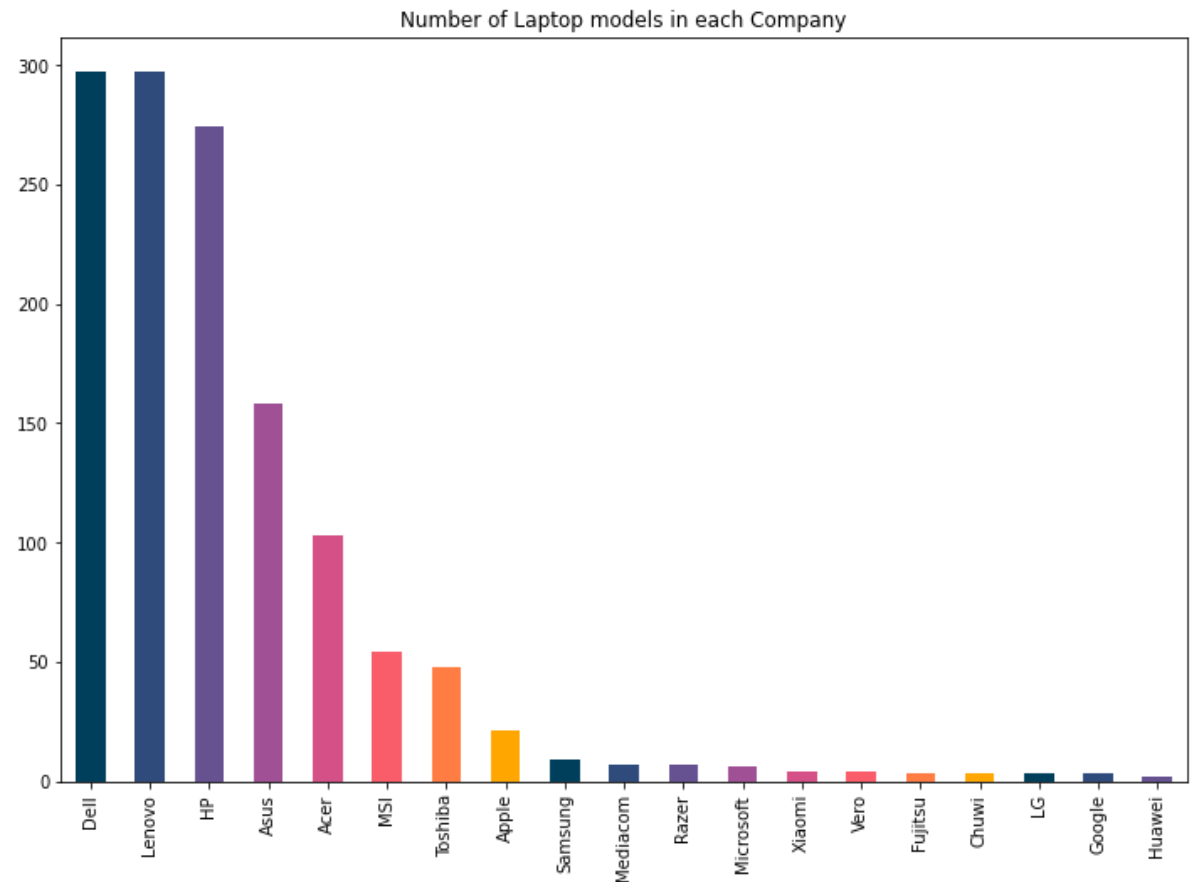
- Most of the devices price in range
200 : 2000 €



Data visualization

Number of laptops models

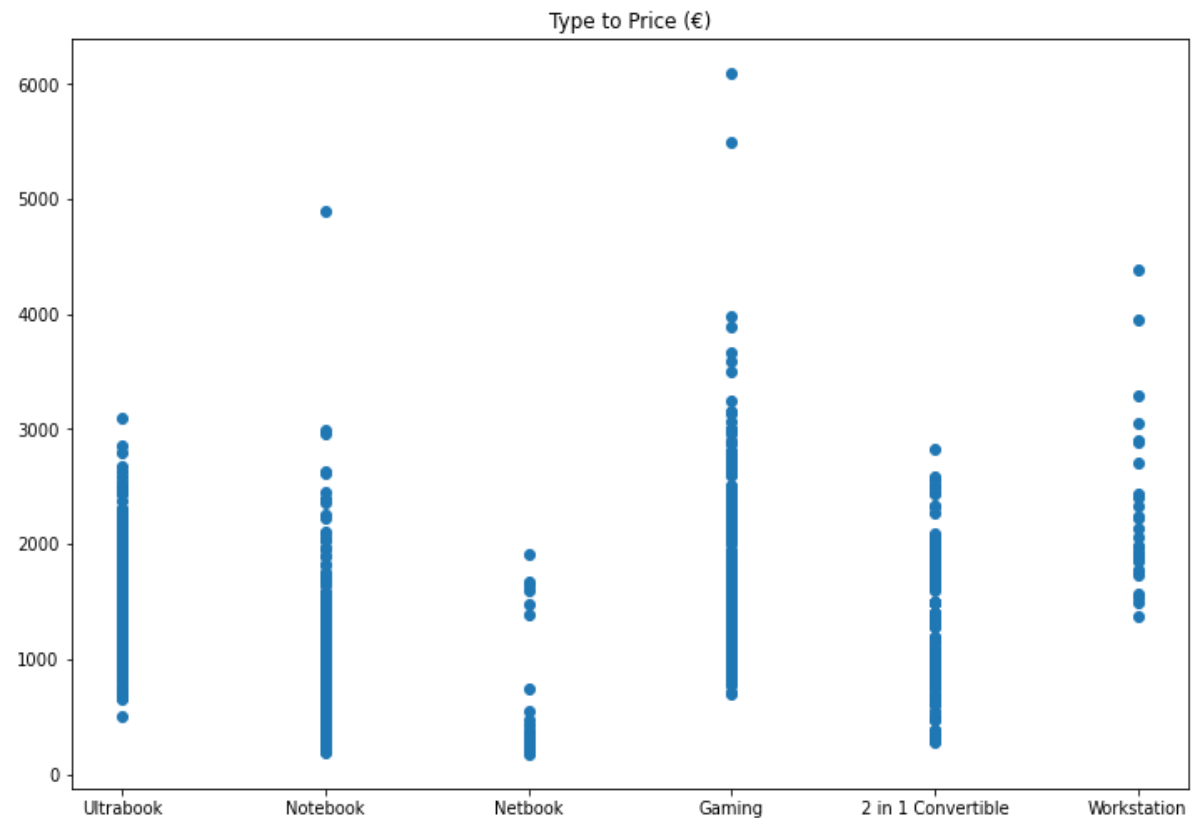
- lenovo and dell are the more preferable laptops followed by Hp.



Data visualization

Types of laptops compared to the prices

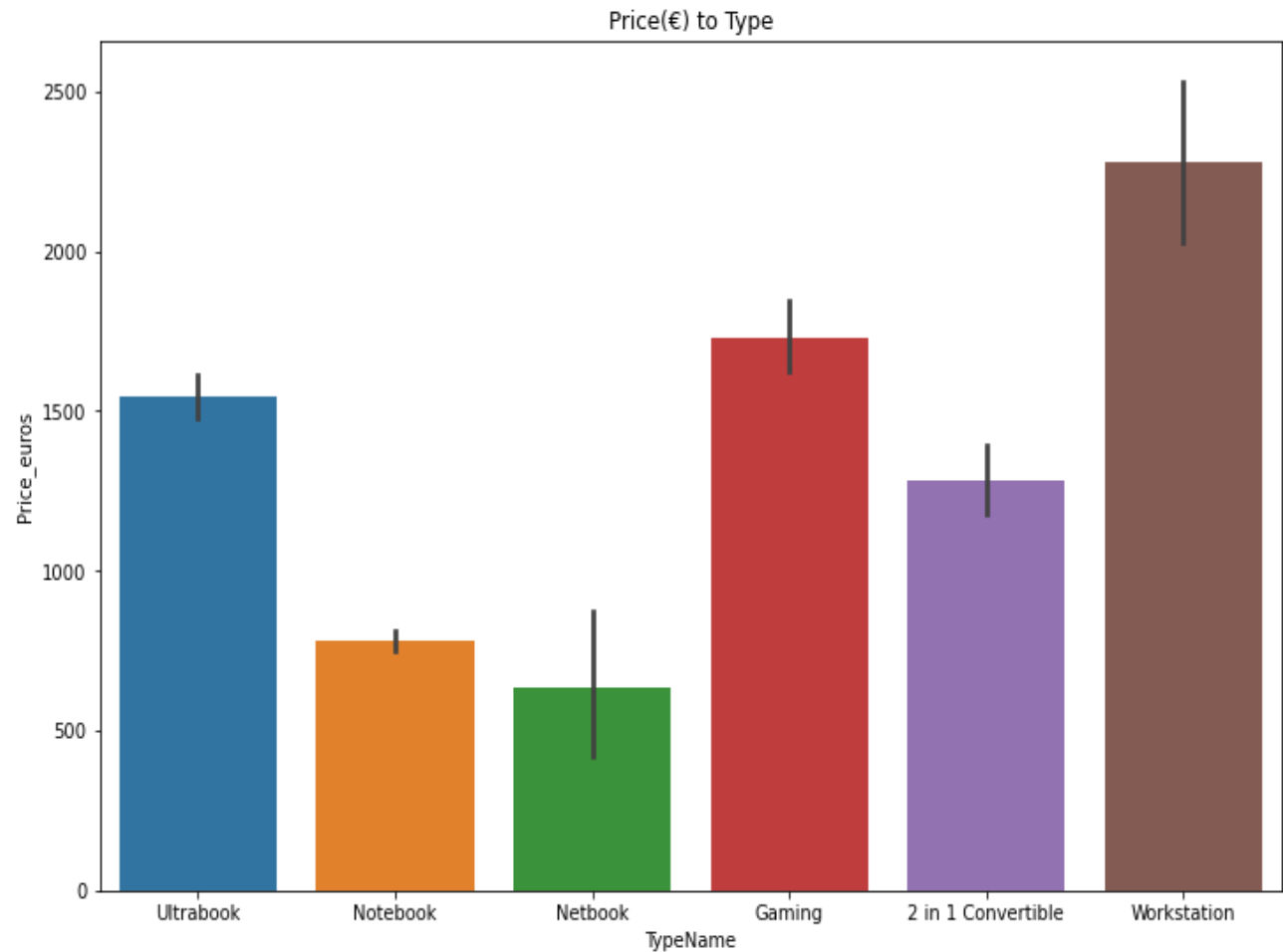
- The gaming and Workstation laptops are the most expensive types of laptops .



Data visualization

Types & Price

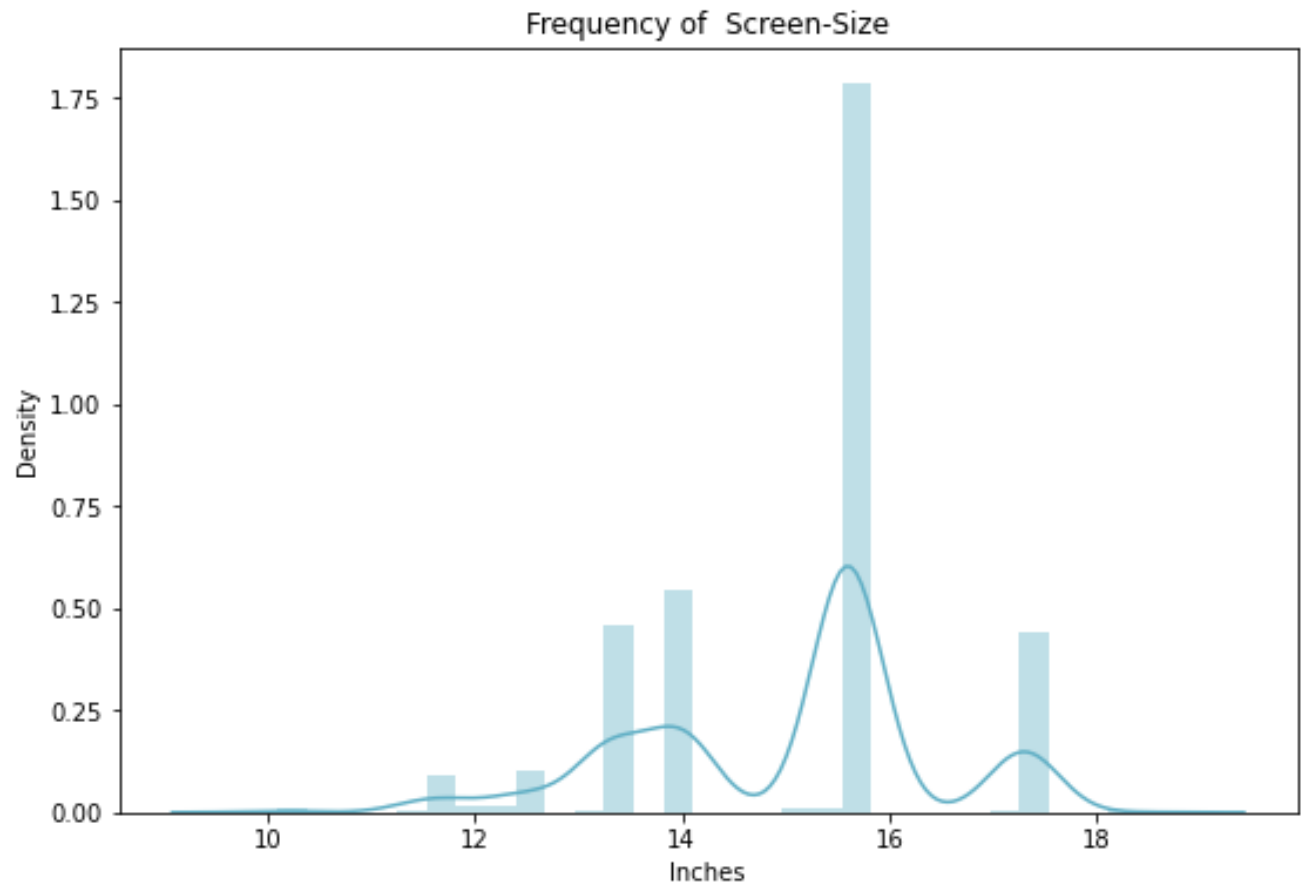
- Workstation is the most expensive type .



Data visualization

Types of screens

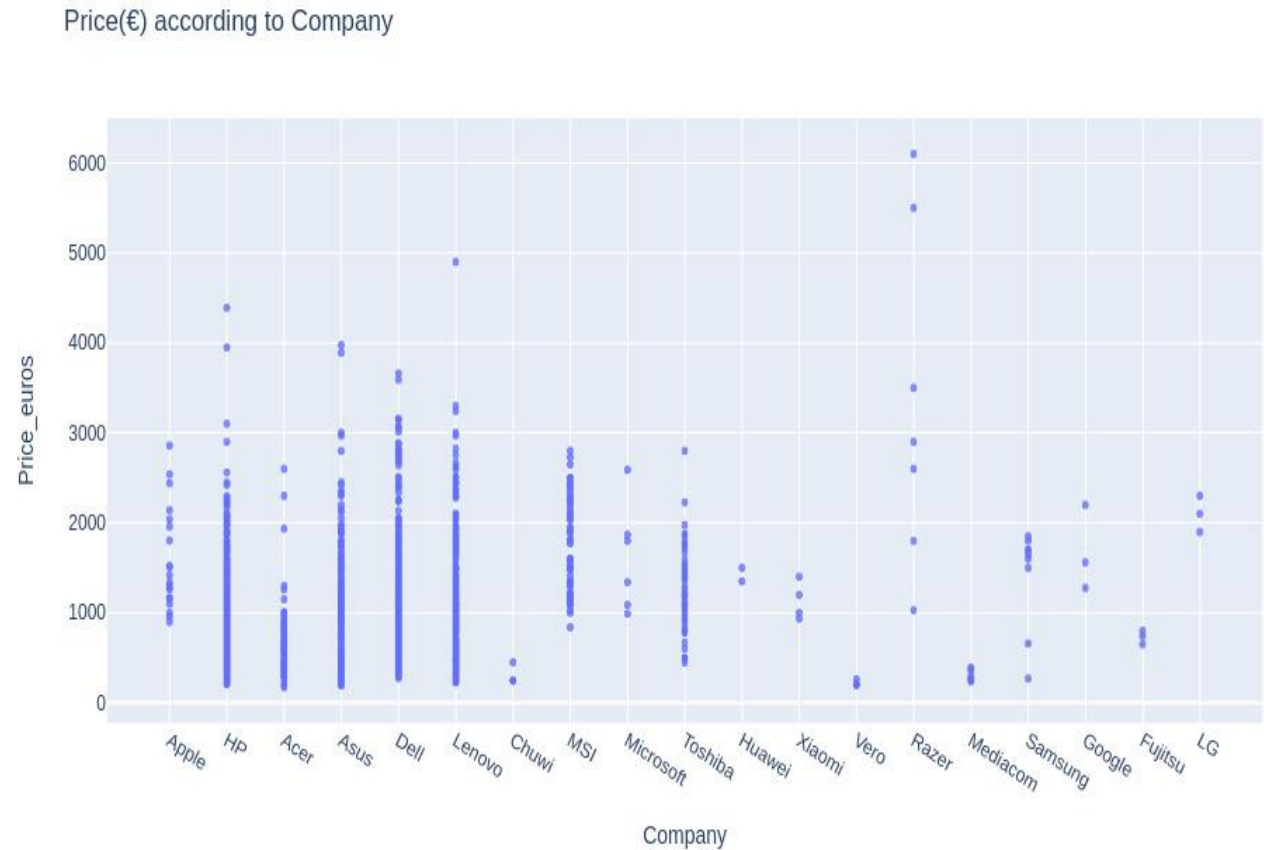
- The best density
In 15.90 inches .



Data visualization

Companies

- Razer company have The highest prices in different ranges.



Data visualization

Touchscreen

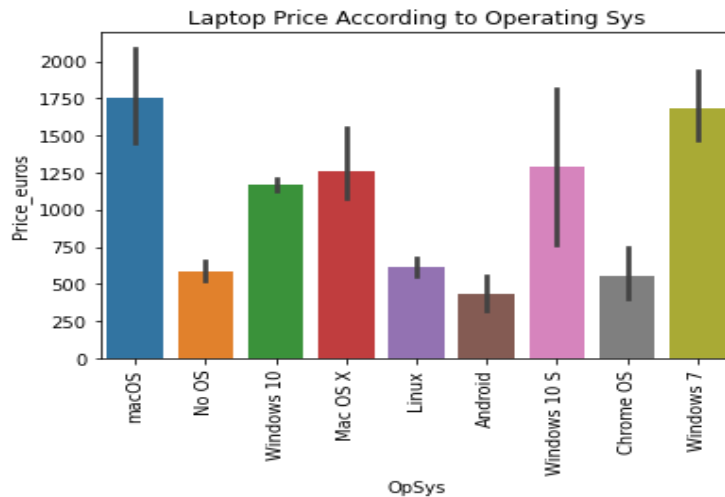
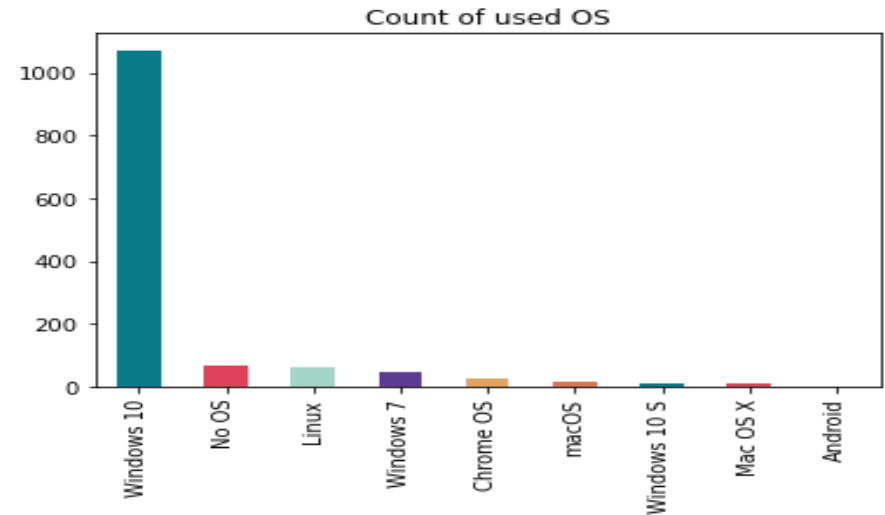
- laptop which have Touchscreen more expensive than the other.



Data visualization

operating system

- Most popular operating system is **Windows 10** .

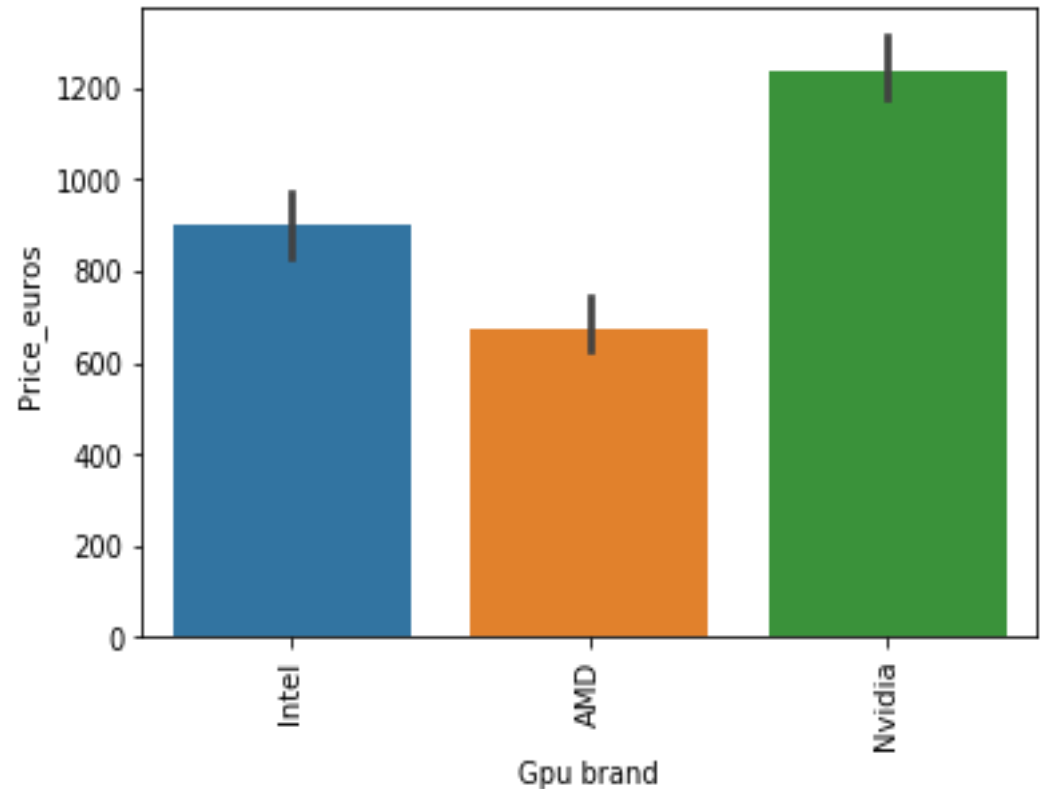


- **macOS** laptop is the most expensive one.

Data visualization

Graphics card

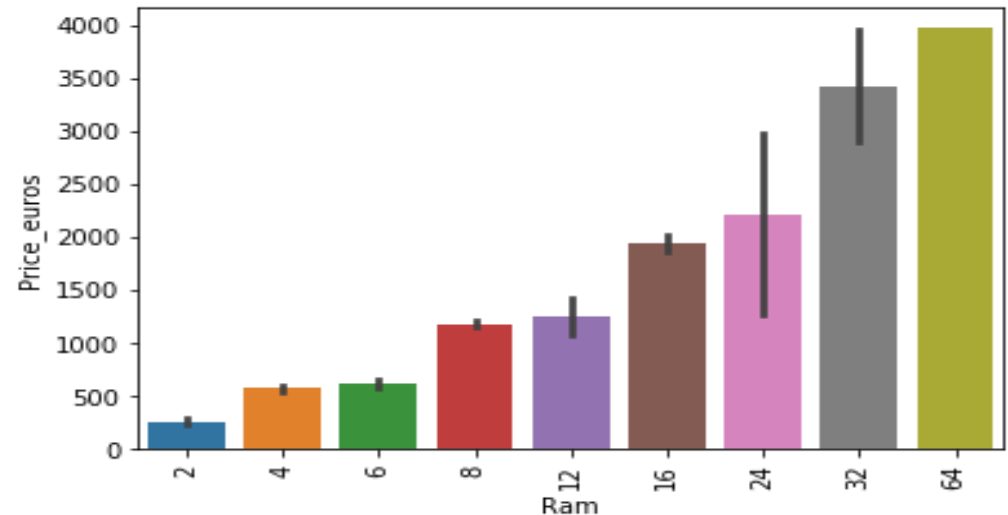
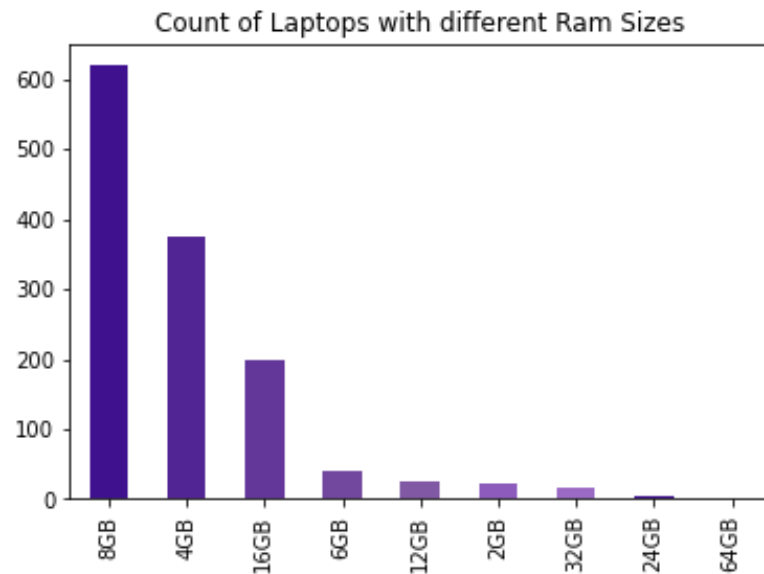
- **Nvidia** is high quality & high price .



Data visualization

RAMs

- Ram which have more capacity is more expensive .

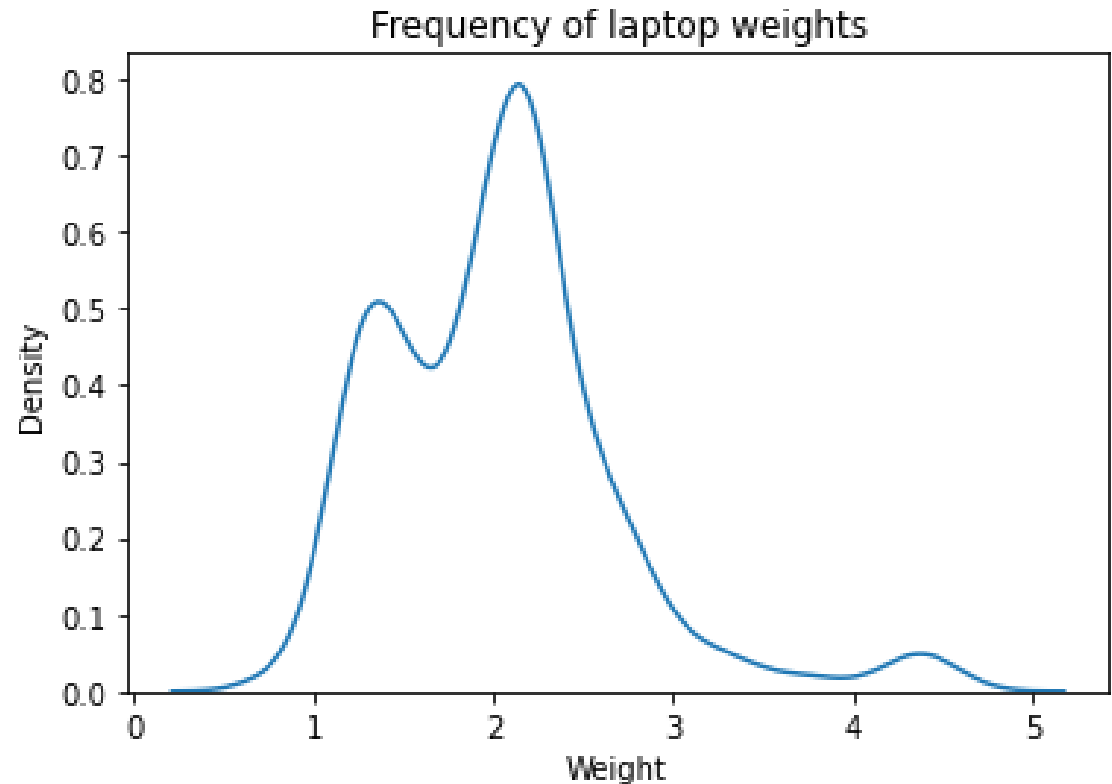


- Most laptops come with 8 GB Ram.

Data visualization

Weight of laptops

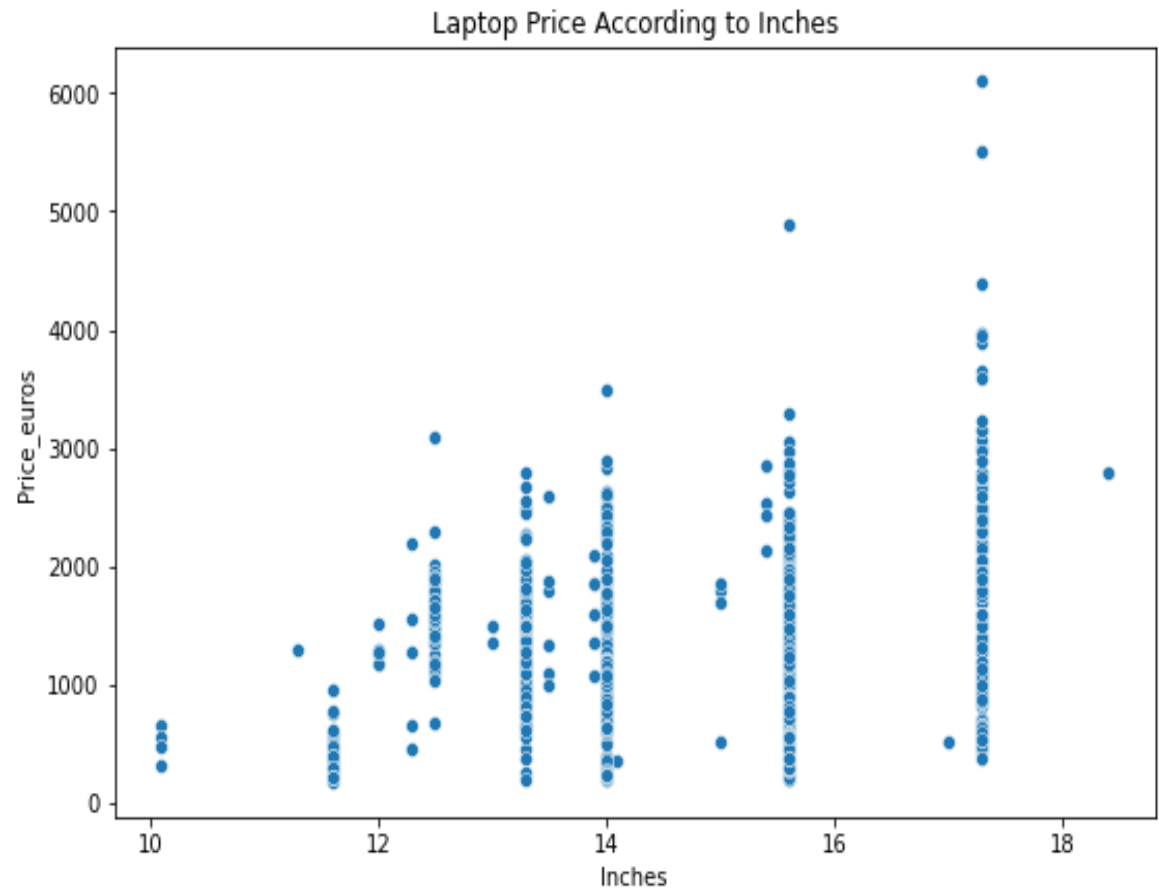
- laptops which is less weight is best .



Data visualization

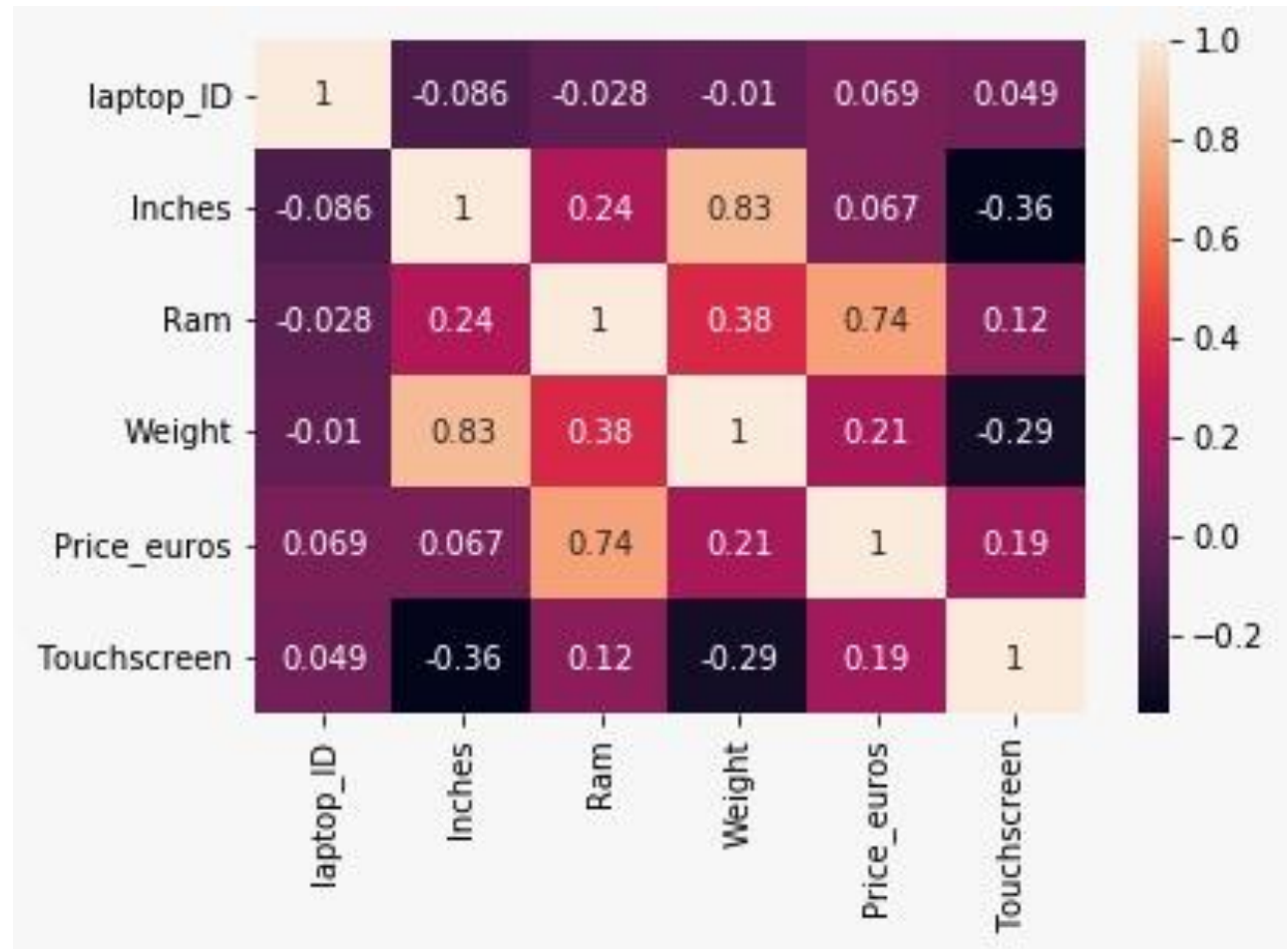
Inches

- The more inches, the higher the price



Data visualization

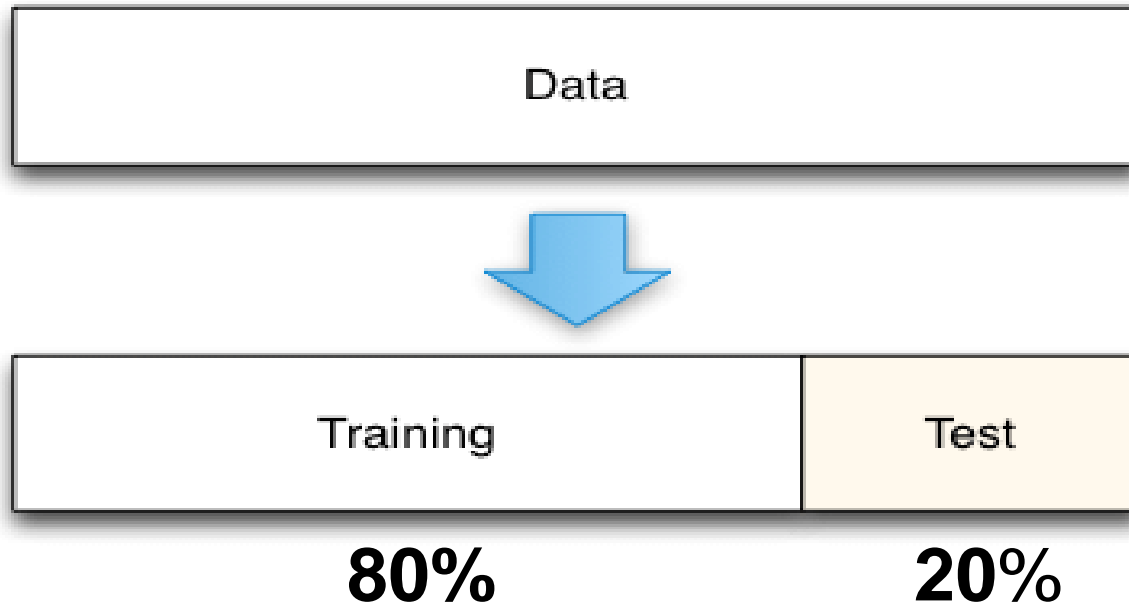
- Correlation



Modeling

Feature selection And modeling

- By using **all features** in training and “**Price_euros**” for prediction.



Modeling

Algorithm that used in this data

Random
forest

- Training : 93.64 %
- Testing : 89.88 %

Linear
Regression

- training : 69.60 %
- testing : 76 %

XGBoost

- training : 99 %
- testing : 92 %

Decision Tree

- training : 82.43 %
- testing : 82 %

Business Recommendation

- lenovo and dell are the more preferable laptop.
- laptops with **8 GB Ram** most popular.
- Laptops with **Windows 10** have good price and desired by most users.
- **2 Kg** Laptops are more acceptable.
- **Core i7** laptops are the most requested.

A person with short dark hair, wearing a grey and black striped sweater, is seen from behind, looking at a wall covered in numerous sticky notes, diagrams, and sketches. The scene is dimly lit, with the wall's contents being the primary light source. The word "Thanks" is overlaid in a large, white, serif font on the left side of the image.

Thanks

Eng. Mohamed Ali Elshaghnouby

Dr. Doaa Mahmoud Abdel-Aty

Together for Tomorrow! **Enabling People**

Education for Future Generations

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