Samsung Innovation Campus

Artificial Intelligence Course

Laptop Price Prediction
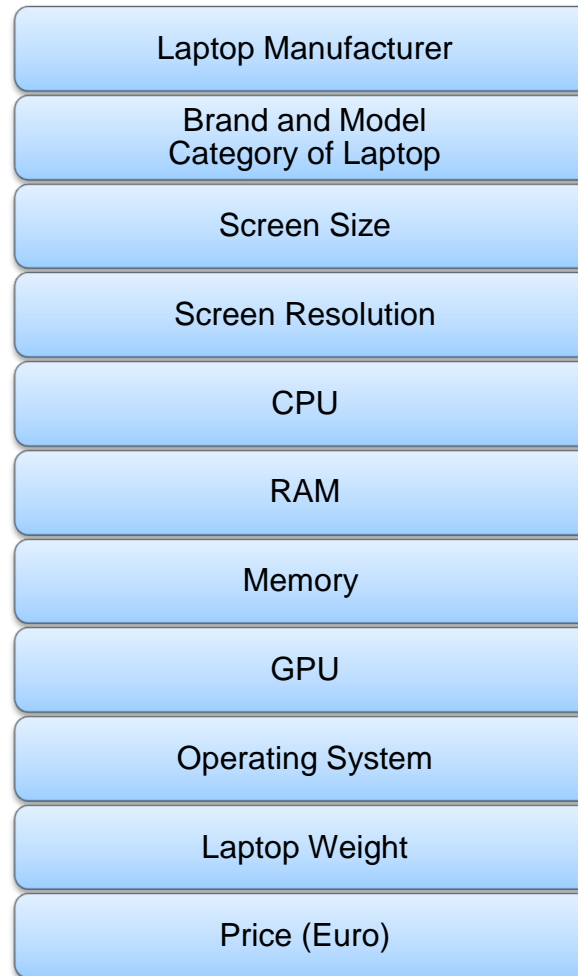
Made By:

- **Khaled Ehab Fathy**

- **Sa'ad Muhammad**

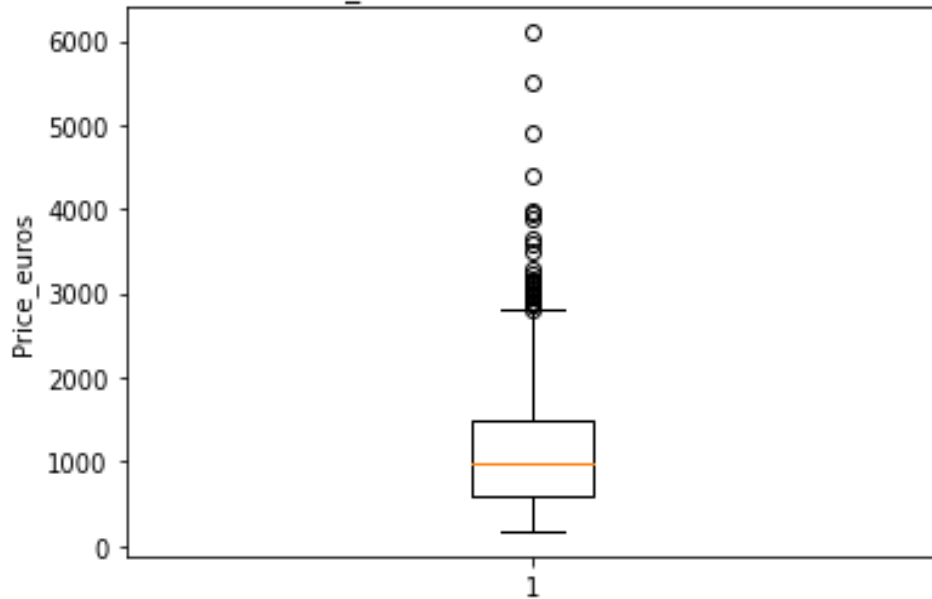# What is the Target?

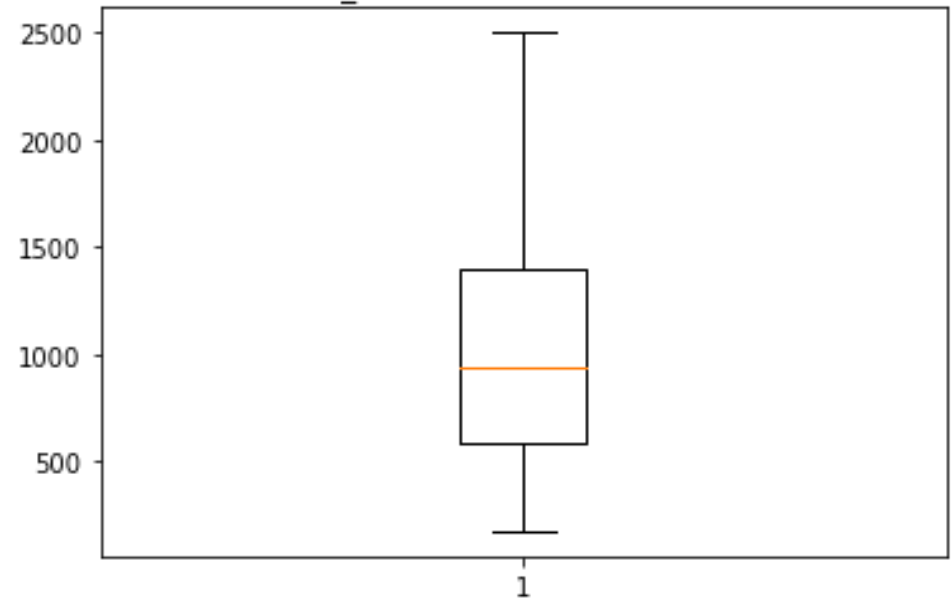**Predicting A price of Laptops Using Regression models**

Determine Most important Features responsible of Price

About The Dataset

Laptop Manufacturer

Brand and Model
Category of Laptop

Screen Size

Screen Resolution

CPU

RAM

Memory

GPU

Operating System
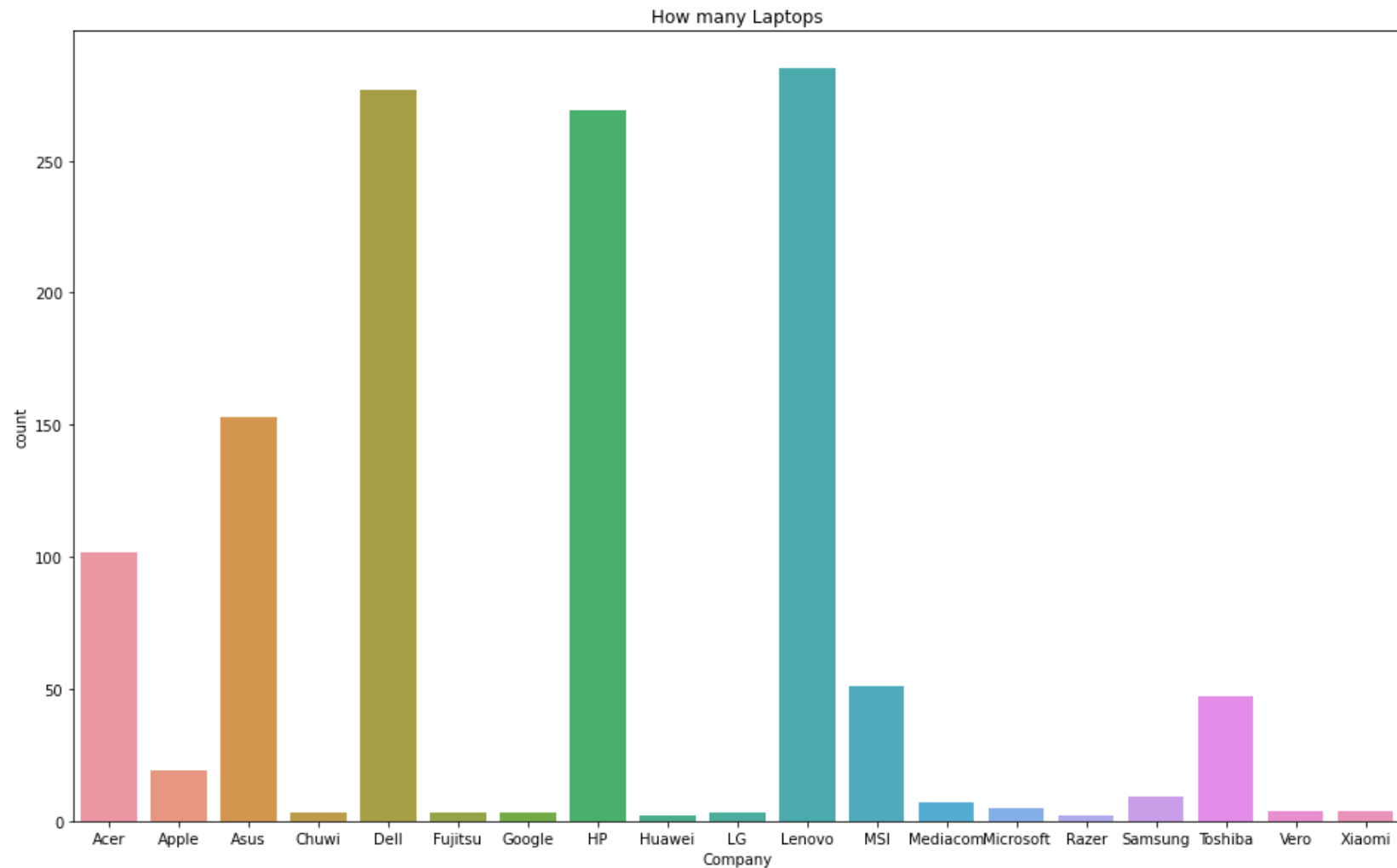
Laptop Weight

Price (Euro)

Handling Dirty Data

How Will We Work

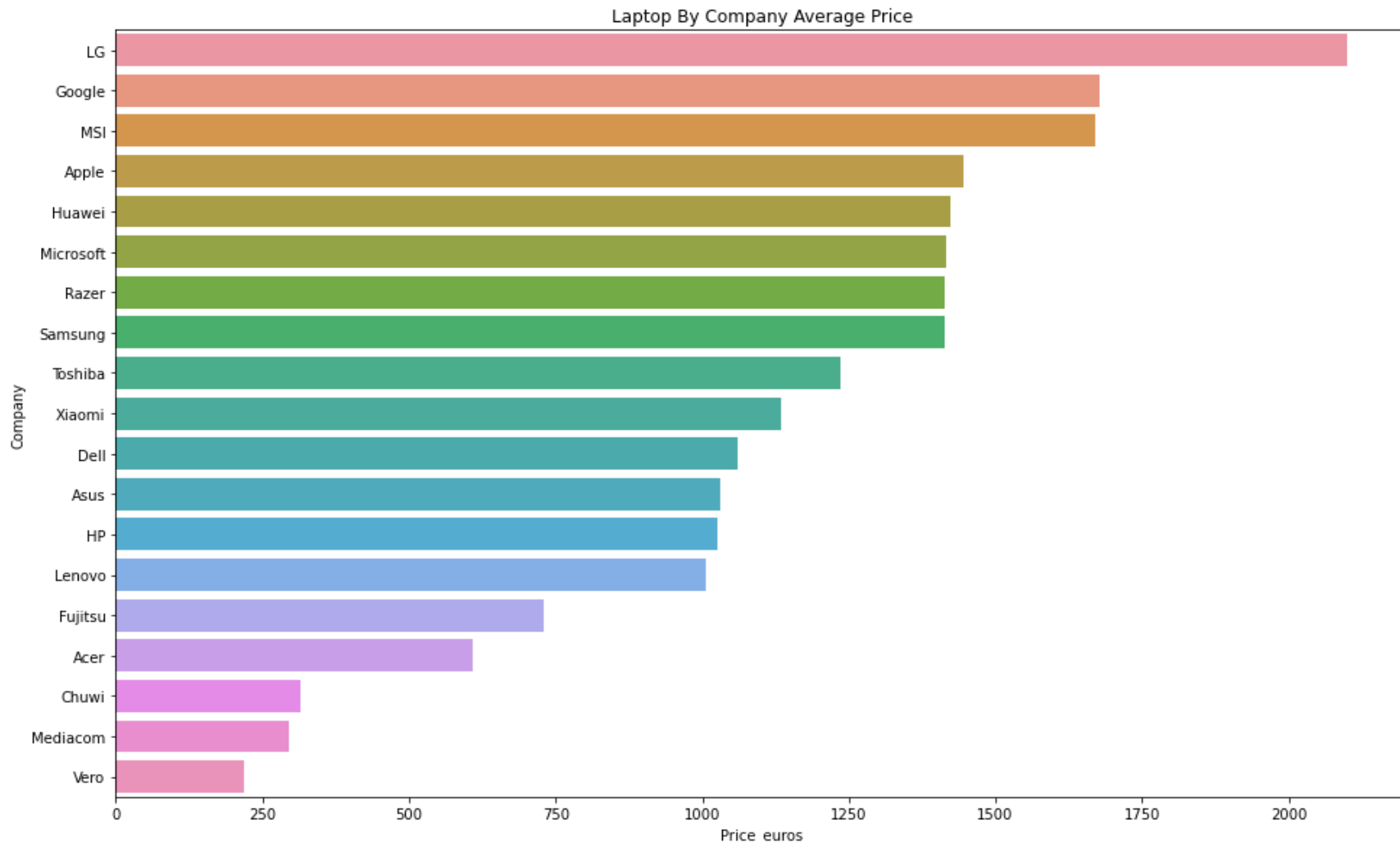
We will check the relationships between the feature with price and each other which can led us to the most important factors of pricing a laptop
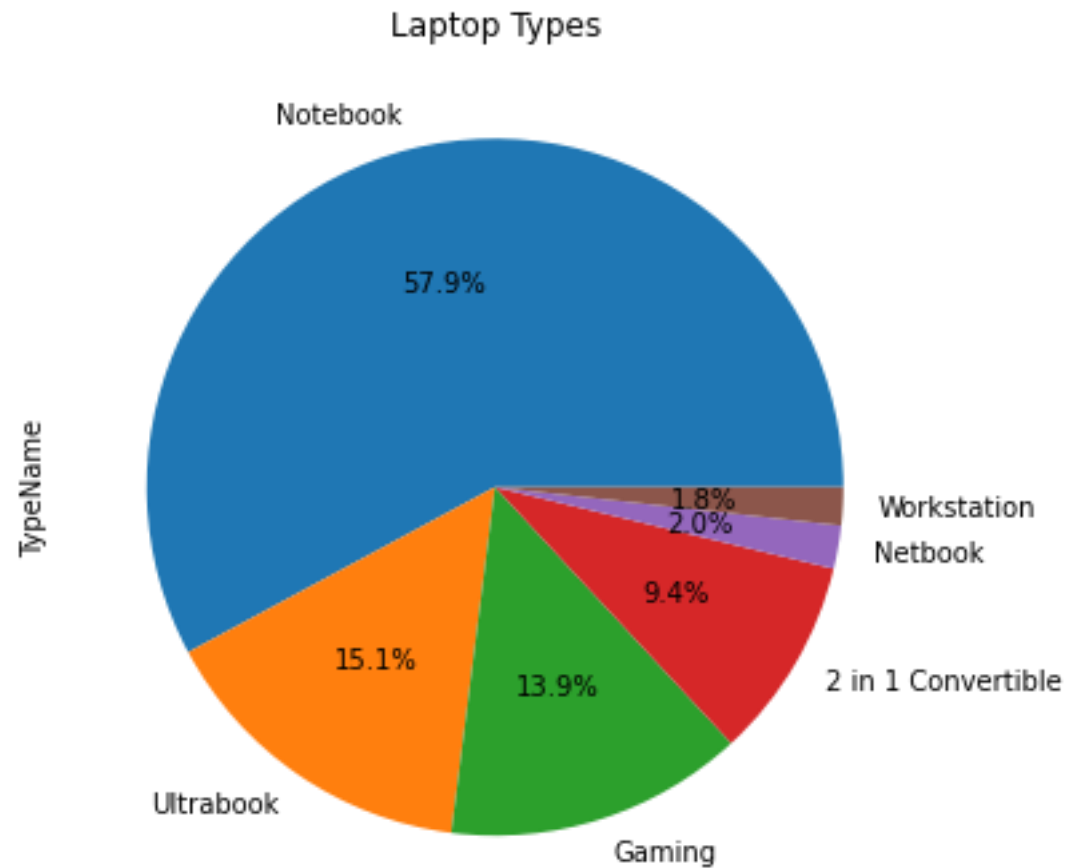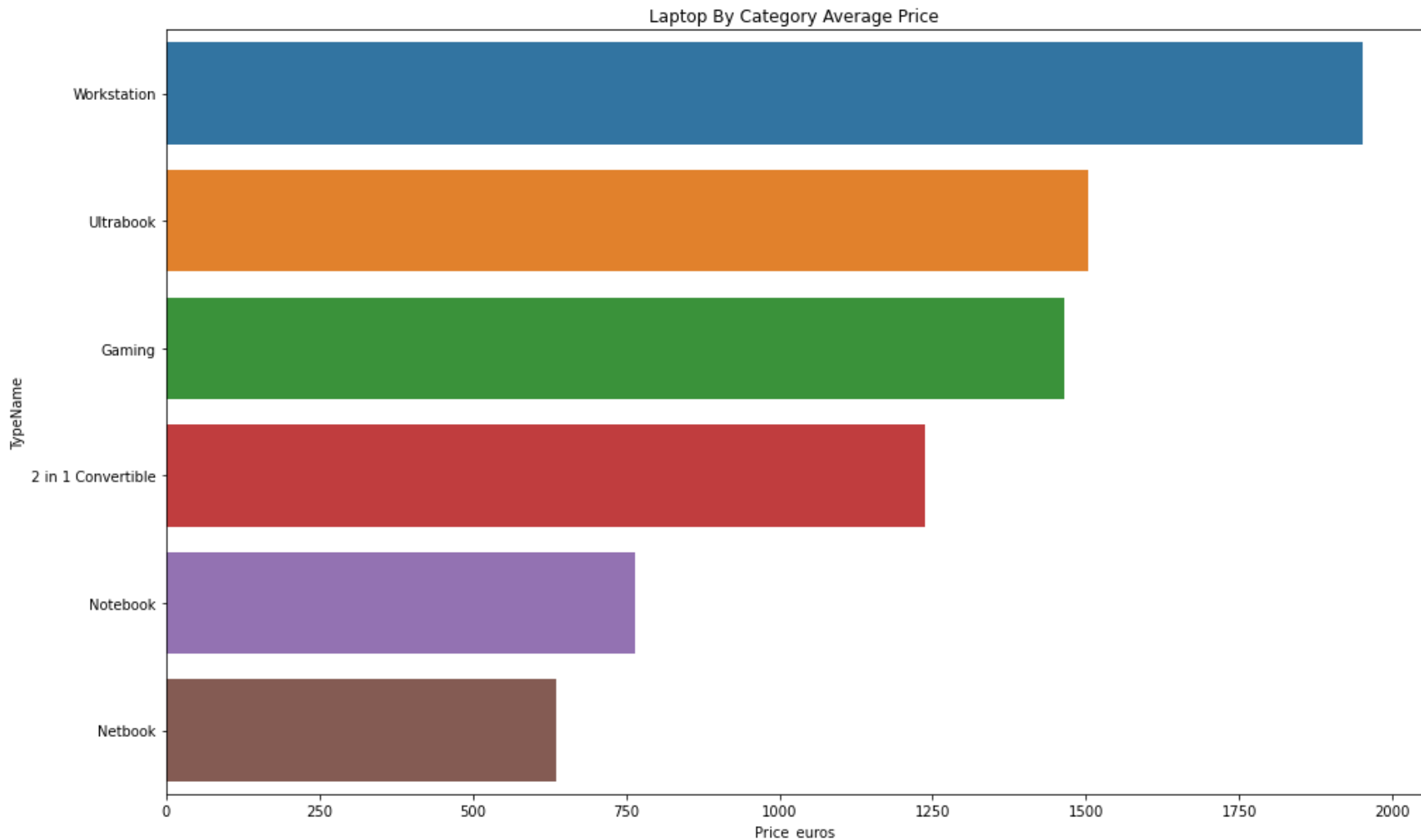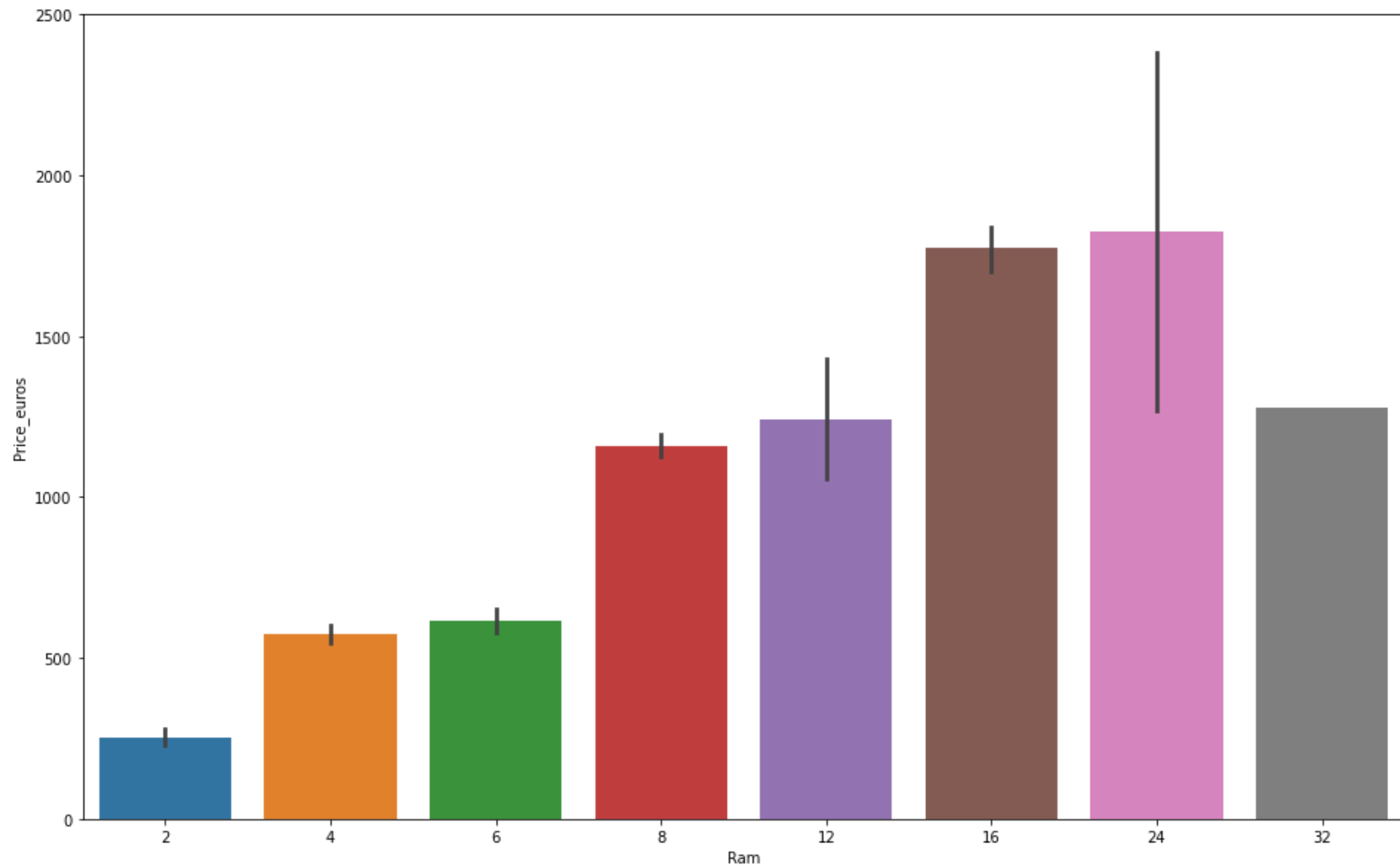
Company

How many Laptops

Company

Laptop By Company Average Price

Category of Laptop

Laptop Types

Notebook — 57.9%
Ultrabook — 15.1%
Gaming — 13.9%
2 in 1 Convertible — 9.4%
Netbook — 2.0%
Workstation — 1.8%

TypeName

Category of Laptop

Laptop By Category Average Price
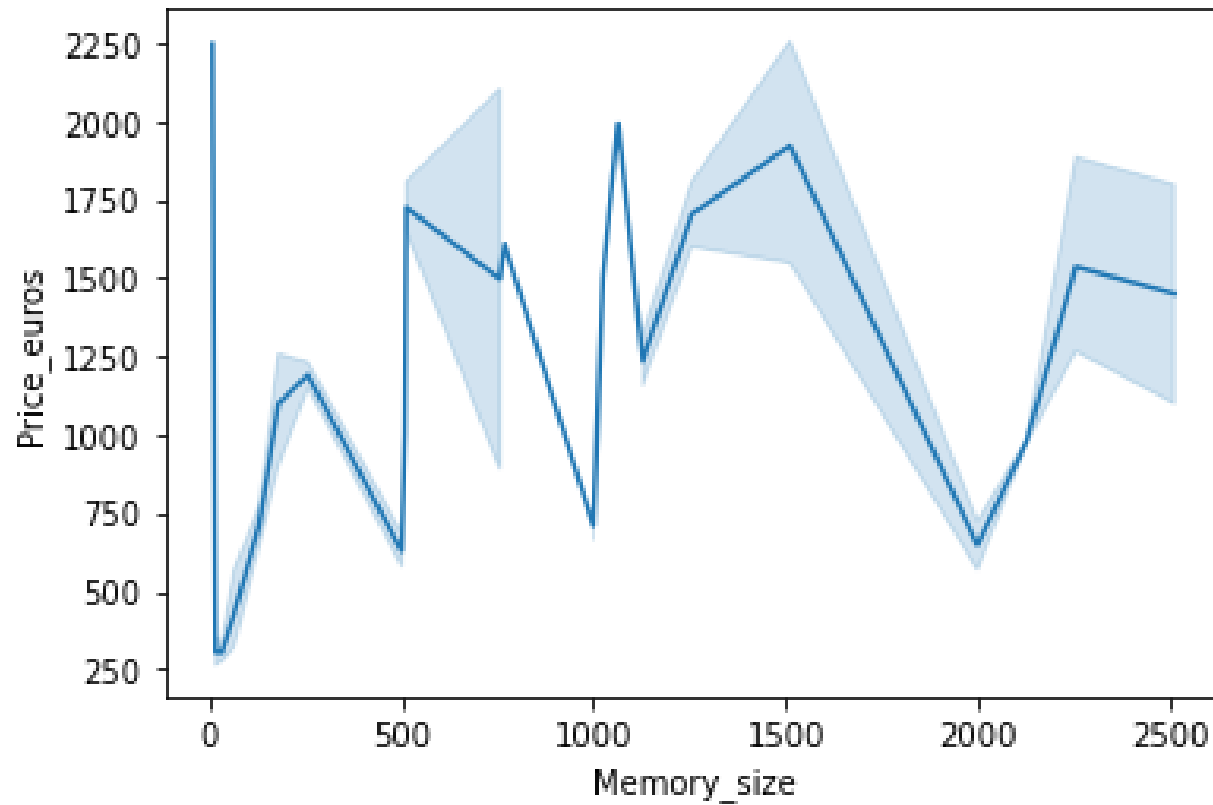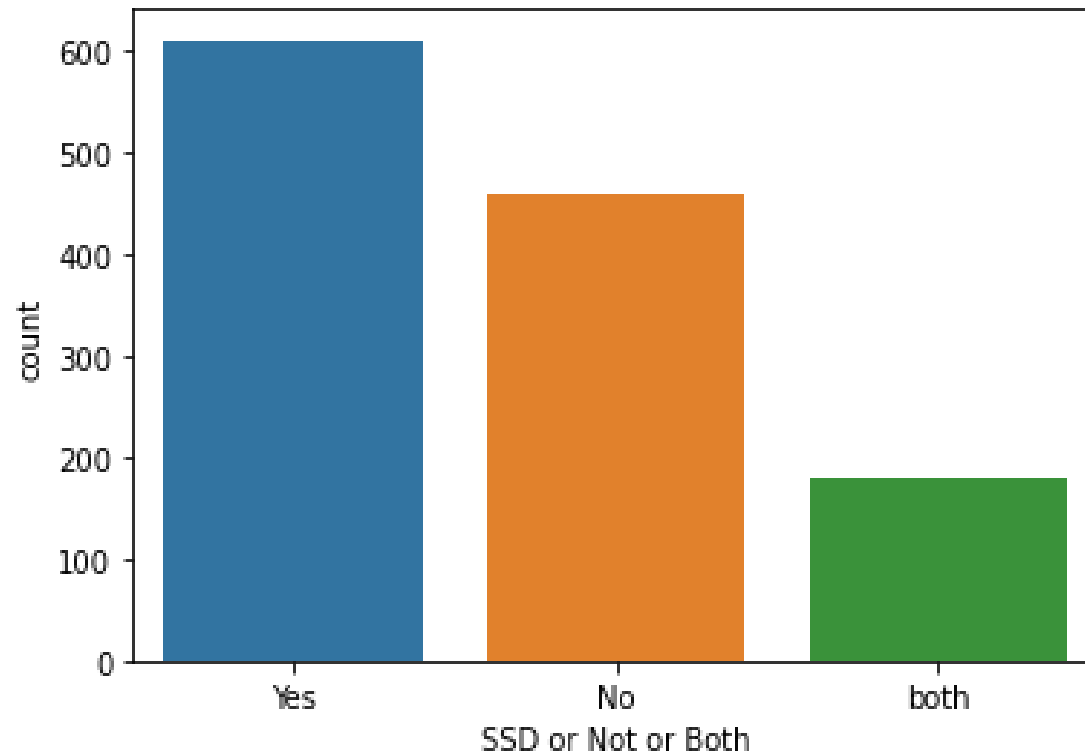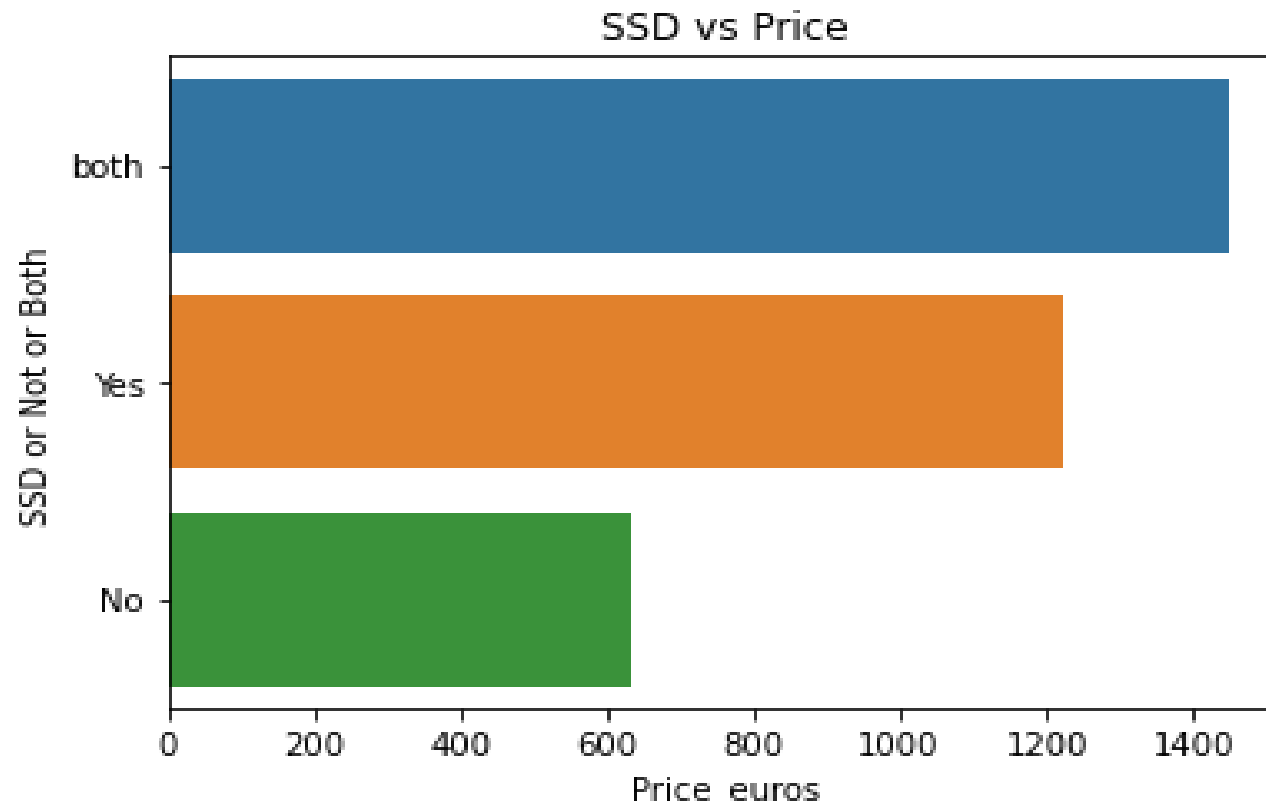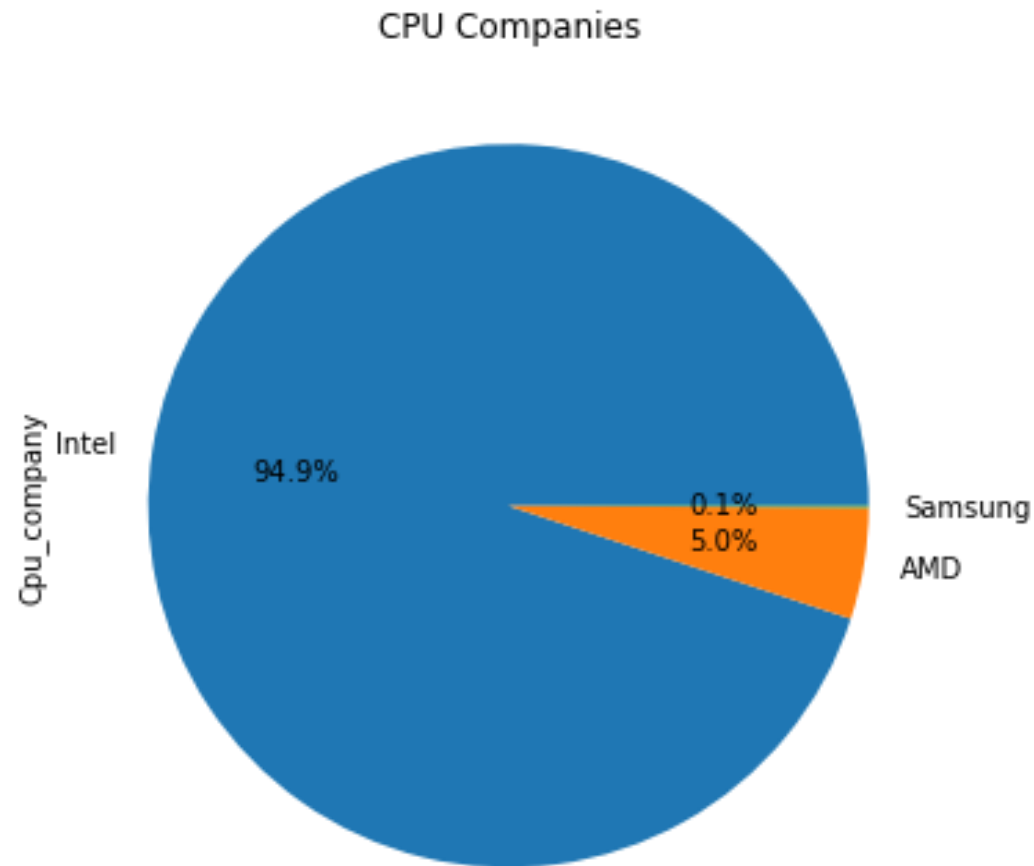
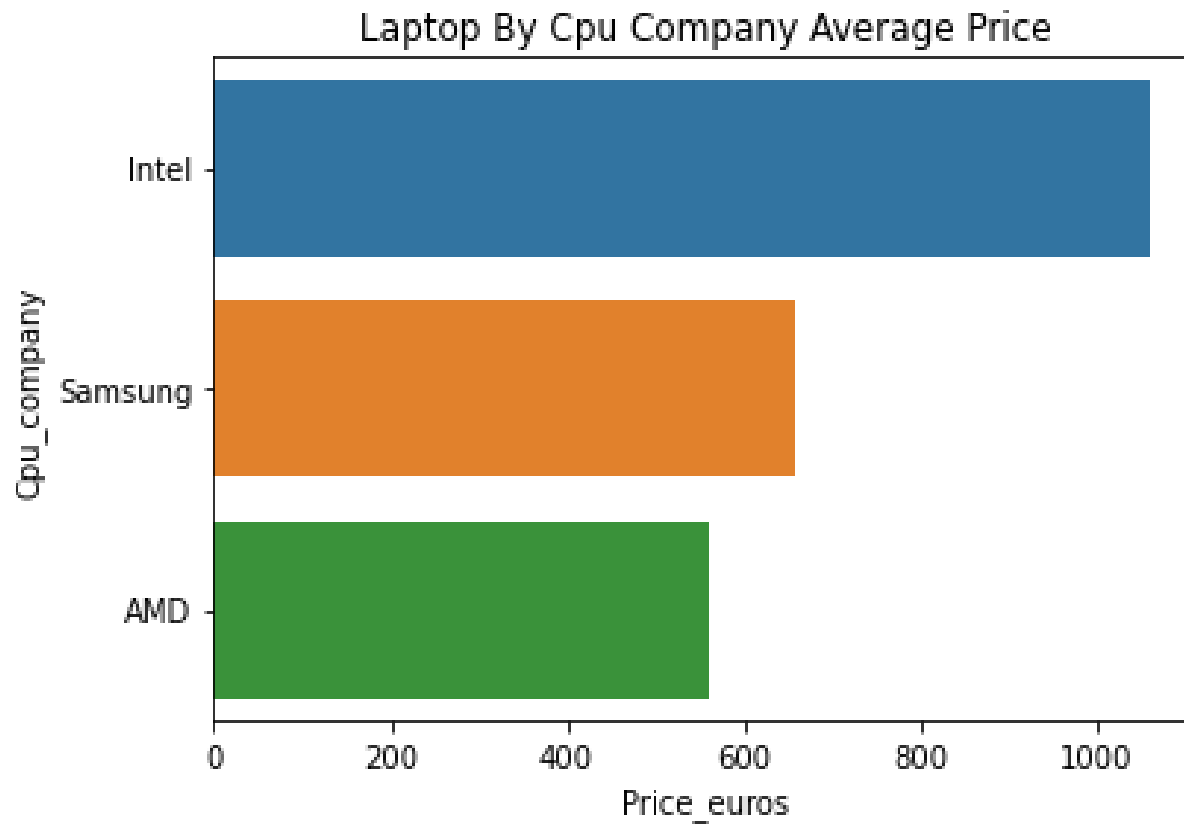# RAM

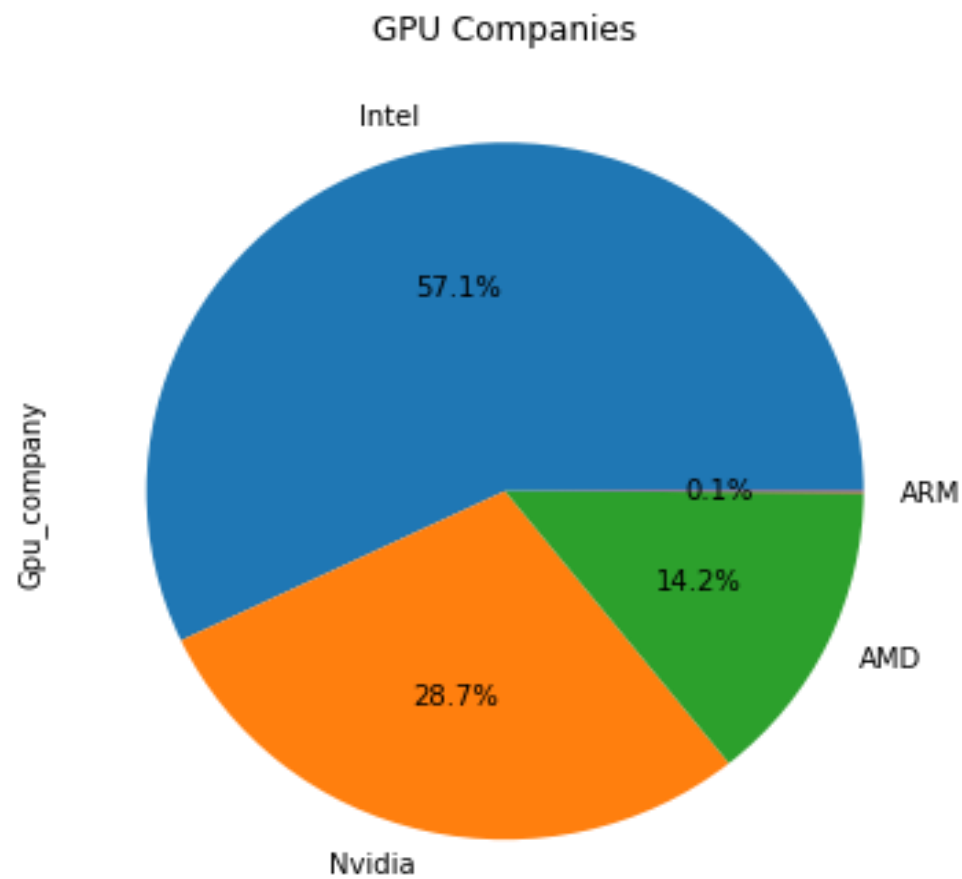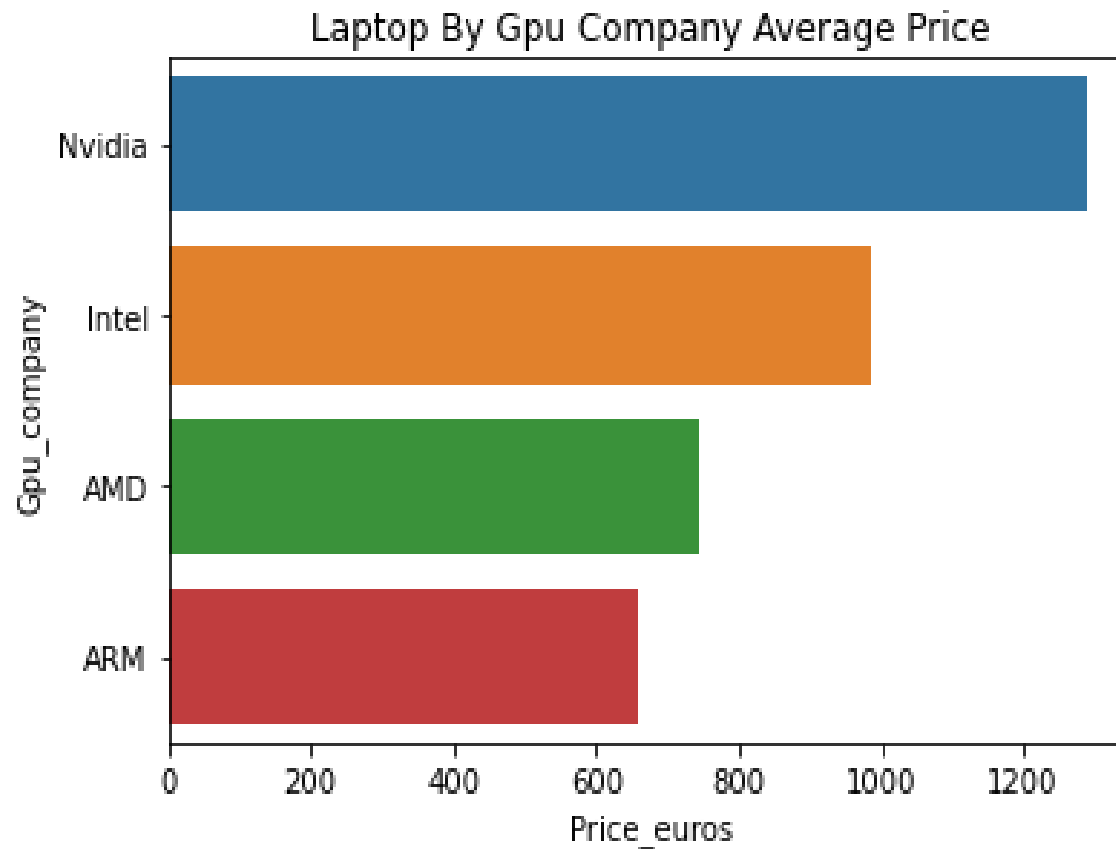# Category And RAM
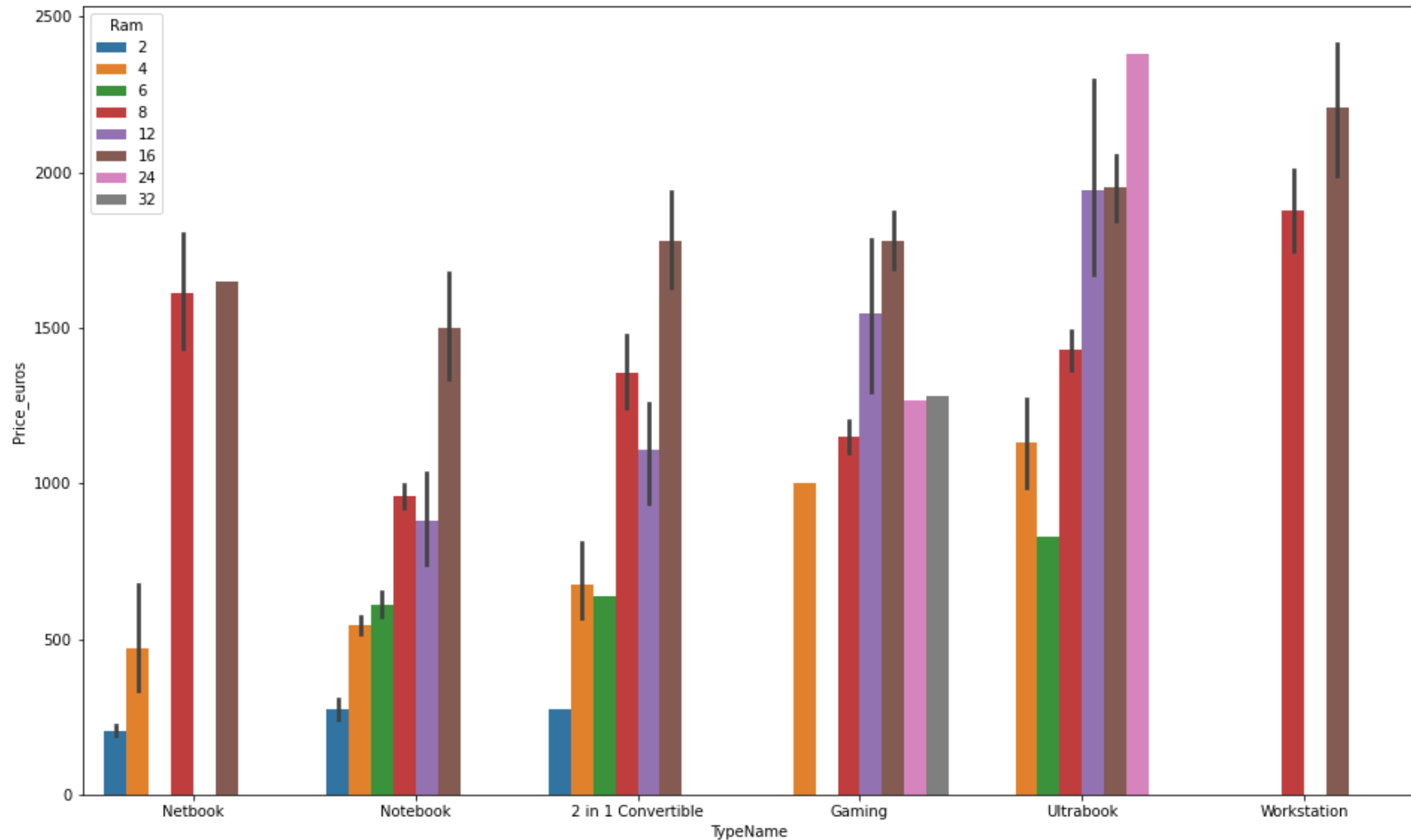
Memory Size

Memory SSD

Memory SSD

CPU

CPU Companies

CPU

Laptop By Cpu Company Average Price

GPU

GPU Companies

- Intel 57.1%
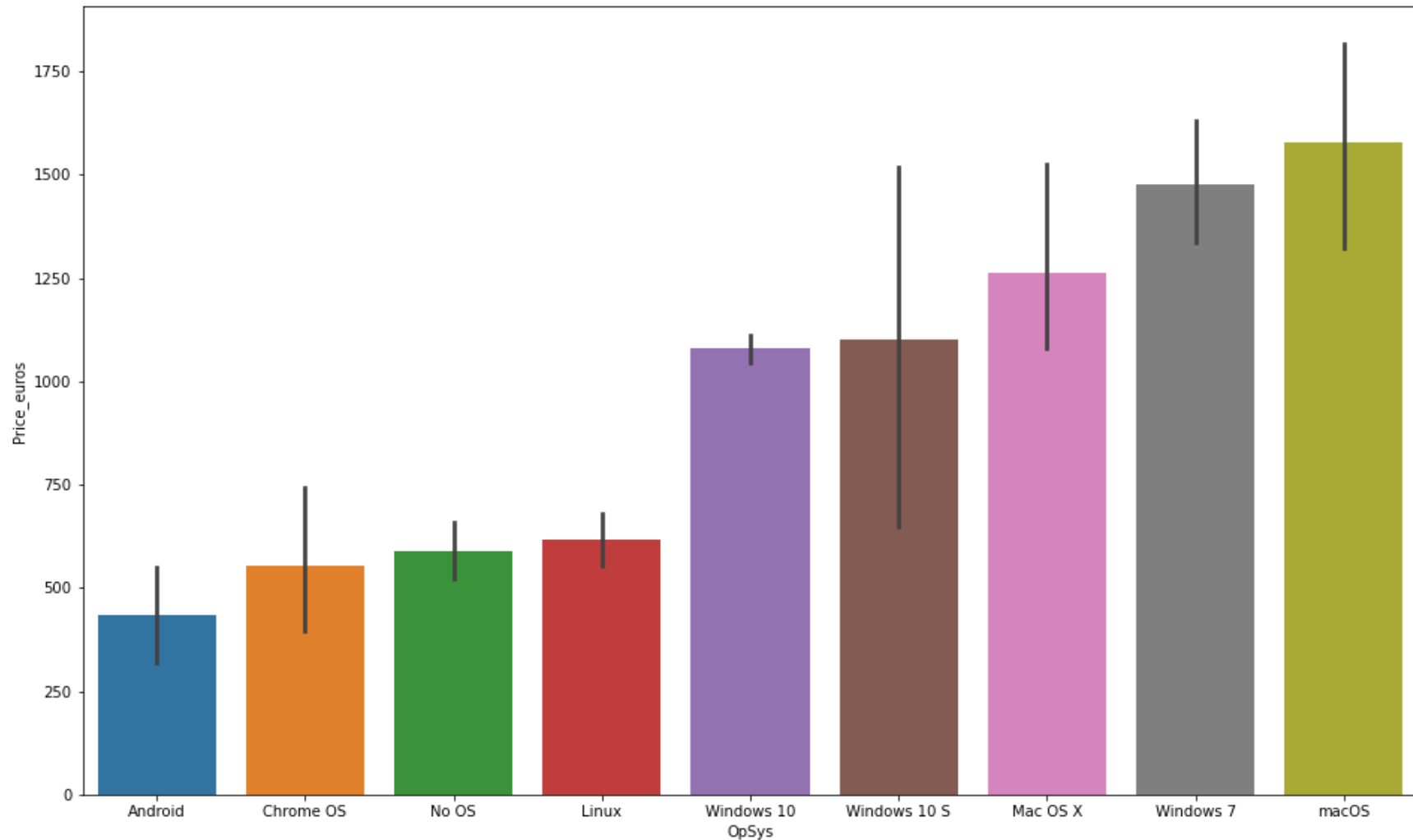- Nvidia 28.7%
- AMD 14.2%
- ARM 0.1%

Gpu_company

GPU

Laptop By Gpu Company Average Price

Operating System

Operating System

Operating System Laptops

Windwos 10 — 82.1%

Other OS — 17.9%
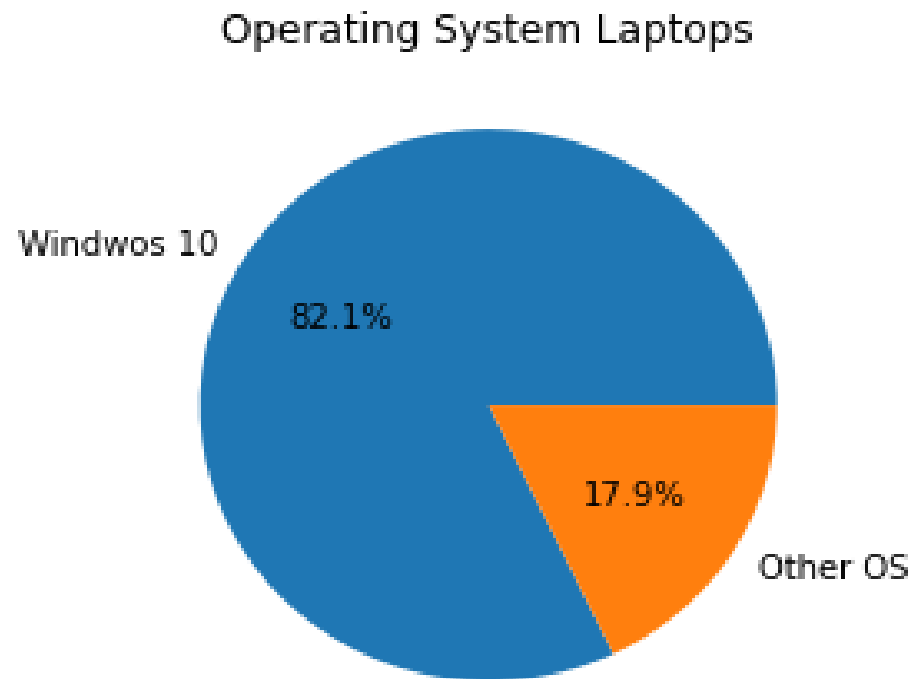
Correlation Heat Map

Best Model To Use?
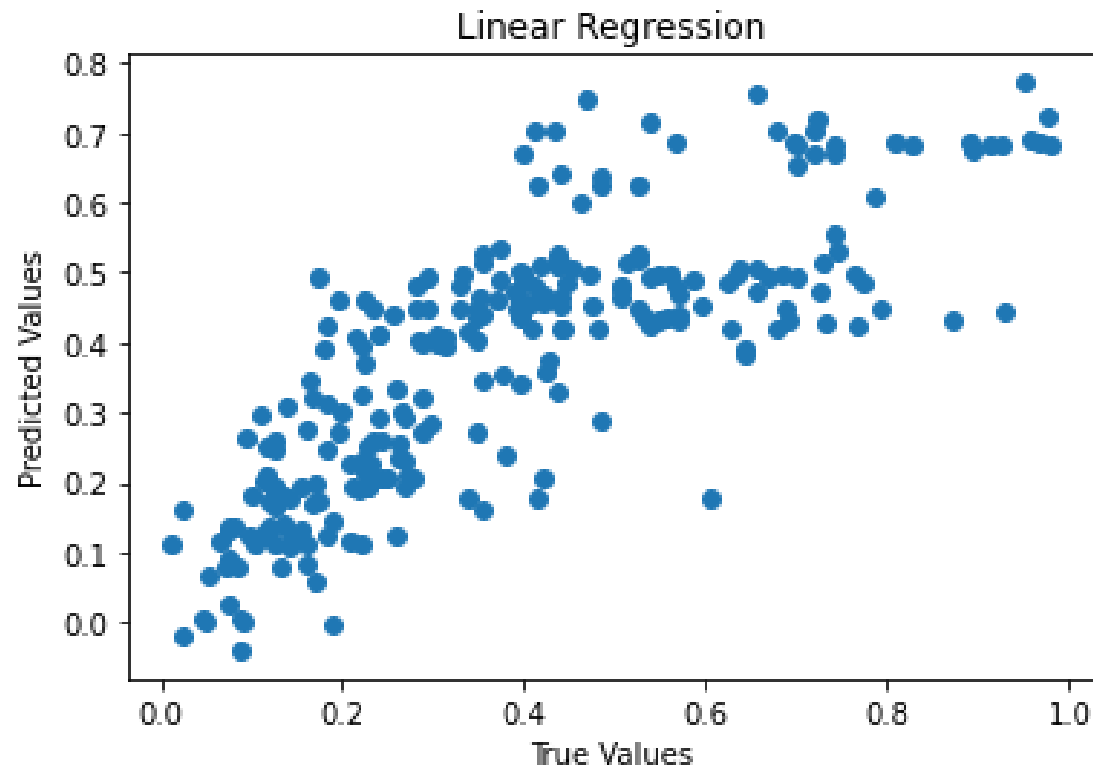
Linear Regression
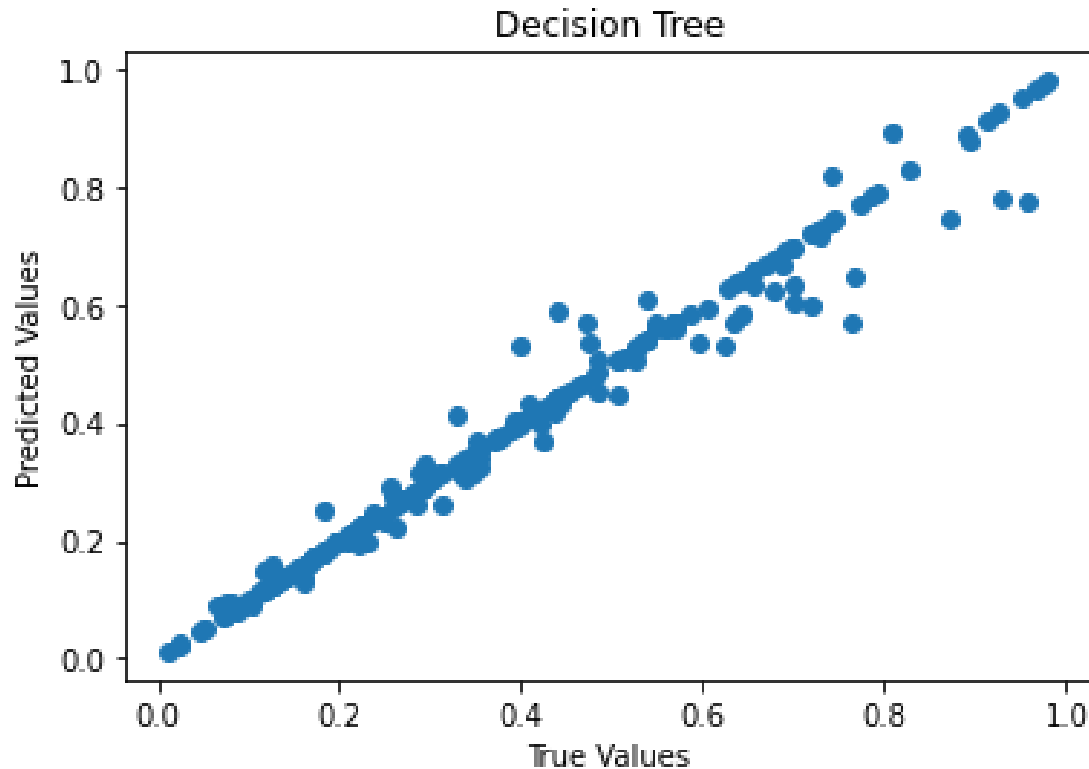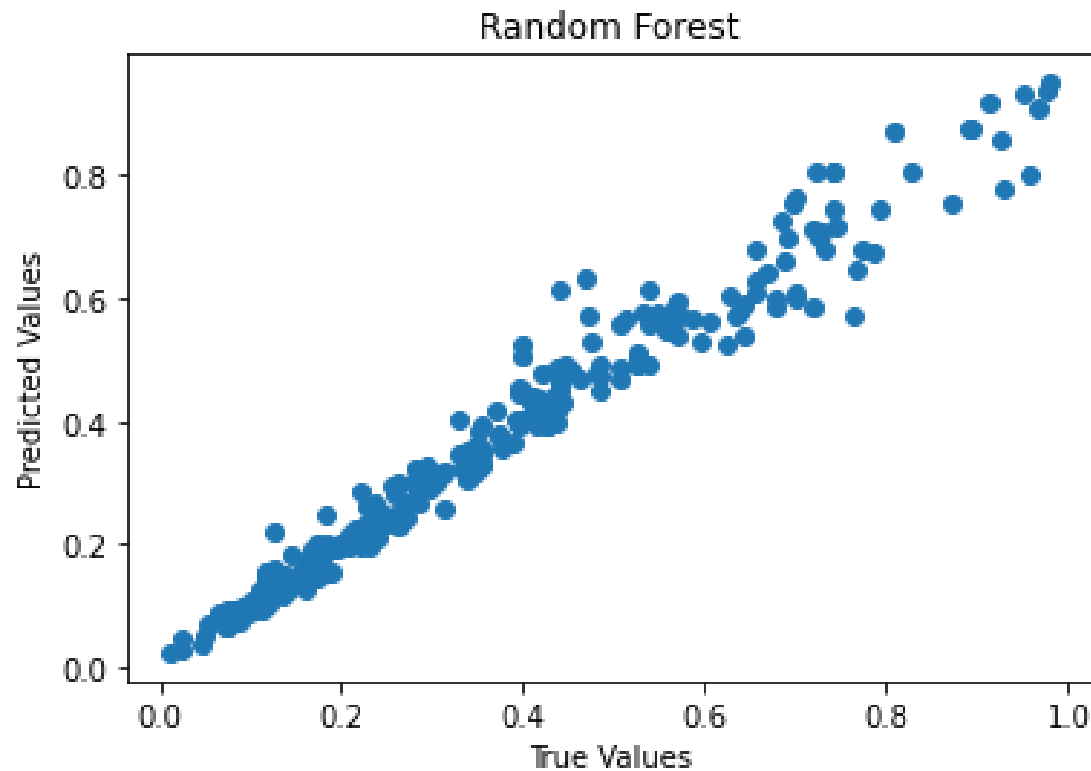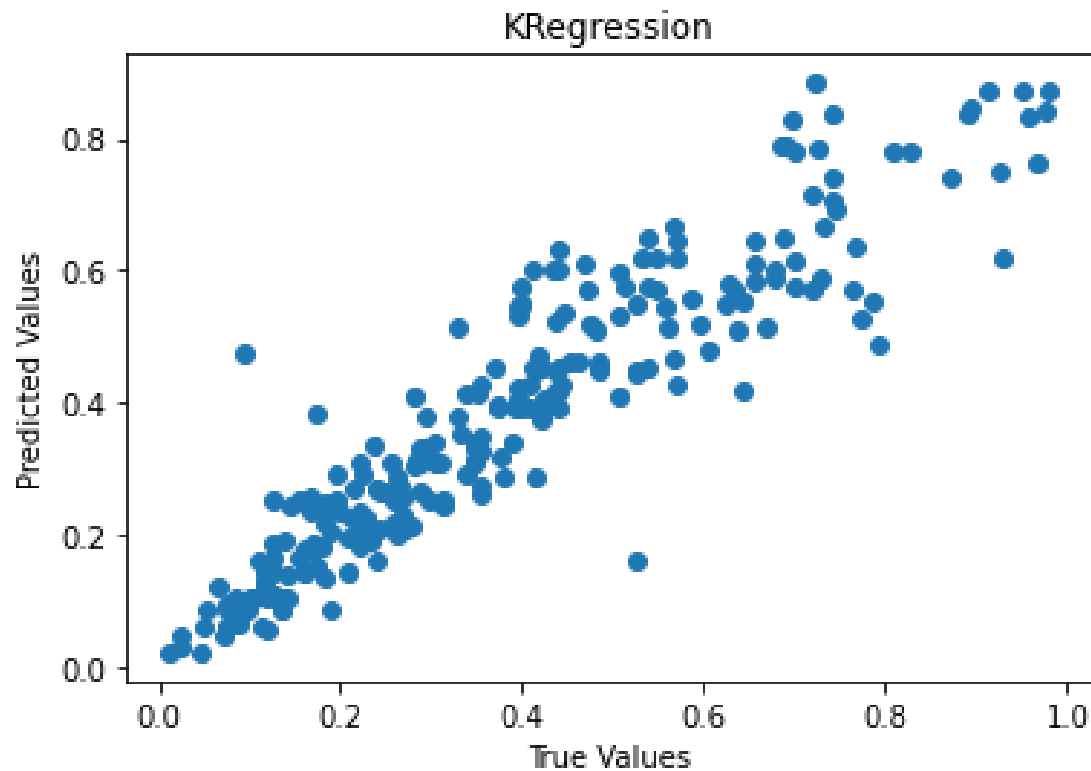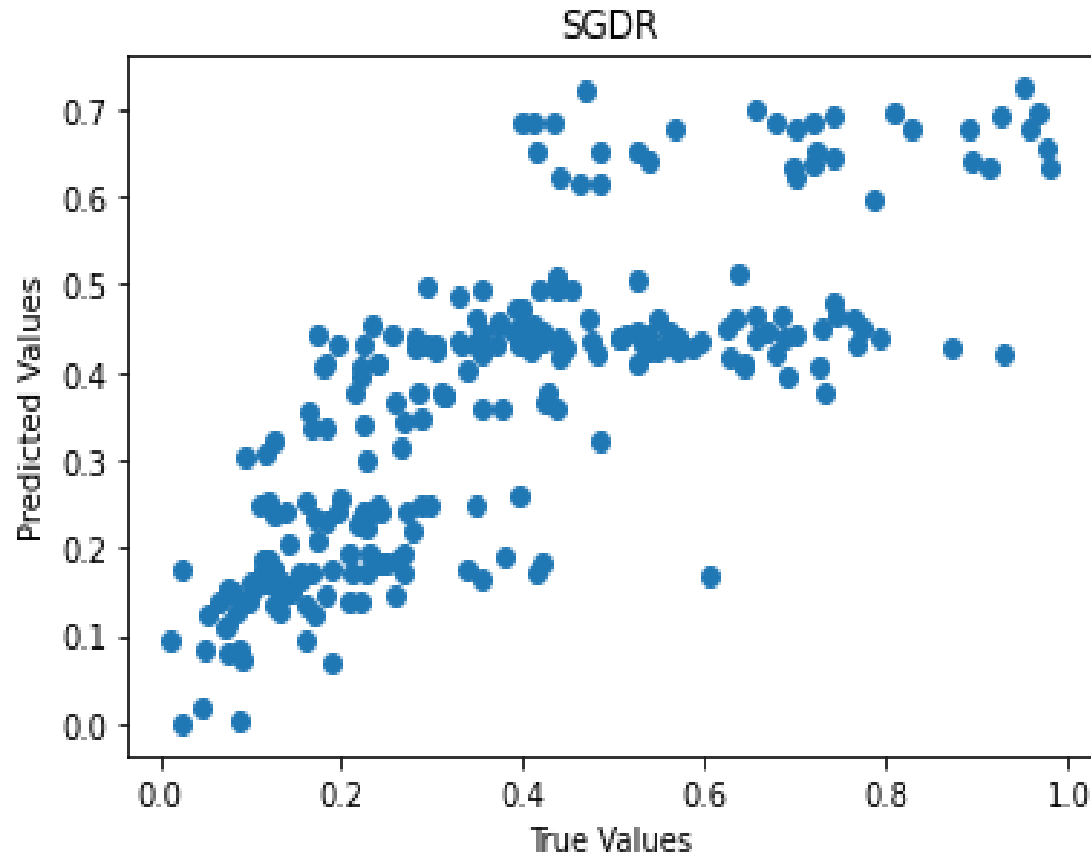
Best Model To Use?
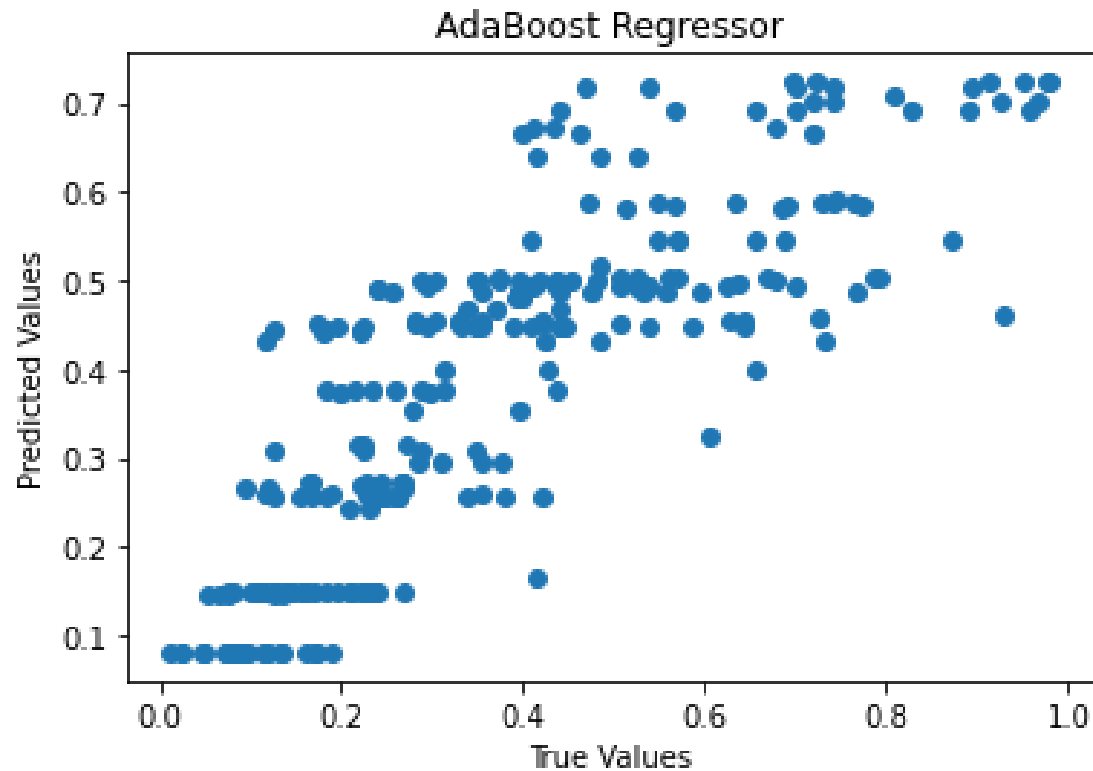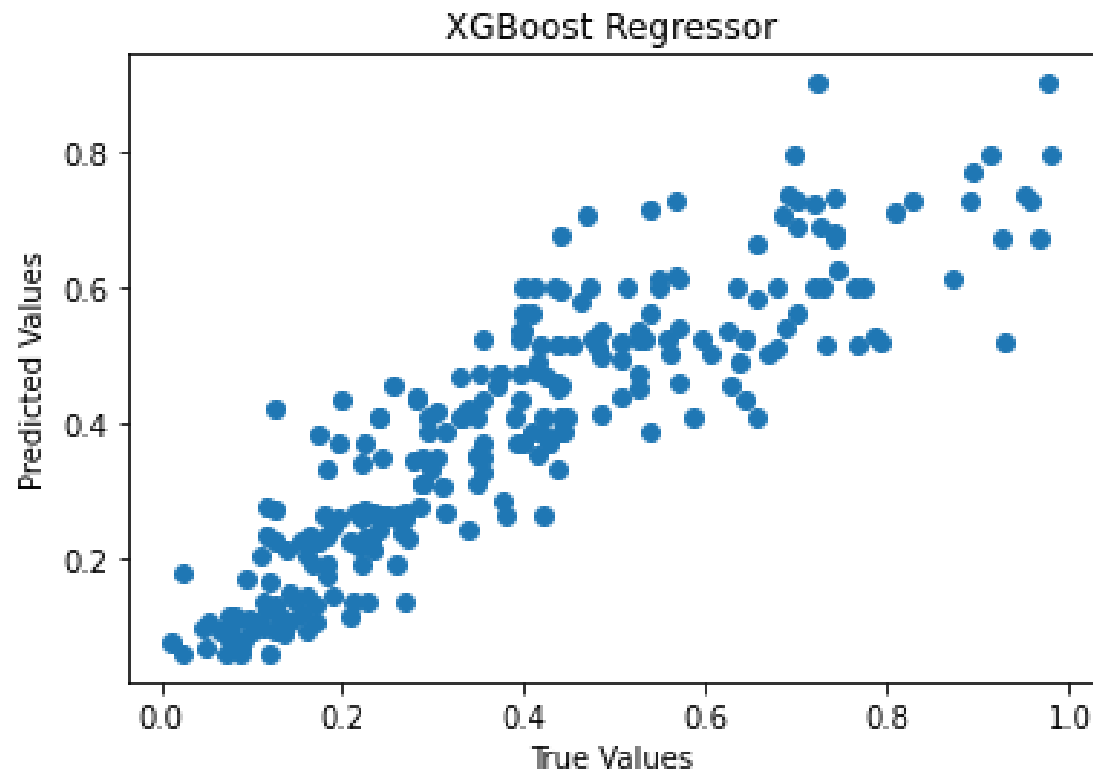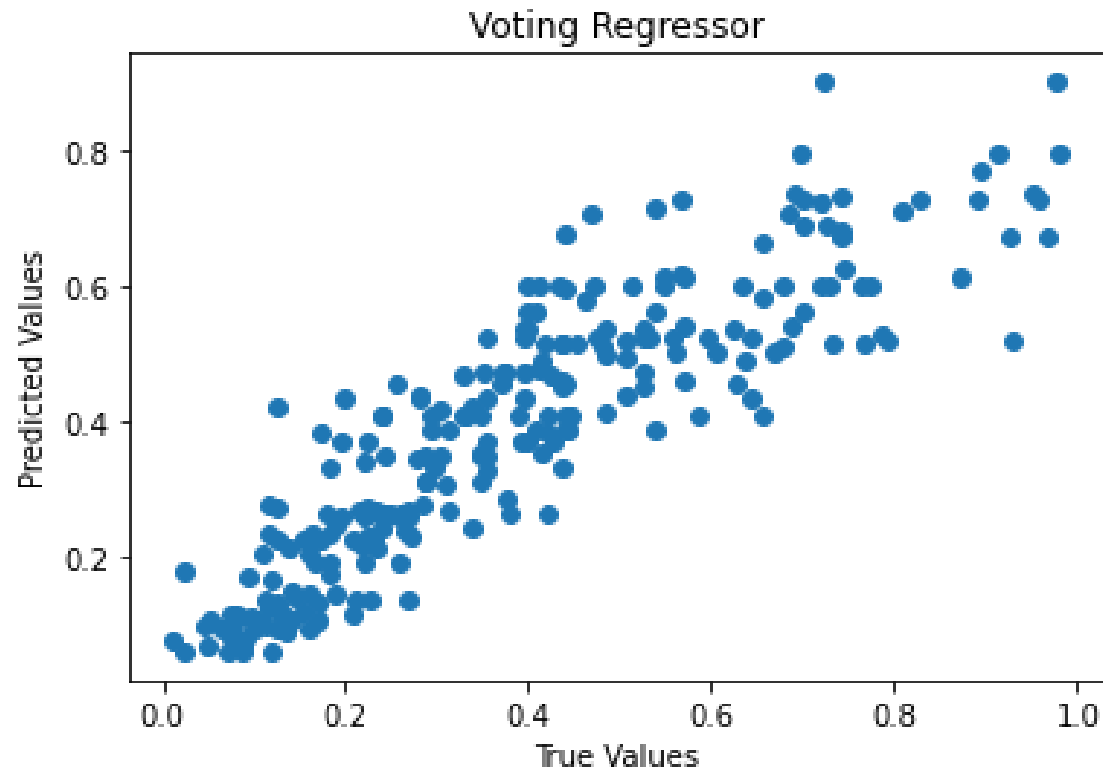
Best Model To Use?

Best Model To Use?

Best Model To Use?

Best Model To Use?

Best Model To Use?

XGBoost Regressor

Best Model To Use?

Best Model To Use?

Model	Train	MAE	MSE	RMSE	R2
Linear Regression	**0.620**	0.110	0.020	0.142	**0.624**
Decision Tree	**0.982**	0.013	0.001	0.034	**0.978**
Random Forest	**0.963**	0.030	0.002	0.044	**0.963**
Knn Regression	**0.855**	0.062	0.007	0.087	**0.857**
SGDR	**0.601**	0.114	0.022	0.147	**0.594**
AdaBoost	**0.69**	0.101	0.017	0.133	**0.67**
XGBoost	**0.809**	0.080	0.011	0.107	**0.788**
Voting	**0.861**	0.078	0.011	0.105	**0.80**

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