1) a) Reading Data

A screen shot of a computer code

Description automatically generated

OUTPUT  
A screenshot of a computer

Description automatically generated

1. a) i) & ii) Cleaning Data  
   A screenshot of a computer

   Description automatically generated

OUTPUT

A table of numbers and letters

Description automatically generated

1. b) Understanding data types



OUTPUT

A screenshot of a computer screen

Description automatically generated

1) c) Variable Frequencies

A close-up of a computer screen

Description automatically generated

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A screenshot of a computer

Description automatically generated

1) d) i) ii) iii) Creating categorical variables

A computer screen shot of a computer code

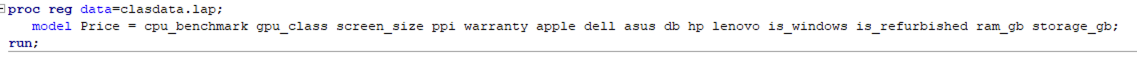
Description automatically generated

OUTPUT

A screenshot of a computer screen

Description automatically generated

1) e) Running Reg model



OUTPUT

A screenshot of a computer

Description automatically generated

1) e) i)

* APPLE: Price will be **$109.28 lesser** if the product is Apple when compared to OTHERS and the Parameter estimate is **not significant** at 5% significance level
* DELL: Price will be **$199.80 more** if the product is Dell when compared to OTHERS and the Parameter estimate **is significant** at 5% significance level
* Asus: Price will be **$48.67 lesser** if the product is Asus when compared to OTHERS and the Parameter estimate is **not significant** at 5% significance level
* DB: Price will be **$39.793 lesser** if the product is DB when compared to OTHERS and the Parameter estimate is **not significant** at 5% significance level
* HP: Price will be **$123.63 more** if the product is HP when compared to OTHERS and the Parameter estimate **is significant** at 5% significance level
* Lenovo: Price will be **$3.238 less** if the product is Lenovo when compared to OTHERS and the Parameter estimate is **not significant** at 5% significance level

1) e) ii)

* Operating System: Price will be **$204.31 lesser** if the Operating Sytem is Windows when compared to others and the parameter estimate **is Significant** at 5% significance level
* PPI: Price will be **$4.61 more** for every pixcel per inch increase and the parameter estimate **is Significant** at 5% significance level
* Warranty: Price will be **$126.34 more** for increase of warranty each year and the parameter estimate **is Significant** at 5% significance level
* Total RAM (ram\_gb): For every additional GB of RAM, the price will **increase by $51.02**, and this parameter estimate **is significant** at the 5% significance level.
* Total Storage (storage\_gb): For every additional GB of storage, the price will **decrease by $0.44** (or 44 cents). However, this parameter estimate **is not significant** at the 5% significance level.
* CPU Benchmark (cpu\_benchmark): For every unit increase in the CPU benchmark score, the price will **increase by $0.0161** (or 1.61 cents), and this parameter estimate **is significant** at the 5% significance level.
* GPU Class (gpu\_class): An increase in GPU class will **decrease the price by $259.11**, and this parameter estimate **is significant** at the 5% significance level.
* Screen Size (screen\_size): For every inch increase in screen size, the price will **increase by $4.91**. However, this parameter estimate **is not significant** at the 5% significance level.
* Refurbished (is\_refurbished): If the item is refurbished, the price **will be $141.02 less** than if it's not refurbished, and this parameter estimate **is significant** at the 5% significance level.

1. e) iii)  
   The adjusted **R^2 value of 0.7640** indicates that 76.40% of the variability in the dependent variable is explained by the independent variables in the model, after adjusting for the number of predictors. The remaining 23.60% is unexplained by the model.

1) f) Taking log transformation of required variables

A computer code with text

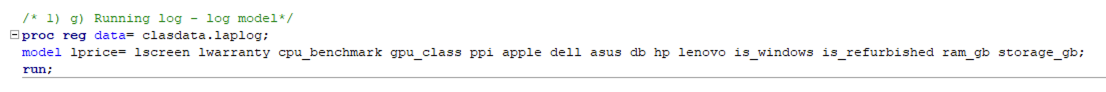
Description automatically generated

OUTPUT

A screenshot of a table

Description automatically generated

1) g) Running log - log model



OUTPUT:

A screenshot of a computer

Description automatically generated

1) g)

For screen size (lscreen):

The parameter estimate is -0.4051. This means that for a 1% increase in screen size, the price is expected to decrease by approximately 0.4051% when all other factors are held constant. The negative value indicates an inverse relationship.

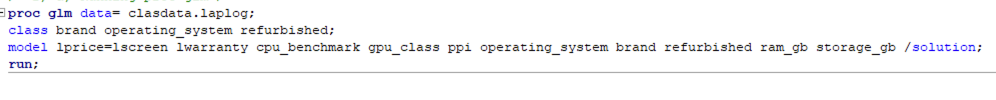
For warranty:

The parameter estimate is 0.20614. This suggests that for a 1% increase in warranty length (in years, presumably), we can expect the price to increase by approximately 0.20614% when holding all other variables constant.

The adjusted R-squared is 0.8364. This means that 83.64% of the variability in the log-transformed price can be explained by the log-transformed independent variables in the model, adjusting for the number of predictors.

1) h) Log - Log model offers the highest R-Squared value of 0.8364 when compared to the normal model without log transformation of parameters which is 0.7604

2) a)



OUTPUT

A screenshot of a computer

Description automatically generated

Output with default Reference Cases

* Brand: Default Reference case is **OTHER.**
* Operating\_System: Default Reference case is **WINDOWS.**
* Refurbished: Default Reference case is **YES.**

2) b)

A close-up of a computer screen

Description automatically generated

OUTPUT

A screenshot of a computer

Description automatically generated