

Laptop vs Computer

Survey

Presented to prof. Ibrahim galal

I) Introduction

The laptop vs desktop conversation has been going on since the very first portable computers started being manufactured decades ago, and the arguments on either side for which is better haven't really changed much.

There are two main types of computers: desktop PCs and laptops. Both have their advantages and disadvantages, and it is important to understand how people use these devices and what factors influence their preferences.

Therefore, we propose conducting a survey on PC and laptop usage to better understand how people use these devices and what factors influence their preferences.

What factors do people consider when buying a new laptop or pc, and in what ways are their priorities different.

Using the market research data that we gathered to increase the profit of a certain company that works in the field of computers, which is going to be used in customer satisfaction.

Team members

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II) Objectives

How demographic (gender, income level,...etc) affects the decision of choosing a laptop or a pc

current market distribution

What factors do people consider when buying a new laptop or pc ,and what Factors are more influential than others.

what makes people more inclined toward a specific laptop model or pc build

how performance, upgradability, screen size affect choosing either of them

how the future career plans affect the choice of device

how time spent (screen time/ time of using the device) affect on choosing the device

III) Participants

Population is going to be computer science student (FCDS) taking a simple random sample from all levels.

There were 3 choices for sampling:

1-Systematic random sampling:

This was impossible, because systematic random sampling requires having A list of all the participants, and the ability to choose specific units and get their responses, which was not readily available.

2-Stratified random sampling was also impossible due to size constraints, students of all levels were not equally willing to participate in the survey

3-Simple random sampling is the best choice, because the sample is often representative, obeying the characteristics of a good sample and are well generalizable

Notice that even though fourth year students typically have more experience and are more knowledgeable, we are interested in the opinions of the whole market, because only knowing that some people are more informed cannot be used alone to give their opinions higher weights.

IV) Survey design

The survey employed open-ended questions (free response , probing) whenever necessary, and closed-ended questions of the appropriate type otherwise.

The way the questions will be given is by Google forms, given to the respondent via various electronic communication methods.

The way that the respondent will answer the questionnaire is by Google form

V) Data analysis

Python will be used to conduct statistical inference and regression analysis to extract knowledge from survey data, details about how this is done will be found in the analysis section.

VI) timeline

Will be conducted in period of a month

In detailes.

The first week : making the proposal and discuss it with the supervisor

The second week: making the questionnaire ,sampling , pretest

The third week : collecting data , expectations vs Real

The fourth week: data analysis , presentation and report

VII) budget

Zero(0\$)

VIII)

We are responsible for evaluating proposed research to ensure adequate provisions to protect the privacy of participants and to maintain the confidentiality of data, we will not ask for a name neither we will be able access any emails using Google forms

IX) conclusion

will provide valuable insights into how people use and prefer desktop PCs and laptops

What factors do people consider when buying a new laptop or pc ,and what is the difference between them objectively

Using the market research data that we gathered to increase the profit of a certain company that works in pc_s field

Outlined questionnaire and Pretest

- i) We conducted 2 stages of pre testing for the sake of having two different data the describes how well we did changing our questionnaire
stage 1 was conducted on 13 interviewees ,5 of which was not recorded
- ii) stage2 was conducted no 5 interviewees and was recorded

interview 1

- 1-edit the specs question to make it closed-ended, most people will not fill it if it open-ended
- 2-the income question can be range form 1 to 100 to make it easier to be answered
- 3-question "how important is this attributes to you : without cable" ,make it more clearer
- 4-question "If you had the chance to buy a device again, what would you prefer?" ,is not clear

interview 2

- 1- the interviewee was asked about point 2,3 from interviewee one and didn't agree with them
- 2- edit the specs question to make it closed-ended, most people will not fill it if it open-ended
- 3-question "If you had the chance to buy a device again, what would you prefer?" ,is not clear

interview 3

- 1- the income question can be specified with a yearly salary range
- 2- question "how important is this attributes to you :multiple monitors" , make it clearer
- 3- question "how many hours do you spend on: Self study ",make it Self study(course etc)
- 4- edit the specs question to make it closed-ended, most people will not fill it if it open-ended
- 5-the survey is small ?

interview 4

- 1- the income question can be range form 1 to 100 to make it easier to be answered
- 2-question "If you had the chance to buy a device again, what would you prefer?" ,is not clear

interview 5

- 1- question " the main usage of your device ?", have a typo in answers
- 2- last question "express your point of view", some people will be too lazy to fill it
- 3- question "how important is this attributes to you :" make its range 1 to 5 instead of 0 to 4

interview 6

- 1- add a question for a bunch of pcs asking them which device can you financially buy
- 2-edit the specs question to make it closed-ended, most people will not fill it if it open-ended
- 3-question "If you had the chance to buy a device again, what would you prefer?" ,is not clear

interview 7

- 1-question "If you had the chance to buy a device again, what would you prefer?" ,is not clear
- 2-less open ended questions in general

interview 8

- 1-translate some hard-to-understand words
- 2-question "If you had the chance to buy a device again, what would you prefer?" ,is not clear
- 3-edit the specs question to make it closed-ended, most people will not fill it if it open-ended

**At this point most of the interviewee was just
addressing the same points**

Here is the other 5 interviewee points all together

1-Id question:

- make it optional.

2-

? income level

- ☐ low
- ☐ medium
- ☐ high

- add a range
- change the paraphrase to make it clearer the question is for family income

3-

? Current career or your future career plans/field

- is not clear
- make it mcq with "other" option

4-

if you own both laptop and desktop computer ,which of them do you use more ?

- ☐ 20% using laptop 80% using desktop computer
- ☐ 40% using laptop 60% using desktop computer
- ☐ 50% using laptop 50% using desktop computer
- ☐ 60% using laptop 40% using desktop computer
- ☐ 80% using laptop 20% using desktop computer
- ☐ I don't have both

- Change the choices to (mostly , sometimes , more than ,less than)

5-

the main usage of your device

- ☐ gaming
- ☐ surfing the internet
- ☐ study
- ☐ work
- ☐ other , specify

- Add another question about "total" usage, not only the "main usage", and it should be check box.

6-

If you had the chance to buy a device again, what would you prefer

- ☐ laptop
- ☐ desktop computer

- add "tablet" in choices.

7-

your device operating system

- ☐ Windows
- ☐ Mac
- ☐ Linux

- add "other."

8-

if you going to describe your device performance what would choose?

- ☐ low specs device (can do simple tasks like surfing the web or using word, power point)
- ☐ medium specs device (can run coding programs with some how semi low gaming experience)
- ☐ medium high specs device(can run graphic programs , and simulations relatively smooth, with medium to semi high gaming experience)
- ☐ high end specs device(can run mostly any game ,can do mostly any graphic work , a "beast")

- change "mostly any game" to "high processing tasks"

9-

how important each of these attributes to you?(from 0 to 4)

- change the range to (1-5)

10-

How often do you use your device for daily ? 0-2 , 2-4 ,4-6 , 6-8 , +8

- Add "hours" word in question to make it clear.
- Delete the ranges in the question statement.
- Add a question about "communication"

11-

Academic study?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self study ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- Change it to one question, and change it to "education."

12-

your device specs(processor , graphics card , brand (if you know it) , model)?

Your answer

- Should be optional.


13-

Form your point of view , what do you prefer more laptop or pc , state your reasons

Your answer

- change the paraphrase the question

The questionnaire



Section 1 of 2

PC vs. Laptop

Introduction:
This survey was made in order to measure the impact of some factors on people's decision to choose a computer or laptop, and this survey will benefit many companies that manufacture these devices in order to be aware of people's requirements, which will help them improve their work

Instructions:
The questionnaire will not take much of your time, as it takes at most 10 minutes to answer all the questions. Therefore, I hope that you answer the following questions honestly and correctly, as follows: - In the essay questions, fill in the blank space and make your answers clear and explicit

How old are you? *

☐ 17

☐ 18

☐ 19

☐ 20

☐ 21 or more

Choose gender. *

☐ Male

☐ Female

What is your level? *

☐ First

☐ Second

☐ Third

☐ Fourth

What is your income level? *

- ☐ Low
- ☐ Lower medium
- ☐ Medium
- ☐ Higher medium
- ☐ High

Enter your ID. *

Short answer text

? Current career or your future career plans/field *

- ☐ web developer
- ☐ mobile developer
- ☐ Data scientist
- ☐ Software Developer
- ☐ UX Designer
- ☐ IT
- ☐ Information Security
- ☐ Cyber security analyst
- ☐ Penetration tester
- ☐ Systems Architect
- ☐ AI Engineer
- ☐ Video Game Developer
- ☐ IOT enginner
- ☐ embedded systems engineer
- ☐ cloud computing engineer
- ☐ Other...

How many devices do you own? (This includes phones, tablets, PC's, laptops and similar devices) *

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 or more

Which of these devices do you own? *

- ☐ Laptop
- ☐ Desktop computer
- ☐ Tablet

If you own both laptop and desktop computer ,which of them do you use more ? *

- ☐ I only use PC
- ☐ 20% using laptop 80% using desktop computer
- ☐ 40% using laptop 60% using desktop computer
- ☐ 50% using laptop 50% using desktop computer
- ☐ 60% using laptop 40% using desktop computer
- ☐ 80% using laptop 20% using desktop computer
- ☐ I only use laptop
- ☐ I don't have both

What is the MAIN usage of your device? *

- ☐ Gaming
- ☐ Surfing the internet
- ☐ Study
- ☐ Work
- ☐ Other...

What is the price of your main device? *

Short answer text

After section 1 Continue to next section

Section 2 of 2

Please complete the following questions



Description (optional)

if you got the chance to rebuy the main computer device (laptop , pc) you use at moment what would you choose instead , (or if you going to stick with your current device choose your device) *

- ☐ Laptop
- ☐ Desktop computer

What is your main operating system? *

- ☐ Windows
- ☐ Mac
- ☐ Linux

Use the best choice to describe your device's performance.

- ☐ Low end device. (Can do basic tasks like surfing the web or running Office programs (Word, PowerPoint))
- ☐ Medium end device (Can run coding programs and a low-end gaming experience)
- ☐ medium high specs device(can run graphic programs , and simulations relatively smooth, with medium t...
- ☐ high end specs device(can run mostly any game ,can do mostly any graphic work , a "beast")

How important is each of these attributes to you

	1	2	3	4	5
Screen size?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Portability(التنقل) ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upgradability ?...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The device abil...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performance ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Affordability?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The existence ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrated cam...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multiple monit...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How often do you use your device for daily ? (hours)

	0 to 2	2 to 4	4 to 6	6 to 8	+8
Gaming?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Academic stud...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self study (cou...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entertainment ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Choose your processor: *

- ☐ Intel Xeon
- ☐ Core 2 duo
- ☐ Core i3
- ☐ Core i5
- ☐ Core i7
- ☐ Core i9
- ☐ Ryzen 3
- ☐ Ryzen 5
- ☐ Ryzen 7
- ☐ Ryzen 9
- ☐ AMD a4
- ☐ AMD a6
- ☐ AMD a8
- ☐ AMD 10
- ☐ Other...

...

Choose your processor generation *

- 1. 1
- 2. 2
- 3. 3
- 4. 4
- 5. 5
- 6. 6
- 7. 7
- 8. 8
- 9. 9
- 10. 10
- 11. 11
- 12. 12
- 13. 13

What is your graphics card model *

Short answer text

From your point of view , what do you prefer more laptop or pc , state your reasons *

Long answer text

Thank you very much for sharing with us part of your time to answer the questions honestly. We hope it will benefit you best wishes

Description (optional)

Cleaning Data

We Clean the data Manually and with Python Code:

In column : (What is your income level ?):

We Convert each Text Value to Numerical For example ,

Low=1 , Medium=2 , Lower medium=3 , Higher medium=4 , High=5

Setting a numerical value as a weight for each level of income making it easier to be analyzed in the future using a regression technique or any other technique that depends on numerical values for its algorithm to work.

In column : (Current Career of Your Future Career Plans/Field):

We Replaced the Miss Value With Null Value .

In column: (Enter your ID):

If ID don't start with 2020,2021,2022 or not understand value ,We put null.

In this column :(Sum of Min):

We added all the min value of how many hours do you use your devices for many tasks for this 5 columns (How often do you use your device for gaming daily ? , How often do you use your device for work daily ? , How often do you use your device for academic study daily ? , How often do you use your device for self study and courses daily ? , How often do you use your device for entertainment (other than gaming) daily ? And put them in one column.

In column: (if you got the chance to rebuy the main computer device (laptop , pc) :

you use at moment what would you choose instead , (or if you going to stick with your current device choose your device) and column(Which of these devices do you own?):

1- We used the data of these two columns to create a new column(would he change his device) To know who wants to change his device

2- If he does not change his device, we put a zero ,else put 1.

In column:(What is the MAIN usage of your device?):

We took the first answer for those who chose more than one option because we want to know what is the main use of their devices.

In column:(choose your processor) :

We replace the Intel values (core i3 , core i5 , core i7) with value 1 and we replace the other types of processor like(Intel xeon, Ryzon 7, Ryzen 5, Ryzen 3, AMd 10 ,AMD a8, AMD a6,AMD a4, Ryzen 9, snap dragon) with 0 value And we put the new values at the(is it Intel) column.

We did that to group it by generation

as the Intel processor starts from 1 to 13 th generation and the other types like AMD it starts from 1 to 7 th generation.

In Column: (the price of the device) :

There was small values that do not fit to be prices for devices such as 15 and 8, and it is likely that the person who entered you the number forgot the rest of the numbers, so we set them up to be 15000 and 8000, and there are also illogical values such as 1, so we deleted them and replaced them with null, in order to make it easier for us to deal with the numbers and the numbers are real and logical.

In Column :(which of these devices do you own):

We created Three columns(laptop ,Desktop ,Tablet) corresponds This column so that we can express the data inside The column by (yes or No).

..If someone have laptop and Desktop only the corresponding value for the same person in column of "laptop" & "Desktop" will be "Yes" but the column of tablet will be "No"...etc.

Which Facilitates knowing The number of survey participants who have only Laptop ,who have only Desktop and who have only Tablet Separately.

In column: (If you own both laptop and desktop computer ,which of them do you use more):

Some people choose that they own one of the two devices, the computer or laptop, and do not own the other in the column of "Which of these devices do you own?" At the same time, they choose that they prefer to use one of the two devices over the other in the column of "If you own both laptop and desktop computer, which of them do you use more" - This is because they did not read all the options, so they did not notice this option, so they chose another option that they thought was the closest to their situation. - That is why we amended this column: "If you own both laptop and desktop computer ,which of them do you use more" by comparing it with the column: "Which of these devices do you own" so that everyone who wrote that he owns one of the two devices and does not own the other in the column : "Which of these devices do you own" and did not choose that he does not own both in the column: "if you own both laptop and desktop computer ,which of them do you use more" We modified his answer so that he does not have both

In column :(What is the MAIN usage of your device?) :

so that each cell contains only the main use of the device that the user owns instead of many several usages, And I considered that the first use the user wrote is actually the main use , I did this modification since the most important thing for us in the analysis phase is the main use , it is done by python .

In column:(Use the best choice to describe your device's performance.)

where each cell includes only the first 3 or 4 words instead of a long sentence, as these words are sufficient to express or describe the performance of the device and we do not need the whole sentence in the analysis.

Data Analysis

1. Data Cleaning & Preparation:

We needed to do additional modifications to the data to make it even more suitable for the analytical methods we planned to use.

- We dropped 2 things from the table, careless-ness responses and the columns we wouldn't use or don't have a use for in the analysis itself

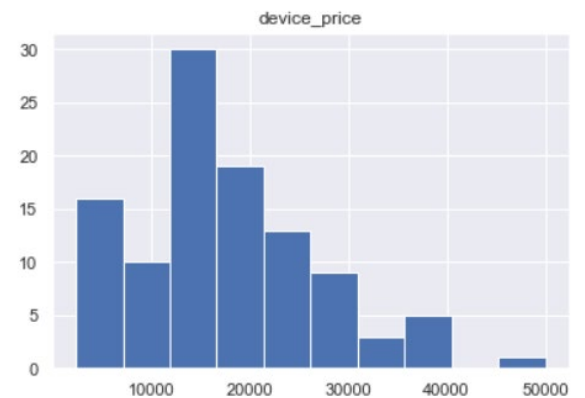
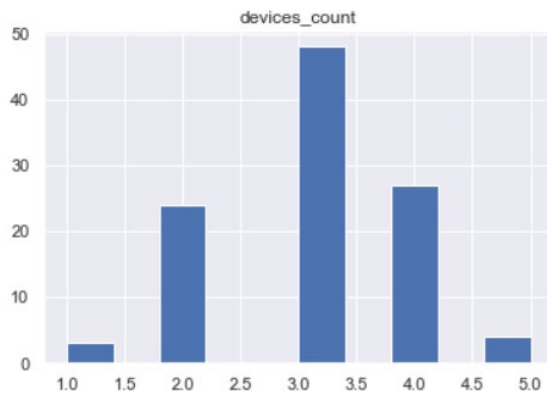
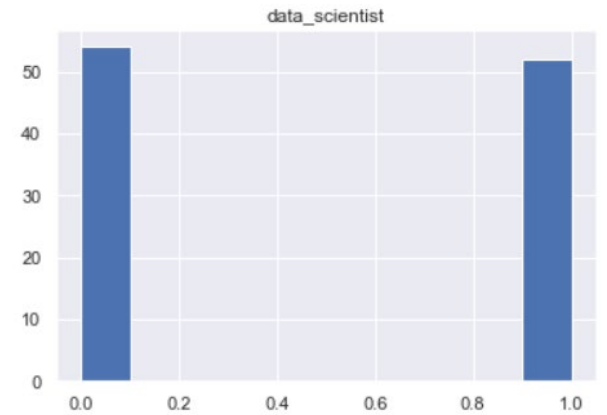
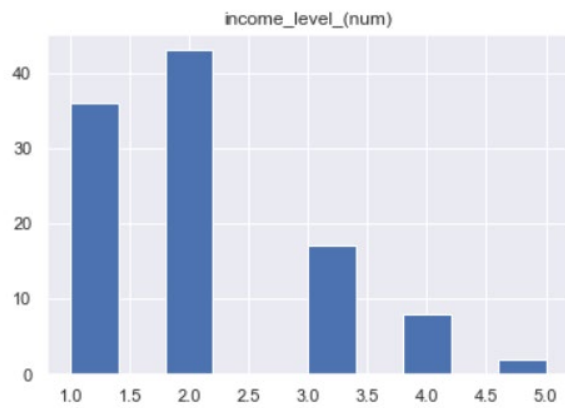
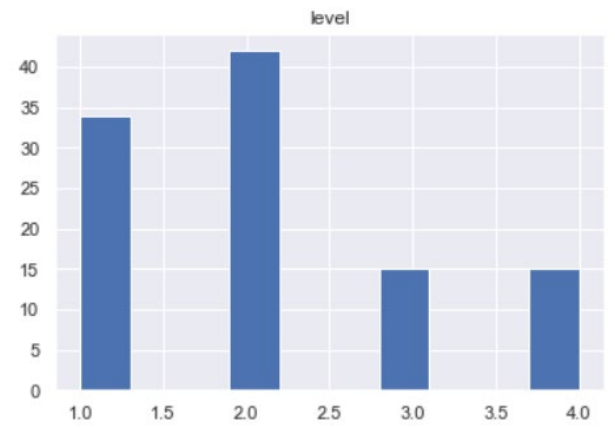
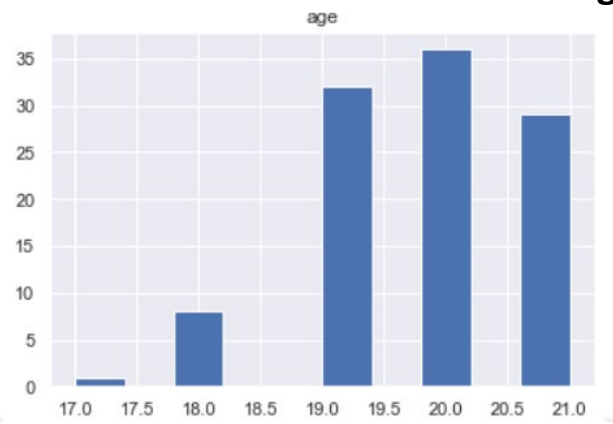
Such as: ['ID', 'point of view', 'graphics card model', 'how powerful from 1_to_5.1', 'main device', 'is it intel ', 'sum of the time spent', 'own DeskTop', 'own Laptop', 'Data scientist?', 'would he chage his device']

- Cleaned text strings
- Created 2 columns that measure the percentage or the ratio of laptop/pc usage
- Replaced null values in the price column with the average price of all devices
- Replaced null values in the “how powerful is your device” column with average scale of power
- Anyone having +5 devices will be considered as only having 5, for easier scalability.
- Anyone above the age of 21 will be considered as 21, for easier scalability.
- Created 2 columns for visualization's sake, the 2 columns being a ratio for which device you want to rebuy/replace.

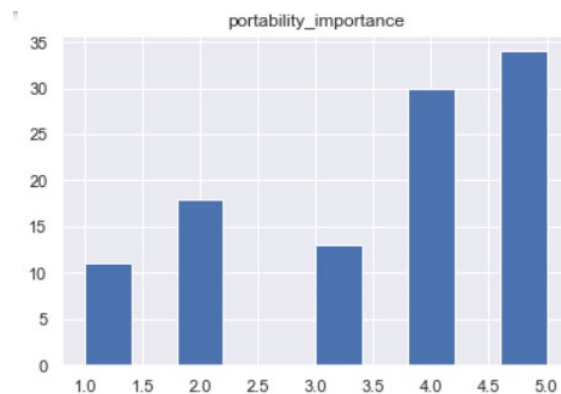
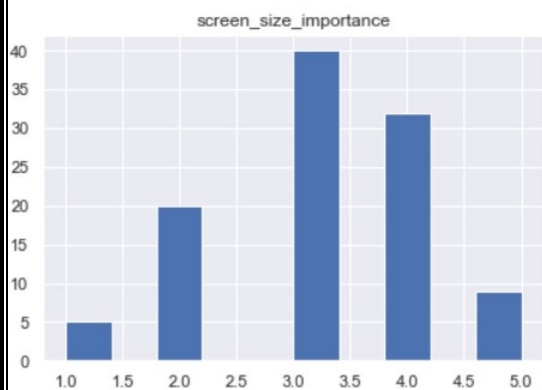
2. Descriptive Statistics:

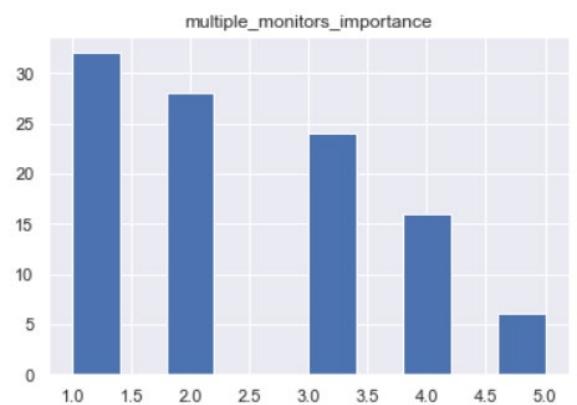
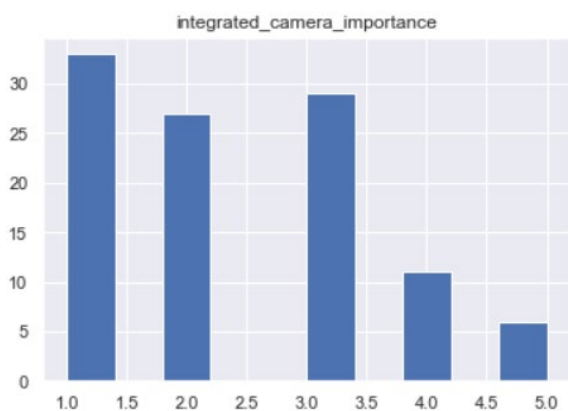
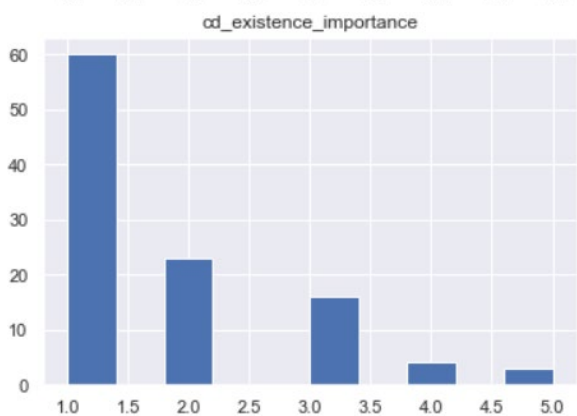
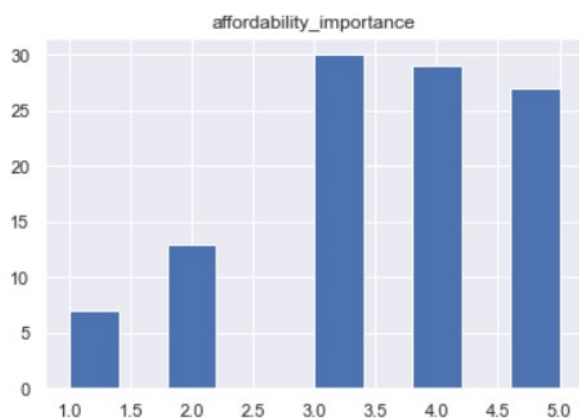
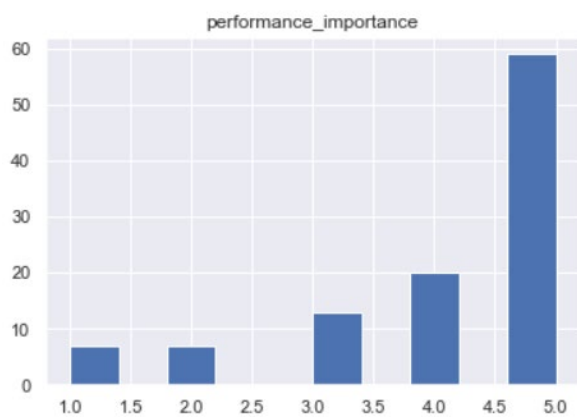
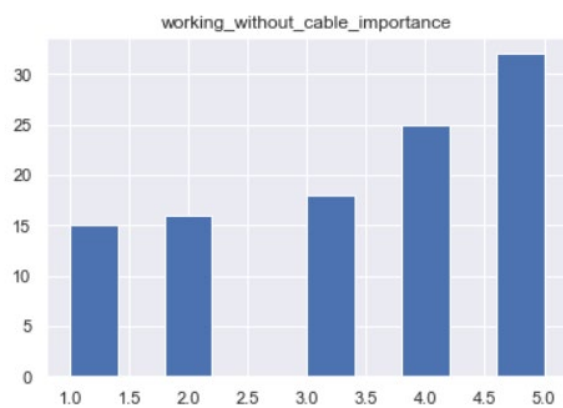
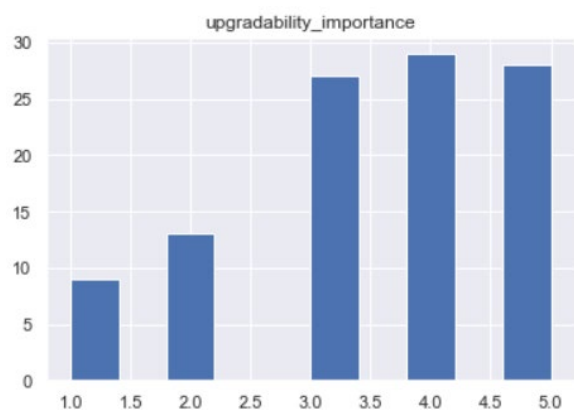
We first took a descriptive look at the data. Visualizing the data that we have using charts and histograms we were able to obtain some insights and knowledge about the data we have. First we made histograms of all important columns that we have:

General Information about demographic:

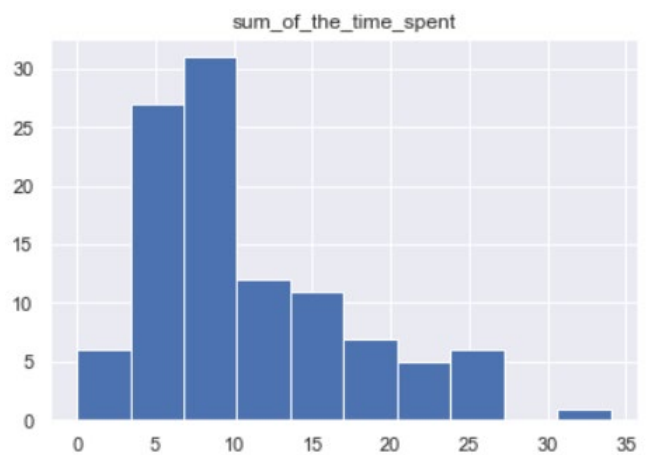
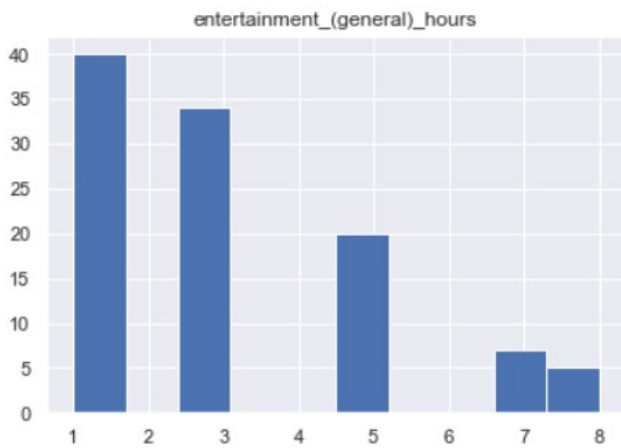
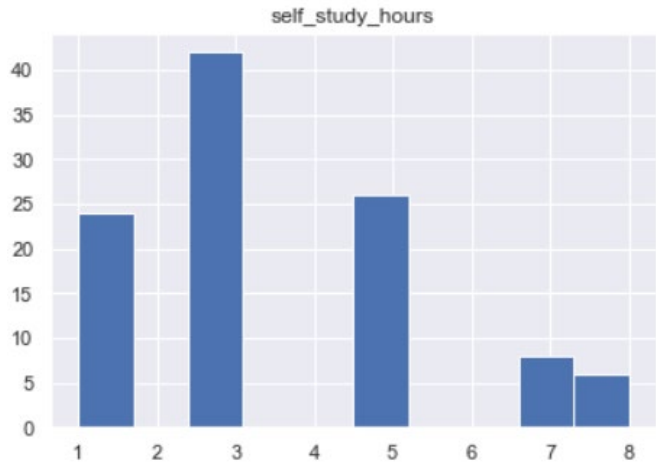
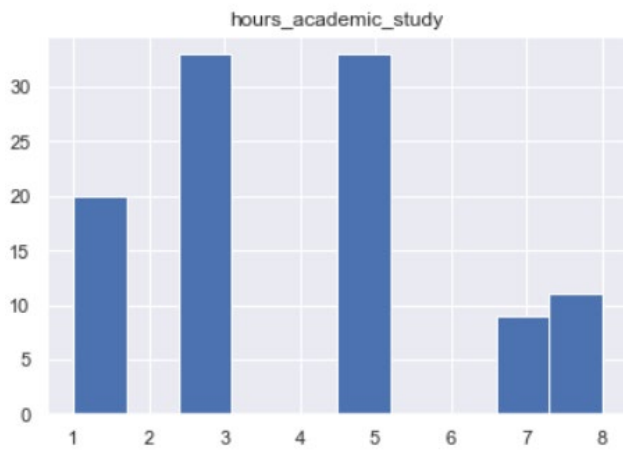
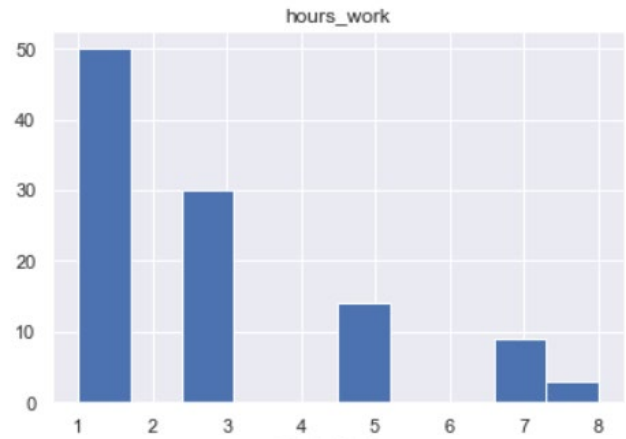
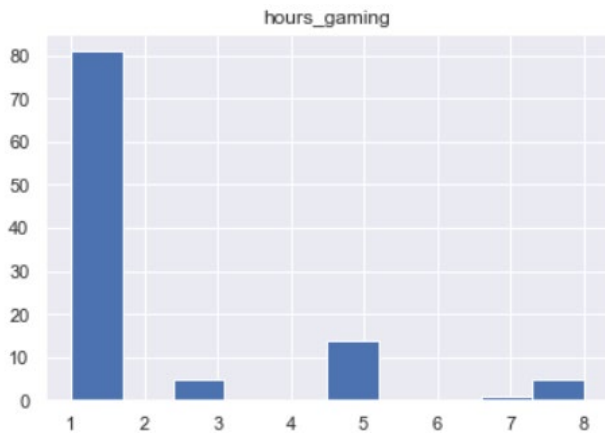


Importance :

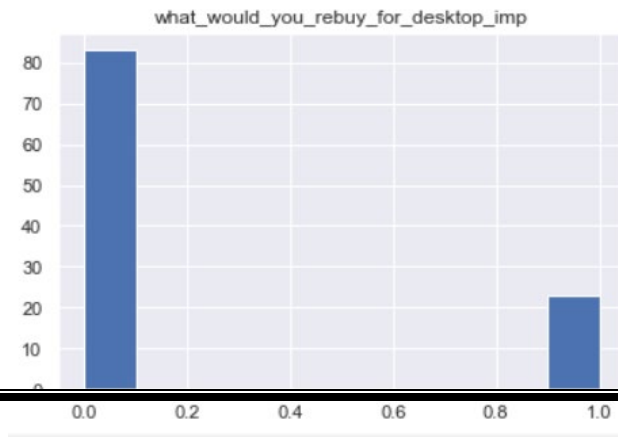
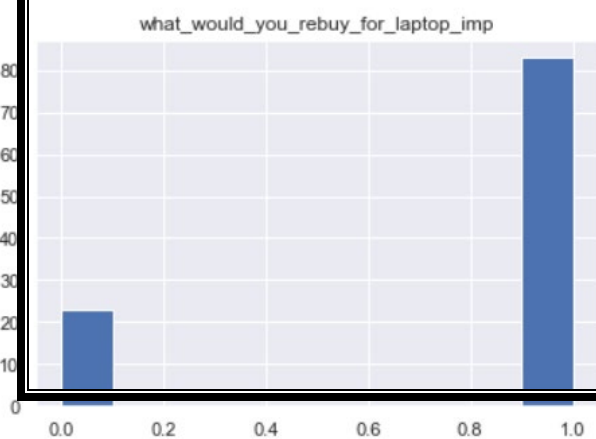
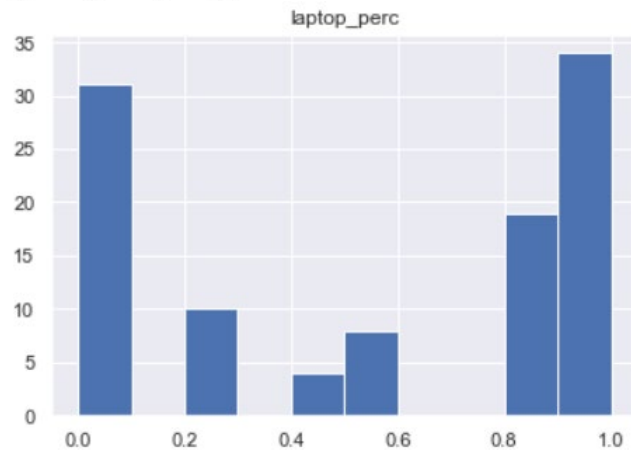
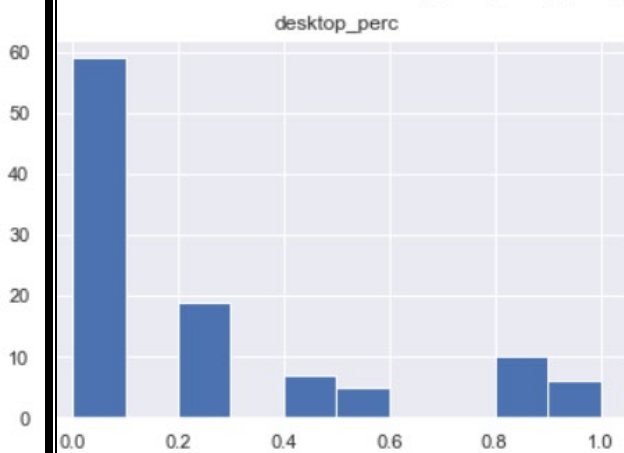
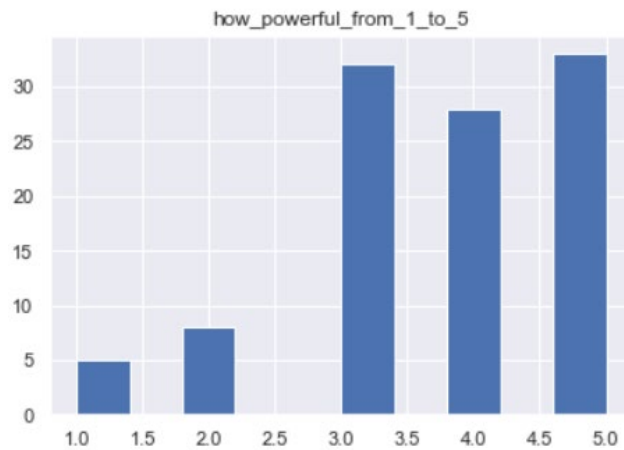
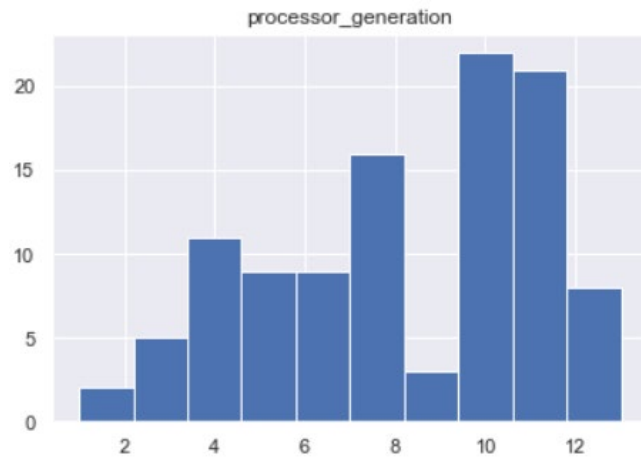
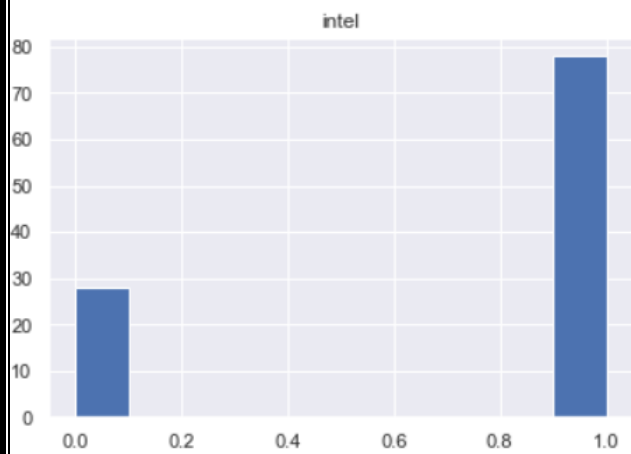




Usage hours:

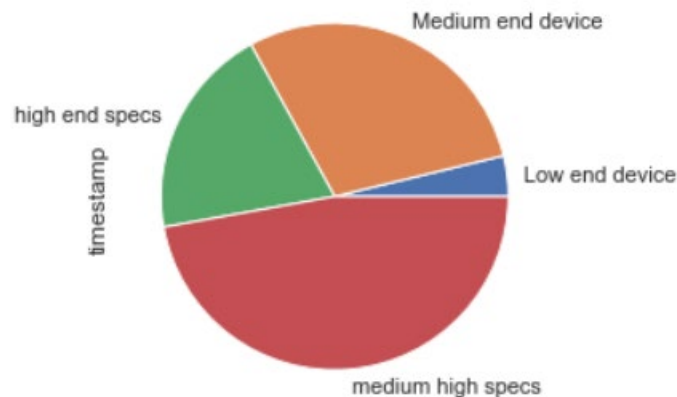


Device related information:

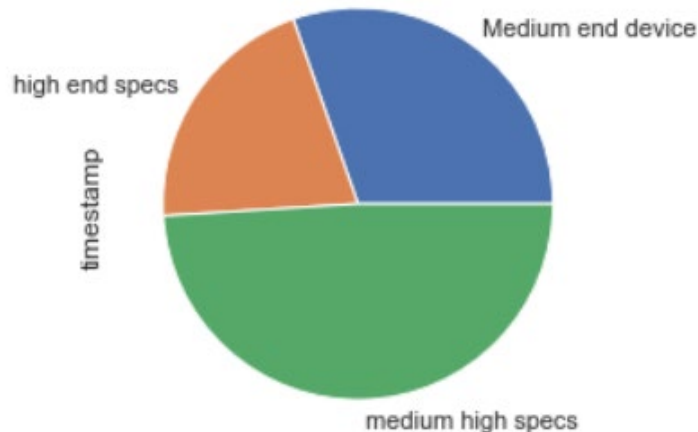


We tried to test the correlation between a few attributes and these are examples of what we found:

- Correlation coefficient between people who would rebuy a laptop and hours spent gaming was -0.4129, which means the more hours people spend on gaming, the more they are likely to get a PC instead.
- Looking for more information about device performance:



We see that the sampling is not representative enough for low end devices, which is expected given that the sample is drawn from Computer science majors and professionals, we focus on analyzing the differences between the other 3 segments:



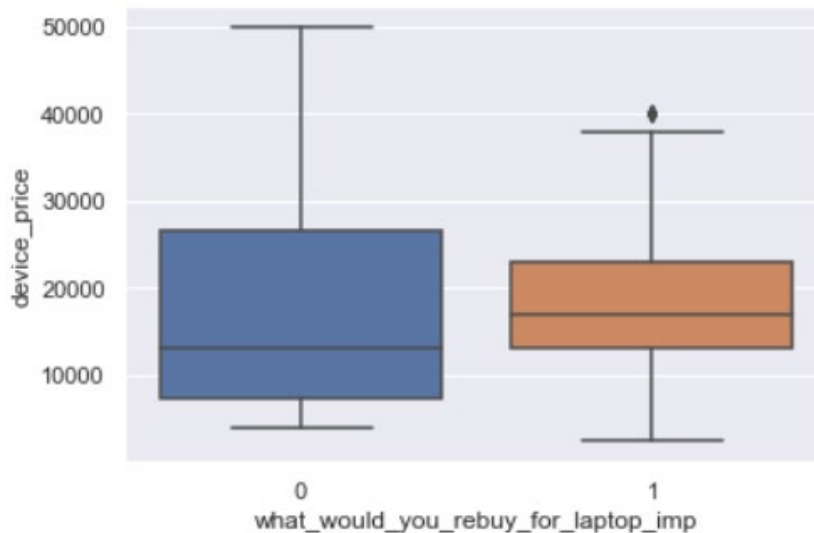
The target audience seems to be in favor of medium high devices.

And when we look at the average prices of each device specs :

```
device_performance
Medium end device    13345.161290
high end specs       26180.952381
medium high specs    16997.000000
```

We see that device price is consistent with device performance.

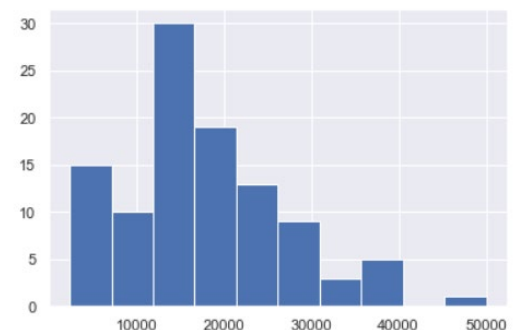
Also:



The people who would prefer keeping or rebuying laptops have a higher average income than those who would prefer to buy PCs, yet the price range is shorter which stands out well with general laptop prices.

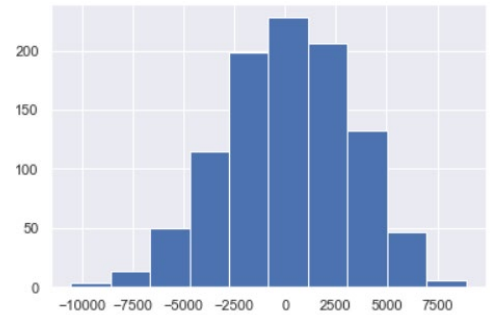
3. Inferential statistics:

- We tried to find out whether people spend more on laptops or on PCs. We would use the alternative hypothesis, but because the sample size is very small and the distributions are hard to identify, we had to resort to empirical statistical methods. The most suitable here would be **Bootstrap Algorithm**.



These are the results from running the algorithm:

- Bootstrap mean = 110.28260869565234
- Bootstrap confidence interval is constructed by taking the value at
 - $(\alpha \cdot \text{iterations})$ and $(\text{iteration} - \alpha \cdot \text{iteration})$
- 95% confidence interval for $\mu_1 - \mu_2$:
[-5252.17391304348 , 5250.0]
- The bootstrap hypothesis test is performed by checking whether the value for the variable lies within the acceptance region or not, since the null hypothesis states that $X=0$ where $X=\mu_1-\mu_2$, and 0 lies inside the acceptance region, therefore we do not have enough evidence to reject the null hypothesis, that people tend to spend more on one device than another.
- We also tried to find out if the two variables, gender and purchase choice, are dependent. So we used **Chi-Square Test (95% confidence level)**.
 H_0 : The gender has no relationship with one's purchase choice.
 H_1 : The two variables, gender and purchase choice, are dependent.
 - The p-value we extracted was 0.12639457846098398
 - Since $p\text{-value} = 0.12639 > \alpha$, we cannot reliably reject the null hypothesis. **There is not enough evidence to say that the two variables, gender and purchase decision are dependent.**
- We conducted a similar test for age and purchase decision. **(95% conf)**
 - P-value = 0.4463577738771113
 - Since $p\text{-value} = 0.44635 > \alpha$, we cannot reliably reject the null hypothesis. **There is not enough evidence to say that the two variables, age and purchase decision are dependent.**



- When we did the same thing with the factors matrix, this is what we gathered. Since all the variables are ordinal, we use the chi-square test to test all of them for dependency.
 - With $\alpha = 0.05$, the only two factors that show dependency is how much a user cares about portability and working without cable, which are highly correlated because the latter is part of the first.
 - Using $\alpha = 0.1$, we can be at least 90% confident that the screen size also shows dependency.
 - For other tests, there is not enough evidence for dependency.
 - Other factors will be checked through logistic regression analysis.

4. Model building and interpretation:

- Dropped ['working_without_cable_importance', 'affordability_importance', 'processor_generation'] columns due to multicollinearity
- The main statistical algorithm used is **Logistic Regression**, to obtain odds ratio in the presence of more than one explanatory variable based on prior observation of a dataset.
- Used **One-hot encoding** from the **sklearn** library, which can be used to transform one or more categorical features into numerical dummy features useful for training machine learning model.
- We split data for training and testing.
- Upon testing the model we found:
 - The accuracy is better than the baseline.
 - We evaluated the model, and we can see that it's valuable. Now we can use the whole data for training.

5. Reliability and validity

Starting with reliability, we went for **Cronbach's alpha** approach which is a way of assessing reliability by comparing the amount of shared variance, or covariance, among the items making up an instrument to the amount of overall variance

- Started by some preprocessing,
 - dropping the columns that will not be used as ["main_usage_device", "income_level", "own_tablet"]
 - changing the gender "string" values to numerical values
 - same goes for the "device_performance" changed it to a ranged numerical values from 1 to 4
- Then we used Cronbach alpha from pingouin lib to get general Reliability value
- Then we normalized the "device price" dividing it by its max value
And redid Cronbach

```
(0.0003332009155561007, array([-0.293, 0.255]))
```

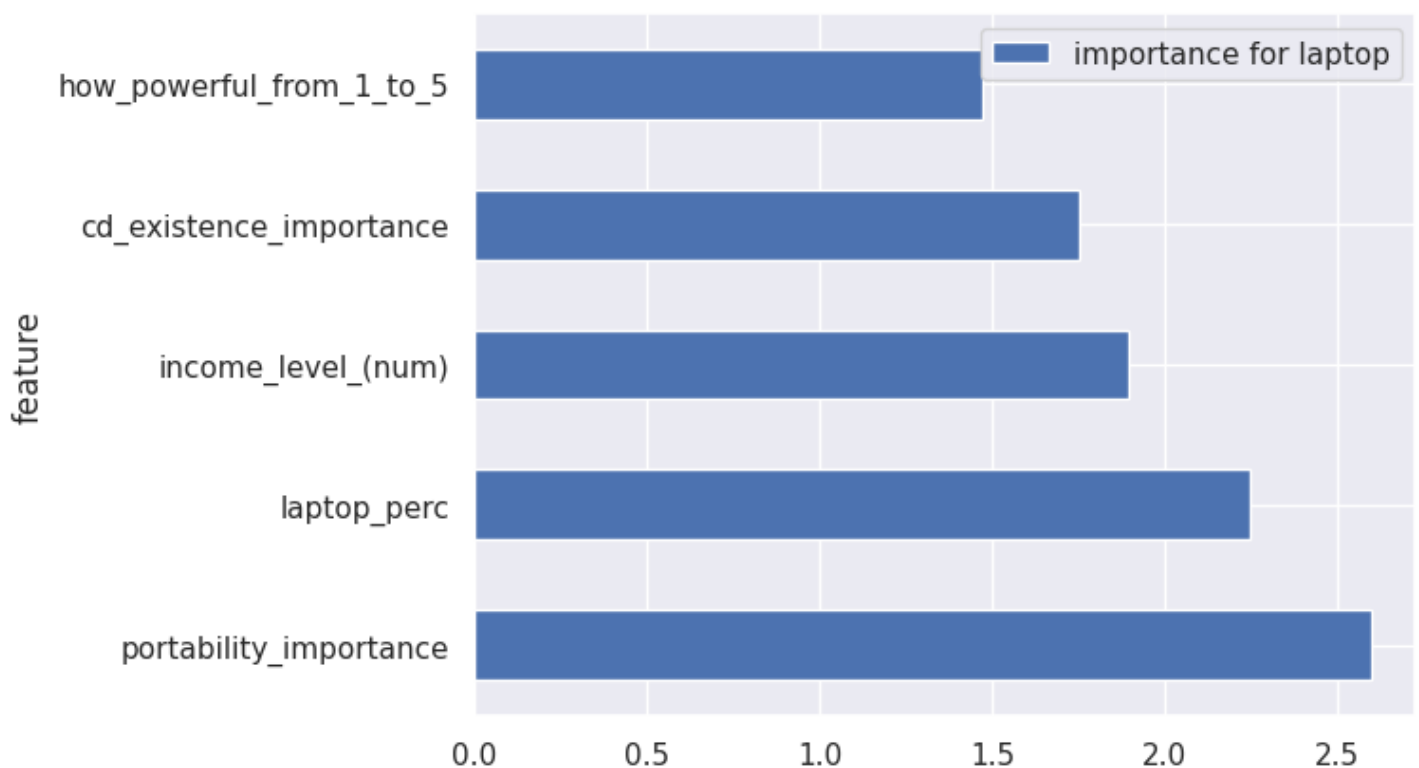
```
(0.6360760517575998, array([0.529, 0.729]))
```

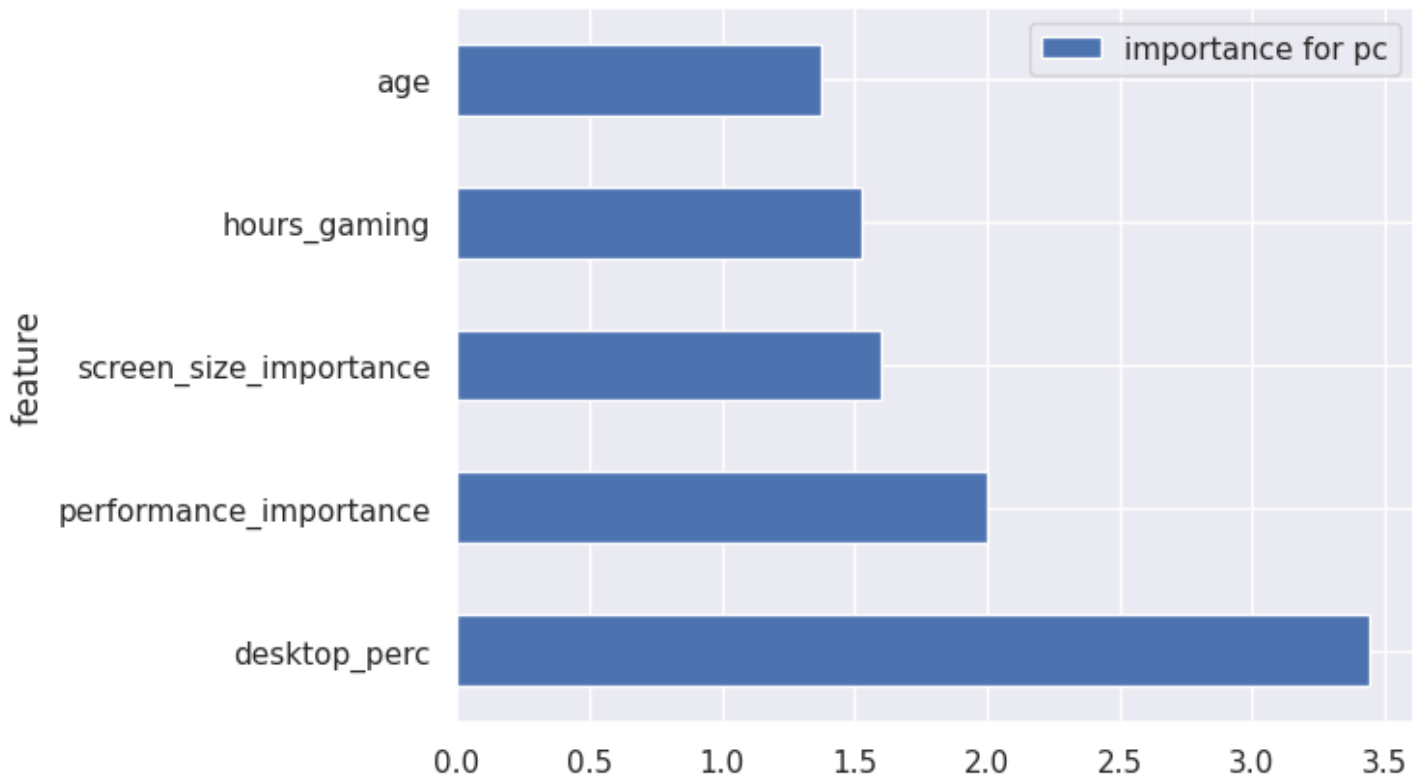
For the validity stage we resent the survey for some of the respondents asking them to refill it if possible, getting a 10% of the original respondents to refill it half of which didn't write their id's properly the first time, making the validity data 5%

- For those 5% data, we calculated how identical their answer was to their first response, result was (90%, 81%, 87%, 0.87%, 48%)
- So we have an average validity value of 79%

Key findings

- The 'portability importance' is the most effective feature for increasing the odds of buying a laptop as the next device. An increase of the 'portability importance' feature by one unit increases the odds of buying a laptop by a factor of 2.6 when all other features remain the same.
- An increase of the 'laptop usage percentage' feature by one unit increases the odds of buying a laptop by a factor of 2.25 when all other features remain the same.
- An increase of the 'income level' feature by one unit increases the odds of buying a laptop by a factor of 1.89 when all other features remain the same.
- An increase of the 'CD existence importance' feature by one unit increases the odds of buying a laptop by a factor of 1.75 when all other features remain the same.
- An increase of the 'How powerful is your processor' feature by 1 unit increases the odds of buying a laptop by a factor of 1.74 when all other features remain the same.





- An increase of the 'performance importance' feature by one unit increases the odds of buying a desktop as the next by a factor of 2 when all other features remain the same.
- An increase of the 'screen size importance' feature by one unit increases the odds of buying a desktop by a factor of 1.6 when all other features remain the same.
- An increase of the gaming time by one hour increases the odds of buying a desktop by a factor of 1.5 when all other features remain the same.
- An increase of age by one year increases the odds of buying a desktop by a factor of 1.4 when all other features remain the same.