Quiz 2 - DSC 10, Winter 2024

Full Name:

PID:

Discussion: ◯ A (5PM) ◯ B (6PM) ◯ C (7PM)

Instructions:

- This quiz consists of 5 questions. You have a total of 20 minutes to complete it.
- Please write **clearly** in the provided answer boxes; we will not grade work that appears elsewhere. Completely fill in bubbles and square boxes; if we cannot tell which option(s) you selected, you may lose points.

  ◯ A bubble means that you should only **select one choice**.

  ☐ A square box means you should **select all that apply**.
- If your answer is a string, make sure to put it in quotes. If your answer is a float, make sure to include a decimal point.
- No aids are allowed (no notes, no calculators, and no computers).

By signing below, you are agreeing that you will behave honestly and fairly during and after this quiz.

Signature:

Version A

Please do not open your quiz until instructed to do so.

The `laptops` DataFrame contains information on various factors that influence the pricing of laptops. Each row represents a laptop, and the columns are

- `"Mfr" (str)`: the company that manufactures the laptop, like `"Apple"` or `"Dell"`.
- `"Model" (str)`: the model name of the laptop, such as `"MacBook Pro"`.
- `"OS" (str)`: the operating system, such as `"macOS"` or `"Windows 11"`.
- `"Screen Size" (float)`: the diagonal length of the screen, in inches.
- `"Price" (float)`: the price of the laptop, in dollars.

Question 1

We'd like to visualize the distribution of the `"Mfr"` column in the `laptops` DataFrame. Fill in the blanks so that the code below draws an appropriate plot.

```
laptops.groupby(__(a)__).__(b)__.get([__(c)__]).plot(kind=__(d)__)
```

a: , b:

c: , d:

Question 2

Fill in the blanks so that `rotten_apple` evaluates to the number of laptops manufactured by `"Apple"` that are priced below the median price of all laptops.

```
x = __(a)__
y = __(b)__
rotten_apple = laptops[x __(c)__ y].__(d)__
```

a:

b:

c: , d:

PID: _____

Question 3

Select all the true statements below.

☐ When you set the index of a DataFrame, the specified column becomes the index, and the old index becomes a column.

☐ After grouping a DataFrame, the resulting number of rows is less than or equal to the original number of rows.

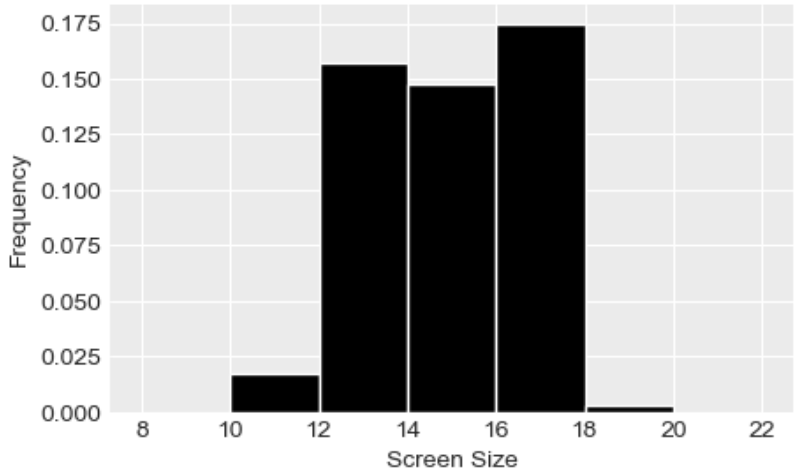
☐ The area of a density histogram is always equal to 1.

☐ A scatter plot has one numerical axis and one categorical axis.

☐ The height of the tallest bar in a density histogram is always less than 1.

Question 4

A density histogram of `"Screen Size"` is shown below.



What **percentage** of computer models have a `"Screen Size"` of at least 16 inches but less than 18 inches? Give your answer as an integer rounded to the **nearest multiple of 5**.

%

Question 5

a) **Using** `groupby`, write an expression that evaluates to the average price of laptops with the `"macOS"` operating system.

b) **Without using** `groupby`, write an expression that evaluates to the average price of laptops with the `"macOS"` operating system (the same quantity as above).

Before submitting your quiz, make sure your PID is on the front page and on the top right corner of page 3.