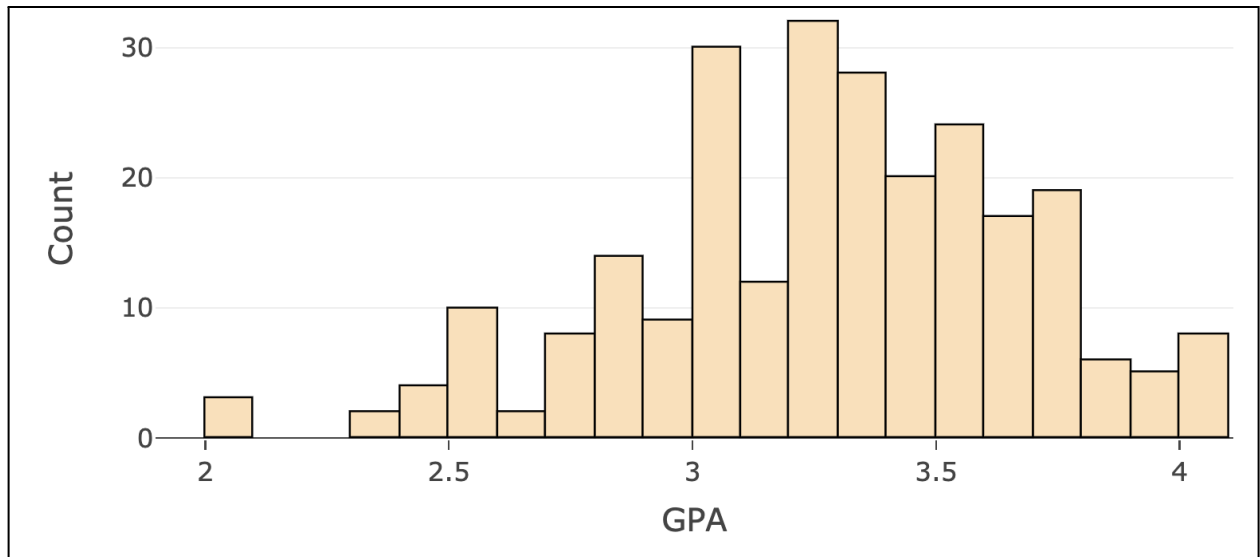


## Practice Assignment: Measures of Center

Questions 1–4: In addition to “Poor Sleep Quality Scores” and “Alcoholic Drinks Per Week” that we saw during the in-class activity, there are other variables from the study of college students that were of interest to the researchers. Questions 1–4 focus on some of these other variables.

- 1) The histogram below displays the grade point averages (GPAs) for the participating college students. Based on this histogram, which median and mean pair do you believe matches these data?



- a) Median: 2.8; mean: 2.8  
b) Median: 3.3; mean: 3.2  
c) Median: 3.6; mean: 3.1  
d) Median: 3.3; mean: 2.7
- 2) The table below displays the measures of center for the variable “Classes Missed,” based on whether students identified as “owls” or “larks.” Which of the following interpretations is most accurate (answer choices on the next page)?

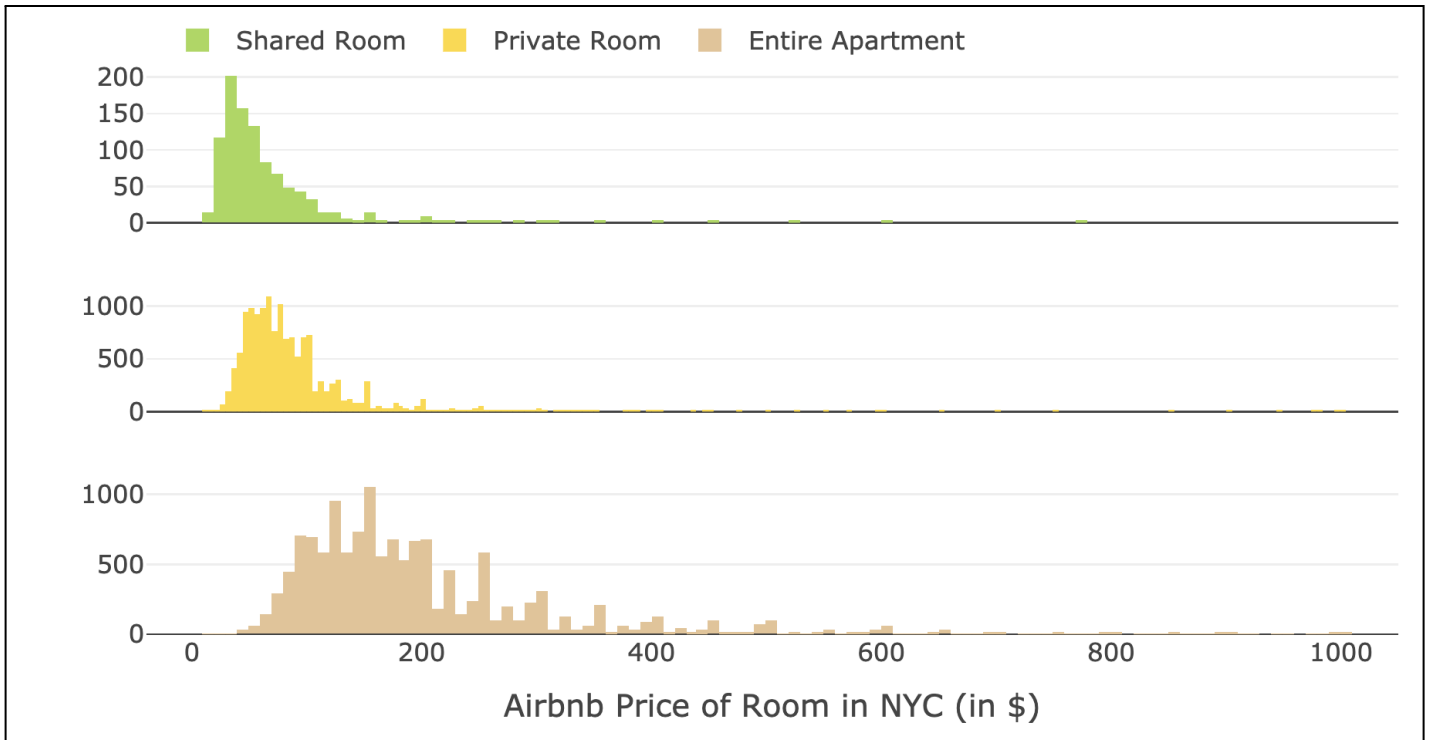
	Mean	Median
Owl	4.24	2
Lark	1.57	1

- a) Those who identify as morning larks have a larger mean and median. This suggests that morning larks tend to miss more classes in a semester than night owls.
  - b) Those who identify as night owls have a larger mean and median. This suggests that night owls tend to miss more classes in a semester than morning larks.
  - c) Those who identify as morning larks have a larger mean and median. This suggests that morning larks tend to miss less classes in a semester than night owls.
  - d) Those who identify as night owls have a larger mean and median. This suggests that night owls tend to miss less classes in a semester than morning larks.
- 3) Go to the *Describing and Exploring Quantitative Variables* tool at [https://dcmathpathways.shinyapps.io/EDA\\_quantitative/](https://dcmathpathways.shinyapps.io/EDA_quantitative/). Using the **Several Groups** tab, calculate the mean and median for the variable “Missed Classes.” Fill in the table below.

<b>Class</b>	<b>Mean</b>	<b>Median</b>
Freshman (Year 1)		
Sophomore (Year 2)		
Junior (Year 3)		
Senior (Year 4)		

- 4) Interpret your findings from the previous question. Based on your calculations, which statement is most accurate?
- a) Students in the Freshman class tend to miss more classes.
  - b) Students in the Sophomore class tend to miss more classes.
  - c) Students in the Junior class tend to miss more classes.
  - d) Students in the Senior class tend to miss more classes.

- 5) The graph below displays the distribution of prices for Airbnb rentals in New York City based on the type of accommodation (shared room, private room, entire apartment).<sup>1</sup>



Part A: Based on these histograms, which type of accommodation do you believe has the largest mean and median prices? Explain.

Part B: Which type of accommodation do you believe has the smallest mean and median prices? Explain.

- 6) Based on the histograms displayed in the previous problem, determine whether you believe the following statements are true or false.

Part A: The mean price of a private room is more than \$150.

Part B: The median price of an entire apartment is more than \$100.

Part C: The mean and median prices of a shared room are less than \$100.

<sup>1</sup> Agresti, A., Franklin, C. A., & Klingenberg, B. (n.d.). *Statistics: The art and science of learning from data, 5th edition*. Pearson.  
<https://www.pearson.com/us/higher-education/program/Agresti-My-Lab-Statistics-with-Pearson-e-Text-Access-Card-for-Statistics-The-Art-and-Science-of-Learning-from-Data-18-Weeks-5th-Edition/PGM2788191.html>

- 7) Go to the *Describing and Exploring Quantitative Variables* tool at [https://dcmathpathways.shinyapps.io/EDA\\_quantitative/](https://dcmathpathways.shinyapps.io/EDA_quantitative/). Select the **Several Groups** tab, locate the drop-down menu under “Dataset,” select “CO<sub>2</sub> Emissions by Continent,” and use the dataset to address the following questions.

Part A: Calculate the mean and median CO<sub>2</sub> emission values (metric tons) for countries in Central and South America and for countries in Europe. Complete the table below.

<b>Group</b>	<b>Mean</b>	<b>Median</b>
Central and South America		
Europe		

Part B: What might you conclude about the CO<sub>2</sub> emissions of these countries?