

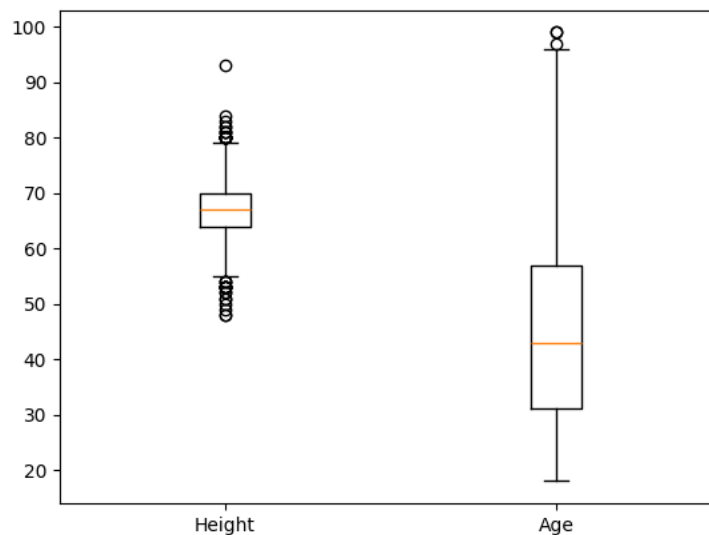
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Project 1
ECE 3710
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Project 1 Report

Question 1:

Our approach to answering these questions were to create two functions, BoxPlot and BarPlot. The first one calculates the interquartile ranges and creates a boxplot of the spread. The second one plots the gender and the exercise levels. We did not really make any assumptions for this question, it was more based on actually extracting the data from the CSV file and performing calculations on it.

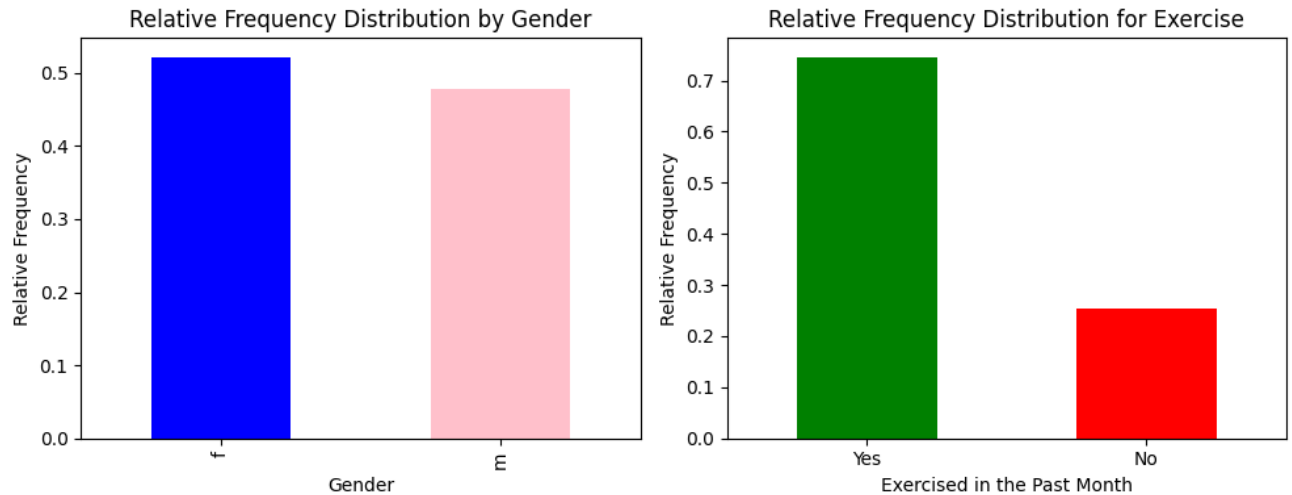
1a:



The interquartile range for height out of the sample data was 6.0 feet, while the interquartile range for age was 26 years. This tells us the spread of the middle half of the distribution.

1b:

The proportion of the sample that is female is 52% and the proportion of the sample that has exercised in the past month is 75%. This means that the population is slightly more female, and the proportion that exercises is much greater than those that don't.



Question 2:

There were no assumptions made for this question either. In fact, it was really just two lines of code using a command provided by the MATLAB library.

Output:

Smoke?	No	Yes
Female:	6012	4419
Male:	4547	5022

The output of the `crosstab()` function reveals that there are more men who have smoked 100+ cigarettes in their lifetime than there are women who have. The ratio of women who've smoked in this study versus those who haven't is 0.73, whereas for men the ratio is 1.1. These results show that men are more likely to smoke more than women.

Question 3:

Our approach to answering this question was to use the commands of `mean()` and `std()` to find the mean and standard deviation of weight. We then counted the number of weights within one standard deviation, then used those results to find the proportion.

The results showed that the mean weight was 169.68 pounds, and the standard deviation was 40 pounds. The proportion of weights within one standard deviation was 70%. This does match up with what you would expect, since 75% of the sample exercises, which would keep the men and women in their expected weight categories. The spread of the height was also relatively small, so the population does not vary much in height, which has a direct correlation to weight.