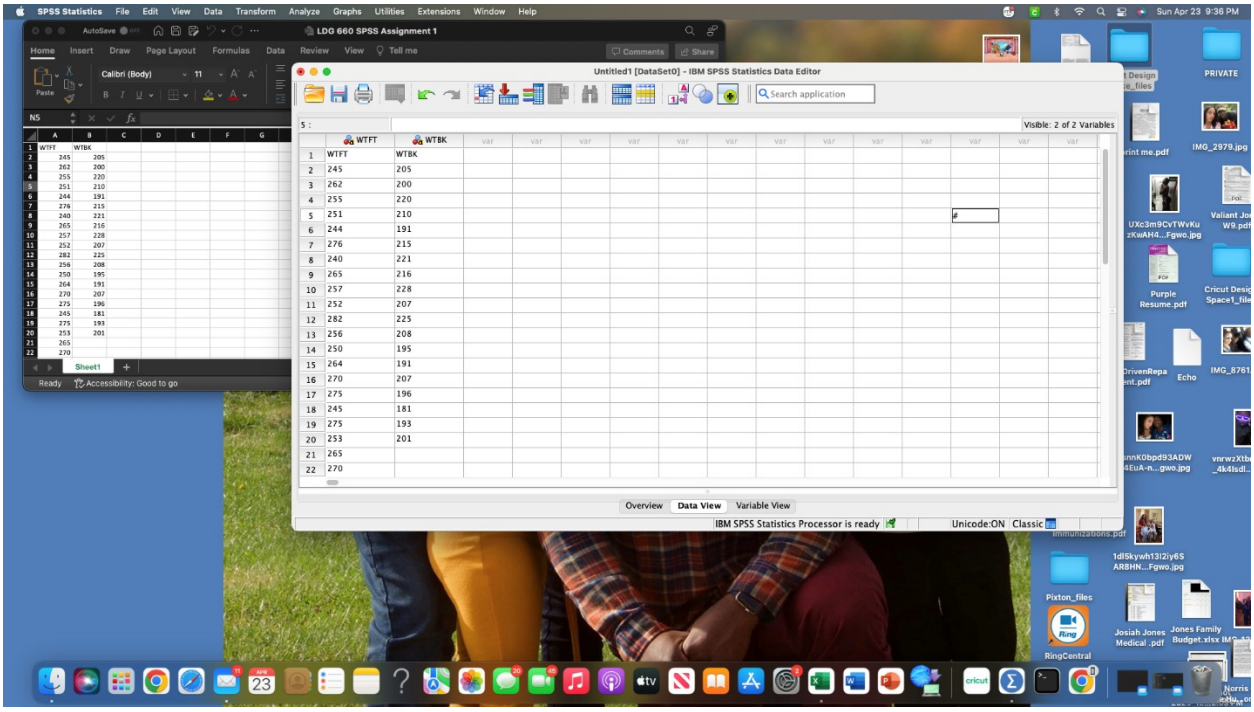
LDG 660 SPSS Assignment 1

The following data represent weights in pounds of 21 pro football players (the variable called WTFT), and 19 pro basketball players (the variable called WTBK). A convenience sample was conducted.

Reference: Sports Encyclopedia of Pro Football, and Official NBA Basketball Encyclopedia

There are 5 steps (each worth 15 pts). The lab, in total, is worth 75 pts.

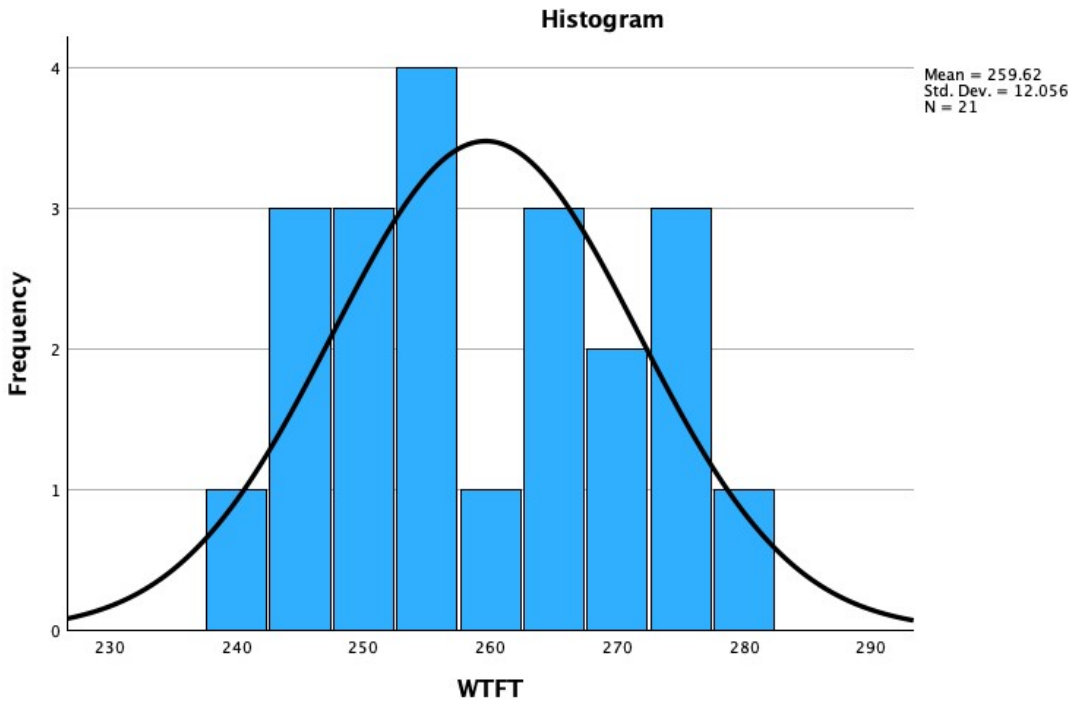
Step 1 (15 pts): Import the data into SPSS. Insert an image/screenshot below to confirm this.



Step 2 (15 pts): Generate any graph you would like for the weights of pro football players. Insert an image/screenshot below to confirm this.

Note: You could do this several ways:

(1) *Analyze → Descriptive Statistics → Frequencies – from here the Charts option will allow to output bar charts, pie charts, and histograms*
(2) *Graphs → Chart Builder*



Comment on what you see/what you can infer from the graph you generated.

Based on the graph, I can infer that the mean is under 260 lbs, the standard deviation is about 12 lbs.

Step 3 (15 pts): Compute descriptive statistics for the weight of pro basketball players.

Note: Be certain to include in the output: mean, std deviation, variance range, minimum, maximum, and range (i.e. make sure these are checked).

Insert an image/screenshot below to confirm this.

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
WTBK	19	47	181	228	205.79	2.959	12.900	166.398
Valid N (listwise)	19							

What is the average weight of the 19 randomly selected basketball players?

205.79

What is the meaning of the standard deviation?

Hint: On average, each of the 19 data points varies ..... Now, fill in the rest....

On average each of the 19 basketball players varies from the mean of 205.79 lbs by about 12.9 lbs.

Step 4 (15 pts): Test (at the 5% level of significance) the hypothesis that the true population mean weight of football players is equal to 250 lbs. Therefore, test the following:

Null: μ = 250lbs
Alternative: μ ≠ 250lbs

Insert an image/screenshot below to confirm this.

One-Sample Test

	Test Value = 0						
	t	df	Significance One-Sided p	Mean Difference Two-Sided p	95% Confidence Interval of the Difference Lower	Upper	
WTFT	98.683	20	<.001	<.001	259.619	254.13	265.11

What is the p-value?

P is <.001

What is the decision rule (do we reject the null OR fail to reject the null)?

Yes, we reject the null. The evidence supports the alternative that the true average weight of all football players is not equal to 250 lbs.

What is the real-world conclusion?

The true average weight of all football players is not equal to 250 lbs.

Step 5 (15 pts): Do you think it is wise to use this sample data to make inferences and conclusions about the true weights for pro football and basketball players? Why or why not?

Hint: There are two things related to sampling that should likely be discussed in your answer.

1. We use a convenience sample. Convenience sampling is a non-probability-based approach, therefore it does not guarantee any sort of random sampling. Random sampling is a fair and representative of the entire population.
2. The sample size is small. We would want our sample size to be 30 or greater.