Problem Set 1 Advanced Methods in Applied Statistics

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1 Exercise 1

For the first part of the assignment, I used scrapy (https://scrapy.org/) to parse the data on the given website to a csv.

The main challenge lay in figuring out the fact that teams without a seed had two (!) fewer columns. This took longer than I care to admit, but I extracted all the data into csv files. (attached)

I treated the data with pandas dataframes, and plotted the data in figure 1.

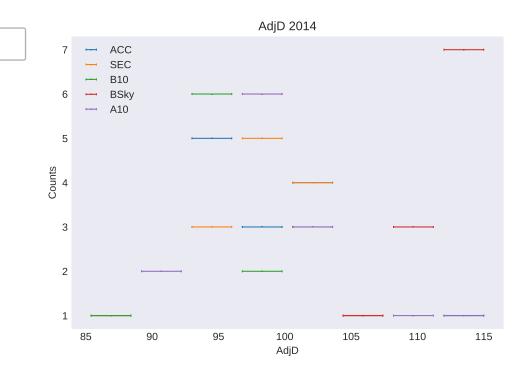


Figure 1: Exercise 1 - histogram of all the teams

2 Exercise 2

Importing this csv took three clicks. Thanks for the tip on code robustness, Jason

With Pandas, subtracting the two columns was simple enough. Eliminating NaN values was also straightforward.

This resulted in figure 4.



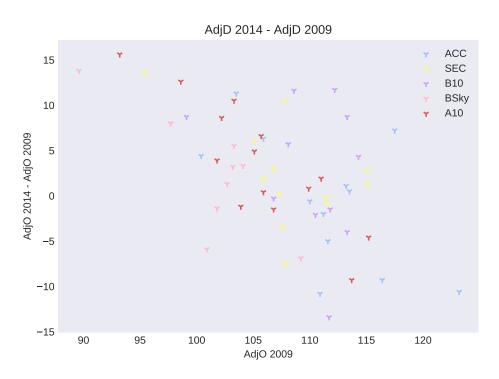


Figure 2: Exercise 2 - plot of the AdjO of all the teams as fcn of 2009 AdjO

Pandas' mean and median functions also came in handy here, and I generated the following .txt file.

AdjO-diff-Md is Median, while AdjO-diff-Mn is Mean

Conference	AdjO diff-Md
ACC	-0.05
SEC	1.65
B10	4.30
BSky	3.20
A10	2.90
Outsiders	1.30
Conference	AdjO diff-Mn
ACC	-0.63
SEC	2.28

B10	2.67
BSky	2.32
A10	3.51
Outsiders	2.40

3 Exercise 3

Again, Jason's tip about robust and scalable code came in handy.

3.1 Exercise 1 redone

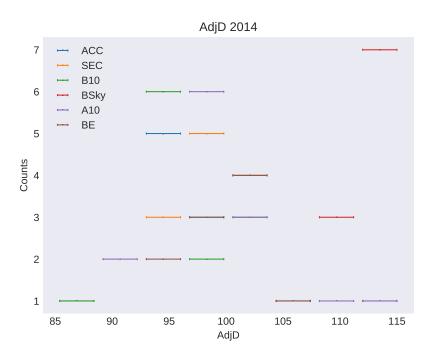


Figure 3: Exercise 3-1 - histogram of all the teams

3.2 Exercise 2 redone

Another text file was generated:

Conference	AdjO	${\tt diff-Md}$
ACC		-0.05
SEC		1.65
B10		4.30
BSky		3.20

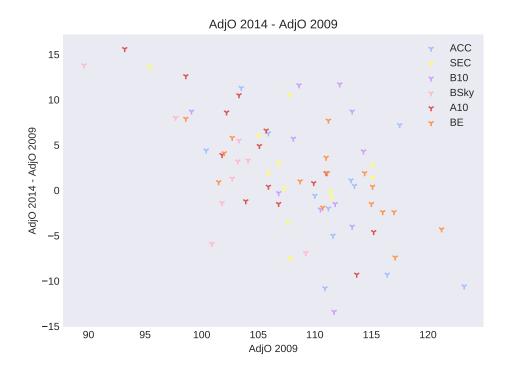


Figure 4: Exercise 3-2 - plot of the AdjO of all the teams as fcn of 2009 AdjO

A10		2.90
BE		0.95
Outsiders		1.50
Conference	AdjO	${\tt diff-Mn}$
ACC		-0.63
SEC		2.28
B10		2.67
BSky		2.32
A10		3.51
BE		0.96
Outsiders		2.49