CDS 290 Midterm Exam 1

7 October 2020

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CDS 290-001

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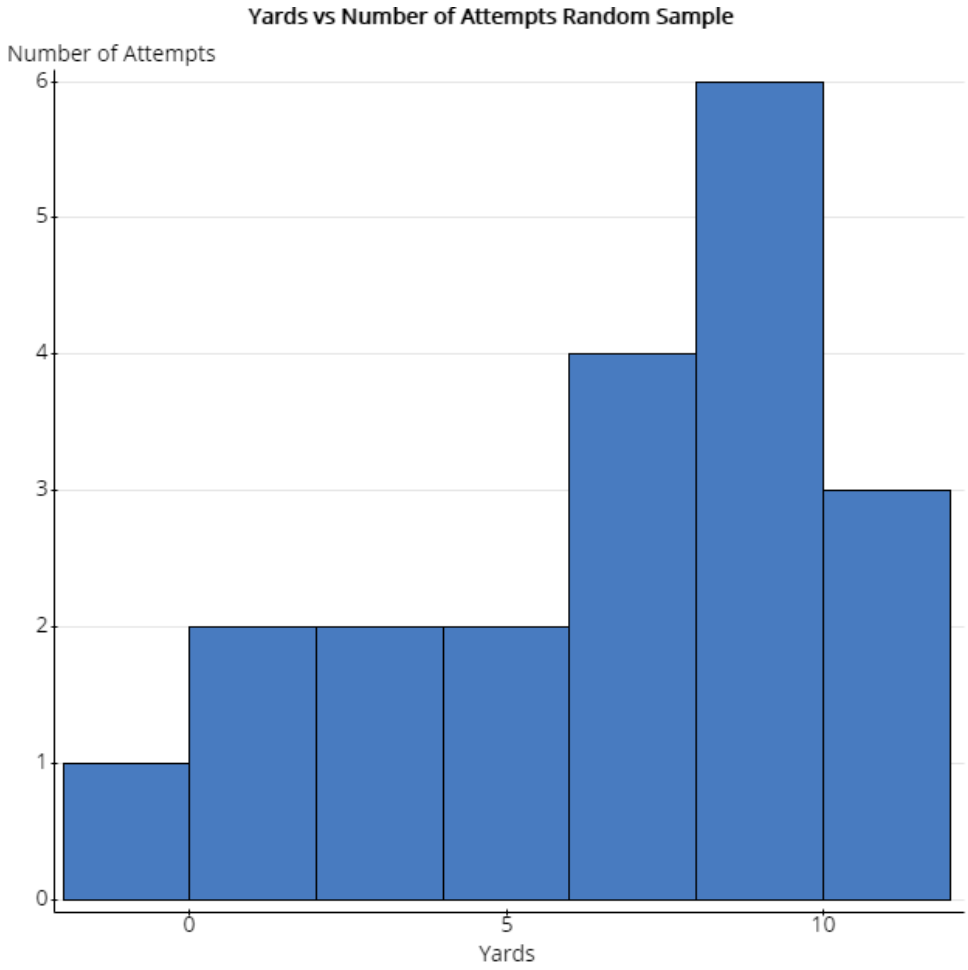
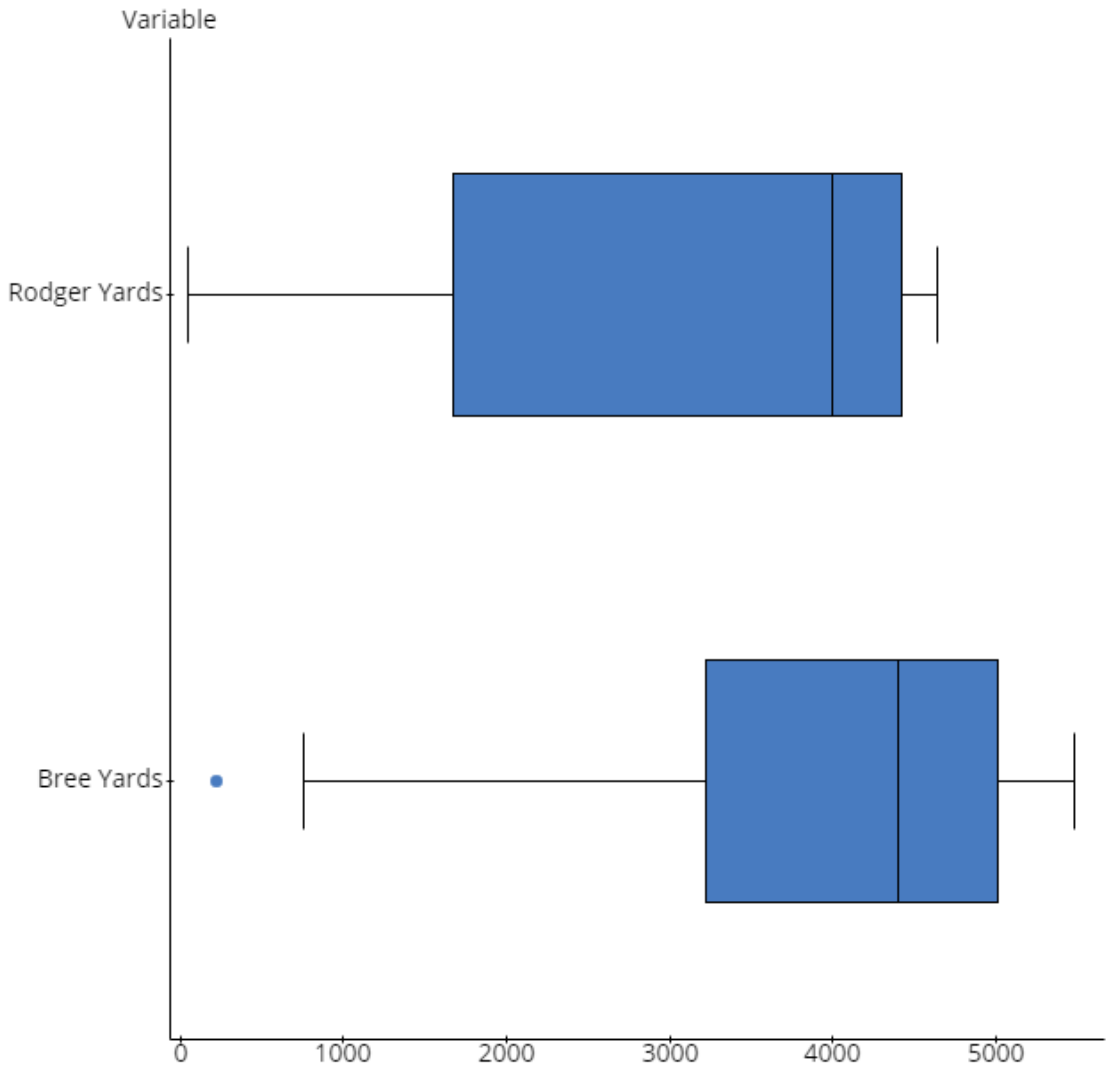
Midterm #1:

Problem 1.

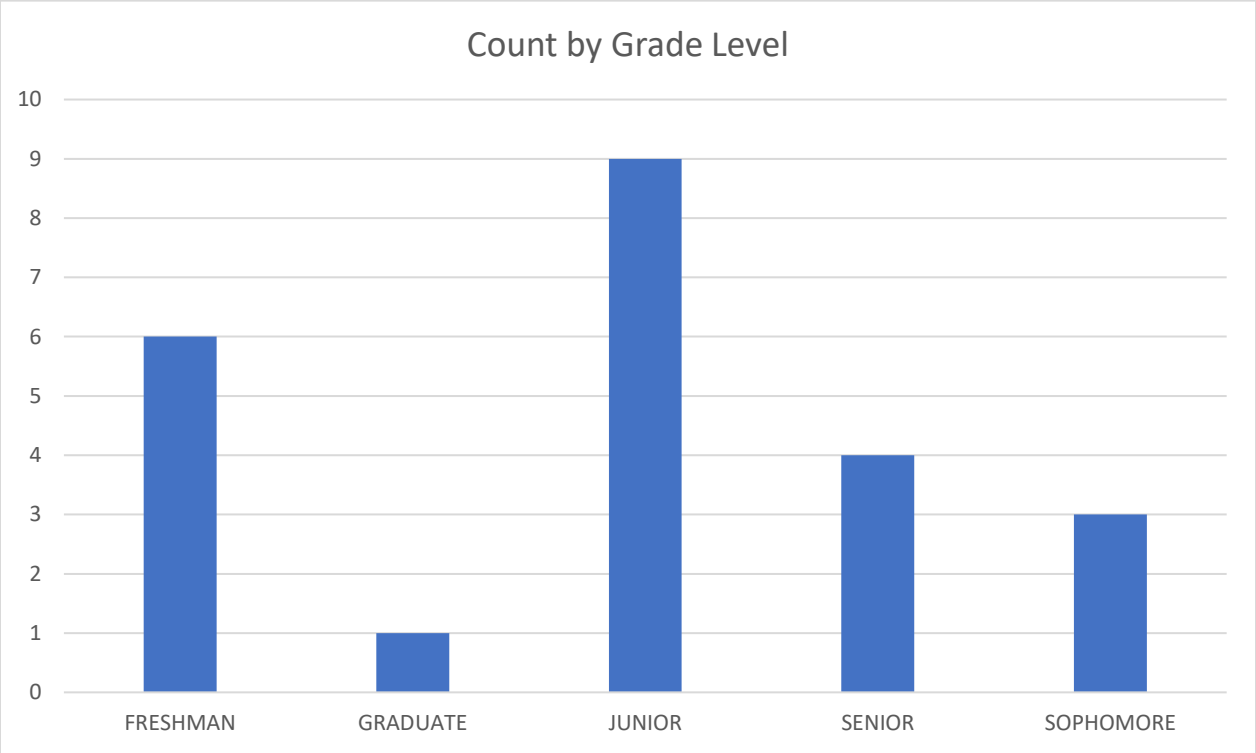


Problem 2.



One could argue that Bree has a better career since his passing yards IQR was higher and more narrow.

Problem 3.



Problem 4.

Summary statistics for men:

Column	n	Mean	Std. dev.
Result	8	9.9425	0.080311892

Men's 100 Meter Dash results			
RANK	***PARTICIPANT***	***RESULT***	***Z-SCORE***
G	**Usain Bolt**	**9.81**	-1.64982
S	**Justin Gatliln**	**9.89**	-0.6537
B	**Andre DeGrasse**	**9.91**	-0.40467
4	**Yohan Blake**	**9.93**	-0.15564
5	**Akani Simbine**	**9.94**	-0.03113
6	**Ben youssef Meite**	**9.96**	0.2179
7	**Jimmy Vicaut**	**10.04**	1.214017
8	**Trayvon Bromell**	**10.06**	1.463046

Summary statistics for Women:

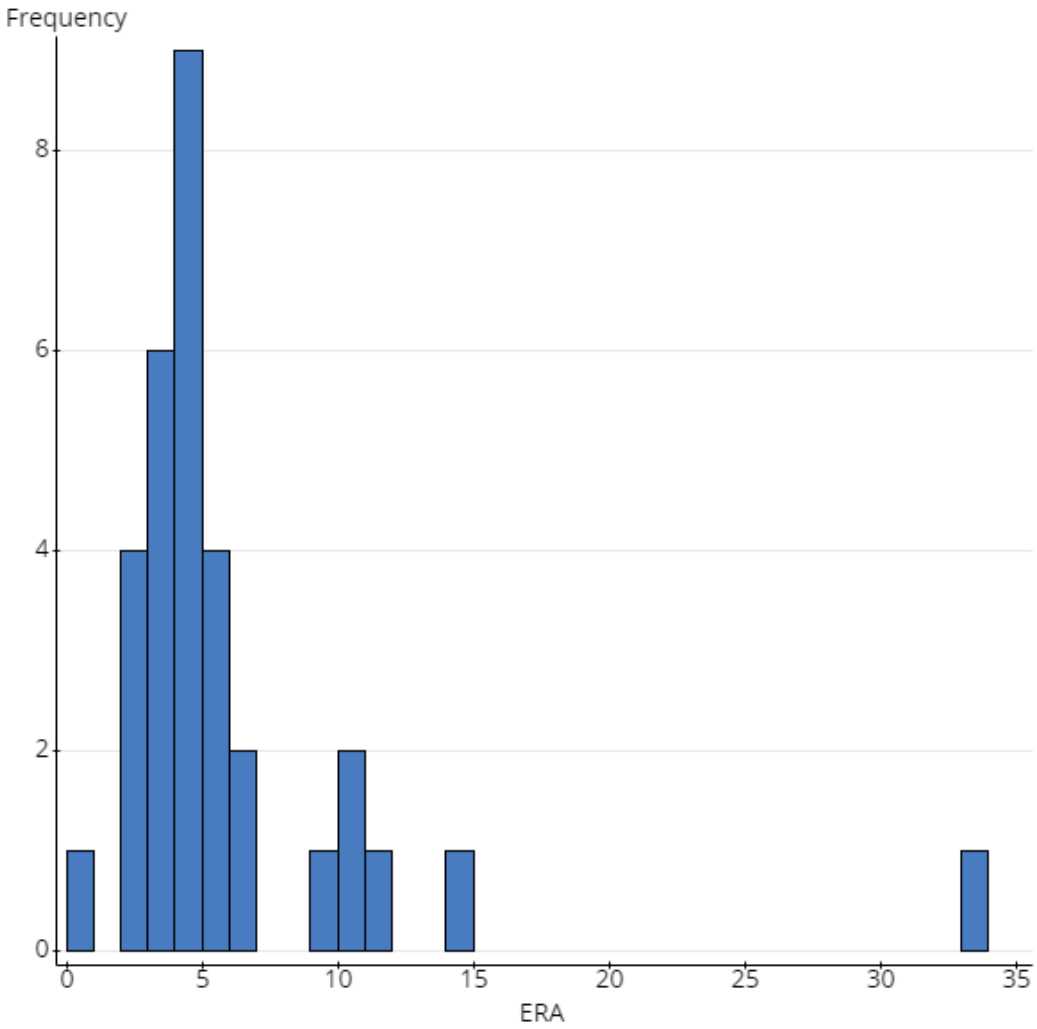
Column	n	Mean	Std. dev.
Score	8	10.9775	0.33977934

WOMEN'S 100 METER DASH RESULTS			
RANK	***PARTICIPANT***	***RESULT***	***Z-SCORE***
G	**Elaine Thompson**	**10.71**	-0.78728
S	**Tori Bowie**	**10.83**	-0.43411
B	**Shelly-Ann Fraser-Price**	**10.86**	-0.34581
4	**Maire-Josee Ta Lou**	**10.86**	-0.34581
5	**Dafne Schippers**	**10.9**	-0.22809
6	**Michelle-Lee Ahye**	**10.92**	-0.16923
7	**English Gardiner**	**10.94**	-0.11037
8	**Christania Williams**	**11.8**	2.420689

Problem 5.

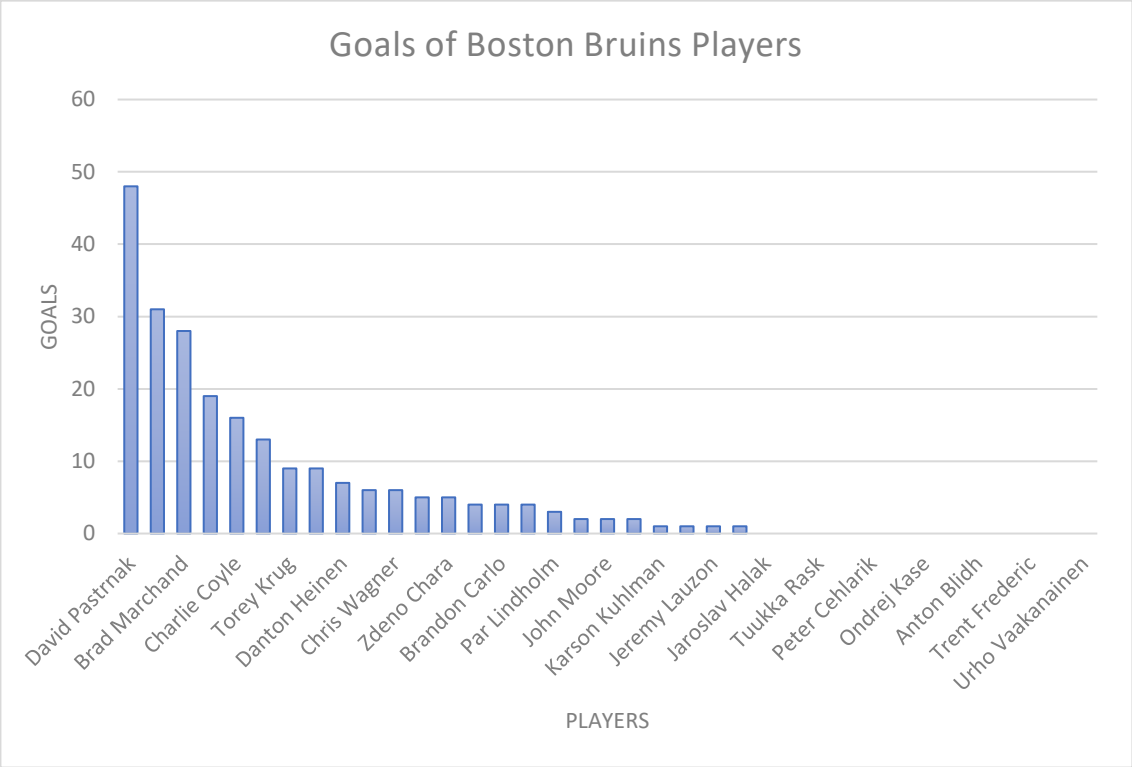
BA	
Mean	0.245674
Standard Error	0.001924
Median	0.252
Mode	0.25
Standard Deviation	0.043024
Sample Variance	0.001851
Kurtosis	1.539314
Skewness	-0.92092
Range	0.284
Minimum	0.054
Maximum	0.338
Sum	122.837
Count	500

Problem 6.



The Earned Run Average is monomodal, and right skewed. There are some minor outliers in the data, where the ERA was much higher than normal. This could mean that there is an extremely good player, or a mistake in the data. Supposedly, that player is Chad Smith with an ERA of 33.75. Most players, however, are in the ERA range of 2.0-5.0.

Problem 7.



Pastrnak has a much higher goal count than the rest of his team. He has more goals than the 14 least-scoring players on his team combined. He is definitely the team's most valuable player, tripling Charlie Coyle's score and quadrupling Torey Krug's score.

Problem 8.

	Primary	Somewhat	No	Total
Yes	47	26	14	87
No	21	23	37	81
Total	68	49	51	168

The difference in percentages between a primary yes affected decision and primary no affected decisions is 47/68 – 21/68 = 0.6911 – 0.3088 = 69.11% - 30.88% = 38.23%

Ratio = 0.6911/0.3088 = 2.2380

Problem 9.

Bridgewater	Entropy	Mariota	Entropy
8.30%	0.206579918	**22.90%**	0.337554
20.00%	0.321887582	**21.20%**	0.328848
30.00%	0.361191841	**20.80%**	0.326605
18.30%	0.31078325	**14.80%**	0.28276
11.70%	0.251033017	**11.00%**	0.2428
8.30%	0.206579918	**3.00%**	0.105197
0.00%		**2.10%**	0.081128
1.70%	0.069267213	**3.40%**	0.114967
1.70%	0.069267213	**0.80%**	0.038627
0.00%		**0.00%**	
	Total Entropy:		**Total Entropy:**
	1.796589952		1.858486
	Standardized Entropy		**Standardized Entropy:**
	0.780249103		0.80713

Problem 10.

PITCHER	THROWS	BAA VS. R	BAA VS. L	Adjusted 1
Beckett	**R**	**0.226**	**0.258**	0.24072
Santana	**L**	**0.235**	**0.267**	0.24972
Floyd	**R**	**0.256**	**0.232**	0.24496
Billingsley	**R**	**0.229**	**0.257**	0.24188
Wainwright	**R**	**0.217**	**0.275**	0.24368
Happ	**L**	**0.253**	**0.216**	0.23598