Due: October 4, 2024

Happy October!

Some notes:

1. Please remember to run all your code and save your ipynb file that way before committing to github.
    a. Please also make sure that all your results are replicable in jupyter lab - that the code runs properly without needing changes.
2. Please clearly label your file name and upload each lab/homework to it's own folder/file in github - don't upload a lab in another lab's folder. Makes it harder to find.
3. Please remember to print every relevant output - jupyter may output the results anyway but generally IDEs won't, and even in notebooks sometimes the formatting can be better if explicitly printed.
4. Please do your own work - copy/pasting or submitting the same file as someone else will not help you. Copying directly from ChatGPT will also not help you - use it for debugging not your whole assignments.

Questions:

1. We want to check the accuracy of a linear regression model (OLS) with bootstrap. Use the College dataset, with Grad.Rate as the outcome variable, and Accept as the predictor. Use 0 as seed everywhere to make it replicable, points will be deducted if not. 5pt.

Hint for how I structured this: define a bootstrap standard errors function, define a bootstrap OLS function, define a partial of the bootstrap OLS function, use the bootstrap standard errors function with the partial bootstrap OLS function to get the bootstrap estimated SE, and lastly estimate a univariate OLS and use print(summarize(results)) to see the SE estimated by OLS.

Hint for what output should be:

intercept 0.783696
Accept 0.000180

	coef	std err	t	P>|t|
Intercept	64.5110	0.797	80.915	0.000
Accept	0.0005	0.000	1.878	0.061