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Machine Learning 1, Fall 2020

Linear Regression Assignment

1. Multiple Linear Regression is applied using linear algebra and the standard equation. Libraries are used to chart the data, which are used to analyze and prepare for the application of the model. Independent variables are chosen, coefficients are calculated, and the model is applied to the test set. The results are then used to calculate the margin of error.
2. The data was evaluated with r, r^2, and the predicted values.

	LSTAT	RM	PTRATIO	MEDV	predy	r^2	adj r^2
197	0.273353	0.358406	0.568413	0.844526	1.214228	0.136680	0.129773
429	-0.772580	0.041563	-0.169340	-1.417055	-0.886300	0.281701	0.275954
116	0.041449	-0.047345	0.063634	-0.144916	0.071795	0.046964	0.039339
406	-0.722548	-0.935553	-0.169340	-1.156104	-1.813385	0.432018	0.427474
465	-0.099856	-0.229084	-0.169340	-0.286265	-0.484223	0.039188	0.031501

3. Only 3 independent variables were used because I struggled with learning how to write this model from scratch. The results weren't as accurate as I would like, so I think using more variables has a chance to yield better results.
4. I think changing the number of variables has the potential to be more accurate. Also adjusting the coefficients based on the training data model - I don't know how to do that yet.