Assignment 2 Question 3

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1 Least Square Regression Problem

In this section we vary the alpha parameter for Lasso, Ridge, ElasticNet and note down the accuracy changes.
Here Alpha is a Constant that multiplies the L1 term. Defaults to 1.0. alpha = 0 is equivalent to an ordinary least square, solved by the Linear Regression.

1. **Lasso**

Table 1: Accuracy for lasso regression

alpha	**accuracy**
0.1	0.7163461538
0.2	0.7115384615
0.3	0.7067307692
0.4	0.7067307692
0.5	0.7067307692
0.6	0.7067307692
0.7	0.7067307692
0.8	0.7019230769
0.9	0.7019230769
1	0.7019230769

2. **Ridge**

Table 2: Accuracy for Ridge Regression

alpha	**accuracy**
0.1	0.6778846154
0.2	0.6394230769
0.3	0.6394230769
0.4	0.6394230769
0.5	0.6394230769
0.6	0.6394230769
0.7	0.6394230769
0.8	0.6394230769
0.9	0.6394230769
1	0.6394230769

3. **Elastic net**

Table 3: Accuracy for Elastic net

alpha	**accuracy**
0.1	0.6923076923
0.2	0.6586538462
0.3	0.6394230769
0.4	0.6394230769
0.5	0.6394230769
0.6	0.6394230769
0.7	0.6394230769
0.8	0.6394230769
0.9	0.6394230769
1	0.6394230769

4. **No regularization**

Table 4: No regularization

	alpha	accuracy
0	0.1	0.7307692308