**Lasso Regression**

It is very similar to the ridge regression, but instead of squaring the slope we take the absolute value of slope. But as in ridge the lambda varies from 0 to infinity and its optimum value is determined using cross validation. When ridge and lasso shrink the parameters, they don’t shrink them all equally. This makes the final equation simpler and easier to understand.

**Big difference between the ridge and lasso**

Ridge regression can only shrink the slope asymptotically to 0, but the lasso regression shrinks the slope all the way to 0. Since lasso an exclude useless variables from equations, it is a little better than ridge regression at reducing the variance in models that contain a lot of useless variables.

In contrast, the ridge tends to do a little better when most variables are useful. So when we are trying to predict the target variable using a model where most of the variables are useful, the ridge regression will shrink the parameters but will not remove any of them.

**Elastic Net Regression**

When we have millions of parameters then it becomes certainly impossible to know all of them and also it necessitates the need for some sort of regularization method to estimate them. Just like lasso and ridge regressions, elastic net starts with least squares then it combines the lasso regression penalty with the ridge regression penalty with separate lambdas for each penalty terms. So elastic net combines the strength of both lasso and ridge regressions. When both the lambdas are 0 then we get the original least squares parameter estimates. But when both the lambdas are > 0 we get a hybrid elastic net that is good at dealing with situations when there are correlations between the parameters. Lasso tends to pick one of the correlated terms and eliminate the others whereas the ridge tends to shrink all of the parameters for the correlated variables together. So by combining the lasso and ridge, elastic net groups and shrinks the parameters associated with the correlated variables and leaves them in equation or removes them all at once. Elastic net does well with correlated variables.