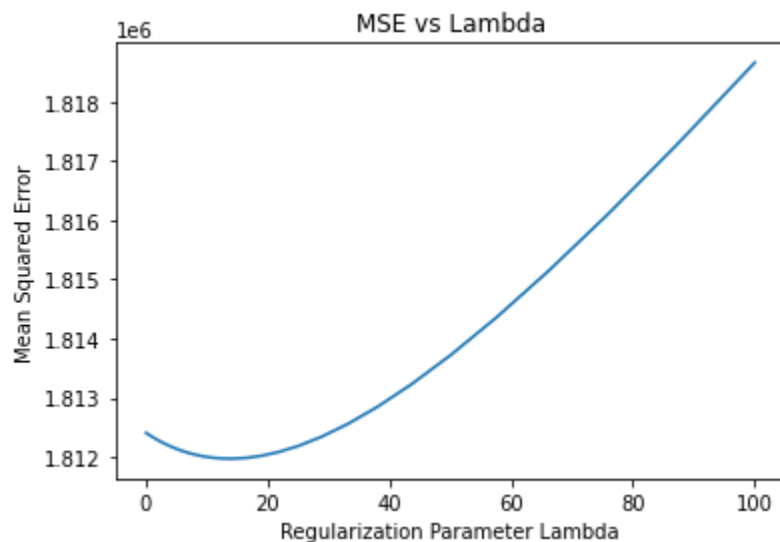


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## Problem2 Writeup

### Finding Best Lambda:



Based on the range of Lambda values tested, the best lambda tested is 14.45439770745928, which yields an MSE of 1811976.910951057 as shown on the plot above

### Equation of the best fitted model:

$$y = 5112.572x_9 + -201.037x_8 + -207.151x_7 + -1331.534x_6 + 217.847x_5 + -68.753x_4 + 500.945x_3 + 74.336x_2 + -458.989x_1 + 3928.077$$

The predicted price for a .25 carat, 3 cut, 3color, 5 clarity, 60 depth, 55 table, 4 x, 3 y, and 2 z diamond would be \$442.87 which would be determined by replacing x in the equation with the respective value.

When plotting both the ridge and lasso models, it is obvious that they are very different. When using the ridge model however, we get a much better MSE vs Lambda graph that follows a more uniform model.