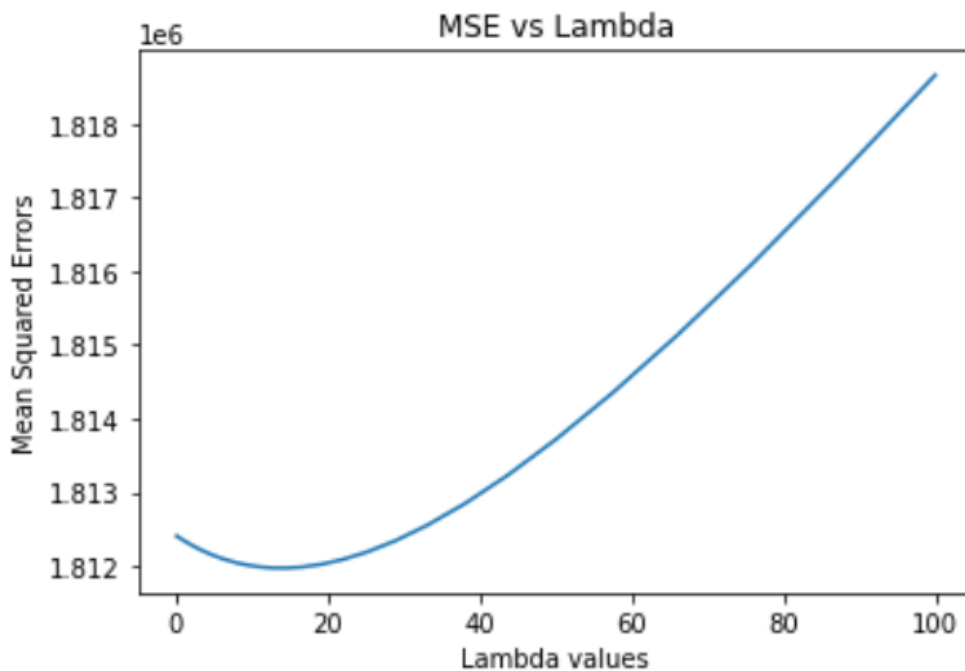**Name: Miguel Castilho Oliveira**
Github Username: MigCast9
Purdue Username: mcastilh - 0032513713
Instructor: Prof Brinton
Problem2_writeup

Best fit Equation:

$$y = 5112.50987786 * x\_1 - 201.03452142 * x\_2 - 207.14864943 x\_3 - 1331.51984525 * x\_4 + 217.84446348 * x\_5 - 68.75157482 * x\_6 + 500.93838851 * x\_7 + 74.3346825 * x\_8 - 458.9837666 * x\_9 + 3928.07687554$$

This plot was made by plotting the MSE values in function of the Lambda values in which the MSE values were obtained with the Ridge regression models.

Based on the Lambda values tested, the best lambda value is 14.45439770745928 which yields a MSE of 1811976.910163041.

Predicting Price:
The predicted price for a 0.25 carat, 3 cut, 3 color, 5 clarity, 60 depth, 55 table, 4 x, 3 y, 2 z diamond is 17906.61$. This value was obtained by substituting the values in the equation above after normalizing them.