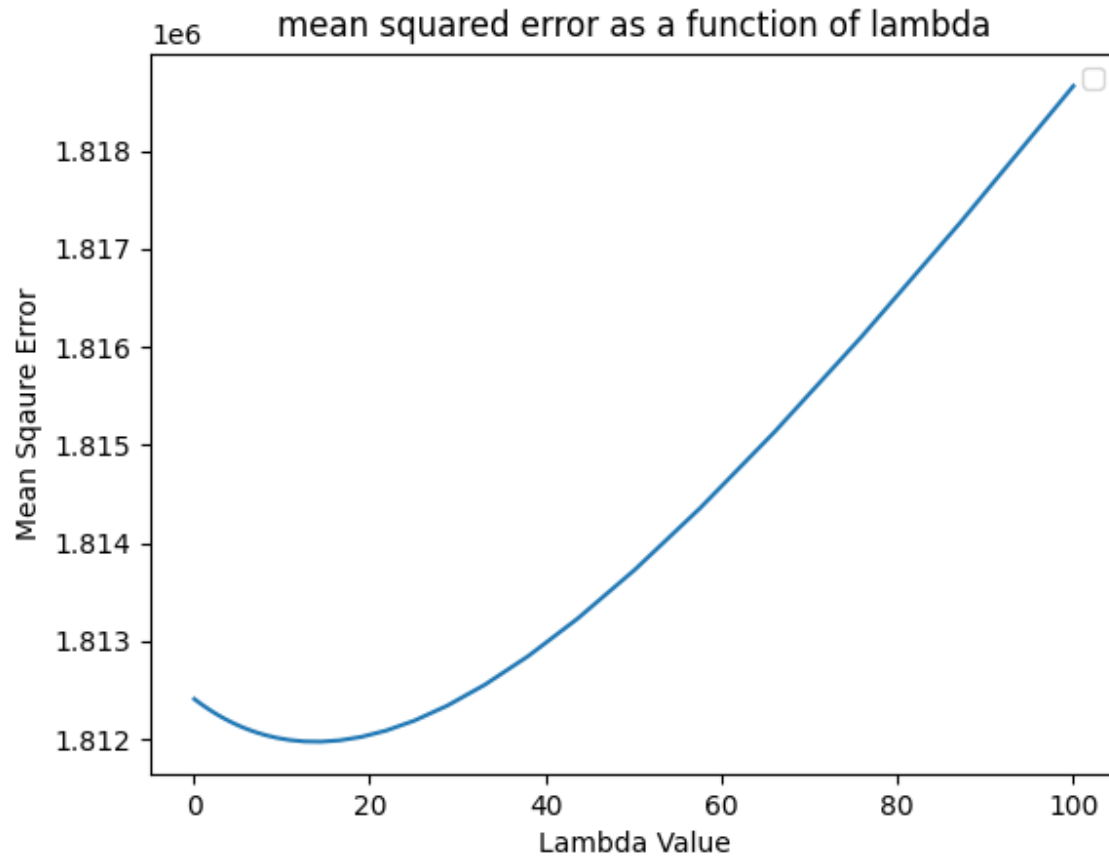


Problem 2: Regularized regression

The Output of the code written:



```
Best lambda tested is 14.45439770745928, which yields an MSE of 1811976.91016305
[[ 5112.50987786 -201.03452142 -207.14864943 -1331.51984525
   217.84446348 -68.75157482  500.93838851  74.3346825
  -458.9837666 ]]
[3928.07687554]
```

What is the predicted price y for a 0.25 carat, 3 cut, 3 color, 5 clarity, 60 depth, 55 table, 4 x, 3 y, 2 z diamond?

Equation:

$$y(x) = 5112.50987786 * X_1 - 201.03452142 * X_2 - 207.14864943 * X_3 - 1331.51984525 * X_4 \\ + 217.84446348 * X_5 - 68.75157482 * X_6 + 500.93838851 * X_7 + 74.3346825 * X_8 \\ - 458.9837666 * X_9 + 3928.07687554$$

$$y = 5112.50987786 * 0.25 - 201.03452142 * 3 - 207.14864943 * 3 - 1331.51984525 * 5 \\ + 217.84446348 * 60 - 68.75157482 * 55 + 500.93838851 * 4 + 74.3346825 * 3 \\ - 458.9837666 * 2 + 3928.07687554$$

$$y = 7922.1768$$