2.

$\beta_0 = 6523.516, \beta_1 = -0.01485$

We get this from:

$\beta_1 = \frac{\sum_{i=1}^{n} x_i(y_i - \bar{y})}{\sum_{i=1}^{n} x_i(x_i - \bar{x})}$ $\beta_0 = \bar{y} - \beta_1 \bar{x}$

Here $\bar{y} = 5988.1443, \bar{x} = 36040.05$

$\sum_{i=1}^{n} x_i(y_i - \bar{y})$ = -58050289.7

$\sum_{i=1}^{n} x_i(x_i - \bar{x})$ = 3907812841

These values of β_0, β_1 mean that each car according to our model will be sold at most for a price of 6523.516 and will decrease by 0.01485 for every mile on the odometer.

3.

Pearson linear correlation= -0.9496964

Coefficient of determination (R^2) = 0.901923222

SSE of least squares linear regression = 0.91857745

Plot of Linear regression in comparison with training data:

This plot gives us an idea on what happens when a linear regression model is used to learn data that could be learnt well with a logistic regression model. For the given training data, a linear regression model does not learn the data well as seen by the SSE value and the plot.