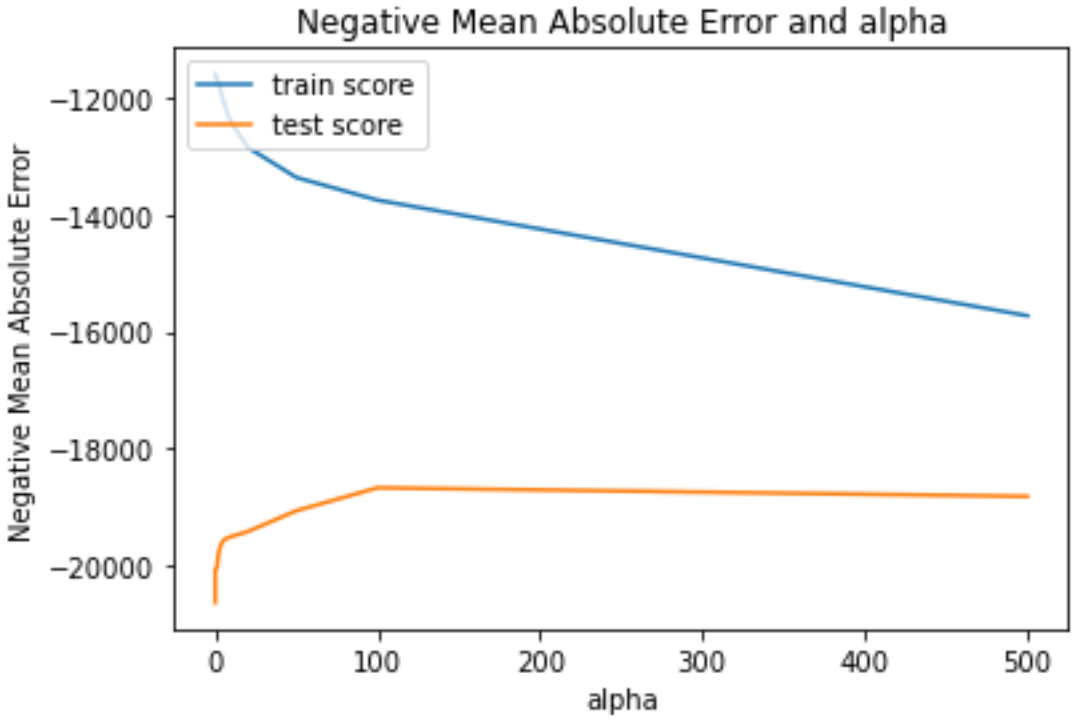
Question 1

What is the optimal value of alpha for ridge and lasso regression? What will be the changes in the model if you choose to double the value of alpha for both ridge and lasso? What will be the most important predictor variables after the change is implemented?

Answer:

From the regression model we can see that the most optimal value of alpha for both Ridge and Lasso regression is 100, the train score and test score combination score is highest at this point.



If we double the value of alpha for both Ridge and Lasso regression then, the train score decreases for both and hence Negative Mean Absolute Error will increase. Most important predictor variables coefficients are :

72410.00070878582, 42922.243899130444, 41145.65980155086, 25235.81953665492, 23027.238581376238, and these features affect the final price by as much value.s

Question 2

You have determined the optimal value of lambda for ridge and lasso regression during the assignment. Now, which one will you choose to apply and why?

Answer: We will use lasso regression for feature selection and ridge regression as it is getting higher r2 score for the test set as well.

Question 3

After building the model, you realized that the five most important predictor variables in the lasso model are not available in the incoming data. You will now have to create another model excluding the five most important predictor variables. Which are the five most important predictor variables now?

Answer: We will use the next 5 important predictor variables based on the value of coefficients in Lasso regression model.

Question 4

How can you make sure that a model is robust and generalizable? What are the implications of the same for the accuracy of the model and why?

Answer: following are the ways to make sure that a model is robust and generalizable:

1. Features should not be multicollinear, that is not related to each other.
2. The model should not be overfitting
3. Size of test and train data sets should be good enough
4. r2 value should be high enough