**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 double the value of alpha for both ridge and lasso? What will be the most important predictor variables after the change is implemented?

**Answer:** Optimal value of alpha is determined through cross-validation. doubling alpha would increase regularization likely leading to models with fewer predictors retained. most important predictor is the highest absolute coefficient values in the updated models.

**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:** choose Lasso regression because it performs feature selection by setting coefficients of less important predictors to zero, leading to potentially simpler model.

**Question 3**

After building the model, you realised 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:** OverallQual ,GrLivArea , 2ndFlrSF , TotalBsmtSF , BsmtFinSF1

**Question 4**

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

**Answer:** robustness and generalizability of a model obtained using cross-validation and regularization...