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 for ridge is = 1.0
Optimal value of alpha for lasso is = 0.0001

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
Applying the ridge regression as it have better r2 score.

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
The top 5 important predictors after dropping 5 are
2ndFlrSF

BsmtFullBath

TotalBsmtSF

BsmtFinSF

GarageCars

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

Ensuring robustness and generalizability typically involves techniques like cross-validation, regularization, and avoiding overfitting. A robust and generalizable model may have slightly reduced accuracy on the training data but should perform better on unseen data. If we look at the accuracy, a too complex model will have a very high accuracy. So, to make our model more robust and generalizable, we will have to decrease variance which will lead to some bias. Addition of bias means that accuracy will decrease.