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?

Ans : Lasso alpha : 0.00033, Ridge 'alpha': 19.2
Looks like GrLivArea is the the most positively correlated factor for SalePrice whi le MSZoning_C(all) is the most inversely correlated factors for SalePrice .

No change in model is observed. GrLivArea and MSZoning_C(all) will be the mos t important predictor variables after the change is implemented

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?

Ans : Lasso alpha : 0.12193, Ridge 'alpha': 0.12005 . We will be implementing det ermined optimal value of ridge and lasso regression.

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?

Ans : GrLivArea, MSZoning_C(all), Neighborhood_Crawfor, Neighborhood_StoneBr, YearBuilt

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?

Ans : Ensuring model robustness and generalizability involves practices like train-test splitting, cross-validation, hyperparameter tuning, and feature engineering. Robust models exhibit consistent performance across diverse datasets, minimizing overfitting and underfitting. High accuracy on both training and testing sets signifies generalizability, reducing the risk of poor performance on new data. Model interpretability aids in identifying biases or weaknesses. Achieving robustness enhances a model's reliability in real-world applications, fostering dependable predictions across various scenarios**.**