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?

A) Optimal values of alpha for ridge and lasso are 10 and 0.001 respectively. If the value of alpha increases, then coefficients gets regularized more and reach close to 0. This could cause the model to underfit.

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

A) After comparing the r2 scores, I will choose lasso because it will also perform feature selection by making some coefficients to 0. Therefore, model will not too complex.

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 an other model excluding the five most important predictor variables. Which are the five most important predictor variables now?

A) `KitchenQual_Gd, BsmtQual_Gd, KitchenQual_TA, BsmtQual_TA, 1stFlrSF are the top 5 predictors after change.`

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?

A) By checking R2_score , Adj R2, AIC,BIC. If the models r2 score for train is significantly higher than test, then model is not generalizing the data and is overfitting.