Q1.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: According to the options I gave for choosing alpha

Ridge: 1.0

Lasso: 0.0001

After doubling the value of alpha for ridge my R2 value increased slightly, reason I had not given 0.2 in the range to choose alpha from. Whereas in case of Lasso it decreased slightly which is correct.

Most important variable is still LotArea

Q2. 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: For Ridge I can still do experiment as on doubling it gave better results. Whereas for Lasso I am good.

Q3. 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

KitchenAbvGr

GarageCars

OverallCond_8

Functional_Sev

Q4: 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: A model is robust when any variation in the data does not affect its performance much.A generalizable model is able to adapt properly to new, previously unseen data, drawn from the same distribution as the one used to create the model.To make sure a model is robust and generalizable, we have to take care it doesn't overfit.In other words, the model should not be too complex in order to be robust and generalizable.

If we look at it from the prespective of 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.