**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?**

- Optimum value of alpha for ridge is 0.2
- Optimum value of alpha for lasso is 100
- After double the alpha value i.e. 0.4, for ridge regression, important predictor variables are
- After double the alpha value i.e. 200, for lasso regression, important predictor variables are

**Question2:**

**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?**

The R square value of the model is almost same for both regressions. Lasso regression pushes coefficients to zero which helps in eliminating the features. So, lasso regression is chosen with alpha value as 100.

**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?**

After Dropping 5 important features from the model and created the model. The Top five features are 1. OverallQual_9, 2. BsmntCond_po, 3. MSSubClass_90, 4. GarageFinish_No Garage and 5. BsmtUnfSF

**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?**

The model is robust even if small changes in input does not affect the output and generalisable as its performance better well with new or test data as well. These properties can be taken care with outliers Treatment, Proper Model selection and Cross validation technique. The Accuracy of the model should not be changed drastically for both train and test data.