

### 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 :**

**Ridge Regression - 10**

**Lasso Regression – 0.001**

### 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 :**

**We'll choose Lasso in this case since reduction of features is required in this specific problem to get rid of the noise. Also, it is less prone to overfitting and not computationally expensive.**

### 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?

**Answer :**

**The new top predictors are:**

**2ndFlrSF, Exterior1st\_BrkFace, TotalBsmtSF, 1stFlrSF, MSSubClass\_70**

### 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:**

**To make sure that a mode is robust and generalizable:**

- **Use a validation set.**
- **Use cross-validation.**
- **Choose the right penalty parameter.**
- **Use feature selection**

**Implications:**

1. **Less likely to overfit.**
2. **More likely to generalize well.**
3. **More robust to noise.**