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: Optimal value of alpha for ridge regression is 20.7 and for ridge regression is 100.

If values are doubled then r2 score of ridge regression is marginally decreased and r2 score of lasso regression is marginally increased.

Most important predictor variable is **OverallQual**

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: I will use Lasso regression, since this model is simple without compromising on accuracy.

	Metric	Ridge Regression	Lasso Regression
0	R2 Score (Train)	8.317105e-01	8.309409e-01
1	R2 Score (Test)	8.099704e-01	8.097771e-01
2	RSS (Train)	2.951860e+11	2.965358e+11
3	RSS (Test)	1.392687e+11	1.394103e+11
4	MSE (Train)	1.964342e+04	1.968828e+04
5	MSE (Test)	2.060582e+04	2.061629e+04

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: After removing five most important predictor, next important predictor in lasso model are 'BsmtUnfSF', 'TotalBsmtSF', '1stFlrSF', '2ndFlrSF', 'GrLivArea'