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. The optimal value of alpha for:
        i. Ridge - 50
        ii. Lasso – 500
    b. The changes in the model if I double the value of alpha for:
        i. Ridge: R-squared will decrease by about 0.3%, RSS will increase, MSE will increase.
        ii. Lasso: R-squared will decrease by 1%, RSS will increase, MSE will increase
    c. The most important predictor after that change is implemented is: 'GrLivArea'(Above grade (ground) living area square feet)
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?**
    a. I will choose lasso regression for my final model, as lasso regression also does feature selection. And since we already have a lot of features in this data, using lasso will make it a bit less complex. Anyways the difference in R-squared for ridge and lasso is pretty less.
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?**
    a. The new 5 most important predictor variables are: 1stFlrSF, 2ndFlrSF, BsmtQual_TA, ExterQual_TA, and KitchenQual_TA
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. To make a model robust means to make sure that any small variance in the data does not affect its performance much.
    b. A generalizable model works the same way on the test data, the way it does on the train data.
    c. So, to make a model robust and generalizable, we have to make sure that it does not overfit or underfit.
    d. So, we have to strike some balance between variance and bias and make our model best-fit.