Q1)hat 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?

OPTIMAL VALUE FOR ALPHA FOR RIDGE AND LASSO

RIDGE = 0.01

LASSO = 0.001

When the values of Ridge and Lasso regression are doubled, we get :

(PASTED FROM PYTHON OUTPUT)

RIDGE REGRESSION

```
r2_test:
0.8385454964260755
RSS_test:
11.635795360427196
MSE_test:
0.02656574283202556
```

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?

The alpha values clearly determine the usage of Lasso Regression; When we compare the R-squared values. Lasso edges out Ridge regression. I would choose Lasso regression because the optimization is better, and simpler than the Ridge regression too

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?

A Model should be generalizable so that we maintain a sufficient level of test accuracy. Outliers should not affect the model. Outlier elimination helps us control these. If the model is not robust and generalizable, the analysis and predictions that we perform will either be an overfit or an underfit.