Assignment part II

Question 1 :

Ridge : 100, Lasso : 500.
If we double the values of alpha :
In case of ridge regression both r2 value on train data show a decrease while on the test data it shows increase. The RMSE value also show's a decrease.
In case of Lasso regression we see the same behavior as what we have seen in case of ridge regression.

Question 2 :

Comparing the overall RMSE, and r2 values on test and train data, ridge regression performs better on the test data as compared to Lasso in this case. So I will go with it.

Question 3:

GarageCars, FullBath, OverallCond, BsmtExposure, Neighbourhood

Question 4 :

- To ensure a model is robust and generalizable, use diverse and representative training data.
- Apply data augmentation during training to introduce variations and improve resilience.
- Implement regularization techniques like dropout to prevent overfitting and enhance generalization.
- Utilize transfer learning with pre-trained models to leverage knowledge from broader datasets.
- Conduct cross-validation to assess performance on different subsets of the data.
- Experiment with hyperparameter tuning to optimize the model's configuration.
- Evaluate the model on unseen data to gauge its generalization ability.
- Test the model's robustness against adversarial examples to ensure reliability.
- Strive for a balance between underfitting and overfitting for optimal generalization.
- Prioritize generalization performance over perfect accuracy on the training set for real-world effectiveness.