Consider the `Hitters.csv` file. This dataset includes information about baseball players such as their salary and 19 performance measures. It is of interest to predict a player's salary based on the player's performance. Fit the following shrinkage regression models

Ridge regression

1. The dataset does not include the salary of some players (missing values or NA). Remove all rows with missing values.

2. Fit one hundred ridge regression models with $10^{-2} < \alpha < 10^{10}$.

3. Plot the coefficients of the ridge regression predictors as a function of α.

4. Split the data set into a training and test set (50%). Fit ridge regression models with $\alpha = 4, 10^9$, and 0. Compare their test MSE.

5. Use 10-fold cross validation to find the best value (in terms of MSPE) for α. Find the MSPE of the ridge regression model with this value of α.

6. Use the best α value to fit a ridge regression model with the full data set.

Lasso Regression

7. Fit one hundred lasso regression models with
   $10^{-2} < \alpha < 10^{10}$.

8. Create a coefficients plot to see how much they vary as a function of α.

9. Perform 10-fold cross validation to find the best value (in terms of MSPE) for α. Find the MSPE of the lasso regression model with this value of α.

10. Use the best α value to fit a lasso regression model with the full data set. How many coefficients are equal to zero?