Linear Regression

Univariate regression

1. Fit a linear regression model with **medv** as the response and **lstat** as the predictor.
2. Plot the data along the fitted line
3. What is the value of the R squared statistic in your model?
4. What is the value of the F statistic?
5. What does the model predict for the value lstat=10?
6. Compute a 95% confidence interval associated with the value lstat=10.

Multivariate regression

1. Fit a linear regression model using **lstat** and a new feature that is equal to two times **lstat**. What happened?
2. Fir a linear regression model using all features except **age**. Did your prediction become better?
3. Using linear regression, compte a **parabolic** least-squares fit for the target variable using only **lstat**. Plot your result. Did this improve upon your fit from 1a?
4. Use p-values to find the highest exponent for which the polynomial regression fit keeps improving your model.